

# Registered Apprenticeship for Transit Rail Vehicle Technicians



**National Framework | Local Implementation**

 **RAIL CAR TRAINING CONSORTIUM**

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# American Apprenticeship Initiative: Overview

- Apprenticeship in five occupations: Transit Coach Operator, Bus Maintenance, Rail Vehicle Maintenance, Elevator-Escalator Maintenance, Signals Maintenance
- 5 years of apprenticeship registration and implementation
- 8 agencies committed to Rail Vehicle Apprenticeship

# American Apprenticeship Initiative: Deliverables

## West Virginia Career Pathways Workplan

### Transit-Based Scenarios

Working with the Defined STEM platform used by the West Virginia Department of Education Career and Technical Education program, the Transportation Learning Center will develop two transit-related scenarios, one in signals and one in bus electronics, with a green emphasis. These scenarios will be designed for use by WVDE in its transportation career pathway in the high schools, but will also be able to migrate to other interested high school, community and technical college and agency and union training programs across the country. Because Defined STEM utilizes the national competency model framework, these scenarios designed in tandem with the development of a detailed core curriculum outline linked to required competencies and standards.

Point People: Tia Brown, Jack Clark, John Schiavone, Melissa Huber from TLC for scenario development; Kathy D'Antoni from WVDE CTE for appropriate distribution and use in West Virginia.

#### Deliverables and Dates Due:

- 2.5.1: Develop one detailed core curriculum outline linked to required competencies and standards. Due March 1, 2014-Month 10.
- 2.6.1, 2.6.2: Develop at least two interactive learning modules based on the core curriculum outline. Due June 1, 2014 and September 1, 2014-Months 13 and 16.
- 2.3.1: Engage at least 450 high school students across at least three locations (partial numbers met through students engaging in these scenarios in West Virginia, more if utilized in other locations.) Due November 1, 2014-Month 18.

### CTE Summer Honors Academy 2014

Through a competitive process, twenty CTE students are selected from a state-wide pool to participate in the Summer Honors Academy. One to two days of this program will be devoted to transportation, including transit. Students will visit various transportation properties in the state and engage with workers and managers in the field and/or classroom. The program may be designed to include use of all or part of the Defined STEM scenarios being developed by the Transportation Learning Center. The Center will work with the Rahall in support of program planning and, where appropriate, will help to develop useful outreach and program materials in addition to presenters in the field and/or classroom. Program may involve hands-on learning module related transit.

Point People: Diana Long of the Rahall Institute directly working with the students and on program planning; support from Center staff led by Jack Clark and Pat Greenfield on program coordination and appropriate resources for the transportation/transit segments of the program.

#### Deliverables and Dates Due:

	2015			2016									2017					
	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar
Select SMEs																		
Start-up Webinar																		
Hold first in person meeting																		
Develop workplan																		
Review and revise, if necessary APTA standards/addendum																		
Use APTA standards and current apprenticeship to draft competency based apprenticeship																		
Hold in person meeting																		
Submit revised apprenticeship to DOL																		
Work with agencies to develop Joint Apprenticeship Committees																		
Apprenticeship																		
Begin developing 100 level lesson plans																		

## Technical Workplan

# American Apprenticeship Initiative: Deliverables



## APTA STANDARDS DEVELOPMENT PROGRAM RECOMMENDED PRACTICE

American Public Transportation Association  
1666 K Street, NW, Washington, DC, 20006-1215

APTA RT-RMT-RP-001-10

Approved June, 2010

Vehicles Training Joint Steering  
Committee

## Rail Vehicles Maintenance Training Standards

**Abstract:** This *Recommended Practice* establishes standards for a program of rail vehicles maintenance training.

**Keywords:** training, rail vehicles

**Summary:** In response to the transit industry's need for rail vehicles maintenance training, the Transportation Learning Center has partnered with APTA, transit agencies and unions representing transit workers to develop these joint labor-management training guidelines and recommended training practices.

**Scope and purpose:** The curriculum, courseware and training guidelines adopted by the group and contained in this *Recommended Practice* are designed to meet or exceed the licensing requirements of jurisdictions, which currently or in the future, may legislate professional licensure or certification for rail vehicle technicians. The apprenticeship program will ultimately be registered by the U.S. Department of Labor's Office of Apprenticeship.

This Recommended Practice represents a common viewpoint of those parties concerned with its provisions, namely, transit operating/planning agencies, manufacturers, consultants, engineers and general interest groups. The application of any standards, practices or guidelines contained herein is voluntary. In some cases, federal and/or state regulations govern portions of a rail transit system's operations. In those cases, the government regulations take precedence over this standard. APTA recognizes that for certain applications, the standards or practices, as implemented by individual rail transit agencies, may be either more or less restrictive than those given in this document.

## MENTORING FOR TRANSIT MAINTENANCE MECHANICS

### TRAIN-THE-TRAINER FOR ON THE-JOB-TRAINING (OJT)

### GREATER CLEVELAND REGIONAL TRANSIT AUTHORITY AND AMALGAMATED TRANSIT UNION LOCAL 268

Submitted by Stuart Bass,  
Keystone Development Partnership



For the Transportation Learning Center

 TRANSPORTATION LEARNING CENTER

May 2014

opsU-2

Develop and customize materials for Mentor

Training

Update and Revise APTA Standards

# Project Overview: Major Project Deliverables

Day1 – Teaching & Learning	Day 2 – Best Practices	Day 3 – Practice Teaching	Day 4 – Practice Teaching	Day 5
<b>Module 1 – The Adult Learner</b> <ul style="list-style-type: none"> <li>• Welcome &amp; Introductions</li> <li>• Pre-Training Analysis</li> <li>• How Adults Learn</li> <li>• Learning Styles</li> <li>• Characteristics</li> </ul>	<b>Module 3 – Teaching Tools &amp; Demonstrations</b> <ul style="list-style-type: none"> <li>• Instructional Materials:                             <ul style="list-style-type: none"> <li>○ Instructor Guide</li> <li>○ Participant Guide</li> <li>○ PowerPoint</li> </ul> </li> </ul>	<b>Module 4 – Classroom-Based Practice Teaching</b> <p>Round #1</p> <ul style="list-style-type: none"> <li>• Pre-Training Prep</li> <li>• Practice Teaching</li> </ul>	<b>Module 5 – Lab-Based Practice Teaching</b> <p>Round #1</p> <ul style="list-style-type: none"> <li>• Pre-Training Prep</li> <li>• Practice Teaching</li> </ul>	<b>Module 7 – Evaluations</b> <ul style="list-style-type: none"> <li>• Instructor Challenges and Solutions</li> <li>• Course Evaluation</li> <li>• Self-Assessment</li> <li>• Post-Training Analysis</li> </ul>
A.M. BREAK	A.M. BREAK	A.M. BREAK	A.M. BREAK	A.M. BREAK
<ul style="list-style-type: none"> <li>• Components of Instruction                             <ul style="list-style-type: none"> <li>○ Gagne's 9 Events</li> </ul> </li> </ul>	Instructor Demonstration: <ul style="list-style-type: none"> <li>• Classroom-Based</li> </ul>	Round #2 <ul style="list-style-type: none"> <li>• Pre-Training Prep</li> <li>• Practice Teaching</li> </ul>	Round #2 <ul style="list-style-type: none"> <li>• Pre-Training Prep</li> <li>• Practice Teaching</li> </ul>	<ul style="list-style-type: none"> <li>• Performance Evaluations</li> <li>• Closing</li> </ul>
LUNCH	BREAK + Travel to Lab	BREAK	BREAK	
<b>Module 2 – The Effective Instructor</b> <ul style="list-style-type: none"> <li>• Characteristics</li> <li>• Teaching Methods</li> <li>• Learning Environment Preparations</li> <li>• Presentation Skills</li> </ul>	Instructor Demonstration: <ul style="list-style-type: none"> <li>• Lab-Based</li> </ul>	Round #3 <ul style="list-style-type: none"> <li>• Pre-Training Prep</li> <li>• Practice Teaching</li> </ul>	Round #3 <ul style="list-style-type: none"> <li>• Pre-Training Prep</li> <li>• Practice Teaching</li> </ul>	
	LUNCH	LUNCH	LUNCH	
P.M. BREAK	Practice Teaching <ul style="list-style-type: none"> <li>• Overview &amp; Assignments</li> </ul>	Practice Teaching <ul style="list-style-type: none"> <li>• Overview &amp; Assignments</li> </ul>	<b>Module 6 – Field Trip Practice</b> <ul style="list-style-type: none"> <li>• Field Trip Best Practices</li> <li>• Instructor Demonstration</li> <li>• Participant Practice</li> </ul>	
<ul style="list-style-type: none"> <li>• Practice Presentations</li> <li>• Individualized Instruction</li> </ul>	Preparation for Classroom-Based Practice Teaching	Preparation for Lab-Based Practice Teaching		

## U. S. DEPARTMENT OF LABOR EMPLOYMENT AND TRAINING ADMINISTRATION OFFICE OF APPRENTICESHIP

### APPRENTICEABILITY REQUEST FORM

Occupational Title: Transit Elevator-Escalator Maintenance Technician

O\*NET-SOC CODE:

SVP: Proposed Term:

Is this occupation part of a recognized apprenticeable occupation?  Yes  No

If yes, how is separate apprenticeability recognition justified?

Potential Sponsor (name, address, contact person and e mail): National Transit Elevator-Escalator Consortium Administered by the Transportation Learning Center, C/O Jack Clark, 8403 Colesville Road, # 825, Silver Spring, MD 20910 jclark@transportcenter.org

Estimated number of apprentices to be trained by this sponsor:

Proposed ratio (apprentices to journeyworkers):

Estimated number of workers in this occupation Nation-wide:                      Estimated

number of employers using this occupation Nation-wide:                      Union

involved, if any (name, address, and contact person): SEIU, ATU, TWU Does

this union support apprenticeability of this occupation?  Yes  No

National employer association involved, if any (name, address, and contact person): NA

Does this association support apprenticeability of this occupation?  Yes  No

No

Does the sponsor have a history of utilizing formalized training?  Yes  No  
If so in which occupation?

Has this sponsor previously recognized and undertaken formalized training in this occupation?  Yes  No.

Assist agencies with training development and Registered Apprenticeship registration

# American Apprenticeship Initiative: Deliverables



Recruit and Train Mentors

## Transit Jobs: Building Green Careers and Helping the Environment

Green collar jobs are blue collar jobs that improve environmental quality and build strong communities. Green collar jobs are good jobs that are poised for dramatic growth well into the future!

### Transit is Experiencing Dramatic Growth!

- Transit ridership has grown by 30 percent since 1995. Riders take more than 10.3 billion trips annually.
- Transit employment is expected to grow by 24 percent between 2006 and 2016, creating 64,347 new green collar jobs in transit.
- Transit is projected to be one of the fastest growing transportation sectors.



### Transit Jobs Improve the Environment!

- Conserve Energy: Public transportation saves consumers 11 million gallons of gas a day equalling 4.2 billion gallons a year.
- Shrink Carbon Footprints: Public Transportation saves 37 million metric tons of carbon dioxide annually. 138 metric tons of carbon dioxide are saved per green collar transit employee.
- Reduce Traffic Congestion: Public transportation saves travelers 541 million hours in travel time and 340 million gallons of fuel. Without public transportation, congestion costs would have been an additional \$10.2 billion.

### Transit Jobs are Good Jobs!

- Workers in transit perform meaningful work in their communities and workers earn a living wage.
- Workers earn three times more than the federal minimum wage. Green collar transit drivers earn an average of \$18.41 an hour and mechanics earn \$21.39 an hour.
- Workers have a myriad of career advancement opportunities. The Transportation Learning Center works to support and expand these opportunities.

### Transit Jobs Grow the Economy!

- 1.3 million new jobs can be created in the next two years with \$47.8 billion invested in capital transit projects.
- 35,000 jobs can be supported with a \$1.25 billion investment in the nation's public transportation infrastructure.
- \$10 million in public transportation capital investments can return up to \$30 million in business sales alone.

To learn more about the Transportation Learning Center's cutting-edge research visit our website at [www.transportcenter.org](http://www.transportcenter.org)

 **TRANSPORTATION LEARNING CENTER**

opelu-2

Develop outreach and recruitment materials

# American Apprenticeship Initiative: Deliverables



Apprentice and pre-apprentice training



# Rail Vehicle Apprenticeship Timeline

- 5 year timeline overall
- Technical Workplan by October 2016
- Update to APTA standards by December 2016
- Submission of standards to APTA by February 2017
- Rail Car Apprenticeship Registration by December 2017
- Train the Trainer ,Mentor Training Implementation (Ongoing)
- Recruitment of new partners (Ongoing)
- As courses are developed in the Rail Car Consortium, will work with NCCRS to assess for college credit

# Piloting/Implementation

- Revise and submit apprenticeship framework to National Department of Labor
- Development of Policy Committee (if not already developed)
- Development of Joint Labor Management Apprenticeship Committee (if not already developed)
- Development of apprenticeship structure
- Piloting/Implementation
- Registration of program with State or Feds
- Tracking of registered apprentices
- Discussions with workforce board for training funds

