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Assurance Scope

2973 – Northumbrian Water

Assurance of Lowestoft AD

Scheme

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1 Background and report purpose

Aqua have been commissioned by Northumbrian Water (NWL) to undertake independent, third-party assurance, with a duty of care to Ofwat, to assure that the conditions and outputs set out as part of the PR19 Accelerated Delivery (AD) Final Decisions¹ have been delivered, or if they have been partially delivered, that appropriate control measures have been put in place to redress progress.

Aqua will assure **Scheme 4** only, the Lowestoft Reuse Scheme, with other parties providing assurance across Scheme 1-3 and 5-7, specifically the activities for Scheme 4 that were due for completion by 31st March 2025.

The outputs to be achieved by 31 March 2025, as per the PR19 AD Final Decisions¹, are:

1. On-site hydraulics and topographical surveys
2. Geotechnical investigation reports
3. On-site ecological and archaeological surveys (50%)
4. Network Rail UTX Designs
5. 60% of the work required on undertaking formal Environmental Impact Assessments (EIA) and preparing environmental statements for planning approval
6. Land agreements (as appropriate)

The Lowestoft Reuse (scheme 4), as per the final WRMP24, should deliver 11 Ml/d water available for use gain for the Northern Central WRZ under a 1-in-500 year drought scenario by 2030/31. The WRMP states that this is only required for the supply-demand balance in the best-value plan by 2032/33.

Aqua's final assurance report will be provided alongside Northumbrian Water's 2025 Annual Performance Report and is intended to give confidence to the regulator and

¹ [Appendix-2-Accelerated-Delivery-Project-Final-Decisions-2023.pdf](#)

customers that robust tests are in place to ensure allowed investment achieves its outcomes and objectives in a timely manner.

This report sets out the findings from our assurance activity.

2 Scope of assurance

2.1 Assurance tests

Our assurance has focussed on:

1. **Have the deliverables defined in the PR19 Accelerated Delivery (Appendix 2, June 2023), and repeated above, been achieved?**
 - a. Evidence of a formal report or deliverable having been completed and accepted by NWL.
 - b. Evidence that the report has had an appropriate level of assurance, through line 1 and 2 controls (appropriate quality assurance from the responsible consultant prior to final-issue, client review / sign-off and independent peer reviews as necessary).
 - c. Validate that the scope and extent of work completed, detailed within the technical reports, aligns to industry practice and to the specification within the accelerated investment programme. We have taken a light-touch approach to the assessment of the quality of the required outputs. We will review outputs based on what we would typically expect for each work-activity, based on industry standard approaches.
 - d. For partial outputs: we will assess the volume of work completed to date, and review the overall work-plan, to establish a view on the percentage completed to date.
 - e. Where outputs have not been achieved, we will assess as part of activity 2 below, revised milestones for these outputs.

From early engagement with NWL in May 2025, NWL have advised that a fundamental change to the overall project consenting strategy has taken place since the initial project milestones were agreed as part of the FD19 Accelerated Delivery. Further context is provided in Section 3.1 of this report. For this reason, we have looked to test the robustness

of the revised plan to inform a view of % complete or revised milestone for each Accelerated Delivery milestone listed above.

2. Testing the robustness of the revised plan.

- a. Are the activities included in the plan comprehensive?
- b. Are the timescales allowed reasonable, and have they taken into consideration the complexities identified?
- c. Is the delivery team appropriately resourced and on track against the revised plan?

2.2 Out of Scope

Aqua have not provided any assurance on Scheme 1-3 and 5-7, defined within the Accelerated Delivery Programme FD.

Ofwat also placed more general expectations on Northumbrian Water's PR19 Accelerated Delivery Programme; these areas are out of scope of this review:

1. Delivery of PR19 funded benefits to meet the supply demand balance
2. Delivery of the PR19 water enhancement programme in full.
3. Inclusion of the Accelerated Delivery scheme benefits within the 2024 Water Resources Management Plan (WRMP).

2.3 Data received and engagement held

A range of information was received from NWL, and its subconsultants to inform this assurance report.

The following tables summarises the key information received.

