

# PDWG Task Group – Safety Shares

## Summary on a page

**Purpose of the Meeting** - to investigate whether a Design Close Calls process similar to that used by Network Rail might provide learning and sharing benefits for health, safety and wellbeing considerations for the National Highways community

### Attendees

- Martin Partington (Jacobs) - Chair
- Doug Potter (Arcadis)
- Sophie Gwynne (Arcadis)

### Attendees

- Jim Gallagher (National Highways)
- Sam Allin (Jacobs)

### Apologies

- Rob Butcher (Jacobs)
- Stephanie Goldsmith (Skanska))
- Tim Goddard (Arcadis)

### Last meeting

- Finalised 3 safety shares (following 3 pages)
- Reviewed 7 further to get to a final draft for review by next meeting
- And another 6 titles with information to be gathered together

### Outstanding issues

- which websites to publish:
  - Supply chain Safety Hub,
  - National Highways Home, Safe and Well,
  - or both: saved on one but a webpage developed for both

### Outcomes and Next Steps

- Next meeting on 27th July chaired by Doug Potter, due to leave clashes

Ref Number	Share Title	Status
WLD.001	Manual Handling - Low Level Retaining Structures	Finalised
WLD.002	Impact with Moving Vehicle - Positioning of Assets	Finalised
WLD.003	Manual Handling - Revetment Finishes	Finalised
WLD.004	Temporary Traffic Management Arrangements – Asset Impact Avoidance	Drafted
WLD.005	Working at Height Maintenance of Technology	Reviewed
WLD.006	Health and Wellbeing - Carpal Tunnel Syndrome in the Office/Site Environment	Reviewed
WLD.007	Verge and Central Reserve Treatments – Avoiding Animals on the Network	Reviewed
WLD.008	Collision/Impact – Hit by Falling Object	Reviewed
WLD.009	Site Visit - Failure to Manage Access to the Place of Work	Reviewed
WLD.010	Procedural - Unauthorised Access to a Confined Space	Reviewed
WLD.011	Working at Height - When Is a Fence Not a Fence	Drafted
WLD.012	Bridge Strike - Materials Delivery	identified
WLD.013	Strategic Road Network (SRN) Interaction - Live Carriageway Working	identified
WLD.014	Stress Management	identified
WLD.015	CDM Designer Duty – Failure to Provide Adequate Access	identified
WLD.016	Retaining Wall Component - Other	identified



### Description of Event

*A flat edge solution was designed as a low-level retaining structure without consideration for working area*

### Population at Risk

Construction and Maintenance Workers, Inspectors and Travelling Members of Public (MoP)

### Hazardous Activity and Residual Risk Description

- Construction of low-level retaining structure using flag on edge with restricted site access requires manual handling with an assessed residual risk of 'an almost certain' likelihood of extreme harm incurred.
- A flag on edge retaining structure has a shorter design life than other solutions, increased construction period and requires a shorter interval between inspections.

### Potential consequences of this event

- In 2021 HSE estimated that there were 40,000 workers suffering with musculoskeletal disorders.
- The musculoskeletal disorder incident rate is 1.8%.
- Extended period of TTM required leading to greater exposure to workers and public.

### Safety Hub Alert Database

- Sub-category 2 MoP TTM incursions has 8 alerts including 1 fatality.



Photo of flag on edge retaining structure

### Potential Mitigation Measures



#### Design

- Eliminate manual handling of materials by designing a pre-cast concrete panel solution that requires mechanical handling.

#### Construction

- Design temporary works for access and installation of precast panels to reduce TTM duration and reduce onsite manhours.

#### Maintenance / Operations

- Periodically assess safety and serviceability at a reduced frequency when precast panels are used.



Photo precast concrete panels

### Further Guidance and Reading

- [RtB 8](#) – Manual Handling
- [RtB 26](#) – Safety by Design
- [DMRB GD 304](#) – Designing health and safety into maintenance
- [INDG 143 Manual handling at work](#) – a brief guide
- [L23 Manual handling](#), Manual handling operations regulations 1992. Guidance on regulations.



Please send ideas for Whole Life Design safety shares to [wellbeing@nationalhighways.co.uk](mailto:wellbeing@nationalhighways.co.uk)

LEAN

Alternative  
Materials

Alternative  
Plant

Reduced  
Labour

Improved  
end user  
benefits

Reduced  
Activity  
Duration

Reduced  
Defects

Reduced  
Reportable  
Accidents





## IMPACT WITH MOVING VEHICLE – POSITIONING OF ASSETS

WLD.002

### Description of Event

*A designer has positioned assets (a traffic loop box) on live carriageway side of vehicle restraint system*

#### Population at Risk

Maintenance Contractor  
Workers and Inspectors

#### Hazardous Activity and Residual Risk Description

- Live carriageway working exposes workers maintaining and inspecting assets to the potential of being struck by a Member of Public (MOP) vehicle with an assessed residual risk of an almost certain likelihood of extreme harm being incurred.
- A low load class of an asset cover is a hazard to vehicles driving on the shoulder with an assessed residual risk of an unlikely likelihood of minor harm being incurred.



