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ASSET MANAGEMENT
COMPETENCE FRAMEWORK

MARCH 2019

DISCLAIMER

Whilst every care has been taken in the preparation of this Framework, the authors stress that it is intended for guidance purposes only. No legal liability is accepted for its contents and the Framework is not intended as a substitute for legal advice. The views expressed do not necessarily reflect those of the sponsoring organisations.

COMMENTS & FEEDBACK

The UK Roads Liaison Group would welcome any comments and feedback on this Asset Management Competence Framework, so that it may be reviewed, improved and refined to give the sector the best support possible. To do so, please email ukrlg@ciht.org.uk with the header, 'Feedback on Asset Management Competence Framework'.

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CONTENTS

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1. INTRODUCTION

1.1 PURPOSE

This document contains an Asset Management (AM) Competence Framework designed to help highway authorities implement the recommendations of the CoP, with particular focus on Recommendation 15 – Competencies and Training:

> The appropriate competencies for all staff should be identified. Training should be provided where necessary for directly employed staff, and contractors should be required to provide evidence of the appropriate competencies of their staff.

The successful achievement of the other CoP recommendations will be supported through the identification, development and evidence of competences required across the highway service. Its adoption should enable highway authorities to manage both their physical and their intellectual assets effectively and efficiently.

1.2 BACKGROUND

Research undertaken to date has revealed a variety of approaches being used by different highway authorities to manage the skills, competences and training requirements of their staff. In response, the UK Roads Liaison Group Asset Management Board has produced a framework aligned to the latest Code of Practice (CoP), Well-managed Highway Infrastructure (WMHI), and the international standard ISO 55000.

1.3 OBJECTIVES

The competence framework has been developed for highway authority roles to include:

- Competence requirements for highway authorities;
- Definition of generic highway roles/responsibilities, specifying the different levels of competence required;
- Definition of the competence (in particular the knowledge and experience) required for each generic role/level, including any key review cycles for updating/maintaining competence; and
- A template that authorities can use to document and track competences.

The implementation of a consistent competence framework, with defined roles, competences and competence levels will help highway authorities identify whether staff are suitable for the role they have; or alternatively provide an indication of the training or experience which may enhance their capabilities.

Further benefits of the competence framework include:

- Allowing highway authorities to identify commensurate training needs in order to meet the requirements of all roles;
- Assessing whether staff conducting a specific role are sufficiently competent for the specific role;
- Assessing whether a sufficient level of competence exists amongst all the staff in the authority;

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- Allowing staff to identify progression routes and any gaps in training or experience;
- Providing an assessment of whether staff in the team can contribute to another part of the organisation;
- Enabling succession plans for the workforce; and
- Enhancing staff's employability and enable freedom of movement within the industry.

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2. FRAMEWORK APPROACH

2.1 COMPETENCE LEVELS

The following Table 2-1 depicts the different levels of competences and the description for each level.

Table 2-1 - Competence levels

Level of Competence		Description
Proficiency	P	Able to manage, supervise and advise others
Experience	E	Capable of undertaking the competence independently
Knowledge	K	Capable of contributing to the work of others but not of undertaking the competence independently
Awareness	A	Is aware of the competence but has not practiced it
Not Applicable	NA	No experience, knowledge or training

Levels A, K, E and P have been chosen in order to be consistent with other industry competence frameworks.

2.2 DEFINITION OF CATEGORIES AND COMPETENCES

There are 10 broad categories which were defined to group competences into a series of themes. The categories were defined by critically reviewing the literature mentioned in Appendix A and through sector experience. The categories are the following:

- Legislation
- Procurement, Commercial and Contract Management
- Risk Management
- Governance, Policy and Strategy
- Information and Data
- Network Prioritisation and Resilience
- Funding Programmes and Lifecycles
- Customers and Communication
- Sustainability and Asset Preservation
- Performance Monitoring

Individual competences were then defined under each of these broad areas, following the requirements and guidance identified in the literature review. The competence area and the individual competences are listed in the first two columns of the competence table (Appendices C & D).

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2.3   ASSIGNMENT OF REQUIRED LEVELS

One of the objectives of the framework was to establish the competence requirements for highway authorities. It would be unfeasible for an authority to rely on a single person to fulfil all asset management duties; in most authorities this is done through collaboration of several members of staff who may or may not work in a centralised asset management team. Therefore, a recommended level of requirements to be achieved across the whole authority has been suggested.

This is based on typical highway authorities' requirements and needs but is not prescriptive. Authorities should review the proposed "required levels" against their remit and operations to confirm their applicability. The competence level required by the highway authorities can be provided by external staff.

Where a certain competence requires *developing, auditing, assessing, defining, promoting, shaping, identifying, establishing or evaluating* a P level of competence is required, as the staff responsible must have sufficient capability to manage and guide others. For those competences which involve *implementing, following, conducting, demonstrating or measuring* a E or K level is sufficient, as staff may need to undertake the competence but following established processes or guidance.

For example, for the competence "Audit compliance with relevant legislation and suggest improvements to plans/procedures" the recommended requirements for the highway authority is P; the highway authority must have these levels due to the need for general responsibility and for people to lead those development tasks.

2.4   DEFINITION OF JOB ROLES

One of the requirements of the framework was to define and agree generic highway roles/responsibilities, specifying the different levels of competence required for each. The following ten roles were developed in total, aiming to keep the role descriptions fairly generic so that they would be applicable to most Authorities:

- **Political/Senior Decision Makers**

Portfolio holders and responsible for the decision making in a senior/strategic level, representing the political leadership.

- **Organisational Leadership**

Responsible for leading, directing and managing the delivery of the entire Highways portfolio. Representative of the AM function at board level. Provides leadership and decision making to ensure delivery of the service to fulfil the authority's corporate objectives while managing risk.

Example Role names: Highways and Transport Lead, Head of Infrastructure/Transportation, Head of Highways

- **Asset Management Leadership**

Responsible for leading the AM team and associated suppliers. Develop and manage organisational change, shaping the AM culture. Assure the quality of AM processes, monitor and review progress and performance, review and audit compliance. Appraise, manage and communicate risks of the AM function.

