FTA

FEDERAL TRANSIT ADMINISTRATION

Transit Advisory Committee for Safety (TRACS) Meeting Agenda

July 21-22, 2020
Day 1

Bridget Zamperini
Federal Transit Administration (FTA)

U.S. Department of Transportation
Federal Transit Administration

Introduction & Welcome

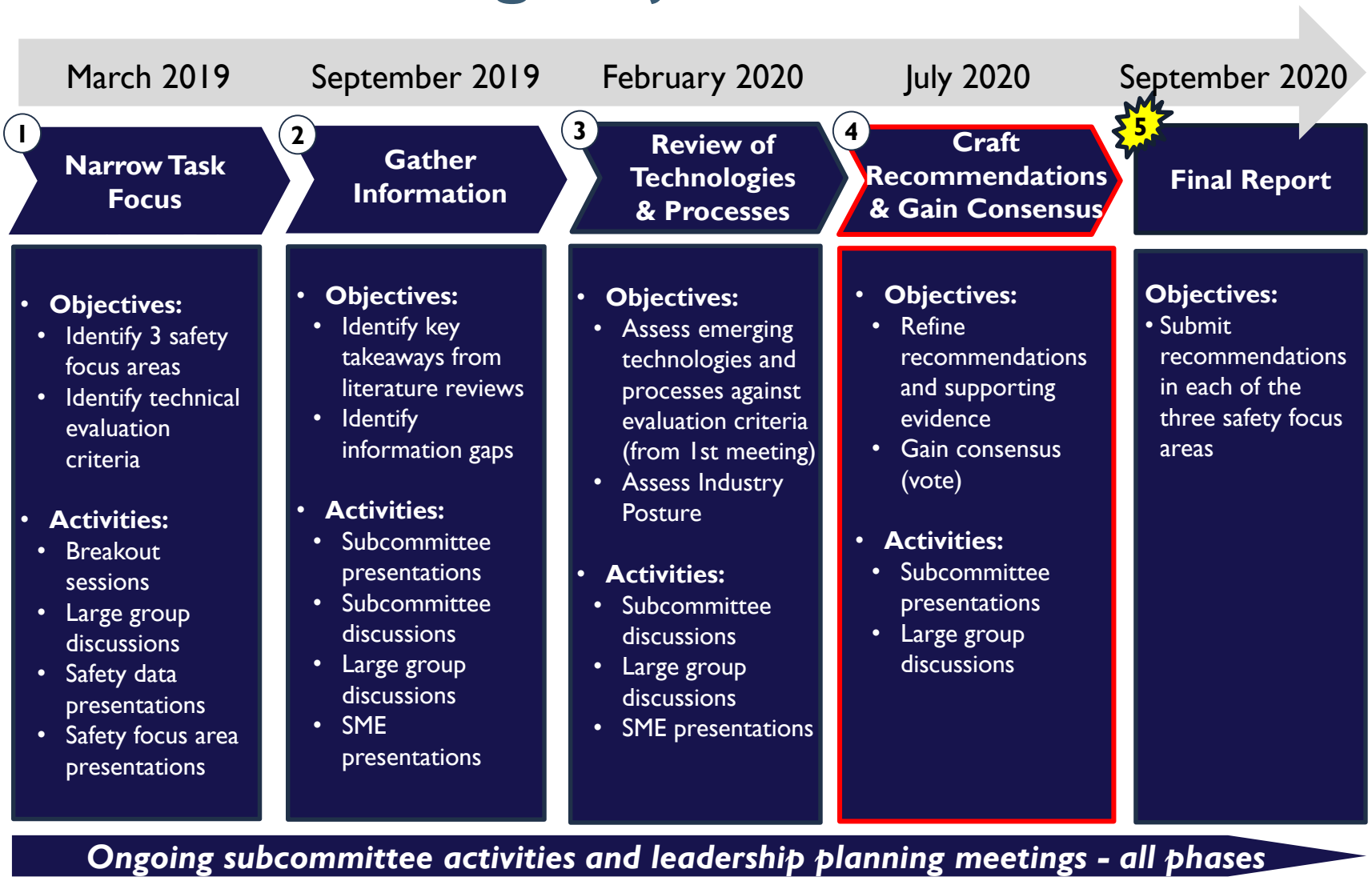
Bridget Zamperini

TRACS Program Manager

Conference Roll Call

1. Acting Chairperson: Pamela Fischhaber, PhD, Chief, Rail/Transit Safety, Colorado Public Utilities Commission, Denver, CO
2. Scott A. Sauer, Assistant GM, Operations, Southeastern Pennsylvania Transportation Authority, Philly, PA
3. Herman Bernal, State Safety Oversight (SSO) Manager, Arizona Department of Transportation (ADOT), Phoenix, AZ
4. Ronald Nickle, Former Chief Safety Officer, Massachusetts Bay Transit Authority (MBTA), Boston, MA
5. Victor B. Wiley, Former Chief Safety Officer, Memphis Area Transit Authority, Memphis, TN
6. Elayne Berry, Former Assistant GM Management of Safety and Quality Assurance, Metropolitan Atlanta Rapid Transit Authority (MARTA), Atlanta, GA
7. James Hickey, Former SSO Program Manager, Illinois Department of Transportation (IDOT), Chicago IL
8. Eric Muntan, Chief, Office of Safety and Security, Miami-Dade Transit, Miami, FL
9. Brian Sherlock, Safety Specialist, Amalgamated Transit Union (ATU), Silver Spring, MD
10. Joyce Rose, Principal Consultant, Transit and Rail Safety, WSP-Parsons Brinckerhoff, Baltimore, MD
11. David Harris, Transit and Rail Division Director, New Mexico Department of Transportation (NMDOT), Santa Fe, NM
12. Karen E. Philbrick, PhD, Executive Director, Mineta Transportation Institute, San Jose State University, San Jose, CA
13. Jeffrey Lau, Chief Safety Officer, Bay Area Rapid Transit (BART), San Francisco, CA

