PPR2062

Well Managed Highways Infrastructure (WMHI) Code of Practice (CoP) Update

Commissioning and delivery options

Authors

D Peeling, A Boath

May 2025

TRL **THE FUTURE OF TRANSPORT**

Report details

Report prepared for:	Department for Transport		
Project/customer reference:	GFA023		
Copyright:	© TRL Limited		
Report date:	8th April 2025		
Report status/version:	1.0		
Quality approval:			
Cathy Booth (Project Manager)		Alex Boath (Technical Reviewer)	

Disclaimer

This report has been produced by TRL Limited (TRL) under a contract with Department for Transport. Any views expressed in this report are not necessarily those of Department for Transport.

The information contained herein is the property of TRL Limited and does not necessarily reflect the views or policies of the customer for whom this report was prepared. Whilst every effort has been made to ensure that the matter presented in this report is relevant, accurate and up-to-date, TRL Limited cannot accept any liability for any error or omission, or reliance on part or all of the content in another context.

When purchased in hard copy, this publication is printed on paper that is FSC (Forest Stewardship Council) and TCF (Totally Chlorine Free) registered.

Contents amendment record

This report has been amended and issued as follows:

Version	Date	Description	Editor	Technical Reviewer
0.1	11th April 2025	First draft	D Peeling	A Boath
V1.0	9th May 2025	Final version	D Peeling	A Boath
	16th May 2025	Final version compiled – Not Accessible	P While	

Executive Summary

The Well Managed Highway Infrastructure (WMHI) Code of Practice (CoP), originally published in 2016, provides a risk-based framework to guide local authorities in managing highway networks. While not legally binding, it supports authorities in meeting statutory duties and evidencing best practice. Given the rapid evolution of technology, policy, and operational practice since its publication, the Department for Transport (DfT) commissioned TRL to undertake a scoping exercise to assess whether and how the CoP should be updated.

The gap analysis in Part One combines stakeholder engagement, a comprehensive survey, and a review of the current CoP and its references. Feedback was gathered from UKRLG boards and sub-boards, via a virtual whiteboard and meetings, and from a national online survey that received 164 responses, 65 of which were completed in full.

The findings highlight that the CoP remains a valuable and respected document, particularly for its flexibility and support of risk-based approaches. However, it faces challenges including inconsistent implementation, limited engagement from senior leaders, lack of up-to-date references, and insufficient support materials for practitioners.

Stakeholders strongly advocated for a modernised, digitally accessible CoP, enhanced with interactive tools, case studies, and template resources. Emerging themes such as carbon management, artificial intelligence in inspections, active travel infrastructure, and climate resilience were identified as essential additions. Improvements to usability, structure, and communication of the CoP were also consistently requested.

The analysis concludes with a set of high-level recommendations:

- Establish a mechanism for continuously updating reference links and related materials.
- Enhance the CoP's usability through digital formats and practical resources.
- Address technological, environmental, and social challenges with new guidance on AI, carbon, climate adaptation, and inclusion.
- Develop competency frameworks and promote training to support implementation.
- Maintain a meaningful risk-based approach while considering hybrid models with minimum standards.
- Continue stakeholder engagement throughout the update process, including focused working groups.

These recommendations form the basis for a future update to ensure the CoP remains relevant, accessible, and aligned with the needs of a modern, sustainable, and resilient highways network.

In Part Two, this paper outlines a recommended approach for delivering and commissioning the next phase(s) of work.

The preferred delivery model is a collaborative approach in which:

- The Department for Transport (DfT) provides funding and policy direction;
- UKRLG retains ownership and stewardship of the updated CoP;

- A Lead Consultant is appointed as integrator and delivery manager;

- Working groups including UKRLG sub-board members and industry experts co-author content.

To support this delivery model, the recommended commissioning route is a single integrated contract. This approach ensures strategic continuity, simplifies management and procurement, and enables better coordination of thematic inputs, training, digital platform development and stakeholder engagement.

The proposed scope includes:

- Development of a governance framework;

- Technical updates to the CoP and its structure;

- Inclusion of new content areas such as carbon management, AI, and climate resilience;

- Creation of executive summaries and training materials;

- Launch of a live, searchable digital platform; and

- Development of a monitoring and evaluation framework.

This model balances strategic oversight with sector ownership and practical delivery. It will help ensure the refreshed WMHI CoP is both implementable and future-facing.

Part Three of this report proposes a delivery plan. Eight work packages are scheduled across three phases. The work to update the WMHI CoP is estimated to take approximately 18 months.

Part One

Gap analysis

Table of Contents

1   Introduction

The latest version of the Well Managed Highway Infrastructure (WMHI) Code of Practice (CoP) was published in October 2016 by the UK Roads Liaison Group[1] (UKRLG), to provide guidance for local authorities on managing highway networks. It emphasises a risk-based approach, encouraging authorities to tailor their policies to local circumstances rather than adhering to prescriptive standards. Though not legally binding, compliance demonstrates best practice and helps authorities manage risks and meet statutory duties.

Given the time since publication, it has been recognised that the current CoP is now in need of updating to meet the needs of the modern highway network. This will help shape a modernised version of the CoP that reflects current best practices, technological advancements, legislative changes, and stakeholder needs, ensuring effective and sustainable highway infrastructure management.

TRL has carried out an initial scoping exercise on behalf of the Department for Transport (DfT) to identify what and how the current CoP should be updated. This is a short-term commission, prior to a separate project to update the CoP, as it was recognised that a more informed view of the scope of the work needed to update the CoP was required.

TRL has conducted a series of stakeholder engagement sessions to seek the views of the industry to assess what in the current CoP works well, what doesn't work well and what changes or additions might be needed to ensure the CoP meets the requirements of the industry now and into the future. This stakeholder engagement included meetings with a steering group, UKRLG boards and sub-boards and a stakeholder survey disseminated to key stakeholders and users of the CoP. TRL also carried out a document review.

This document describes the outputs and findings from the stakeholder engagement and document review.

---

[1] Now named the UK Roads Leadership Group

2 Stakeholder Engagement

2.1 Steering Group

The Steering Group will provide oversight, technical leadership and decision making to the project. It is expected that the Steering Group will remain in place for the full update project so they will also advise on the changes needed to ensure that the revised WMHI CoP is fit for purpose and can be kept updated in the future.

2.1.1 Terms of Reference

The Terms of reference are as follows:

- oversee the project's progress and ensure alignment with the project objectives
- support decision making during all stages of the project
- bring to the project the views of the groups they represent
- ensure the groups they represent are engaging with the project activities as required
- ensure the groups they represent are kept informed throughout the project lifecycle
- attend meetings of the Steering Group and address project requirements for the duration of the project
- advise on consultation with wider sector including the scope and distribution group for an online survey
- advise on identification of suitable attendees at project focused workshops
- represent the Steering Group in project focused workshops or other consultation exercises
- address risks and issues that may arise and escalate as appropriate

The following terms are anticipated to be required in future phases of the project.

- review (with the groups they represent draft) text for the WMHI CoP and ensure feedback is provided to the project team
- identify and share with the project team potential risks, issues and opportunities associated with the review and update of the WMHI CoP
- advise on and support the dissemination of the revised WMHI CoP

2.1.2 Membership

The membership of the Steering Group is formulated to ensure proportionate views across the sector are shared with DfT and the project team:

- TRL Project team
- Department for Transport (DfT)
- UK Roads Board
- UK Bridges Board

- UK Lighting and Technology Board
- The Scottish Collaboration of Transportation Specialists (SCOTS)
- County Surveyors' Society (CSS) Wales
- Department for Infrastructure (DfI) Northern Ireland
- UK Network Management Board
- UK Adaptation, Biodiversity, and Climate Board
- UK Asset Management Board

2.2   Stakeholder meetings

TRL created a 'virtual whiteboard' (An example is shown in Appendix A) designed for UKRLG and associated sub-boards to collaborate and share feedback on the current CoP and the options for the update to the document. The whiteboard focused on the following topics:

- Feedback on the current CoP

  - What aspects of the current CoP do you think work well and why?

  - Which areas of the current CoP do you think need improvement or updating? Why?

  - High level approach of the CoP – risk based vs prescriptive level of condition. Comments on preferred approach

- Updates and changes

  - What new subject areas, technologies or practices should be included in the update CoP?

  - Comment on sections/documents that are no longer need and should be deleted?

  - Any new references that should be included in an updated CoP?

- Implementation and adoption

  - What challenges do you think organisations face when implementing the current CoP?

  - What prevents a wider implementation of the CoP?

  - What would make it easier to adopt and implement the CoP?

  - How could the CoP's content be presented to increase adoption?

  - What tools / resources (e.g. case studies. Toolkits) should be included in an updated CoP?

- Anything else?

  - Any further comments or suggestions regarding the update of the CoP?

TRL joined meetings of the boards and sub-boards of UKRLG and facilitated sessions to support completion of the whiteboard. Attendees were able to add 'sticky notes' under each question with their thoughts and feedback. There was then some discussion around

some of the topics raised. The whiteboards remained open after the session for attendees to add additional thoughts at a later date. TRL facilitated sessions with the following boards / sub boards and their views are summarised below:

- UK Roads Board
    - Desire for ongoing training and simplified, digital presentation of the CoP
    - Need to address emerging technology and customer expectation management
    - Call for better support for new practitioners and non-engineering stakeholders

- UK Bridges Board
    - Concern about the compact nature of the current CoP – too little detail for structures
    - Need for guidance on resource capacity and communicating risk to senior leadership
    - Improve guidance on carbon assessment and green materials

- UK Asset Management Board
    - Request for better tools to increase adoption: toolkits, templates, digital format
    - Feedback supports maintaining the risk-based approach but with clearer governance
    - Call for simplified summary versions of the CoP parts to aid internal advocacy and decision-making

- Road Condition Management Group (RCMG)
    - Strong feedback on modernising condition surveys and integrating AI
    - Risk-based approach needs refinement to avoid misuse or under-delivery
    - Introduce minimum service levels or fallback standards

- Footways and Cycletrack Management Group (FCMG)
    - Need for more focus on active travel infrastructure – better hierarchy, usage-based design
    - Call to reflect diverse user needs including vulnerable and disabled users
    - Wider reflection of emerging practice, e.g., behaviour change, climate, and resilience

- ADEPT Bridges Board
    - Include examples of risk based cross asset prioritisation
    - Include use of Artificial Intelligence
    - Include a section on carbon management

The completed whiteboards will be shared with DfT separately. At the time of writing it has not been possible to meet with the UK Lighting and Technology board or the UK Adaptation, Biodiversity, and Climate (ABC) Board.

