



**Safety and Operations Committee**

**Board Information Item III-A**

**Technical Training & Development Update**

Washington Metropolitan Area Transit Authority

## Board Action/Information Summary

☐ Action ☒ Information

Document  
Number:  
206739

Resolution:  
☐ Yes ☒ No

### Presentation Name:

Technical Training and Development Updates

### Project Manager:

Elissa McDade

### Project Department:

Safety & Readiness/Technical Training and Development

### Purpose/Key Highlights:

To provide an update on realignment progress within the Office of Technical Training and Development, and progress towards development of the Center of Excellence Training Academy.

### Interested Parties:

**AECOM** is engaged in project management and program design support of the Agency's 7000-series rail simulators and bus simulators.

**The Center for Research in Railway Technologies (CITEF)** is engaged, in partnership with **eTech Simulation**, to build and deliver twenty 7000-series rail simulators.

**Deloitte** has been competitively selected to develop a current state assessment and vision and implementation strategy for the Center of Excellence Training Academy.

**eTech Simulation** has been contracted to develop simulation scenarios for the Agency's 7000-series rail simulators and bus simulators, and to build and deliver the bus simulators.

**Guidehouse** has been competitively selected to redesign, pilot, and support continuous improvement for the Rail Traffic Controller training curriculum.

### Background:

With the Agency-wide organizational realignment in November 2022, all operational and safety training was aligned under the new Department of Safety and Readiness. As a result, the Office of Technical Training and Development was established to merge all training related roles. In January 2023, Technical Skills Training, Rail Operations Quality Training, Bus Operations Training, and Bus Maintenance Training were all brought under this new Office.

In February 2023, the Strategic Transformation Plan was formalized and identified a preliminary initiative program under the Talented Teams goal to establish the center of excellence training academy to provide staff with the right skills and capabilities that Metro's operations require.

### **Discussion:**

#### Technical Training and Development Organizational Handover

With the Agency-wide organizational realignment in November 2022, all operational and safety training was aligned under Theresa Impastato as the new Chief Safety and Readiness Officer. As a result, the Office of Technical Training and Development was established to merge all training related roles. In January 2023, Technical Skills Training, Rail Operations Quality Training, Bus Operations Training, and Bus Maintenance Training were all brought under this new Office.

In February 2023, the Strategic Transformation Plan was formalized and identified a preliminary initiative program under the Talented Teams goal to establish a center of excellence training academy to provide staff with the right skills and capabilities that Metro's operations require.

Safety and Readiness received functional organization control over the Technical Training and Development budget and performance in May 2023.

In July 2023, Technical Training and Development was internally reorganized to rebalance staff and workloads, and to deepen functional area expertise and customer engagement. The new training program areas are:

- Technical Skills
- Maintenance (which combines rail and bus rolling stock maintenance)
- Bus Operations
- Rail Operations
- Safety and Certification

Rail Certification will transition from Rail Transportation to Technical Training and Development, Safety and Certification program area on June 30, 2024.

Technical Training and Development is collaborating with People, Culture, and Inclusion to modernize and standardize job descriptions, and create new job descriptions to support the programmatic shift toward instructional system design and utilization of formal curriculum development.

### The Center of Excellence Training Academy

In November 2023, Metro engaged Deloitte to develop the Center of Excellence Training Academy Vision and Implementation Strategy, which will be delivered in May 2024. Developing a center of excellence training academy is an ongoing investment in training and development at Metro that will pay off by improving the quality of the staff, their morale, and safety and efficiency throughout the system.

As part of this effort, Deloitte conducted a **Current State Assessment** of the Office of Technical Training and Development. The Current State Assessment, completed in March 2024, established the baseline from which to build improvement using benchmarking and/or leading practices from transit and other peer organizations. The Assessment included an office-wide analysis of governance systems, procedures, and training materials. It also included data from one-on-one meetings and focus groups with Technical Training Staff and Leadership, and with customer leaders from across Metro, such as Rail and Bus Transportation and Maintenance, Infrastructure, and Safety.

