

National Highways Principal Designer Working Group

Meeting No.31

Thursday, 29th March 23 – 10.00 am – 15.00 pm.

Jacobs - 7th Floor, 2 Colmore Square, 38 Colmore Circus, Queensway, Birmingham, B4 6BN

Agenda

Name	Initials	Position	Organisation
Richard Wilson (Chair)	RW	H&S Director C&P	National Highways
Doug Potter (Secretary)	DP	TA HSW Lead - Principal Designer Manager	Arcadis
Tim Goddard	TG	Principal Designer Manager	Arcadis
Toria Thomas	TT	Principal Designer	Arup
Pav Singh	PSi	Technical Director / Principal Designer Manager	Arcadis
Sam Allin	SA	CDM Manager	LTC
Jonathon Giles	JG	Principal Designer Manager	Rambolt
Natalie Mansell	NM	Head of Safety – SR, H<	Atkins
David Owens	DO	Digital Manager	WSP
Charlotte Cook	CC	WHS Lead	Arcadis
Mark Lawton	MLo	Head of Engineering Surveying and GIS	Skanska
Tim Walker	TW		Galliford Try
Nick Boyle	NB	Technical Manager	Balfour Beatty
Attended via Teams			
Tim Bowes	TB	Principal Designer Manager	Atkins
Steve Yates	SY	PD / CDM Advisor	Jacobs
Paul Brown	PB	Technical Manager	WSP Group
Dave Olorenshaw	DO	Area Manager	Kier
Jim Gallagher	JG	Prin Struct. Advisor (SES)	National Highways
Simon Wilkinson	SWi	Technical Director	AECOM
Martin Partington	MP	Principal Engineering Man.	Jacobs
Ali Chaudry	AC	Principal Designer	Galliford Try
Ghayan Briggs	GB		Jacobs
Andrew Wedderburn	AW	Principal Designer	Pell Frischmann
John Pilkington	JP		WSP
Sophie Gwynne	SG	Graduate Highway Engineer	Arcadis
Joanna Goulding	JG	Head of Health & Safety Risk, Standards and Assurance	National Highways
Simon Hawley	SH		Rambol
Steve Bowen	SB	Technical Director	Stantec
Noel Gibbin	NG	(CPS Head of Design)	Connect Plus
Jon Webster	JWe	Safety Lead	Kier
Samuel Hogan	SH	Principal Engineering Man.	Balfour Beatty
Robert Butcher	RB	Technical Director CDM	Jacobs
Lee Ward	LW	Principal Designer Manager	Arcadis

Roger Swainston	RS	PD / CDM Advisor	Jacobs
Helen Richardson	HR	NH Regional Lead	National Highways
Jon Webster	JW		
Darren Prowting	DPr		
Roger Swainston	RS	PD / CDM Advisor	Jacobs
Guests:			
Nicola Tweedie	NT	SA – Road User Safety	National Highways
Steven Thorpe	ST	NUAR Lead	Cabinet Office
Iain Reidy	IR	Risk Management	National Highways
Mark Reid	MR		
Apologies:			
Nina Warminger	NW	H&S Manager SWAD	National Highways
Mark Lamport	MLa	Technical Director / Principal Designer Manager	Arcadis
Malcolm Shaw	MS	Principal Designer Manager	Arup
Stuart Dawes	SD	H&S Manager A66	National Highways
Paul Boddy	PB	Director	Interserve
Stephanie Goldsmith	SG	Senior H&S Advisor	Skanska Infrastr.
Katie Swanick	KS	Contracts Manager	Motts
Aimee Blay	AB	Design Manager	Galliford Try
Thomas Merry	TM	H&S Lead Major Projects	National Highways
Ronan Finch	RF	Principal Designer	WSP
Shaun Pidcock	SP	Director LTC	National Highways
Chris Griffin	CG	Design Innovation Manager	National Highways
Phil Samms	PS	Engineering Man. (Area 3)	Kier
Kevin Morgan	KM	PD / CDM Advisor	Jacobs
Mark Riordan	MoR	Principal Engineering Man.	Amey
Paul Wilkins	PW	Ass. Tec. Director Structures	Arcadis
Dave Townsend	DT	H&S Team Standards	National Highways
Jon Horrill	JH	Principal Designer / H & S	WSP Group
John Migoski	JM	Technical Manager	Network Rail
Suryakant Patel	SP	Principal Designer Manager	Costain
Steve Ristow	SR		Transport for London
Sean Connon	SC	Principal Designer Manager	Costain
Ben Moulton	BM	Safety Lead	Balfour Beatty
David Lumb	DL	Health and Safety Business Partner – RIP North	National Highways
Cora Goodman	CG	H&S Manager YNE	National Highways
Mark Bridges	MBr	Former H&S Hub Lead	Galliford Try
Jordan Flint	JF		Kier
Lawrence Weller	LW	Safety Manager	TfL
James Washington	JWa	Safety Lead	Kier
Owaiz Khan	OK	Technical Manager	MGF
Richard Horan	RH		Telent

Glen Matthews	GM		Kier
Robert Mullen	RM	Asset Information Group	National Highways
Marcus Anning	MA		National Highways
David Harris	DH		
Jason Glasson	JG	Asset Information Manager	National Highways
Tarandeep Atwal	TW	Associate Director	Arcadis
Rob Eagles	RE	Temp Works Designer	MGF
Charlotte Taylor	CT		Morgan Sindall
Russell Brookes	RB		National Highways
Greig Houghton	GH	Design HSE Lead	Jacobs
Terry Meadows	TM	Safety Lead	Kier
Paul Watson	PW		Amey
Steve Haviland	SH	Partnership Lead	Farrans
Richard Delaney	RD	Senior H&S Consultant	Capita
John Quarless	JQ	Safety Manager	Kier
Ken Harrison	KH	Principal Engineer	Amey Consulting
Craig Simmonds	CS	Managing Director	Macleod Simmonds
Elliot Galvin	EG		Mott Macdonald
Adrian Shawcross	AS	Rail Associate	Ramboll
Clare Brown	CB	Safety Lead	Link Connex (Bam Nuttall)
Darren Allen	DA		Tellent
Dave Avery	DA	H&S Manager	Kier
Oliver McMann	OM		Atkins
Liam Burns	LB		National Highways
Philip Farrar	PF	Highways Safety Hub Website	Galliford Try
Andrew Koutsouki	AK		Arup
Anthony Adu-Gyamfi	AAG		
Chris Gee	CGe	Head of Utility Diversions	National Highways
Stephen Pettifer	SP		Volker Fitzpatrick
Eleanor Brennan	EB		
Matthew Murrell	MM		
David Riley	DR	H&S Business Partner	Amey
Tony Lewis	TL	P Designer Man. YNE	Costain
Beverley Mears	BM		National Highways
Abbey Featherstone	AF	Technical Lead	Connect+
Elizabeth Bennett	EB	Director	Safety in Design
Ian Nixon	IN	Sector SHE Director Transportation	Costain
Steve Willoughby	SW	Technical Director	Pell Frischmann
Stephen Larkin	SL		Aecom
Andy Robinson	AR		
Alexandra Kouts	AK		Arup
Tom Bolton	TB	Principal Designer Manager	Amey
Sulagna Ghosh	SG	Ass. H&S Rep Leeds	WSP Group
Robert Legg	RL	Highways Safety Co.	Motts

Jim Castle	JC		LTC
Leah Shah	LS		
Alexandrine Bernard	AB		Rambol
Reuel Abrams	RA	Senior Project Manager	Arcadis
Patrick Brady	PB	Engineering Manager M25DBFO	Connect plus /BB
Kevin Stevens	KS	Safety Manager	FM Conway
Gordon Crick	GC	BIM for H&S	HSE
Keith Smith	KS	Group Chief Engineer	Chevron Group
Saskia Lear	SL	Principal Designer Manager	Arup
Liz Brathwaite	LBr	Safety Hub Lead	Skanska
Euan McRobie	ER	H&S Lead	Capita
Nicola Hodges	NH	Project Manager	Keltbray
Adrian Lewis	AL	RHS Manager (East Region)	National Highways
Tony Wallis	TW		Tetra Tech
Josh Hicks	JH		Mott Macdonald
Katie Harman	KH	SMP Safety Lead	National Highways
Paul Dennis	PD	A417 Project Manager	Arup

1.0 Welcome (Richard Wilson)

1.1 Health, Safety and Wellbeing Moment

Safety Moment given by David Olorenshaw on Road Worker abuse and noting the appropriate action to take in certain situations. DO shared the recent NH Safety Alert (NHa325).



national highways **INFORMATION**

Safety Alert

Abuse from a Member Of The Public

27 March 2023

Background information

There has been a recent HART story 140097 where one of our people was assaulted by a Member of the Public.

At 18:43pm on Sunday 19th March one of our Traffic Officers was working towards a vehicle on the carriageway which had been fully stopped with a RRE. As they approached the vehicle, he knocked on the passenger window where the occupant was sat and opened the door slightly, he was then attacked by the member of the public in an aggressive and threatening manner. The TO was then struck on the arm with a small wheel wrench leaving a small bruise to the upper left arm.

The Traffic officer then retreated to his vehicle, called the Police and maintained a safe distance away from the Member of the Public.

Please report all incidents in HART.

Injury to Traffic Officer

Lessons Learnt

- Ensure that your body cam is switched on at all times when exiting the TOV, no matter how simple the incident may look.
- Approach Members of the Public with caution at all times, thinking of your own well being.
- Keep boundaries and space between you and the MoP, also remember your environment, look for tripping hazards, traffic, uneven ground.
- Do not get into any kind of confrontation in any way.
- Always report incident to the Police for your own protection, do not take matters into your own hands and remain calm at all times.

DO detailed a recent incident that occurred with Kier and presented slides on the resultant Road Worker Abuse safety stand down.



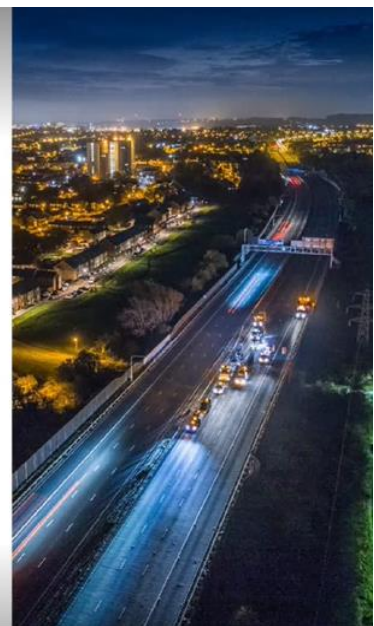
HS2 [Phase 2a – A1] Yarnfield South Embankment 19th December 2022

Whilst Traffic Management operatives were installing traffic management, an operative was approached by two members of the public from a nearby flat who threatened the him with a hammer and an angle grinder.

The operative then called his colleague (the lead traffic management operative (TMO), who then called the 999. The offenders then ran into the nearby woods when they realized that the police had been called.

Two other persons (a lady and man then came out of the block of flat then continue to abuse the TMO. Site Foreman/Supervisor called off the job and pull the workforce back to the depot in consultation with the security manager until emergency security guards (by protector) arrived.

No one was hurt.



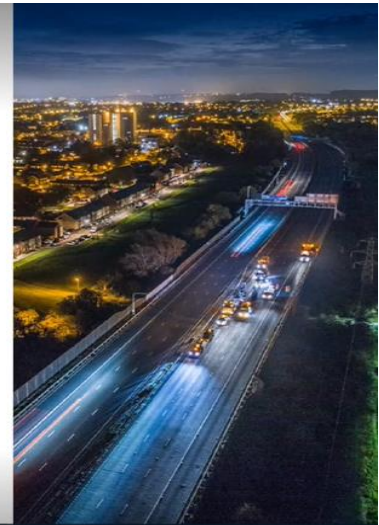
SWDSC Berry Brook, near Exeter 2nd July 2021

The Drainage team were inspecting a stream on private land and met two angry landowners, they had parked their truck blocking the gate and were both stood at the gate waiting for us. They were initially "hostile", questioning why we were on their land and who had given us permission.

The team had asked Highways England to seek permission prior to undertaking the inspection and had received confirmation that the landowner was content. It transpired that the client had approach the landowner on an adjacent plot.

Fortunately, the team had printed a record of the correspondence and permission and taken with them to site and therefore were able to defuse the situation.

No one was hurt.



KIER

Road Worker Abuse

June 2022

TBT-HIG-11



Road Worker Abuse

Introduction

- At some stage during your work, you will all probably have encountered difficult people and situations that call for a special set of skills in order to deal effectively with them and prevent difficult situations becoming potentially violent ones
- This is particularly true when you have close contact with members of the public, often in situations where the public don't understand, or want to understand, the context of the work you are involved in.
- It is important therefore that you understand why some people become angry and what you can do to prevent the situation from escalating and getting out of hand.



Road Worker Abuse

Critical Points

- Ensure that you know if you are working in an area where there is a potential for violence. Ask the question at your on-site induction and ensure that you know what to do if an aggressive situation arises. Speak to your supervisors and get advice from them.
- Try not to put yourself in a situation where there could be a potential for violence. If you are confronted by a member of the public, be polite and cooperative. Stop what you are doing and give the person your attention. Try to build trust; be calm, respectful and patient.
- Try to understand the mind-set of this person - they may be under the influence of drugs or alcohol.
- Try to identify signs of when the situation is moving out of control. Never belittle, embarrass or verbally attack a hostile person. Be polite and walk away from the situation. Move away from any potential danger.
- Retreat from any violent situations. Call the police.



Road Worker Abuse

Discussion Points

Question

What can you do to help prevent a difficult situation occurring when an angry member of the public approaches you?

The Wrong Approach

1. You continue to work when they approach you
2. Words such as "there's nothing I can do about it mate..."
3. You getting angry with them in turn
4. Turning your back or walking away from them, or completely ignoring them
5. Making snide comments, either directly to them, under your breath or to your colleagues
6. Telling them you don't know what their problem is
7. Telling them you are just doing your job



Road Worker Abuse

Discussion Points

Question

What type of behaviour is likely to make a member of the public less angry?

