

Strategies for Deterring Trespassing on Rail Transit and Commuter Rail Rights-of-Way

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Strategies for Deterring Trespassing on Rail Transit and Commuter Rail Rights-of-Way

Prevent Tragedy on the Tracks 2022

DuPage Railroad Safety Council

October 20, 2022

Jeff Warner

Presentation Outline

- Part 1 - Project Objective and Overview
- Part 2 – Case Study Findings
- Part 3 - Countermeasure Strategies and Selection Guidance

Part 1 – Project Objective

To provide guidance on strategies to deter trespassing on rail transit and commuter rail rights-of way in exclusive and semi-exclusive rights-of-way, including within station areas outside designated pedestrian crossings.



Project Activities Overview



Literature Review and Survey of Practitioners

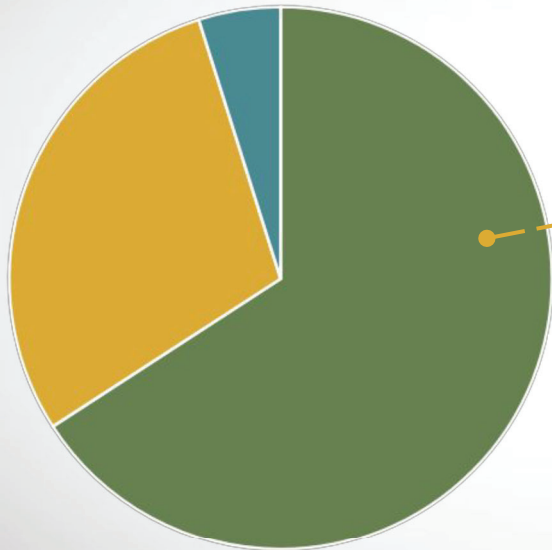
- **Literature Review & Current Practices**

- Main objectives to capture strategies to deter trespassing and document current applications of these strategies

- **Survey of Practitioners**

- Main objectives to catalog practices to mitigate trespassing and understand trespassing concerns and issues