Theme	Document provided (document issue date ²)
Background material and scheme context	<p>28OCT24- ELT briefing note - Suffolk AMP8 Accelerated Schemes.docx (DATE: 28 Oct 2024)</p> <p>FINAL Project Brief- PR24 Lowestoft Effluent Reuse.pdf (DATE: 03 October 2023)</p> <p>Snapshot of PR24 Lowestoft Reuse 2025-4-25.xls (DATE: 25 April 2025)</p>
WRMP	<p>esw-wrmp24-exec-summary---final.pdf (DATE: October 2024)</p> <p>esw-wrmp24-main-report_final-oct-24.pdf (DATE: 18 October 2024)</p> <p>esw-wrmp24-main-report-appendix_final.pdf (DATE: 24 April 2024)</p>
Risk Registers	<p>SSNLRS DCO Programme Risks and Assumptions.xlsx</p> <p>Suffolk SROs Programme Risk Register.xlsm</p>
Gants / project schedules	<p>DCO WBS L3&4 Programme_16.05.2025.pdf (DATE: 16 May 2025)</p> <p>Jacobs Resource forecasting.xlsx</p> <p>Lowestoft - Detailed Programme April 2025_REV.2.xml (DATE: April 2025)</p> <p>Lowestoft - Programme Relationships April 2025_REV.2.pdf (DATE: April 2025)</p> <p>Lowestoft - Programme Summary April 2025_Critical path.pdf (DATE: April 2025)</p> <p>Lowestoft - Programme Summary NWL Template April 2025 REV.2 (I).pdf (DATE: April 2025)</p>

² The date when the document was originated / published.

Theme	Document provided (document issue date ²)
	<p>Lowestoft C&D Programme 13 05 25.pdf (DATE: 13 May 2025)</p> <p>SWRSE DCO FULL Programme_12.05.25.pdf (DATE: 12 May 2025)</p> <p>Planning assumptions (email 22 May 2025)</p> <p>Action plan for improving current Gantt (email 22 May 2025)</p>
Legal Advice	<p>FINAL AMP8 Legal Opinion 19 12 24.pdf (DATE: 19 December 2024)</p> <p>NWL Strategic Legal Advice May.pdf (DATE: 28 May 2024)</p>
Technical Papers	<p>WT024 0245-000-DOC-PLN-AA08-0001 - ATP Site Selection Methodology (DATE: 12 June 2024)</p> <p>WT024 0245-000-DOC-PLN-AAI 1-0002 - Advanced Treatment Plant Site Selection Study- Stage 1 (DATE: 12 September 2024)</p> <p>WT024 0245-000-DOC-PLN-AAI 1-0003 - Advanced Treatment Plant Site Selection Study - Stage 2 (DATE: 14 February 2025)</p> <p>WT024 0245-000-DOC-PLN-AAI 1-0006 - Pipeline Route Selection - Stage 1 (DATE: 20 September 2024)</p> <p>WT024_0245-JAC-XX-XX_000-DOC-PR-0002.pdf (DATE: 10 May 2024)</p> <p>WT024_0245-JAC-XX-XX_000-DOC-PR-0004.pdf (DATE: 10 March 2025)</p>

The following assurance sessions were held with the following key roles:

Meeting date	Assurance theme	Attendees
07 May 2025	Initial kick off meeting and project background	NWL Delivery Project Manager, NWL Regulatory Programme Manager Aqua audit team.

Meeting date	Assurance theme	Attendees
14 May 2025	Initial assurance meeting, understanding scheme complexity, delivery strategy and progress to date.	NWL Delivery Project Manager Jacobs project manager Jacobs technical lead
16 May 2025	Testing robustness of revised Lowestoft delivery plan	NWL Delivery Project Manager Jacobs project manager Jacobs technical lead
19 May 2025	Testing the completion of the FD19 Accelerated Delivery milestones	NWL Delivery Project Manager Jacobs project manager Jacobs technical lead
21 May 2025	Testing robustness of revised Lowestoft delivery plan	NWL Delivery Project Manager Jacobs project manager Jacobs technical lead Stantec Project Director Stantec planner

Note: that **Stantec** are managing the Development Consent Order (DCO) programme for NWL. **Jacobs** are responsible for delivering the Lowestoft Concept Design up to April 2026.

3 Assurance findings

3.1 Scheme update: Changes since 2024

At the outset of our assurance, NWL advised that there have been several key changes since the FD19 Accelerated Delivery plan was agreed and the final WRMP was published.

These are summarised below:

- NWL took a strategic decision in October 2024, to change their consenting approach, from the Town and Country Planning Act (for each individual scheme) to a Development Consent Order (DCO), following independent legal advice. The Development Consent Order includes for the consenting of Lowestoft Reuse, Scheme 4 and Scheme 2 (Suffolk Strategic Network and Storage Enhancements). While Scheme 3 (North Suffolk Winter Storage Reservoir Detailed Design) will continue with a separate consenting strategy.
- The Lowestoft Reuse scheme, following early design work (post the WRMP submission) now includes for a new treatment plant on a new site. This design work has shown that it was not feasible to locate the required treatment processes within the existing site boundary of Anglian Water's Lowestoft water treatment site.