2.3 Stakeholder survey

The WMHI CoP is used across the industry by many stakeholders. To seek the views of such a wide range of people it was agreed to conduct an online survey. The survey was disseminated through UKRLG boards and sub-boards, CIHT website and social media and TRL website and social media to ensure as wide a reach as possible. To maximise the response rate, the original survey deadline was extended by two weeks.

The survey was accessed by a total of 164 individuals, 65 of whom completed the survey in full. The remaining 99 reflects partial responses. An analysis of the partial responses indicated that most respondents were completing the initial consent questions and simple job description questions (e.g. who do you work for? where are you based?) before dropping out of the survey when the more detailed open-response questions were presented.

It is possible that, on seeing the main body of questions that required a free-text response, some respondents determined that they did not currently have time to complete the survey and then returned to complete it at a later date. As the survey did not allow respondents to return to a partially complete survey, it is possible that the number of partial responses is an overestimate as some respondents may have submitted a completed response later (meaning one respondent could have submitted both a partial and a complete response).

The survey questions can be found in Appendix B.

2.3.1 The respondents

The survey opened with a series of questions designed to understand the sample of respondents; specifically, the nature of their work, where they are based, and their familiarity and use of the CoP.
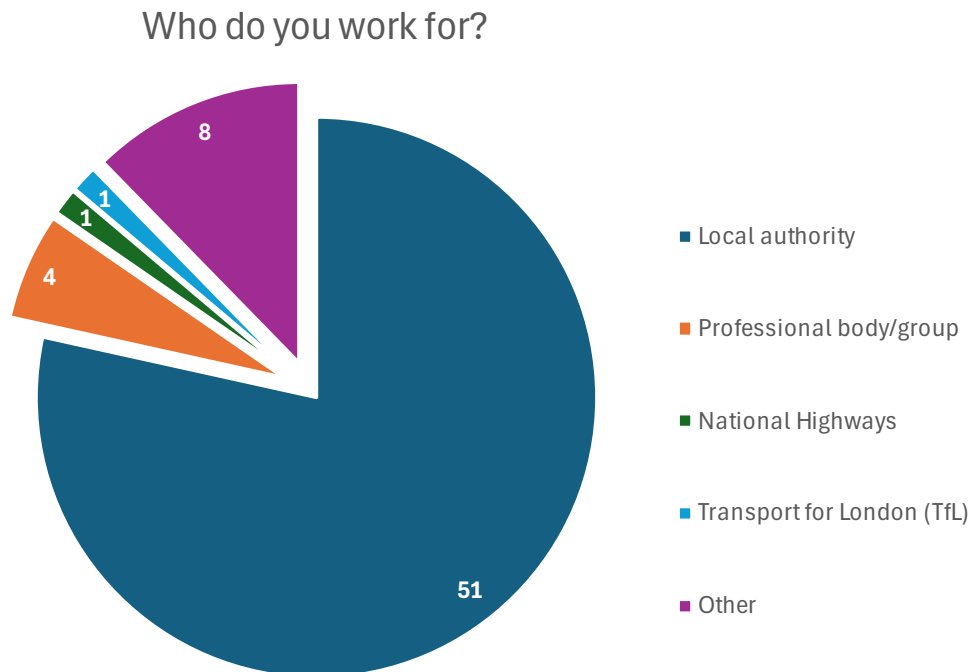
Who do you work for?

- Local authority
- Professional body/group
- National Highways
- Transport for London (TfL)
- Other

Figure 1 Responses to the question 'Who do you work for?'

Figure 1 gives an overview of the organisations where respondents are currently employed. The vast majority (N=51) reported working for local authorities. A small portion (N=4) work for a professional body or group. Two respondents work for National Highways and Transport for London respectively. The remaining eight respondents stated 'Other' options not presented within the question options. These included: supply chain partners, charity organisations (including the Canal and River Trust, and Plantlife), service providers, asset-owning and managing non-governmental organisations, and consultants partnered with local authorities. It should be noted that the Department for Transport was included as a response option to this question, however no respondents reported being employed by this organisation.
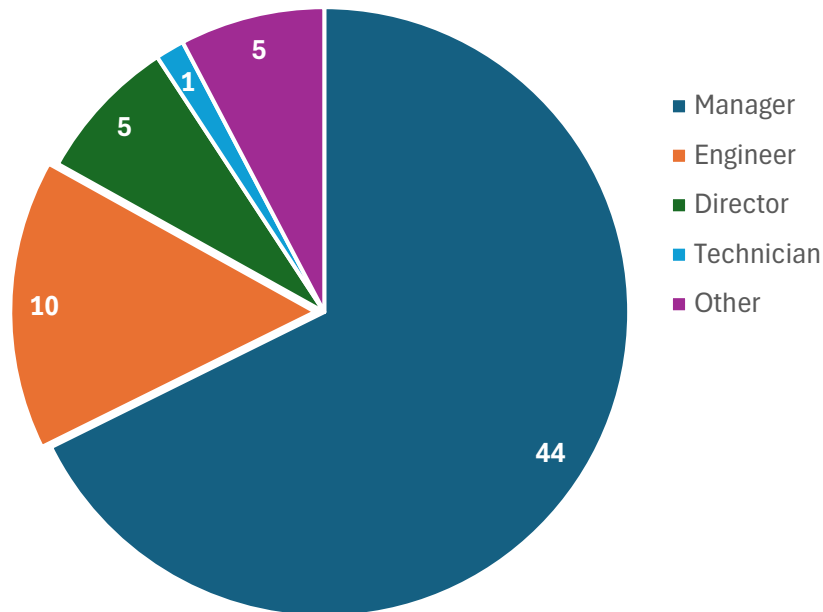
What best describes your job title?

Figure 2 Responses to the question 'What best describes your job title?'

To further understand the respondent sample, individuals were asked to state their job title. Figure 2 shows that 44 respondents indicated that they were in a management role, 10 engineering, five directorial, and one technician. Five respondents stated 'other' roles, which included two Chief Executive Officers, two Asset Management roles, and an Advisor.

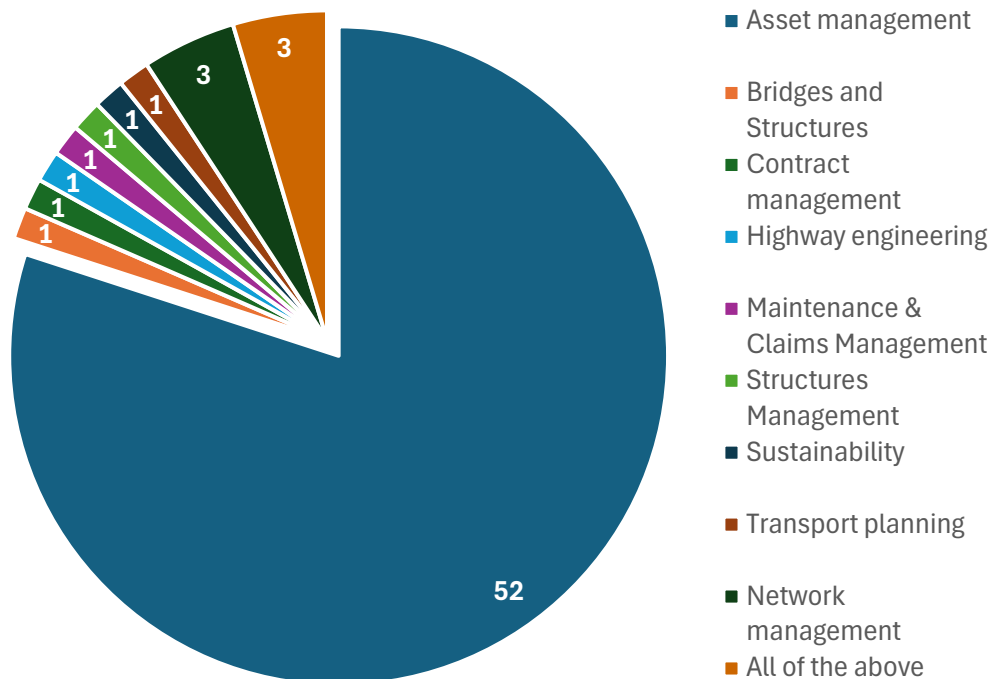## Which best describes your area of interest?

Figure 3 Responses to the question 'Which best describes your area of interest?'

Figure 3 shows respondents' specific areas of interest. Asset Management was by far the most common response, with 52 respondents reporting this as their area of interest. Three participants specified Contract Management as their primary area. Several individuals reported other areas, such as Structures Management, Sustainability, and Transport Planning. A further three individuals responded with 'All of the above'; it is worth noting that this wasn't a specific option presented by the question, but shows that a small selection of respondents felt that all listed options (as shown in the figure above) fell under their area of interest.
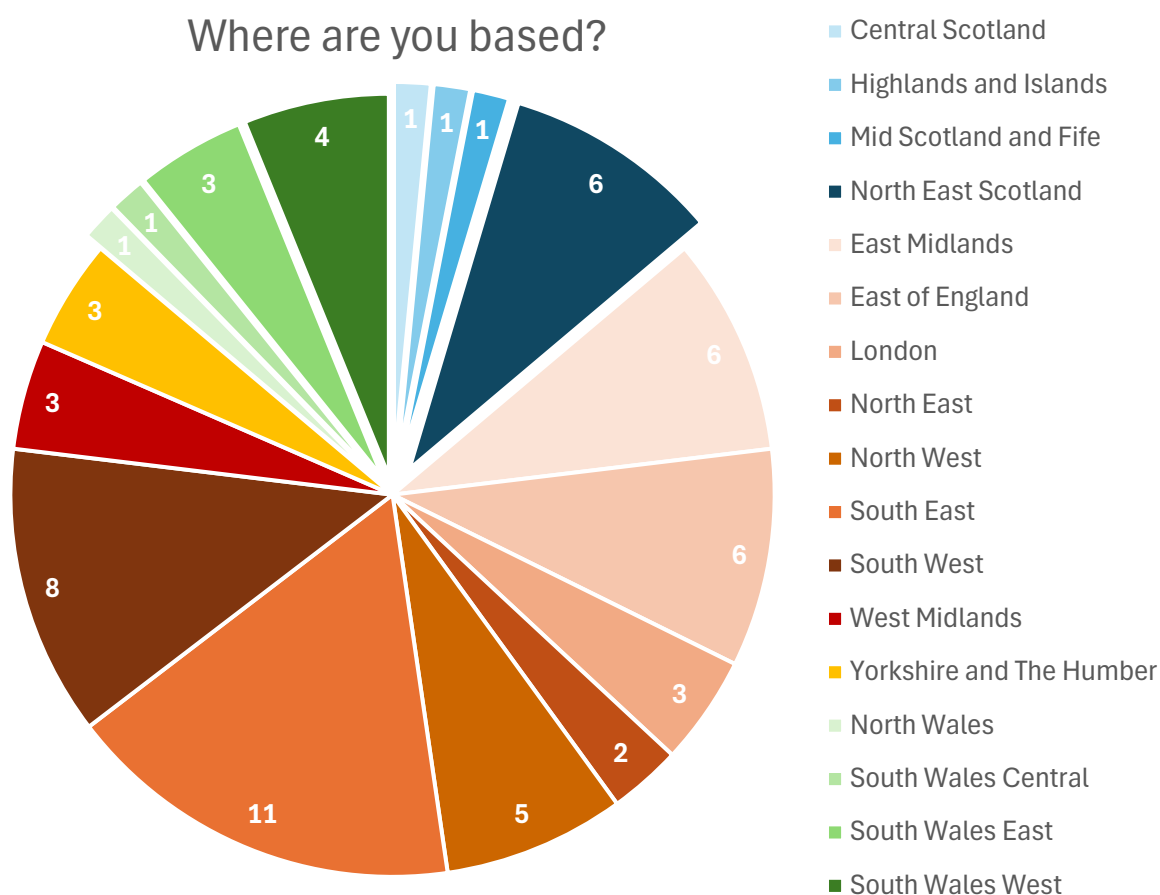
Where are you based?