Photo traffic loop box road side of vrs

#### Potential consequences of this event

- The residual risk requires (TTM) Temporary Traffic Management solution to be designed and implemented, negatively impacting road users' wellbeing.
- Putting TTM solutions in place is a hazardous activity placing workers at risk of harm. Sept 2021 National Highways performance report showed 49 vehicle incursions.



Photo of an Impact Protection Vehicle following a vehicle strike

#### Safety Hub Alert Database

- Sub-category 2 MOP incursions has 8 alerts including 1 fatality.

#### Potential Mitigation Measures

##### Design

- Provide a safe working area by positioning assets set back behind a suitable vehicle restraint system.



- Provide information and instructions for workers on load class of cover and safe route from maintenance vehicle to working area within a Maintenance and Repair Statement.

##### Construction

- Submit Request for Clarification to National Highways Project Manager.
- Raise safety observations.

##### Maintenance / Operations

- Submit Works Request to provide a safe working area and raise safety observation.
- Design a suitable TTM solution before working on live carriageway.

#### Further Guidance and Reading

- [DMRB TD 131](#) Roadside technology and communications
- [DMRB GD 304](#) – Designing health and safety into maintenance
- [RtB 26 – Safety by Design](#)
- [CIRIA C686](#) Safe access for maintenance and repair. Guidance for designers



Please send ideas for Whole Life Design safety shares to [wellbeing@nationalhighways.co.uk](mailto:wellbeing@nationalhighways.co.uk)

LEAN

Reduced  
PlantReduced  
LabourReduced  
TransportationImproved  
end user  
benefitsReduced  
Activity  
DurationReduced  
DefectsReduced  
Reportable  
Accidents



Description of Event

*A designer has specified a block paving finish for a bridge revetment increasing repetitive strain or risk of slips*

Population at Risk

Maintenance Contractor Workers and Inspectors

Hazardous Activity and Residual Risk Description

- Maintaining and inspecting a bridge revetment may expose workers to tripping on uneven ground hazards, slipping and falling on slopes with an assessed residual risk of an almost certain likelihood of minor harm and a may happen likelihood of moderate harm being incurred.



Photo of a bridge revetment without surface stabilization treatment

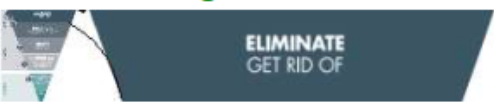
Potential consequences of this event

- This residual risk may require a safe working at height solution to be designed and implemented, such as a rope access system.
- A finish that cannot be easily and quickly maintained or one with a short design life increases the number of man-hours to which workers are exposed to the hazards and risks.
- A soft landscaped revetment exposes maintenance and inspection workers to a higher number of man-hours compared with a hard landscaping finish.

Safety Hub Alert Database

- Sub-category 2 Slips trips & falls (same level) for Housekeeping has 13 alerts.

Potential Mitigation Measures



Design

- Design bridges without sloping revetments.
- Specify revetment with a slip resistant hard finish.
- Evaluate block paving with sprayed concrete solutions.

Construction

- Submit Request for Clarification.
- Raise safety observations.

Maintenance / Operations

- Submit Works Request to provide a hard landscaped finish and raise safety observation.
- Design suitable engineering controls when working on sloping revetments.

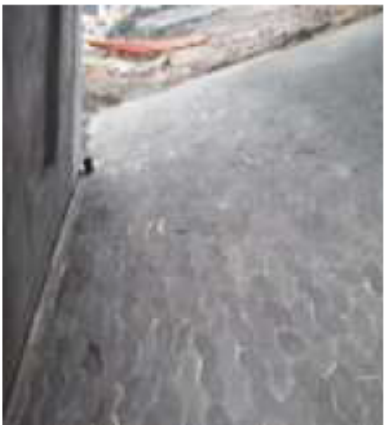


Photo of a bridge revetment with block paving surface treatment

Further Guidance and Reading

- [BD 97/12](#) – The Assessment of scour and other Hydraulic Actions at Highways Structures.
- [CD 351](#) The design and appearance of highway structures
- [LD 117](#) Landscape design.
- [DMRB GD 304](#) – Designing health and safety into maintenance
- [CIRIA C686](#) Safe access for maintenance and repair. Guidance for designers.



Please send ideas for Whole Life Design safety shares to [wellbeing@nationalhighways.co.uk](mailto:wellbeing@nationalhighways.co.uk)

LEAN

Improved end user benefits

Reduced Defects

Reduced Reportable Accidents