

Transit Advisory Committee for Safety (TRACS) Meeting Minutes

September 9-10, 2019

National Highway Institute

1310 North Courthouse Road

Arlington, VA 22201

Attendance

TRACS Members in Attendance

Scott Sauer, TRACS Chairperson, Southeastern Pennsylvania Transportation Authority (SEPTA)

Pamela Fischhaber, TRACS Vice Chairperson, Colorado Public Utilities Commission

Elayne Berry, formerly of Metropolitan Atlanta Rapid Transit Authority (MARTA)

David Harris, New Mexico Department of Transportation (NMDOT)

Jeff Lau, San Francisco Bay Area Rapid Transit District (BART)

Eric Muntan, Miami-Dade Transit

Ron Nickle, Transit Safety Solutions

Karen Philbrick, Mineta Transportation Institute (MTI), San Jose State University

Joyce Rose, WSP-Parsons Brinckerhoff

Brian Sherlock, Amalgamated Transit Union (ATU)

Victor Wiley, formerly of Memphis Area Transit Authority (MATA) (phone)

Non-TRACS Members

Mike Coplen, Independent Consultant

Paul King, California Public Utilities Committee

Carl Hamann, Metropolitan Transit Authority (MTA) New York City (phone)

Travis Knepper, Trapeze Group (phone)

Faye Lyons-Gary, Atkins Global (phone)

Kevin Reilly, LKT Engineering Services (phone)

Narayana Sundaram, American Public Transportation Association (APTA) (phone)

FTA/Support

Henrika Buchanan, Associate Administrator and Chief Safety Officer, Office of Transit Safety and Oversight (TSO), Federal Transit Administration (FTA)

Candace Key, Director, Office of System Safety (TSO-10), FTA

Kara Waldrup, TRACS Program Manager, TSO-10, FTA

Jeff Thompson, General Engineer, TSO-10, FTA

Dharm Guruswamy, Transportation Program Analyst, Office of Program Oversight (TSO-30), FTA

Rhoderick Ramsey, Program Analyst, TSO-10, FTA

Richard Wong, Attorney Advisor, Office of Chief Counsel (TCC), FTA

Kristen Fredrich, Program Analyst, TSO Stakeholder Engagement, FTA

Alex Druy, Guidehouse, contract support to FTA

Mindy Forsyth, Guidehouse, contract support to FTA

Jake Kellner, Guidehouse, contract support to FTA

Kim Wilson, Accel Solutions, contract support to FTA

Trecia Warnholz, Accel Solutions, contract support to FTA

Opening Remarks and Introduction of Attendees

Candace Key, Director of the Office of System Safety, opened the committee meeting by delivering welcoming remarks and introducing TRACS committee members and supporting contractors.

Kara Waldrup, TRACS Program Manager, gave a brief overview of the two-day agenda, the TRACS task and meeting objectives. All committee members, public attendees, and FTA staff and contractors introduced themselves.

TRACS Task Review and FTA Updates

Kara Waldrup presented the three focus areas and summarized outcomes from the previous meeting in March 2019. The three subcommittee groups include: 1) Trespass and Suicide Prevention (tasked to the committee members by FTA leadership), 2) Roadway Worker Protection, and 3) Employee Safety Reporting. Kara Waldrup also reviewed the work that has been completed since the previous TRACS meeting and highlighted the accomplishments of the group. The group also reviewed a high-level agenda that reflects key milestones for the remainder of the 2018-2020 TRACS charter.

The conference objectives were as follows:

- Identify additional learning opportunities
- Gain a greater understanding of information needs
- Propose a date for the next meeting
- Refine work plans for the next year of the charter

Trespass and Suicide Prevention

Presentation by Subcommittee and Questions/Answers (Q/A)

The Trespass and Suicide Prevention subcommittee members (Joyce Rose, Karen Philbrick, David Harris, and Jeff Lau) presented an overview of progress made since the previous committee meeting. Through a series of discussions, literature reviews, and subject matter expert (SME) presentations, the subcommittee improved their understanding of the frequency of events on the general railway system versus commuter rail and rail transit systems.