The Current State Assessment research identified opportunities for growth, and that Metro would benefit from looking at multiple best practice models from transit peers and private industry, as there is no 'one size fits all'. Five major cross-cutting areas and actions were identified, and represent an overlapping set of challenges and opportunities which, if addressed together, can create a real transformation in the way Metro trains its staff and delivers service to its customers:

- Create a unified Metro-wide training strategy and vision.
- Improve coordination, policies, and processes to achieve better results that enable improved training performance, compliance, and overall organizational effectiveness.
- Prioritize key value-add activities such as course development, training delivery, and training improvement while harnessing training staff knowledge and expertise and provide opportunities for continual growth.
- Lean into Adult Learning best practice to deploy a variety of learning modalities, from instructor led classes and hands-on lab or field training, to use of technology that supports more effective instruction such as simulations and a video library of microlearning.
- Transform the physical space, invest in the tools and technology used by learners, and improve Technical Training and Development's ability to analyze and react to data supporting more effective learning.

The project to create the roadmap for the Training Academy Center of Excellence continues through May 2024. Technical Training and Development is currently in the process of finalizing the visioning process and starting to build a roadmap. In June 2024, the transformation process will launch, prioritizing impactful changes and launching long-range capital programs.

### Rail Traffic Controller Curriculum Pilot Approach

In response to a 2020 Washington Metrorail Safety Commission audit, Metro engaged Guidehouse and launched an initiative to design, develop, and deliver a new

Employee Development Training Program for the Rail Traffic Controller. After conducting a current state assessment of the Rail Traffic Controller Training Program, Metro engaged training services utilizing best practices to create an industry leading instructional program.

In November 2023, Technical Training and Development launched the Rail Traffic Controller Pilot, an updated training program which included improved course structure and design built around adult learning best practices, weekly assessments, and spaced learning to revisit topics multiple times to reinforce learning. This Rail Traffic Controller Pilot serves as one example of curriculum that has undergone an extensive update to improve the assessment and learning outcomes of the training course through the use of instructional system design.

The Pilot is a 21-week program which provides Rail Traffic Controller candidates a strong foundation of core skills before they are applied in a simulated-live environment and a revamped on-the-job training program.

The Pilot is expected to complete in May 2024, and Metro is assessing its success and opportunities for continued improvement to update the next class.

#### Training Simulator Updates

In March 2023, eight compact 7000-series rail simulators, built and delivered by CITEF and eTech Simulation, were installed at the Carmen Turner training facility. In September 2023, Technical Training and Development launched a 7000-series rail simulator utilization strategy and pilot program for new rail operators, and successfully awarded construction support through Metro's Multiple Award Task Order Contract program to provide an installation pathway for 12 additional 7000-series rail simulators.

The Train Operator 7000-series Simulator Pilot Program enhanced the training and performance evaluation of train operators and used a Train Simulator for selected train operator troubleshooting competencies and time operating the rail vehicle. The pilot demonstrated statistically significant improvements over the previous approach of utilizing the physical train for all competencies. The Train Operator 7000-series Simulator Pilot was conducted over seven New Train Operator classes from June 2023 through March 2024. Participants in the pilot program, in comparison with control, were observed to have statistically significant improvement over other course participants.

Installation for the remaining twelve rail simulators is expected to be completed by the end of June, which will allow the next New Train Operator class to utilize simulators for all students.

Four Bus Simulators, designed and built by eTech Simulation, will be installed by the end of April. Testing and instructor training will begin in May. Bus Operations Training is finalizing a hybrid-curriculum approach which will incorporate the simulators in the training program.

## Governance and Form Digitization

Governance improvements and form digitization are ongoing. Technical Training and Development has been partnering with Office of Quality to align Standard Operating Procedures across Technical Training and Development and has piloted a process to utilize Metrodocs for review, approval, and storage of selected course materials.

Technical Training and Development is also partnering with the Digital Modernization team to develop digital solutions to manual, human processes. In March 2024, Rail Operations Quality Training launched a process to digitally capture course information, which will enable the training team to quickly respond with comprehensive training information during incident investigations.

The Training Center of Excellence Current State Assessment will also provide a roadmap and implementation strategy to upgrade data collection, record storage, and provide reporting.

### **Funding Impact:**

This presentation is informational and not a request for action or funding.