The Correct Approach

1. Looking at the person who is talking to you
2. Acknowledging them by nodding and making eye contact
3. Standing slightly to one side of them rather than directly in front of them
4. Standing with your hands at your side rather than folded
5. Waiting for them to finish talking and not interrupting them
6. Summarising what they have said to let them know you have understood the problem



Road Worker Abuse

What to say in a difficult situation

Question

What behaviour can you use to help calm a difficult situation?

1. I understand what you are saying
2. I can understand that you are angry about this situation
3. What would you like me to do to help you
4. This is what I can do to help you
5. I can't help you myself, however, here's the name and telephone number of the person who can
6. If you don't have any luck phoning Come back to me and I will get hold of them for you and ask them to contact you directly



Road Worker Abuse

Reporting violent or aggressive behaviour

- Give details of the company near miss or incident hot line
- Discuss why it is important to get the reports
- Explain what happens with the reports

Any questions?



RW informed that Traffic Officers have now been fitted with body cams.

Charlotte Cook highlighted a recent incident relating to a member of the public who threatened workers with a knife in Birmingham.

RW indicated that NH are seeing a rise in incursions at roadworks and abuse increasing to roadworkers and road users.

1.2 Matters Arising (PDWG 30 – 19/01/23)

2.2 Keith Smith and Ian Reidy to discuss carriageway crossings offline – No update on this, IR will contact KS.



2.3 KS responses – these have been added offline to the Chat Room (see PDWG 30 tab). These are captured in the Chat Room Log which will be appended to these meeting minutes.

4.1 Liz Braithwaite to include Passport note with regard visiting site more than once per year which will require membership of the Passport. - The wording in the Passport rules now states that the only designers exempt from the requirement to hold a passport are - Designers who do not visit site.

Nick Boyle voiced concern with regards to any Designer not visiting site in person and relying on virtual data only.

4.1 Liz Braithwaite to add an FAQ – confirming the definition of a site, which is deemed as any outside location where a supplier is conducting business on behalf of National Highways. LB confirmed that a site will not be defined in the document. The push is that designers obtain Passports and certainly some contracts / projects will require it of

IR

	<p>everyone, even those who simply visit the compound. This is because projects are starting to use the Passport as their access card into the site. Any site-specific training including the induction, behaviour programmes etc. are all recorded on the Passport whilst on site through the swipe facility.</p> <p>4.1 Liz Braithwaite to provide details of the updated Common Induction video. LB confirmed that the Common Induction Video is being reviewed, but this is an ongoing process. LB has been invited to several meetings about this matter in April, so will provide a further update at the next meeting.</p> <p>6.1 Whole of Life Design Safety Shares group – more volunteers required. Subject discussed later in the meeting.</p> <p>6.3 H&S File – End user requirements – Mark Lamport to speak to Dave Olorenshaw – Mark Lamport had sent his apologies that this hasn't happened, and he will be pick up in the next period. Date to agreed.</p> <p>6.3 Mark Lamport to agree end products for H&S File Digitisation Group with Richard Wilson. Meeting had taken place with RW. However, RW to have a further meeting with Sarah Bull & Jason Glasson next week and will provide an update to MLa and the group.</p>	<p>All</p> <p>LB</p> <p>All</p> <p>MLa/ DO</p> <p>RW</p>
2.0	<p>Presentations for Learning Opportunities</p> <p>2.1 (10.30 – 10.45) NSCRG update - Iain Reidy (National Highways) Matters Arising and current concerns.</p> <p>NSCRG update</p> <p></p> <p>Items discussed at NSCRG February and March 2023.</p> <p>February:</p> <ul style="list-style-type: none"> ▪ All Lane Running (ALR) (GD 301 Smart Motorways) Hazard Log Update (SCRG) <p>March:</p> <ul style="list-style-type: none"> ▪ HS2 use of tower cranes adjacent and over M42 ▪ Operational technology availability and performance report quarterly update ▪ Emergency Mobile Carriageway Closure (EMCC) technique M25 trial update (AOB item). <p>And Drones update</p> <p></p> <p>IR highlighted that the tower crane will be within the central reserve for approx. 2.5 years and detailed the discussions to undertake this action - to appease customer safety concerns and to minimise H&S risk. HS2 and NSCRG are currently reviewing and identifying the safety risks and control measures. Further updates will be provided by NH.</p> <p>SVD performance is increasing, and lessons learnt regarding issues such as maintenance, availability of spares, etc. are being collated.</p> <p>Mobile management closure technique is continuing with M25 trials, however, likely use as present is only permitted on roads with technology provision, due to this being the only trial to date. Updates on the trials / rollout will be provided in due course by National Highways.</p> <p>Use of Drones on the network has now been formalised with the issue of GG954 Drone Operation. IR highlighted the requirement to seek approval of risk base assessment (GG104) from NH Drone team (Colin Brown). Request from National Highways for good practise / use of Drone's examples to be sent to the Drones team at NH to further develop use on the network (Drones@NationalHighways.co.uk)</p>	<p>IR</p> <p>IR</p> <p>All</p>

NSCRG update

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Issue	Decision	Summary
ALR) (GD 301 Smart Motorways) Hazard Log Update (1 of 2)	Accepted by SCRG. (Using NSCRG cross-functional forum to facilitate, as Type B activity).	<p>Overview of changes undertaken:</p> <ul style="list-style-type: none"> A setup sheet (see infographic slide) has been created for users to apply project specific elements for the baseline such as the presence of MIDAS and/or SVD. Hazards have been arranged into blocks of similar content (see infographic slide) for analysis of subject areas of hazards, such as driver behaviour; merging; public on foot, speeding; stopped vehicle. Identified some double counted hazards such as use of EAs, where LGVs had been double counted in the generic hazard and a HGV specific hazard. Each hazard now has its own worksheet for additional transparency and accessibility. H135 Vehicle stopped in live lane (off peak) has been transferred from an event to a state hazard, based on SVD timeline work, and changes in risk profile through those periods, such as reduced risk following signals being set. Some hazards disaggregated such as fatigue, which originally was constituted of several elements including significant proportion of associated risk being from failed to look and or judge. Now got fatigue; Distraction and impairment. Vehicle/vehicles being driven too fast now regrouped into too fast for NSL; VMSLs; and VASLs. Some new hazard IDs to reflect these changes (see infographic slide). The outcome of all of this work is that the top ten hazards account for 80% of all after risk; H13 'Driver loses control of vehicle' as the top scoring hazard. <p>Continued...</p>

NSCRG update

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Issue	Decision	Summary
ALR) (GD 301 Smart Motorways) Hazard Log Update continued (2 of 2)		<p>Decision: SCRG accepted version 28 of the ALR GD 301 Smart motorways hazard log updates, to be the new current version used by National Highways and its supply chain. This included elements as described:</p> <ul style="list-style-type: none"> Assumptions updated Scoring updated and cross-checked Rationalisation and disaggregation of hazards, with nine new IDs More robust architecture Accommodation of varying baseline and/or activity parameters by user <p>Feedback included:</p> <ul style="list-style-type: none"> The risk of pedestrians on verges to be clearly identified. Nearside VRS treatment as a dummy field within the setup sheet to prompt designers to think about less VRS being a positive design aspiration, in general terms. Consideration for a new hazard for off network access (ONA), as new infrastructure from D3M baseline, and still not fully understood in terms of safety risk.

NSCRG update for CHE

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Issue	Decision	Summary
HS2 use of tower cranes adjacent and over M42	Accepted in principle	<p>Background: The team came to present their updated proposal for acceptance for the use of tower cranes adjacent to and over the M42. The primary reason for tower crane proposed use is to retain four narrowed lanes on both carriageways to reduce customer impact over a four year road works period.</p> <p>Previous September 2022 NSCRG actions were presented, with progress to date:</p> <ol style="list-style-type: none"> SES structures consultation- There will be an additional AIP specific for the tower cranes base and foundation, erecting and dismantling the crane which will require further consultation with National Highways. Warning signs - The sign proposals have been agreed in principal with BBV & National Highways. The proposals will be further consulted at Customer Assurance Framework (CAF) workshops. The final sign design to be reviewed as part of a consent application and will be subject to regular customer drive through audits. Use of motorway Variable Message Signs (VMS) - Initial consultation with the Resilience Team has been undertaken and VMS will be utilised. The final legend and timing for the VMS will be agreed with the Area 9 Resilience Team prior to the application to NTOC. Traffic Management Plan (TMP) consultation, including diversions and distraction - There will be a consent submission regarding the erection and dismantling of the Tower Crane under full closures (likely weekend closures), approval to be granted by RPTM. The Temporary Traffic Management is being considered as an M42 corridor approach and engagement with National Highways and wider stakeholders is ongoing. Enforceable TASCAR is expected and billboards are planned to be installed. CSC consultation for local communities engagement - Theresa Massey of the CSC Directorate is now included in risk workshops. The proposals will be further consulted at Customer Assurance Framework (CAF) workshops. It was agreed that all of these actions have progressed adequately to date, but are still outstanding. <p>Queries regarding crane safety were expertly answered, including icing, data collation and site security from protests.</p> <p>Further concerns - were raised regarding contingency scenario planning, the TMP, and site security from protests etc.</p> <p>Decision - NSCRG accepted the work undertaken to date by the project. The operation of tower cranes directly adjacent to the SRN is accepted in principle. There are still elements that require acceptance by SCRG/NSCRG.</p>

NSCRG update

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Issue	Decision	Summary
Operational technology availability and performance report quarterly update	For information	<p>CCTV - CCTV availability had improved from low to mid ~95% availability, due to significant efforts in this area.</p> <p>Technology Performance and Availability Management (TPAM) - DS are in the process of introducing an event management process to improve operational technology availability. This includes ten teams across the business fulfilling TPAM. Data comes from Technology Operations Capability (TOC) into TPAM, to breakdown issues into piles to allow efforts to be focused strategically, and send to TOC to issue task orders to CONFIRM to maintainers to undertake remediation work at the roadside.</p> <p>Signs and signals – We have a focus on process improvements. An incident manager and SME roles have been appointed. Other improvements include reducing idle times, such as access to roadspace bookings and spares.</p> <p>Fix first visits – rather than going to site just to confirm if there was a fault and requiring a follow-up visit, common spares are carried to fix first time; being trialled in Area 7 to improve the timeline. Longer stops need allowance in GG 115 Requirements for works on the hard shoulder and road side verges on high speed dual carriageways, such as consideration of how PRS can be used.</p> <p>Next steps:</p> <ul style="list-style-type: none"> Focus on applying enduring fixes for intermittent faults; A wider use of resolver groups; To continue to progress the TPAM function; To modernise the asset, including not retaining poor performing versions of assets; and To behave more like an agile small business.

NSCRG update

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Issue	Decision	Summary
Any other business (AOB)	N/A	Will Spurr raised an AOB item, that the Emergency Mobile Carriageway Closure (EMCC) technique project had now undertaken trials on the M25, as per previous NSCRG request. They plan to return to NSCRG with a for information submission in May 2023, which RM noted and added to the NSCRG tracker.

Question on the roll out of SVD. IR noted SVD is built into the ongoing roll out of Smart Motorways. With regards to roll out on other schemes, NH are currently considering the safe systems approach to SVD alongside, location, people, infrastructure, etc. Currently the roll out of SVD is focused on the areas with the greatest need for SVD via a risk-based approach and sits with the road safety division (Sheena Hague) who make the decision on SVD roll out.

IR noted he is available should anyone have any questions in between PDWG meetings.

2.2 I3P Utility Strikes Avoidance Programme - Amer Essa – (National Highways)

– Presentation deferred - no update provided as part of this meeting

2.3 NH HSW Harm Assessment Tool, Home Safe and Well - Sam Allin – (Jacobs)

Health, Safety and Wellbeing Harm Assessment Tool

Sam Allin, HSW / CDM Client Assurance lead for Lower Thames Crossing
Sam.allin@lowerthamescrossing.co.uk

National Highways Major Projects Implementation of Home Safe and Well Strategy

Dean Sporn, Director Regional Projects (South)
Edgar Vila Pouca Delivery Partners Workstream Lead

Delivery Partner Sub Work Streams

- | | |
|--|-----------------------|
| • Gap assessments – Culture | • Andrew Scatchard |
| • Gap Assessments – Engineering Controls | • Emily Jones |
| • Charter | • Edgar Vila Pouca |
| • Drumbeat | • Esther Gordon-Smith |
| • Safety By Design | • Sam Allin |

HSW Harm Assessment Tool

Trials Completed

- End of Trial Report written
- Version 2 of tool developed

Next Steps

- Share with Major Projects Leadership Team
- Include as a PCF product at stages 0 to 3

Version 2 of tool

- Removed Pavement design discipline (7 disciplines)
- Reduced number of HSW categories 14 to 10
- Automated reports for
 - Construction risks
 - Maintenance risks
 - User risks
 - All risks



HSW Harm Assessment Tool

- Objective of tool is to provide a record of conversation between designer and client about selected inherent risks present in a scheme at PCF stages 0 to 3.

m3 /km of excavated material containing substances hazardous to health. E.g asbestos, guam, hydrocarbons, heavy metals, etc.

Qty /km of lighting column within the proximity or vicinity zone of an overhead utility.

m3 /km of cut or fill requiring to be removed from or brought onto site.

Qty /km of bridges incorporating insitu concrete construction.

Lm /km of utility with less than 7m plant working space on one side.

Lm /km requiring water table management works.

Qty /km of C&C equipment not protected by VRS.



