Northumbrian Water

Asset Management Maturity Assessment

August 2023
Final V1.0

ARUP   NWG
living water

Content

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Revision	Date	File Name			
V1.0	24.08.23	**Description**	Independent AMMA Review - Final		
			Prepared by	**Checked by**	**Approved by**
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1. Introduction

This section provides an overview of this report's purpose and AMMA background.

Purpose

In 2023, NWL updated their responses to the Asset Management Maturity Assessment (AMMA) questions to reflect the progress they have made in relation to their asset management processes.

An Arup team have been commissioned to conduct an independent assessment of the updated AMMA responses and provide an updated maturity assessment based on Ofwat's AMMA criteria.

Limitations

Our work for this independent assurance commenced in July 2023 and this version of the report was completed based on the information available at that time.

In preparing the report, our source of information has been the AMMA responses provided by Northumbrian Water on 21 July 2023 and responses to requests for information provided on 09 August 2023.

We have satisfied ourselves so far as reasonably possible, that the information presented in our report is consistent with the information which was made available to us in the course of our work in accordance with our Contract. Validation of the evidence provided is beyond the scope of this commission.

AMMA Background

In 2021, Ofwat worked with water companies to co-create an Asset Management Maturity Assessment (AMMA). The AMMA built on existing asset management frameworks to develop a maturity assessment that assessed asset management capabilities and approaches, and the data and insight used to inform decisions for the benefit of customers, environment and society now and in the long term across the water sector. The AMMA sections are based on the Institute of Asset Management (IAM) asset management anatomy – notably excluding life cycle delivery, as this assessment is focused on investment planning and decision-making (i.e., an outcome-focused approach).

The AMMA contains 33 questions across five sections: Strategy and planning, decision-making, asset information, risk and review, and organisation and people. Against these questions, and based on the responses provided, an AM maturity grade is provided (Table 1). The grade indicates the level of maturity to allow for comparisons across the sector. To achieve a specific maturity level, is it expected that all elements in the description of the level (and the lower maturity levels) have been met. In 2021, companies submitted a self-assessment with accompanying evidence which Ofwat moderated and developed a summary report of insights.

Table 1. AMMA Scoring Criteria	
1	Unaware
2	Aware
3	Developing
4	Competent
5	Optimising
6	Leading

To support their PR24 submission, NWL have developed updated responses to the AMMA questions and subsequently commissioned Arup to conduct an independent assessment of these scores to provide an updated baseline of their asset management maturity.

2. AMMA Review
This section provides the project approach and project team

Project Approach

Arup undertook an independent review of NWL's updated AMMA responses that were made available via PDF on 21st July 2023 via an Arup-hosted SharePoint.

The Arup team reviewed each question response individually against the Ofwat AMMA criteria and indicative scores across each question were awarded and gaps in responses were flagged. We (Arup) have been transparent with our feedback, maintaining an evidence log, outlining how our scoring has been arrived at with a clear rationale and appropriate referencing of evidence identified in the NWL AMMA responses.

In areas where further clarity was required to evidence scoring, a request for information (RFI) was submitted to NWL on 9th August 2023. NWL subsequently provided additional information to support the assessment of AMMA responses, which the Arup team reviewed and updated scoring as necessary.

The findings of the Arup AMMA review were shared with the NWL Senior Leadership team on 22nd August 2023 and are captured within this report.

Project Team

Our team have maintained independence from the teams involved in the development of the AMMA responses alongside NWL. Our team includes:

- Louise Ellis (Associate Director)
- James Green (Associate): IAM Endorsed Assessor
- Rosemary Jenkinson (Principal Consultant)
- Nina Noreika (Consultant)
- Gillian Gao (Graduate Consultant)
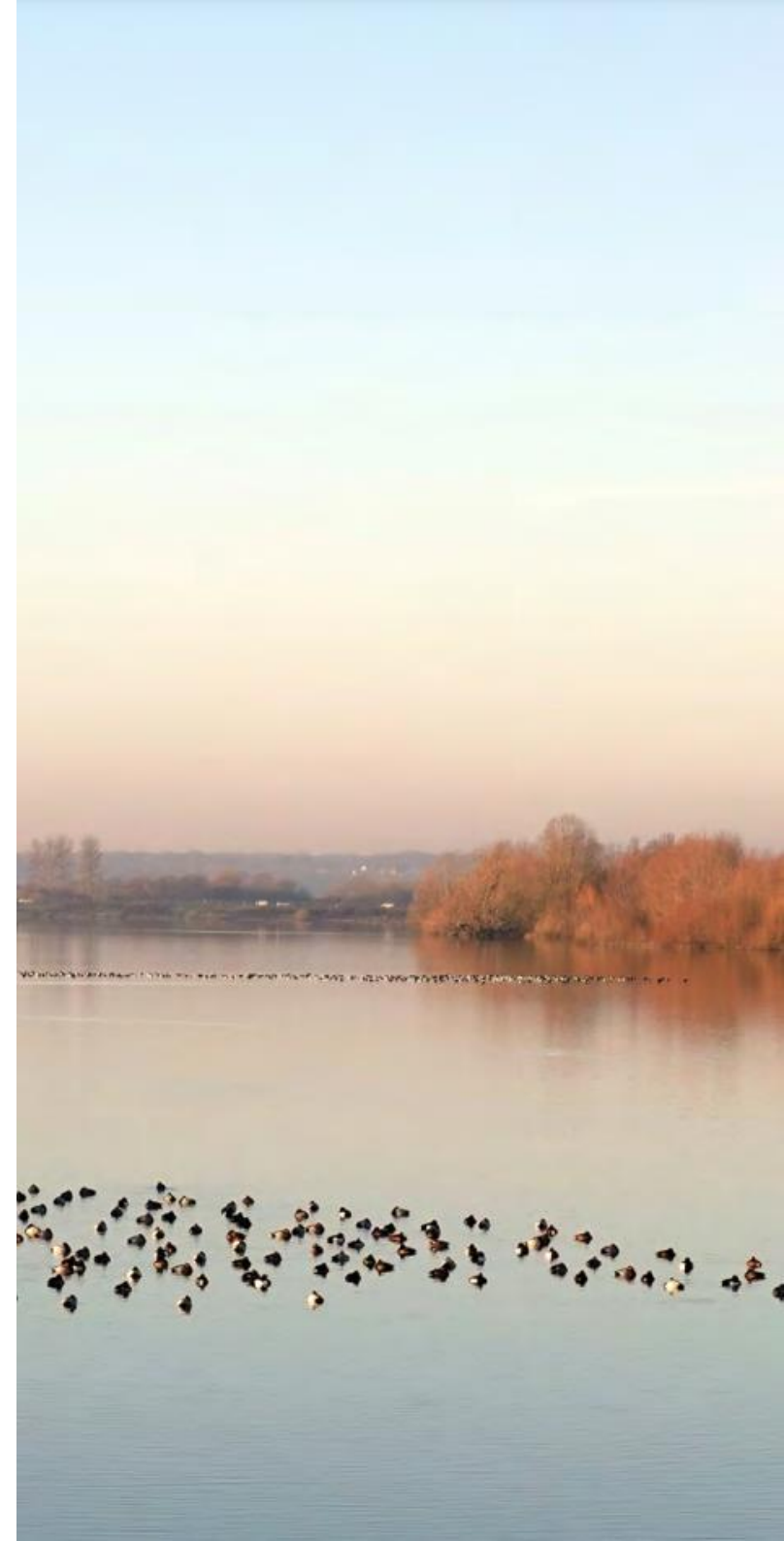
3. Independent Assessment Review Findings
This section provides a summary of findings from the independent assessment

Findings overview

A summary of the asset management maturity for each section of the AMMA assessment is provided in the table opposite (Table 2). Since their AMMA submission in 2021, the majority of the asset management maturity grades have moved from developing (level 3) to competent (level 4) or optimising (level 5). Notably:

- Across Strategy & Planning and Risk & Review, all of NWL's responses were assessed as competent with five areas assessed as optimising.
- Across Asset Information, Risk and Review and Organisation and People, Arup found that NWL's responses were assessed as competent or optimising in all but three questions. For these three areas, NWL have plans or processes in place to fill these gaps, with further time needed to embed them within the organisation.
- The largest average jump was achieved in Asset Information, shifting from a 3.1 average score across the category to a 4.6.

In reviewing the updated AMMA response submissions from NWL, we believe that the progress in maturity made by NWL since 2021 is reflective of a series of transformation programmes and activities (listed below) and the development of AMMA responses which more appropriately reflect NWL's systems and activities, with specific reference to the assessment question and criteria. The key areas of progress made by NWL include:

- The business-wide incorporation of Copperleaf and the Service Planning Framework to ensure that the short-, mid-, and long-term objectives of NWL are properly aligned and managed.
- The systematic incorporation of tools and teams to track and manage asset data business-wide (e.g., IBM Maximo, Elyx, Copperleaf)
- The development and refresh of several strategies and plans (including the Strategic Asset Management Plan, Long-Term Delivery Strategies, Service Delivery Strategies, Drainage and Wastewater Management Plan, Water Resources Management Plan)
- The development of asset criticality matrices, establishing an "asset ownership" hierarchy, and creating a platform to continually communicate asset accountability data to the Data Governance Council.
- The consideration of long-term resilience trends and climate change scenarios to support plans, e.g. WRMP, DWMP, Climate Change Adaptation plans, etc.