Survey Respondents



27 out of 50 U.S.
Transit Agencies
Completed the Survey

59%

Light Rail

59%

Commuter Rail

64%

Heavy Rail

* 41 Unique Agencies or Locations Identified from the Survey Responses

Case Studies

Case Studies

```
graph LR; A[Case Studies] --- B[U.S. Agencies]; A --- C[Non-North American]; A --- D[Secondary Case Studies];
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U.S. Agencies

- Planned: 4 in-person case studies
- Adjusted: 5 virtual case studies

Non-North American

- Planned: 1 virtual case study
- Adjusted: 2 virtual case studies

Secondary Case Studies

- Fill gaps of understanding
- Discuss specific topics

Case Studies

•U.S. Case Studies

1. **MTA – Baltimore, MD** > Light Rail, Heavy Rail and Commuter Rail
2. **MTA Metro North – New York, NY** > Commuter Rail
3. **UTA – Salt Lake City, UT** > Light Rail and Commuter Rail
4. **DART – Dallas, TX** > Light Rail and Commuter Rail
5. **LA Metro – Los Angeles, CA** > Light Rail and Heavy Rail

•Non-North American Case Studies

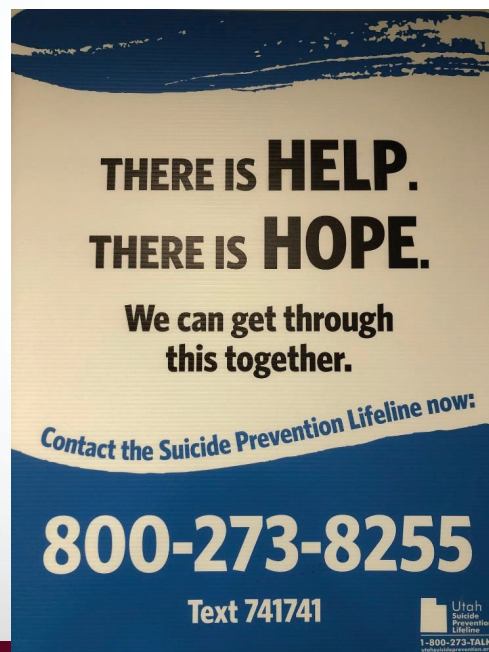
1. **ProRail – The Netherlands** > Commuter Rail
2. **London Underground – United Kingdom** > Heavy Rail

Part 2 - Case Study Findings

- Several new countermeasures identified during case studies not found in literature review or surveys
- False positives are a major hinderance to technology implementation
 - Several noted removal of applications due to false positives
- Much stronger belief that agencies have role in reducing suicides
- Significant effort training employees to recognize suicidal behavior



Utah – Hope Poles



Suicide Crisis Lines and Messaging

Out of the Darkness Community Walk
**Metro-North Railroad
TRACKS Team**

Together Railroads and Communities Walking to Fight Suicide!

Text **NEXT2U** to **741741** With **Help**, Comes **Hope**
or call, **1-800-273-TALK** (8255)
www.suicidepreventionlifeline.org

American
Foundation
for Suicide
Prevention DEPT OF THE
TRANSPORTATION SUICIDE
PREVENTION TRACKS CRISIS TEXT LINE



"I'm Listening"



London Underground

Thrive LDN
towards happier, healthier lives



It's OK to not feel OK

Feeling worried or stressed is normal during challenging times. However, it is really important that we take care of our mental health and wellbeing as much as possible.

This is a pack of little things you can do to keep yourself well and some useful ways to get support if you are finding it hard. Don't be afraid to ask for help if you need it.

> Be kind to yourself, find time to do something you enjoy.



> Connect with others, by phone, text, social media, write a letter or smile at your neighbours.



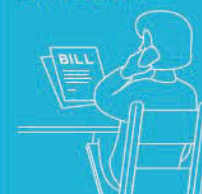
> Find different ways of staying active.



> Support is available to help you manage debt and money worries.



> Help is available if you are in personal difficulty or experiencing low income.



> Help is available if you are not OK.



Things can feel very hard at times. Support is available for whatever you are going through, there is hope and you are not alone.

These helplines are free and confidential.

Samaritans: 116 123

Whatever problems you are facing Samaritans are there to listen