Example Role names: AM Group Lead, Head of Asset Management

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- **Asset Management Delivery**

Responsible for the production and delivery of asset-specific strategies and plans to meet required service levels. Responsible for implementing a risk-based approach for the maintenance of one or more asset groups, through development and delivery of work programmes, investment plans, lifecycle plans and business cases for funding.

Example Role names: Asset Management Officer, Highways/Structures/Asset Engineer, Highways/Structures/Drainage Manager

- **Asset Management Support**

Support the Asset Management Delivery in AM activities (e.g. planning, design and delivery of maintenance programmes and renewals schemes).

Example Role names: Assistant (Highways/Structures/etc) Engineer, (Highways/Structures/etc) Technician, Assistant Asset Management Officer

- **Service Delivery Leadership**

Ensure the delivery of highway maintenance, responsible for the introduction of new services, of achieving performance requirements and accountable for the successful delivery of services (Note: this may be an outsourced role).

Example Role names: Contracts Manager, Service Delivery Manager

- **Service Delivery Operations**

Experienced staff in fixing highway defects and delivering the routine and planned maintenance works programmes (Note: this may be an outsourced role).

Example Role names: Highway Technician/Engineer, Service Delivery Operative

- **Asset Management Inspections**

Responsible for identifying defects, critically assessing them and recording them in appropriate systems.

Example Role names: Highways/Structures/etc. Inspector

- **Administration**

Receive requests from the public and follow appropriate procedures to resolve them.

Example Role names: Support Team

- **Risk, Legal and Insurance**

Ensure efficient management of claims and that established procedures are implemented.

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3. STRUCTURE OF THE ASSET MANAGEMENT COMPETENCE FRAMEWORK

The framework has been presented as two tables: the first containing all competences and levels required per role and for the whole authority, the second one containing the training and evidence requirements, as well as an indication on the provenance of each competence. This format has been made more user-friendly and digitally enabled prior to implementation.

Tables 3-1 and 3-2 show the headings present in the AM competence framework table, plus the first competence row as an example.

Table 3-1 – Competence Table Part 1 – Required levels in authority and per role

Competence area	Competences	Required level within the Authority	Political/Senior Decision Makers	Organisational Leadership	Asset Management Leadership	Asset Management Delivery	Asset Management Support	Service Delivery Leadership	Service Delivery Operations	Asset Management Inspections	Administration	Risk, Legal and Insurance
Legislation	Demonstrate understanding of developing plans and procedures in accordance with the law to fulfil the legal requirements placed upon the authority in the context of asset management	P	A	K	P	E	NA	A	A	A	NA	P
i	ii	iii	iv									

The table is structured as follows:

i. The first column shows the 10 general competence areas (as per Section 2.2);

ii. The second column shows the competences;

iii. The third column shows the recommended requirements for the highway authorities (as per Section 2.3); and

iv. Columns 4 to 13 show level of competence required for each of the "typical roles" (defined in Section 2.4).

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Table 3-2 – Competence Table Part 2 – Provenance, Training and Evidence

Competence area	Competences	WMHI recommendation	ISO55000	IAM	Training – formal	Training – OTJ and/or Relevant Experience	Evidence
Legislation	Demonstrate understanding of developing plans and procedures in accordance with the law to fulfil the legal requirements placed upon the authority in the context of asset management		✓	6	• Self-study on legal requirements in the context of AM • Attending seminars/training sessions on the topic (e.g. ADEPT etc) • Attending workshops/ working groups to develop these plans and procedures	• Shadowing experienced staff • Developing plans/ procedures (with supervision where appropriate)	• Plans and procedures (authorship or review responsibility) • Training course tests/ assessments • CPD records • IAM diploma (M8)
i	ii	iii			iv		v

The second table is structured as follows:

i. The first column shows the 10 general competence areas (as per Section 2.2);

ii. The second column shows the competences;

iii. The next three columns show the provenance of each competence, highlighting which of the documents in the literature review listed this particular competence as desirable;

iv. Columns 6 and 7 show suggested training (both class-room based and on the job and relevant experience) which may help staff fulfil the competence; and

v. The last column provides suggested evidence to demonstrate this competence.

It should be noted that it is up to the individual to provide evidence to the appropriate level: for the example above, if an E level is being sought evidence should demonstrate that the individual demonstrated understanding of developing plans and procedures, whereas if the individual contributed to them under the direction of others this would only provide evidence for a level of K.

It should also be noted that the staff can evidence that they have the required level of competence using previous relevant experience.

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4. USE OF THE ASSET MANAGEMENT COMPETENCE FRAMEWORK

The Framework can be used in two ways: either by assessing the individual competences of members of staff within the highway authority or by performing a single assessment for the entire authority. It should be noted that the former method also allows aggregation of individual assessments to provide an overall assessment for the highway authority.

Assessment of individual staff

Furthermore, the framework can be used to assess competences of an individual, either through a self-assessment or with a manager/mentor as a tool for development discussions and career progressions. To facilitate this, competence levels have been assigned against each of the ten "typical roles" described in Section 2.

Each individual should select the "typical role" which most closely matches their current role within the highway authority and assess their own competence against the levels suggested for that particular role. Since the framework is not prescriptive and the precise requirements of each role may vary between highway authorities, any gaps identified should be assessed to determine whether they truly represent a lack of competence for the role. Training and other on-the-job development opportunities can then be identified to fill any gaps.

If the assessment highlights few gaps or none, the individual can still benefit from it by examining the levels of competence required for a more experienced role, and use the framework to guide their development (for example, if all the competence levels for the "Asset Management Support" role are fulfilled, the individual may wish to target levels suggested for the "Asset Management Delivery" role to further their development).

The process described above is depicted in the following Figure 4-1.