## Tracking Apprentices

Data Element Number	Data Element Name	Code Value	Optional (Yes/No/Conditional)	Required Field
1	Report Year			Y
2	Report Quarter			Y
3	Total Exiters			Y
4	Total Participants Served			Y
5	New Participants Served			Y
6	Male			Y
7	Female			Y
8	Hispanic/Latino			Y
9	American Indian or Alaskan Native			Y
10	Asian			Y
11	Black or African American			Y
12	Native Hawaiian or Other Pacific Islander			Y
13	White			Y
14	More Than One Race			Y
15	Eligible Veterans			Y
16	Individuals with a Disability			Y
17	Employed Individuals			Y
18	Unemployed Individuals			Y
19	Long-term Unemployed			Y
20	High School Graduate or Equivalent			Y
21	1 - 4 Years or More of College, or Full-time Technical or Vocational School			Y
22	Associates Diploma or Degree			Y
23	Bachelor's Degree or Equivalent			Y
24	Advanced Degree Beyond Bachelor's			Y
25	Number Began Receiving Education/Job Training Activities			Y
26	Number Participated On-the-Job Training Activities			Y
28	Number Participated in Classroom Occupational Training Activities			Y
28	Number Participated in Contextualized Training Activities			Y
29	Number Participated in Distance Learning Activities			Y
30	Number Participated in Customized Training Activities			Y
31	Number Participated in Incumbent Worker Training Activities			Y
32	Number Completed Education/Job Training Program Activities			Y
33	Number Completed On-the-Job Training Program Activities			Y
34	Number Completed Program Activities and Obtained a Credential			Y
35	Total Number of Credentials Received			Y
36	Number Entered Unsubsidized Employment			Y
37	Number Entered Unsubsidized Training-Related Employment			Y
38	Number Retained Employment			Y
39	Total Number of Employed Retained Current Position			Y
40	Total Number of Employed Advanced into New Position			Y
41	Total Number of Incumbent Advanced into New Position			Y
42	Entered Employment Rate			Y
43	Employment Retention			Y
44	Average Earnings			Y
45	NarrativeRptAttachmt			Y
46	GranteeCertfyngTitle			Y
47	CertifierPhone			Y
48	CertifierEmail			Y
49	AdditionalComments			Y
50	RegionalFedPrjOfficer			Y
51	NationalPrgmOffice			Y
52	Report Status	1= In Progress 2= Submitted 3= Approved		Y
53	Remarks			
54				
55				
56				
57				

# Leveraged Resources

- Need to document agency leveraged resources
- Collected on a quarterly basis
- Can be as simple as a spreadsheet or email
- Types of leveraged resources
  - Training costs
    - Portion of trainers salaries for time spent teaching apprentices or pre-apprentices
    - Cost of developing any training materials or curriculum related to apprenticeship training
  - Materials and supplies
    - Textbooks
    - Training Aids
    - Skill gap survey materials and implementation

# Leveraged Resources

- Types of leveraged resources
  - Rental costs
  - Personnel costs (including fringe benefits)
    - OJT wage costs
    - Cost of any personnel time spent working on apprenticeship activities, including work group meetings, policy committee meetings, time spent working with or doing logistics, complying with reporting requirements, etc.
  - Meeting costs
    - Including costs of SME time for webinars and in person meetings
  - Telephone, postage, copying, printing
  - Travel costs not covered by the project



## Draft National Rail Car Apprenticeship Technical Workplan

### **1. Modification of National Transit Rail Vehicle Maintenance Technician Apprenticeship program**

- Revision of the minimum and maximum requires of the total hours for the national rail vehicle apprenticeship framework, to make it a “true” hybrid apprenticeship model. This review will include:
  - Review of minimum and maximum classroom and on-the-job learning hours required for the work process schedule in the national rail vehicle apprenticeship framework. The revised national framework will be submitted to the National Office of Apprenticeship for approval.
  - Review and possible revision of interim credentials for the 100, 200, and 300 level apprentice training areas.

### **2. Development of Apprenticeship Assessments**

- Enhance the current bank of assessment questions for modular rail vehicle training assessments currently housed in online assessment database. These assessments were created as part of a national rail vehicle qualification program. The questions can be used for an individual to demonstrate competency and/or to assess knowledge gained at the end of instruction.
- Validate assessments (hands-on and written) through a pilot assessment process
- Develop guidelines for assessment that will include recommendations for fair and consistent assessing of individual’s abilities.

### **3. Implementation and Registration of Local Apprenticeships**

- Work with agencies and the relevant federal and state Offices of Apprenticeship to register local rail vehicle apprenticeship programs
- Assist agencies with the design and implementation of their apprenticeship programs. This will include assistance with the development of joint apprenticeship committees, assistance with the implementation of the training program, mentor training, train the trainer, etc.
- Work with agencies on community outreach, partnerships with community colleges, assessment of courses for college credit, etc.

# Types of Apprenticeship

- DOL Quick Start Toolkit:  
[http://www.doleta.gov/oa/employers/apprenticeship\\_toolkit.pdf](http://www.doleta.gov/oa/employers/apprenticeship_toolkit.pdf)
- Time Based
- Performance/Competency Based
- Hybrid



## Time Based Example

### Time based apprenticeship

Minimum of 2,000 hours which includes an outline of the specific work processes and the approximate time requirement for each individual process

#### Appendix A

#### WORK PROCESS SCHEDULE TRANSIT ELEVATOR-ESCALATOR MAINTENANCE TECHNICIAN (Existing Title: Elevator Repairer)

This schedule is attached to and a part of these Standards for the above identified occupation.

#### 1. TERM OF APPRENTICESHIP

The term of the apprenticeship shall be 48 months with an OJL attainment of 5399 hours. (This example assumes a certain level of competency in math and reading. Math and reading classes will be added by transit agencies that are not able to find candidates with these qualifications within their labor market.)

#### 2. RATIO OF APPRENTICES TO JOURNEYWORKERS

Ratio as covered in the local collective bargaining agreement (CBA).

#### 3. APPRENTICE WAGE SCHEDULE

Apprentices shall be paid a progressively increasing schedule of wages based on a percentage of the current journeyworker wage rate per the CBA.

**Transit Elevator-Escalator Technician Apprenticeship Term:**

**By Percentage of Journey-level Wage: SAMPLE  
for a 36 month program and an hourly wage rate of \$28.75.**

(The hourly rate is a composite representative of the current state of the industry.  
Local rates will be determined by the CBA.)

*Time Period | Percentage of Journey-level | Apprentice*

1 <sup>st</sup> six months	= 60%	= \$ 17.25
2 <sup>nd</sup> six months	= 67%	= \$ 19.26
3 <sup>rd</sup> six months	= 74%	= \$ 21.28
4 <sup>th</sup> six months	= 81%	= \$ 23.29
5 <sup>th</sup> six months	= 88%	= \$ 25.30
6 <sup>th</sup> six months	= 95%	= \$ 27.31

#### 4. SCHEDULE OF WORK EXPERIENCE (See attached Work Process Schedule)

The NJATC may modify the work processes to meet local needs prior to submitting these Standards to the appropriate Registration Agency for approval.

#### 5. SCHEDULE OF RELATED INSTRUCTION (All classes include practical application, diagnostics and troubleshooting where applicable)

Transit orientation  
Electrical and electronics  
Preventive maintenance and inspection  
(See attached Related Instruction Outline for more details)

Appendix A - 1

## Competency/Performance Based Apprenticeship

- ❖ Work process schedules specify approximate time of completion of competency which can be applied to the 2,000 hour requirement
- ❖ Flexibility - Apprentices can work at their own pace
- ❖ Monitor, Measure, and Reward
  
- ❖ Characteristics
  - Competencies identified and defined by job/task analysis
  - Structured organized learning activities that can be self-paced
  - Measures or tests of competency attainment that are observable
  - Minimum and maximum time/hours for each competency

# Competency Based Example

### ORGANIZATION OF THE STANDARDS

These standards are organized in major job (competency) areas. Each area contains the various tasks that make up the job (competency) area. The sequence in which the major job areas are listed does not imply the sequence in which the training of the apprentice should be accomplished. Related instruction (home study) courses are available and enrollment of the apprentice will provide a structured learning, sequential training program to the apprentice as well assist the sponsor in providing the necessary training required by the apprenticeship program.

The National Apprenticeship and Training Committee will meet periodically to modify and update these standards, if necessary.

### ON-THE-JOB TRAINING AND RELATED INSTRUCTION

#### Purpose and Use of the Apprentice Schedule

The Apprentice Schedule provides a training outline, a progress evaluation, and a schedule of record keeping.

The schedule is designed to assure that the tasks will be included in study references, needed knowledges and proficiencies required to complete effectively the apprenticeship program. In addition, a listing of related instruction has been included. Although much of the related instruction material will be covered in the course of the apprentice schedule, arrangements for study of the non-covered material shall be made by the sponsor.

The apprentice shall be rotated through the task list on the training schedule and provided the related instruction associated with each task. The sequence of training should be based on the sponsor's operating procedures. The training schedule is designed to assist the program supervisor and the apprentice and is based on the following criterion:

- Ability to recognize and analyze problems
- Applies basic knowledge and skills to problem solving tasks
- Performs appropriate actions to complete tasks

Periodically, the apprentice may request the supervisor to review his/her progress in the assigned elements of the program. Upon completion of all elements in the formal program, the apprentice may then request the sponsor's certification.


# Hybrid Apprenticeship

## Hybrid Apprenticeship

Combination of time and competency based

Work processed developed with minimum-maximum time/hours for each task or job requirement

Allows for more flexibility in apprenticeship



**APPENDIX A**

**CARPENTER**  
(Hybrid)

D.O.T. CODE 860.381.022  
O\*NET CODE 47-2031.01

*Hybrid apprenticeships are premised on attainment of demonstrated, observable and measurable competencies in addition to meeting time-based work experience and on-the-job learning requirements.*

This training outline represents minimum standards for work processes and related instruction. Changes in technology and regulations may result in the need for additional on-the-job or classroom instruction.

**WORK PROCESSES**

	Approximate Hours Minimum/Maximum
A. <u>Tools and Materials</u>	325/450
1. Caring for/cleaning/safely using tools, measuring devices and woodworking machinery.	
2. Identifying trade materials and their uses.	
B. <u>Form Building</u>	780/1100
1. Building and placing straight concrete forms; irregular concrete forms; concrete forms for footings, stairways, floors, walls, and columns.	
2. Stripping and salvaging forms for reuse.	
3. Locating and erecting forms for ground-mounted solar collector systems (optional)*.	
C. <u>Rough Framing</u>	780/1100
Framing floors, walls, roofs, stairs, scaffolding – on both house	

ATP 12-037H (02/2016)      Apprentice Training Section  
Page 1

# Registered Apprenticeship for Transit Rail Vehicle Maintenance Technician

- Basic structure
- Classroom hours
- On the Job Learning hours
- Interim Credentials
- Modify?

## BASIC STRUCTURE

### TABLE OF CONTENTS

SECTION I.	Program Administration
SECTION II.	Equal Opportunity Pledge
SECTION III.	Affirmative Action Plan
SECTION IV.	Qualifications for Apprenticeship
SECTION V.	Selection of Apprentices
SECTION VI.	Apprenticeship Agreement
SECTION VII.	Ratio of Apprentices to Journeyworkers
SECTION VIII.	Term of Apprenticeship
SECTION IX .	Probationary Period
SECTION X.	Hours of Work
SECTION XI.	Apprentice Wage Progression
SECTION XII.	Credit for Previous Experience
SECTION XIII.	Work Experience
SECTION XIV.	Related Instruction
SECTION XV.	Safety and Health Training
SECTION XVI.	Supervision of Apprentices
SECTION XVII.	Records and Examinations
SECTION XVIII.	Maintenance of Records
SECTION XIX.	Certificate of Completion of Apprenticeship

## BASIC STRUCTURE

### TABLE OF CONTENTS

SECTION XX.	Notice to Registration Agency
SECTION XXI.	Cancellation and Deregistration
SECTION XXII.	Amendments and Modifications
SECTION XXIII.	Adjusting Differences/Complaint Procedure
SECTION XXIV.	Collective Bargaining Agreement
SECTION XXV.	Transfer of Training Obligations
SECTION XXVI.	Responsibilities of the Apprentice
SECTION XXVII.	Technical Assistance
SECTION XXVIII.	Signature Page Adopting Apprenticeship Standards

Appendix A - Sample Work Processes and Related Instruction Outline

Appendix B - Sample Apprenticeship Agreement

Appendix C - Template Affirmative Action Plan and Selection Procedures

Appendix D – Qualifications and Selection Procedures

## INTERIM CREDENTIALS

**WORK PROCESS SCHEDULE AND RELATED INSTRUCTION OUTLINE  
TRANSIT RAIL VEHICLE MAINTENANCE TECHNICIAN  
(Existing Title: Car Repairer (Railroad Equipment))  
O\*NET-SOC CODE: 49-3043.00 RAPIDS CODE: 0642R-HY**

**Level 100 – Fundamental skills for transit railcar maintenance (diagnose, adjust, repair, or overhaul mass transit rail cars)**

<b>Classroom Hours of Instruction</b>	<b>Subject Area</b>
24	Transit Orientation – History of Transit in the U.S. and local community. How transit is funded. Basic Regulatory agency information, federal and state. Orientation and background on the specific property.
16	Electrical and Job Safety: Demonstrate Knowledge of Job and Electrical Safety Practices
48	Tools and material handling
48	Basic mathematics
64	Introduction to electricity
24	Electrical meters
40	Wiring technologies and equipment
80	DC fundamentals
80	AC fundamentals
24	Basic hydraulic and pneumatic theory and applications
24	Basic mechanical theory and applications
160	AC motors, DC motors and generators
80	Introduction to electrical ladder drawings
80	AC circuit analysis
160	Semiconductor fundamentals
40	Digital fundamentals
<b>992</b>	<b>TOTAL</b>

**NOTE:** The 100 level is classroom training only, no on-the-job learning (OJL).



# Rail Vehicle Apprenticeship: Interim Credentials

**WORK PROCESS SCHEDULE AND RELATED INSTRUCTION OUTLINE  
TRANSIT RAIL VEHICLE MAINTENANCE TECHNICIAN  
(Existing Title: Car Repairer (Railroad Equipment))  
O\*NET-SOC CODE: 49-3043.00 RAPIDS CODE: 0642R-HY**

**Level 200 - Vehicle theory of operation and standard maintenance of rail vehicles**

Hours of Instruction		Subject Area
Classroom	On-the-Job	
8	-	Vehicle theory of operation and overview of major systems – The contents of this class will vary by property according to the equipment and propulsion systems used at that location. May include Light Rail Vehicles, Heavy Rail, Commuter Rail and AC, DC catenary, third rail etc.
16	200	Couplers – Introduction and preventive maintenance
24	200	Trucks and axles – Introduction and preventive maintenance
24	300	Propulsion and dynamic braking – Introduction and preventive maintenance
16	60	Auxiliary inverters and batteries – Introduction and preventive maintenance
24	200	Friction brakes – Introduction and preventive maintenance
40	320	HVAC – Introduction and preventive maintenance
8	120	Current collection and distribution – Introduction and preventive maintenance
16	120	Car body – Introduction and preventive maintenance
24	80	Doors
16	120	Communications systems
24	160	Communications Based Train Control (CBTC, Automatic Train Protection (ATP), Automatic Train Operation (ATO))
24	120	Monitoring, diagnosing and troubleshooting overview
<b>264</b>	<b>2000</b>	<b>TOTAL</b>

# Rail Vehicle Apprenticeship: Interim Credentials

**WORK PROCESS SCHEDULE AND RELATED INSTRUCTION OUTLINE  
TRANSIT RAIL VEHICLE MAINTENANCE TECHNICIAN  
(Existing Title: Car Repairer (Railroad Equipment))  
O\*NET-SOC CODE: 49-3043.00 RAPIDS CODE: 0642R-HY**

**Level 300 – Advanced theory of operation and troubleshooting of systems**

Hours of Instruction		Subject Area
Classroom	On-the-Job	
24	200	Advanced methods of monitoring, diagnosing and troubleshooting
24	80	Couplers – Advanced theory of operation and troubleshooting
40	320	Trucks & axles– Advanced theory of operation and troubleshooting
40	480	Propulsion and dynamic braking– Advanced theory of operation and troubleshooting
40	480	Auxiliary inverters and batteries– Advanced theory of operation and troubleshooting
20	240	Friction brakes– Advanced theory of operation and troubleshooting
24	200	HVAC– Advanced theory of operation and troubleshooting
16	160	Current collection and distribution– Advanced theory of operation and troubleshooting
16	160	Car body
40	480	Doors– Advanced theory of operation and troubleshooting
36	240	Communications systems– Advanced theory of operation and troubleshooting
24	360	CBTC (ATP-ATO) – Advanced theory of operation and troubleshooting
<b>344</b>	<b>3400</b>	<b>TOTAL</b>

**Total OJL hours (Subject to local CBA) 5,400**

\*Descriptions are limited to brief summaries and are not meant to be inclusive of the many complex components on today's railcars.