AMMA Question	Ofwat AMMA Assessment (2021)	Arup Independent Assessment (2023)	Indicative Change	
Strategy & planning				
1.1	3	4	⬆	1
1.2	3	4	⬆	1
1.3	3	5	⬆	2
1.4	3	4	⬆	1
1.5	3	5	⬆	2
1.6	3	4	⬆	1
1.7	3	4	⬆	1
Asset information				
2.1	3	5	⬆	2
2.2	2	4	⬆	2
2.3	3	5	⬆	2
2.4	3	5	⬆	2
2.5	4	5	⬆	1
2.6	3	5	⬆	2
2.7	3	3	➡	0
2.8	4	5	⬆	1

AMMA Question	Ofwat AMMA Assessment (2021)	Arup Independent Assessment (2023)	Indicative Change	
Decision-making				
3.1	3	4	⬆	1
3.2	3	4	⬆	1
3.3	2	3	⬆	1
3.4	3	4	⬆	1
3.5	3	4	⬆	1
3.6	3	5	⬆	2
3.7	3	4	⬆	1
3.8	3	4	⬆	1
Risk & review				
4.1	4	4	➡	0
4.2	4	4	➡	0
4.3	3	5	⬆	2
4.4	3	5	⬆	2
4.5	3	5	⬆	2
Organisation & people				
5.1	3	5	⬆	2
5.2	3	3	➡	0
5.3	4	4	➡	0
5.4	4	4	➡	0
5.5	4	5	⬆	1

Table 2. Summary of NWL's asset management maturity 2023 - more detail is provided overleaf.

3. Independent Assessment Review Findings

Strategy & Planning		2021	2023	Evidence Statement
1.1	How do you use your asset management policy and strategy to promote asset health and long-term operational resilience?	3	4	• NWL have developed and / or refreshed several strategies and plans - including their Strategic Asset Management Plan (SAMP) with supporting Asset Management Policy and Objectives to enable better line-of-sight planning. The SAMP, AM Policy and Objectives are supported by Water and Wastewater Service Policies, Service Delivery Strategies, Asset Group Strategies and Standards which drive investment requirements.
1.2	How do you understand and manage the interaction between asset health and long-term resilience?	3	4	
1.3	How does your asset management system enable you to maintain and improve asset health and operational resilience?	3	5	
1.4	How does your organisation ensure its asset management plan achieves an appropriate balance between short and medium-term needs and long-term objectives?	3	4	• NWL have worked to ensure there is a common understanding of the asset management policy and strategy across the organisation.
1.5	How do you track and report on the effectiveness and success of the asset management plan in delivering your objectives?	3	5	• The NWL Asset Management System has been formally documented to direct, coordinate, and control all AM decisions and activities for most of their operational assets.
1.6	What processes do you have in place to develop an implementable asset management plan from your asset management policy and strategy?	3	4	
1.7	How do you incorporate uncertainty in your asset strategies and plans?	3	4	• The incorporation of the Service Value Framework and Copperleaf ensure that NWL can plan from the short- to the long-term while evaluating benefits to customers, society, and the environment.

Asset Information		2021	2023	Evidence Statement
2.1	How are your asset information strategy and asset information standards implemented to ensure asset data and information is sufficiently robust for planning and decision-making?	3	5	• NWL utilises various tools, processes and platforms to collect, manage and review asset data business-wide (e.g., IBM Maximo, Elyx, Copperleaf) to ensure flexibility at the short-, medium- and long-term. They have a clear Data Ownership and Accountability model underpinning their approach, supported by a Data Governance Council.
2.2	How does the organisation collect and process sufficient asset health data for different asset types, to be able to make your decisions?	3	4	
2.3	How do you identify and quantify the risk of failure of assets including critical assets?	3	5	• NWL have developed criticality matrices across all WTW and STW assets and have developed Asset Health Dashboards to display assessment results. AMPS and Copperleaf are used to consistently assess the consequence of risk of failure.
2.4	How do you consider uncertainty in your understanding of the risk of failure of assets in the short, medium, and long term?	3	5	
2.5	What methodologies do you use to assess and predict asset deterioration in the short, medium, and long term?	4	5	• NWL employs a variety of tools to assess asset health and account for uncertainty in asset failure and undertake deterioration modelling spanning short- to long-term durations; e.g., Arcadis Gen EDA tool, Assessment of Low Failing Assets (ALFA) tool, the MEICA Replacement Needs Simulation tool etc.
2.6	How do you understand the consequences of asset failure on service for customers, society, and the environment?	3	5	
2.7	How do your asset standards support you to maintain or improve asset health and operational resilience as well as prepare assets for the future?	3	3	
2.8	How does the organisation plan for operational response and recovery to asset failures?	4	5	• NWL have well-established and robust plans in place to respond to and recover from asset failures.

