



17 OCTOBER 2018

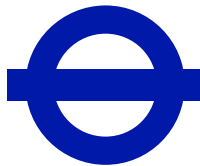
## Transport for London: Bus Safety Standard

Kerri Cheek, Bus Safety Development Manager



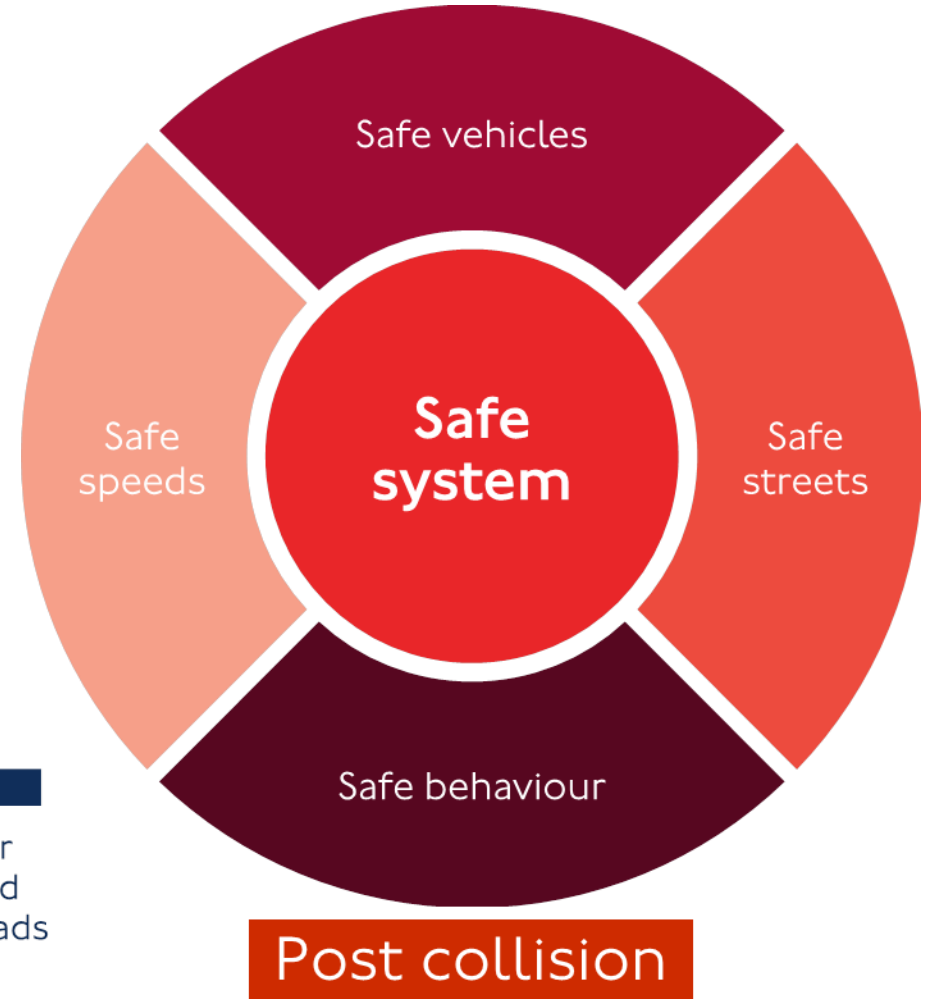
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# Vision Zero for Buses



Loss of life and serious injuries are not acceptable nor inevitable.

0



### Countdown to Vision Zero

**2022**

**2030**

**2041**

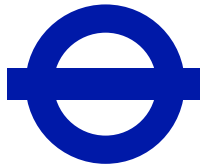
70 per cent reduction in people killed or seriously injured in or by a bus (based on 2005-09 baseline)