An individual identifies the role which most closely aligns to their job

The individual's competences are assessed against the levels suggested for the role

Identify whether any highlighted gaps are not required for the particular role

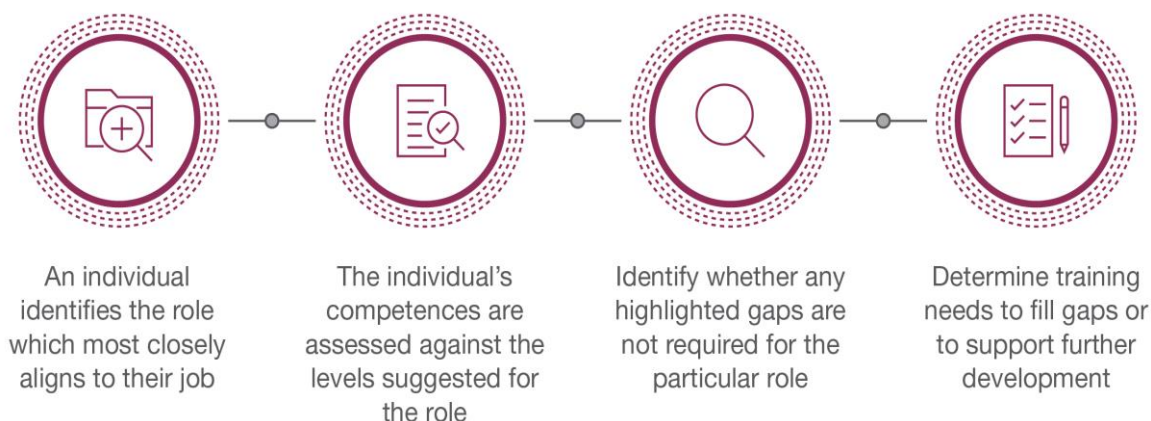Determine training needs to fill gaps or to support further development

Figure 4-1 – Description of individual usage of the AM competence Framework

It is recommended that after an individual completes their self-assessment, they discuss their results with their supervisor/line manager/mentor. This will encourage feedback on whether the individual has assessed their competence correctly and will also highlight areas of development to those responsible.

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Assessment of entire highway authority

This method involves a single assessment for the entire highway authority, assessing the existing competences of the entire highway authority towards those listed in the "Required Levels" columns. This way skill gaps within the authority as a whole can be spotted, and suitable recruitment or upskilling plans can be designed based on these. The process described above can be carried out through a series of sequential steps as depicted in the following Figure 4-2.
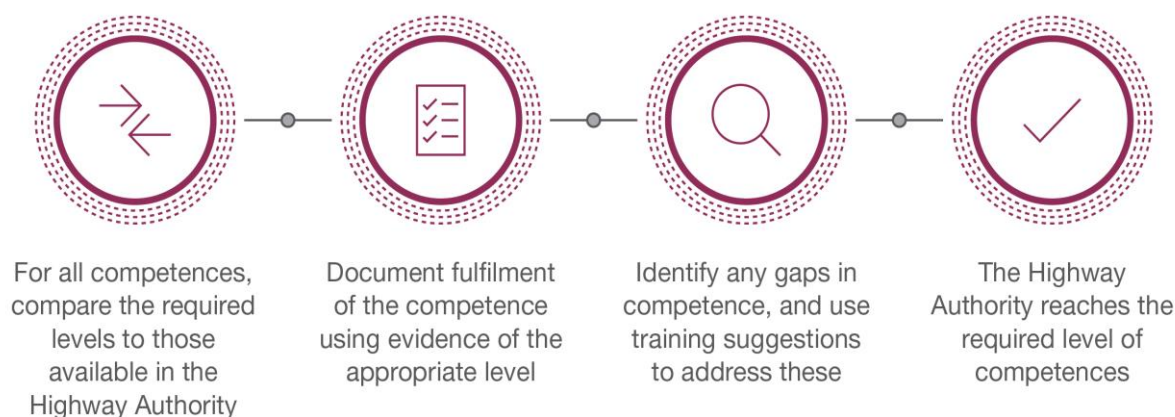

| For all competences, compare the required levels to those available in the Highway Authority | Document fulfilment of the competence using evidence of the appropriate level | Identify any gaps in competence, and use training suggestions to address these | The Highway Authority reaches the required level of competences |

Figure 4-2 – Description of the highway authority -wide usage of the AM competence Framework

Am Excel-based tool was developed to make this framework user friendly, quick and cost effective for authorities to use. The tool explicitly shows the output through graphs in an easy way for the authorities to interpret and is freely available on the UKRLG website.

For example, for Competence 2.1 "Comply with procurement legislation and current best practice procedures", the following may be a valid assessment:
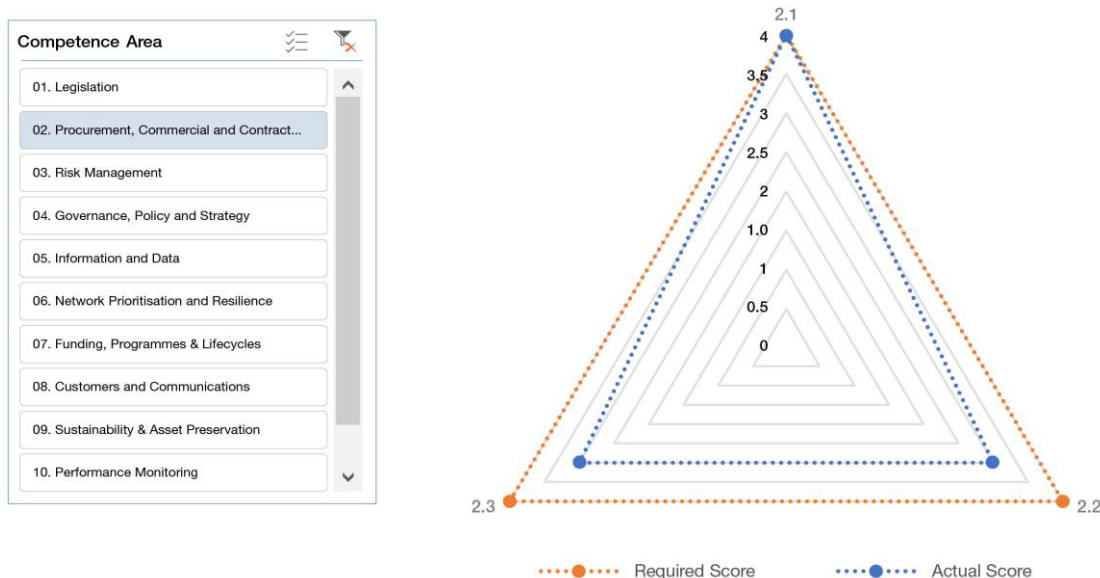

Figure 4-3 – Example assessment for Competence 2.1

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The above figure shows that the entire highway authority meets the recommended requirements for the Competence 2.1. If the competence assessment or provided evidence is insufficient to meet the "required level", the authority can record the level reached (A or K for this example) and this will be highlighted as a gap. The training columns can then be examined to determine suitable formal or on-the-job training required for one or more individuals in order to obtain this competence at the desired level. This way the highway authority can demonstrate its current position and the steps being taken to achieve the competence.