SHOUT: Text Shout to 85258

Text service for support with any mental health concern (it will not show up on your bill)

CRUSE: 0808 808 1677

Support and advice if you are grieving or dealing with bereavement and loss of a loved one

If you find yourself in urgent financial or personal need, there is support and information available for you.

Turn2us: 0808 802 2000

Advice with accessing crisis grants, welfare benefits and where to find debt help

Shelter: 0808 800 4444

(free helpline) or 0344 515 1540 (London helpline, charges may apply) Advice after a sudden drop in income, including housing and household bills

The Trussell Trust: 0808 208 2138

Advice when facing financial difficulties, as well as helping you find your local foodbank for an emergency food parcel

If you are worried about money or need free, impartial advice, there is support available.

Debt Free London: 0800 808 5700

Call or WhatsApp message for assistance on a wide range of issues, including council tax, rent arrears, utility bills and benefit overpayments.

Christians Against Poverty: 0800 328 0006

Advice on budgeting and debt support, regardless of your faith or background.

Being active reduces stress and helps us sleep better.

If you have access to a garden or it is safe for you to visit your local park, then get some fresh air, go for at least a 20-minute walk or a run.

If getting out and moving around is not easy or possible for you, keep moving about indoors as often or as much as you can.

Having an exercise routine which you can do at home or locally outdoors is really important and will help give a positive influence on our self-esteem and self-worth.

Many of us are seeing family and friends less and not taking part in many of our usual activities.

It's important that we stay connected. Get in touch with family and friends to share your thoughts and have a chat.

If talking to a friendly stranger is easier, you can call **Samaritans** on **116 123** – a free helpline for you to talk any time you like, in your own way, about whatever's getting to you.

If you're online, the NHS website always has the latest information to keep you up to date at [nhs.uk/coronavirus](https://www.nhs.uk/coronavirus)

It's OK to treat yourself to the things that make you smile and make you feel good.

Don't be hard on yourself. Make yourself a hot drink, watch a film, read a book, or try a crossword.

You may want to limit your intake of daily news as too much coverage can be overwhelming and make you stressed.

If you are online, visit www.good-thinking.uk for free, NHS approved digital tools to help manage anxiety, low mood, sleeping problems and stress.

Thrive LDN is a partnership between London's NHS, public services, the Mayor of London, councils, and charities to promote better mental health for everyone. We need to think and talk more about mental health and wellbeing in our neighbourhoods, our family and friendship groups and at work.

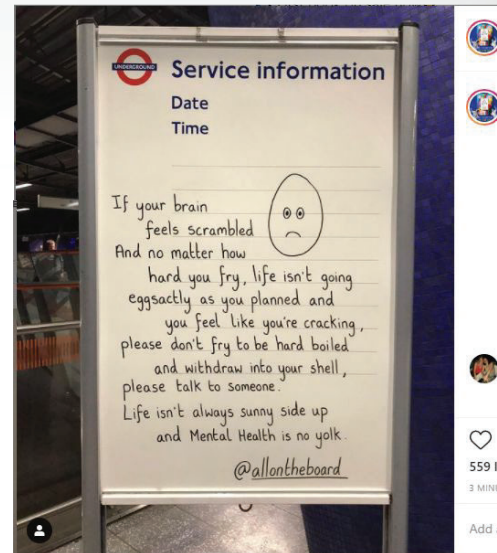
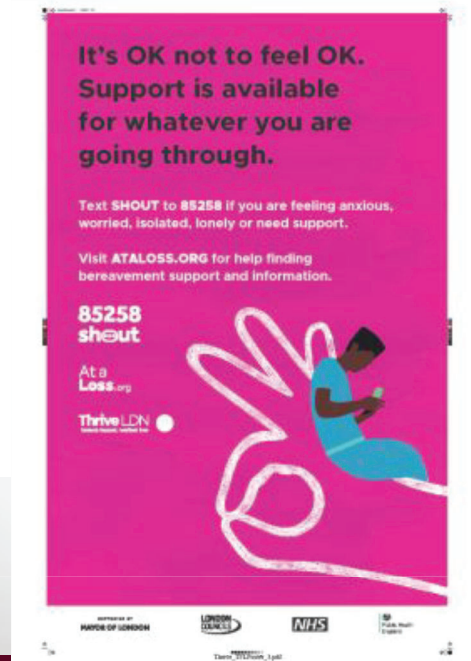
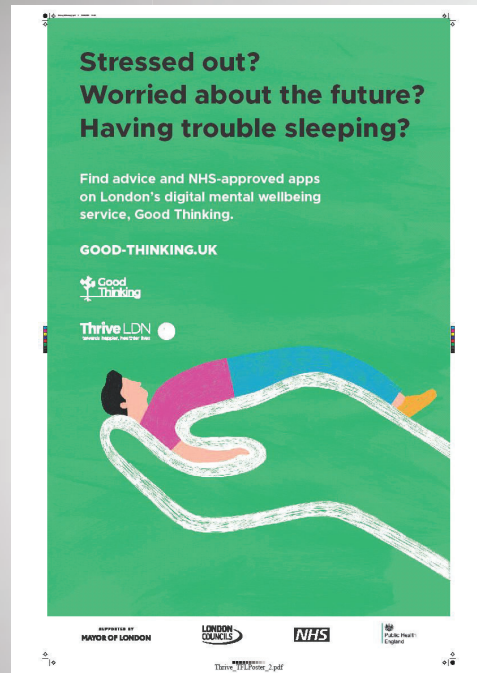
Find more Thrive LDN resources online:
www.thriveLDN.co.uk/resources

Follow us on social media: @ThriveLDN