Legend:
- Central Scotland
- Highlands and Islands
- Mid Scotland and Fife
- North East Scotland
- East Midlands
- East of England
- London
- North East
- North West
- South East
- South West
- West Midlands
- Yorkshire and The Humber
- North Wales
- South Wales Central
- South Wales East
- South Wales West

Figure 4 Breakdown of respondents based on stated location

Figure 4 gives an overview of the various locations where respondents are based. This figure has been colour-coded, with blue sections representing the regions of Scotland, green sections representing the regions of regions of Wales, and the orange sections representing the regions of England. With this in mind, it can be seen that nine respondents are based across Scotland, most of which being in North East Scotland. A further nine respondents are based in Wales, most being either based in South Wales East and South Wales West. The remaining 47 respondents are based across England. The largest respondent group reported being based in the South East, with the smallest group among the English regions being based in the North East. There were no responses from Northern Ireland.
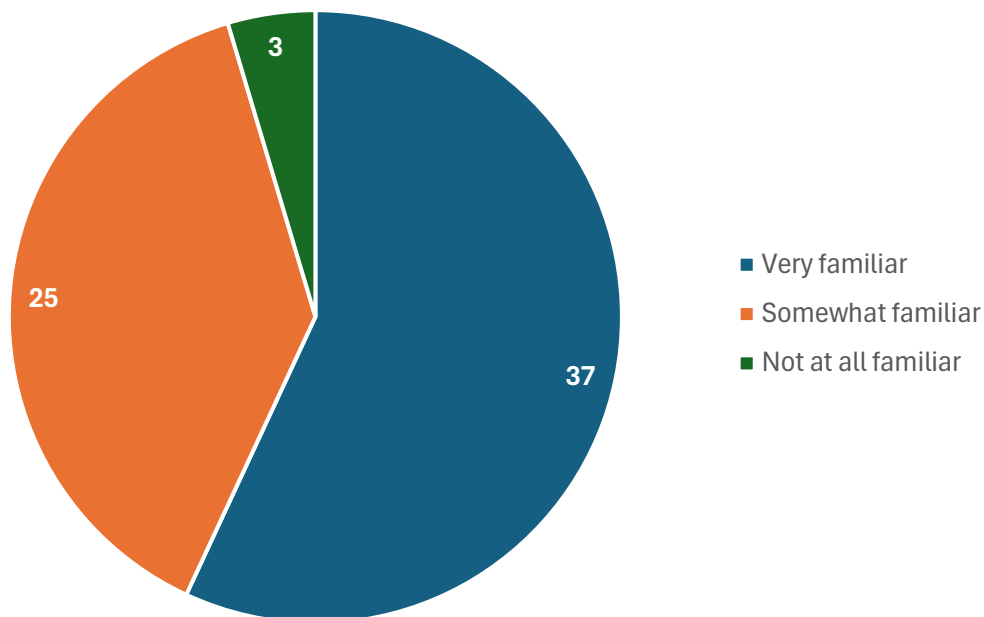
Familiarity with the Code of Practice

Figure 5 Respondents' familiarity with the Code of Practice

As can be seen in Figure 5, over half of the respondents (N=37) reported being 'very familiar' with the CoP. Only three respondents said that they were 'not at all familiar' with the CoP. Exploring the job roles and locations of these respondents offers no insight as to why they reported having no familiarity with the document. That is, there is nothing specific about their reported job role that would suggest they would have no need to be familiar with the CoP as other respondents in similar jobs role reported having at least some familiarity. All other respondents (N=25) stated being 'somewhat familiar' with the CoP. It should be noted that how this phrasing is interpreted was down to the respondent and does not reflect a specific level of familiarity with the document. For example, one respondent may have reported being 'somewhat familiar' because they know only one part of the CoP very well (e.g. Highways) but are not familiar with other parts (e.g. Lighting), while another may have reported being 'somewhat familiar' because they have looked at the document on only a few occasions. It is assumed that those who reported being 'very familiar' with the CoP have a reasonably good understanding of at least one part of the document.
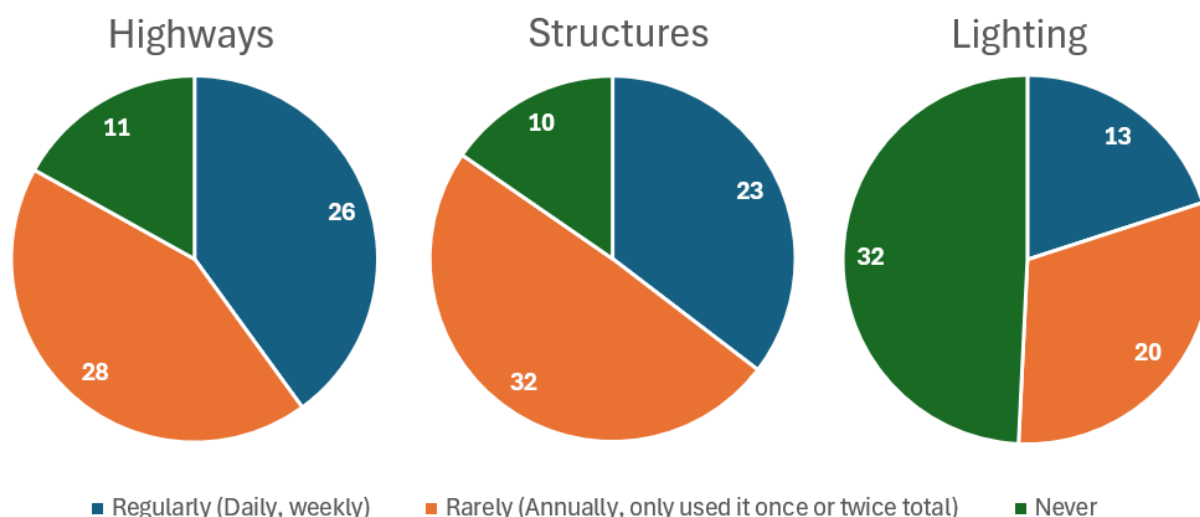
Figure 6 Responses to the question 'How often do you use the Code of Practice for each asset type?'

Figure 6 shows how often respondents use each main section of the CoP. The sections that cover 'Highways' and 'Structures' appear to see a similar amount of use, with around 10 respondents reporting that they never use the CoP in relation to each asset type. Close to half of the sample also reported rarely using the document in both cases as well. The most notable difference is regarding the CoP section on 'Lighting'. Half of respondents reported never using the CoP with a further third stating that they rarely use it for this specific section. Only 13 respondents stated they used the 'Lighting' section of the CoP regularly.

A brief comparison between those who responded with 'Never' was undertaken to determine whether there were some respondents that never used the CoP at all. Only three of the 65 respondents reported that they never used any sections of the CoP; all others reported using at least one section rarely or regularly. As these three individuals did not appear to have any unique job roles (sharing similar roles as others who reported using at least one of the CoP sections), there is nothing to indicate why these individuals never use the document.

2.3.2   *Is a risk-based approach still appropriate*

Overall 56% of respondents feel that a risk-based approach is still appropriate. 29% of respondents are unsure and 14% favour a prescriptive approach. Table 1 shows the number of respondents in favour of risk-based approach compared to a prescriptive approach by asset type.

	Risk-based approach	Prescriptive approach	Unsure
Highways	37	7	15
Structures	37	11	14
Lighting	28	7	23

Table 1 Risk-based vs Prescriptive approach

It is less clear for Lighting but generally a risk-based approach is favoured and works well for most respondents. A risk-based approach provides greater flexibility for local authorities in setting their levels of service and managing risk.

Example quotes from respondents included:

> *"A prescriptive approach would either have to adopt the lowest common denominator (and so risk being almost worthless) or risk pushing some authorities into adopting an unaffordable (for them) approach."*

> *"The risk-based approach works very well with the Highways, Structures and Street Lighting inspections."*

However, some respondents felt that the risk-based approach can lead to inconsistent approaches across different authorities and there is a potential unintended consequences of driving down short-term investment that leads to long term harms.

The general consensus was that while funding is tight a risk-based approach works better that prescriptive requirements, which would only be possible if appropriate funding, both capital and revenue, was available. A prescriptive approach could incorporate risk-based elements or vice versa, e.g. a risk-based approach that is underpinned by prescriptive/statutory minimums.

2.3.3 How could the structure be improved and why?

69% of respondents feel that the division of the Code of Practice into Overarching Principles, Highways, Structures, and Lighting is still appropriate.

There were some comments regarding additional sections that would improve the structure. These are covered in section 2.3.7

2.3.4 What aspects of the current Code of Practice work well and why?

92% of respondents feel that the current Code of Practice addresses the challenges faced in managing the highway infrastructure today either "very well" or "somewhat well". 69% of respondents feel that the current Code of Practice is very or somewhat user-friendly.

- **General views**

The general view of the document is that it is a good, rounded document, very detailed and pulls other guidance together (using links) into one place. For any future update the respondents recommend keeping it simple and not to change things that don't need changing. Furthermore a log of sections that have and haven't changed would help users navigate the updated CoP.

- **Referencing work**

Many felt that it was good for referencing work in particular in dealing with legal claims and when challenged by members of the public.

- **Recommendations section**

A number of respondents noted that the 'recommendations' at the start of the document highlight the key points which give a quick summary of the important factors.

Example quotes include:

> *"The recommendations summary works well"*

> *"The recommendations summary is useful as quick synopsis of requirements."*

- **Other comments**

Those with an interest in structures noted that the CoP sets the principles for managing highway structures out well and has a unified approach, however some said that they use "Management of Highway Structures A Code of Practice" and the "Inspection Manual for Highway Structures" rather than the CoP.