NWL have stated that this has changed the overall delivery timescales from that originally stated, with beneficial-use now forecast later in 2033.

We have been advised by NWL that these changes have been formally communicated to Ofwat as part of NWLs recent draft Delivery Plan submitted to Ofwat on the 12 May 2025.

3.2 Activity 1: Delivery of FD19 deliverables

The following section assesses whether the **FD19 deliverables** stated within the Accelerated delivery programme for Lowestoft Reuse (Scheme 4) have been achieved by 31 March 2025.

We have used the following RAG criteria.

Major concerns: Has not met requirements	Moderate concerns: moderate risk that progress will not meet requirements	Minor concerns: minor risk that progress will not meet requirements	No concerns. No or limited risk identified.
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Deliverable in FD19	Assurance findings	RAG status
On site hydraulics surveys	<p>On-site hydraulic surveys have not been completed.</p> <p>Onsite hydraulic surveys were required when the preferred solution (as defined in the WRMP) required a new treatment plant to be constructed within an existing Anglian water treatment works. The preferred design now assumes a new treatment plant will be constructed on a new site. As such there is no need for on-site hydraulic surveys. The project now requires appropriate topographical surveys to inform the hydraulic designs.</p>	
On site topographical surveys	<p>On-site topographical surveys have not been completed.</p> <p>To date, only a visual assessment has been completed of the potential sites for the treatment plant and pipeline routes, to inform initial desk top designs to inform initial screening. On-site topographical surveys are not planned to be completed, until after Design Freeze 0. (DF0 in July 2025), when the preferred option is confirmed.</p>	
Geotechnical investigation reports	<p>Geotechnical investigations reports have not been completed.</p> <p>Only high-level desk top studies have been completed to date to inform Stage 1 and 2 screening and site selection for the advanced treatment plant, and Stage 1 assessments for the pipeline routing and selection. These findings are evidenced in the Stage 1 & 2 technical reports.</p>	
Onsite ecological surveys (50%)	<p>Onsite ecology assessments (50%) have not been completed.</p> <p>Some visual on-site assessments have been made in May 2025 (ecological hotspots) to inform the site-screening /</p>	

Deliverable in FD19	Assurance findings	RAG status
	selection. These findings are evidenced in the Stage 1 & 2 technical reports.	
Onsite archaeological surveys– 50% complete	<p>Onsite archaeological surveys (50%) have not been completed.</p> <p>An initial geophysical survey is planned for July 2025 to early 2026, with further intrusive surveys planned thereafter.</p>	
Network rail UTX designs	<p>The network rail under-track crossing design has not been completed.</p> <p>The pipeline route will cross a railway line and will therefore require consultation and necessary approvals from network-rail.</p> <p>The plan does not currently include the granular activities associated with design and approval of railway crossings with network rail, so forecast completion dates are unclear.</p>	
60% of formal Environmental Impact Assessments	<p>60% of the formal Environmental Impact Assessments are not complete.</p> <p>These activities have not been started and are dependent on completion of the ecological and archaeological surveys.</p>	
60% of environmental statements for planning approval prepared	<p>60% of the environmental statements for planning approval are not complete.</p> <p>These activities have not been started and are dependent on completion of the ecological and archaeological surveys.</p>	
Land agreements in place	<p>Required land agreements are not in place.</p> <p>Land agreements for current walk-overs to enable site selection are scheduled to be in place 3rd Jun 2025. Further land agreements are needed to enable all non-intrusive and intrusive surveys (2025–26) and for construction of the final solution, once the DCO is granted.</p>	

3.3 Activity 2: Revised plan

This section focusses on evidencing that the revised delivery plan is appropriately resourced and reasonable, to assess either:

- % completion, or;
- a likely completion date

for the defined Accelerated delivery milestones stated in Activity 1 above.

We have therefore only considered the timescales up to and including the completion of detailed design.

To establish whether the plan is reasonable, we have focussed on testing the level of plan-maturity and the level to which best-practice planning principles have been applied. We have undertaken limited assurance on:

- Programme structure, including non-working time, activity constraints, predecessors / successors, critical path analysis
- Time risk allowance, float and risk management
- Timescales for governance activities (internal and external governance and reviews)
- Resource management and procurement
- Visibility of activities related to complex works (crossing the Broads and railway lines)

The documents itemised in detail in Section 2.3 were reviewed and evidenced to inform our findings and conclusions.

3.3.1 Test 1: Are the activities included in the plan comprehensive?

The high-level activities in the DCO programme appear reasonable and follow a logical sequence, but beyond April 2026 the plan lacks detail.