TRACS Meeting Objectives & Activities



Conference Agenda – Day 1

Times	Session Activity
11:00 a.m. – 11:05 a.m. EDT	Conference Kick-off – Bridget Zamperini, *Safety and Security Specialist*
11:05 a.m. – 11:15 a.m. EDT	FTA Update and Administrator Introduction – Henrika Buchanan, *Associate Administrator, Office of Transit Safety and Oversight and Chief Safety Officer*
11:15 a.m. – 11:45 a.m. EDT	FTA Welcoming Remarks – K. Jane Williams, *Acting Administrator*
11:45 a.m. – 12:00 p.m. EDT	Conference Introductions – Candace Key, *Director, Office of System Safety*
12:00 p.m. – 12:40 p.m. EDT	Roadway Worker Protection (RWP) Recommendations Presentations (8 total) • Estimate 5 minutes for each presentation
12:40 p.m. – 1:50 p.m. EDT	RWP Recommendations Discussion
1:50 p.m. – 2:10 p.m. EDT	*Break (Lunch)*
2:10p.m. – 3:20 p.m. EDT	RWP Recommendations Discussion (continued)
3:20 p.m. – 3:35 p.m. EDT	Public Comments

Conference Agenda – Day 1 (continued)

Times	Session Activity
3:35p.m. – 3:40 p.m. EDT	Vote of Approval on RWP Recommendations
3:40 p.m. – 4:00 p.m. EDT	Employee Safety Reporting (ESR) Recommendations Presentations (4 total) • Estimate 5 minutes for each presentation
4:00 p.m. – 4:40 p.m. EDT	ESR Recommendations Discussion
4:40 p.m. – 4:55 p.m. EDT	*Break*
4:55 p.m. – 5:35 p.m. EDT	ESR Recommendations Discussion (continued)
5:35 p.m. – 5:50 p.m. EDT	Public Comments
5:50 p.m. – 5:55 p.m. EDT	Vote of Approval on ESR Recommendations
5:55 p.m. – 6:00 p.m. EDT	Close of Business
6:00 p.m. EDT	*Adjourn*

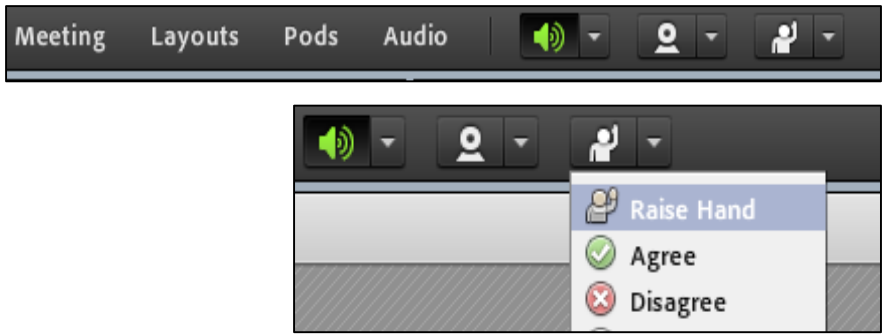
Meeting Protocol

Manage Audio

- If you are not speaking, please remain on mute.

Raise Your Hand

- If you would like to speak, please use the "Raise Hand" feature in Adobe Connect (see screenshot below). Contract support and FTA Facilitators will be monitoring hand-raising to identify speakers.



Manage Webcams

- Please do not share your webcam; too many active webcams will overload the bandwidth and lead to technical glitches.

Announce Yourself

- When you start speaking, please identify yourself.
- Contract support will also help announce speakers by calling on individuals using the "Raise Hand" feature in Adobe Connect.

Avoid Multi-Tasking

- To stay engaged in the conversation, please try to avoid multi-tasking as much as possible by closing non-essential windows and programs. If appropriate, you can also choose to turn off push notifications on your phone to help avoid distractions.

FTA Update and Administrator Introduction

Henrika Buchanan

Associate Administrator,
Office of Transit Safety and Oversight,
Chief Safety Officer

Welcoming Remarks

K. Jane Williams

Acting Administrator,
FTA

Office Updates and Conference Support Introductions

Candace Key
Director, Office of System Safety

Designated Federal Official:

Henrika Buchanan

Associate Administrator, Office of Transit Safety and Oversight

FTA Facilitation:

Bridget Zamperini

TRACS Program Manager

Additional Conference Support:

Guidehouse

12:00 p.m. – 12:40 p.m. EDT

RWP RECOMMENDATIONS PRESENTATIONS

RWP Recommendation Presentations

#	Recommendation	Presenter
1	Minimum RWP Safety Requirements as the Basis for Secondary Warning Systems	Paul K.
2	Behavior-Based Safety Systems for RWP	Paul K.
3	Fatigue Management for Maintenance, Controller, and other Non-Operating Personnel	Paul K.
4	Funding for Research and Implementation of New Systems and Technology	Pam F.
5	Require Use of Secondary Warning Systems	Pam F.
6	Development of Risk-Based Safety Metrics Including Leading Indicators	Pam F.
7	Research and Create Guidance on Cognitive Workload and Distraction of Light Rail Transit (LRT) Operators Using RWP Technology in Operators Car	Pam F.
8	Develop RWP Safety Technology Reliability Criteria	Paul K.