The subcommittee reviewed 19 articles and framed their reviews around the REduction of Suicide, Trespasses on RAILway property (RESTRAIL) framework. After reviewing the literature, the subcommittee recommended that the TRACS members read the following articles:

- [Patrick Sherry \(2016\), Remedial Actions to Prevent Suicides on Commuter and Metro Rail Systems](#)
- [Cécile Bardon & Brian Mishara, \(2015\), Research and Counter Measures to Reduce Suicide on Railway Rights of Way and their Impact on Railway Workers](#)
- [Cox G.R., Owens, C., Robinson, J., Nicholas, A., Lockley, A., Williamson, M., Cheung, Y. T. D., Pirkis, J. \(2013\), Interventions to Reduce Suicide Hotspots: A Systematic Review](#)
- [Gabree, S., Hiltunen, D., & Ranalli, E. \(2019\), Railroad Implemented Countermeasures to Prevent Suicide: Review of Public Information](#)

- [Zaman, A., Ren, B., & Liu, X. \(2019\), *Artificial Intelligence-Aided Automated Detection of Railroad Trespassing*](#)

Key Takeaways and Information Gaps

From the literature review, the subcommittee categorized key findings into three categories: technology, education/training, and organizational/procedural.

- Technology:
 - Use monitoring technologies (remote sensing, motion detectors, video feed) to detect trespassers and individuals circumventing barriers.
 - Use physical barriers.
- Education/Training:
 - Invest in railroad employee training on suicide awareness and warning signs.
 - Provide rail safety awareness training for mental health institutions in the vicinity of tracks.
- Org/Procedural:
 - Encourage help-seeking: Suicide help phones and signs.
 - Engage community around the railroad for a more focused suicide prevention program to be tailored to high-risk groups.
 - Encourage responsible media reporting of suicide through guidelines for journalists.
 - Provide comprehensive critical incident response for train crew support.

The information gaps identified by the subcommittee are:

- The impact of rail suicides on train crews
- Evaluation of strategies in reducing the negative impacts on train crews after a fatality
- More comprehensive study needed on video feed artificial intelligence algorithm

Welcome Comments

Henrika Buchanan, TSO Associate Administrator

Henrika Buchanan, the TSO Associate Administrator, welcomed the TRACS members and public attendees and gave remarks regarding the state of the industry and the priorities of FTA and TSO. Henrika discussed the importance of technology and innovation when preparing for the growth of a younger generation and adjusting current transit modes to improve real-time information. Henrika stressed that TRACS is a priority of FTA, as the focus of emerging technologies will help save lives and further transit safety.

Trespass and Suicide Prevention, SME Presentation and Q/A

Dr. Scott Gabree, Volpe Center

Dr. Scott Gabree, a Manager of the Grade Crossing Safety and Trespass Prevention research program at the Volpe Center, gave a presentation on suicide and trespass statistics and suicide prevention programs, specifically focused on rail. Dr. Gabree highlighted that while fatalities due to railway crossings have decreased by almost 50 percent in the past thirty years, trespass and suicides have not

experienced the same decrease. Dr. Gabree also discussed the six Federal Railroad Administration (FRA) pilot programs used to address suicide prevention:

1. Suicide countermeasure pilot testing
2. Impact of media
3. Data-driven efforts
4. GRASP (Global Railway Alliance for Suicide Prevention)
5. International efforts (including RESTRAIL)
6. U.S. efforts such as suicide intervention training, fencing, and increasing awareness of help services

Dr. Gabree led a discussion on the statistical and reporting challenges of accurately determining the number of rail suicides. Challenges cited include: suicide data was not collected prior to 2011, and there is a lack of protections for medical examiners (ME) regarding insurance, liability, and reputation. According to a committee member, MEs are advised only to declare cause of death as suicide if they are absolutely certain, which results in the use of ambiguous terms that do not clearly define cause of death as suicide.

Public Comments Period

After Dr. Gabree's presentation, public attendees had the opportunity to ask questions to the committee members and Dr. Gabree. The public comments focused on what other countries are doing to establish consistency across suicide data and the impact and effects of traumatic exposure on train crews and the public. From an international data consistency perspective, Dr. Gabree pointed out that the United Kingdom has a unified police force that standardizes criteria, and increased access to medical records. These factors provide increased validity of suicide classification data, but are not necessarily actions that can be easily applied in the United States. On the impact and effects of traumatic exposure on train crews, a public attendee pointed out the research that FRA has conducted and offered to provide additional information to help close the information gaps.

Small Group Discussion Period

Trespass and Suicide Prevention

The small group discussions identified key takeaways and information gaps from the presentations by the Trespass and Suicide Prevention subcommittee and Dr. Gabree. Each subcommittee broke out into a small group, and conversations were led by an FTA facilitator and a Guidehouse co-facilitator. The Trespass and Suicide Prevention subcommittee discussed their workplan, milestones, and next steps for the January/February 2020 meeting.