**SCHEDULE OF RELATED INSTRUCTION HOURS**

(Sub-component lists are for illustrative purposes and are not inclusive.) **1,600**

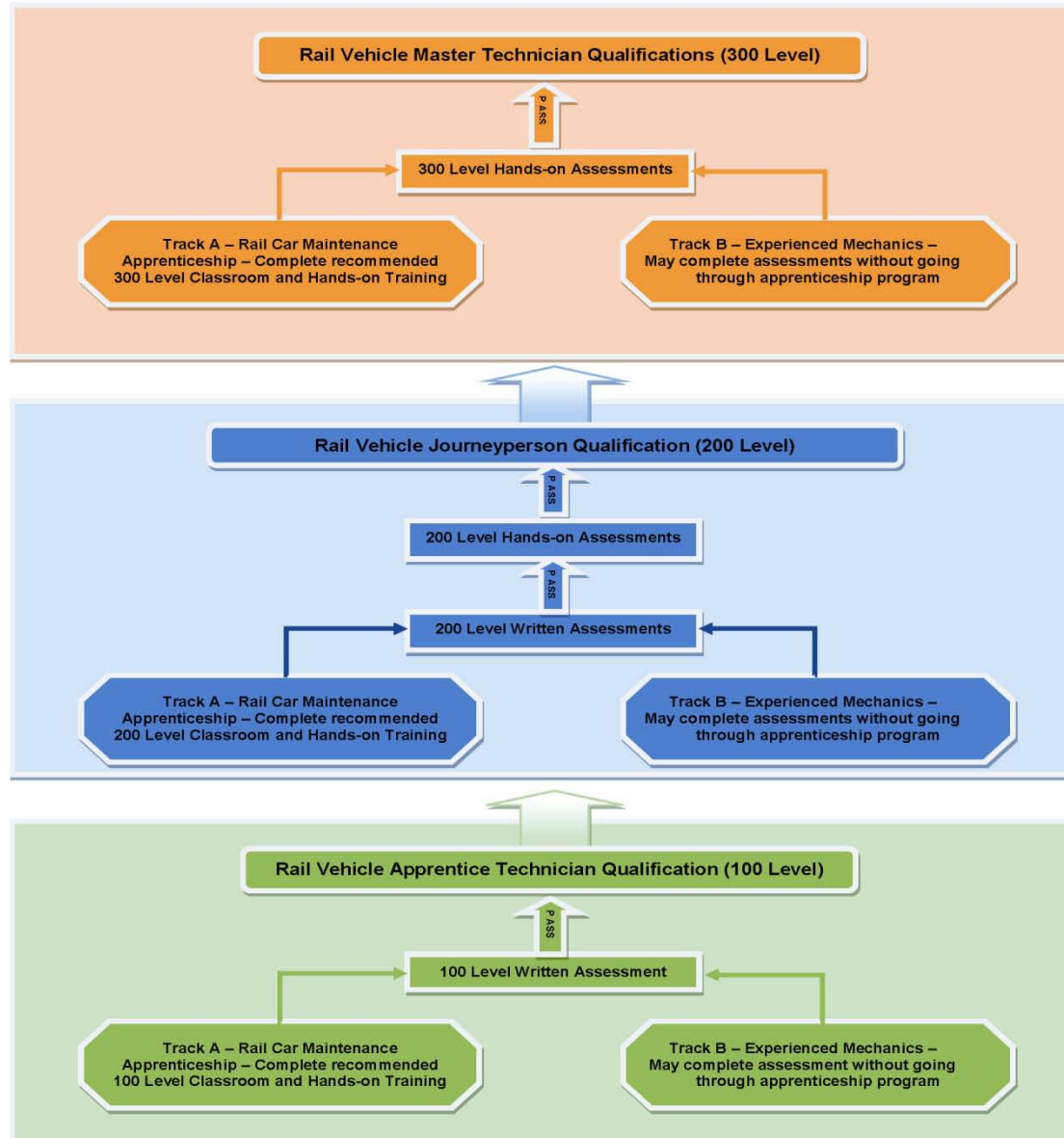
**Total hours OJL and Related Instruction are subject to local CBA 7,000**

Safety is a part of all instruction  
Several components will have equipment-specific instruction on schematic reading.

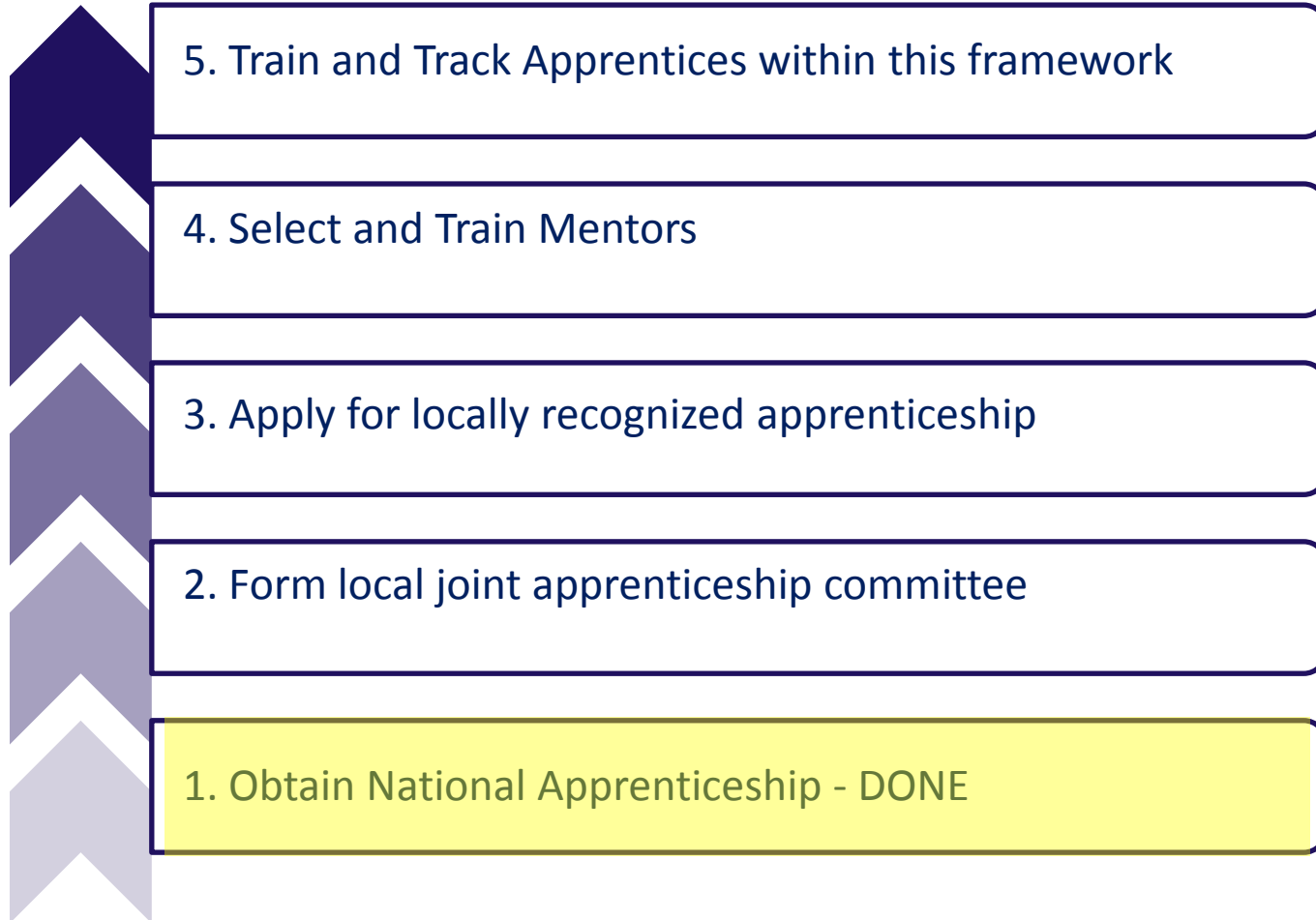
**NOTE:** Each level represents an interim credential with an associated certificate of training.

# Rail Vehicle Apprenticeship: Interim Credentials




## Transit Rail Vehicle Technician Qualification System



# Implementing A Local Apprenticeship Program

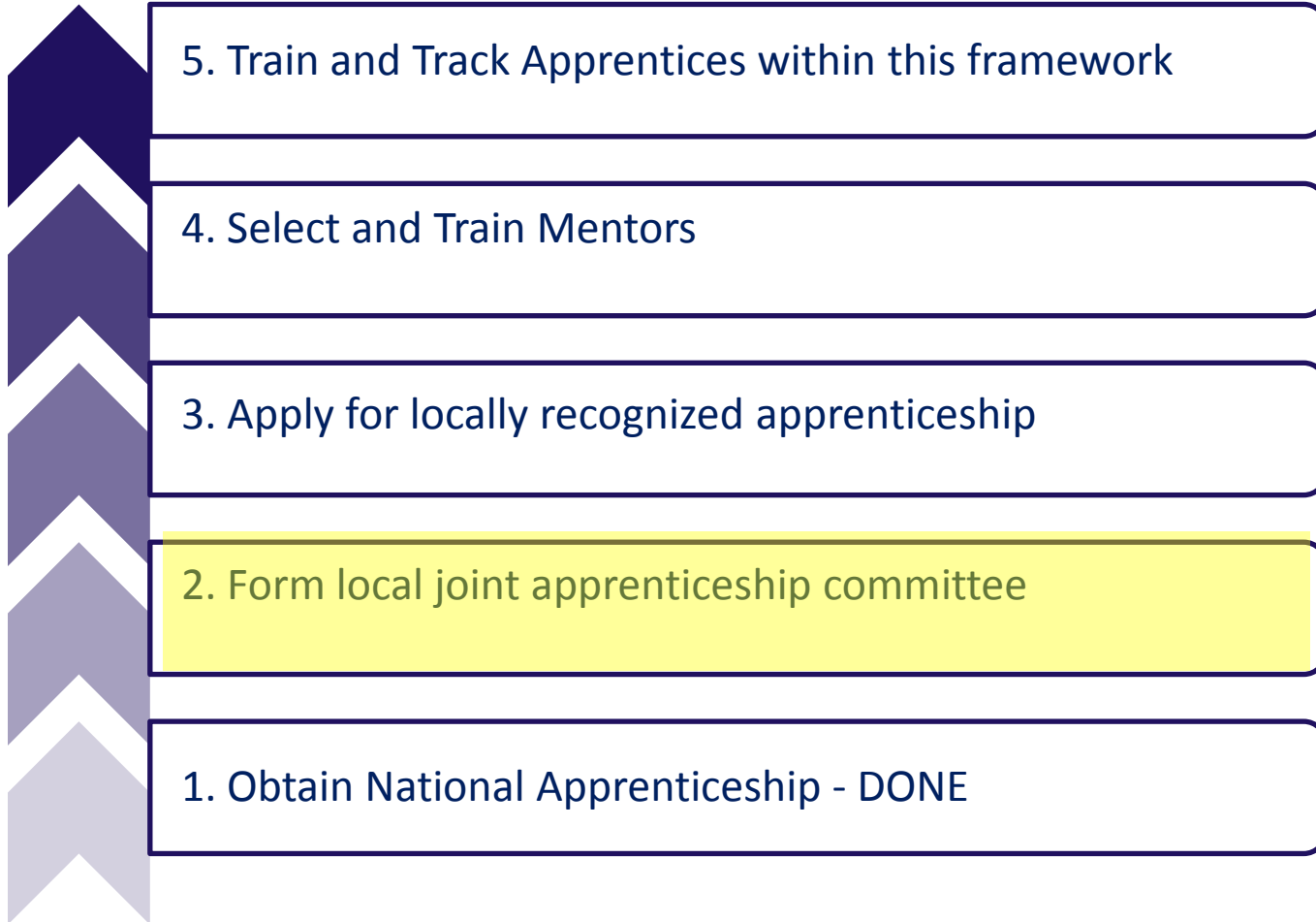


# Obtain National Apprenticeship

BULLETIN 2013-22		June 18, 2013
U.S. Department of Labor Employment and Training Administration Office of Apprenticeship (OA) Washington, D.C. 20210	<b>Distribution:</b> A-541 Headquarters A-544 All Field Tech A-547 SD+RD+SAA+; Lab.Com 	<b>Subject:</b> Revision to Existing Apprenticeable Occupation: Transit Rail Vehicle Maintenance Technician  <b>Code:</b> 200
Symbols: DSNIP/KSL		Action: Immediate
<p><b>PURPOSE:</b> To inform the staff of OA, State Apprenticeship Agencies (SAA), Registered Apprenticeship program sponsors, and other Registered Apprenticeship partners of a revision to an existing apprenticeable occupation:</p> <p style="text-align: center;">Transit Rail Vehicle Maintenance Technician Existing Title: Car Repairer (Railroad Equipment) O*NET-SOC Code: 49-3043.00 RAPIDS Code: 0642R-HY Training Term: 5,400 hours Type of Training: Hybrid</p> <p><b>BACKGROUND:</b> The occupation Transit Rail Vehicle Maintenance Technician was submitted by Mr. Mark Dysart on behalf of the Transportation Learning Center, for apprenticeability determination for a revision to the title, type of training and the term.</p> <p>The revision of Transit Rail Vehicle Maintenance Technician has changed the type of training from time-based to hybrid. The time-based approach was 8,000 OJL hours; the hybrid approach has a minimum of 5,400 of OJL hours.</p> <p><b>ACTION:</b> The OA staff should familiarize themselves with this bulletin and the attached Work Process Schedule and Related Instruction Outline, as a source for developing apprenticeship standards and/or providing technical assistance.</p> <p>If you have any questions, please contact Ken Lemberg, Apprenticeship and Training Representative, at the Division of Standards and National Industry Promotion at (202) 693-3836.</p> <p><b>NOTE:</b> This bulletin is being sent via electronic mail.</p> <p>Attachments</p> <p> TLC Work Process Schedule</p> <p> TLC Occ Competency-Level</p>		