RWP Subcommittee Recommendation #1

The Committee recommends that FTA develop minimum safety RWP rules/requirements as primary protections and to assist with implementation of any secondary RWP safety systems.

Technical Evaluation Criteria

Adequacy of primary protections. Susceptibility of secondary systems to failure, and how they can provide truly additional independent layers of protection to the primary protections for each use-case. For any technology to be cost-effective, it first must be effective - by providing redundancy and by not introducing complacency or new opportunities for failure.

Key Takeaways

Technologies are available that are designed to address and complement the National Transportation Safety Board (NTSB), FTA, the American Public Transportation Association (APTA), and the California Public Utilities Commission recommendations, guidance, standards, and regulations. Each application should be tailored to how it will be used to add redundancy to the primary protections (see Transportation Technology Center, Inc. use-case survey/analysis).

Information Gaps

Five secondary system technologies were identified that were in use, either operationally or in testing, but experience with these applications need to be identified and results made available to rail transit agencies (RTAs), who then can learn from them and then adapt them to their particular use cases. NTSB investigations and recommendations are available for further research and safety assurance.

Additional Justification

Roadway workers experience an inordinate number of fatalities, and are distinguished from other employees and the public in that they are required to be in the track area, thus ethically deserving a greater mandate for addressing their safety. NTSB has issued at least 13 different recommendations since 2008.

RWP Subcommittee Recommendation #2

The Committee recommends that FTA research the existing behavioral focused safety initiatives and literature for application to RWP in particular, but also to safety culture and Safety Management Systems (SMS) effectiveness in general.

Technical Evaluation Criteria

The committee examined research on whether implementation of positive reinforcement behavior-based systems resulted in an increase in safe behaviors in general. The committee also examined how these systems might contribute to safety culture and SMS.

Key Takeaways

These systems have been applied successfully on railroads and other industries. They are successful when there is buy-in from employees, and positive reinforcement principles are applied – and perceived to be positive by employees. This is an important, and sizeable task to implement on RTAs such that it should be more thoroughly researched, including as a new task for the next chartered TRACS.

Information Gaps

The committee was unaware of any experience and/or information on applications in the rail transit industry, and was unable to address the potential application sufficiently, concluding that this topic should be a separate task in its own right for the next TRACS. How such applications might be implelmented for RWP should be one of the focus areas.

Additional Justification

Research shows that behavioral interventions based on non-punitive positive-reinforcement principles are effective at producing desired behaviors, in this case, the desired safe behaviors and mutual trust, both necessary components of safety culture and SMS.

RWP Subcommittee Recommendation #3

The Committee recommends that FTA provide state-of-the art fatigue management for all employees involved in roadway work, including track, signal, and structures maintenance workers, controllers, relevant supervisors, and other non-operator personnel not covered by fatigue management provisions such as hours-of-service limitations.

Technical Evaluation Criteria

Ensure that RWP-related workers are sufficiently alert to utilize all protections and ensure safety. Scientifically-based research was covered in TRACS report 14-02, which provided evaluation criteria that can be applied to RWP. Attending to multiple evaluation criteria, by consensus TRACS developed a recommended regulation in that report.

Key Takeaways

A well-researched report by TRACS, with scientific support from Volpe subject-matter experts, is available for utilization for RWP-related employees.

Information Gaps

To the extent that applications for RWP-related employees might differ from operating employees covered in the TRACS 14-02 report, those differences should be investigated.

Additional Justification

In report RAR1501, the NTSB issued recommendations to the FTA:
1) Develop a work-scheduling program for RTAs that incorporates fatigue science.
2) Establish scientifically-based hours-of-service regulations.
3) Require initial and recurrent training for work schedulers based on fatigue science.

RWP Subcommittee Recommendation #4

FTA should provide funding for research and implementation of existing and new systems and technology including research and testing grants for new RWP technology and grants to assist transit agencies with the financial burden of implementing these systems.

Technical Evaluation Criteria

The subcommittee evaluated this recommendation based on criteria including the potential impact to safety, cost/economic considerations, the potential impact to service, readiness, the ability to further SMS, risk-based safety data quality, systems integration and technology management in the transit industry.

Key Takeaways

Key takeaways include:
1) RWP safety technologies that can be purchased and installed from a number of vendors.
2) RWP safety technologies are too new, or have not been rigorously researched and confirmed to be compatible with their system.
3) Implementation cost of these systems involve substantial capital investment and significant time to implement.

Information Gaps

Information gaps include:
1) Lack of research testing the validity of existng technologies.
2) Lack of research examining applicability of technologies in use on railroads for RTA use.
3) Lack of information about ongoing maintenance costs once installed.
4) Lack of information on testing, implementation, and cost of other types of RWP systems outlined by the NTSB Special Investigation Report.

Additional Justification

NTSB has made numerous findings and recommendations regarding the need for additional protections for roadway workers to the FTA, transit agencies, and other related agencies. While many involve changes to standard operating procedures (SOPs) and comprehensive job briefings, recommendations also include that secondary RWP systems should be used.

RWP Subcommittee Recommendation #5

FTA should require secondary warning systems and create a resource document that identifies existing secondary warning systems and describes primary features, implementation readiness and experience, and hardware needed for installation.

Technical Evaluation Criteria

The subcommittee evaluated this recommendation based on criteria including the potential impact to safety, the potential impact to service, and the ability to further SMS.

Key Takeaways

Key takeaways include:
1) RWP safety technologies have already been required by one state.
2) RWP safety technologies have the potential to provide impacts to safety and service.
3) RWP safety technologies have the ability to further SMS.