A contractual clause 32 schedule is available for work up to completion of the concept design (April 2026), produced by Jacobs as part of their concept design contract. Stantec are developing the over-arching DCO programme that will encompass Lowestoft Reuse (Scheme 4) and the Strategic Network Pipeline (Scheme 2).

No “plan on a page” was available that explains the key stages and milestones for the overall DCO programme and how the Lowestoft project integrates. It was therefore difficult to get a quick and clear view of the project delivery stages and key milestones.

The programme plan is maturing, and the project is currently at early feasibility / screening stage. The project team acknowledged that further improvements to the schedule were planned for completion by the end of June 2025. We note that the programme schedules currently have the following limitations and gaps:

- Lacks granular detail for later stages of the programme which prevents assurance on allowed timescales. Some activities are only planned at high-level.
Predecessors and Successors have not yet been included for all activities.
- No critical path is identifiable on the DCO programme.
- Key activities such as consultations and consenting for rail crossings are not visible.
- No visible float, or time-risk allowance has been included.
- Seasonal constraints have been added into the durations of activities such as ecology or other surveys, rather than separate planning constraints.
- Inconsistent activity and milestone names between the Lowestoft concept design clause 32 plan and the overall DCO plan. Reconciliation and alignment between both plans are therefore difficult.
- The Accelerated Delivery Outputs are not shown as milestones in the Gantt.

NWL have shared an action plan, which evidences that the DCO programme team have a number of further collaborative-planning sessions during June 2025 to include the plan logic, additional scope, time-risk allowance and critical path.

The above limitations and the lack of a “plan-on-a-page” to aid understanding of the overall programme-logic has meant we have been unable to complete any independent assurance on the DCO plan.

3.3.2 Test 2: Are the timescales allowed reasonable, and have they taken into consideration the complexities identified?

We have not undertaken assurance on this area of the plan, due to the limitations noted above around the plan-maturity.

3.3.3 Test 3: Is the delivery team appropriately resourced and on track against the revised plan?

The overall high-level procurement strategy will utilise NWL’s established AMP8 framework agreements and this has been used to inform the delivery plan.

Supply-chain partners for the design and construction have been identified and mobilised as required.

There is evidence that Jacobs, undertaking the current concept design, are actively managing their resources to deliver their contractual requirements.

MWH Treatment have been identified as the preferred contractor, and will be involved throughout the design phase, as part of early contractor involvement.

We have evidence that progress to date is consistent with the latest position shown in the Clause 32 Gantt chart reviewed (16 May 2025). A short-listed set of pipeline-corridors and treatment plant sites are nearly complete, in line with their Design Freeze (DF0) milestone, ready to inform concept-design work and non-statutory consultation.




The plan for delivery of the concept design appears appropriately resourced and on-track against the current plan.

3.3.4 Activity 2: Conclusions and Next steps

We have applied the following RAG scoring to this Activity:

Major concerns: Significant concerns over robustness of plan	Moderate concerns: moderate concerns over robustness of plan.	Minor concerns: minor concerns over robustness of plan.	No concerns. No or limited risks identified.
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Activity 2 set out to test if the revised plan was robust, by assessing if:

Test	RAG	Findings
The activities included in the plan are comprehensive?		The DCO plan is still under development with several gaps and limitations. For this reason, Aqua has been unable to independently assure the robustness of the plan at this time. NWL and their delivery partner have evidenced that improvements to the plan will be made in June 2025, through further collaborative planning sessions. ³
The timescales allowed are reasonable, and have they taken into consideration the complexities identified?		
The delivery team is appropriately resourced and on track against the revised plan?		The plan for delivery of the concept design (up to April 2026) appears appropriately resourced and on-track against the current plan.

³ The RAG has been scored as moderate because a plan is in place to improve schedule-maturity and the overall robustness during June 2025.

We would recommend the following improvements are actioned promptly following completion of Design Freeze 0 milestone, once the preferred site and pipeline corridor is confirmed, to improve the robustness of the current plan:

- Use of a common work breakdown structure (WBS) between the DCO and Lowestoft scheme sub-programme, to drive clarity and alignment between the overall and sub-elements of the plan.
 - Ability to see the Lowestoft specific sub-activities within the overall DCO plan.
- Milestones included to identify FD19 Accelerated Delivery outputs and any other Ofwat deliverables agreed through ongoing engagement.
- Inclusion of additional level 3 / 4 activities within the DCO plan.
- Link all activities with a predecessor and successor.
- Incorporate significant risks into the programme logic.
- Inclusion of time-risk allowance and float.
- Clarity on critical path / ability to see critical path.
- Inclusion of seasonal constraints, to ensure that any slippage on key activities such as ecology surveys are accurately represented.
- High risk / high-complexity scope such as complex crossings (the Broads, railways) and other critical activities (new electrical supplies) should be visible, and include initial engagement, approvals, design and implementation as a minimum.