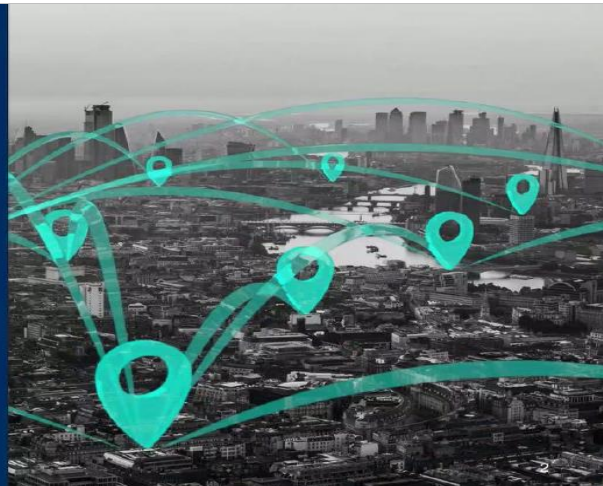
2.4 NUAR update – Steven Thorpe



About us

The Geospatial Commission is an independent, expert committee responsible for setting the UK's geospatial strategy and coordinating public sector geospatial activity.

We are part of the Department for Science, Innovation & Technology.



UK's Geospatial Strategy



Mission 1: Promote and safeguard the use of location data



Mission 2: Improve access to better location data



Mission 3: Enhance capabilities, skills and awareness



Mission 4: Enable innovation

3

Why do we need NUAR?

- 4 million kilometers of buried pipes and cables in the UK
- 4 million holes dug every year
- c. 60,000 accidental strikes per year
- Planners and excavators need the data to do their jobs safely and efficiently
- Data is held by over 650 organisations
- Asset owners are legally required to make their data available for free to statutory undertakers

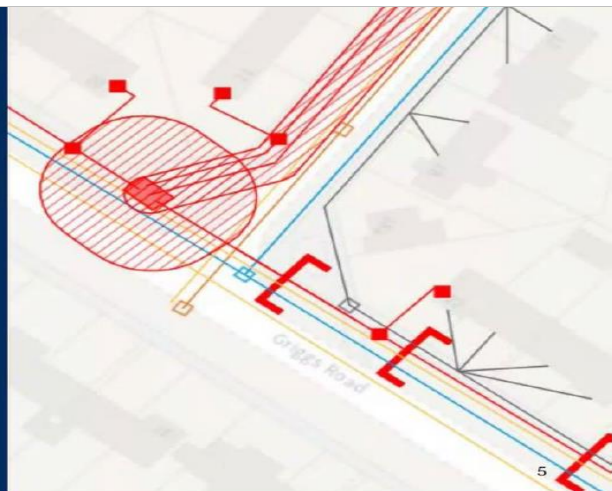
4

ST confirmed that currently approx. 2 million kilometres logged.

What is NUAR?

NUAR is an interactive, digital map of underground pipes and cables.

It will revolutionise the way we install, maintain, operate and repair our buried infrastructure.



What will NUAR do?



Standardise

...data from 650+ asset owners



Secure

...data shared through the platform to safeguard and protect against misuse



Streamline

...data sharing between asset owners and those planning and carrying out excavations



Support

...improvement in data quality through missing or erroneous data being fed back

6

Building on existing initiatives

- Research projects such as VISTA, Mapping the Underworld and Project Iceberg
- London's Highways Apparatus Data Exchange System (HADES) project 2017
- Northumbrian Water Group 2018 Innovation Festival
- Scottish Roadworks Commissioner VAULT system
- Operational systems in Belgium, Germany and Netherlands
- NUAR Pilot Projects from 2019 to 2020

7

Benefits for a wide range of users

Asset Owners - efficiencies in sharing data

Excavators - reduced risks of asset strikes

Data managers - improved data quality

Planners - efficiencies in sourcing data and reduced risks of asset strikes

Plant protection officers - greater knowledge of activity near assets

General public and businesses - reduced delays from accidental strikes

8

£350m pa economic benefits

- The estimated economic cost of accidental strikes on underground pipes and cables is £2.4 billion a year
- The economic benefits of NUAR are estimated to be £350m per year
- This consists of benefits in efficiencies, reduced asset strikes, and reduced delays to the public and businesses
- We have published the approach taken to estimate the relevant benefits

9

Timeline

2018

Geospatial Commission established

NUAR research phase starts

2019-20

Pilot projects completed

Preparation phase starts

Sep 2021

NUAR build programme starts

Mar 2023

Platform operational in North East England, Wales and London

Sep 2024

Platform operational in rest of England and Northern Ireland

10

Building a great service

Login securely using
2 factor authentication

View data related to
subsurface assets on a single
map, with options to turn
asset types on and off

Search by: street name,
UPRN, USRN and postcode

Specify and edit an Area of
Interest by a circle or polygon

Display and query asset data

Share locations with
other users

11

The platform

PRIVATE BETA This is not yet an operational service and should not be used as a replacement for existing processes in planning and executing work. It is offered as an early preview - your [feedback](#) will help us to improve it.

453805,317942 Search Edit AOI Bookmarks and sharing

Legend

Electricity

- Sensitive asset (approximate)
- Overground site
- Underground site
- Property change
- Cross-section
- Underground point asset
- Overground point asset
- Underground line asset
- Overground line asset

Scale: 1:479

12

Public consultation

164

RESPONSES IN TOTAL

A preference for a single database containing all data to be controlled by government due to legitimate commercial and security sensitivities

No consensus on who should fund NUAR in the operational phase but general agreement that those who benefit from the service should contribute

Acknowledgement that legislation is required to maximise the value of the service

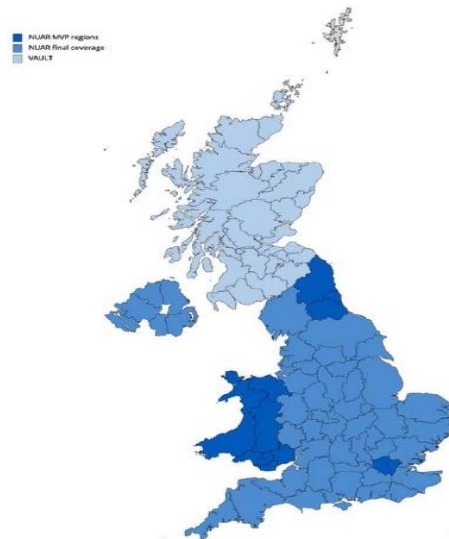
A potential opportunity for NUAR to be commercialised beyond the intended use case

13

Growing participation*

- 500+ Asset Owners engaged across England and Wales
- 285 Data Exploration Agreements (DEAs) signed
- 185 organisations' data uploaded to NUAR
- 164 datasets' transformations agreed
- 150 Data Distribution Agreements (DDAs) signed

* - Data correct as of 22 March 2023



14

Working with experts

- A supply chain of world leading experts in their field
- Other government departments
- Existing networks of asset owners
- Industry and professional bodies
- Academia and international partners
- Users



15

Support from industry

When we find that assets are not in the place that we thought they were, the ability to push back information to the central repository and have this information available for everyone's benefit, as opposed to it sitting in silos, is very exciting for industry.

Shelley Copsey, Co-Founder & CEO, Fyld

Our vision is to get a "single view of what is happening on the street". NUAR will have a massive impact on planning of works.

David Capon, CEO, Highways Authority Utility Committee (HAUC)

In our increasingly digitalised world, NUAR's accessibility to visualised information which has been aligned across multiple sectors' data is incredibly useful and powerful, enabling whole system collaboration for the benefit of customers and society as a whole.

Steven Gough, DSO Technical Authority, Scottish and Southern Electricity Networks

I am so glad to see that NUAR will really make a national records system a reality. I have waited a long time for this. The water industry especially will benefit as their assets are generally below the other utilities so to carry out work on them safely and effectively it is essential to know the location of other utility assets.

Jo Parker, Vice President of Engineering, Institute of Water

16



RW highlighted that National Highways has an objective to halve the number of current utility strikes on the network, with current progress showing an approx. 30% reduction.

Q – Request from David O as whether this information will be available to download 2D/3D or will this be restricted due to safety concerns – ST to feedback availability.

ST

3.0 3.1 Healthier and Safer Design SCLG WG – Assignment of Task and Finish Groups to PDWG members – Toria Thomas/ Jonathan Giles / Sam Allin / Richard W (60 min)

JG introduced the proposal to undertake a Significant Risk review.

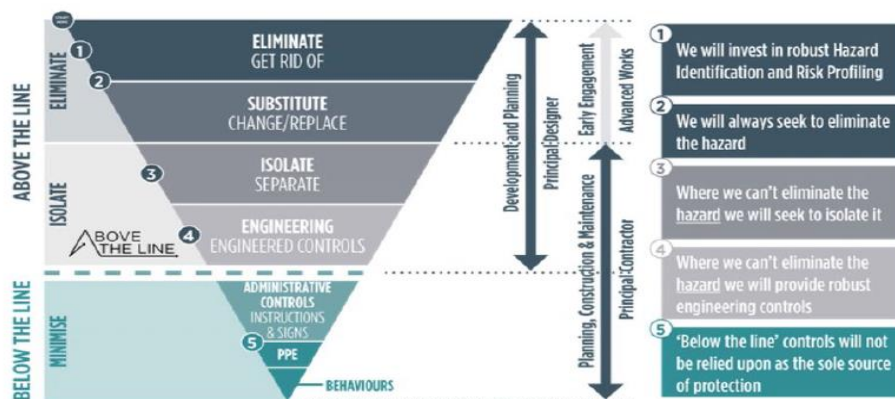


Vision

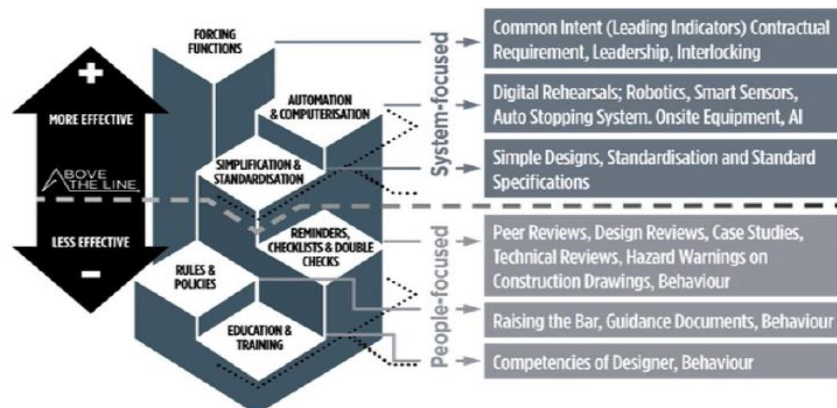
To eradicate any occurrences of fatal harm from **“significant risks”** throughout the complete lifecycle of all National Highways assets by 2030 and prevent occupational health life-changing harm by 2040, by elimination, substitution, isolation and/or engineering controls.



HIERARCHY OF OPERATIONAL CONTROL



HIERARCHY OF OPERATIONAL CONTROL



Risk Profiling Results

 SUPPLY CHAIN SAFETY LEADERSHIP GROUP



PRIORITY GROUPS



IDENTIFYING THE RISKS

RISK PROFILE - A FIRST FOR INDUSTRY

Occupational Road Risk

People Plant Interface

Incursions +IPV Strikes

Working at Height

Temporary Works

Underground/Overground Services

Occupational Health (Noise/Dust/Manual Handling)

Plant Turnover

Lifting Operations

SCSLG MEMBERS

CHAIR

ADAM GREEN

CEO
FM CONWAY



SUPPLY CHAIN SAFETY LEADERSHIP GROUP

SIGNIFICANT RISK GROUPS

INCURSIONS & IPV

JAMES HALUCH
MANAGING DIRECTOR
BREEDON GROUP

OCCUPATIONAL ROAD RISK

NICK HOLT
OPERATIONS DIRECTOR
WJ ROADMARKINGS

PEOPLE PLANT INTERFACE (PPI)

SIMON ELLISON
HIGHWAYS DIRECTOR
COSTAIN

OCCUPATIONAL HEALTH

TONY SLATER
MANAGING DIRECTOR
SMP ALLIANCE

STRATEGIC DELIVERY GROUPS

HEALTH & SAFETY IN DESIGN

IAN SPELLACEY
CLIENT DIRECTOR - STRATEGIC
HIGHWAYS ATKINS

HEALTH & SAFETY PERFORMANCE

ANDREW SHARP
MANAGING DIRECTOR
CARNELL

COMMUNICATION

VICKI GLOVER
HR DIRECTOR
KIER LIMITED

Health and Safety In Design Working Group



SUPPLY CHAIN SAFETY LEADERSHIP GROUP

Chair:

- Ian Spellacey (Atkins)

Members:

- Richard Wilson (National Highways)
- Toria Thomas (Arup)
- Sam Allin (Jacobs)
- David Shaw (HW Martin)
- Jonathan Giles (Ramboll)

Health and Safety In Design Working Group



Vision:

1. Leadership on healthier and safer in design activities
2. A focus on improving and measuring effectiveness of healthier and safer in design outcomes

Questions for designers:

- What can Designers do to eliminate these 9 significant risks through design?
- How are design safety decisions made from the outset by
 - Eliminating
 - Substituting
 - Or through engineering controls?

Health and Safety In Design Working Group



Progress:

- Agreed Working Group Aims/Goals
- Held Bow-Tie workshop
- Supporting other working group Bow-Tie workshops with 'Designer Influence'
- First focus on one of the nine 'Priority Risks':

Occupational Risk – **noise, dust and vibration**

Health and Safety In Design Working Group



Output:

- Revise Raising the Bar for design health and safety
- Use the framework of the significant risks to focus on practical risk mitigation through design – focusing on **above the line** solutions
- Collaboration with supply chain
- On-going commitment to continue to work through the significant risks

Healthier and Safer Design WG

PDWG Task And Finish Group

Populating a matrix that describes how design could apply the principles of prevention for a given hazardous activity with potential harm arising from vibration noise and dust hazards.

Introduction to the Healthier and Safer Design and Delivery Working Group

Chair: Ian Spellacey

ian.spellacey@atkinsglobal.com

Members:

Jonathan Giles: jonathan.giles@ramboll.co.uk

Toria Thomas: toria.thomas@arup.com

David Shaw: dshaw@hwmartin.com

Sam Allin: sam.allin@Jacobs.com

Richard Wilson:

richard.wilson2@highwaysengland.co.uk

•Vision:

To develop an understanding of the healthier and safer by design improvements to National Highways HSW Hub and monitor the effectiveness of their implementation.