It should be noted that the same person can cover several levels of competence, provided they fulfil the requirements of each level.

Authorities should review gaps in competence, assess the risk with each, and then develop a prioritised improvement plan. The tool also contains two columns for authorities to record both:

• Resilience for the particular competence (i.e. number and competence of individuals with this competence); and

• Criticality of competence (a RAG assessment which indicates the importance of the particular competence for that authority).

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5. ALIGNMENT WITH INSPECTION COMPETENCE GUIDANCE

The Asset Management Competence Framework is not intended to provide a comprehensive set of requirements for the inspection of highway infrastructure assets.

Instead, it is designed to align with separate competence guidance for inspectors of specific asset types, which should provide detailed requirements unique to each role.

In contrast, the "Asset Management Inspection" typical role listed in this 'general' framework sets out the surrounding asset management competences for an inspector. As a result, most of the competences listed in the 'general' framework under this column have levels of A or K, seeking to make inspectors aware of how their role affects other aspects of asset management delivery, but not requiring high levels of competence in these.

Both the Asset Management Competence Framework and any inspector competence guidance should be used in conjunction with one another, with the latter being prioritised over the 'general' framework for inspector staff.

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APPENDICES

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APPENDIX A. REFERENCES AND RESOURCES

Description	Type	Organisation
Well-managed Highway Infrastructure – a Code of Practice	Code of Practice	UK Roads Liaison Group (UKRLG)
Highway Infrastructure Asset Management Guidance	Guidance Document	UK Roads Liaison Group (UKRLG) Highways Maintenance Efficiency Programme (HMEP)
Asset Management E-learning Toolkit	E-learning	Highways Maintenance Efficiency Programme (HMEP)
The IAM Competency Framework-The Requirements: Version 3.0	Requirements	Institute of Asset Management (IAM)
ISO 55000	International Standards	BSI Standards Publications
Bridge Inspector Certification Scheme (NHSS31)	Certification Scheme	UK Bridges Board/LANTRA
Professional Certificate/Diploma in Asset Management	Training Course	Institute of Highway Engineers (IHE)

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APPENDIX B. LITERATURE REVIEW

ISO 55000

The ISO 55000 suite highlights the importance of appropriate staff training and competence. The adoption of ISO 55000 enables an organization to achieve its objectives through the effective and efficient management of its assets. As an international standard suited to various sectors, its requirements were fairly generic. Where appropriate, these generic competence requirements were incorporated into the framework.

Highway Infrastructure Asset Management, Guidance Document

Asset management has been widely accepted by central and local government as a means to deliver a more efficient and effective approach to management of highway infrastructure assets. In 2013, HMEP released the Highway Infrastructure Asset Management Guidance Document for local highway authorities, which is endorsed by UKRLG, to support the adoption of asset management principles and enable implementation of the benefits of long-term planning. This will support a more effective and efficient approach to the management of highway infrastructure.

Well-managed Highway Infrastructure

The WMHI is the most recent document which is nationally considered as good practice for highways AM. Through its 36 recommendations, which build upon those listed in the Highway Infrastructure Asset Management Document, it provides a comprehensive guide for the implementation of good AM practice in highway authorities.

Being targeted at the highways sector, the WMHI document is more specific in its recommendations than the ISO suite of documents. As a result, these were used more extensively in the framework (35 of the 43 competences are aligned to WMHI recommendations).

IAM Competence Framework

The IAM competence framework suggests 7 generic roles and 153 specific competences which can be used by asset managers to optimise the delivery and performance of physical assets. Through this Framework, the IAM seeks to help organisations plan and develop the competences they need to meet current and future needs, help individuals plan their training and professional development, and create a firm base for designing training and qualifications which have value in a global market. It spans a wide spectrum of disciplines including engineering, finance, operations, information systems, management, contract and supplier management, human resources and organisational development. The precise mix of competences that people and organisations need depends on their objectives, the context and circumstances they are operating in.

Summary

Overall, the literature review provided valuable insight into general and highways-specific competence needs for highway authority staff. When defining specific competences, the recommendations of the CoP were incorporated as a first step, followed by IAM competences and any general requirements form the ISO 55000 international standards.

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APPENDIX C. COMPETENCE FRAMEWORK – TABLE 1