No one killed in or by a London bus

No one killed or seriously injured on London's roads



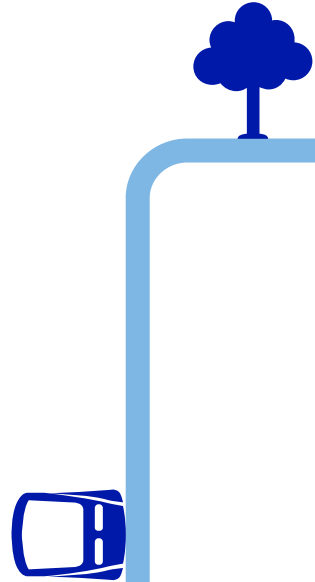
# Bus Safety Standard



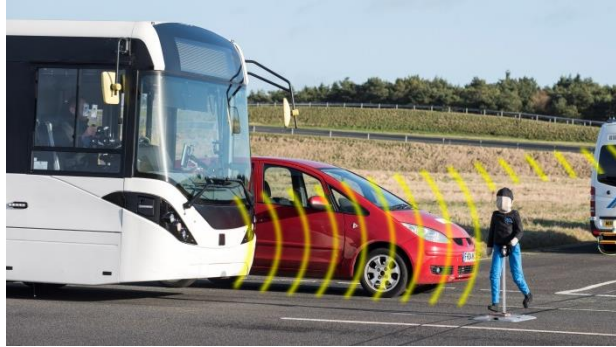
# Bus Safety Standard - video

<https://www.youtube.com/watch?v=c9Pr2fmgAd4&feature=youtu.be>

Bus Safety Standard