T&F Group Objective / Constraints

The objective of each T&F group is identify as many possible **design treatments** to prevent harm from the health hazards:

- Vibration
- Noise
- Dust

for the given hazardous activity type.

1. Do not include treatments already in DMRB.
2. Do not include treatments that are put in place by a construction management team.
3. Include innovative treatments, even if they seem impossible today.



The Matrix

- Row 2 titled (coloured blue) includes the CDM2015 principles of prevention categories, enhanced with text from ISO 45001.

Note: The principles of prevention categories are made visible by ungroup the columns.

	A	B	C	D	E	F
1	Health Hazard	Vibration				Noise
2		Eliminate	Reduce (through substitution)	Engineering Controls	Administrative Controls (Information to be provided on drawings etc)	Eliminate
3	Detailed Hazardous Activities					
4						
5						
6						
7						
8						
9						
10						
11						

Process

- In cell A6 (yellow cell) review, amend and develop detailed hazardous activity descriptions, separated by a comma.
- Ungroup the columns for the health hazard so the principles of prevention categories can be seen

- Insert a description of the treatment a design could apply for each of the health hazards within the relevant treatment category.

*The description should include the **detailed hazardous activity description**, in bold, which should match the text in cell A6. Separate the hazardous activity description and description of the treatment with a coma. See example on slide.*

	A	B	F	J	N	O	P	Q	R	S	T	U	V	W	X
1	Health Hazard	Vibration	Noise	Dust											
2		Eliminate	Eliminate	Eliminate											
3	Detailed Hazardous Activities														
4															
5															
6															
7															
8															
9															
10															
11															
12															

The Matrix

1. There is one worksheet for each hazardous activity type.
2. Column A (coloured yellow) is titled 'Details of Hazardous Activities' and contains detailed descriptions of the hazardous activities to be considered.
3. Row 1 (coloured purple /pink) is titled 'Health Hazard' and includes the health hazards Vibration, Noise and Dust.

	A	B	F	J
1	Health Hazard	Vibration	Noise	Dust
2		Eliminate	Eliminate	Eliminate
3				
4	Detailed Hazardous Activities			
5				
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				
16				

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S
1	Health Hazard	Vibration				Noise			Dust										
2		Eliminate	Reduce (through substitution)	Engineering Controls	Administrative Controls (Information to be provided on drawings etc)	Eliminate			Eliminate										
3																			
4	Detailed Hazardous Activities																		
5																			
6																			
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9																			
10																			
11																			
12																			
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16																			
17																			
18																			

	A	B	C	D	E	F	G
1	Health Hazard	Vibration				Noise	
2		Eliminate	Reduce (through substitution)	Engineering Controls	Administrative Controls (Information to be provided on drawings etc)	Eliminate	Reduce (through substitution)
3							
4	Detailed Hazardous Activities						
5							
6							
7							
8							
9							
10							
11							
12							
13							
14							
15							
16							
17							
18							

Example - Vegetation design for vibration

	A	B	C	D	E
1	Health Hazard	Vibration			
2		Eliminate	Reduce (through substitution)	Engineering Controls	Administrative Controls (Information to be provided on drawings etc)
3	Detailed Hazardous Activities				
4		Hard surface / substrate, Design to specify substrate which vegetation is unable to grow on, that eliminates growth of vegetation	Landscaping, Planting, Design and selection of planting species that is suitable for the setting (IDEA - create a design standard) (Challenge SES)	Cutting, Embankment, Design an access track for in-cab equipment to cut and maintain vegetation (Challenge SES)	Planting, Health and safety file to identify HAV as a significant risk and provide details of how vegetation could be maintained that avoids exposure to HAV in a maintenance manual.
5					
6		Planting, Locate trees, bushes and hedges away from signage / roadside equipment / access routes	Cutting, Embankment, Reduce gradients to facility use of in-cab equipment (Challenge SES)		
7		Cutting, Embankment, Design an access track for in-cab equipment to apply vegetation suppressants	Cutting, Embankment, Reduce gradients to facility use of robotic equipment (Challenge SES)		
8			Verge, Design to provide vegetation control membranes around signage and roadside equipment and structures. (Challenge SES)		
9			Hard surface / substrate, Design to incorporate automated		

Matrix Allocation Plan

- AECOM – Vegetation
- Arcadis – Coring and Boring
- Arup – Drilling and fixing
- Atkins – Planing
- Capita – Cleaning & Sweeping
- Cowi – Cutting and Breaking
- Jacobs – Groundworks
- Lower Thames Crossing – Mixing material
- Mott McDonald – Material processing
- Ramboll – Piling
- WSP – Handling products & materials

NH Suppliers who may be able to provide construction management knowledge

- Skanska
- Kier
- Telent Costain
- Galliford Try
- Amey
- VolkerFitzpatrick
- Balfour Beatty

Timings

- Confirm that the business is content to support the T&F group scope by 7th April.
- Matrix to be populated and returned to Ian Spellacey by Friday 19th May.

ian.spellacey@atkinsglobal.com

Additional items for consideration to potentially add:

1. Traffic Noise
2. Concreting
3. Production of offsite assembly
4. Tunnelling

JG/TT

David O noted perhaps this would be easier to consider if this was undertaken at discipline level? JG/TT to consider.

JG/TT

Post Meeting

A separate request for organisations within PDWG to undertake this activity and reply back to the Working Group was issued on 3/4/23. Responses required.

All

4.0 4.1 Whole Life Design Safety Shares – (M Partington – Jacobs)

PDWG Task Group – Safety Shares

Summary on a page

Purpose of the Meeting –

- to review next 4 draft safety shares 18, 19, 22, 23 to finalise or for 2nd draft, and
- to review status of other draft shares that have been potentially identified.

Attendees

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

Attendees

- Jim Gallagher (National Highways)
- Sam Allin (Jacobs)
- Paul Brown (WSP)

Apologies

- Rob Butcher (Jacobs)

Meeting Summary -

- Paul Brown joined the group in February, bringing value from his work within the Hub and the RtB 26, and bringing in a new draft share around designing verge channels
 - February session also reviewed 2 other new shares
 - Designing to reduce occ health issues for strimming
 - Instability conditions for formwork design
- March then reviewed 3 shares
 - 1 finalised
 - 019: risks associated with drones
 - 2 need more work
 - 022 danger to travelling public – temporary works access/egress points
 - 023 cables on strategic road network during temporary works design phase
- Pav shared several case studies relating to drone use, that can't be found elsewhere on the SafetyHub website at the present time: a new drone lessons learnt area to be set up for the information

Next Meeting: Next meeting on Tues 25th Apr



1

©Jacobs 2021

DRAFT

NRTS exposed highway cables

Description of Event
Management of strategic highway cabling – failure to implement suitable procedures.

Population at Risk
Construction Workers, Maintenance Workers and Road Users

Hazardous Activity and Residual Risk Description


- Without authorisation the Contractor lifted and shifted a section of surface mounted purple motorway ducts and cables (NRTS) and left them unsecured. It left exposed cables on the ground and in the undergrowth with an assessed residual risk of an almost certain likelihood of moderate harm being incurred.

Potential consequences of this event


- An increased risk of damage leads to the loss of essential services such as CCTV monitoring of the network (risk to road users – traffic jams etc)
- A slip / trip hazard to the workforce, and / or members of the public seeking refuge.
- Risks to road users.

Safety Hub Alert Database

- Sub-category 2 Service strike with 4 alerts.



Section removed without approval



Exposed cable

Potential Mitigation Measures

Design

- Designers to ensure design coordination of temporary service and utility movements with third parties and network maintainers.
- Plan runs – ensure the temporary works have designated crossing points/ drop duct down for pedestrian workforce (designed for safe passage)
- Designer to identify a strategy for maintaining/removing temporary services at end of the works.
- Design to consider creating exclusion zones, and signage.

Construction

- Surface-mounted services should be included on known stats plans and should be treated accordingly.
- Use of foam at ends of ducts for CJE's.
- Constructors to seek designer input through temporary works coordinator approval prior to working inside exclusion zones.

Maintenance / Operations

- Identifying the governance adjacent to or directly onto the surface mounted asset could mitigate this type of event re-occurring.
- Regular patrols are required by maintenance gangs trained and briefed in NRTS requirements.

Further Guidance and Reading

- RtB 1 – Plant and Equipment
- RtB 2 – Utility Avoidance
- Simple precautions provided by HSE.

Very
DRAFT

DESIGNING FOR MAINTENANCE – HAND ARM VIBRATION STRIMMING WLD.??

Description of Event
Maintenance of verges involves grass cutting around many poles whether sign posts, lamp columns or steel safety barriers – use of strimmers can increase risk of HAVS (Hand and Arm Vibration)

Population at Risk
Maintenance Workers

Hazardous Activity and Residual Risk Description

- Soil in the verges where signs, lighting columns and restraint systems are used is generally specified for maximum fertility allowing grass to grow right to edge of poles, requiring then the use of strimmer's to remove grass growth, or
- Pole is driven into soil with soil then in contact with the pole and grass allowed to grow against the pole, again needing strimmer's to reduce grass height and the pole to be inspected.

Potential consequences of this event

- More poles in direct contact with soil means more time needed to cut grass by labour workforce using strimmer's, increasing risk of exposure on side of high speed road
- Long term use of strimmer's can lead to HAVS white finger if triggers times are missed
- Accurate vibration trigger times need recording at place of work on verge using accelerometer, exposing different workers to high speed traffic hazard

Safety Hub Alert Database

- No injuries identified within Alerts Database possibly due to long term condition.

Potential Mitigation Measures

Design

- consider changing designs around base of posts to incorporate flat area to enable mower to cut grass.
- Consider whether post needed at all
- Consider specifying lower grade soil where mowing required or changes in soil and plant cover to reduce amount of need to mow.

Construction

- All design changes should always consider future maintenance requirements and the fact they could result in different inspection regimes being required.

Maintenance / Operations

- Use mower or other mechanical means to cut grass around posts in verge
- Keep lookout for innovations in verge maintenance

Further Guidance and Reading

- HAVS – HSE website
- R18.26 – Safety by Design
- GD 304 Table 1/A 3 Type C, C1

Hand Arm Vibration White Finger injury

Please send ideas for Whole Life Design safety shares to wholelifedesign@nationalhighways.co.uk

LEAN Alternative Materials Alternative Plans Reduced Labour Improved and safer benefits Reduced Actual Duration Reduced Defects Reduced Repeatable Accidents

Very
DRAFT

INSTABILITY IN TEMPORARY CONDITION – FORMWORK SHUTTERING WLD.00X

Description of Event
The constructed formwork shutter was not in accordance with manufacturer's design

Population at Risk
Installation Contractor Workers and Supervisors

Hazardous Activity and Residual Risk Description

- Installation of shutters may expose workers to working adjacent to structures that are unstable in the temporary condition with an assessed residual risk moderate harm being incurred.

Potential consequences of this event

- Collapse of formwork may result in impact and crush injuries to workers within area at risk of harm.
- Failure of design to identify area at risk of harm may result in workers being harmed.
- Failure of adequate working area / plant operating area / material lay down area / on-site assembly area design may increase risk of harm from plant / tool person interfaces.

Potential Mitigation Measures

Design

- Provide information on limits of design e.g. to be used in plane X only.
- Provide information on associated drawings in all drawings.

Construction

- Check that the formwork is assembled in accordance with a design.
- Check that a designed lifting ancillary is installed.
- Select lifting equipment and ancillaries that are suitable for the designed lifting point.
- Check that the lifting plan aligns with the designed drawings.
- If the assembled formwork or lifting plan is not aligned with a design STOP and seek advice.
- Remove workers from area at risk of harm.
- Supervisor to talk and walk-through assembly steps and lifting plan before activity starts.

Maintenance / Operations

- Not applicable

Further Guidance and Reading

- BS 5975:2019 Code of Practice for temporary works procedures and the permissible stress design of falsework
- Highways Safety Hub Temporary Works

Safety Hub Alert Database
Sub-category 2 Collapse for Temporary Works has 7 alerts.

Please send ideas for Whole Life Design safety shares to wholelifedesign@nationalhighways.co.uk

LEAN Alternative Materials Alternative Plans Reduced Labour Improved and safer benefits Reduced Actual Duration Reduced Defects Reduced Repeatable Accidents

Very
DRAFT

Unstable Ground – Vehicle Restraint Systems WLD.00X

Description of Event
The designed location of the vehicle restraint system resulted in working on a potentially wet and slippery sloping surface.

Population at Risk
Maintenance Contractor Workers, Supervisors and members of the public.

Hazardous Activity and Residual Risk Description

- A worker or member of public stepping over a vehicle restraint system to access a place of relative safety or undertake a work activity is at risk of minor injury due to potentially wet and slippery sloping ground.

Potential consequences of this event

- Slipping on a wet surface may result in impact and crush injuries to workers if making contact with the barrier.
- An injured person may be located on the live traffic side of the barrier resulting in closure of a lane.

Potential Mitigation Measures

Design

- Eliminate hazard by designing a level area between barrier and drain.

Construction

- Challenge designs that do not provide a level area.
- Plan work activity to eliminate or reduce requirement to cross barriers.

Maintenance / Operations

- Plan work activity to eliminate or reduce requirement to cross barriers.