3. Independent Assessment Review Findings

Decision-making		2021	2023	Evidence Statement
3.1	What are the asset health and operational resilience measures that you use for decision-making?	3	4	• NWL have a combination of leading and lagging measures which initiate interventions either operationally or via the Service Planning Framework and Tactical Planning processes.
3.2	How do you use asset health data, information, measures and forecasts to identify the need for investment and inform decision-making?	3	4	• NWL have incorporated Copperleaf and the Service Planning Framework business-wide, which enable consistent decision-making and programme optimisation to ensure that the short-, mid-, and long-term objectives of NWL are aligned and managed.
3.3	Does the organisation establish a risk tolerance level for asset health and apply this in decision-making? If so, how?	2	3	
3.4	How do you use optioneering to develop interventions to address asset health and resilience needs for each asset type?	3	4	• NWL's optioneering methodology has expanded from a risk-based approach to a value-based approach. NWL assesses asset health in three ways, and these assessments are continually fed-back to the Asset Policy Group.
3.5	How does the organisation determine the balance between preventive and corrective action for different asset systems?	3	4	
3.6	How does the organisation understand the link and interdependencies between asset health and service over the short, medium and long term?	3	5	
3.7	How does the organisation optimise risks, costs, and performance in its decision-making to prioritise investment within the short, medium and the long term?	3	4	
3.8	How are asset health and resilience valued in investment decision making?	3	4	

Risk & Review		2021	2023	Evidence Statement
4.1	What asset risk management processes does the organisation have in place to identify, assess, track and manage asset risks?	4	4	• NWL have an established, systematic Risk Management Framework understood at various levels across the organisation with clear risk capture, escalation and communication processes.
4.2	How do the results of the asset risk management process feed into governance and how are they also communicated across the organisation?	4	4	• NWL have a structured governance hierarchy and continuous improvement programme to approve, monitor and continually improve their AMS. There is an internal Data Integrity Dashboard to support improving and updating asset health data.
4.3	What processes do you have in place for approval, monitoring, and continuous improvement of your asset management system (including policy, strategy and plans)?	3	5	
4.4	How does the organisation review and continually improve asset health data?	4	5	• NWL conduct active horizon scanning for best practice to enhance existing tools (e.g., Tipping Point tool).
4.5	How is input from audits, independent assessments, or compliance with other international standards managed?	3	5	• NWL have an ISO55001 accreditation - actions from related audit findings are monitored and tracked.

3. Independent Assessment Review Findings

Organisation & People		2021	2023	Evidence Statement
5.1	How is asset health and operational resilience managed within your organisational structure?	2	5	• The incorporation of the Asset Management Plan-Deliver-Monitor-Review-Support model and the IAM competency framework have enabled NWL to clarify roles, responsibilities and accountability for the asset management system – including senior level accountability and significant senior leadership engagement.
5.2	How does the organisation identify and address any gaps in asset management capability and resources for its employees?	3	3	
5.3	How do you ensure that you understand the needs and expectations of customers and stakeholders in relation to asset health and resilience and incorporate them into the decision-making process?	4	4	• NWL have established processes for stakeholder and customer engagement which enables their needs and expectations to be considered as part of the decision-making processes.
5.4	How does the organisation communicate the plan for asset health and operational resilience and report progress to internal and external stakeholders?	4	4	
5.5	Do you involve customers and stakeholders in the co-creation of solutions around asset health and resilience? If so, how?	4	5	

4 Benchmarking

This section provides an overview of NWL's asset maturity comparatively across the sector.

Overview

As part of this review, a benchmarking exercise was undertaken to determine how NWL's performance compares to others across the sector based on the re-assessment (2023) compared to the previous Ofwat AMMA scoring across the sector.