Roadway Worker Protection (RWP)

Presentation by Subcommittee and Q/A

The Roadway Worker Protection subcommittee members (Pam Fischhaber, Scott Sauer, Ron Nickle, and Paul King [public member]) presented their accomplishments since the last committee meeting in March 2019 and highlighted their recommended literature for the broader committee. Over the past six months, the subcommittee organized a literature review, compiled a literature review form, and started

a technology discussion, which involved beginning to contact rail transit agencies (RTAs) to gather information on effectiveness, cost, and ease of implementation.

The RWP subcommittee recommended that the TRACS members read the following documents and articles:

- [49 CFR Part 214](#) (FRA RWP standards)
- [State of California. \(2016\), California General Order 175-A](#)
- [Sayers, D., Murphy, D. \(2016\), APTA RWP Program Requirements](#)
- [Federal Transit Administration. \(2013\), FTA Safety Advisory 14-1](#)
- [National Transit Safety Board. \(2014\), National Transportation Safety Board \(NTSB\) RWP Recommendations](#)
- [National Transit Safety Board. \(2014\), NTSB Special Investigation Report](#)
- [Morgan, J., Ramsay, J., Abbott, R., Furness, P. \(2009\), UK Rail Worker's Perceptions of Accident Risk Factors](#)

Key Takeaways and Information Gaps

The subcommittee highlighted four key takeaways from their overall literature review:

- RWP safety technologies are available.
- Independent redundancies must be provided, avoiding the potential for single-point failures.
- RWP safety technologies are being used, and TRACS would benefit from finding out RTA experience with them.
- TRACS would benefit from working with any existing FTA RWP work, including those which followed from Safety Advisory 14-1.

The group also identified the following information gaps:

- Identifying newer RWP technologies available in the transit industry
- Feasibility and practicality of the emerging and existing technologies
- RWP and implementation of RWP technologies under Safety Management System (SMS)
- FTA work following the NTSB RWP recommendations, FTA's Safety Advisory 14-1, and how the FTA might assist with new technology rollout
- Feasibility gaps include cost, effectiveness, operational ease of use, and upkeep and maintenance

Public Comment Period

Public attendees asked questions and engaged committee members in conversation. The comments raised during the public comments period to the RWP subcommittee included the topic of behavior-based safety research, the evaluation of RWP technology for blind spots (radio frequency inability to transmit around curves, buildings, etc.), and considering the non-revenue periods of properties in their research. Additionally, the subcommittee welcomed comments regarding automated inspections, the application of data into action, and challenges and regulations of voluntary standards. A public member discussed the data to support how behavior-based safety research has been successful for change. A committee member also indicated that FTA has publications on this topic. FTA encouraged the subcommittee to use State Safety Oversight Agencies (SSOAs) for information on technology testing and

utilization experience. A subcommittee member described an early warning vest that is under patent and raised the challenge of the lack of recordings of non-fatal injuries. Another subcommittee member cited a growing knowledge and experience gap among roadway workers, and emphasized that generational differences in interests, behaviors, expectations, and practices should be examined in more detail, especially as they relate to technology use, social media, employment expectations, and training.

Small Group Discussion Period

Roadway Worker Protection

The small group discussion identified key takeaways and information gaps from the presentations by the RWP subcommittee. Each subcommittee broke out into a small group, and conversations were led by an FTA facilitator and a Guidehouse co-facilitator. The RWP subcommittee discussed their workplan, milestones, and next steps for the January/February 2020 meeting.

Day 1 Close of Business

Kara Waldrup thanked the committee members and public attendees for a productive first day. She then discussed a high-level agenda for Day 2 of the September 2019 TRACS Meeting.

Day 2 Welcoming Remarks

Kara Waldrup welcomed back the committee members and public attendees, and reviewed the agenda for Day 2. Guidehouse led the group in a brief icebreaker.

Employee Safety Reporting (ESR)

Presentation by Subcommittee and Q/A

The Employee Safety Reporting (ESR) subcommittee members (Elayne Berry, Eric Muntan, Victor Wiley, and Brian Sherlock) presented their accomplishments since the last committee meeting in March 2019 and highlighted their recommended literature for the broader committee. Over the past six months, the subcommittee divided the literature review, planned the literature review presentation, and provided input toward the article recaps. The recommended literature is as follows:

- Robbins, K. (2019), *Develop a Reporting Structure for Close Calls*
- Federal Railroad Administration. (2018), *Report to Congress: Confidential Close Call Reporting Systems*
- [Johnson, C. \(2003\), *Handbook of Incidents and Accident Reporting*](#)
- [Audenaerd, L., Massimini, P., & Orrell, G. \(2017\), *Trust, Public-Private Partnerships, and Transportation Safety: Applicability of the Aviation Model for Rail*](#)