Further Guidance and Reading

- CG 501 Design of Highway drainage systems
- CD 377 Requirements for road restraint systems
- HA 39/96 Edges of Pavement Details
- C652E Safer surfaces to walk on

Safety Hub Alert Database

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

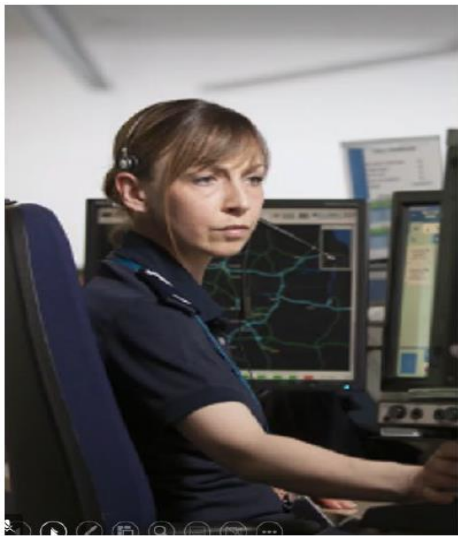
Please send ideas for Whole Life Design safety shares to wholelifedesign@nationalhighways.co.uk

LEAN Alternative Materials Alternative Plans Reduced Labour Improved and safer benefits Reduced Actual Duration Reduced Defects Reduced Repeatable Accidents

4.2 Suicide Prevention Design Tool – (Nicola Tweedie – National Highways)



NT sadly noted there was a total of 59 suicides on the network last year.



What do we know about suicides on the SRN?

- Estimated 50 suicides per year on our network.

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec	Total
9	5	3	5	3	1	4	4	8	6	***6	5	59

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec	Total
5	2.3	3.3	2.3	4.7	3	1.7	4.3	3.3	4.7	6	5.3	46

- Even more suicide attempts

Average Incidents	Average Lane Closure (DPI)	Average Lane Closure
1.165K	69,785	85,621



Suicide accounts for approx. 20% of all deaths on the SRN

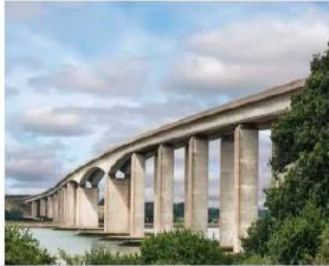
Setting and industry wide-approach



- Raising the bar guidance
 - [Highways Safety Hub](#)
- HART Reporting
- Training



High Frequency Locations



High Frequency locations

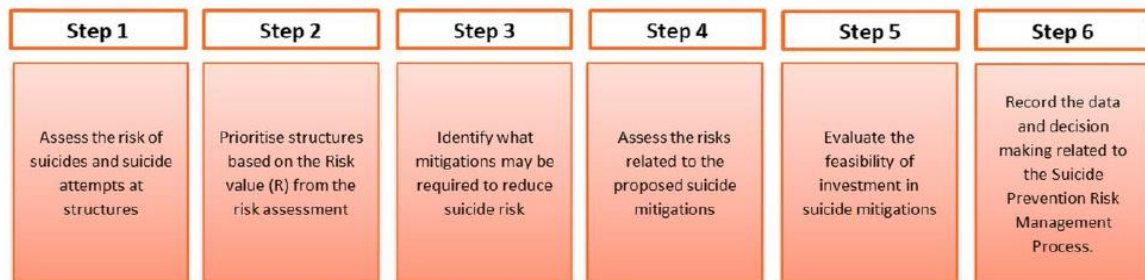


High frequency locations are found near to hospitals, universities, etc.

Advisory Group



Overview of Suicide Prevention Risk Management Process



Step 1: Assess the risk

- Deprivation data
- ControlWorks Data
- HART Data
- National Suicide Datal
- Suspected Suicide
- Reports due July 2023



The reports will assist in categorising the risk potential of specific assets.

Step 2 : Risk assessment table for suicide risk at structures

Likelihood (L) x Severity (S) = Risk Value (R)		Severity (S)				
		1	2	3	4	5
		Very low probability of death if an attempt is made	Low probability of death if an attempt is made	Medium probability of death if an attempt is made	High probability of death if an attempt is made	Very High probability of death if an attempt is made
Likelihood (L)	1	Very unlikely; no attempts over the next 5 years	1	2	3	4
	2	Unlikely; 1-2 attempts over the next 5 years	2	4	6	8
	3	May happen; 3-5 attempts over the next 5 years	3	6	9	12
	4	Likely; 6-10 attempts over the next 5 years	4	8	12	16
	5	Almost certain; over 10 attempts over the next 5 years	5	10	15	20

Risk Value (R)	Required action
Potentially low (1-9)	Existing control measures should be maintained and reviewed, and future proofing should be considered.
Potentially medium (10-19)	Suicide reduction measures should be considered in the design on a case-by-case basis.
Potentially high (20-25)	Suicide reduction measures should be included in the design.

Step 3: Design Guidance

- Design principals
- Recommended design mitigation based on risk values
- Applies to Major Projects and Operations

Risk Value (R)	Required action
Potentially low (1-9)	Existing control measures should be maintained and reviewed, and future proofing should be considered.
Potentially medium (10-19)	Suicide reduction measures should be considered in the design on a case-by-case basis.
Potentially high (20-25)	Suicide reduction measures should be included in the design.

home
safe
and well

highways
england

Next Steps

- Finalise the design guidance
- Update relevant products in PCF, 3D and associated standards.
- Share the risk reports
- Continue with risk tool development
- Develop a standard for suicide prevention?

home
safe
and well

highways
england

RW asked what's is the communication approach so that National Highways can discuss / share the information across all areas to provide further learning? NT felt that the DMRB was currently the preferred route for communication and disseminating of essential information and guidance.

NT will provide further updates on progress over the coming months.

NT

4.3 H&S File Digital Development – Dave Owens (WSP) SMPA

MLa sent his apologies – Dave Owens has kindly offered to update on his work for SMP.

PDWG SMP Alliance Handover Improvements

29 March 2023

David Owens
Handover Process Lead

Why focus on Handover?

- Handover has historically been a pain point for everyone involved
- The SMP Alliance now has integrated Delivery Teams enabling us to capitalise on the opportunities for improvement around handover
- The negative impact on our outcomes and the reputational damage associated with a poor handover is something the Alliance has to avoid
- There is an opportunity to develop an exemplar working relationship with the Operations Directorate

29 March 2023

SMPA Handover Improvements

Handover Process/Framework Task

- Development the SMP Alliance's handover process through collaborative workshops and process mapping activity.
- Work collaboratively with Alliance Partners and the supplier network to ensure all views and requirements are understood and the process is representative.
- Lead engagement with key National Highways stakeholders and interested parties
- Collate complex information and present it in a consumable way
- Test outputs with users to ensure fitness for purpose

29 March 2023

SMPA Handover Improvements

DP to provide a link to D Owen in relation to RDP collaboration. Actioned

Position the Handover Framework

Production Lifecycle Handover Framework Handover Playbook

29 March 2023

SMPA Handover Improvements

national highways | smp alliance

Our approach to standardisation of Handover

- The Alliance's approach to handover will be standardised and captured within the Handover Framework & Playbook
- All content is going through a rigorous Check Review Approve and Verify process including consultation and agreement on content with OD and other key stakeholders prior to release enabling schemes to focus on value add activity.
- We aim to capture a national approach to handover of Smart Motorways schemes. Where this isn't possible we will state where regional variations exist.
- **The Handover Framework & Playbook will be available to schemes by June 2023.**

29 March 2023

SMPA Handover Improvements

national highways | smp alliance

Handover Framework

A process diagram to guide the project...

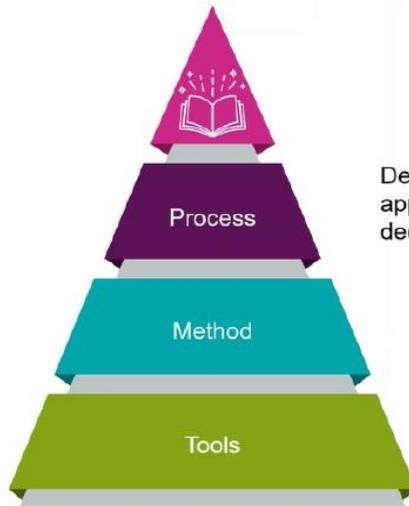


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SMPA Handover Improvements

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What is the Handover Playbook?



Defines the SMP Alliance's end to end Handover Process and approach; identifying all requirements, stakeholders and key decision points.

Describes how to meet handover requirements through clear definition of roles and responsibilities, deliverable lifecycles and how to guides.

Support in the production of a successful handover package through provision of annotated best practice examples, detailed guidance on completion of handover deliverables and direction on end of stage handover audits including audit templates.

29 March 2023

SMPA Handover Improvements

Handover Playbook Structure and Content

The Handover Playbook consists of 12 chapters:

1. Introduction and Scope
2. Construction (Design and Management) Regulations 2015
3. End to End Handover Process
4. Roles and Responsibilities
5. Handover Requirements
6. Information Management Systems and Requirements
7. Management of the Digital Asset
8. Acceptance of the Asset from OD (before SMP Alliance starts work)
9. Handover Deliverables
10. Risks and Opportunities
11. Efficiency and Benefits
12. Conclusion and Close Out

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SMPA Handover Improvements

Example Content

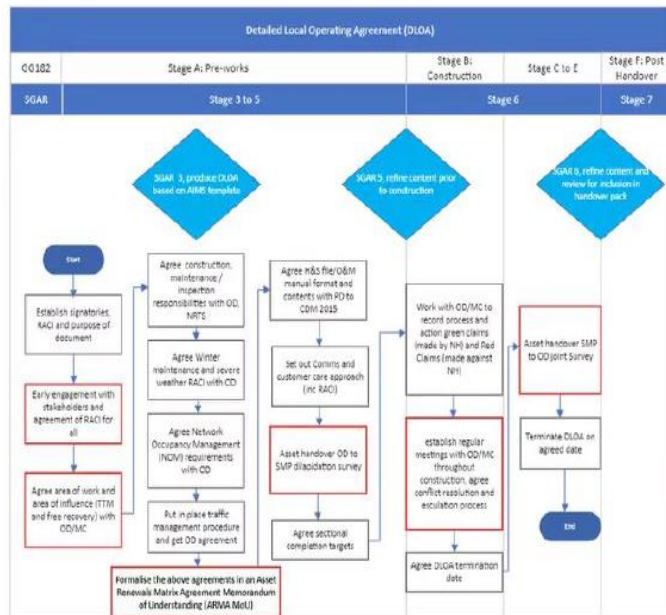
Deliverable Lifecycles

A Deliverable Lifecycle will be available for key handover deliverables, which will chart the key process steps in production of that deliverable.

Where a deliverable is a PCF deliverable, this information will supplement, but not replace, any content already available on the PCF Supply Chain Portal.

This tool enables individuals to understand the full journey of a deliverable and its key interfaces with other processes and procedures.

The adjacent example is for the Detailed Local Operating Agreement (DLOA).



Red box items are priority steps in the production of a scheme DLOA and project lifecycle.

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SMPA Handover Improvements

RACI Matrices

A RACI Matrix will be available for key Handover deliverables. These are based on the AIMS template to set out the responsibilities through the lifecycle of an individual deliverable.

This tool enables individuals to see 'at a glance' their involvement in that deliverable.

The adjacent example is an extract from a Stage 3 to 5 DLOA.

Task	OSAP				DED			
	Assembly Lead	Quality Manager	Customer and Stakeholder Lead	Temporary Traffic Management Manager	Handover Manager	Design Lead	Principal Designer	NH Interface PM
Establish Signatories, RACI and purpose of document	R	C					C	A
Early engagement with Stakeholders and agreement of RACI for all	R	C					C	A
Agreement of in construction, maintenance / inspection responsibilities with OD, NRTS	R	C					C	A
Agree area of work and area of influence (TTM and free recovery) with OD/MC	R		I	R			C	A
Agree Winter maintenance and severe weather RACI with OD	R		I					A
Agree Network Occupancy Management (NOM) requirements with OD	R			R			C	A
Put in place traffic management procedure and get OD agreement	A		I	R			C	C
Formalise agreements in a MoU, ARMA*	C		I	C				A
Initial completion of DLOA template	A	R			C			
Set out Communications and customer care approach (inc RACI)	A		I	R				
Agree H&S file / O&M manual format and contents with Principal Designer to CDM 2015	A	R			C		C	C
Asset handover OD to SMP dilapidation survey	A	C			R			C
Agree sectional completion targets	A	C		C	C		C	C
Agree predicted DLOA termination date	A	C		C	R		C	C
SCAR 5								

*Regional variation on OD owner / approach

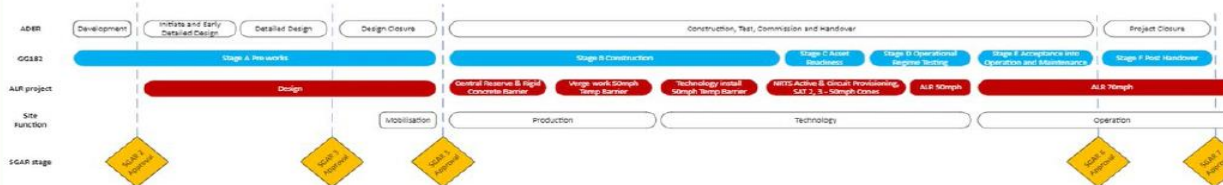
Responsible	Assigned to complete the task or deliverable
Accountable	Has final decision making authority and accountability for completion - one per task
Consulted	An adviser, stakeholder, or subject matter expert who is consulted before a decision or action
Informed	Must be informed after a decision or action

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SMPA Handover Improvements

Terminology Support

The Playbook will support individuals to navigate the language used to describe stages of a project's delivery as this can become confusing. The example below shows comparative terminology for an ALR scheme's lifecycle, the SGAR stage, onsite, GG182/ MCH1349 and the Alliance Delivery Execution Requirements (ADER).