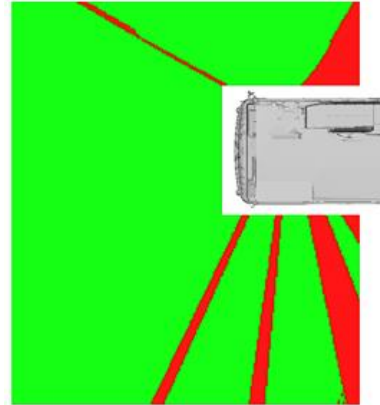


# Announcements



Advanced Emergency Braking

Vision Standard for

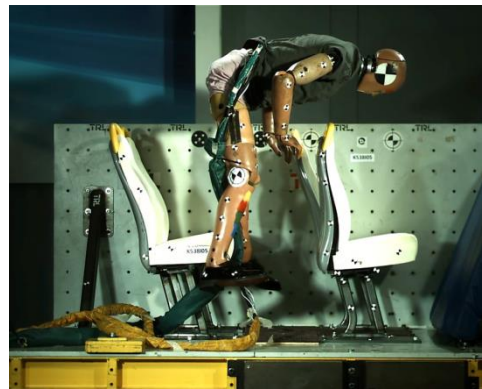


Runaway bus prevention

Acoustic Conspicuity



Occupant Friendly



Pedal Application Error

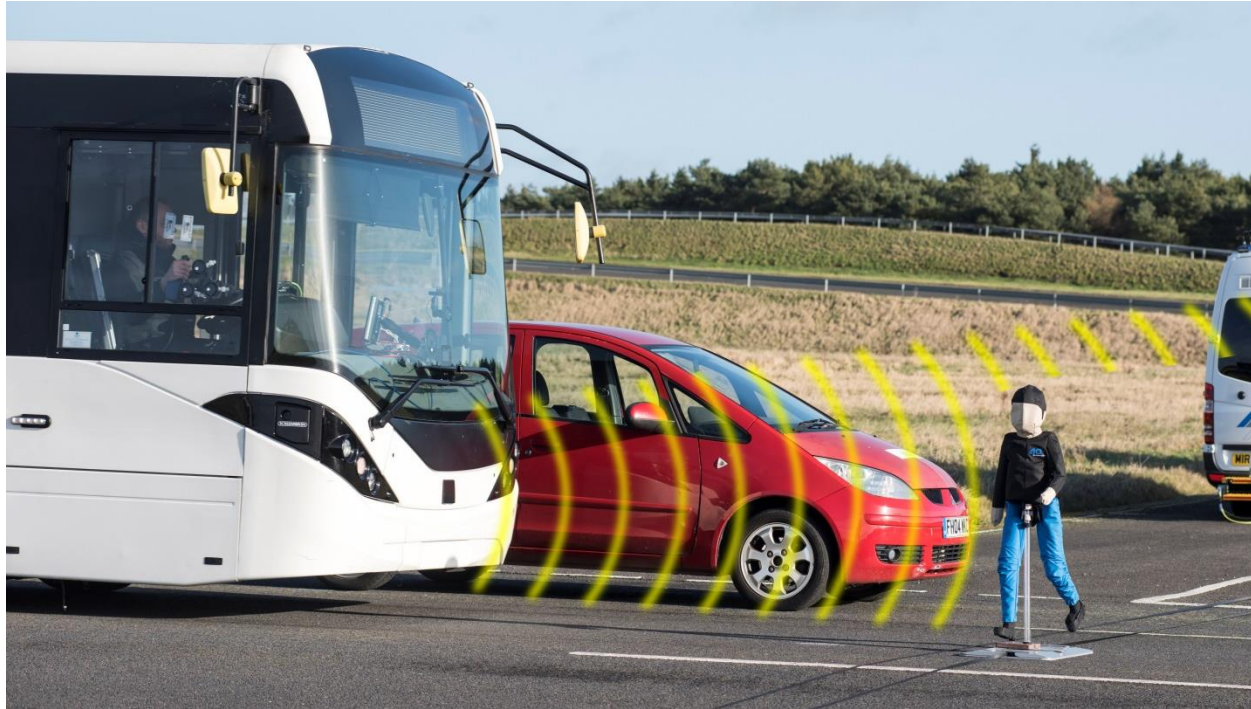
Intelligent Speed Assistance