Information Gaps

Information gaps include:
1) The number of agencies that have implemented RWP safety technologies to address NTSB findings and FTA's Safety Advisory 14-1.
2) What the various State Safety Oversight agencies (SSOA) are doing with respect to RWP.
3) A relevant working definition of redundant protection.

Additional Justification

NTSB has made numerous findings and recommendations regarding the need for additional protections for roadway workers to the FTA, transit agencies, and other related agencies. While many involve changes to SOPs and comprehensive job briefings, recommendations also include that secondary RWP systems should be used.

RWP Subcommittee Recommendation #6

FTA should develop risk-based safety metrics including leading indicators.

Technical Evaluation Criteria

The subcommittee evaluated this recommendation based on criteria including the potential impact to safety, implementation readiness, the ability to further SMS, and risk-based safety data quality.

Key Takeaways

Key takeaways include:
1) Development of risk-based safety metrics including leading indicators.
2) Such risk-based safety metrics, if nationally consistent, would enable a larger scale analysis of RTA operations throughout the nation.
3) Development of risk-based safety metrics would further collection of quality data and data to be used in RTA SMS development and implementation.

Information Gaps

This recommendation's information gap is the lack of a review of current literature and studies on risk-based safety metrics and leading indicators. Such research will be necessary to develop these metrics, and should include analyzing the quality of data being collected for each metric developed.

Additional Justification

As part of Moving Ahead for Progress in the 21st Century (MAP-21), FTA implemented rules that require review and analysis of data as part of the 49 CFR Part 673 and 674 rules. Having consistent metrics throughout the RTA industry would greatly help RTAs and SSOAs in their data review and analysis duties. These metrics would also allow consistent analysis of risks throughout the many RTAs and SSOAs.

RWP Subcommittee Recommendation #7

FTA should research and create guidance on the potential for cognitive workload and distraction of LRT operators caused by the use of RWP technology in the operator's car.

Technical Evaluation Criteria

The subcommittee evaluated this recommendation based on criteria including the potential impact to safety, cost/economic considerations, and the potential impact to service.

Key Takeaways

Key takeaways include:
1) Research should be completed regarding potential cognitive workload and distractions from attending to new RWP technology in operator cabs.
2) Guidance on implementation of RWP technology to limit the possible impacts on operator cognitive workload and distraction should be a key part of implementation.

Information Gaps

Information gaps include:
1) Lack of a review of research specific to cognitive workload and distraction in general, and specific to LRT operators with in-cab RWP technology.
2) Lack of guidance on training and mitigation of cognitive workload and distraction of LRT operators using in-cab RWP technology.

Additional Justification

The question remains whether in-cab RWP safety technology might cause extra cognitive workload and distraction. The lack of specific research answering this question may leave operations vulnerable to new safety issues rather than improved safety for RWP workers.

RWP Subcommittee Recommendation #8

The Committee recommends that FTA develop criteria to determine the reliability of RWP safety technology, utilize those criteria to ascertain the reliability of the different technologies, and provide the information to RTAs and SSOAs.

Technical Evaluation Criteria

Susceptibility to failure, e.g.,
1) Due to technological and environmental issues such as in tunnels, on curves, and in dense urban areas with frequency interference and conflicts.
2) Technology durability, power demands, maintenance, and design issues.

Key Takeaways

Avaliable RWP safety technologies have different performance capabilities in different contexts.
Several RTAs have experience with at least one of the five available technologies and FTA could gather and disseminate such experience to the benefit of all RTAs.

Information Gaps

Information gaps include:
1) Comprehensive reliability information.
2) Maintenance requirements and effect on reliability.
3) Means to report technological failures.
4) No papers on technology limitations.
5) May be other technologies available.
6) No comprehensive compilation of experience with these technologies.

Additional Justification

Reliability is an essential part of any safety intervention. Any technological failure would render the protection useless, and potentially endanger roadway workers.

12:40 p.m. – 1:50 p.m. EDT

RWP RECOMMENDATIONS DISCUSSION

1:50 p.m. – 2:10 p.m. EDT

LUNCH

2:10 p.m. – 3:20 p.m. EDT

RWP RECOMMENDATIONS DISCUSSION (CONTINUED)

3:20 p.m. – 3:35 p.m. EDT

PUBLIC COMMENTS

3:35 p.m. – 3:40 p.m. EDT

RWP VOTING

3:40 p.m. – 4:00 p.m. EDT

ESR RECOMMENDATIONS PRESENTATIONS

ESR Recommendation Presentations

#	Recommendation	Presenter
1	Uniform ESR Strategies; FTA should adopt uniform ESR strategies.	Jim H., Brian A.
2	Improve Safety Culture; FTA should focus on improving safety culture through effective measurement of current safety culture, open and honest reporting, and the creation of a standardized toolkit for agencies to reference.	Victor W., Brian S., Mike C.
3	Compliance with Safety Risk Management and Safety Risk Assurance; Transit agencies should have dedicated staff who ensure that agencies are SMS-compliant and to conduct quality assurance.	Eric M., Gardner T.
4	Central Repository of Information; FTA should have a central repository for information that includes the ability to conduct agency-to-agency comparisons and Confidential Close Call Reporting System (C^3RS).	Elayne B., Frank C.

ESR Recommendation #1

The Committee recommends that FTA develop and produce industry guidance to create a uniform, consistent strategy and framework to guide agencies in implementation of ESR programs.

Technical Evaluation Criteria

The framework that guides ESR should be compatible with the technology-based systems that transit agencies may propose to use or already have in use (i.e. software programs, hotlines, and online/paper safety hazard identification forms). Thus, the ESR system should be flexible and scalable, just like the SMS of which it is a component.