# Implementing an Apprenticeship



# Forming a JATC

- Equally weighted **Labor** and **Management**
- Appoint **co-chairs**
- Set Ground Rules
- List of **Members** and their **expertise** must go to Registration Agency

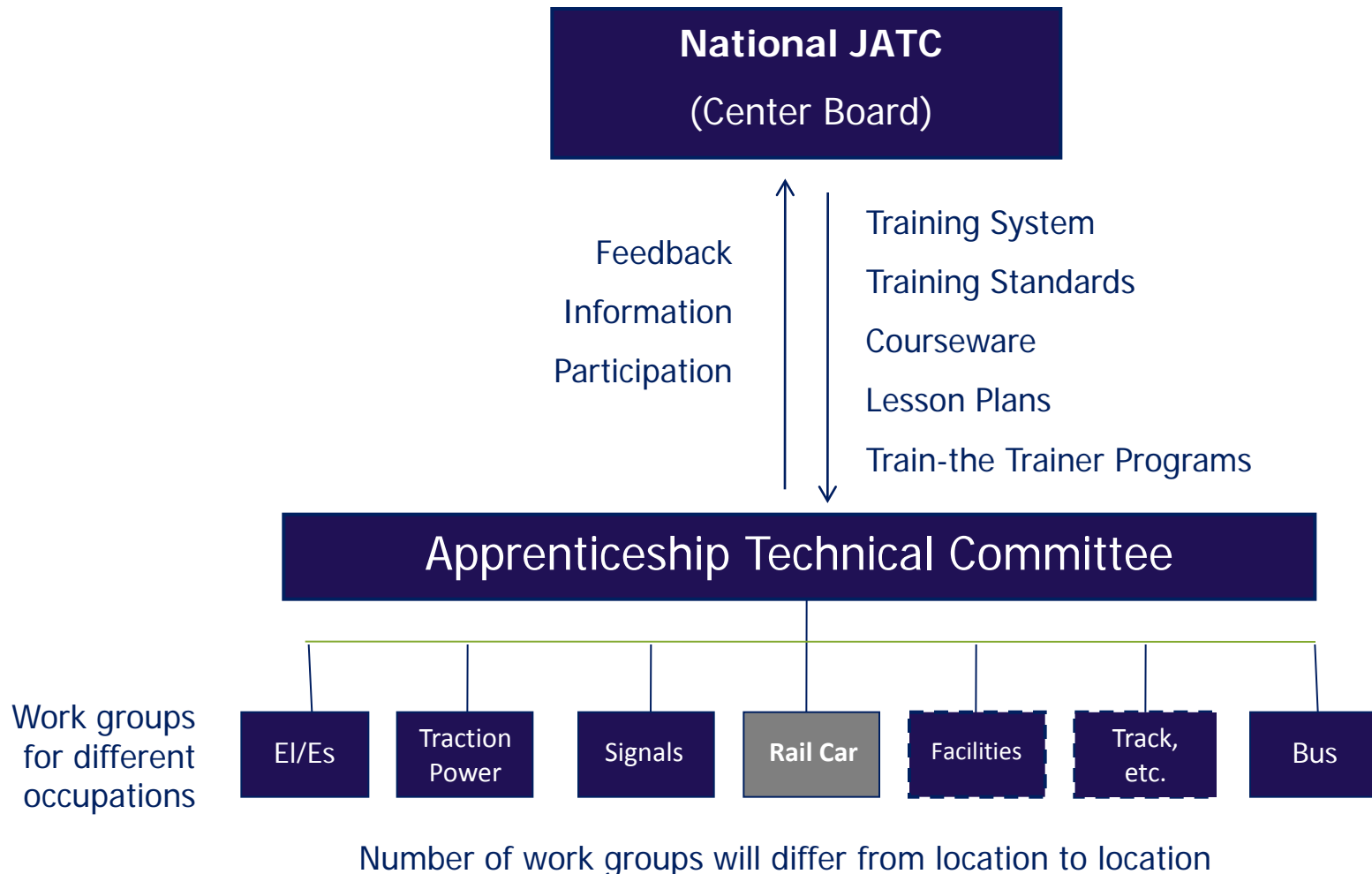


## Joint Apprenticeship Committees

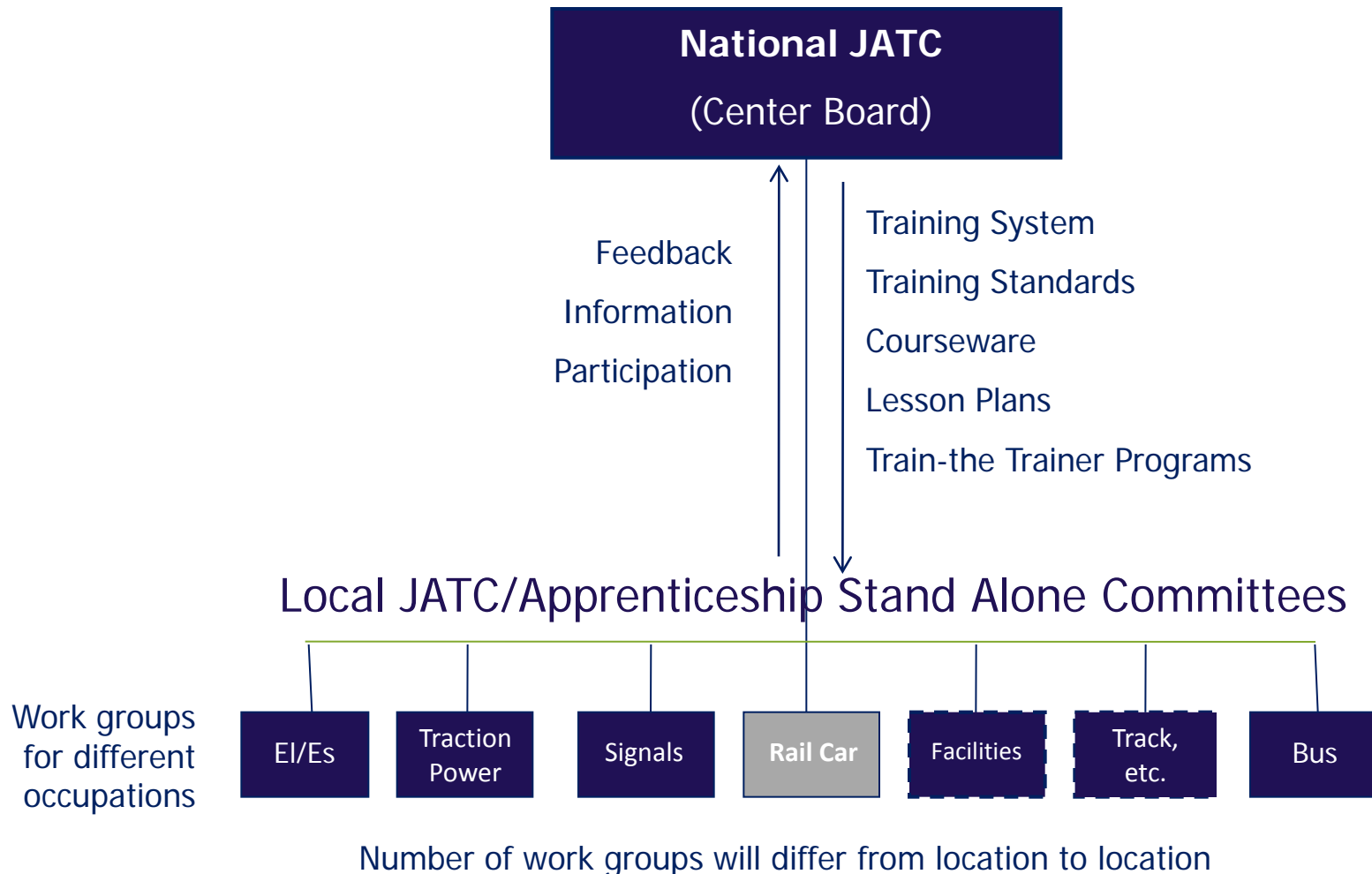
1. Review and modify **National Apprenticeship** for local use
2. Draft **documents** for apprenticeship:
  - **Affirmative Action**
  - **Contract Language**
  - **Wage Schedule**
3. Recruit and Orient Apprentices
4. Ongoing work with Apprentices and Program



## Suggested Training & Apprenticeship Structure #1



## Suggested Training & Apprenticeship Structure #2



# Review and Modify Nat'l Apprenticeship

- Review National Apprenticeship Program
- If needed, **modify** program for **local** implementation
- Set minimum **experience** and **education** standards
- Establish **Apprenticeship to Mentor ratio**

## Create and Implement Training Schedule

					W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T		
22																																		
23	Student Name	Student Name	Student Name	OCT	start	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	
24	Nick N.	Thomas Li	S. Houser	100-100	D	101 comp	106 comp																											
25	K. Edgecomb	M. Nategh	C. Bailiff	100-100	D							100	101	106																				
26	R. Reed	D. Lopez	M. Lockwood	100-100	D														100	101	106													
27	De La Rosa, J	Stockton, E	Dorn, B	100-100	D																					100	101	106						
28	Planas, E	Logd, C	DeValt, J	100-100	D																												100	
29						S	S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	
30	Student Name	Student Name	Student Name	NOV	start	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	
31	Rove, T	Swanson, D	Lau, B	100-100	D				100	101	106																							
32	Fernandez, T	Gilmore, B	Atmodjo, E	100-100	D														100	101	106													
33	Canals, J	Lopez, J	Arriaga, S	100-100	D																					100	101	106						
34				100-100	D																													

Training Schedule Example from BART

# Local JATC Responsibilities

- Draft Documents for Apprenticeship:
  - A. Wage Schedule
  - B. Affirmative Action Plan

# Wage Schedule – Appendix A

### 3. APPRENTICES' WAGE SCHEDULE

Apprentices shall be paid a progressively increasing schedule of wages based on a percentage of the current journeyworker wage rate per the CBA.

**Transit Rail Vehicle Maintenance Technician Apprenticeship Term:**

**By Percentage of Journey-level Wage: SAMPLE  
for a 42 month program and an hourly wage rate of \$28.80.**

(The hourly rate is a composite representative of the current state of the industry.  
Local rates will be determined by the CBA.)

*Time Period | Percentage of Journey-level | Apprentice*

#### **100 Level – Rail Vehicle Apprentice Technician**

1 <sup>st</sup> six months	= 60%	= \$ 17.28
2 <sup>nd</sup> six months	= 65%	= \$ 18.72

#### **200 Level – Rail Vehicle Technician**

3 <sup>rd</sup> six months	= 70%	= \$ 20.16
4 <sup>th</sup> six months	= 75%	= \$ 21.60

#### **300 Level – Rail Vehicle Master Technician**

5 <sup>th</sup> six months	= 80%	= \$ 23.04
6 <sup>th</sup> six months	= 85%	= \$ 24.48
7 <sup>th</sup> six months	= 95%	= \$ 27.36

# Affirmative Action Plan

- For Programs that will have 5+ apprentices
- May already be developed by HR Department
  - Obtain
  - Modify as needed
- Other Resources:
  - EEOC
  - Local DOL/OA

## Affirmative Action Plan - Appendix C

### SECTION I - INTRODUCTION

The JATC enters this Affirmative Action Plan (AAP) with good faith for the purpose of promoting equality of opportunity into its Registered Apprenticeship Program. The JATC seeks to increase the recruitment of qualified women and/or minorities for possible selection into the apprenticeship program in the event women and/or minorities are underutilized in the apprenticeship program. The JATC hereby adopts the following nondiscriminatory pledge and the AAP.

This AAP is a supplement to the Apprenticeship Standards. Any changes made by the JATC will become part of this written AAP, once approved by the Registration Agency.

### SECTION II - EQUAL OPPORTUNITY PLEDGE

The JATC commits to the following Equal Opportunity Pledge:

"The recruitment, selection, employment, and training of apprentices during their apprenticeship shall be without discrimination because of race, color, religion, national origin, or sex. The Sponsor will take affirmative action to provide equal opportunity in apprenticeship and will operate the apprenticeship program as required under Title 29 of the Code of Federal Regulations, part 30."