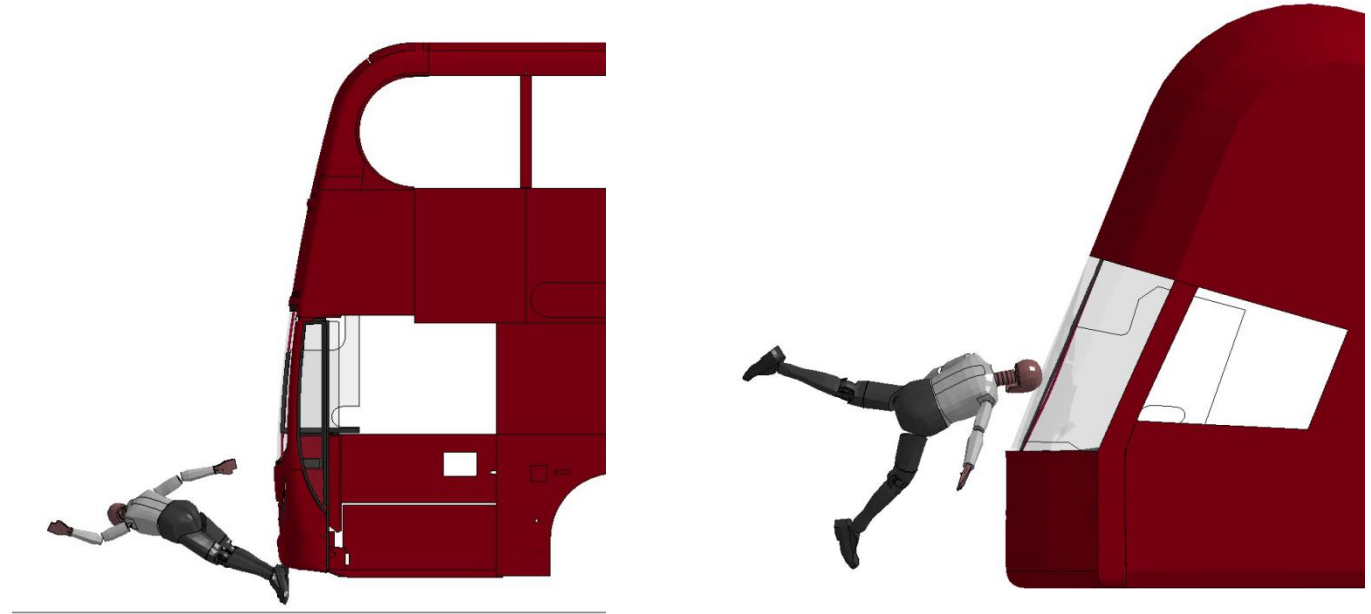
VRU Frontal Crashworthiness



# Advanced Emergency Braking



# VRU Frontal Crashworthiness

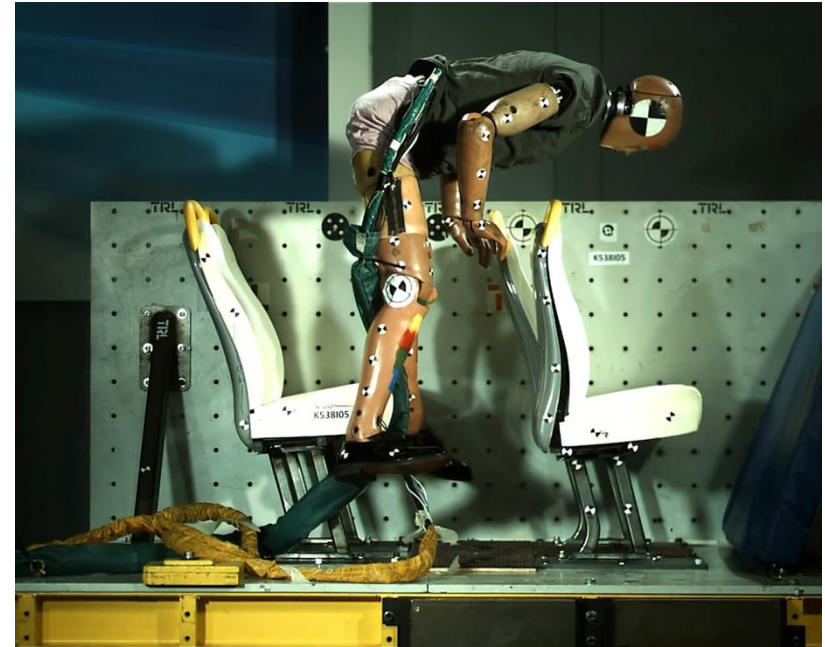
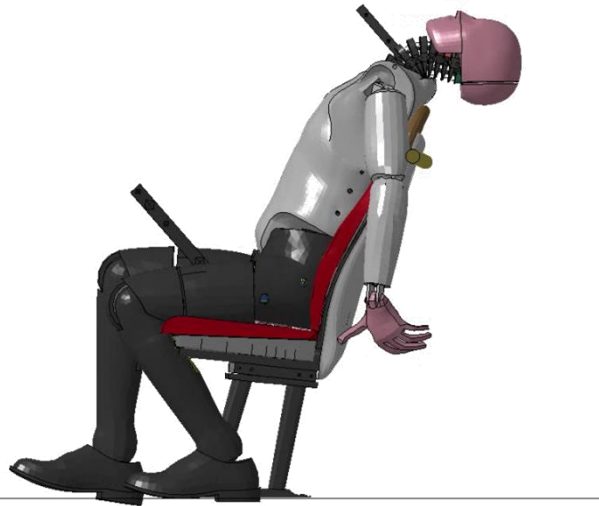
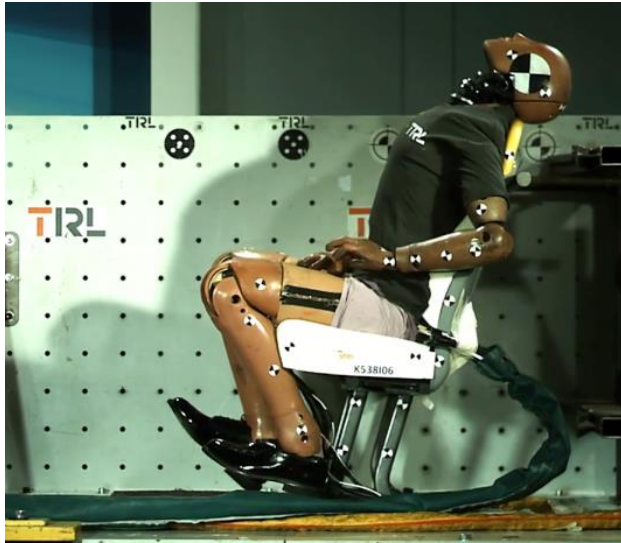
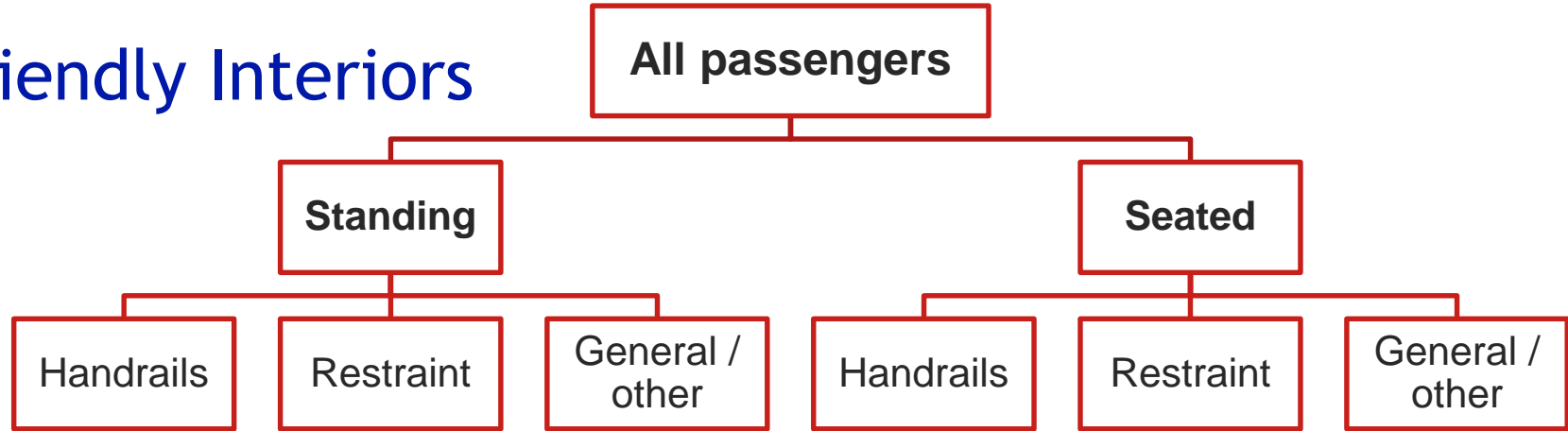