Key Takeaways

- Information and best practices are frequently shared among transit leadership.
- Consistent approaches to common problems and lesson sharing has proven to collectively benefit the industry.
- A shared framework for implementing ESR programs would allow transit agencies to work through the learning curve together, as an industry, rather than as individual agencies.

Information Gaps

Leaders in the transit industry should be consulted with to agree on the uniform terminology and definitions to be used in employee reporting systems. There should be agreement between those representing both large and small systems (as well as bus and rail). If needed, APTA can assist FTA, in reaching out to the industry to determine what common ESR definitions and terminology are used at various size transit agencies.

Additional Justification

Many transit agencies already have employee reporting systems, and some have multiple systems. Of these systems, some are highly developed and robust, and others are in a newer stage. Although the Public Transportation Agency Safety Plan (PTASP) regulation calls for an employee safety reporting program, additional FTA guidance to expand on the overall framework even further would be beneficial to ensure consistency.

ESR Recommendation #2

The Committee recommends that FTA develop implementation strategies for improving safety culture as a key mechanism of an effective and robust ESR system based on a foundation of trust. The Committee recommends the following elements be included:

Adopt and promote DOT's definition of safety culture, as published by the U.S. DOT Safety Council in 2017.

Develop standardized terminology that facilitates a common language and understanding of ESR.

Develop a standardized suite of validated safety culture assessment tools for continuous improvement.

Develop customized toolsets and resources for agencies that only receive 5310 and 5311 federal financial assistance.

Provide funding for pilot demonstration projects that apply and measure the effectiveness of safety culture intervention strategies.

Develop a toolset for building collaboration and trust to facilitate an accurate and comprehensive ESR system, specifically addressing the following:

SMS Training for labor and management specifically emphasizing ESR systems and the importance of trust in a strong safety culture.

A metric for assessing trust as a separate validated measure across all organizational levels.

Provide feedback to individuals who submitted safety comments and reports.

ESR Recommendation #3

The Committee recommends that FTA compel the transit industry to dedicate critical human and financial resources needed to ensure the effectiveness of its required PTASP.

Technical Evaluation Criteria

The recommendation is founded on the need to accurately gather and analyze data to:

- Enrich safety-related leading indicators,
- Mitigate safety-related lagging indicators,
- Create greater internal stakeholder engagement opportunities, and
- Enhance an agency's safety culture.

Key Takeaways

Recommendation Themes: Culture & Training, Data, and Emerging Technology

As the premise behind SMS dictates, safety is a data-driven discipline, which relies on the interpretation and synthesis of data into meaningful information and action. Key resources, both fiscal and personnel, should be solely allocated to focus their attention on the compilation/interpretation of all data collected into meaningful, proactive measures to address identified action items.

Information Gaps

Although criteria for reporting requirements may have been included in the federal and/or SSO guidance documentation, the known, preexisting allocation(s) throughout individual agencies is uncertain. The following challenges have been identified:

- Personnel who possess data/analytical skills and transit knowledge
- Complexities of interpreting data and disseminating activities

ESR Recommendation #4

FTA to develop a central repository for C^{3}Rs and RTA agency to agency comparisons.

Technical Evaluation Criteria

The subcommittee evaluated this solution on its potential ability to further SMS, standardize safety performance and readiness to implement. The evaluation of this recommendation on these criteria contribute to it being a practical recommendation for FTA that brings tangible improvement to the transit industry.

Key Takeaways

This recommendation builds on the key takeaway theme of 'Safety Culture.' The recommendation builds on the idea that in order for an organization to have a successful employee safety reporting program (ESRP) the organization must build a culture of trust, upper management support, shared goals, and honesty.

- The importance of ensuring a robust safety culture where safety incidents are reported.
- Engaging staff and stakeholders early in the development process and using a third party to maintain anonymity in the reporting process.

Information Gaps

This recommendation aims to fill the employee reporting information gap that explores a lack of information on current and emerging technologies that transit agencies can use for ESR; as well as a lack of standardized terminology when recording data using ESRPs which complicates data analysis and safety assurance activities.

Additional Justification

Understanding regarding the psychological effects of ESR and how elements of behavior-based science could be incorporated.

4:00 p.m. – 4:40 p.m. EDT

ESR RECOMMENDATIONS DISCUSSION

4:40 – 4:55 p.m. EDT

BREAK

4:55 p.m. – 5:35 p.m. EDT

ESR RECOMMENDATIONS DISCUSSION (CONTINUED)

5:35 p.m. – 5:50 p.m. EDT

PUBLIC COMMENTS

5:50 p.m. – 5:55 p.m. EDT

ESR VOTING

5:55 p.m. – 6:00 p.m. EDT

CLOSE OF BUSINESS

Please mute your phone if you are not speaking

FTA

FEDERAL TRANSIT ADMINISTRATION

Transit Advisory Committee for Safety (TRACS) Meeting Agenda

July 22, 2020
Day 2

Bridget Zamperini
Federal Transit Administration (FTA)