### SECTION III - UTILIZATION AND ANALYSIS, GOALS AND TIMETABLES

In order to allow positive recruitment and full utilization of minorities and women in the apprenticeship program, the JATC pledges to identify outreach efforts under Section IV which will be undertaken. The purpose of the analysis is to determine the minority's and women's labor force in the JATC's labor market area. Once the labor force is determined, the JATC can determine if deficiencies exist in terms of underutilization of minorities and/or women in the occupations registered with the Registration Agency. See attached Affirmative Action Plan Workforce Analysis Worksheet.)

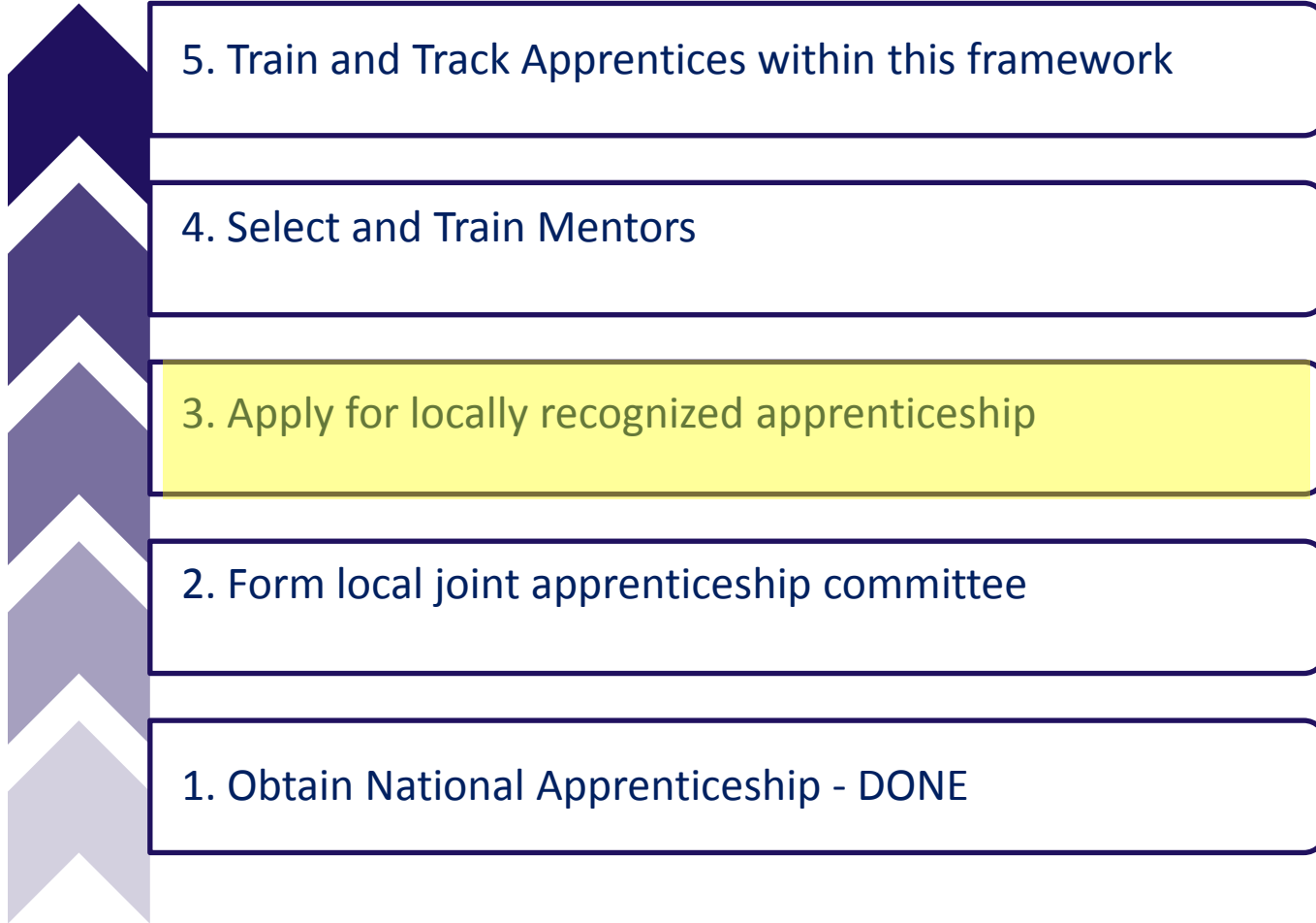
### SECTION IV - OUTREACH AND POSITIVE RECRUITMENT

The JATC's AAP includes the following "checked" outreach and positive recruitment efforts that would reasonably be expected to increase minority's and women's participation in apprenticeship by expanding the opportunity of minorities and women to become eligible for apprenticeship selection. Once those efforts have been checked, the JATC will set forth the specific steps they intend to take under each identified effort. The JATC will identify a significant number of activities in order to enable it to meet its obligation under Title 29, CFR part 30.4(c).

- |    |    |   |
|----|----|---|
| A  | o  | An announcement of specific apprenticeship openings must be disseminated thirty (30) days in advance of the earliest date for application at each interval to the following agencies/organizations:   |
|    |    | <ul style="list-style-type: none"> <li>Registration Agency</li> <li>Women's Organizations/Centers</li> <li>Local Schools</li> <li>Employment Service Centers</li> <li>One Stop Centers</li> <li>Vocational Education Schools</li> <li>Other Organizations/Centers (which can effectively reach minorities and women)</li> <li>Newspapers (which are circulated in the minority community and among women)</li> </ul>  |
|    |    | The announcement will include the nature of the apprenticeship, requirements for admission to the apprenticeship, availability of apprenticeship opportunities, sources of apprenticeship applications, and the JATC equal opportunity policy. The period for accepting applications as established by the JATC is: _____   |
| B. | o  | Participation in annual workshops conducted by employment service agencies for the purpose of familiarizing school, employment service and other appropriate personnel with the apprenticeship program and current opportunities.   |
| +  | c. | o   |
|    |    | Cooperation with school boards and vocational educational systems to develop programs for preparing students to meet the standards and criteria required to qualify for entry into the apprenticeship program.  |
| D. | o  | Internal communication of the JATC's equal opportunity policy should be conducted in such a manner to foster understanding, acceptance, and support among the JATC's various officers, supervisors, employees, and members, and to encourage such persons to take the necessary action to aid in meeting its obligation under Title 29 CFR, part 30.  |
| E. | o  | Engaging in programs such as outreach for the positive recruitment and preparation of potential applicants for apprenticeship; where appropriate and feasible, such programs will provide for pre-testing experience and training. In initiating and conducting these programs, the JATC may be required to work with other sponsors and appropriate community organizations. The JATC will also initiate programs to prepare women and encourage women to enter traditionally male programs. |



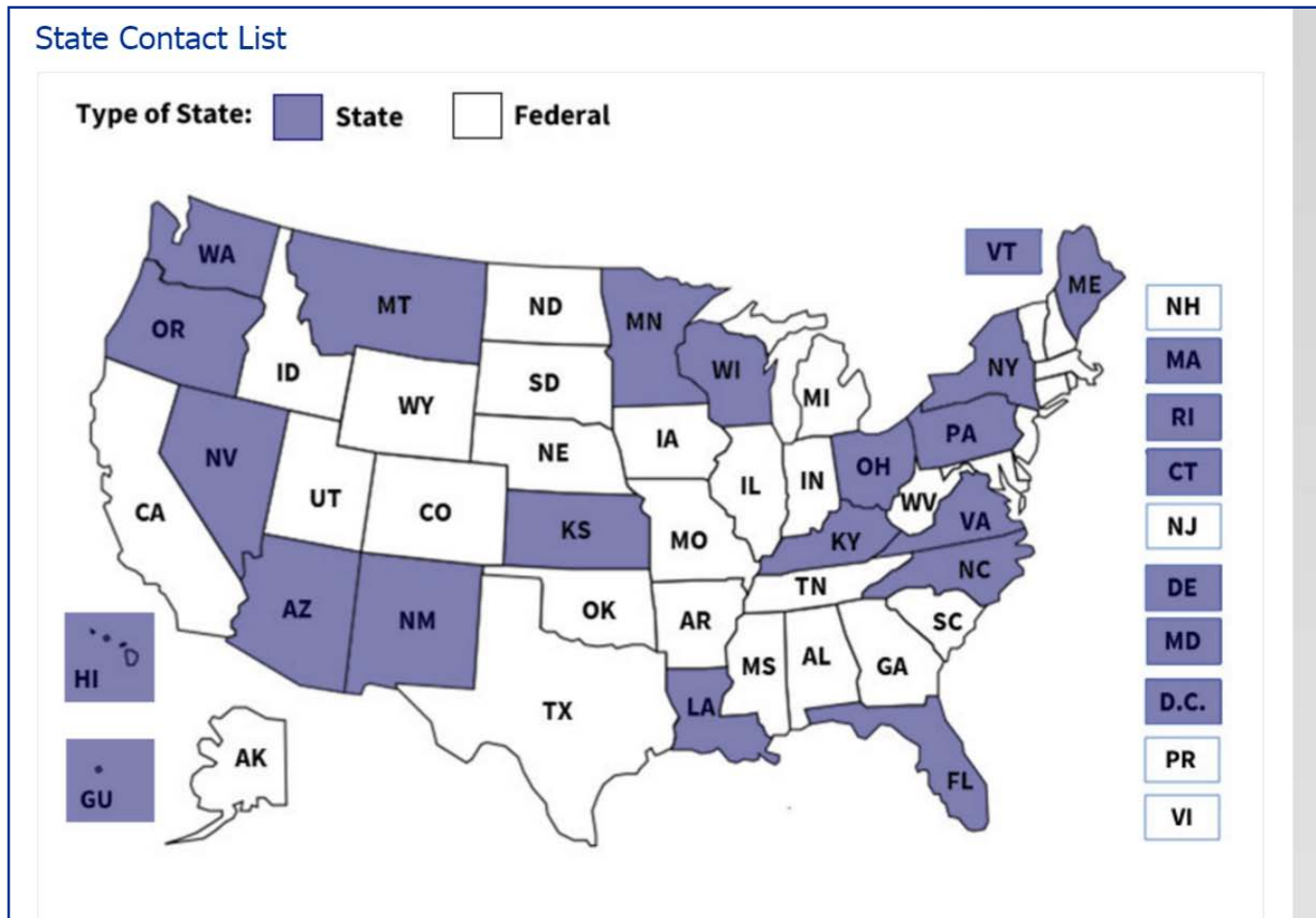
# Implementing an Apprenticeship



# Apply for Local Apprenticeship

- Find out if your state is regulated by state or federal rules
- Get in touch with appropriate representative
  - Discuss any adjustments needed for your location

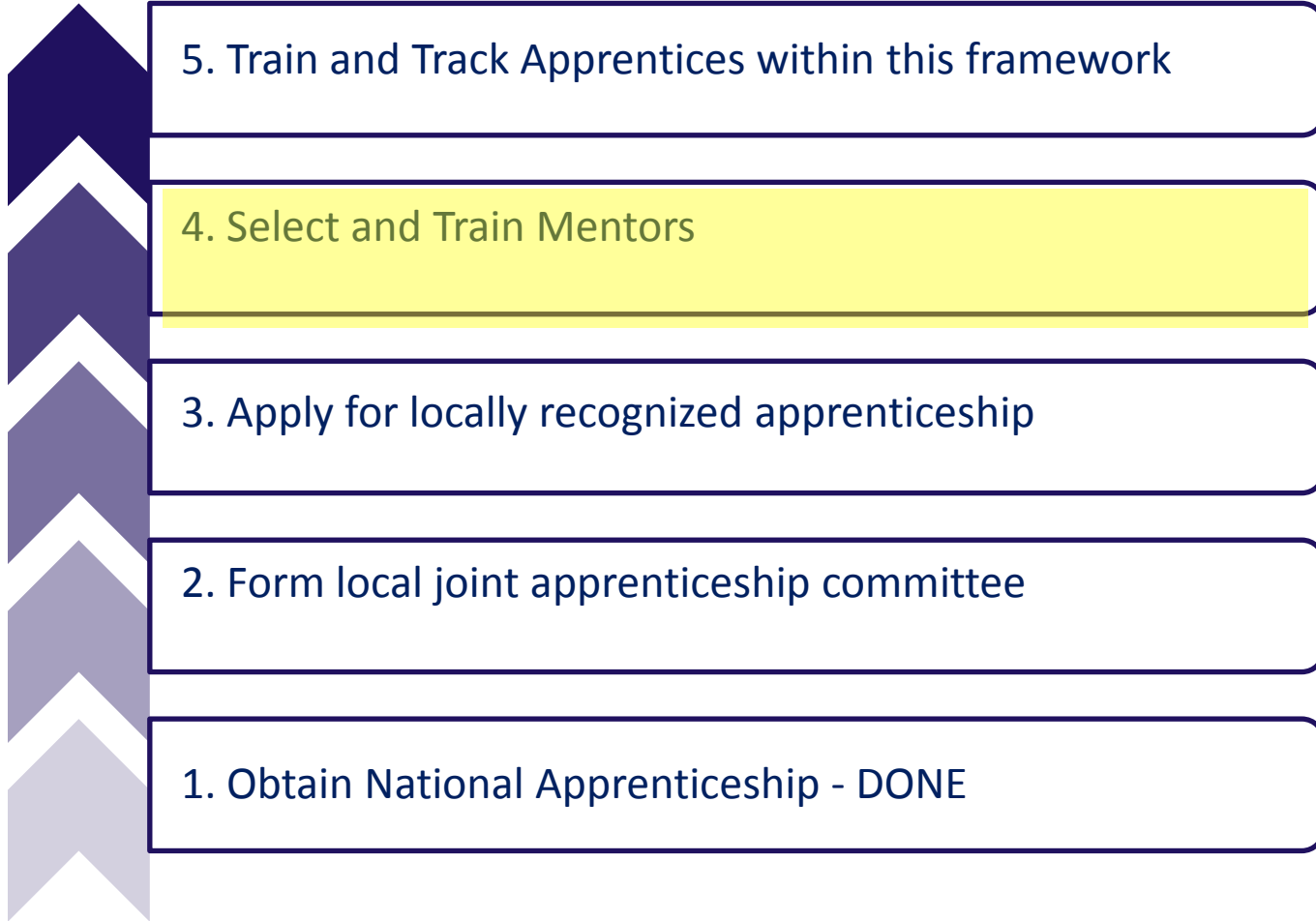
# Apply for Local Apprenticeship



# Document Checklist

- JATC member list
- Training Program with any modifications for local implementation
- Affirmative Action Plan
- Contract Language
- Wage Schedule

# Implementing an Apprenticeship



# What is a Mentor?

A mentor is a teacher who assigns tasks and reviews performance. A mentor also facilitates personal and professional growth in an individual by sharing knowledge learned throughout the years. The desire to want to share these "life experiences" is characteristic of a successful mentor. In maintenance, a mentor is one who shows a trainee how best to diagnose, maintain, repair and overhaul equipment. Because not all procedures are clearly spelled out in the classroom or in manuals, mentors fill in the missing elements by showing trainees how jobs get done in actual work settings.