VRU Frontal Crashworthiness





# Occupant Friendly Interiors



# Roadmap

|   |   |                                    | 2018      | 2019      | 2020      | 2021     | 2022      | 2023 | 2024     | 2025     | 2026 | onwards |  |
|---|---|------------------------------------|-----------|-----------|-----------|----------|-----------|------|----------|----------|------|---------|--|
| <b>Driver Assist</b>  | <b>Intelligent Speed Assistance (ISA)</b>                           | Standalone mandatory               | Required  |           |           |          |           |      |          |          |      |         |  |
|   | <b>Advanced Emergency Braking (AEB)</b>                             | Car, Pedestrian & Cyclist partners |           |           | Preferred |          |           |      | Required |          |      |         |  |
|   | <b>Runaway Bus Prevention</b>                                       | Interlock system                   |           | Preferred |           | Required |           |      |          |          |      |         |  |
|   | <b>Pedal Application Error – Foot placement</b>                     | Brake toggling                     |           |           | Preferred |          | Required  |      |          |          |      |         |  |
|   |   | Pedal standardisation              |           |           | Preferred |          | Required  |      |          |          |      |         |  |
|   | <b>Pedal Application Error – Recovery</b>                           | Pedal indicator lights             |           | Required  |           |          |           |      |          |          |      |         |  |
|   |   | Pedal acoustic feedback            |           | Preferred |           | Required |           |      |          |          |      |         |  |
|   | <b>Pedal Application Error – Intervention</b>                       | AEB logic                          |           |           | Preferred |          |           |      | Required |          |      |         |  |
|   | <b>Vision – Direct &amp; indirect vision standard</b>               | Direct vision                      |           | Preferred |           |          | Required  |      |          |          |      |         |  |
|   |   | Enhanced indirect vision           |           |           | Preferred |          |           |      |          | Required |      |         |  |
|   |   | Class II CMS                       |           |           | Preferred |          | Required  |      |          |          |      |         |  |
|   |   | Blind spot Mirrors                 |           | Required  |           |          |           |      |          |          |      |         |  |
|   |   | Blind spot CMS                     |           |           | Preferred |          | Required  |      |          |          |      |         |  |
|   |   | Reversing CMS                      |           | Required  |           |          |           |      |          |          |      |         |  |
| Front & Nearside  |   |                                    |           | Preferred |           |          |           |      | Required |          |      |         |  |
| <b>Vision – Internal obscuration</b>                          | Driver assault screens  |                                    | Required  |           |           |          |           |      |          |          |      |         |  |
| <b>Partner Assist</b>   | <b>Acoustic Conspicuity</b>   | Acoustic Vehicle Alerting System   | Required  |           |           |          |           |      |          |          |      |         |  |
| <b>Partner Protection</b>                                     | <b>VRU Frontal Crashworthiness – Bus front end design</b>           | Minimum geometry                   |           | Preferred |           | Required |           |      |          |          |      |         |  |
|   |   | Optimised geometry                 |           |           |           |          | Preferred |      | Required |          |      |         |  |
|   | <b>VRU Frontal Crashworthiness – VRU impact protection</b>          | Energy absorption                  |           |           |           |          | Preferred |      | Required |          |      |         |  |
|   |   | Wiper protection                   |           | Preferred |           | Required |           |      |          |          |      |         |  |
| <b>VRU Frontal Crashworthiness – Mirror strike protection</b> | Class II CMS  |                                    |           | Preferred |           | Required |           |      |          |          |      |         |  |
| <b>Occupant Protection</b>                                    | <b>Occupant Friendly Interiors – Visual inspection &amp; design</b> | Level 1 requirements               | Preferred |           |           | Required |           |      |          |          |      |         |  |
|   |   | Level 2 requirements               |           |           | Preferred |          |           |      | Required |          |      |         |  |
|   | <b>Occupant Friendly Interiors – Slip protection</b>                | Surface friction requirements      | Required  |           |           |          |           |      |          |          |      |         |  |