U.S. Department of Transportation
Federal Transit Administration

Please mute your phone if you are not speaking

Conference Roll Call

1. Acting Chairperson: Pamela Fischhaber, PhD, Chief, Rail/Transit Safety, Colorado Public Utilities Commission, Denver, CO
2. Scott A. Sauer, Assistant GM, Operations, Southeastern Pennsylvania Transportation Authority, Philly, PA
3. Herman Bernal, State Safety Oversight (SSO) Manager, Arizona Department of Transportation (ADOT), Phoenix, AZ
4. Ronald Nickle, Former Chief Safety Officer, Massachusetts Bay Transit Authority (MBTA), Boston, MA
5. Victor B. Wiley, Former Chief Safety Officer, Memphis Area Transit Authority, Memphis, TN
6. Elayne Berry, Former Assistant GM Management of Safety and Quality Assurance, Metropolitan Atlanta Rapid Transit Authority (MARTA), Atlanta, GA
7. James Hickey, Former SSO Program Manager, Illinois Department of Transportation (IDOT), Chicago IL
8. Eric Muntan, Chief, Office of Safety and Security, Miami-Dade Transit, Miami, FL
9. Brian Sherlock, Safety Specialist, Amalgamated Transit Union (ATU), Silver Spring, MD
10. Joyce Rose, Principal Consultant, Transit and Rail Safety, WSP-Parsons Brinckerhoff, Baltimore, MD
11. David Harris, Transit and Rail Division Director, New Mexico Department of Transportation (NMDOT), Santa Fe, NM
12. Karen E. Philbrick, PhD, Executive Director, Mineta Transportation Institute, San Jose State University, San Jose, CA
13. Jeffrey Lau, Chief Safety Officer, Bay Area Rapid Transit (BART), San Francisco, CA

Welcome Back Recap

Paulina Orchard

Division Chief, Safety and Policy Promotion

Conference Agenda – Day 2

Times	Session Activity
11:00 a.m. – 11:05 a.m. EDT	Welcome Back – Paulina Orchard, *Division Chief, Safety Policy and Promotion*
11:05 a.m. – 11:40 a.m. EDT	Trespass and Suicide Prevention (TSP) Recommendations Presentations (7 total) • Estimate 5 minutes for each presentation
11:40 a.m. – 12:50 p.m. EDT	TSP Recommendations Discussion
12:50 p.m. – 1:10 p.m. EDT	*Break (Lunch)*
1:10 p.m. – 2:20 p.m. EDT	TSP Recommendations Discussion (continued)
2:20 p.m. – 2:35 p.m. EDT	Public Comments
2:35 p.m. – 2:40 p.m. EDT	Vote of Approval on TSP Recommendations
2:40 p.m. – 3:00 p.m. EDT	*Break*

Conference Agenda – Day 2 (continued)

Times	Session Activity
3:00 p.m. – 3:20 p.m. EDT	Summary of Voting Results
3:20 p.m. – 4:30 p.m. EDT	TRACS Next Steps and Subcommittee Workplans
4:30 p.m. – 4:50 p.m. EDT	Public Comments
4:50 p.m. – 5:00 p.m. EDT	Close of Business
5:00 p.m. EDT	*Adjourn*

11:05 a.m. – 11:40 a.m. EDT

TSP RECOMMENDATIONS PRESENTATIONS

TSP Recommendation Presentations

#	Recommendation	Presenter
1	Align Definitions and Recording of Trespass and Suicide Data with the Federal Railroad Administration (FRA)	Joyce R.
2	Provide Targeted Funding Support for Comprehensive Post-Fatality Support Programs for Employees who Follow Best Practices for Post-Traumatic Events	Mike C.
3	Develop Standard Signage for Railway Stations that includes Information on Suicide Hotlines and the Dangers of Trespassing	Karen P.
4	Support Research and Funding on the Use of Detection Technologies	David H.
5	Look at Low-Cost Barriers to Reduce Trespassing and Support Building Barriers as the Most Effective Means of TSP	David H.
6	Research AI Technologies used for Trespass and Suicide Detection and Prevention	Karen P.
7	Support Additional Research to Develop a Proof of Concept for Emerging Technologies/Behaviors	Joyce R.

TSP Recommendation #1

FTA and FRA should cooperatively work to align how they define and report trespass and suicide incident data. Additionally, FTA and FRA should seek to develop a standardized definition and methodology for tracking and reporting a "near miss."

Technical Evaluation Criteria

The subcommittee evaluated this recommendation on the critera of risk-based safety data quality and ability to further SMS.
1) There is a well-established gap between how trespass- and suicide-related incidents are reported to FTA and FRA, resulting in incomplete, sometimes inaccurate data.
2) Incomplete or inaccurate safety data prevent effective SMS implementation.

Key Takeaways

1) Safety data regarding rail trespassing and suicide cannot be consolidated or compared between FTA and FRA systems.
2) Transit agencies often operate both rail transit and commuter rail systems, which means duplicative but different reporting requirements.
3) Different data definitions and reporting requirement create a roadblock to interagency collaboration. For example, "Near Miss" and "Close Calls" should be defined the same.

Information Gaps

This recommendation will address the information gaps identified in the Key Takeaways by aligning definitions and data reporting requirements for rail trespassing and suicide incidents. A clear, consistent understanding of trespass and suicide data will support more accurate tracking and trend analysis of these incidents at the agency level and on a national basis, and will help assess whether mitigations and countermeasures are effective.

Additional Justification

This recommendation will help improve the quality and reliability of safety data on the highest-risk types of incidents on rail systems: trespassing and suicides. (FTA studies show 62% of fatalities and FRA studies show 72% of fatalities are trespass or suicide-related.) Better data will give transit agencies, commuter rail systems, and the U.S. DOT the ability to assess effectiveness of mitigations and determine if performance targets are met.

TSP Recommendation #2

FTA should provide funding to develop and pilot test a comprehensive transit-specific Critical Incident Program (CIP) for preventing, mitigating and reducing the effects of traumatic exposure (suicides, deaths, assaults, etc.) on safety critical transit employees, including resilience training, post event screening and assessment, and treatment.