2.3.5 *What aspects of the Current Code of Practice need improvement or updating?*

- **Inconsistent Implementation**

Understanding of the risk-based approach varies significantly across authorities and disciplines. Some apply the CoP in name only, sticking to traditional or prescriptive approaches without genuine risk-based thinking.

Example quote:

> *"We need to find out… to what extent they have implemented a true risk-based approach or have retained existing standards and rebadged."*

- **Accessibility & Complexity**

Many find the document dense and hard to engage with, especially for non-specialist or new staff. Many sighted that the lack of executive summaries, visual aids and training materials creates a barrier to successful implementation of the CoP

Example quote:

> *"The scale of it. Requires significant time investment to understand."*

- **Tools & Resources**

Several respondents noted a lack of supporting templates, case studies, toolkits, and practical guidance to assist adoption. Many authorities requested "pick-up-and-play" style resources.

Example quote:

> *"Case studies, indication of cost for different interventions, and template policies would be really useful."*

- **Technological & Policy Gaps**

Emerging issues like AI in inspections, carbon reporting, and EV infrastructure are either missing or outdated. See section 2.3.6 for more detail on new technologies.

Example quotes:

> *"Needs a whole new section about the use of Artificial Intelligence for road surveys."*

> *"Current CoP seems to have little guidance on Carbon Management. It could be much more explicit."*

2.3.6   What new subject areas, technologies, or practices should be included in the updated Code of Practice?

- **Technology & AI in Asset Management:**

Respondents sighted that there is limited open-source data which affects AI-driven predictive maintenance efforts. Many recommended use of predictive analytics, AI-driven surveys, and vehicle telemetry for road condition monitoring. Others encouraged use of video-based inspections and drone technology for asset condition assessment.

- **PAS 2161**

A number of respondents noted PAS 2161 which is an updated road condition monitoring specification for local authorities.

- **Carbon management**

There were lots of comments regarding carbon management and the need to include carbon reduction approaches, carbon footprints, carbon measurement guidance, toolkits for calculating carbon emissions and lifecycle carbon management approaches.

- **Climate change adaptation**

This needs to be a theme throughout the CoP and should include a new section on flood risk management

- **Management of soft estate**

It was suggested that an approach that follows a prescriptive method in terms of mitigating risks and realising opportunities for biodiversity would be beneficial. A risk-based approach was felt appropriate for mowing regimes.

2.3.7   What new or updated sections/references should be included in the updated Code of Practice?

The following new sections were proposed by respondents:

- Innovation
- Sustainability
- Carbon management
- Climate change adaptation
- Biodiversity
- Management of Public Rights Of Way (PROW)
- Flood risk management
- New asset types
    - o EV Charging infrastructure
    - o Active travel infrastructure
    - o Traffic signals

- o Electronic traffic equipment
- o Soft estate
- o Footbridges

The following documents should be included/referenced in the updated Code of Practice:

- ISO 55000:2024 Asset management — Vocabulary, overview and principles
- PAS 2161:2024 Road condition monitoring (RCM) data. Specification
- PAS 2080:2023 Carbon Management in Infrastructure and Built Environment
- LA108 Biodiversity
- DfT Resilience review
- Updated DMRB documents
- Manual of Contract Documents for Highway Works (MCHW) to be published in August 2025
- Boundary issues between LHA and National Highways (Strategic Highways Company)
- BS 9228:2021 - Recycling of roads and other paved areas using bitumen
- Schedule 3 of the Flood and Water Management Act 2010
- Guiding principles for drainage and wastewater management plans - Updated 26 August 2022
- Report of a review of the arrangements for determining responsibility for surface water and drainage assets May 2020
- Ensuring the Network Remains Operational during Unprecedented Conditions - Proceedings from PIARC Panel Discussion at Highways UK in October 2024
- The Good Verge Guide - Plantlife
- Managing Grassland Road Verges - A Best Practice Guide - Plantlife
- ICE Blue Green Infrastructure Handbook (2023) Chapter 10 "Blue Green Infrastructure on Highways
- The Gwent Green Grid Cut and Collect Report
- Greenprint Project Reports (LiveLabs2)

2.3.8 What sections/reference documents within the current Code of Practice are no longer needed and should be removed?

Very few comments were received to this question. Two comments of note were:

- 2012 Highway Maintenance Efficiency Programme (HMEP) documents need to be updated or, if no longer relevant, removed,

- Reference to Structure Asset Management Planning Toolkit (SAMPt) should be removed and more references to Structures Asset Valuation Investment (SAVI) tool should be included.

2.3.9 What prevents a wider implementation and what challenges do organisations face when implementing the Code of Practice?

- **Limited awareness and engagement**

Senior leaders and decision-makers are often unaware of the Code or do not prioritise its implementation. Some concerns that the CoP is not universally known about or used to develop local plans and strategies. It is often used reactively rather than proactively. The CoP format is complex and difficult to digest, requiring significant time investment.

Example quote:

"Senior leaders are not aware of it. Presume everything is OK until something fails."

- **Resource and Knowledge Gaps:**

Many noted that smaller teams struggle to adopt the CoP (in full) due to resource constraints and loss of experienced staff is a growing concern across the industry. The lack of ongoing training programmes leads to inconsistent application and there is a need for competency frameworks and structured staff retention strategies.

2.3.10 What would make it easier for your organisation to adopt and implement the Code of Practice?

- **Clarity of funding, investment cycles and priorities**

Authorities noted that a lack of clarity on funding mechanisms makes long-term planning difficult. It was noted, therefore, that improved visibility of funding and investment cycles would make it easier to adopt the CoP. The Incentive Fund previously drove adoption, but its effectiveness has diminished in recent years.

- **Up to date asset records**

Up to date and reliable asset records documenting asset age and condition would make it easier for authorities to adopt the CoP. Previous poor workmanship, such that components do not have a reliable lifespan for lifecycle planning mean that much of the works undertaken remain reactive.

- **Improved guidance and training**

Easy to understand training, summaries and visuals. A simplified document where priorities, or hierarchies, are set and then each asset in turn applied to one network hierarchy. Worked examples and templates would also be beneficial.

2.3.11 How should the Code of Practice's content be presented to increase adoption?

- **Digital Transformation of the CoP:**

Move away from PDF documents to a live, continuously updated web-based resource. Include video tutorials, interactive tools, and data-driven insights to increase adoption.

2.3.12   *What tools/resources (e.g. case studies, toolkits, guidelines) should be included in an updated Code of Practice?*

According to the respondents the following (web-based interactive) tools and resources should be included in an updated Code of Practice:

- Best Practice case studies

- Templates, e.g. example policies

- Compliance checklists

- Digital training resources, e.g. video shorts

- Toolkits, e.g. carbon management toolkit

- Retention of recommendations summary

2.3.13   *Would you welcome a short summary guidance document alongside the Code of Practice?*

73% of respondents would welcome a short summary guidance alongside the Code of Practice.

2.3.14   *Any further comments or suggestions regarding the update of the Well Managed Highway Infrastructure Code of Practice?*

No additional comments not already covered in previous sections were noted.

3   Document review

The CoP contains 305 links to other documents. Of these, 81 links no longer work and therefore need to be updated. We reviewed each link and, where possible, identified updated links for each document and noted the changes made between the two versions of the document. There are also a number of links that work but they do not link to the document noted in the CoP. Figure 7 shows an example of the output produced as part of the document review. The full output will be shared with DfT separately.

Link	Old link	Updated link	What has changed? What is the new document?
ISO 55000	Error 404.	ISO 55000:2014(en), Asset management — Overview, principles and terminology	This is the latest version of ISO 55000: https://www.iso.org/obp/ui/#iso:std:iso:55000:ed-2:v1:en "The main changes are as follows: — the document has been restructured to provide an insight and understanding of asset management and its principles, its outcomes and benefits, the relationship between asset management, an asset management system and the assets of an organization, and indicators of asset management maturity; — the principles of asset management have been revised; — the outcomes of asset management have been introduced; — the benefits have been rephrased and extended; — the explanation of the elements of an asset management system has been deleted; — the integration of management systems has been introduced; — the maturity of an asset management organization has been introduced; — the annexes have been deleted."
ISO 31000:2009 – Risk management – Principles and guidelines	https://knowledge.bsigroup.com/en/ProductDetail/?pid=000000000030202344	PECB - ISO 31000 Risk Management – Principles and Guidelines	This is the latest version of ISO 31000: https://www.iso.org/obp/ui/#iso:std:iso:31000:ed-2:v1:en "The main changes compared to the previous edition are as follows: — review of the principles of risk management, which are the key criteria for its success; — highlighting of the leadership by top management and the integration of risk management, starting with the governance of the organization; — greater emphasis on the iterative nature of risk management, noting that new experiences, knowledge and analysis can lead to a revision of process elements, actions and controls at each stage of the process; — streamlining of the content with greater focus on sustaining an open systems model to fit multiple needs and contexts."
The Institute of Risk Management – Risk Appetite and Tolerance	www.theirm.org	https://www.theirm.org/what-we-say/thought-leadership/risk-	No change to note - updated link simply replaces/corrects the original broken link.
Code of Practice on the Highways Network Asset	https://www.cipfa.org/404-page-not-found?item=%2fpolicy-and-guidance%2fpublications%2fc%2fcode-of-practice-on-the-highways-network-asset-2016-edition-	Highways Network Asset Code Guidance Notes	CIPFA	No change to note - updated link simply replaces/corrects the original broken link.

Figure 7 Example findings from document review

We recommend a further review of all links is conducted when the CoP is updated and a mechanism or framework is established to ensure references to other documents can be continually managed and updated.

4   Recommendations

Based on the stakeholder engagement activities and the document review, the following high-level recommendations are made:

1. **Modernise the Format and Delivery**

   - Develop a digital-first CoP: Create a dynamic, web-based version of the CoP, allowing for:

     o Interactive tools and calculators (e.g. carbon footprint estimators, inspection frequency models)

     o Embedded case studies and training videos

     o Searchable, filterable content by asset type or user group

   - Consider a tiered structure:

     o Executive summaries and infographics for senior leaders

     o Technical depth for engineers and asset managers

     o Quick-start guides/checklists for practitioners

2. **Enhance Usability and Adoption**

   - Introduce summary guidance documents tailored to:

     o Different organisation sizes and capacities

     o Different user groups (e.g. highway engineers, sustainability officers, elected members)

   - Publish implementation toolkits with:

     o "Pick-up-and-play" templates (e.g. asset management plans, lifecycle models)

     o Best practice case studies (e.g. active travel integration)

     o Compliance self-assessment checklists

   - Establish a digital training programme to support rollout and implementation

3. **Strengthen and Clarify the Risk-Based Approach**

   - Clarify expectations for applying risk-based thinking across asset types

   - Define minimum service levels or statutory baselines where appropriate

   - Develop worked examples showing different ways to apply risk-based principles

4. **Expand the Scope to Reflect Emerging Priorities**

Incorporate new subject areas and assets, including:

   - Active travel infrastructure (walking, wheeling, cycling)

   - Carbon management: Lifecycle carbon, carbon toolkits, and alignment with PAS 2080

   - Climate adaptation and resilience: Flood risk, soft estate, extreme weather

- EV charging infrastructure

- Technology and innovation:

  o AI for inspections

  o Predictive maintenance

  o Data standards and open-source tools

5. Improve Structural and Governance Aspects

- Split the CoP by asset category, but retain unifying principles (Overarching Principles, Highways, Structures, Lighting, Active Travel, Technology, etc.)