# Casualty Benefits



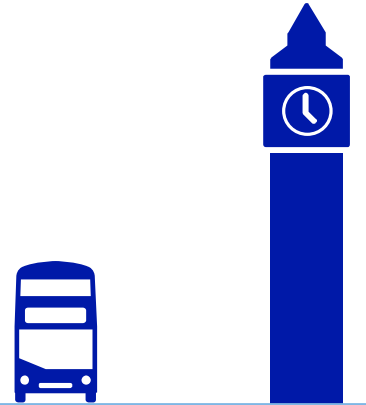
# Bus Safety Innovation Fund

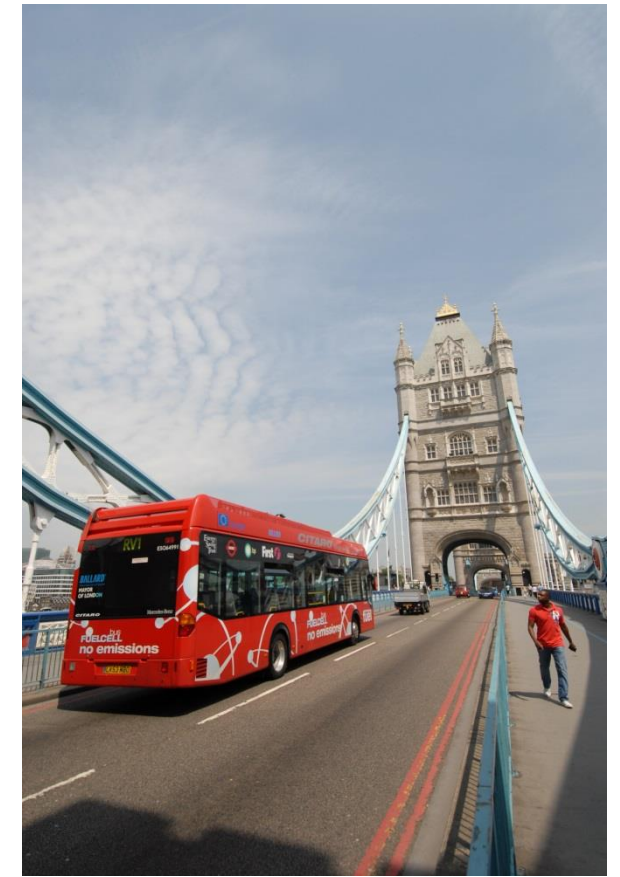


# Bus Safety Innovation Challenge



Thank you  
Questions?





## Contact

Kerri Cheek  
Bus Safety Development Manager  
Bus Operations Directorate, TfL

[kerricheek@tfl.gov.uk](mailto:kerricheek@tfl.gov.uk)



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