The graph (Figure 1) on the right outlines where NWL sit compared to the industry categorised by average AMMA score based on the 2021 Ofwat scoring assessment. When compared to the 2021 scoring, NWL now sit above the industry average across all AMMA categories and outscores the highest average scoring company in across the Strategy & Planning, Asset Information, and Organisation & People categories.

We recognise that maturity across the sector may have changed since the 2021 AMMA scoring, and thus this may not be an up-to-date reflection of the sector's position. As such, this graphic's purpose is to demonstrate the performance of NWL's AMMA assessment relative to the previous baseline position.
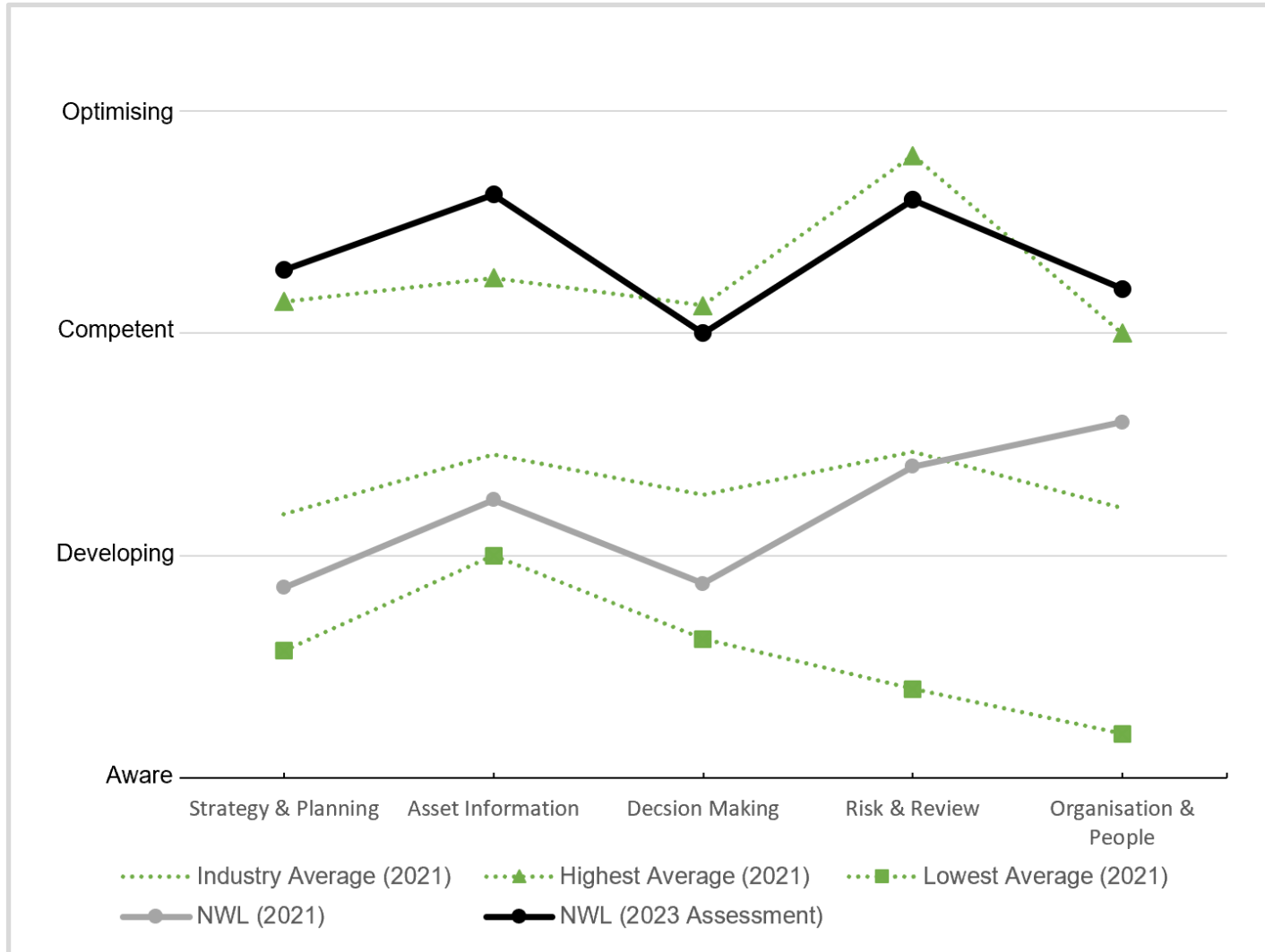

Figure 1. Average AMMA scoring per question across the industry to support benchmarking