Technical Evaluation Criteria

The subcommittee identified potentially positive impacts on all of the following criteria:

- Cost benefit factors
- Potential safety impacts
- Potential employee health and well-being impacts
- Potential job satisfaction, performance, and engagement impacts and
- Readiness to implement

Key Takeaways

1) Half or more of transit operators are likely to be exposed to a traumatic incident in their career.
2) Consequences include impairments in emotional health, cognitive functioning, and overall physical health and well-being.
3) Job performance impacts can include distractibility, absenteeism, presenteeism, and turnover.
4) Well-designed intervention programs are readily available that can be readily adapted to the transit industry.

Information Gaps

1) Few critical incident programs appear to be operating in the transit industry.
2) Integration with existing Employee Assistance Program (EAP) and occupational health programs needs exploration.
3) Effective implementation strategies, including online and remote training features, should be considered.
4) Utilization, outcome and impact evaluations should also be documented for accountability purposes.

Additional Justification

Extreme distractibility and excessive fatigue are common consequences of traumatic exposure and should be considered a "hazard" as defined in PTASP for the design of an effective SMS program. Effective programs for the prevention and mitigation of the consequences of traumatic exposure are readily available from other industries for implementation in the transit industry.

TSP Recommendation #3

FTA should develop standard signage for railway stations that includes information on suicide hotlines and the dangers of trespassing.

Technical Evaluation Criteria

The subcommittee evaluated this recommendation on cost and readiness to implement. Signage is a low-cost solution and could be implemented relatively quickly, therefore making it an effective intervention measure against trespassing and suicide.

Key Takeaways

This recommendation builds on the theme of 'Emerging Technology.' Signage, along with hotline referral numbers, can direct distressed individuals to appropriate resources. With signage already proven to assist with prevention and intervention efforts, this shows that developing standard signage could play an important role in reducing trespassing and suicide.

Information Gaps

Information gaps this recommendation addresses include the lack of information on the efficacy of signage, lack of consensus on standard language, and lack of data on the frequency that suicide prevention numbers are called. By proposing standard signage across railway stations, more data on the effectiveness of signage and helpline numbers could be provided.

Additional Justification

A study found that when suicide-specific prevention signage was placed near suicide "hot spots," suicides reduced from 10 to less than 3.3 per year (King & Frost, 2005). In San Francisco, BART revealed that partnering with a Suicide Prevention Lifeline on a signage campaign resulted in the helpline receiving 20 to 50 calls per year since the campaign began (Gabree, Scott H. et al. 2019).

TSP Recommendation #4

FTA should support research and funding on the use of detection technologies, such as aerial photography, to identify trespassing hotspots and cross-reference that with suicide hotspots.

Technical Evaluation Criteria

This recommendation was evaluated on data quality and the readiness to which a reference system can be developed. With the potential to learn more about trespassing, and with the technology already available to develop a reference system, we could enhance our understanding of trespassing hotspots and assist agencies on where to focus their resources.

Key Takeaways

This recommendation builds on the theme of 'Data.' With further research on detection technologies, and with the technology already available, we could advance our understanding of trespassing, start developing a reference system to cross-reference trespassing hotspots with suicide hotspots, and help agencies further SMS.

Information Gaps

Information gaps this recommendation addresses include the limited research on detection technologies, where chronic trespassing hotspots are located, and how agencies can use this data. With additional research, we could learn more about trespassing and detection technologies, learn more about hotspots, and develop a reference system for agencies to use.

Additional Justification

A study in NY found video-based trespass monitoring to be about 90% accurate (daSilva, Marco P et al. 2012). Other agencies have started using drones to detect trespassers and inspect rail infrastructure (Gabree, Scott H. et al. 2019; Knight 2016). Although research is limited, there is some promise as to the effectiveness of detection technologies and what we could learn from them.

TSP Recommendation #5

FTA should support building low-cost barriers, such as signage, landscaping, and other barriers, around the railroad right-of-way to reduce chronic trespassing, and potentially suicides.

Technical Evaluation Criteria

The subcomittee evaluated this recommendation on its cost, implementation readiness, and ability to further SMS. With the potentially low-cost, quick implementation, and encouragment of more comprehensive safety policies, this recommendation will be an effective tool in reducing trespassing and suicide.

Key Takeaways

This recommendation builds on the theme of 'Emerging Technology.' Barriers are already being used by agencies across the world and have shown to have a significant effect at critical locations/ hotspots. This demonstrates that barriers are not only becoming prevalent but are showing evidence as being one of the most effective countermeasures against trespassing/suicide.

Information Gaps

Information gaps this recommendation addresses include how to address chronic trespassing, where counter-measures should be implemented, and what agencies can do. Barriers have proven to significantly reduce trespassing, and by establishing guidance on installing barriers, agencies could focus more attention on this issue and determine where hotspots are located.

Additional Justification

A study in Finland found that fencing reduced trespassing by 94.6%, landscaping reduced trespassing by 91.3%, and signage reduced trespassing by 30.7% (Silla and Luoma 2011). This research shows that some type of barrier is one of the most effective ways to reduce trespassing.

TSP Recommendation #6

FTA should research artificial intelligence (AI) technologies to detect trespassing and suicide. Additional research should be supported on understanding and identifying potential suicidal behaviors to establish inputs that support AI-based detection of suicides.

Technical Evaluation Criteria

The subcommittee evaluated this recommendation on systems integration, technology management, cost, and readiness to implement. With the ability to integrate with existing systems and handle "big data," AI technology can further our understanding of trespassing/suicide and allow for real time response, despite possible cost and implementation drawbacks.

Key Takeaways

This recommendation builds on the theme of 'Emerging Technology.' Initial research on AI detection technology shows promise for detecting trespassers in rail settings. With further research, we could develop a standard AI algorithm, advance its effectiveness and adoption, convert "big data" into real-time alerts, and further our understanding of trespassing and suicide.