- Create a governance framework for:

  o Continuous updates to linked references

  o Stakeholder engagement and future revisions

  o Ownership and accountability (e.g. DfT and UKRLG roles)

6. Support Smaller Authorities

- Develop a "light-touch" CoP path for smaller or resource-constrained authorities

- Offer minimum viable implementation options for local councils with limited technical teams

- Align recommendations with Incentive Fund metrics or equivalent mechanisms to drive uptake

- Address workforce shortages by providing competency frameworks

7. Enable Monitoring and Evaluation

- Define measurable outcomes and KPIs aligned with CoP principles (e.g. condition trends, service levels met, carbon reductions)

- Suggest auditing templates and feedback loops (internal and external)

8. Continue cross industry engagement throughout future phases of work

- Continue engagement with steering group and UKRLG boards / sub-boards

- Where appropriate set up separate working groups to focus on requirements for specific topics e.g. Active Travel

Summary

The WMHI CoP remains highly valued but is increasingly outpaced by modern needs. The update should not only revise content but rethink its structure, format, and implementation support. By addressing climate, technology, accessibility, and governance gaps—while remaining risk-based and practical—the new CoP can better serve both today's and tomorrow's infrastructure needs.

Appendix A   Virtual whiteboard example

Appendix B   Stakeholder survey questions

1. **Who do you work for?**
   o   Local authority

   o   Professional body/group

   o   DfT

   o   TfL

   o   National Highways

   o   Other (please specify)

2. **Which of these best defines your job title?**
   o   Director

   o   Manager

   o   Engineer

   o   Designer

   o   Technician

   o   Early careers

   o   Other (please specify)

3. **Which of these best describes your area of interest?**
   o   Asset management

   o   Network management

   o   Highway engineering

   o   Highway design

   o   Transport planning

   o   Road safety

   o   Sustainability

   o   Operations

   o   Contract management

   o   Other (please specify)

4. **Where (country/region) are you based?**

General Feedback on Current CoP:

5. **How familiar are you with the current CoP?**
   o   Very familiar

   o   Somewhat familiar

   o   Not familiar at all

6. **Do you use the CoP for all asset types?**

   o Asset type (Highways, Structures, Lighting)

      • Regularly (Daily, weekly)

      • Rarely (Annually, only used it once or twice total)

      • Never

7. **How well do you feel the current Code of Practice adequately addresses the challenges faced in managing the highway infrastructure today?**

   o Very well

   o Somewhat well

   o Not well at all

   o Unsure

8. **How user-friendly do you find the Code of Practice?**

   o Very user-friendly

   o Somewhat user friendly

   o Neither user-friendly or not user friendly

   o Somewhat not user-friendly

   o Very not user friendly

   o Unsure

9. **Is the division of the CoP into Overarching Principles, Highways, Structures and Lighting, each with subsections to provide more detail, still appropriate?**

   o Yes

   o No – How could the structure be improved? (Open-ended response)

   o Not sure

10. **For each asset type, would you prefer the Code of Practice to take a risk-based or prescriptive approach to detailing working practices?**

    o Asset type (Highways, Structures, Lighting)

       • Yes

       • No

       • Unsure

       • Other possible approaches – please specify (Open-ended response)

11. **What aspects of the current CoP do you think work well and why do they work?**

    o (Open-ended response)

12. **Which areas of the current CoP do you think need improvement or updating and why? Please indicate which areas should be prioritised.**

o (Open-ended response)

13. **Have you ever provided feedback on the structure and content of the Code of Practice?**

   o Yes (If so, how? Open-ended response)

   o No

Updates & Changes:

14. **What new subject areas, technologies or practices should be included in the updated CoP?**

   o (Open-ended response)

15. **It is recognised that there are many related documents quoted in the current CoP. Are there new references that should be included in an updated CoP?**
   o (Open-ended response)

16. **Are there sections/quoted documents within the current Code of Practice that you feel are no longer needed and should be removed?**

   o (Open-ended response)

17. **Would you welcome a short summary guidance document alongside the Code of Practice?**

   o Yes

   o No

   o Unsure

Implementation and Adoption:

18. **What challenges do you think organisations face when implementing the current CoP and what prevents a wider implementation of the CoP?**

   o (Open-ended response)

19. **What would make it easier for your organisation to adopt and implement the CoP?**

   o (Open-ended response)

20. **How should the CoP's content be presented to increase adoption?**

   o (Open-ended response)

Impact and Future Considerations:

21. **What tools/resources (e.g., case studies, toolkits, guidelines) should be included in an updated CoP?**

   o (Open-ended response)

22. **Do you have any further comments or suggestions regarding the update of the WMHI CoP?**

   o (Open-ended response)

Part Two

Commissioning options

Table of Contents

1 Introduction

The latest version of the Well Managed Highway Infrastructure (WMHI) Code of Practice (CoP) was published in October 2016 by the UK Roads Liaison Group[1] (UKRLG), to provide guidance for local authorities on managing highway networks. It emphasises a risk-based approach, encouraging authorities to tailor their policies to local circumstances rather than adhering to prescriptive standards. Though not legally binding, compliance demonstrates best practice and helps authorities manage risks and meet statutory duties.

Given the time since publication, it has been recognised that the current CoP is now in need of updating to meet the needs of the modern highway network. This will help shape a modernised version of the CoP that reflects current best practices, technological advancements, legislative changes, and stakeholder needs, ensuring effective and sustainable highway infrastructure management.

TRL has carried out an initial scoping exercise on behalf of the Department for Transport (DfT) to identify what and how the current CoP should be updated. This is a short-term commission, prior to a separate project to update the CoP, as it was recognised that a more informed view of the scope of the work needed to update the CoP was required.

TRL has conducted a series of stakeholder engagement sessions to seek the views of the industry to assess what in the current CoP works well, what doesn't work well and what changes or additions might be needed to ensure the CoP meets the requirements of the industry now and into the future. This stakeholder engagement included meetings with a steering group, UKRLG boards and sub-boards and a stakeholder survey disseminated to key stakeholders and users of the CoP. TRL also carried out a document review. The main findings from the stakeholder engagement and document review where that document users felt there was a need to:

- Establish a mechanism for continuously updating reference links and related materials.
- Enhance the CoP's usability through digital formats and practical resources.
- Address technological, environmental, and social challenges with new guidance on AI, carbon, climate adaptation, and inclusion.
- Develop competency frameworks and promote training to support implementation.
- Maintain a meaningful risk-based approach while considering hybrid models with minimum standards.
- Continue stakeholder engagement throughout the update process, including focused working groups.

Based on the stakeholder engagement this document describes the delivery and commissioning options available to the DfT for updating the WMHI CoP. It evaluates the strengths and weaknesses of each option and presents a preferred collaborative delivery

---

[1] Now named the UK Roads Leadership Group

and commissioning model. A scope and indicative roadmap for implementation based on this preferred model is also included.

2   Delivery options

2.1   Preferred delivery option

This model was directly informed by stakeholder feedback which emphasised the importance of retaining UKRLG ownership to maintain legitimacy, while also calling for coordinated industry authorship and structured governance to ensure quality and relevance (see Gap Analysis report, Peeling (2025)). This scenario outlines a collaborative delivery model for updating the WMHI CoP, where:

- **DfT** provides funding and strategic policy direction
- **UKRLG** assumes ownership and stewardship of the updated CoP
- **Lead Consultant** acts as the independent integrator and delivery manager, while also providing technical support for authorship
- **Industry experts** formed in working groups, including representation from UKRLG sub-boards, lead consultant and sub-consultants (where appropriate), contribute to content development and thematic expertise

The governance roles are shown in Table 1 and describe the role of key stakeholders in the update of the WMHI CoP. The delivery architecture in Figure 1 shows how the roles fit together to form a delivery model. The integrator will co-ordinate the other roles to ensure smooth delivery of the project and bridge between funders, experts, and users

Table 1 Governance roles

Actor	Role in the Model
DfT	Strategic funder and policy steer. Sets the overarching aims and ensures alignment with national priorities.
UKRLG	Custodian of the CoP. Provides oversight, sector endorsement, and long-term stewardship.
Steering Group	Provides oversight and direction of the project, drafting support and sign-off of technical updates
Lead Consultant	Integrator. Facilitates stakeholder engagement, drafts and coordinates content, ensures quality and consistency.
Industry Experts	Drafts new sections, join thematic working groups, peer review content. Represent a cross-section of authorities, consultancies, and user bodies.
Sub-consultants	Appointed by the lead consultant, sub-consultants will provide technical and drafting support

Figure 1 Delivery architecture
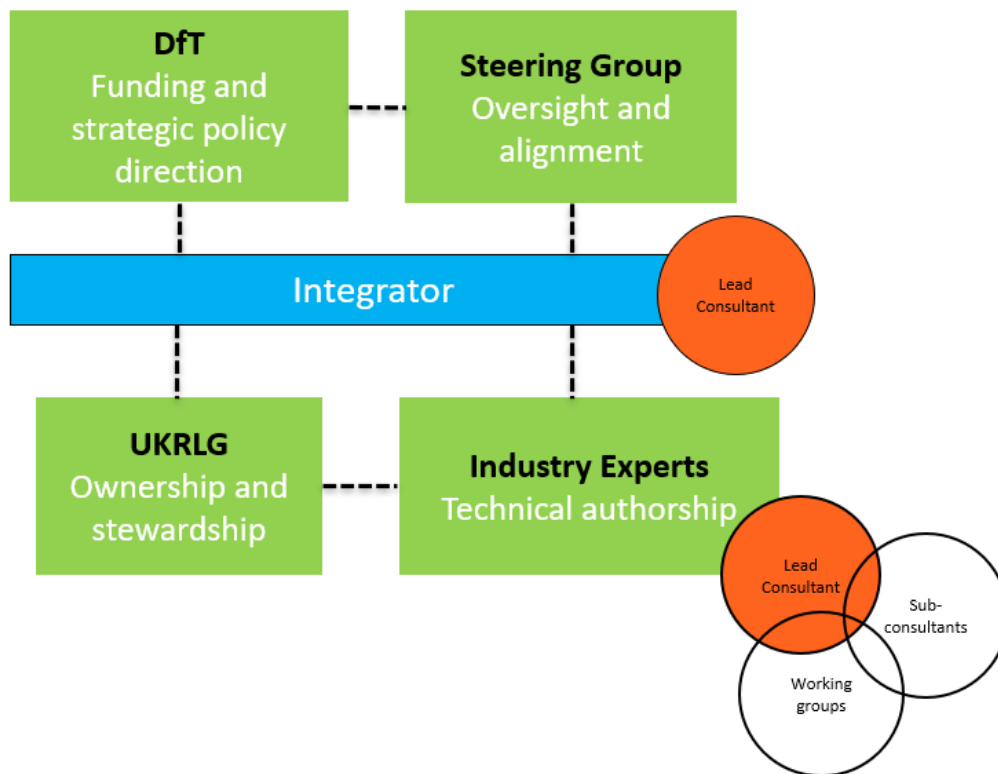
The pros and cons of this option are described below.