Ref	Competence area	Competences	Required level within the Authority	Political/Senior Decision Makers	Organisational Leadership	Asset Management Leadership	Asset Management Delivery	Asset Management Support	Service Delivery Leadership	Service Delivery Operations	Asset Management Inspections	Administration	Risk, Legal and Insurance
1	Legislation	Demonstrate understanding of developing plans and procedures in accordance with the law to fulfil the legal requirements placed upon the Authority in the context of asset management	P	A	K	P	E	NA	A	A	A	NA	P
2		Audit compliance with relevant legislation and suggest improvements to plans/procedures	P	A	K	P	A	NA	A	A	A	NA	P
3	Procurement, Commercial and Contract Management	Comply with procurement legislation and current best practice procedures	P	A	K	P	E	A	P	NA	NA	NA	NA
4		Identify and recommend appropriate forms of contract and service delivery models for achieving the AM strategy and AM objectives	P	A	K	E	K	K	P	K	NA	NA	A
5		Develop project or service specifications to be included in contract documentation and regularly review and update them	P	NA	K	P	E	A	P	NA	NA	NA	NA
6	Risk Management	Identify, assess and manage risks related to the delivery of the service	P	A	K	P	P	K	P	K	K	NA	P
7		Define a risk-based approach for all aspects of asset maintenance, review and update it	P	A	K	P	P	K	A	A	A	NA	E
8		Develop an asset management framework	P	A	K	P	P	K	A	A	A	NA	NA
9		Conduct inspections and evaluate defects according to the defined risk-based approach	E	NA	K	NA	NA	NA	E	E	E	NA	NA
10		Implement the risk-based defect repair approach to Asset Management	E	NA	A	E	E	A	K	E	E	NA	A
11		Follow established procedures to ensure efficient management of claims	E	NA	A	K	E	E	A	A	E	E	E
12		Define need of asset condition surveys and plan for their implementation	P	A	A	K	P	A	K	A	K	NA	NA
13	Governance, Policy and Strategy	Define organisational goals and how to achieve them through the AM policy and strategy	P	A	K	P	P	K	A	A	A	NA	NA
14		Define requirements of the AM policy, including corporate goals, consider consistency with other authorities, and treating the network as an integrated set of assets	P	A	A	P	P	K	A	A	A	NA	NA
15		Develop the AM strategy and policy and obtain organisational buy-in, define inputs to the AM strategy, including corporate goals, stakeholder requirements, risks, opportunities and constraints and how the effectiveness of the AM policy and strategy will be measured	P	A	K	P	P	K	A	A	A	NA	NA
16		Implement the AM policy and strategy	E	NA	A	K	E	K	A	A	A	NA	NA
17		Promote continuous improvement and evaluate the need of potential corrective actions through collaborative culture	P	A	K	P	E	K	K	K	K	NA	NA
18		Shape the Authority's AM culture by promoting the benefits of AM and implementing changes as required	P	A	K	P	E	K	K	K	K	NA	NA
19	Information and Data	Ensure that the AM system supports the information required for AM decision-making through quality and accurate data	E	A	K	E	E	A	NA	NA	NA	NA	NA
20		Define and regularly review an asset information strategy to assess and record the data needs of the Authority	P	A	K	P	E	A	NA	NA	NA	NA	NA
21		Follow appropriate procedures to record asset condition and inventory information, escalating any risks or issues	E	NA	A	K	E	A	E	E	E	NA	NA
22		Specify the use of appropriate systems and associated processes to record asset condition and inventory information, and routes for issue escalation	P	NA	K	P	P	K	NA	NA	NA	NA	NA

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Ref	Competence area	Competences	Required level within the Authority	Political/Senior Decision Makers	Organisational Leadership	Asset Management Leadership	Asset Management Delivery	Asset Management Support	Service Delivery Leadership	Service Delivery Operations	Asset Management Inspections	Administration	Risk, Legal and Insurance
23	Network Prioritisation and Resilience	Define the methodology and criteria for the production of network hierarchy	P	A	K	P	K	K	A	A	A	NA	NA
24		Identify a Resilient Network within the network hierarchy	P	NA	K	P	K	K	A	A	A	NA	NA
25		Establish a risk-based approach for climate change adaptation	P	A	K	P	K	K	K	K	A	NA	NA
26		Develop an operative, practicable and risk-based severe weather plan including a plan for flood forecasts with lessons learnt after events	P	A	K	P	P	K	K	K	A	NA	NA
27		Effectively maintain the drainage assets, through the use of appropriate strategies and plans	P	NA	A	K	P	K	K	K	A	NA	NA
28	Funding, Programmes & Lifecycles	Demonstrate understanding of different funding sources available to the Authority	K	A	K	K	K	A	K	A	NA	NA	NA
29		Evaluate the Asset Management implications of new development proposals and use lifecycle planning when assessing maintenance options	P	A	K	P	E	A	NA	NA	NA	NA	NA
30		Prepare short, medium and long term financial plans for AM activities	P	A	K	P	E	A	P	NA	NA	NA	NA
31		Develop investment programmes taking into account cross-asset prioritisation	P	A	K	P	E	K	K	A	A	NA	NA
32		Develop lifecycle plans to support short and long-term investment decisions	P	A	K	P	E	K	K	A	A	NA	NA
33	Customers and Communications	Ensure appropriate parties are notified of maintenance or works programmes and identify, communicate and collaborate with appropriate stakeholders	P	NA	K	P	K	A	A	A	NA	K	NA
34		Demonstrate understanding of different methods to collect customers' feedback, understand and interpret customers' needs and tailor services based on their needs	K	A	K	K	K	A	A	A	A	K	NA
35		Understand and respond to customers' enquiries and defect reports	E	A	K	E	E	E	E	E	E	E	NA
36	Sustainability & Asset Preservation	Ensure environment, sustainability and biodiversity principles are incorporated in the organisational strategy and maintenance decisions	P	A	K	P	E	A	E	A	NA	NA	NA
37		Demonstrate understanding of carbon whole life cost (WLC) and ability to apply it when determining appropriate interventions and materials	K	A	K	K	K	K	K	A	A	NA	NA
38		Identify heritage assets and ensure their maintenance reflects planning requirements, including preserving the character of the area	P	A	K	P	K	K	P	K	K	NA	NA
39		Demonstrate understanding of the benefits of removing redundant items during maintenance activities	K	NA	A	K	K	A	K	K	K	NA	NA
40	Performance Monitoring	Define appropriate KPIs and targets aligned to the organisation's objectives and develop action plans to correct areas of underperformance	P	A	K	P	E	A	E	A	NA	NA	NA
41		Measure and monitor performance against established KPIs	P	A	K	P	E	E	P	E	A	A	NA
42		Develop a performance management framework (PMF) and communicate it to stakeholders	P	A	K	P	E	K	K	NA	NA	NA	NA
43		Identify the AM competences required for all staff and ensure that they receive appropriate training, which is regularly reviewed and updated	P	A	K	P	E	K	P	K	K	NA	NA

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APPENDIX D. COMPETENCE FRAMEWORK – TABLE 2