Scan me if you have a smart phone



London Underground

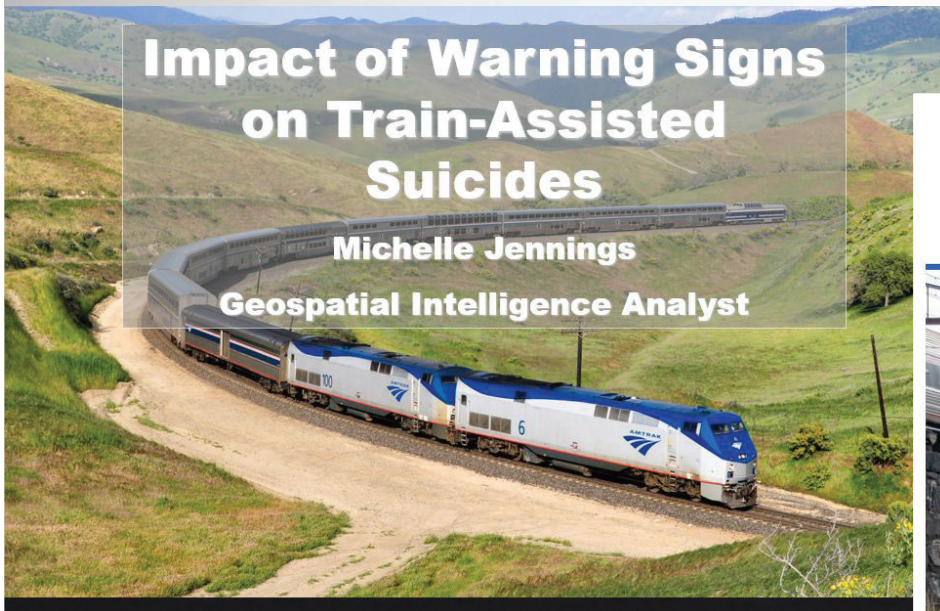


Amtrak – Data Analytics

Impact of Warning Signs on Train-Assisted Suicides

Michelle Jennings

Geospatial Intelligence Analyst



WHERE NEXT | CXO Priorities | June 25, 2019

Unseen: How Businesses Protect the Public

By Jeffrey Peters and Matt Piper

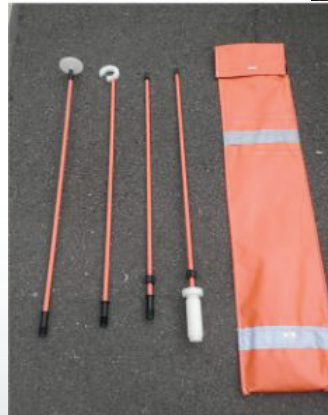


Part 3 – Countermeasure Strategies and Selection Guidance

14 Countermeasure Strategies Grouped into Three Categories:

1. Engineering and Physical Measures

- Fencing, channelization, and barriers
- Landscaping
- Anti-trespassing guard panels
- Platform screen doors
- Surveillance and detection
- Lighting
- Approaching train alerts
- Track retrieval device



Trespassing Countermeasure Strategies

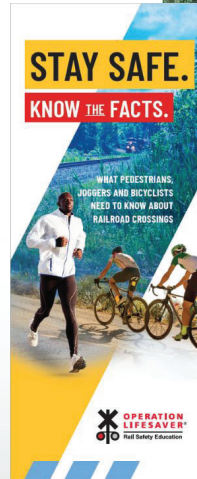
14 Countermeasure Strategies Grouped into Three Categories:

2. Education and Engagement

- Signage
- Community-based collaboration
- Public and industry events/campaigns
- Employee intervention training
- Hope poles

3. Enforcement

- Law enforcement and patrol



THERE IS HELP.
THERE IS HOPE.

**We can get through
this together.**

Contact the Suicide Prevention Lifeline now!

800-273-8255

Text 741741

Utah
Suicide
Prevention
Lifeline
1-800-273-TALK
utahsuicideline.org

Ease of Implementation Table

Tier 1—Strategies that are easiest and fastest to implement at low operating and capital costs

- Track retrieval device
- Signage
- Hope Poles

Tier 2—Strategies that are easiest to implement but typically involve some operating costs or coordination with outside entities (often administrative)

- Community-based collaboration
- Public and industry events/campaigns
- Employee intervention training
- Law enforcement and patrol

Tier 3—Strategies that require longer lead time and typically involve higher operating costs and/or capital costs

- Fencing, channelization, and barriers
- Landscaping
- Anti-trespass guard panels
- Lighting

Tier 4—Strategies that require complex implementation, highest costs, and complex maintenance activities

- Platform screen doors (typically considered for heavy rail only)
- Surveillance and detection
- Approaching train alerts

Countermeasure Summary Matrix

Category	Countermeasure	Rail System Type	Problem Location	Costs	Type of Trespassing Addressed	Target Root Cause	Companion Countermeasure	Ease of Implementation	Benefit-Cost Tradeoffs
Engineering and Physical Measures	Fencing, Channelization, and Barriers	Light (L), Heavy (H), Commuter (C)	<ul style="list-style-type: none"> • Rights-of-way • Equipment and maintenance yards • Stations and platforms 	\$-\$-\$-\$	Trespassing (T), Suicide (S)	<ul style="list-style-type: none"> • Living/Loitering in Right-of-Way (ROW) • Self-Harm Intent • Shortcut/Route Convenience • Criminal Behavior • Other 	<ul style="list-style-type: none"> • Landscaping • Anti-trespass Guard Panels • Surveillance and Detection • Approaching Train Alerts • Signage • Community-Based Collaboration • Law Enforcement and Patrol 	Tier 3	<ul style="list-style-type: none"> • May not have issues with cutting or scaling if made with the heavy metal of smaller mesh size. • Can be installed at most of the rights-of-way, but some areas are not designed for fencing. • Regular inspection and maintenance are needed, especially for regular fencing systems.