Pros:

- Balances neutrality, expertise, and sector engagement
- Retains stakeholder trust
- Consultant acts as a bridge between funders, experts, and users
- Allows industry co-authorship with coordinated quality assurance

Cons:

- Requires structured coordination
- Requires buy-in and commitment from all stakeholders
- Complexity in governance must be managed

Benefits

- **Sector ownership** via UKRLG
- **Policy control** retained by DfT
- **Technical neutrality** and continuity from the Lead Consultant
- **Practical relevance** through industry authorship
- **Scalable updates** and clear maintenance plan

2.2 Other delivery options considered:

2.2.1 In-House Delivery (DfT-led Project Team)

Pros: Full control and policy alignment; integrates easily with wider DfT strategy; cost-effective in principle.

Cons: DfT may lack specialist expertise and delivery capacity; reduced sector trust or perceived neutrality; slow mobilisation if internal recruitment is needed.

2.2.2 UKRLG Delivery

Pros: Sector-led delivery builds legitimacy and user ownership; well placed to convene experts across domains.

Cons: UKRLG has limited delivery infrastructure and capacity; may need to subcontract technical work; risks with capacity and continuity.

2.2.3 Led by Large Transport Body (e.g. National Highways, TfL)

Pros: Strong delivery credentials and resources; can apply internal best practice; potential for innovation.

Cons: May not be seen as impartial for local authority-focused CoP; could skew priorities towards their own models or needs.

2.2.4 Led by a Professional Body (e.g. CIHT, ICE)

Pros: Broad professional reach; neutral industry voice; strong policy-influencing role; often experienced in stakeholder engagement.

Cons: May lack delivery mechanisms or need to outsource significant work; slower decision-making; potential funding dependencies.

2.2.5 100% Consultant Delivery (i.e. minimal UKRLG input)

Pros: High efficiency and expertise; rapid mobilisation; innovation potential; clarity of deliverables.

Cons: Risk of limited stakeholder ownership; perceived distance from end users; reliant on quality of brief and oversight.

3   Commissioning options

3.1   Preferred commissioning option: Single Commission (Integrated Contract)

This commissioning structure responds to concerns raised by stakeholders about fragmented delivery, inconsistent content, and lack of visibility on project progress. A single contract model enables the continuity and cohesion that stakeholders identified as essential.

Description: One commission to a lead integrator, responsible for programme coordination, technical assurance, and subcontracting additional inputs (e.g. thematic authors).

Pros:
- Simplified procurement process, reducing administrative burden.
- Clear single point of accountability and performance management.
- Stronger alignment of programme objectives and deliverables.
- Improved continuity and integration across content areas and workstreams.
- Reduces duplication of roles, resources and reporting.
- Easier for DfT to maintain strategic oversight and policy alignment.
- Encourages a coherent approach to stakeholder engagement, consultation and communication.

Cons:
- Risk if the lead supplier underperforms
- May reduce direct oversight of subcontracted elements

Benefits of Single Commission:
- Ensures programme-wide coherence and consistency across content and deliverables.
- Reduces interface risk between suppliers.
- Enables earlier mobilisation and delivery through a streamlined contract.
- Facilitates a more agile and adaptive working relationship with DfT.
- Enhances transparency in performance tracking, allowing clear KPIs and outcomes to be monitored.
- Ideal for collaborative models where integrator plays a critical leadership and coordination role.
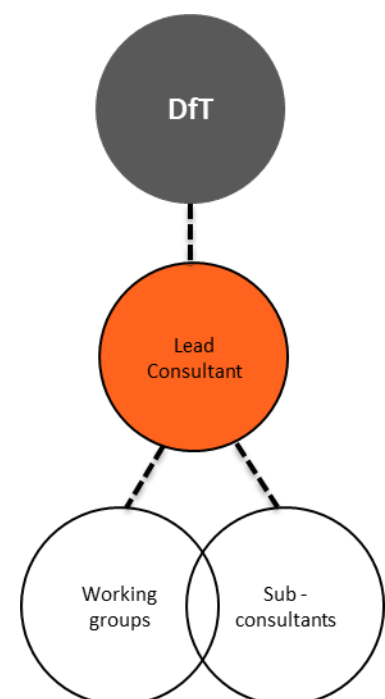
3.2   Other commissioning options considered:

3.2.1   Multiple Commissions (Segmented Delivery)

Description: DfT issues individual commissions for integrator role, thematic content areas (e.g. highways, structures, lighting), digital platform development, and communications / training.

Pros: Tailored expertise for each workstream; encourages innovation and specialist involvement.

Cons: Increases administrative burden on DfT, project management complexity; risk of siloed work; requires strong central coordination.

3.2.2   Hybrid Model (Integrator + Framework Call-offs)

Description: Appoint a lead integrator to manage core programme delivery, with framework-based mini-competitions for specific modules.

Pros: Combines integration and flexibility; retains oversight of specialist suppliers while reducing management burden.

Cons: Requires well-defined scopes and sequencing; risk of procurement delays if not coordinated

3.2.3   Staged Commissioning (Phase-Gated)

Description: Begin with a short-term commission for high priority deliverables, followed by subsequent staged commissions to deliver future phases.

Pros: Reduces initial risk; allows early lessons to shape future delivery.

Cons: Introduces potential gaps between phases; may limit continuity if different suppliers win subsequent work and increases administrative burden on DfT

4   Project scope

4.1   Purpose of the service

4.1.1   Client's objectives

Department for Transport (DfT) is looking to set up a contract for the provision of a range of technical consultancy services to support an update of the Well Managed Highway Infrastructure (WMHI) Code of Practice (CoP).

The UKRLG (UK Roads Leadership Group) is planning an update of the WMHI CoP. This publication is used by local highway authorities to ensure best practice in the management and maintenance of local highway networks, but it is now some 8 years old and requires a refresh to bring it up to date.

The service includes:

- Development of a governance framework for the project
- Development of executive summaries to be released ahead of the main document
- Planning and development of updated WMHI CoP
- Development of training and implementation material
- Development of digital platform to host CoP
- Development of monitoring and evaluation framework

This project will be managed and governed by DfT with technical oversight and support from UKRLG.

4.1.2   Background

The latest version of the WMHI CoP was published in October 2016 by the UKRLG to provide guidance for local authorities on managing highway networks. It emphasises a risk-based approach, encouraging authorities to tailor their policies to local circumstances rather than adhering to prescriptive standards. Though not legally binding, compliance demonstrates best practice and helps authorities manage risks and meet statutory duties.

Given the time since publication, it has been recognised that the current CoP is now in need of updating to meet the needs of the modern highway network. This will help shape a modernised version of the CoP that reflects current best practices, technological advancements, legislative changes, and stakeholder needs, ensuring effective and sustainable highway infrastructure management.

TRL has carried out an initial scoping exercise on behalf of the Department for Transport (DfT) to identify how the current CoP should be updated. This is a short-term commission, prior to a separate project to update the CoP, as it was recognised that a more informed view of the scope of the work needed to update the CoP was required.

TRL has conducted a series of stakeholder engagement sessions to seek the views of the industry to assess what in the current CoP works well, what doesn't work well and what

changes or additions might be needed to ensure the CoP meets the requirements of the industry now and into the future. This stakeholder engagement included meetings with a steering group, UKRLG boards and sub-boards and a stakeholder survey disseminated to key stakeholders and users of the CoP. The outputs of this work will be made available to tenderers.

4.2   Description of the service

The overall objective of the service is to produce, launch and embed an updated Well Managed Highway Infrastructure (WMHI) Code of Practice (CoP) through delivery of the following work packages.

4.2.1   Work package 0 – Project and technical management

Objective: To manage day-to-day project delivery, coordinate teams, and maintain project governance, reporting, risks, and milestones throughout the update process.

Key activities of this work package include day-to-day management of the project, coordinating meetings, progress reporting, risk log maintenance, change control and technical governance and review.

An online (Teams) meeting will be held at project inception with the DfT project team to fully plan the work. Following the inception meeting the consultant will produce minutes and a project initiation document detailing an updated project plan, resource schedule (or similar), risk register and action log.

Each month the consultant will produce a Contractors Monthly Report (CMR) and provide updates on any changes to the plan, risk register or action log. Progress meetings will be held at a frequency to be agreed at the inception meeting.

4.2.2   Work package 1 - Governance and stakeholder engagement

Objective: To establish and maintain inclusive governance structures and ongoing stakeholder engagement mechanisms that guide and validate the CoP update from development through implementation.

Stakeholders emphasised the need for continuous engagement mechanisms and better representation across user groups. This work package will:

- Identify all the key stakeholders, steering and working groups including DfT, UKRLG boards and sub-boards and identify other working groups required to support delivery of updated WMHI CoP
- Define clear roles and responsibilities for each stakeholder. This includes senior leadership (e.g., DfT), project management and technical teams and consultation groups (e.g. UKRLG)
- Maintain engagement with the existing steering group and thematic sub-groups throughout the project

- Design a plan for engaging stakeholders throughout the project, including steering group meetings, meetings with UKRLG boards / sub-boards, other working groups and expert reviews (of text for updated CoP)
- Create a structured feedback process to review and incorporate stakeholder input into the drafting process, ensuring the updated code reflects diverse perspectives and set up mechanisms for monitoring the implementation of the updated code to ensure its effectiveness

4.2.3   Work package 2 – Executive summaries

Objective:

To produce standalone, concise, user-friendly executive summaries of key sections in the CoP that enable rapid understanding and uptake by senior leaders and non-specialist users.