## Selecting Quality Mentors through Recommendations

- Supervisor and Shop Steward
- Instructor
- Peer
- Self-Nomination
- Use of Incentives?

# Roles of Instructors/Mentors

1. Teacher
2. Guide
3. Counselor
4. Advisor
5. Motivator
6. Motivator
7. Door Opener
8. Coach
9. Role Model
10. Referral Agent

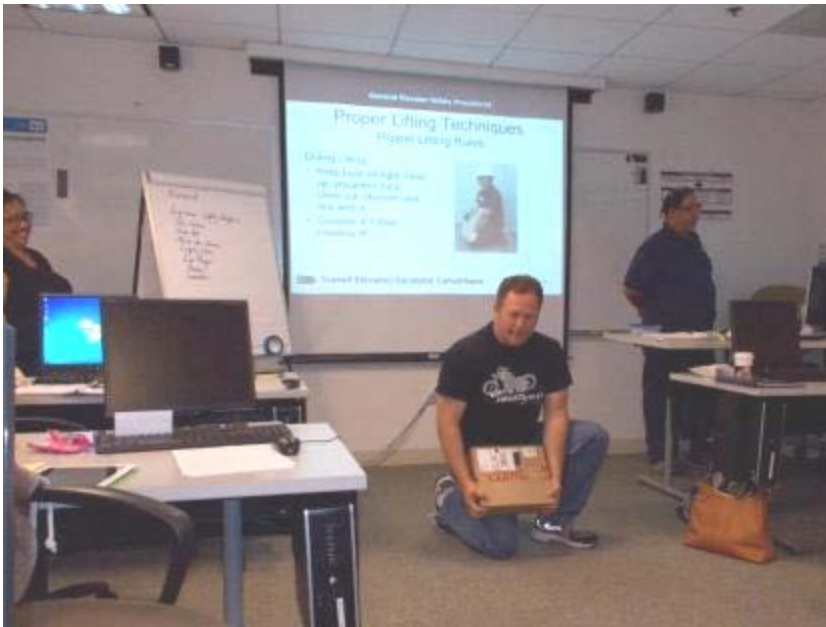


# Attributes of Successful Instructors

- Supportive
- Patient
- Respected
- People Oriented
- Good Motivator
- Effective Teacher
- Secure In Position
- An Achiever
- Provide Trainee Visibility
- Values the Organization
- Values the Work
- Respects Others

# Training Mentors/Instructors

- Develop in house
- Take Advantage of Existing Programs



Classroom Instruction Practice during Train-the-Trainer



Field Based Instruction Practice during Train-the-Trainer

Train-the-Trainer curriculum available through  
[www.transittraining.net](http://www.transittraining.net)

## Training Mentors/Instructors


- Develop in house
- Take Advantage of Existing Programs

**MENTORING FOR  
TRANSIT MAINTENANCE MECHANICS**


**TRAIN-THE-TRAINER FOR ON  
THE-JOB-TRAINING (OJT)**

**GREATER CLEVELAND  
REGIONAL TRANSIT AUTHORITY  
AND  
AMALGAMATED TRANSIT UNION LOCAL 5802**

Submitted by Stuart Bass,  
Keystone Development Partnership



For the Transportation Learning Center



May 2014

GCRTA/ATU Mentoring for Transit

**Review the Subject**


This is when you summarize what was done. After the review, the trainee does the next step; doing the everyday normal work on his or her own. There may be some coaching off from coaching to independent work for the trainee. It is a good practice to have a formal ending to the coaching and hand off to a work assignment.

It is also a good practice for a mentor to let the trainee know that there is always a next step for the trainee. The final step of OJT might include the location supervisor's approval. Each phase or work location may have a different procedure for ending training. Sometimes, the training may end with a performance test.

The relationship between the mentor and the trainee does not have to end with the training.

**ADAPT THE P.O.P.P.E.R. METHOD  
TO FIT YOUR SITUATION**

This teaching process is not set in stone. Each step can be changed depending on the mentor and the trainee. A mentor will have to be flexible to be the best mentor for their trainee. Every trainee has different needs and every mentor has different strengths. As long as the relationship between the mentor and the trainee is based on respect, each person will grow from the experience.



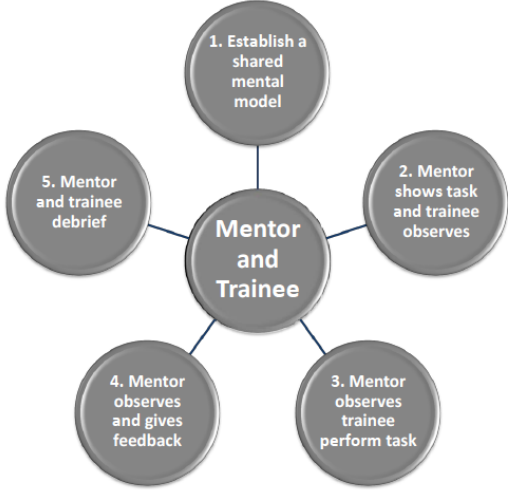
**SOME FACTORS ABOUT TRAINING TO CONSIDER**

Positive	Negative
Teacher/trainer was patient	Teacher showed favoritism
Students were encouraged to learn	Training was boring
Teacher cared and was fair	Trainer was threatening or intimidating
Trainer let me know how I was doing	Trainer was disorganized
Mentor knew their job	Mentor didn't know the subject
Teacher presented practical real problems	Material was not relevant


Prepared by KDP for Transportation Learning Center May 2014

GCRTA/ATU Mentoring for Transit

**FIVE STEPS OF THE MENTORING PROCESS**



Adapted from "Mentoring for Maintenance Employees," by Donna Lucas, SEPTA based on *Training on the Job* by Diane Walter



Prepared by KDP for Transportation Learning Center May 2014

## Mentoring Guidebook

### MENTORING GUIDEBOOK

Transportation Learning Center  
November, 2012

#### PURPOSE & INTRODUCTION

Mentoring provides an excellent training opportunity because experienced person (mentor) with a less experienced trainee's abilities, career development, and professional growth mentoring process requires that the mentor and trainee work work settings to reach specific learning goals and to provide to ensure that goals are reached. With so many highly expert technicians on the verge of retiring, mentoring offers those in opportunity to pass on their vast amount of experience to other highly proficient technicians have what it takes to become those with right attributes to provide excellent on-the-job training settings.

The purpose of this report is to serve as a guidebook, offering transit agencies can use to establish mentoring as a training, guidance, suggestions, and examples to implement or expand mentoring programs. It is based on a generic mentoring guide the USDOT, modified and enhanced to reflect transit maintenance. The guidebook was produced as part of Transportation Research E-7: Initiating a National Joint Transit Industry Rail Vehicle Technician Qualification Program: Building for Success. It has also been done under other grants from the U. S. Department of Transportation Department of Labor.

Information collected in this document is intended to guide the personnel through the mentoring process, defining what it is, the roles and responsibilities during the tutelage period, and that can be adopted to forge a mentoring relationship. It also learning styles and how to cultivate trainee-mentor relationship potential obstacles to mentoring. Finally, guidance is offered sheets that can be used within a structured mentoring program consist of specific learning objectives (e.g., demonstrate uses wrench) that can be developed from common agency jobs or National Training Standards and modified as needed to establish learning activities. A sample Task Sheet adapted from the National

#### APPENDIX A: MENTOR ATTRIBUTE CHECKLIST

Desired Mentor Attribute	Does the Candidate Have This Attribute?  Y/N
Is an extremely knowledgeable technician with exceptional work skills.	
Is considered by peers to be an expert in the field.	
Has earned the respect of his/her peers and the transit agency.	
In addition to having the ability to teach the "skills of the trade," would be willing to manage the trainee's overall learning.	
Sets high standards for themselves.	
Enjoys and is enthusiastic about their work.	
Supports and works within collective bargaining agreements.	
Understands various job classifications and can instruct the trainee not to cross over into the work of other technicians.	
Has willingness to help the trainee take and pass any performance assessments given after the mentoring.	
Continually seeks to update their knowledge and skills.	
Listens to and communicates well with others.	
Likes to help others.	
Exercises good judgment in decisions concerning themselves and the welfare of others.	
Is sensitive to the needs of others, and generally recognizes when others require support, direct assistance or independence.	
Has the ability to support the needs and	

#### MENTORING TASK CHECKLIST – RAIL

Level 100

Tools & Material Handling

Taken From: Rail Training Standard Module 103 – Tools & Material Handling

*NOTE: All tasks may not be applicable, and tasks do not need to be performed in the order listed. Use this task sheet as a guide, tailoring as needed to suit mentoring learning objectives. Add other learning objectives as appropriate to your agency's job tasks.*

Job Task - Learning Objective	Mentor Performs the Task (Trainee Observer)	Mentor Coaches Trainee Through Task	Trainee Performs Task Without Assistance (Mentor Observer)
<b>103 Tools and Material Handling</b>			
<b>Basic Hand Tools</b>			
Hold a rigid rule correctly when measuring an object.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Set lock joint transfer-type calipers.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Identify vernier calipers & show how they are used.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Take a measurement with a micrometer caliper.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Review parts of a combination square.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Wrenches and Screwdrivers</b>			
Demonstrate steps that must be followed when driving a screw.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Demonstrate uses of open-end, box-end, socket, socket-head, adjustable, torque, and striking-face wrenches.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Demonstrate two sizes that are important in identifying a socket wrench.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Demonstrate uses of standard, Phillips, offset, and spiral-ratchet screwdrivers.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Pipetting Tools</b>			
Demonstrate uses of a straight pipe wrench, a Stillson wrench, a chain pipe wrench.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Demonstrate uses of a pipe wrench.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Demonstrate why a machinist's vise should not be used for holding pipe.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Demonstrate how to thread pipe.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Demonstrate how to clean a pipe tool.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

# Agency Task Sheets – Ex: SEPTA

**Elevator Escalator Apprentice Program Task Sheet - SEPTA**

Subject	Task	Required Equipment	Work Orders #'s (attached)	Maint. Mgr. Signature
Soldering	Assemble and Solder a Digital logic probe	Reference material as required. IC components, solder and soldering iron All necessary tools and PPE**		
<p style="text-align: center;">NAME _____ ACCOUNT _____ LOCATION _____</p>				

Task Sheet Example - SEPTA

## Hands-on Assessment Resources from TCRP-E7 Rail Vehicle Project

### NATIONAL RAIL CAR HANDS-ON SKILLS ASSESSMENT

#### PART 1: TASK APPLICATION FORM

This form is used to request a single hands-on skills assessment under the National Joint Transit Industry Rail Vehicle Technician Qualification Program: *Building for Success*. In this stage of the process labor and management representatives work together with the Transportation Learning Center to develop assessment tasks based on each agency's equipment, procedures and training in a way that remains consistent with national guidelines.

Start by completing as much of the application as possible and then contact the Center for assistance. Once the application has been finalized, the Center will produce a step-by-step worksheet that can be used to administer each hands-on assessment.

Agency Name:

Labor Representative Contact Information:

Name:  Telephone:  Email:

Management Representative Contact Information:

Name:  Telephone:  Email:

#### STEP 1: SELECT HANDS-ON SKILL

Training Standard Reference: **Select from Modules/Learning Objectives 204 – Auxiliary Inverters and Batteries**

Hands-On Skill To Be Demonstrated: **Select from Modules/Learning Objectives Assessing the operation of the auxiliary inverter and battery charger with portable test unit (PTU).**

#### STEP 2: IDENTIFY TASKS

Table A lists the generic tasks, acceptable performance criteria (steps needed to successfully complete each task), and point structure identified for this assessment by the rail vehicle training committee. Each agency, however, has equipment, training requirements and work procedures that may differ. Because of this you must review the generic material contained in Table A and create your own Table B, modifying the tasks, acceptable performance criteria, and point structure as needed to suit your specific conditions. Also feel free to rearrange the tasks in an order that best suits your needs. Feel free to contact the Transportation Learning Center for assistance in completing Table B.

#### Preparation of test area:

The couplers are on the train and accessible from under the car. Evaluators select ahead of time three defects from the following list (dependent on property) and create or simulate them on the coupler:

1. Dirty or damaged contact pins or damaged boots
2. Gasket is worn/loose or cover misaligned
3. Draft tube is damaged
4. Coupling/uncoupling mechanism is damaged (in working order)
5. Weight, swing, stop-to-stop, or centering device damaged or misaligned
6. Check torque mechanism
7. Check shear bolts (loosen or remove bolts)
8. Check safety wire, correctly
9. Train line cables are defective - rubbing, chafing, fraying, loose connectors, etc
10. Assembly switch is misaligned
11. Alignment pins are worn

#### Tools, Equipment, and Materials Required:

Provided to the Candidate:

Apr (night tool, etc.), go-no-go gauge or other required gauges, level, measuring tape, track bar, CDU (manual, local inspection sheet)

Provided by the Candidate:

PRC (lockout/ Tagout equipment)

The Candidate is asked to (This will be read to the candidate, one at a time, in sequence. The next item on the list will be read when the candidate indicates they are ready. Candidate can ask questions, but evaluators can only clarify what has been read out loud, not provide additional information.)