Engineering and Physical Measures	Landscaping	L, H, C	<ul style="list-style-type: none"> • Rights-of-way • Stations and platforms 	\$	T	<ul style="list-style-type: none"> • Shortcut/Route Convenience • Other 	<ul style="list-style-type: none"> • Fencing, Channelization, and Barriers 	Tier 3	<ul style="list-style-type: none"> • Visibility can be improved with vegetation management and removal. • However, removing vegetation could increase the need to install fencing or other barriers.
Engineering and Physical Measures	Anti-trespass Guard Panels	L, H, C	<ul style="list-style-type: none"> • Rights-of-way • Equipment and maintenance yards • Stations and platforms 	\$	T	<ul style="list-style-type: none"> • Living/Loitering in ROW • Shortcut/Route Convenience • Criminal Behavior • Other 	<ul style="list-style-type: none"> • Fencing, Channelization, and Barriers • Surveillance and Detection • Lighting • Signage 	Tier 3	<ul style="list-style-type: none"> • Provides a ground-level physical barrier that can deter trespassing. • Panels could prevent railroad employees from accessing the rights-of-way or trap trespassers on the right-of-way.

Interactive Spreadsheet

Rail System Type	Problem Location	Type of Trespassing Addressed	Target Root Cause	Ease of Implementation
Commuter Rail	Equipment and maintenance yards	Suicide	Criminal Behavior	Tier 1
Heavy Rail	Non-specific	Trespassing	Living/Loitering in ROW	Tier 2
Light Rail	Rights-of-way		Lost/Dropped Items	Tier 3
	Stations and platforms		Other	Tier 4
			Self-harm Intent	
			Shortcut/Route Convenience	

Category	Countermeasure	Costs	Companion Countermeasure	Ease of Implementation
Engineering and Physical Measures	Fencing, Channelization, and Barriers	\$-\$-\$-\$	Landscaping;Anti-Trespass Guard Panels;Surveillance and Detection;Approaching Train Alerts;Signage;Community-based Collaboration;Law Enforcement and Patrol	Tier 3
	Landscaping	\$	Fencing, Channelization, and Barriers	Tier 3
	Anti-trespass guard panels	\$	Fencing, Channelization, and Barriers;Surveillance and Detection;Lighting;Signage	Tier 3
	Platform Screen Doors (PSDs)	\$\$\$	Surveillance and Detection;Approaching Train Alerts	Tier 4
	Surveillance and Detection	\$-\$-\$-\$	Fencing, Channelization, and Barriers;Anti-Trespass Guard Panels;Platform Screen Doors;Lighting;Employee Intervention Training;Hope Poles;Law Enforcement and Patrol	Tier 4
	Lighting	\$	Anti-Trespass Guard Panels;Surveillance and Detection;Hope Poles	Tier 3
	Approaching Train Alerts	\$	Fencing, Channelization, and Barriers;Platform Screen Doors	Tier 4
	Track Retrieval Device	\$	Signage;Community-based Collaboration;Public and Industry Events/Campaign	Tier 1
Education and Engagement	Signage	\$	Fencing, Channelization, and Barriers;Anti-Trespass Guard Panels;Track Retrieval Device;Community-based Collaboration;Public and Industry Events/Campaigns;Hope Poles;Law Enforcement and Patrol	Tier 1