Many stakeholders noted the CoP's complexity and requested high-level summaries to aid engagement of resource constrained authorities, non-specialists and senior leaders. This work package will:

- Identify key areas and the most important sections that require executive summaries
- For each chosen area/section produce an executive summary by streamlining concepts and removing any redundant or non-essential details
- Ensure the summary document is reviewed by subject matter experts or stakeholders (e.g., steering group members) to ensure that the key points are accurately represented and that the document is clear
- Incorporate feedback into final summary documents and make available to the intended audience through appropriate channels—e.g., email distribution and/ or inclusion in a digital platform that hosts the full CoP

4.2.4   Work package 3 – Risk-based approach review

Objective:

To assess and update the application of the risk-based approach across asset types, including the definition of Minimum Service Levels (MSLs) to support consistent and accountable delivery.

While most respondents supported retaining the risk-based model, there were consistent calls for clearer MSLs to reduce inconsistency and avoid under-delivery. This work package will:

- Conduct a thorough assessment of the current risk approach for each asset including safety risks, structural integrity, environmental factors, and the likelihood of failure or deterioration
- Identify key risks and categorise risks based on likelihood and consequence (e.g., safety hazards, traffic disruptions, asset degradation)

- Define and validate specific Minimum Service Levels (MSLs) for each risk category covering condition of infrastructure, safety standards and maintenance response times
- Update guidance and incorporate MSLs into updated CoP

4.2.5 Work package 4 – Document definition and scope

Objective:

To develop an updated document definition, scope and audit and update all references, hyperlinks, and structural elements of the CoP, ensuring that the revised document is current, navigable, and fully scoped for future use.

Many stakeholders noted that the extensive references were useful but important that they are kept up to date. Many links were found to no longer work or refer to an outdated document.

This work package will:

- Clearly outline the objectives of the updated CoP. This includes deciding whether the update is a complete overhaul or focused on specific sections.
- Create a clear outline for the updated code with sections for each topic
- Identify and document all hyperlinks in the CoP
- Test each link to determine which ones are broken or lead to outdated or irrelevant resources
- Find updated versions ensuring the most current version of each referenced document, guideline, legislation, or standard and replace outdated links with the updated ones
- Review the need to add references to new documents not currently linked in the CoP

4.2.6 Work package 5 – CoP update

Objective:

To deliver the full technical update of the CoP, including new content development, revisions to existing sections, integration of stakeholder input, legal alignment, and final publication.

This work package will:

- Where possible, identify authors in the working groups / UKRLG board / sub-boards to develop specific sections of the CoP. Where not possible identify authors in industry best placed to author particular sections and establish contracting mechanisms if required
- Identify dependencies and define process to ensure guidance is consistent

- Complete first draft of updated sections and compile updated sections into first draft of updated CoP
- Share the draft with stakeholders and the wider community for review. Gather their feedback on clarity, relevance, and comprehensiveness
- Ensure that the code aligns with the current legal framework and regulatory requirements
- Refine the draft code based on the feedback received during the document review and seek approval for publication from key stakeholders
- Review executive summaries developed in WP2 to ensure they remain relevant and up to date
- Publish approved CoP through appropriate channels and disseminate

4.2.7 Work package 6 – Training and implementation

Objective:

To develop a comprehensive training and support package (including toolkits, case studies, FAQs, and videos) that enables effective adoption of the CoP across diverse user groups.

A lack of training and guidance materials was frequently cited as a barrier to adoption, particularly by smaller authorities and newer practitioners. This work package will:

- Consult with prospective users of the CoP to understand what training is required
- Design a programme of training based on feedback received
- Develop training materials and programmes to help highway professionals adopt the updated practices.
- Create supporting documents, such as FAQs, implementation guides, templates, toolkits and case studies
- Publish training material in digital CoP

4.2.8 Work package 7 – Digital platform to host CoP

Objective:

To design, develop, and launch a web-based, interactive platform for hosting the CoP, offering features such as search, collaboration, version control, and user analytics. The digital platform will be hosted on a UKRLG web site (domain already acquired).

Stakeholders were almost unanimous in calling for the CoP to be hosted on a live digital platform with interactive tools, training, and search functionality.

This work package will:

- Identify core functionalities such as document hosting, collaboration tools, version control, search functionality, user access management, reporting, and real-time updates

- Plan the structure of the content that will be hosted on the platform. This includes documents (CoP, guidelines, reports), multimedia (videos, tutorials), and other resources (tools, templates, case studies)
- Define the technical requirements including platform architecture, user roles, database design, security requirements, scalability, reliability, user interface and content management system
- Create a centralised document repository where users can easily access and download the WMHI CoP and related documents
- Implement a robust search engine that allows users to search through the CoP, documents, and other resources efficiently
- Integrate tools for collaboration, such as forums, discussion boards, or comment sections where users can provide feedback or ask questions about the CoP
- Ensure that documents on the platform are versioned, allowing users to access previous versions
- Provide analytics tools to track user engagement and content consumption, allowing administrators to monitor the platform's usage and identify popular or under-utilised resources
- Conduct QA and user testing with a diverse set of stakeholders (engineers, highway authorities, contractors, etc.) to identify any challenges or pain points in navigating and using the platform
- Launch the platform to the users. Announce the launch through relevant channels (e.g., newsletters, social media, industry conferences)
- Onboarding and Training: Provide onboarding resources such as tutorials, user guides, and video demonstrations to help users get acquainted with the platform

4.2.9 Work package 8 – Monitoring and evaluation framework

Objective:

To define KPIs, data collection methods, and reporting mechanisms that track CoP adoption, effectiveness, and impact — enabling continuous improvement and accountability.

This work package will:

- Identify the core goals of the WMHI CoP including but not limited to enhancing safety, reducing maintenance costs, improving service delivery, and ensuring the infrastructure remains in a good condition
- Determine what metrics will best measure success in achieving the priorities
- Develop data collection methods, define targets and develop evaluation methods
- Establish reporting mechanisms and develop systems for tracking and reporting progress, such as dashboards or regular performance reports

- Review framework for the structured feedback process set up in WP1 to ensure it remains fit for purpose
- Set up mechanisms for monitoring the application of the CoP across highway projects and the collaboration platforms in the digital CoP

4.2.10   Deliverables table

The deliverables and completion dates can be found in the table below:

Work Package	Deliverable number	Deliverable description	Date to be delivered
WP0	PM1	The *Consultant* shall deliver the following outputs of the inception meeting: • A set of minutes highlighting any agreements and/or clarifications made over and above the accepted project proposal including actions. • A project initiation document including an updated project plan and resource schedule (or similar), risk register and action log.	Within two weeks of the inception meeting taking place.
WP0	PM2	• Project plan and resource schedule (or similar). • Action log. • Contractors Monthly Report (CMR) including resource breakdown. • Risk and opportunity register.	By the 25th of each month
WP1	D1	Governance framework including • Stakeholder mapping and engagement plan • Assigned roles and responsibilities • Structured feedback process for stakeholder input into drafting process • Framework for periodic evaluation of CoP by UKRLG	End of month 3
WP2	D2	Executive summaries for key areas and concepts	End of month 6
WP3	D3	Updated risk-based approach guidance including minimum levels of service for each asset	End of month 6
WP4	D4	Document link review output	End of month 5
WP4	D5	Update document links in CoP	End of month 6
WP5	D6	Updated CoP structure including:	End of month 6

		- List of new sections - List of updated sections - List of sections to be removed	
WP5	D7	First drafts of all updated and new sections	End of month 11
WP5	D8	Consolidated first draft of updated CoP	End of month 12
WP5	D9	Final drafts of all updated and new sections	End of month 15
WP5	D10	Consolidated final and approved version of updated CoP	End of month 18
WP6	D11	Training programme plan covering: - Stakeholder engagement - Programme - Training material plan - Dissemination plan	End of month 14
WP6	D12	Training material that may include (but not limited to): - Guidance documents - FAQs - Implementation guides - Toolkits - Case studies - Compliance checklists - Tutorial videos - Templates	End of month 16
WP7	D13	Specification for Digital CoP covering: - Functional requirements - Platform architecture - User roles - Database design - Security requirements - User interface design - Content management system	End of month 12
WP7	D14	Launch Digital CoP with following features: - Document repository - Collaboration tools - Version control - Analytics and reporting	End of month 18

		• Search functionality	
WP8	D15	Monitoring and evaluation framework covering: • KPI definition • Data collection methods • Targets • Evaluation methods • Reporting mechanisms	End of month 18

The completion date for this service is the end of month 18. The work can be mapped as phases:

Phase 1: Foundation & Acceleration
Quick wins, engagement, and direction setting
Mapped Work Packages:
- WP0 – Project and technical management (begins here and runs throughout)
- WP1 – Governance and stakeholder engagement (setup and early engagement)
- WP2 – Executive summaries / Quick start guides
- WP3 – Risk-based approach review (initial scoping of MSLs and current practice)
- WP4 – Document definition and scope (audit links, define structure and required changes)

Phase 2: Development & Integration
Main update of CoP and digital design
Mapped Work Packages:
- WP0 – Project and technical management (throughout)
- WP1 – Governance and engagement (continued input and oversight)
- WP3 – Risk-based approach review (complete and embed into CoP)
- WP4 – Document definition and scope (complete restructuring and author allocation)
- WP5 – CoP update (drafting, legal review, refinement)
- WP6 – Training and implementation (develop tools and materials)
- WP7 – Digital platform (design, build and test core platform features

Phase 3: Adoption & Evolution
Implementation, monitoring, evaluation, and improvement
Mapped Work Packages:
- WP0 – Project and technical management (throughout)
- WP5 – CoP update (finalisation and publication)
- WP6 – Training and implementation (rollout and onboarding)