As a result of these limitations, we have been unable to independently assure whether the revised milestones for the Accelerated Delivery outputs are reasonable. **Where dates are stated in our assurance report (Appendix A), these are provided for information only.**

4 Conclusions

None of the deliverables defined in the FD19 for Scheme 4 (Lowestoft Reuse Scheme) within the Accelerated Delivery programme have been achieved by 31 March 2025, for the reasons set out below:

As part of early discussions with NWL and Jacobs on the overall Lowestoft Reuse scheme, NWL advised that there have been several key changes since the FD19 Accelerated Delivery plan was agreed and the final WRMP was published. These are set out below for completeness.

- NWL took a strategic decision in October 2024, to change their consenting approach, from the Town and Country Planning Act (for each individual scheme) to a Development Consent Order (DCO), following independent legal advice. The Development Consent Order includes for the consenting of Lowestoft Reuse, Scheme 4 and Scheme 2 (Suffolk Strategic Network and Storage Enhancements). While Scheme 3 (North Suffolk Winter Storage Reservoir Detailed Design) will continue with a separate consenting strategy.
- The Lowestoft Reuse scheme, following early design work (post the WRMP submission) now includes for a new treatment plant on a new site. These investigations having shown that it was not feasible to locate the required treatment processes within the existing sites boundary of Anglian Water's Lowestoft water treatment site.

NWL has advised that this has changed the overall delivery timescales from that originally stated and that these changes have been formally communicated to Ofwat as part of NWLs recent draft Delivery Plan submitted to Ofwat on the 12 May 2025.

NWL state that the current delivery plan is focussing on completion of the short-listing of the treatment plant site and most feasible pipeline corridors to inform non-statutory consultation. The FD19 deliverables (for example, completion of ecology surveys, geotechnical investigation reports, topographical surveys, Environmental Impact Assessments, Environmental Statements) will be completed after the preferred solution is

selected (June 2025). These outputs are currently planned for delivery between mid-2025 through to the end of 2026 (calendar year).

We have also undertaken an initial high-level review of whether the revised delivery plan is appropriately resourced and reasonable, to assess, for each of the FD19 Accelerated Delivery outputs for Scheme 4, either:

- % completion, or;
- a likely completion date

Our review has noted that the revised delivery plan for the DCO programme is still under development, with missing detail (some tasks are still only a high-level activity) and the inclusion of seasonal constraints, predecessors / successors and float are still incomplete. As such we have been unable to independently assure the programme at this time.

We have included a detailed list of recommendations to improve the robustness of the programme plan in Section 0 of this report and would recommend the improvements are actioned promptly following completion of Design Freeze 0 milestone, once the preferred site and pipeline corridor is confirmed.

Appendix A: DCO programme dates

The following appendix sets out a summary of the current dates within the DCO programme (May 2025 issue) for Accelerated Delivery milestones. Note the dates below have been provided for information only and have not been independently assured.

- **Hydraulic surveys / Topographical Surveys:** These surveys are scheduled for completion between July – September 2025.
- **Geotechnical investigation reports:** An initial geophysical survey is planned for July 2025 to March 2026, and these will be used to inform intrusive geotechnical surveys (March to Aug 2026).
- **Onsite ecological surveys:** Initial habitats-mapping is planned for July to December 2025 (following DF0), with specific detailed ecology surveys planned thereafter. The plan shows that all surveys are targeted for completion by December 2026.
- **Onsite archaeological surveys:** An initial geophysical survey is planned for July 2025 to March 2026, and this will be used to inform the need for further archaeological surveys (trial holes). These phase 2 surveys are currently scheduled between March 2026 and December 2026.
- **Network rail UTX designs:** NWL have advised that engagement with Network rail is due to start in April 2026 according to the revised plan (after Design Freeze DF1, when non-statutory consultation is completed). Granular activities and timescales for design, approvals and construction are not currently visible in the plan.
- **EIA / Environmental Statements:** The EIA and Environmental Statements have not been started and are dependent on the completion of the ecological and archaeological surveys. The EIA scoping is scheduled to start in July 2025 and be completed for submission to the Secretary of State in April 2026. The environmental statements are currently shown in the plan from October 2027 to April 2028.
- **Land agreements in place:** Land agreements are required for intrusive surveys through late 2025 and 2026. Land agreements for wayleaves for pipelines and land purchase for the treatment plant site are shown as 2027/early 2028.