1. Perform all necessary safety procedures and select and wear necessary PPE before beginning anything else. Do this all before you start the job. You are notified that safety has been addressed. Continue to follow all applicable safety procedure as you perform the following tasks.
2. Perform a coupler inspection according to local procedures, and verbalize what you are doing, identify what you are looking at and how you are determining if a component is in acceptable working condition. Explain, but do not perform, where and how you would be lubricating and cleaning.
3. There are at least three defects on the coupler. Identify these defects during the inspection and tell the evaluators what they are.
4. For each defect found, describe what needs to be replaced or adjusted, and how to do it.

Maximum Time Allowed:

60 minutes (30 minutes after candidate is notified vehicle is secured and safety requirements are met)

#### Scoring and Acceptable Performance:

Perform all tasks safely:

- Proper PPE (safety glasses)

- Verify proper securing of the vehicle (lockout/tag out, etc). Follow all local

required procedures

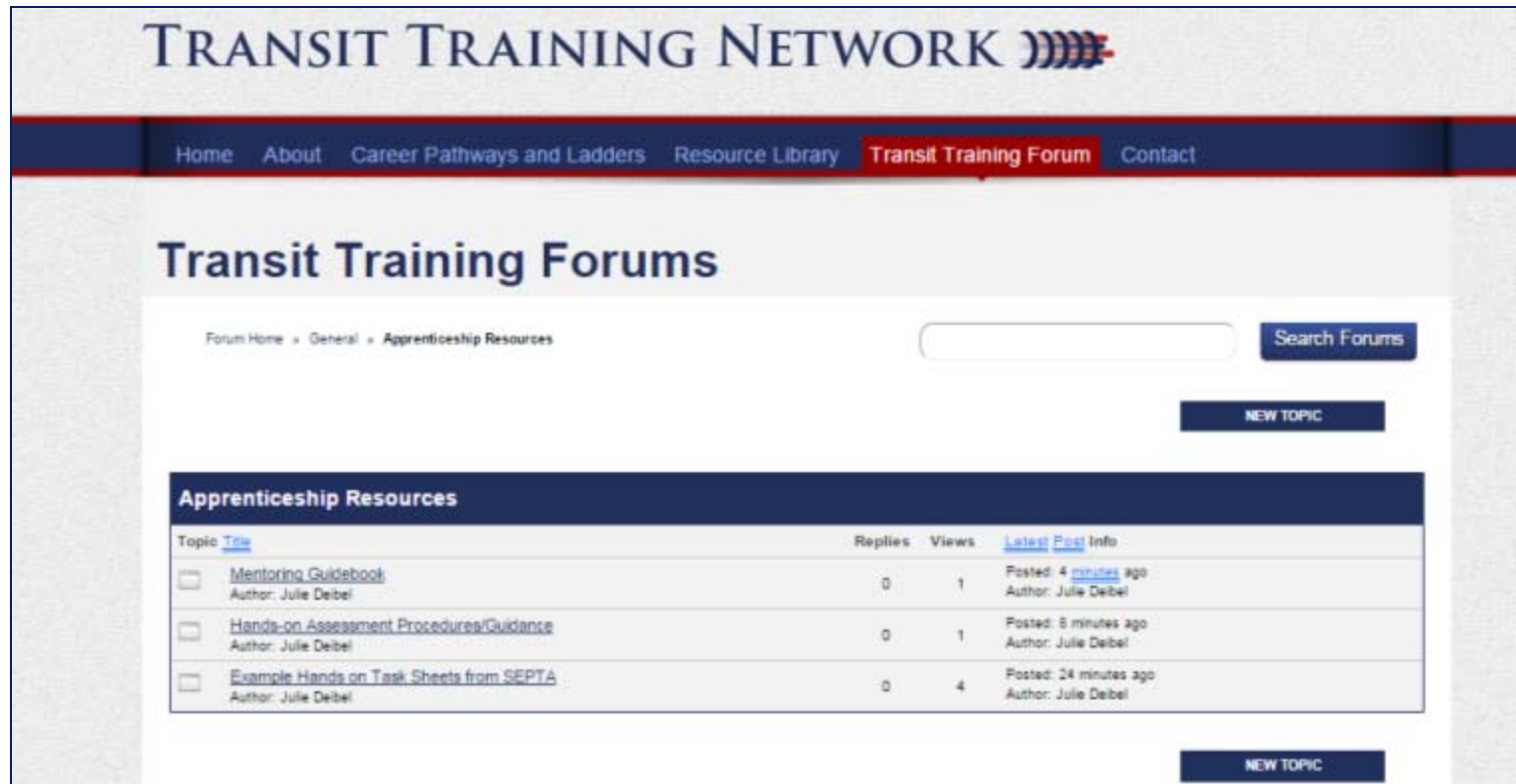
Pass/Fail

Topic: Couplers

Hands on Testing Scenario: Inspection of Couplers

Completes all inspection tasks based on local requirements and verbalizes what he/she is looking at and what criteria/parameters he/she is using.	25
Identifies defect #1 (Candidate identifies defect and condition)	15
Identifies defect #2 (Candidate identifies defect and condition)	15
Identifies defect #3 (Candidate identifies defect and condition)	15
Explains what needs to be replaced or adjusted for defect #1.	10
Explains what needs to be replaced or adjusted for defect #2.	10
Explains what needs to be replaced or adjusted for defect #3.	10

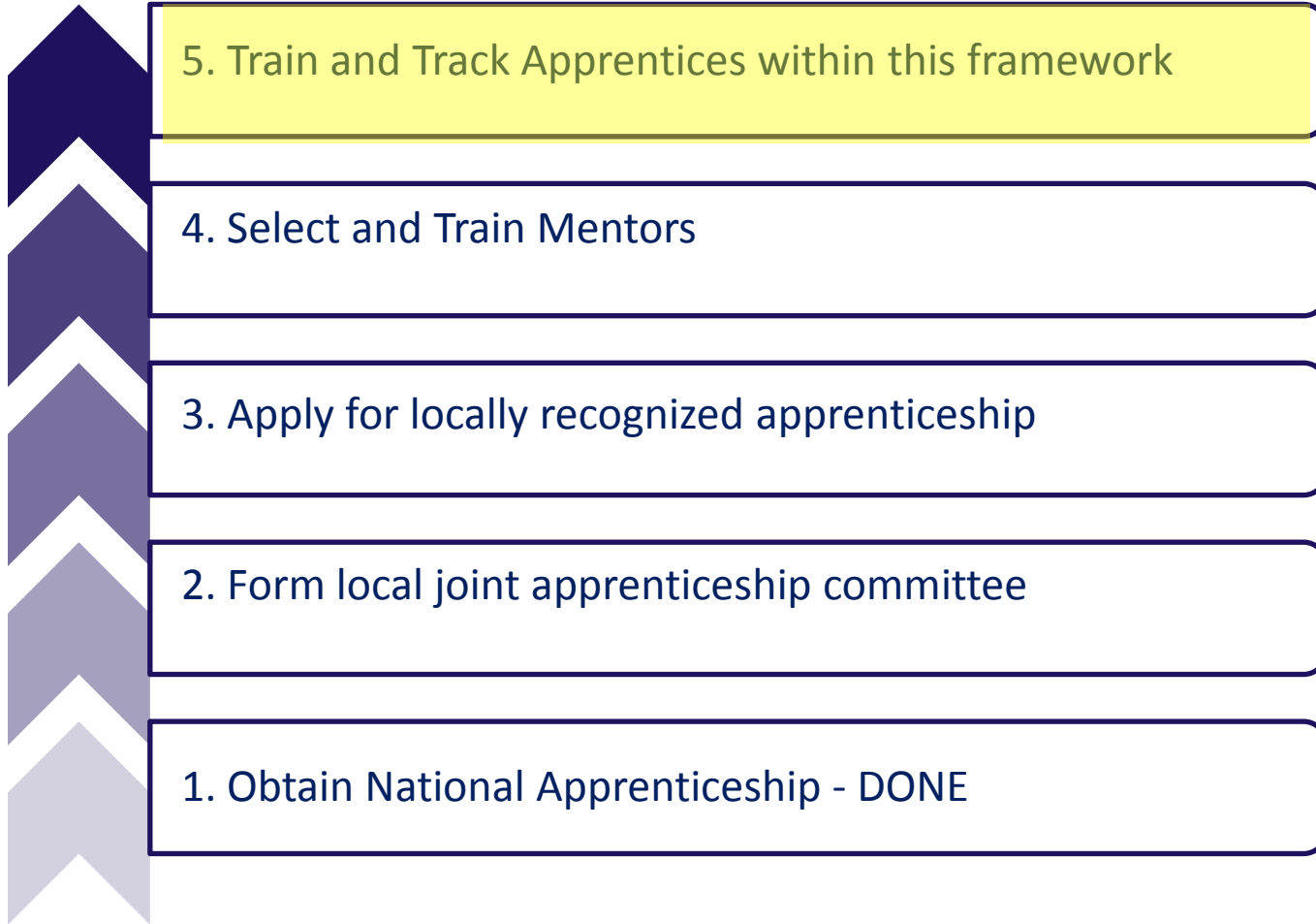
You can **find** or **contribute resources** at [www.transittraining.net](http://www.transittraining.net)  
under  
Transit Training Forum/General/Apprenticeship



The screenshot displays the 'Transit Training Network' website. The main navigation bar includes links for Home, About, Career Pathways and Ladders, Resource Library, **Transit Training Forum**, and Contact. The page title is 'Transit Training Forums'. Below the title, there is a breadcrumb trail: Forum Home » General » Apprenticeship Resources. A search bar and a 'Search Forums' button are present. A 'NEW TOPIC' button is also visible. The main content area is titled 'Apprenticeship Resources' and contains a table of forum posts.

Topic	Title	Replies	Views	Latest Post	Info
<input type="checkbox"/>	<a href="#">Mentoring Guidebook</a> Author: Julie Deibel	0	1	Posted: 4 minutes ago Author: Julie Deibel	
<input type="checkbox"/>	<a href="#">Hands-on Assessment Procedures/Guidance</a> Author: Julie Deibel	0	1	Posted: 5 minutes ago Author: Julie Deibel	
<input type="checkbox"/>	<a href="#">Example Hands on Task Sheets from SEPTA</a> Author: Julie Deibel	0	4	Posted: 24 minutes ago Author: Julie Deibel	

# Implementing an Apprenticeship





## Local JATC Responsibilities: Select and Orient Apprentices

- **Select and Register** Apprentices
  - Dedicated to training program
  - Work safely
  - Respect the workplace
- **Advise** Apprentices on:
  - **Rules**
  - **Policies**
  - **Health and Safety**



## Apprenticeship Agreement – Appendix B

APPRENTICESHIP REGISTRATION-SECTION II OMB No. 1205-0223 Est. Iss: 04/30/2015

Warning: This agreement does not constitute a certification under Title 29. The program sponsor and apprentice agree to the terms of the Apprenticeship CFR, Part 8 for the employment of the apprentice on Federally financed or Standards incorporated as part of this Agreement. The sponsor will not discriminate against construction projects. Current certifications must be obtained in the selection and training of this apprentice in accordance with the Equal from the Office of Apprenticeship (OA) or the recognized State Opportunity Standards in Title 29 CFR Part 30, and Executive Order 11246. This Apprenticeship Agency shown below. (Item 2d)

APART A: TO BE COMPLETED BY APPRENTICE NOTE TO SPONSOR: PART A SHOULD ONLY BE FILLED OUT BY APPRENTICE

1. Name (Last, First, Middle) and Address \*Social Security Number  
(No., Street, City, State, Zip Code, Telephone Number)

2. Date of Birth (Mo., Day, Yr.)

3. Sex (Mark one)  
 Male  Female

4. Answer Both A and B (Voluntary) (Definitions on reverse)

4. a. Ethnic Group (Mark one)  
 Hispanic or Latino  
 Not Hispanic or Latino

4. b. Race (Mark one or more)  
 American Indian or Alaska native  
 Asian  
 Black or African American  
 Native Hawaiian or other Pacific Islander  
 White

5. Veteran Status (Mark one)  
 Non-Veteran  
 Veteran

6. Education Level (Mark one)  
 8th grade or less  
 9th to 12th grade  
 GED  
 High School Graduate or Greater  
 Post-Secondary or Technical Training

7a. Employment Status (Mark one)  
 New Employee  Existing Employee

7b. Career Linkage or Direct Entry (Mark one) (Instructions on reverse)  
 Job Corps  YouthBuild  School-to-Registered Apprenticeship  HUD/STEP-UP  Direct Entry

8. Signature of Apprentice Date

9. Signature of Parent/Guardian (if minor) Date

PART B: SPONSOR: EXCEPT FOR ITEMS 6, 7, 8, 10a, -10c, REMAINDER OF ITEMS REPOPULATED FROM PROGRAM REGISTRATION.

1. Sponsor Program No.  
Sponsor Name and Address (No. Street, City, County, State, Zip Code)

2a. Occupation (The work processes listed in the standards are part of this agreement)

2b. Occupation Code:  
2b.1. Interim Credentials Only applicable to Part B, 3b, and 3c. (Mark one)  
 Yes  No

3. Occupation Training Approach (Mark one)  
3a.  Time-Based  
3b.  Competency Based  
3c.  Hybrid

4. Term (Hrs., Mos., Yrs.)

5. Probationary Period (Hrs., Mos., Yrs.)

6. Credit for Previous Experience (Hrs., Mos., Yrs.)

7. Term Remaining (Hrs., Mos., Yrs.)

8. Date Apprenticeship Begins

9a. Related Instruction (Number of Hours Per Year)

9b. Apprentice Wages for Related Instruction  
 Will Be Paid  Will Not Be Paid

9c. Related Training Instruction Resource

10. Wages: (Instructions on reverse)

10a. Pre-Apprenticeship Hourly Wage \$ \_\_\_\_\_

10b. Apprentice's Entry Hourly Wage \$ \_\_\_\_\_

10c. Journeyworker's Hourly Wage \$ \_\_\_\_\_

Check Box

10d. Term  
 Hrs.  Mos.  or  DYrs.