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SMPA Handover Improvements

Health & Safety File



Structure

- 19.1 - Volume 1 – Introduction and Index
- 19.2 - Volume 2 – Roadworks
- 19.3 - Volume 3 – Structures
- 19.4 - Volume 4 – Lighting
- 19.5 - Volume 5 – Motorway Communications MCH1349
- 19.6 - Volume 6 – Geotechnical
- 19.7 - Volume 7 – Environmental
- 19.8 - Volume 8 – As-Built
- 19.9 - Volume 9 – Material Approvals, Testing & Commissioning, Works Packages
- 19.11 - Volume 11 – Other Information/Documents
- 19.12 - Volume 12 – HE Databases

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SMPA Handover Improvements

- DO noted that the various Volume structures are causing current confusion. This is to be confirmed and informed by further discussions with National Highways. He will also link up with MLa through the T&F Group to ensure there is no duplication.
- Further confirmation will be required in relation to handover on SMP Alliance schemes.
- Discussion noted the importance of designer / and or Principal Designer representation on site throughout the construction period.
- DO emphasised the importance of staff having the correct SKE to understand / manage the design change process during construction.
- TT and DP both referenced the recent Carmont Rail Disaster (now a Safety Share on the Hub Website <https://www.highwayssafetyhub.com/lessons-learned-design.html>) as an example where site based design change failed to follow the CDM Regulations, with catastrophic consequences.

DO
MLa

4.4 Passport Scheme – Designer Module (5 min) (Natalie Mansell -Atkins)

NM confirmed that there had been no feedback from the Passport Steering Group on this. RW would follow up on this.

RW

4.5 Eliminating Risk from the Outset Update – (Doug P on behalf of Paul Dennis - Arup)

PD sent his apologies. The ERO SP&TS project was due to complete at the end of March 2023. – Targets included:

SPaTS2 Home Safe & Well – Eliminating Risk from the Outset

ARUP

What was the task? The task looked at early-stage highway scheme development and focus on the eliminate element of the principles of prevention.

Each deliverable should provide a tangible product that enables National Highways and the supply chain to eliminate risk collectively and systematically from the outset of every scheme.



What work was done?

- **Work Package 2:** The outcome of this work package has provided a detailed review of National Highways current systems, processes and procedures that are in place for health and safety requirements at each PCF stage. Following this review, the next PCF Product update will include amendment of the Design Management section of the Stage 1 Supplier Quality Plan to include a *Safety by Design* plan which sets out how the Principal Designer is going to manage and monitor the design process and co-ordinate matters relating to health and safety during the pre-construction phase. 'Safety by Design' supports National Highways vision for Eliminating Risk From The Outset by allowing Designers to create new and innovative methods of road design and construction that eliminates risk to those constructing, maintaining or travelling on the network.
- **Work Package 3:** The outcome of this work package focused on a thorough review of Lessons Learned at Stage 1 paired with continued learning of lessons throughout Stages 2 to 6 and recommending increased usage of the Major Projects Knowledge Management Sharepoint platform.
- **Work Package 4:** The outcome of this work package was to amend the Pre Construction Design Report in the next PCF update to include a Design Strategy Record (DSR). The DSR acts as a signposting document, or direct record, of the design decisions that have been made, including those relating to health and safety. This is especially relevant where design decisions have been made to eliminate risk from the outset of projects.

What were the benefits to National Highways?

- Clear plan of how Principal Designers will manage and monitor the design process and co-ordinate matters relating to health and safety during projects.
- The ability to influence and implement meaningful changes on their schemes. It will ensure that all project teams are working towards delivering better HS&W outcomes earlier in the project lifecycle at lower cost and impact too.
- Ability to more accurately measure designer's performance on highways schemes.
- Assists National Highways with assessment of compliance of H&S in design for Major Projects

ERO PCF WHS Updates

ARCADIS | Design & Consultancy for natural and built assets

- Design Strategy Record (March 2023)
 - Now required as part of the Stage 5 Pre – Construction Plan product
 - The DSR was referred to in IAN149/17 and IAN 161/15.
 - The DSR acts as a signposting document, or direct record, of the design decisions that have been made.
 - This is especially pertinent where design decisions have been made to eliminate risk from the outset of projects and recording these safety-led design decisions, along with all other design decisions, is essential for compliance and valuable during handover between designers.
 - Entries in the DSR should be succinct, state compliance with the DMRB, use of SMP Design Guide and relaxation/departures from standards.
 - Owned by Regional HSW Lead

ERO PCF WHS Updates

- Safety By Design Plan (Pre-Construction Phase Plan) (Likely June 2023)
- Proposal that it will be a Stage 1 to 5 Supplier Quality Plan product – plan contents to include:
 - How the Principal Designer is going to manage and monitor the design process and co-ordinate matters relating to health and safety during the pre-construction phase to ensure that, so far as is reasonably practicable, the project is carried out without risks to health or safety.
 - How Designers will take into account the general principles of prevention [Managing health and safety in construction \(hse.gov.uk\)](https://www.hse.gov.uk/construction/).
 - How the Principal Designer will ensure that the Designers carry out their duties and take into account, where relevant, the content of any construction phase plan, the health and safety file and the contents of a Design Strategy Record (to be assessed during later stages by NH).
 - Include detail around project planning and guidance on human factors. Refer to The Highways Safety Hub - Raising the Bar 26 – Safety by Design - Version 2 – September 2021 <https://www.highwaysafetyhub.com/raising-the-bar-guidance.html>
 - How Designers will record any hazards that they identify during the design process. It is important that this is set up to be easily accessible to all project personnel.
 - How the Principal Designer and Design Lead will assess the risks and ensure suitable mitigations are recorded.
 - How interdisciplinary design review workshops will be held at appropriate points during the design.
 - Consider integration of Health & Safety information into agreed Building Information Modelling (BIM) Requirements
 - Consider early involvement of designers with Temporary Works and Constructability competencies.

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3

Other ERO Outputs

- Major Projects Knowledge Management SharePoint platform.
- Recommendation to adopt Xactium HSW Harm and Effectiveness of Mitigation Measures Tool
- Safety by Design Plan
 - SMP Safety by Design Plan Example - Paul Brown (WSP)

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4

Paul B gave a brief introduction to the draft Safety by Design (Pre-Construction Phase) Plan that he has developed and would like comments on. It is suggested that an agreed format from PDWG could form the basis of a template to be referenced within the updated Supplier Quality Plan referenced in slide 3 above, in the June update.

Sam Allin to undertake a benchmark exercise against HSE CONIAC guidance against PB safety by design plan template.

Post Meeting
Draft Safety by Design Plan issued for comment – please return asap. Many thanks.

SA

All

4.6 SCSLG & Safety Hub Update

Safety Hub Update – Paul Brown (WSP) on behalf of Liz Braithwaite (Skanska)

Supply Chain Leadership Group Update



Read the SCSLG Update here:

[supply chain safety leadership group update letter.pdf](#)
([editmysite.com](#))

Improvements on the Horizon



Mandatory Elements

- › At design stage designers must prioritise designs and construction methodologies to minimise workforce requirements for working at height during construction, maintenance, and demolition
- › Modern methods of construction and off-site manufacture must be considered for reduction of work at height activities
- › Construction methods involving the assembly of components at ground level to minimise work at height must be prioritised
- › Site cabins with lifting points at the bottom not on the top must be used
- › Principal Contractors must implement a "No Gaps" policy on scaffold and bridge decks etc. to prevent tools/materials falling from height
- › All hand tools must be tethered when working at height
- › The use of ladders / step ladders is prohibited for working at height apart from where they form part of temporary works on scaffolding or for safe access into excavations
- › MEWPs with anti-crush devices fitted must be used (see RtB 1)
- › Persons supervising the use of MEWPs must hold the MEWPs for Managers Course
- › Persons supervising rope access must hold IRATA Level 3 training
- › Planned and regular testing of emergency protocols for rescuing casualties from height must be implemented, recorded and lessons shared

Safety Hub Update

- The revised Work at Height Raising the Bar has been published:
- [b16 work at height feb 23.pdf](#)
([highwayssafetyhub.com](#))

Changes to CSCS Card Scheme – presentation from the CITB

[Construction Skills Certification Scheme | Official CSCS Website](#)

[CSCS Industry Accreditation | Official CSCS Website](#)

All Industry Accreditation (IA) cards issued from 1st Jan 2020 will expire on 31st Dec 2024 and cannot be renewed. **These are CSCS cards gained through “grandfather rights” for people assessed as competent through their experience. They do not hold a current NVQ qualification.**

This guidance is designed to help you understand your next steps to replace your card.

GG128 – new version applies from 1st April

- Re-cap on significant changes:
- **All injury incidents will need to be reported onto HART**
- All customer in crisis interventions will need to be reported onto HART
- The time for providing an investigation report to go onto the system has been increased to 20 days
- Accurate hours and headcount to be input on working day 1
- Much of the other requirements remain the same, we have to report LTIs, RIDDOR, ill health connected with work, high potential near misses and incursions
- Some of the detail though is still confusing and a “guidance” to the guidance is being issued before the end of this month
- Key take-away – **if anything happens report it immediately**

5.0 Information and Discussion

5.1 Designer Awareness of Mobile Mapping - Concrete Roads – Mark Reid (KOREC)



Concrete Roads Programme



Replacing our concrete roads

- 4% of England's Strategic Road Network nearing end of working lives
- £400 Million Strategic Road Network investment up to 2025
- Programme will run until RIS 6 2045
- Life extension schemes – repair roads giving a 5-15 years life extension
- Reconstruction schemes – reconstruct roads giving a 40 year life
- Being delivered by the Concrete Roads Framework, Operations Directorate

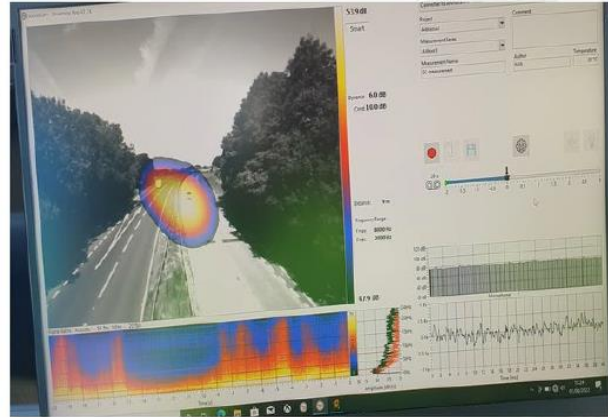


Concrete Centre of Excellence

Driving Innovation

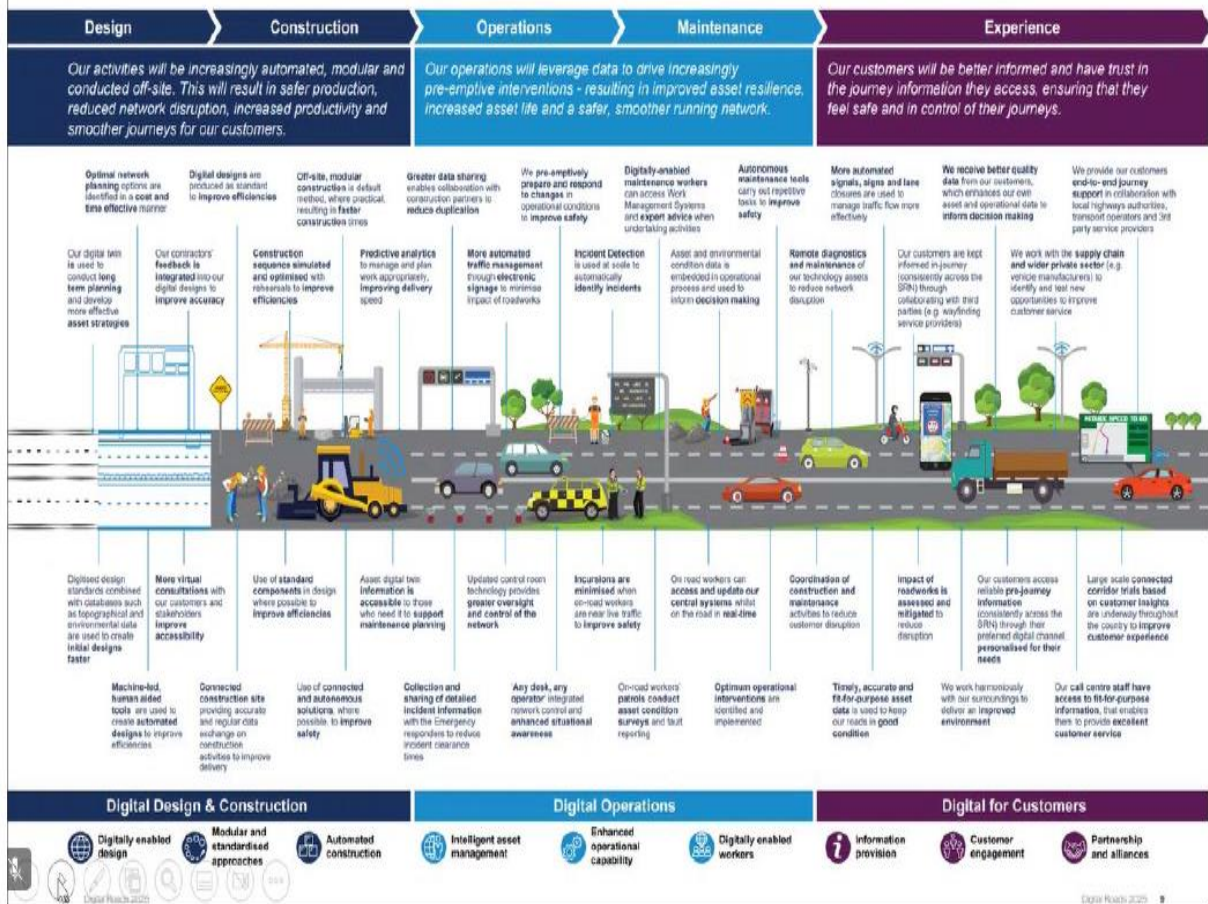
Identifying innovative new methods that can reduce both the cost of the works, carbon, and the impact of construction on roads users and communities.

- Driven Surveys
- Digital Twins
- IOT
- Augmented/Mixed Reality
- New forms of non-destructive testing - noise



KOREC

Digital Roads - 2025 Roadmap



End to End Digital (E2ED)

NH COE undertook an evaluation of digital technology for the construction, repair, operation, and maintenance of the CR network

- Data driven decision making is central to;
 - Increased productivity
 - Improved Safety
 - Reduced Network disruption
 - Staff enablement
 - Lower Carbon footprint
 - Empowerment for Design and Delivery
- Identified the need for a golden thread, a single source of truth (digital twin) to be used throughout the lifecycle of the road



E2ED - Evaluation of technology

Different survey technology and platforms were evaluated for developing the digital twin.