Ref	Competence area	Competences	WMHI recommendation	ISO55000	IAM Role	Training – formal	Training – OTJ and/or Relevant Experience	Evidence
1	Legislation	Demonstrate understanding of developing plans and procedures in accordance with the law to fulfil the legal requirements placed upon the Authority in the context of asset management		✓	6	• Self-study on legal requirements in the context of AM • Attending seminars/training sessions on the topic • Attending workshops/working groups to develop these plans and procedures	• Shadowing experienced staff • Developing plans/procedures (with supervision where appropriate)	• Plans and procedures (authorship or review responsibility) • Training course tests/assessments • CPD records • IAM diploma (M8)
2		Audit compliance with relevant legislation and suggest improvements to plans/procedures		✓	6	• Self-study on relevant legislation • Self-study on auditing procedures	• Shadowing experienced staff • Carrying out audits (with supervision where appropriate)	• Auditing schedules (authorship or review responsibility) • Training course tests/assessments • CPD records • IAM diploma (M8)
3	Procurement, Commercial and Contract Management	Comply with procurement legislation and current best practice procedures		✓	6	• An academic or professional course where this is covered in the syllabus • Attending seminars/training sessions on the topic • Self-study on procurement legislation	• Shadowing experienced staff o • Carrying out a procurement exercise (with supervision where appropriate)	• Training course tests/assessments • CPD records • Communications with others demonstrating compliance • IAM diploma (M8)
4		Identify and recommend appropriate forms of contract and service delivery models for achieving the AM strategy and AM objectives			5	• An academic or professional course where this is covered in the syllabus • Attending seminars/training sessions on the topic • Self-study on forms of contract and service delivery models	• Shadowing experienced staff • Defining appropriate forms of contract (with supervision where appropriate)	• Training course tests/assessments • CPD records • Communications with others recommending/assessing forms of contract or service delivery models
5		Develop project or service specifications to be included in contract documentation and regularly review and update them		✓		• Self-study on how to develop contract specifications • Attending seminars/training sessions on the topic • Attending workshops/working groups to develop specifications	• Shadowing experienced staff • Developing specifications (with supervision where appropriate)	• Training course tests/assessments • CPD records • Project or service specifications

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Ref	Competence area	Competences	WMHI recommendation	ISO55000	IAM Role	Training – formal	Training – OTJ and/or Relevant Experience	Evidence
6	Risk Management	Identify, assess and manage risks related to the delivery of the service	14	✓	6	• An academic or professional course where this is covered in the syllabus • Attending seminars/training sessions on the topic • Self-study on risk assessment and management	• Shadowing experienced staff • Carrying out the competence (with supervision where appropriate)	• Risk assessments (authorship or review responsibility) • Training course tests/assessments • CPD records • Communication with others demonstrating risk assessment and management • IAM certificate (M4)
7		Define a risk-based approach for all aspects of asset maintenance, review and update it	7, 31	✓	4	• An academic or professional course where this is covered in the syllabus • Attending seminars/training sessions on the topic • Attending workshops/working groups to develop a risk-based approach	• Shadowing experienced staff • Carrying out the competence (with supervision where appropriate)	• Training course tests/assessments • Risk-based approach documentation (e.g. strategy, maintenance manuals etc) • CPD records • IAM certificate (M4)
8		Develop an asset management framework	2	✓		• An academic or professional course where this is covered in the syllabus • Attending seminars/training sessions on the topic • Attending workshops/working groups to develop a risk-based approach	• Shadowing experienced staff • Developing the framework (with supervision where appropriate)	• AM framework (authorship or review responsibility) • Training course tests/assessments • CPD records
9		Conduct inspections and evaluate defects according to the defined risk-based approach	7, 16			• Training course on local procedures (delivered by the highway authority or others) • Inspector-specific training courses	• Shadowing experienced staff • Conducting inspections (with supervision where appropriate)	• Inspection records (authorship or review responsibility) • Training course tests/assessments • CPD records
10		Implement the risk-based defect repair approach to Asset Management	19			• Training course on local procedures (delivered by the highway authority or others)	• Shadowing experienced staff • Carrying out the competence (with supervision where appropriate)	• Training course tests/assessments • Communication with others demonstrating approach is being followed • CPD records

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Ref	Competence area	Competences	WMHI recommendation	ISO55000	IAM Role	Training – formal	Training – OTJ and/or Relevant Experience	Evidence
11		Follow established procedures to ensure efficient management of claims	18			• Training course on local procedures (delivered by the highway authority or others)	• Shadowing experienced staff • Following procedures (with supervision where appropriate)	• Training course tests/assessments • CPD records • Communication with others demonstrating compliance
12		Define need of asset condition surveys and plan for their implementation	17			• An academic or professional course where this is covered in the syllabus • Attending seminars/training sessions on the topic • Self-study on survey types	• Shadowing experienced staff • Carrying out the competence (with supervision where appropriate)	• Training course tests/assessments • Communication with others demonstrating the need for surveys (or business case) • Communication with others to plan the surveys • CPD records
13	Governance, Policy and Strategy	Define organisational goals and how to achieve them through the AM policy and strategy			12	• An academic or professional course where this is covered in the syllabus • Attending seminars/training sessions on the topic • Self-study on relationship between organisational goals and policy/strategy	• Shadowing experienced staff • Carrying out the competence (with supervision where appropriate)	• Training course tests/assessments • Communication with others proposing how policy and strategy can achieve goals • CDP records • IAM certificate (M2)
14		Define requirements of the AM policy, including corporate goals, consider consistency with other authorities, and treating the network as an integrated set of assets	5, 6	✓	1	• An academic or professional course where this is covered in the syllabus • Attending seminars/training sessions on the topic • Attending workshops/working groups to develop the policy	• Shadowing experienced staff • Developing the policy (with supervision where appropriate)	• AM policy (authorship or review responsibility) • Training course tests/assessments • CPD records • IAM certificate (M2)
15		Develop the AM strategy and policy and obtain organisational buy-in, define inputs to the AM strategy, including corporate goals, stakeholder requirements, risks, opportunities and constraints and how the effectiveness of the AM policy and strategy will be measured	1, 3	✓	1, 2	• An academic or professional course where this is covered in the syllabus • Attending seminars/training sessions on the topic • Attending workshops/working groups to develop the policy and strategy and to define measures of effectiveness	• Shadowing experienced staff • Developing the policy and strategy and defining effectiveness measures (with supervision where appropriate)	• AM policy (authorship or review responsibility) • Training course tests/assessments • CPD records • IAM certificate (M2)