- WP7 – Digital platform (platform launch, user support, feedback loop)
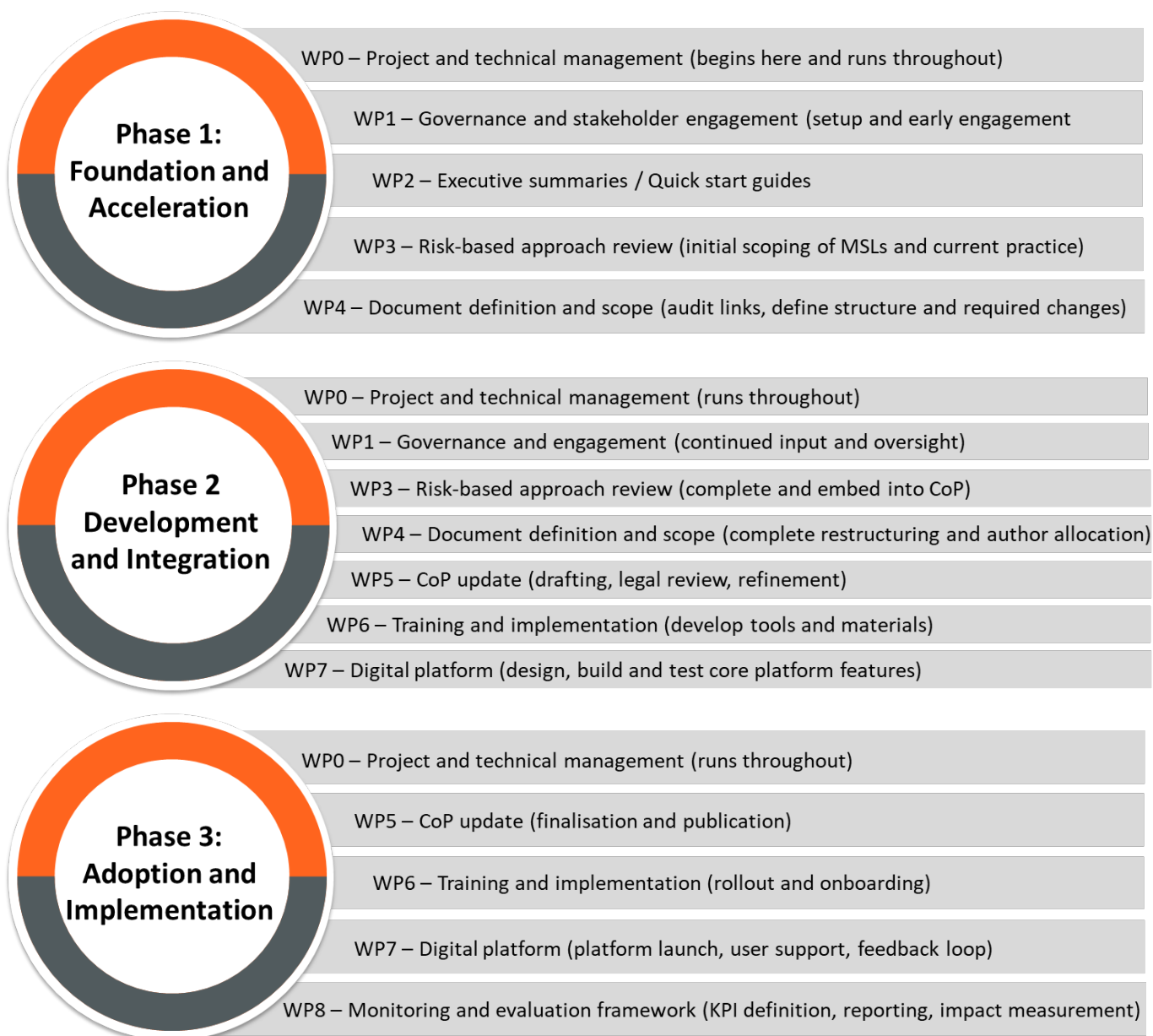- WP8 – Monitoring and evaluation framework (KPI definition, reporting, impact measurement)

An indicative roadmap of the phases is shown in Appendix A with a visual representation in Appendix B.

Appendix A   Roadmap

Phase	Work Package	Work Package title	Description	Timeline
Phase 1: Foundation and Acceleration	WP0	Project and technical management	Manage day-to-day project delivery, reporting, risks, and milestones	Throughout
Phase 1: Foundation and Acceleration	WP1	Governance and stakeholder engagement	Maintain thematic sub-groups and ongoing engagement forums.	Start 0-6 months and continue
Phase 1: Foundation and Acceleration	WP1	Governance and stakeholder engagement	Create a governance framework including stakeholder engagement, continuous updates and version control of the CoP.	0-3 months
Phase 1: Foundation and Acceleration	WP2	Executive summaries	Create high-level executive summaries of key sections in CoP	0-6 months
Phase 1: Foundation and Acceleration	WP3	Risk-based approach review	Assess and update the application of the risk-based approach across asset types	0-6 months
Phase 1: Foundation and Acceleration	WP3	Risk-based approach review	Develop guidance on minimum levels of service to accompany risk-based approaches.	0-6 months
Phase 1: Foundation and Acceleration	WP4	Document definition and scope	Review and replace broken or outdated references in the existing CoP.	0-6 months
Phase 1: Foundation and Acceleration	WP4	Document definition and scope	Restructure CoP into clearer asset-based modules with cross-cutting principles.	0-6 months
Phase 2: Development and Integration	WP5	CoP update	Creation of draft updated CoP including new content development, revisions to existing sections, integration of stakeholder input and legal alignment	6-12 months
Phase 2: Development and Integration	WP5	CoP update	Refine the draft code based on the feedback received during the document review and seek approval for publication from key stakeholders	12-18 months
Phase 3: Adoption and Implementation	WP6	Training and implementation	Design a training programme aligned with stakeholder requirements	12-18 months
Phase 3: Adoption and Implementation	WP6	Training and implementation	Create training materials such as FAQs, implementation guides, templates, toolkits and case studies to support CoP implementation.	12-18 months

PPR2062

Phase 3: Adoption and Implementation	WP7	Digital platform to host CoP	Develop concept and produce specification for web-based, interactive platform CoP	6-12 months
Phase 3: Adoption and Implementation	WP7	Digital platform to host CoP	Develop a web-based, interactive platform for hosting the CoP	12-18 months
Phase 3: Adoption and Implementation	WP8	Monitoring and evaluation framework	Define KPIs, audit tools, and monitoring strategies for evaluating CoP implementation.	12-18 months
Phase 3: Adoption and Implementation	WP8	Monitoring and evaluation framework	Embed continuous feedback and versioning process for CoP evolution.	18+ months onward

Appendix B   Roadmap visuals

Phase 1: Foundation and Acceleration

- WP0 – Project and technical management (begins here and runs throughout)
- WP1 – Governance and stakeholder engagement (setup and early engagement
- WP2 – Executive summaries / Quick start guides
- WP3 – Risk-based approach review (initial scoping of MSLs and current practice)
- WP4 – Document definition and scope (audit links, define structure and required changes)

Phase 2 Development and Integration

- WP0 – Project and technical management (runs throughout)
- WP1 – Governance and engagement (continued input and oversight)
- WP3 – Risk-based approach review (complete and embed into CoP)
- WP4 – Document definition and scope (complete restructuring and author allocation)
- WP5 – CoP update (drafting, legal review, refinement)
- WP6 – Training and implementation (develop tools and materials)
- WP7 – Digital platform (design, build and test core platform features)

Phase 3: Adoption and Implementation

- WP0 – Project and technical management (runs throughout)
- WP5 – CoP update (finalisation and publication)
- WP6 – Training and implementation (rollout and onboarding)
- WP7 – Digital platform (platform launch, user support, feedback loop)
- WP8 – Monitoring and evaluation framework (KPI definition, reporting, impact measurement)

Part Three

Delivery plan

Delivery Roadmap by Work Package

Priority	Project Phase	Theme	Recommendation	Description	Timeline	Addresses TRL recommendation in gap analysis report	Work Package	Work Package title
Short-term	Scoping & Governance	Governance	Establish Living Document Governance	Create a governance framework for continuous updates and version control of the CoP.	0-6 months	5	WP1	**Governance and stakeholder engagement**
Short-term	Scoping & Governance	Stakeholder Engagement	Sustain Stakeholder Engagement	Maintain thematic sub-groups and ongoing engagement forums.	Start 0-6 months and continue	5, 8	WP1	**Governance and stakeholder engagement**
Long-term	Sustainment	Ongoing Maintenance	Maintain Governance and Stakeholder Process	Embed continuous feedback and versioning process for CoP evolution.	18+ months onward	5, 8	WP1	**Governance and stakeholder engagement**
Short-term	Scoping & Governance	Usability	Develop Executive Summary and Quick-Start Guides	Create high-level summaries, checklists and user-friendly overviews.	0-6 months	1, 2, 6	WP2	**Quick start guides**
Short-term	Scoping & Governance	Reference Accuracy	Update Outdated Links and References	Review and replace broken or outdated references in the	0-6 months	5	WP4	**Update document**

Priority	Project Phase	Theme	Recommendation	Description	Timeline	Addresses TRL recommendation in gap analysis report	Work Package	Work Package title
				existing CoP.				
Short-term	Scoping & Governance	Risk Framework	Add Minimum Service Levels	Develop guidance on minimum levels of service to accompany risk-based approaches.	0-6 months	3	WP3	**Document structure and scope**
Medium-term	Research & Design	Structure	Improve Structural Layout	Restructure CoP into clearer asset-based modules with cross-cutting principles.	6-12 months	2, 5	WP3	**Define document structure and scope**
Medium-term	Research & Design	Scope Expansion	Expand Scope for Emerging Needs	Add sections on Active Travel, AI, Carbon, EV Infrastructure, and Biodiversity.	6-18 months	4	WP4	**Update document**
Medium-term	Research & Design	Inclusion & Accessibility	Embed Inclusion & Accessibility	Ensure the CoP meets the needs of vulnerable users and diverse authority contexts.	6-18 months	1, 2, 4, 6	WP4	**Update document**
Medium-term	Research & Design	Training & Capacity	Define Training & Competency Framework	Design a training programme aligned with roles and responsibilities.	6-18 months	2	WP5	**Training and implementation**

Priority	Project Phase	Theme	Recommendation	Description	Timeline	Addresses TRL recommendation in gap analysis report	Work Package	Work Package title
Medium-term	Development & Drafting	Implementation Tools	Develop Implementation Toolkits	Create templates, resources and training resources to support CoP implementation.	6-18 months	2	WP5	**Training and implementation**
Short-term	Digital Design	Digital Transition	Initiate Digital CoP Concept	Develop concept for a modular, web-based CoP with dynamic tools.	0-6 months	1, 2	WP6	**Digital CoP**
Long-term	Digital Delivery	Digital Transformation	Create a Digital-First Platform	Develop a web-based, modular, and searchable CoP with multimedia integration.	6-24 months	1, 2	WP6	**Digital CoP**
Long-term	Evaluation	Monitoring & Evaluation	Create Performance & Evaluation Framework	Define KPIs, audit tools, and monitoring strategies for CoP implementation.	18-36 months	7	WP7	**Monitoring and evaluation**

Well Managed Highways Infrastructure (WMHI) Code of Practice (CoP) Update

The Well Managed Highway Infrastructure (WMHI) Code of Practice, last published in 2016, is a cornerstone document guiding local highway authorities in the effective, risk-based management of their networks. With the emergence of new technologies, evolving policy landscapes, and shifts in stakeholder needs, it is now essential to undertake a comprehensive update of the CoP to ensure its continued relevance and effectiveness.

This report contains a gap analysis, outlines a recommended approach for commissioning the next phase(s) of work, and includes a delivery plan.