Key Takeaways and Information Gaps

After presenting the literature recap, the subcommittee covered their key takeaways and information gaps. The subcommittee's five key takeaways are listed below:

- How the use of ESR produces actionable safety data used to identify hazards and mitigate safety risk
- The importance of a culture for occurrence reporting

- The importance of trust, shared initiatives, and strong feedback mechanisms for a successful confidential close call reporting system
- Opportunities for SSOAs to become involved in ESR programs as a third party
- Challenges of data mining (reporting bias, analytical bias, inadequate risk assessment)

The identified information gaps included a lack of standardized terminology (there is no common language to support data mining), trend analysis, psychology (how to deal with human information), emerging technology (gaps in knowledge of available technologies), and how the transit industry is consistently reporting safety concerns.

Employee Safety Reporting, SME Presentation and Q/A

Dr. Jordan Multer, Volpe Center

Dr. Jordan Multer, a Human Factors Engineer at the Volpe Center, gave a presentation on the Public Transportation Agency Safety Plan (PTASP) regulation requirements (available at transit.dot.gov/PTASP) for ESR and opportunities to use technology and innovation for ESR. PTASP defines an ESR System as “a process that allows all employees, including contract employees to report safety conditions to senior management.” Under the PTASP regulation, staff must report safety issues/concerns to senior management, and the use of ESR program monitoring includes the collection, analysis, and identification of information. Dr. Multer discussed the division of innovation and technology into either reporting or decision-making and action. Dr. Multer then presented a model that follows a six-step process:

- 1) Submitting report
- 2) Processing report
- 3) Analyzing report
- 4) Review, prioritize, and authorize safety mitigation
- 5) Implementation and monitoring of safety mitigation
- 6) Sharing of information

Public Comments Period

After Dr. Multer’s presentation, public attendees had the opportunity to ask questions to the ESR subcommittee and Dr. Multer. The discussion revolved around the importance of organizational culture and confidential close call reporting systems. One public member recommended that the ESR subcommittee consider organizational design and implementation in their workplan, as it is up to leadership to address the organizational challenges that come with moving away from current systems and practices. The public member also emphasized the importance of the policy element in the PTASP regulation. The public members and subcommittees discussed the importance of increasing empathy and trust within organizations, a keystone of success in the implementation of an ESR program.

Small Group Discussion Period

Employee Safety Reporting

The small group discussion identified key takeaways and information gaps from the presentations by the ESR subcommittee and Dr. Multer. Each subcommittee broke out into a small group, and conversations were led by an FTA facilitator and a Guidehouse co-facilitator. The ESR subcommittee discussed their workplan, milestones, and next steps for the January/February 2020 meeting.

Large Group Discussion #1

Key Takeaways and Information Gaps for Trespass and Suicide Prevention

During the large group discussion, facilitated by Guidehouse, committee members documented and prioritized key takeaways and information gaps for each subcommittee. Additionally, the facilitators presented the work plans and allowed TRACS members to provide feedback and input.

The table below captures the key takeaways, information gaps, and workplan of the Trespass and Suicide Prevention subcommittee:

TRACS Large Group Discussion, Sept 10, 2019 Topic Area: Trespass and Suicide Prevention Key Takeaways and Information Gaps	
Group Recap from Employee Safety Reporting Subcommittee	
Takeaways	Gaps
There is an increasing number of trespass and suicide deaths, particularly among young people	What is the readiness of advanced AI/sensor systems?
Transit systems are inherently easier to access than other modes of transportation	How is the effectiveness of different solutions measured?
Trespass and suicide data is inconsistent and often inaccessible	What is the proper post-incident treatment/procedures for employees witness to a suicide/trespass death?
There is a need for community education	
There is a need for improved operator training	
Lack of protections for medical examiners (MEs) leads to inconsistent data	
Group Recap from Roadway Worker Protections Subcommittee	
Takeaways	Gaps
Need better data (reliability and analysis)	Clustering research by FRA
Limited info on trespass prevention	Combining suicide and trespasser data/studies
Community Approach – needs to be at grassroots, family level	Case study or longitudinal study available?
Media reporting (copycat)	Focus area should be in an SMS format (suicide as psychological; trespass as structural or physical)
Replace ‘use technology’ with ‘prioritize and analyze technology’	Technologies: Integrating a Human Factors approach
Technologies need to be mode- and alignment-specific; need behavior detection	
Trespass and Suicide Prevention Subcommittee Workplan	
Milestones	
Line up Safety Specialist Presentations (Dr. Richard Gist; AI, train crew impact, media, organizational procedures)	
Recommendations Template	
Volpe and CUTR Update – input and understanding	
Next Steps	
Continue to expand on key takeaways	
Meetings	
Maintain monthly meetings rhythm	
Consider inviting public members	