Key considerations included;

- Data Capture (Speed, Accuracy, Coverage, Safety, Disruption to network)
- Data Extraction (Automation, Potential deliverables/applications)
- Data Dissemination (Data management, sharing with stakeholders)
- Data updating (How to keep evergreen, data amalgamation from different sources)
- Data Adoption (training needs and ease of use)



E2ED

Automated
Realtime Reporting

Digital
Survey

Mobile Mapping

Digital
Handover

Digital
Design

K-Portal

Works
Management

Digital
Construction

Digital field

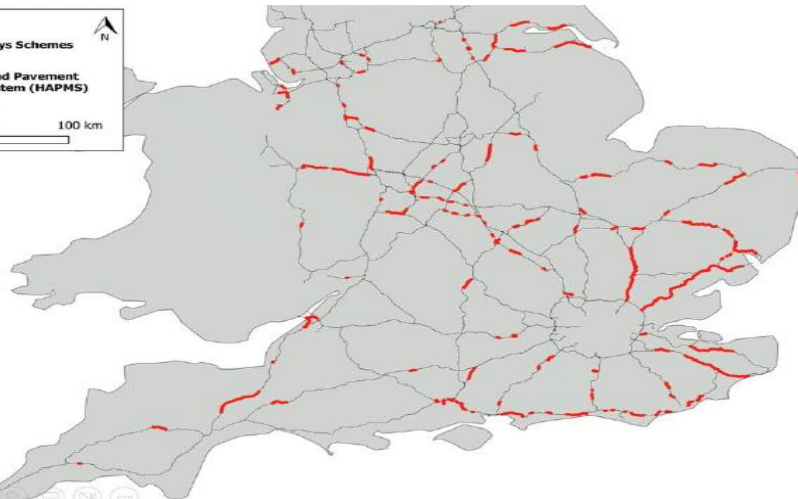


Mobile Mapping – Trimble MX9

Rapid survey grade highway surveys at normal traffic operating speeds – No Traffic management required



 KOREC™



 KOREC™



3D Topo



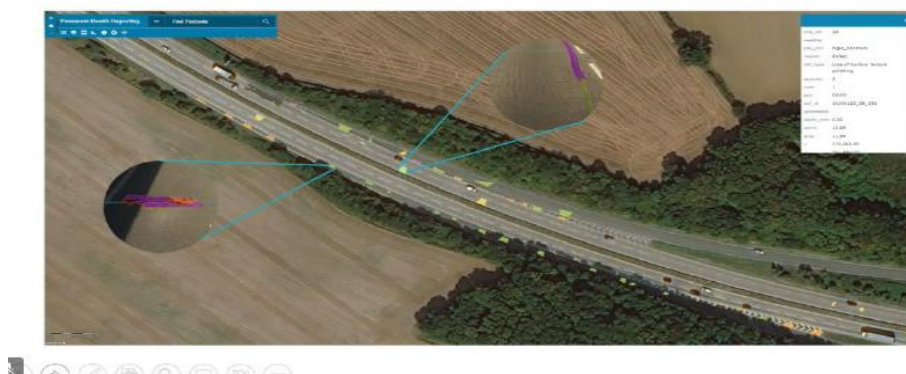
Defect Machine Learning

New levels of efficiency with AI and Machine Learning



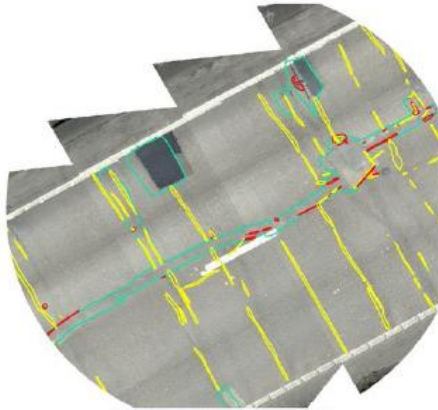
Defect Machine Learning

New levels of efficiency with AI and Machine Learning



Defect Machine Learning

Defect types automatically detected from pavement imagery

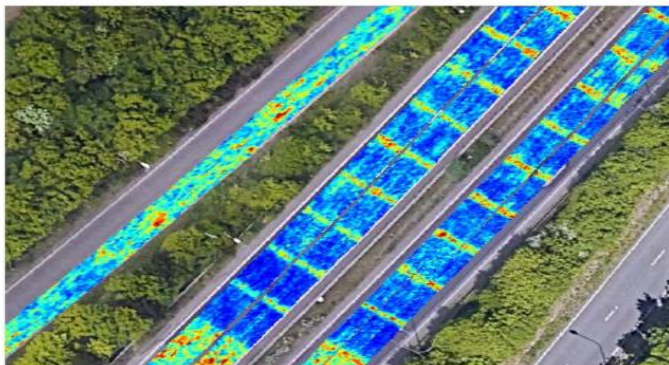


Defect Type
Spalling
Transverse Crack
Corner Crack
Pothole
Failed repair
Diagonal Crack
Good condition repair
Longitudinal Crack
Scaling
Ravelling



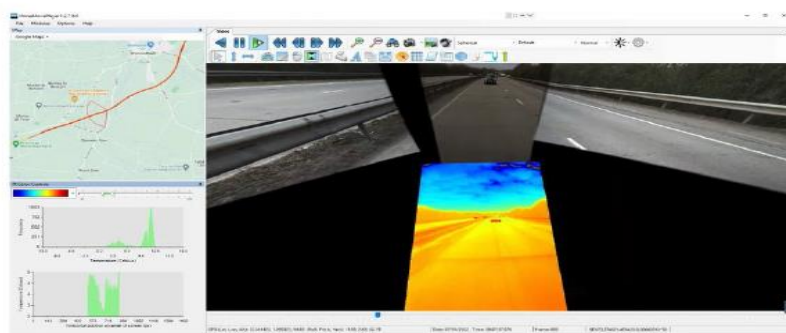
Ground Penetrating Radar

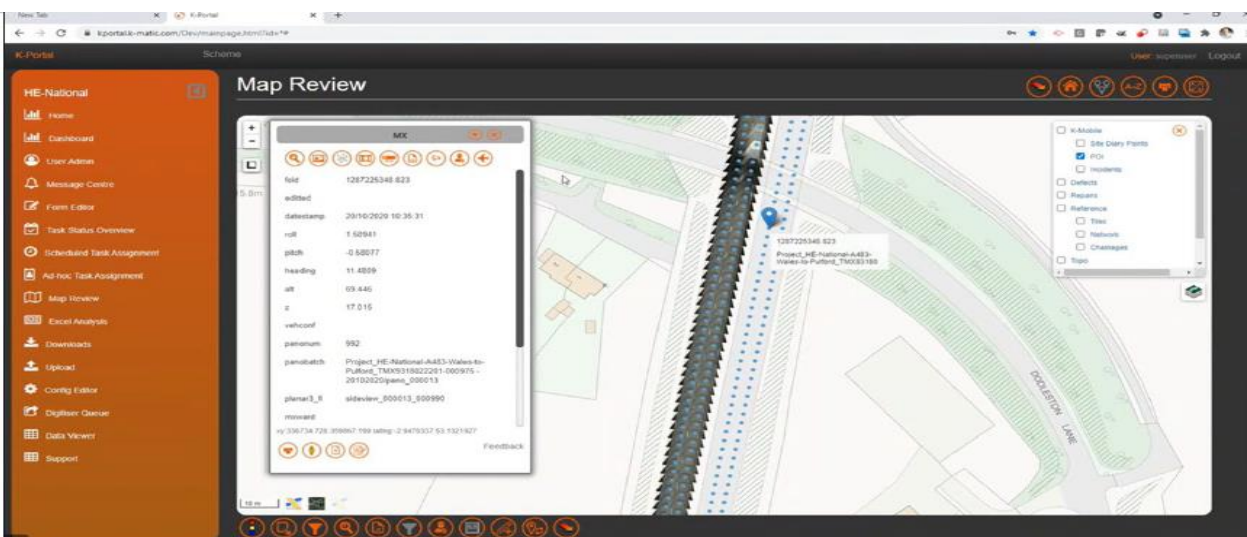
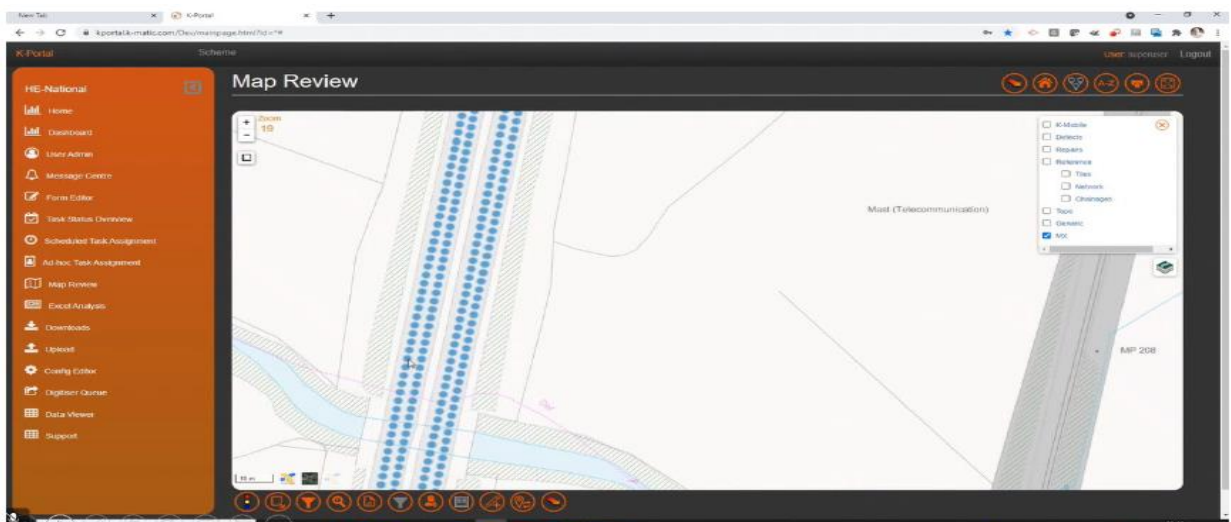
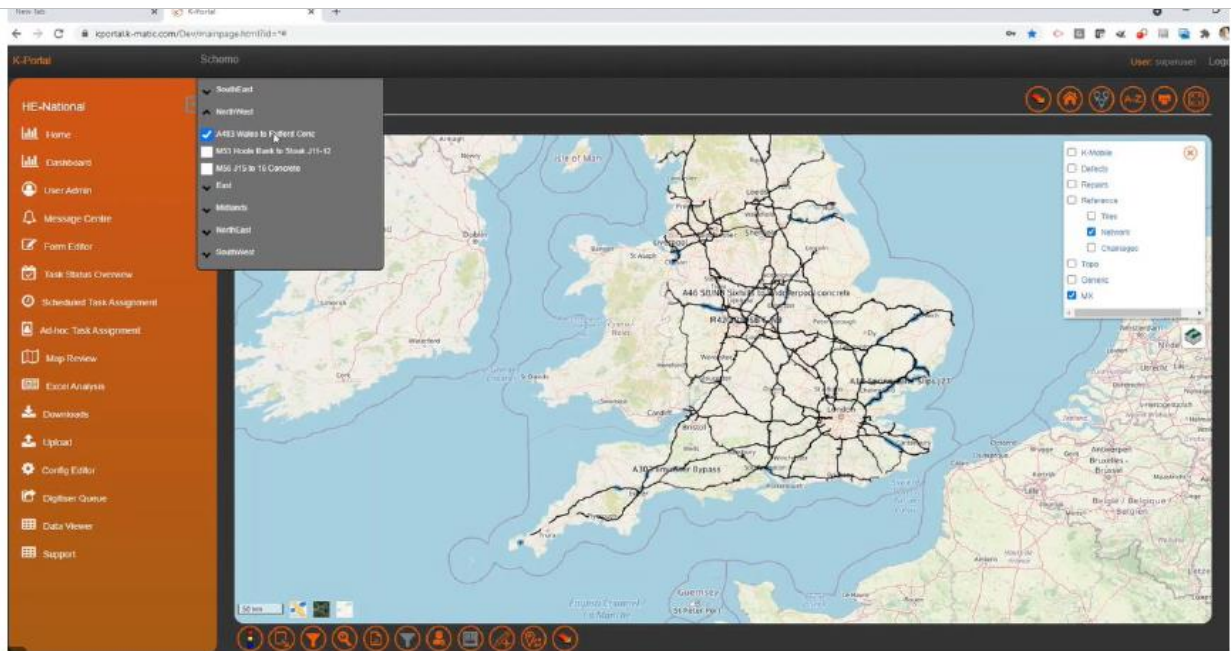
Concrete Joints, Voids, Moisture, and Utilities