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Ref	Competence area	Competences	WMHI recommendation	ISO55000	IAM Role	Training – formal	Training – OTJ and/or Relevant Experience	Evidence
16		Implement the AM policy and strategy	3	✓	1, 2	• An academic or professional course where this is covered in the syllabus	• Shadowing experienced staff • Applying policy/strategy principles to aid forward planning and decision-making (with supervision where appropriate)	• Communication with others demonstrating where decision-making or plans have been influenced by policy/strategy • CPD records
17		Promote continuous improvement and evaluate the need of potential corrective actions through collaborative culture		✓	5	• An academic or professional course where this is covered in the syllabus • Attending seminars/training sessions on the topic	• Defining or contributing to improvements (with supervision where appropriate) • Displaying and encouraging collaborative behaviours	• Communication with others promoting improvements • Training course tests/assessments • Communication with others demonstrating collaborative behaviours • CPD records
18		Shape the Authority's AM culture by promoting the benefits of AM and implementing changes as required		✓	5	• An academic or professional course where this is covered in the syllabus • Attending seminars/training sessions on the topic	• Defining or contributing to improvements (with supervision where appropriate) • Advocating asset management	• Communication with others promoting improvements • Training course tests/assessments • Communication with others promoting asset management • CPD records • IAM diploma (M9)
19	Information and Data	Ensure that the AM system supports the information required for AM decision-making through quality and accurate data	10, 11	✓	3	• An academic or professional course where this is covered in the syllabus • Attending seminars/training sessions on the topic	• Shadowing experienced staff • Defining AM data needs (with supervision where appropriate)	• Training course tests/assessments • Communication with others defining AM data needs • Communication with others assessing data appropriateness • CPD records • IAM diploma (M7)
20		Define and regularly review an asset information strategy to assess and record the data needs of the Authority	10		7	• An academic course where this is covered in the syllabus • Attending seminars/training sessions on the topic • Attending workshops/working groups to define the information strategy	• Shadowing experienced staff • Defining the information strategy (with supervision where appropriate)	•Asset information strategy (authorship or review responsibility) • Training course tests/assessments • CPD records • IAM diploma (M7)

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Ref	Competence area	Competences	WMHI recommendation	ISO55000	IAM Role	Training – formal	Training – OTJ and/or Relevant Experience	Evidence
21		Follow appropriate procedures to record asset condition and inventory information, escalating any risks or issues	8, 9		7	• Training course on local procedures (delivered by the highway authority or others) • Self-study on local procedures	• Shadowing experienced staff • Following procedures (with supervision where appropriate)	• Asset condition and inventory information (authorship or review responsibility) • Training course tests/assessments • CPD records
22		Specify the use of appropriate systems and associated processes to record asset condition and inventory information, and routes for issue escalation	8		7	• An academic course where this is covered in the syllabus • Attending seminars/training sessions on the topic • Attending workshops/working groups to define system requirements or asset data capture processes	• Shadowing experienced staff • Defining processes (with supervision where appropriate) • Specifying systems (with supervision where appropriate)	• Asset information recording processes (authorship or review responsibility) • Systems specification (authorship or review responsibility) • Training course tests/assessments • CPD records
23	Network Prioritisation and Resilience	Define the methodology and criteria for the production of network hierarchy	12			• An academic or professional course where this is covered in the syllabus • Attending seminars/training sessions on the topic • Attending workshops/working groups to define the methodology for the AM hierarchy • Self-study on AM hierarchy development	• Shadowing experienced staff • Defining methodology and criteria for the AM hierarchy (with supervision where appropriate)	• AM hierarchy methodology (authorship or review responsibility) • Training course tests/assessments • CPD records
24		Identify a Resilient Network within the network hierarchy	20			• An academic or professional course where this is covered in the syllabus • Attending seminars/training sessions on the topic • Attending workshops/working groups to define the resilient network • Self-study on resilient network identification	• Shadowing experienced staff • Defining the resilient network (with supervision where appropriate)	• AM hierarchy methodology (authorship or review responsibility) • Training course tests/assessments • CPD records

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Ref	Competence area	Competences	WMHI recommendation	ISO55000	IAM Role	Training – formal	Training – OTJ and/or Relevant Experience	Evidence
25		Establish a risk-based approach for climate change adaptation	21	✓	6	• An academic or professional course where this is covered in the syllabus • Attending seminars/training sessions on the topic • Attending workshops/working groups to define the authority's adaptation plan • Self-study on climate change adaptation	• Shadowing experienced staff • Defining adaptation plans (with supervision where appropriate)	• Risk-based approach for climate change (authorship or review responsibility) • Climate change adaptation plans (authorship or review responsibility) • Training course tests/assessments • CPD records
26		Develop an operative, practicable and risk-based severe weather plan including a plan for flood forecasts with lessons learnt after events	23, 24, 25			• An academic or professional course where this is covered in the syllabus • Attending seminars/training sessions on the topic • Attending workshops/working groups to develop severe weather plans	• Shadowing experienced staff • Developing severe weather plans (with supervision where appropriate)	• Risk-based severe weather plan (authorship or review responsibility) • Training course tests/assessments • CPD records
27		Effectively maintain the drainage assets, through the use of appropriate strategies and plans	22			• An academic course where this is covered in the syllabus • Attending seminars/training sessions on the topic • Attending workshops/working groups to define the drainage management strategy/plan	• Shadowing experienced staff • Developing drainage management strategy or plans (with supervision where appropriate)	• Drainage management strategy/plan (authorship or review responsibility) • Training course tests/assessments • CPD records
28	**Funding, Programmes & Lifecycles**	Demonstrate understanding of different funding sources available to the Authority		✓		• An academic or professional course where this is covered in the syllabus • Attending seminars/training sessions on the topic • Self-study on funding sources	• Developing applications for funding (with supervision where appropriate)	• Funding applications (authorship or review responsibility) • Training course tests/assessments • CPD records
29		Evaluate the Asset Management implications of new development proposals and use lifecycle planning when assessing maintenance options	13		3	• An academic or professional course where this is covered in the syllabus • Attending seminars/training sessions on the topic	• Shadowing experienced staff • Developing LCPs (with supervision where appropriate)	• LCPs (authorship or review responsibility) • Training course tests/assessments • CPD records