### **Previous Actions:**

N/A

### **Next Steps:**

Return to the Board towards the end of the year to provide an update on the Center of Excellence Training Academy

### **Recommendation:**

Information Only

# Technical Training & Development Updates

Safety & Operations Committee



# Talented Teams, a strategic goal from Your Metro, the Way Forward



## Objectives of Talented Teams Goal

**Recruitment and Retention** | Attract and retain the best talent at all levels of the organization to deliver Metro's future vision

**Engagement, empowerment, and recognition** | Empower employees and promote effective collaboration and continuous culture improvement so employees feel supported, recognized, and engaged

**Professional and technical skill development** | Invest in staff to expand career pathways and develop the next generation of Metro leaders and technical skills experts



## The Office of Technical Training and Development will develop the Center of Excellence Training Academy

### PREVIOUS STRUCTURE

Technical, Maintenance, and Operational training teams were separate



Technical



Maintenance



Operational



Operational

### CURRENT STRUCTURE

Since December 2022, all training teams incorporated under TTDV department

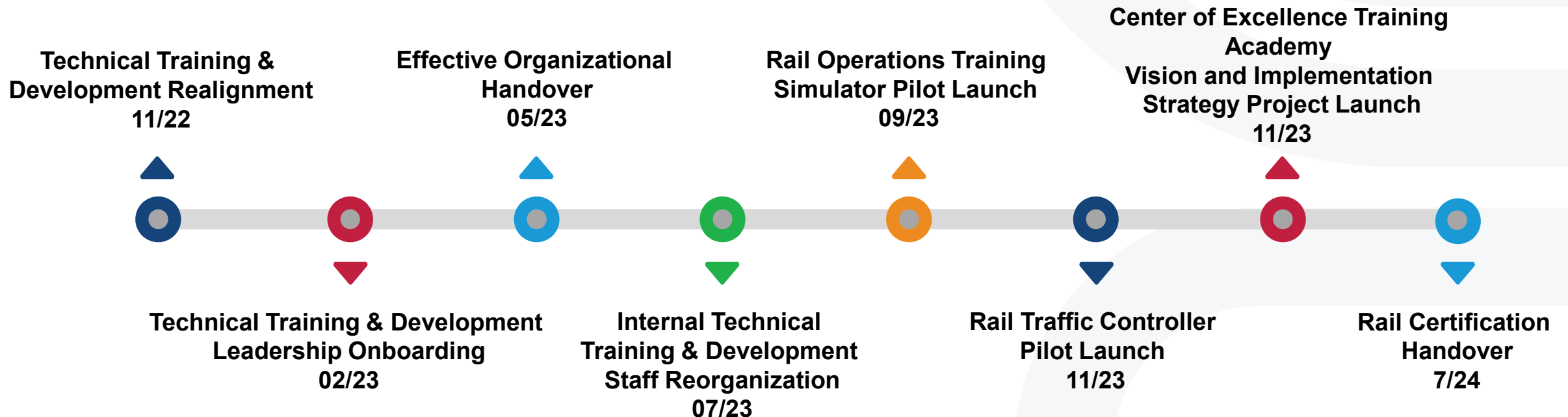


**TECHNICAL  
TRAINING AND  
DEVELOPMENT**

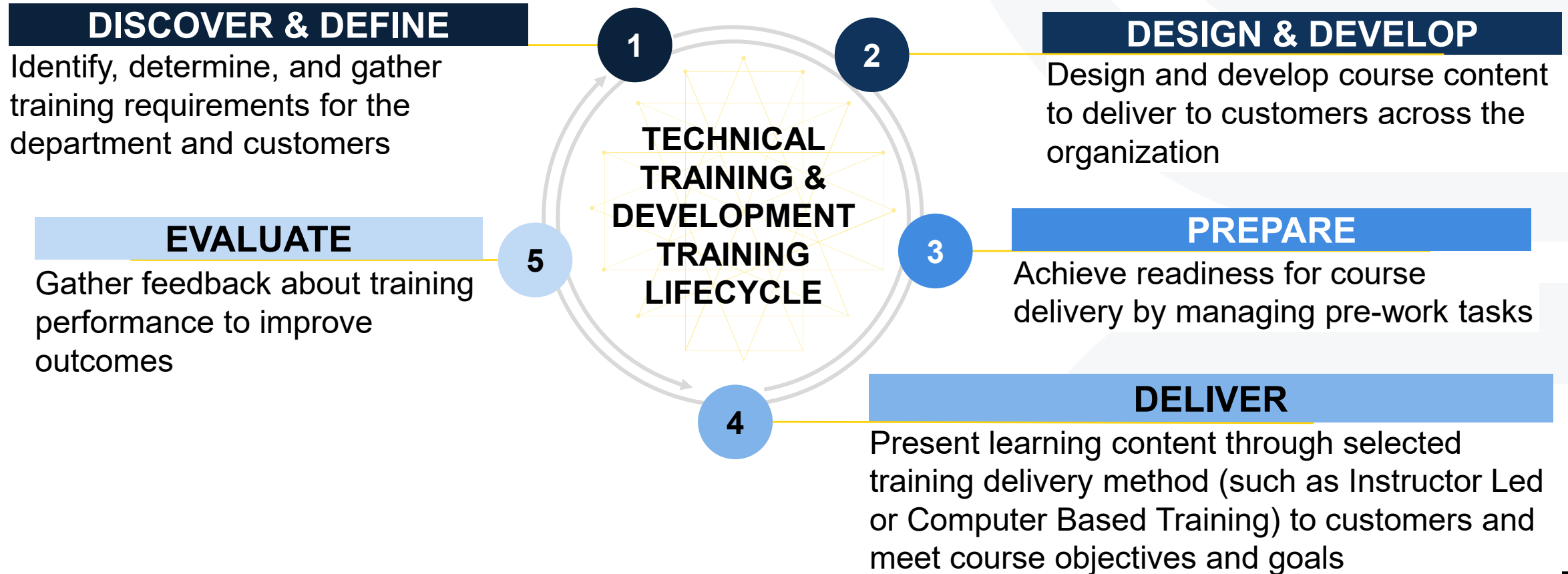


**TECHNICAL  
TRAINING &  
DEVELOPMENT**





## Implementing strategic shifts to lay the foundation for the Center of Excellence Training Academy



## Five phases of the training lifecycle



## Five task areas drive change

TASK AREA	OUTCOMES
 <b>Current State Assessment</b>	Create a shared understanding of: <ul style="list-style-type: none"><li>• Current practices</li><li>• Potential improvement opportunities</li><li>• Leading practices from other organizations (in transit and beyond)</li></ul>