Information Gaps

Information gaps this recommendation addresses include the limited research on AI detection technology, its ability to distinguish trespassers, its reliability at nighttime, and the lack of information on how to handle privacy issues. With additional research, we can refine and enhance AI detection technology and become more prepared for how to handle privacy issues.

Additional Justification

Zaman (2018) and Zaman, Baozhang and Liu (2019) studied an AI framework for the automatic detection of trespassing events in real time. Results showed that the AI differentiated between the type of trespasser and correctly detected all trespassing events at the selected locations with 100% accuracy.

TSP Recommendation #7

FTA should support proof-of-concept research on emerging technologies that may prevent rail trespassing and suicide, including: (1) systems to detect right-of-way, station, or grade crossing intrusions; (2) systems to communicate intrusions and integrate with train controls; and (3) systems that are interoperable with Positive Train Control (PTC).

Technical Evaluation Criteria

The subcommittee evaluated this recommendation on the critera of impact on service, systems integration, cost, and readiness to implement. A CUTR survey of rail transit agencies showed that ROW intrusion detection systems, mobile apps for reporting suicides, and video analytics are being used by some respondents, but many agencies felt that advanced technologies are not yet mature for deployment.

Key Takeaways

Safety equipment vendors made presentations to TRACS that focused more on RWP than on trespass/suicide prevention. Some technologies may integrate RWP communication and train control with track intrusion detection technology such as motion-sensitive panels, optical sensors, laser imaging, radar, or LIDAR. Because rail suicde & trespassing are major safety risks for commuter rail, integrating intrusion detection with PTC is also a possible future technology adaptation.

Information Gaps

There are many different potential technologies and each rail transit property's rail system will present unique challenges for successful implementation. The information gaps that need to be addressed should focus on integrating RWP and track intrusion detection systems with existing transit properties' communications and train control systems, or on commuter railroads, with PTC systems.

Additional Justification

The subcommittee evaluated this recommendation as having a **high impact** on Safety. Trespass and and suicides are the highest-risk types of incidents on rail systems: FTA studies show that 62% of fatalities on rail transit and FRA studies show 72% of fatalities on the general railway system are trespass or suicide-related.

11:40 a.m. – 12:50 p.m. EDT

TSP RECOMMENDATIONS DISCUSSION

12:50 p.m. – 1:10 p.m. EDT

LUNCH

1:10 p.m. – 2:20 p.m. EDT

TSP RECOMMENDATIONS DISCUSSION (CONTINUED)

2:20 p.m. – 2:35 p.m. EDT

PUBLIC COMMENTS

2:35 p.m. – 2:40 p.m. EDT

TSP VOTING

2:40 p.m. – 3:00 p.m. EDT

BREAK

3:00 p.m. – 3:20 p.m. EDT

SUMMARY OF VOTING RESULTS

3:20 p.m. – 4:30 p.m. EDT

TRACS NEXT STEPS AND SUBCOMMITTEE WORKPLANS

TRACS Next Steps

Dates	Task
July 22 – August 14	FTA and Guidehouse to compile recommendation drafts and language from TRACS First Year Report into Final Report drafts
August 14	FTA and Guidehouse to distribute Final Report drafts to TRACS for review, updates, and finalization
August 14 – September 12	TRACS to review, update, and finalize Final Reports
Early September	TRACS Members to vote on Final Reports
September 12	Final Reports due to FTA

RWP Workplan

Dates	Task
July 22	RWP develops workplan to finalize RWP Final Report
*[July 22 – August 14]**	*RWP meets as a subcommittee to confirm schedule of reviews and updates, as needed*
August 14	RWP to receive Final Report draft from FTA and Guidehouse for review, updates, and finalization
*[August 14 – August 31]**	*RWP initiates subcommittee rounds of reviews and updates to finalize RWP Final Report*
*[August 31 – September 4]**	*RWP meets as a subcommittee for compilation and finalization of RWP Final Report*
Early September	TRACS Members to vote on Final Reports
September 12	Final Reports due to FTA

*Recommended date range for activity

TSP Workplan

Dates	Task
July 22	TSP develops workplan to finalize TSP Final Report
*[July 22 – August 14]**	*TSP meets as a subcommittee to confirm schedule of reviews and updates, as needed*
August 14	TSP to receive Final Report draft from FTA and Guidehouse for review, updates, and finalization
*[August 14 – August 31]**	*TSP initiates subcommittee rounds of reviews and updates to finalize TSP Final Report*
*[August 31 – September 4]**	*TSP meets as a subcommittee for compilation and finalization of TSP Final Report*
Early September	TRACS Members to vote on Final Reports
September 12	Final Reports due to FTA

*Recommended date range for activity

ESR Workplan

Dates	Task
July 22	ESR develops workplan to finalize ESR Final Report
*[July 22 – August 14]**	*ESR meets as a subcommittee to confirm schedule of reviews and updates, as needed*
August 14	ESR to receive Final Report draft from FTA and Guidehouse for review, updates, and finalization
*[August 14 – August 31]**	*ESR initiates subcommittee rounds of reviews and updates to finalize ESR Final Report*
*[August 31 – September 4]**	*ESR meets as a subcommittee for compilation and finalization of ESR Final Report*
Early September	TRACS Members to vote on Final Reports
September 12	Final Reports due to FTA

*Recommended date range for activity

4:30 p.m. – 4:50 p.m. EDT

PUBLIC COMMENTS

4:50 p.m. – 5:00 p.m. EDT

CLOSE OF BUSINESS