Large Group Discussion #2

Key Takeaways and Information Gaps for Roadway Worker Protections

The table below captures the key takeaways, information gaps, and workplan of the RWP subcommittee:

TRACS Large Group Discussion, Sept 10, 2019 Topic Area: Roadway Worker Protection Key Takeaways and Information Gaps	
Group Recap from Employee Safety Reporting Subcommittee	
Takeaways	Gaps
Technologies are not universally applicable; need to consider geographical challenges	Data - how to turn it into action?
Growth and Expansion rate – trainings, education, new rules and standards need to keep up with the demand	Concerns about technology (complexities)
Balance of Safety and Ops	Maintenance Demands – older systems have undergone growth, expansion, and use. Need more operations on these systems
Hesitations about automating inspections	Training Tools and Modes – opportunity for innovation
Group Recap from Trespass and Suicide Prevention Subcommittee	
Takeaways	Gaps
Existing roadway worker voluntary standards are relatively robust	What are the various SSOAs doing with respect to RWP?
Opportunity exists for FTA to establish requirements for SSOAs	How mature/flexible is existing RWP technology?
FTA should learn from FRA's RWP rulemaking process	How is redundant protection defined? Is it consistent?
Emphasizing positive safety behavior & culture is critical	
Roadway Worker Protection Subcommittee Workplan	
Milestones	
Conduct industry survey with RTAs – limited to 9 or less RTAs; ideally have range of geography and size. Main objective is to determine what industry is doing with identifying RTAs to talk to subcommittee (Pam will talk to folks at 9/23 conference)	
Volpe and CUTR Updates (Prepare questions and a “what we want to know” list and Communicate input)	
Understand what is being used, how it's used, where it's working, and where it's not working	
Identify Safety Specialist (Los Angeles) to present at subcommittee meeting	
Next Steps	
Gauge interest in survey (Dig into technology – reach out to industry folks; Industry Gauge)	
Dig into existing experience, pilots, and technologies – Conduct an FRA studies review	
Recommend FTA create a baseline requirement	
Focus on social behavior	
Meetings	
Proposed to increase frequency to biweekly	

Large Group Discussion #3

Key Takeaways and Information Gaps for Employee Safety Reporting

The table below captures the key takeaways, information gaps, and workplan of the ESR subcommittee:

TRACS Large Group Discussion, Sept 10, 2019 Topic Area: Employee Safety Reporting Key Takeaways and Information Gaps	
Group Recap from Trespass and Suicide Prevention Subcommittee	
Takeaways	Gaps
Large agencies require behavior and culture shift	Applicability and Scalability to small agencies
Need for close-call “ambassador” or change agent with soft and technical skills and clout/respect to make the change	Need for taxonomy to categorize safety info
Need for common, agreed-upon definitions	NTD Manual – Commonality of descriptions
Determine appropriate media for employee communications and safety reporting	Policies that aren’t followed because they don’t work
	Clearly determining what help is needed (agency size)
	Need to expand ESRP to be more comprehensive (suicide/trespass data aren’t reported)
Group Recap from Roadway Worker Protections Subcommittee	
Takeaways	Gaps
Important to engage staff early/obtain buy-in	Evaluate all elements of an ESRP
ESRP must work within existing worker relationship context	How do you guarantee leadership buy-in?
Confidential reporting program development and execution should include a 3 rd party	What is the right data to collect through ESRP?
	Are there better ways to report back to employees?
	How is ESRB data protected and who has access?
Employee Safety Reporting Workplan	
Define Scope. (C3RS / Hazard identification AND ESR?)	
Extending opportunities to public members to join. (Mike Coplen)	
Subcommittee vendor briefings on technology	
Keep current schedule of monthly subcommittee meetings	
Further down the road – looking at a menu of options for a variety of sized agencies	

Close of Business and Next Steps

The TRACS PM concluded the two-day TRACS meeting by thanking committee members and the public for their participation and engagement. She summarized the accomplishments of the meeting and delivered an overview of the expectations for the next six months. She delivered guidance to the committee members on the next meeting date, encouraged them to complete a short survey requesting feedback about the meeting, and informed committee members that they would be receiving support to set up their monthly subcommittee teleconference calls.

Additional Materials

Presentations and slides are available on the TRACS website, located [here](#).