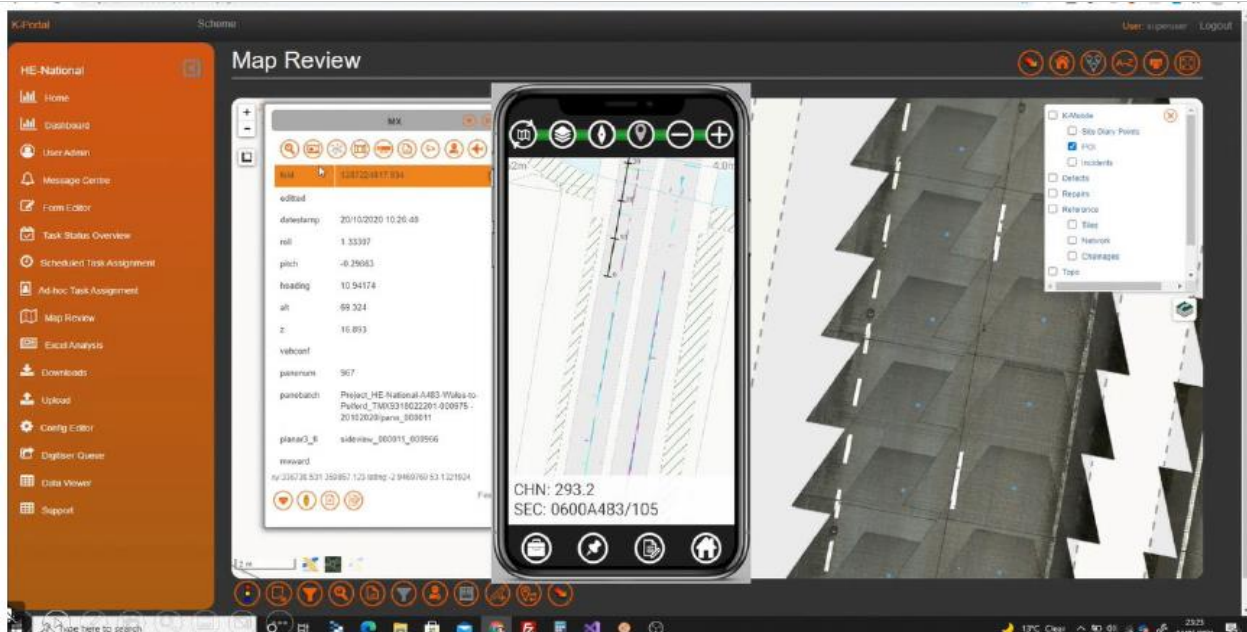


Thermal Imaging

Road and structure assessment

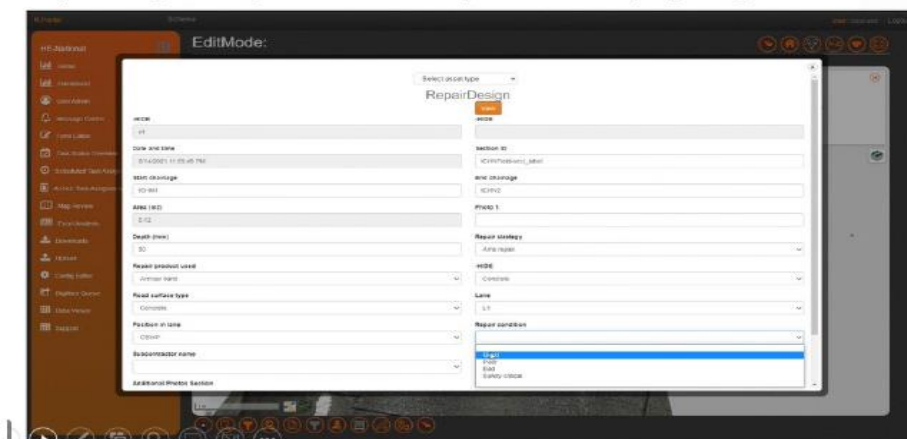






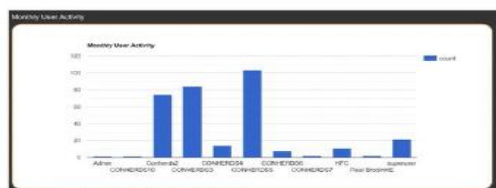
Design

Repair design directly inside Portal or imported from 3rd party design software



Works Management

- Issue work packages directly to contractors
- Track progress
- Automated production of shift reports
- Speed up approvals/Handover



Automated Shift Diary

Defects Recorded

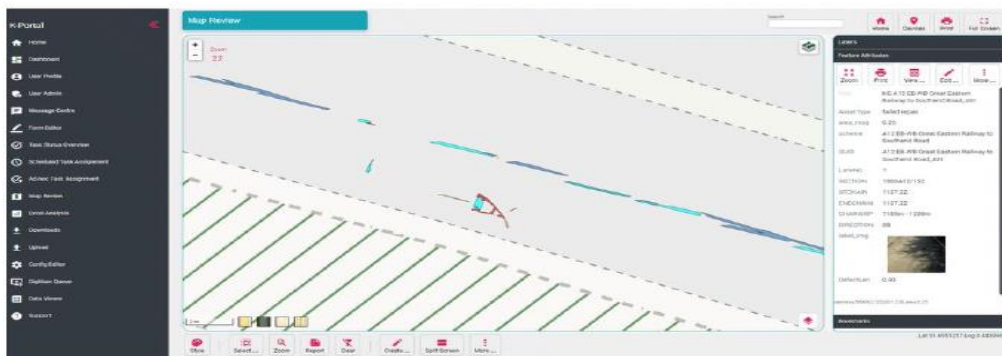
Defect ID	PKH-173-YRK				
	New or Existing	New			
	Location	L1	Other		
	Chainage	27.0 41.4	Section	1500A12/236	
	Dimensions	@area	14,332	Depth	@depth
	DefectType	Longitudinal crack		Severity	3 - Poor
	Surface	Concrete			
	Comments	Edge line failure			
Defect Detailed Location plan					
					

Digital field capture/Supervision

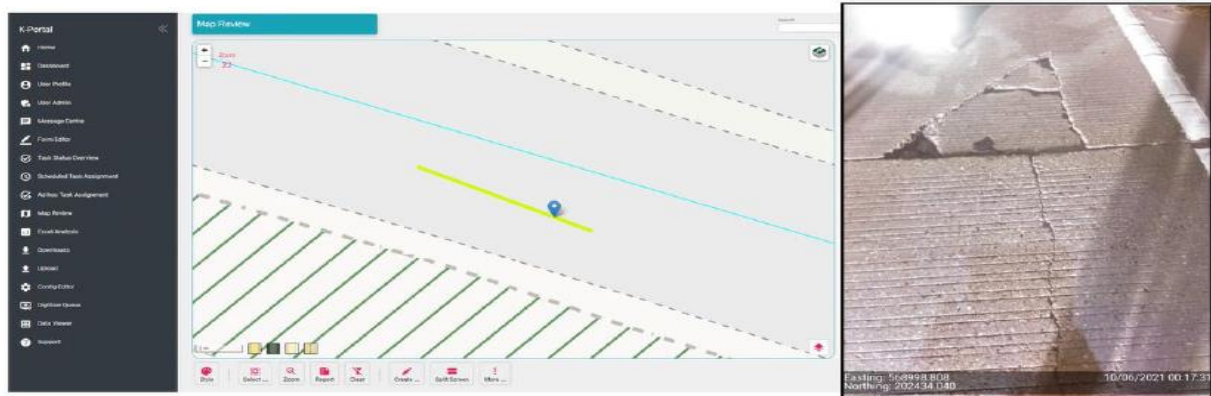
Positioning as a service with Trimble Catalyst DA2 plus the KOREC Capture field collection app



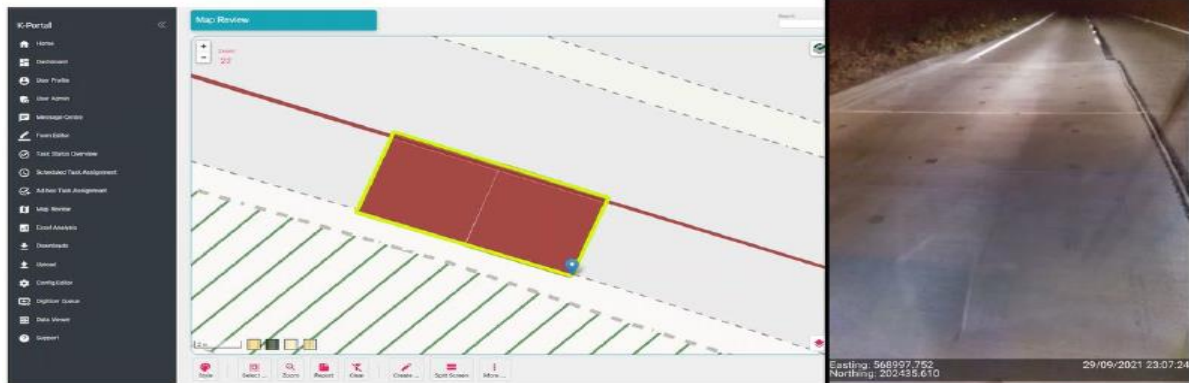
Digital field capture/Supervision



Digital field capture/Supervision



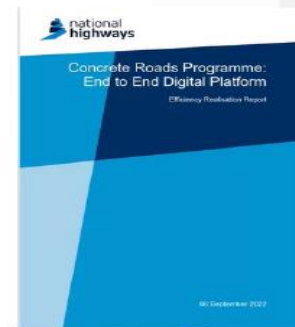
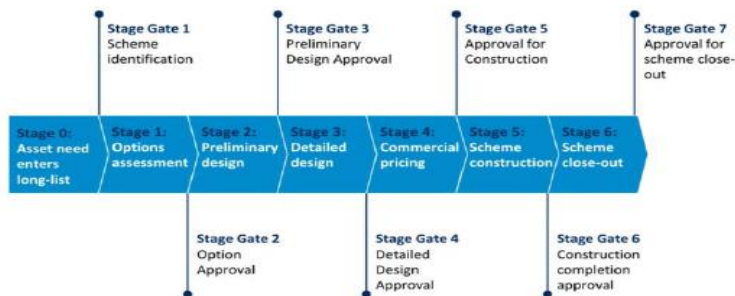
Digital field capture/Supervision



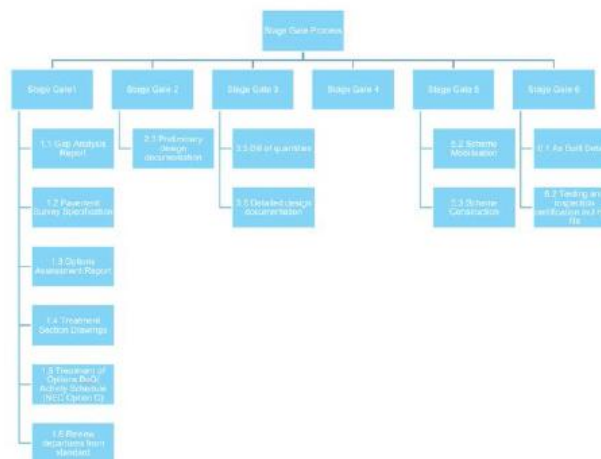
Efficiency Gains

Independent Report by Aecom

- Modelled on a typical 32 lane km Scheme



Core Products



Calculated Savings

Scheme Type	Savings under S1 for the model scheme	Savings under S2 for the model scheme
Life Extension Works	£52,000	£124,000
Reconstruction Works	£35,000	£87,000

Table 5: Potential savings of using the E2ED platform for LEW and Reconstruction for the model scheme

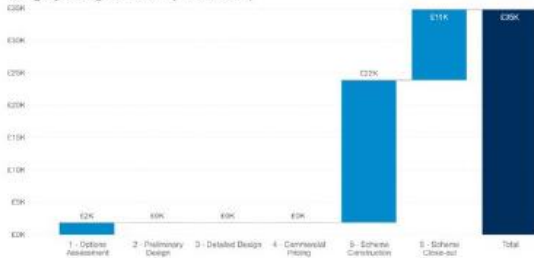
The outputs benefit per linear lane-km for LEW and reconstruction works for S1 and S2 are presented in Table 6 below.

Scheme Type	Savings in S1 per linear lane km	Savings in S2 per linear lane km
Life Extension Works	£1,600	£3,900
Reconstruction Works	£1,100	£2,700

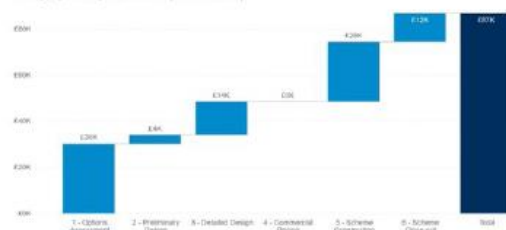
Table 6: Linear lane km savings of using the E2ED platform for LEW and Reconstruction schemes

Reconstruction savings

Savings by 3D Stage - Scenario 1 (Reconstruction)



Savings by 3D Stage - Scenario 2 (Reconstruction)



“Every time we use the solution, we save money”

- Early days of adoption on CRP
- LEW – Significant benefits in stage 1, 5 and 6 already
- Reconstruction - Stage 5 & 6 mainly (Options Assessment Report and Gap Analysis)
- Treatment design in the platform would drive further efficiencies (stages 0 to 3) – will require further development and a move away from traditional methods of design

Other identified intangible efficiencies

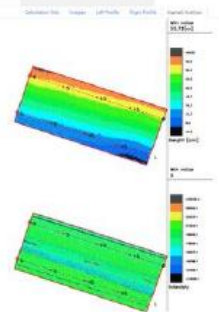
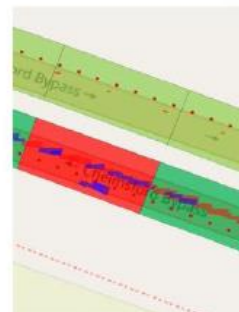
Big Data provides

- Improved digital asset management data
- Improved efficiencies
- Improved Health and Safety
- Analysis and Pro-active maintenance
- Deterioration modelling
- Cost estimation and Risk Allocation
- Improved data accessibility and quality



What's happening now?

- Increase awareness and adoption across the framework
- Further evaluation and development of the E2ED workflow – especially design
- Working with AECOM to develop 'gold standard AI' for design including attribute data
- Undertaking a new national lidar survey of schemes
- Finalisation and implementation of digital handover specification (EIR) into the portal
- Working with DRF at Cambridge University to create an 'exemplar' digital twin
- Further enrich the Digital Twin, HD imagery, GPR, Thermal, Noise, Carbon, Drone footage
- Review, implement, and measure other identified efficiencies especially H&S
- Trials of the process on Asphalt



6.0 AOB

6.1 Video and presentations will be uploaded to the PDWG Tile on the Highways Safety Hub webpage.

6.2 PDWG 33 will be face to face on 13th October – Venue TBC

7.0 Date of Next Meeting PDWG 32 – now 13th July 2023 – (Virtual) Teams Call.