10e. Wage Rate (Mark one) %  or \$

11. Signature of Sponsor's Representative(s) Date Signed

12. Signature of Sponsor's Representative(s) Date Signed

13. Name and Address of Sponsor Designee to Receive Completion (If applicable)

PART C: TO BE COMPLETED BY REGISTRATION AGENCY

1. Registration Agency and Address

2. Signature (Registration Agency)

3. Date Registered

4. Apprentice Identification Number (Definition on reverse)

WAGE PROGRESSION

PROBATIONARY PERIOD

HOURS OF WORK - TERM

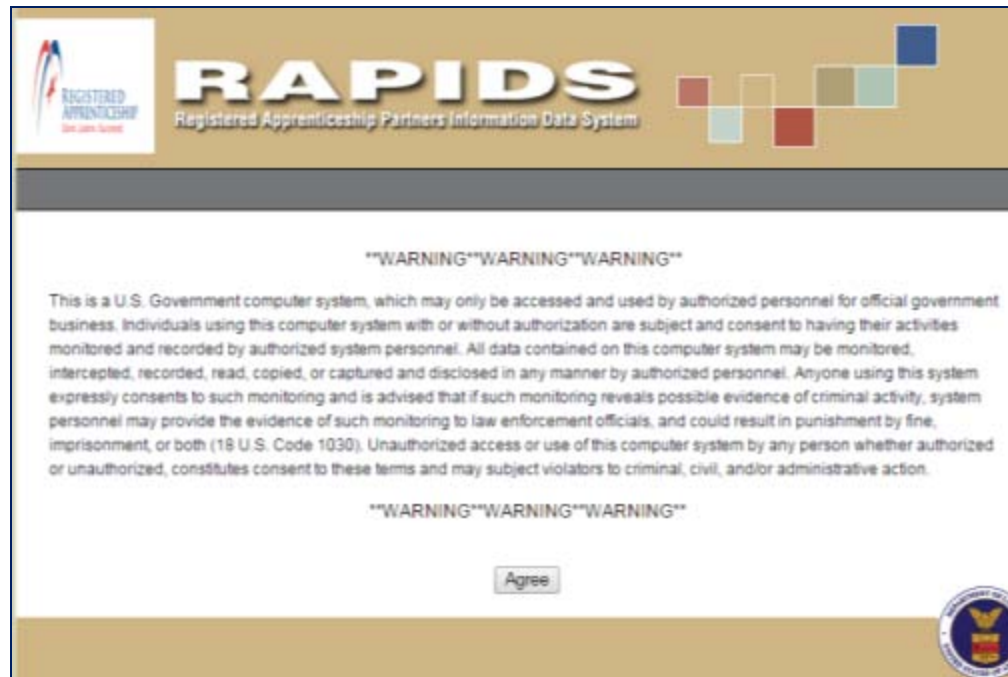
CREDIT FOR PREVIOUS EXPERIENCE

RELATED INSTRUCTION RESOURCES



# Maintaining Records

- Maintain records – training and assessments
- Certify Completion



<http://www.rapids.doleta.gov>

## On-Going Work of the JATC

- Act as **Liaison** between Apprentice and Registration Agency on Status, etc.
- Modify Training Program as needed
- Maintain Records
- **Meet bi-annually to review progress**
- Resolve Complaints

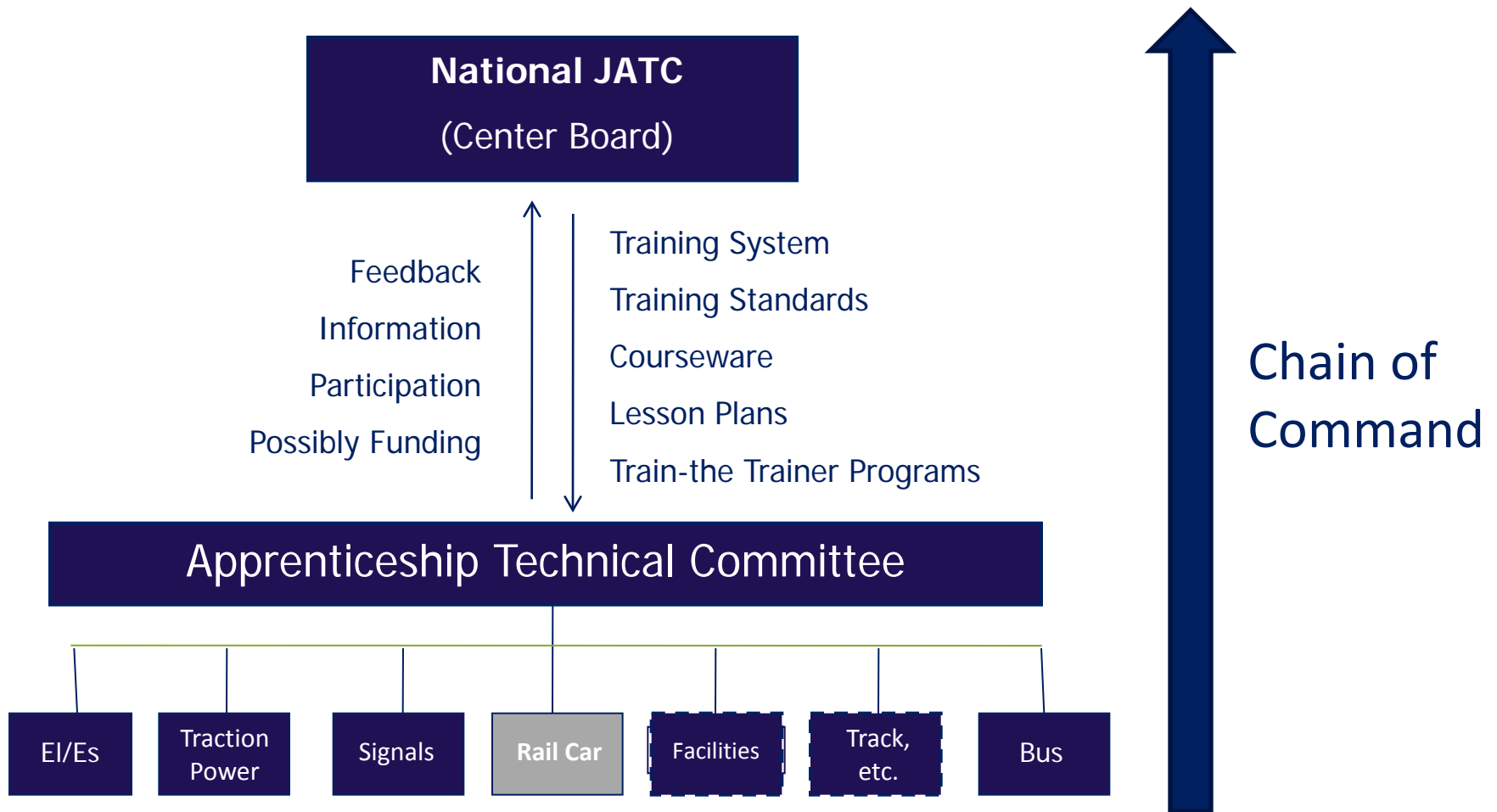


## Resolve Complaints

- Local JATC hears all complaints of violations concerning the apprenticeship agreement and registered apprenticeship standards
- If appealed, taken to National JATC
- For Collective Bargaining violations – issue will be resolved by the applicable grievance and arbitration procedures.

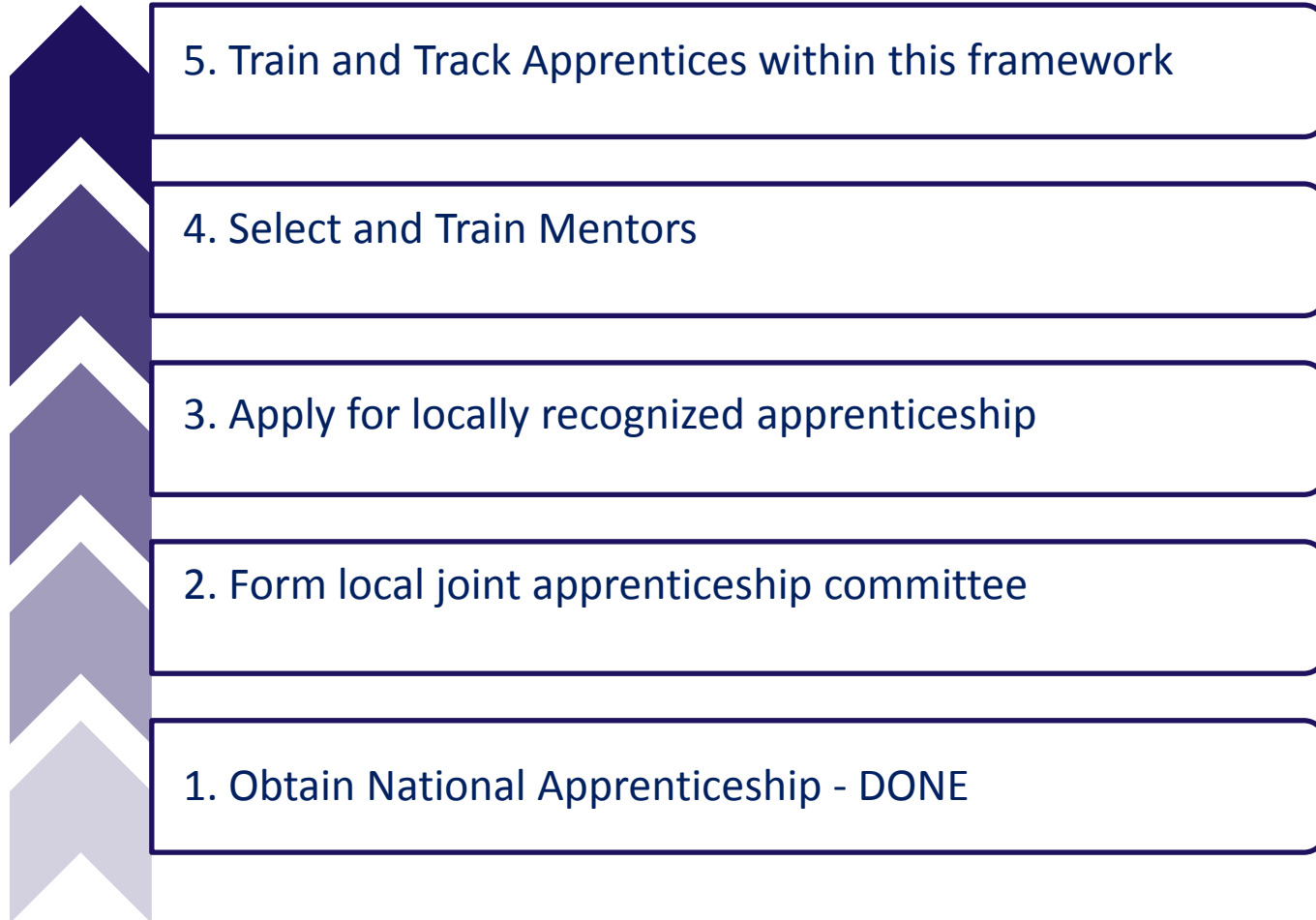


# Apprenticeship: Apprenticeship Structure



Number of work groups will differ from location to location

# Implementing A Local Apprenticeship Program





# Implementing A Local Apprenticeship Program

For More information, contact Mark Dysart  
[mdysart@transportcenter.org](mailto:mdysart@transportcenter.org)  
240.485.2282

# Local Implementation of Rail Car Apprenticeship

- **Registered Apprenticeships:**
  - **TriMet** (see details on following slides)
  - **San Diego Trolley** (see detail on following slides)
  - **GCRTA** – Pending registration with state of Ohio
- **Apprenticeship (not registered yet):**
  - **LA Metro:** Joint apprenticeship committee. A partnership between LA Trade Tech and LA Metro. JAC committee selects candidates from the bus mechanics and service attendant ranks. They go through evaluation and selection to go to Trade Tech on basic aptitude training. They are already Metro employees. Program is not registered. Designed for rail fleet maintenance. Traction and signals department have different programs. They don't go through the college.
  - **SEPTA** – Exploring registration with state

# Local Implementation Successes/Barriers – TriMet

State Standards: [http://www.oregon.gov/boli/ATD/pages/a\\_ag\\_standards\\_1000-1999.aspx](http://www.oregon.gov/boli/ATD/pages/a_ag_standards_1000-1999.aspx)

Standard & Symbol	Skilled Occupational Objective(s)	Committee
<u>10610124</u>	Heavy Duty Bus Mechanic	TRIMET HEAVY DUTY BUS MECHANIC JATC
<u>10610308</u>	Plant Maintenance Mechanic	TRIMET HEAVY DUTY BUS MECHANIC JATC
<u>10780162</u>	Rail Vehicle Mechanic Technician	TRI-MET RAIL MAINTENANCE VEHICLE MECHANICAL/TECHNICIAN JATC
<u>10780162.1</u>	Traction/Substation Technician	TRI-MET RAIL MAINTENANCE VEHICLE MECHANICAL/TECHNICIAN JATC
<u>10780162.2</u>	Overhead Technician	TRI-MET RAIL MAINTENANCE VEHICLE MECHANICAL/TECHNICIAN JATC
<u>10780906</u>	Field Equipment Technician	TRI-MET RAIL MAINTENANCE VEHICLE MECHANICAL/TECHNICIAN JATC
<u>10780942</u>	Signal Technician	TRI-MET RAIL MAINTENANCE VEHICLE MECHANICAL/TECHNICIAN JATC

# Local Implementation Successes/Barriers – San Diego

## Program Info:

<https://www.sdcity.edu/AcademicPrograms/ProgramsofInstruction/Apprenticeship/SanDiegoTrolley>

**Apprentice Eligibility:** High school graduate, 21 yrs old, California DL, drug test. Apprenticeship standard test – math, reading and writing. No hands-on testing requirements for entry.

## Apprenticeship Programs:

- Assistant lineman LRV
- Lineman LRV
- Assistant lineman Wayside
- Lineman Wayside
- Revenue maintainer I
- Revenue maintainer II