	Community-Based Collaboration	\$	Fencing, Channelization, and Barriers;Track Retrieval Device;Signage;Public and Industry Events/Campaigns;Law Enforcement and Patrol	Tier 2
	Public and Industry Events/Campaigns	\$	Track Retrieval Device;Signage;Community-based Collaboration;Law Enforcement and Patrol	Tier 2
	Employee Intervention Training	\$	Surveillance and Detection	Tier 2
	Hope Poles	\$	Surveillance and Detection;Lighting;Signage	Tier 1
Enforcement	Law Enforcement and Patrol	\$	Fencing, Channelization, and Barriers;Surveillance and Detection;Signage;Community-based Collaboration;Public and Industry Events/Campaigns	Tier 2

Interactive Spreadsheet – Scenario A

Rail System Type	Problem Location	Type of Trespassing Addressed	Target Root Cause	Ease of Implementation
Commuter Rail	Equipment and maintenance yards	Suicide	Criminal Behavior	Tier 1
Heavy Rail	Non-specific	Trespassing	Living/Loitering in ROW	Tier 2
Light Rail	Rights-of-way		Lost/Dropped Items	Tier 3
	Stations and platforms		Other	Tier 4
			Self-harm Intent	
			Shortcut/Route Convenience	

Category	Countermeasure	Costs	Companion Countermeasure	Ease of Implementation
Engineering and Physical Measures	Fencing, Channelization, and Barriers	\$	Landscaping; Anti-Trespass Guard Panels; Surveillance and Detection; Approaching Train Alerts; Signage; Community-based Collaboration; Law Enforcement and Patrol	Tier 3
	Landscaping	\$	Fencing, Channelization, and Barriers	Tier 3
	Anti-trespass guard panels	\$	Fencing, Channelization, and Barriers; Surveillance and Detection; Lighting; Signage	Tier 3
	Surveillance and Detection	\$\$-\$\$\$	Fencing, Channelization, and Barriers; Anti-Trespass Guard Panels; Platform Screen Doors; Lighting; Employee Intervention Training; Hope Poles; Law Enforcement and Patrol	Tier 4
	Lighting	\$	Anti-Trespass Guard Panels; Surveillance and Detection; Hope Poles	Tier 3
Education and Engagement	Approaching Train Alerts	\$	Fencing, Channelization, and Barriers; Platform Screen Doors	Tier 4
	Signage	\$	Fencing, Channelization, and Barriers; Anti-Trespass Guard Panels; Track Retrieval Device; Community-based Collaboration; Public and Industry Events/Campaigns; Hope Poles; Law Enforcement and Patrol	Tier 1
	Community-Based Collaboration	\$	Fencing, Channelization, and Barriers; Track Retrieval Device; Signage; Public and Industry Events/Campaigns; Law Enforcement and Patrol	Tier 2
Enforcement	Public and Industry Events/Campaigns	\$	Track Retrieval Device; Signage; Community-based Collaboration; Law Enforcement and Patrol	Tier 2
	Law Enforcement and Patrol	\$	Fencing, Channelization, and Barriers; Surveillance and Detection; Signage; Community-based Collaboration; Public and Industry Events/Campaigns	Tier 2

Final Project Products

- **TCRP Research Report 233**

- **Strategies for Deterring Trespassing on Rail Transit and Commuter Rail Rights-of-Way, Volume 1: Guidebook**

(<https://www.trb.org/Publications/Blurbs/182672.aspx>)

- Interactive Spreadsheet
- Video <https://vimeo.com/672388271>

- **Strategies for Deterring Trespassing on Rail Transit and Commuter Rail Rights-of-Way, Volume 2: Research Overview**

(<https://www.trb.org/main/blurbs/182671.aspx>)



Thank You!

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