 <b>Management Tools</b>	Develop tools to enhance overall service quality and effectiveness
 <b>Vision</b>	Co-create future state vision and strategy for the future state Center of Excellence Training Academy
 <b>Organizational Model</b>	Develop detailed organizational design for the future state Center of Excellence Training Academy
 <b>Implementation Planning</b>	Create a clear path to implement the future state Center of Excellence Training Academy

	ENTERPRISE, VISION & CULTURE	GOVERNANCE & MANAGEMENT	PEOPLE	LEARNING PROCESSES & MODALITIES	ENABLING AREAS
DESCRIPTION	The <b>foundation of an organization's approach</b> to working both internally and with its consumers	The <b>decision rights, policies, and ways of working</b> that define how an organization does its work	The <b>individuals responsible for doing work</b> , engaging with customers, and creating outputs to drive organizational success	The <b>specific activities and modalities</b> which support creating and delivering learning to customers	The <b>supporting context</b> (including spaces, places, tools, and data) that help make an organization successful
OPPORTUNITIES	<ul style="list-style-type: none"> <li>• Create an Enterprise Training Strategy and Vision</li> <li>• Build on staff's passion for Metro</li> </ul>	<ul style="list-style-type: none"> <li>• Improve governance</li> <li>• Enhance coordination</li> <li>• Streamline training development processes</li> </ul>	<ul style="list-style-type: none"> <li>• Focus staff on course development, delivery, and improvement</li> <li>• Build on staff technical and instruction skills</li> </ul>	<ul style="list-style-type: none"> <li>• Revamp courses to include adult learning principles</li> <li>• Deploy technology to support effective instruction</li> </ul>	<ul style="list-style-type: none"> <li>• Transform physical spaces</li> <li>• Modernize tools and technology</li> <li>• Improve data analysis capabilities</li> </ul>