Ref	Competence area	Competences	WMHI recommendation	ISO55000	IAM Role	Training – formal	Training – OTJ and/or Relevant Experience	Evidence
30		Prepare short, medium and long term financial plans for AM activities	28			• An academic or professional course where this is covered in the syllabus • Attending seminars/training sessions on the topic • Attending workshops/working groups to develop financial plans	• Shadowing experienced staff • Preparing financial plans (with supervision where appropriate)	• Financial plans (authorship or review responsibility) • Training course tests/assessments • CPD records • IAM certificate (M4)
31		Develop investment programmes taking into account cross-asset prioritisation	30			• An academic or professional course where this is covered in the syllabus • Attending seminars/training sessions on the topic • Attending workshops/working groups to develop investment programmes or to prioritise across assets	• Shadowing experienced staff • Developing investment programmes (with supervision where appropriate)	• Investment programmes (authorship or review responsibility) • Training course tests/assessments • CPD records • IAM certificate (M3)
32		Develop lifecycle plans to support short and long-term investment decisions	29		3	• An academic or professional course where this is covered in the syllabus • Attending seminars/training sessions on the topic • Self-study on lifecycle planning	• Shadowing experienced staff • Developing LCPs (with supervision where appropriate)	• LCPs (authorship or review responsibility) • Training course tests/assessments • CPD records • IAM certificate (M3)
33	Customers and Communications	Ensure appropriate parties are notified of maintenance or works programmes and identify, communicate and collaborate with appropriate stakeholders			3	• An academic or professional course where stakeholder management and communications are covered in the syllabus • Attending seminars/training sessions on the topic	• Shadowing experienced staff • Carrying out the competence (with supervision where appropriate)	•Training course tests/assessments • Communication records • CPD records
34		Demonstrate understanding of different methods to collect customers' feedback, understand and interpret customers' needs and tailor services based on their needs			2, 5	• An academic or professional course where stakeholder management and communications are covered in the syllabus • Attending seminars/training sessions on the topic	• Shadowing experienced staff • Carrying out the competence (with supervision where appropriate)	• Training course tests/assessments • CPD records

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Ref	Competence area	Competences	WMHI recommendation	ISO55000	IAM Role	Training – formal	Training – OTJ and/or Relevant Experience	Evidence
35		Understand and respond to customers' enquiries and defect reports		✓		• An academic or professional course where stakeholder management and communications are covered in the syllabus • Attending seminars/training sessions on the topic	• Shadowing experienced staff • Carrying out the competence (with supervision where appropriate)	• Training course tests/assessments • Communication records • CPD records
36	Sustainability & Asset Preservation	Ensure environment, sustainability and biodiversity principles are incorporated in the organisational strategy and maintenance decisions	35	✓	2	• An academic or professional course where this is covered in the syllabus • Attending seminars/training sessions on the topic • Self-study on environment, sustainability and biodiversity principles	• Shadowing experienced staff • Applying sustainability principles to aid forward planning and decision-making (with supervision where appropriate)	• Training course tests/assessments • Communication with others demonstrating where decision-making or plans have been influenced by sustainability principles • CPD records • IAM diploma (M8)
37		Demonstrate understanding of carbon whole life cost (WLC) and ability to apply it when determining appropriate interventions and materials	32	✓		• An academic or professional course where this is covered in the syllabus • Attending seminars/training sessions on the topic • Self-study on carbon WLC	• Applying carbon WLC to aid forward planning and decision-making (with supervision where appropriate)	• Training course tests/assessments • Communication with others demonstrating where decision-making or plans have been influenced by carbon WLC • CPD records • IAM diploma (M8)
38		Identify heritage assets and ensure their maintenance reflects planning requirements, including preserving the character of the area	33, 34			• An academic or professional course where this is covered in the syllabus • Attending seminars/training sessions on the topic • Self-study on planning requirements for heritage assets	• Shadowing experienced staff • Applying heritage considerations to maintenance decision-making (with supervision where appropriate)	• Training course tests/assessments • Communication with others demonstrating where decision-making has been influenced by heritage considerations • Communication with others demonstrating where a heritage asset has been identified and recorded as such • CPD records
39		Demonstrate understanding of the benefits of removing redundant items during maintenance activities	36			• An academic or professional where this is covered in the syllabus • Attending seminars/training sessions on the topic	• Identifying opportunities to remove redundant assets	• Training course tests/assessments • Communication with others identifying redundant assets • CPD records

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Ref	Competence area	Competences	WMHI recommendation	ISO55000	IAM Role	Training – formal	Training – OTJ and/or Relevant Experience	Evidence
40	Performance Monitoring	Define appropriate KPIs and targets aligned to the organisation's objectives and develop action plans to correct areas of underperformance	26		3	• An academic or professional course where this is covered in the syllabus • Attending seminars/training sessions on the topic • Attending workshops/working groups to develop KPIs	• Shadowing experienced staff • Developing KPIs (with supervision where appropriate) • Developing plans to address underperformance (with supervision where appropriate)	• KPIs (authorship of review responsibility) • Action plans to address underperformance (authorship of review responsibility) • Training course tests/assessments • CPD records
41		Measure and monitor performance against established KPIs	27	✓		• An academic or professional course where this is covered in the syllabus • Attending seminars/training sessions on the topic • Attending workshops/working groups where KPIs are monitored	• Shadowing experienced staff • Monitoring KPIs (with supervision where appropriate)	• KPIs monitoring records • Training course tests/assessments • CPD records
42		Develop a performance management framework (PMF) and communicate it to stakeholders	4, 26			• An academic or professional course where this is covered in the syllabus • Attending seminars/training sessions on the topic • Attending workshops/working groups to define the PMF	• Shadowing experienced staff • Defining the PMF and communicating it (with supervision where appropriate)	• PMF (authorship or review responsibility) • Training course tests/assessments • Communication with relevant parties • CPD records
43		Identify the AM competences required for all staff and ensure that they receive appropriate training, which is regularly reviewed and updated	15	✓	5	• An academic or professional course where this is covered in the syllabus • Attending seminars/training sessions on the topic • Attending workshops/working groups to define the authority's competence requirements or competence recording approach	• Shadowing experienced staff • Identifying required competences for self and others (with supervision where appropriate) • Identifying required training/development for self and others (with supervision where appropriate)	• Competence records (authorship or review responsibility) • Training plans (authorship or review responsibility) • Training course tests/assessments • CPD records

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