## Key lessons from benchmarking research can be utilized to make the Center of Excellence Training Academy a best-in-class training organization

- Effective training governance supports improved organizational outcomes
- Strong apprenticeship programs benefit employees and the organization over the long term
- Modernized software and up-to-date facilities have a significant positive impact on the training experience, knowledge retention, and organizational outcomes
- Clear career guidance improves morale and supports individual ownership of career growth and development
- Local and regional universities and vocational schools can be powerful partners to identify new employees and upskill the workforce



- Current State Assessment will provide a holistic strategy to upgrade data collection, storage and reporting
- Partnership with Quality to align Standard Operating Procedures
- Ongoing collaboration with Digital Modernization to develop digital solutions



## Highlights

- February 2024 – Piloted process to utilize MetroDocs for review, approval, and storage of course materials
- March 2024 – Launched process to capture, store and dynamically search class sign-in sheets

## Historical Course Design Challenges

### Course Structure & Design

- Outdated design causing cognitive overload
- Delayed job and simulator exposure
- On the Job Training lacked structure and consistent quality

### Content & Materials

- Non-relevant or inaccurate materials
- Lack of memory retention activities
- Fact-dense content minimized creative solutioning

### Assessments

- No practical application evaluation

## Pilot Applied Adult Learning Best Practices



### Peer Synthesis



### Spaced Learning



### Active Learning



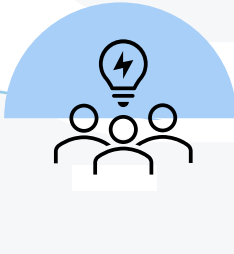
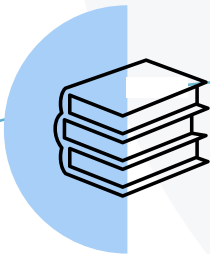
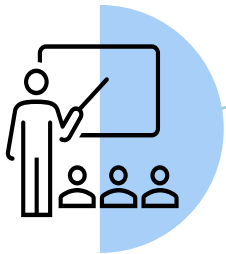
### Formative & Summative Assessments

## Desired Outcomes

- Design a curriculum that meets current adult learning standards
- Produce standardized materials
- Improve application of knowledge and enhance skill development
- Reduce overall training time and cost



## Successes



**Promising Trainee  
Growth and  
Development**

**High Instructor  
and Trainee  
Engagement**

**Comprehensive,  
Updated, and  
Enhanced  
Materials**

**Curriculum  
Reflects Adult  
Learning Best  
Practices**



### Identified opportunities for the next trainee cohort



Add practice opportunities



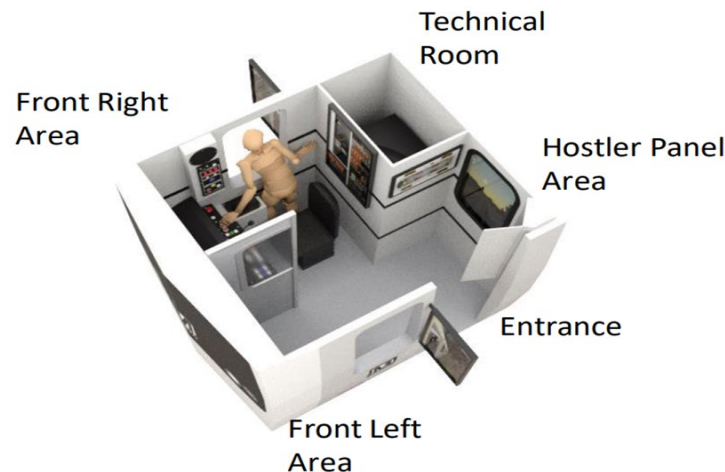
Continue to refine evaluation methods



Increase curriculum flexibility



Augment technical content



## Train Operator 7000-Series Simulator Pilot

- June 2023 – March 2024
- Reduced Train Equipment Needs
- Improved Student Task Comprehension

## Installation Updates – Carmen Turner Facility



### Rail

8 simulators in-service  
12 simulators expected to be installed by end of June



### Bus

4 simulators – install April  
Testing and Training for Instructor staff after install completed





A successful Center of Excellence Training Academy will transform the way Metro develops staff, maintains the system and provides service to the region