Oxford Sewage Treatment Works

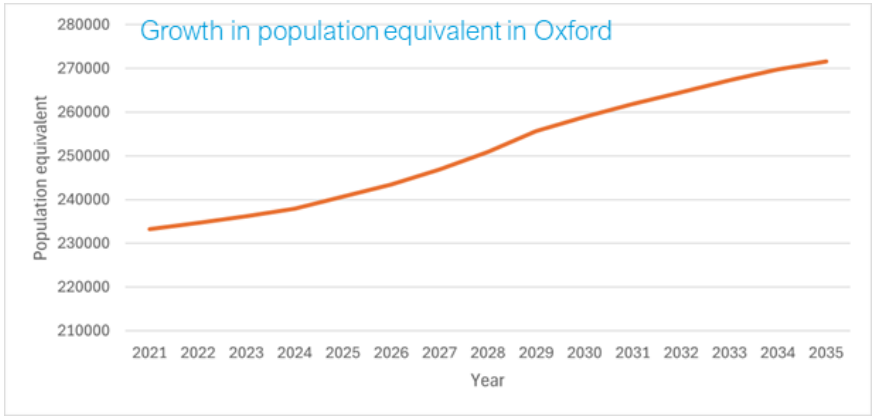
Quarterly report May 2025

Executive Summary

- A major upgrade to Oxford Sewage Treatment Works has begun.
- The upgrade will consist of four phases which will accommodate growth in the area and will deliver environmental commitments previously agreed and committed to as part of our AMP7 work programme.
- The forecast completion date of the works is 2030.
- A quarterly update on our progress for all stakeholders will be provided through this report. This report reflects work up to 31 March 2025. The next report will be published by the end of July.

Background

- Oxford Sewage Treatment Works (STW) is located south of the city near Sandford–on-Thames.
- To facilitate growth and protect the environment, we are finalising plans for a major upgrade at Oxford STW costing more than £435 million* which will provide a significant increase in treatment capacity, larger storm tanks and a higher quality of treated effluent going into the river.
- The major upgrade will take time, so we'll be delivering the upgrade in phases to maximise speed of environmental improvement.



Housing, Population and Population Equivalent forecasts

	2025 - 2031	2031 - 2041
Housing growth	9,534	20,435
Population growth	23,740	50,445
Population Equivalent forecast	272,163	293,973

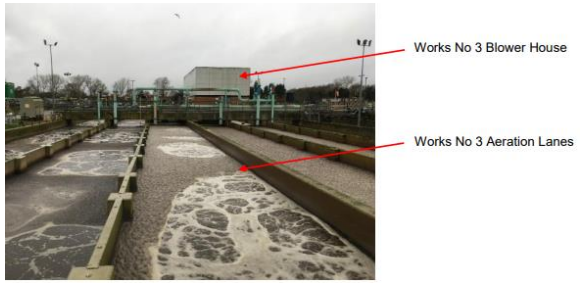
* Taking account of the impact of future inflation.

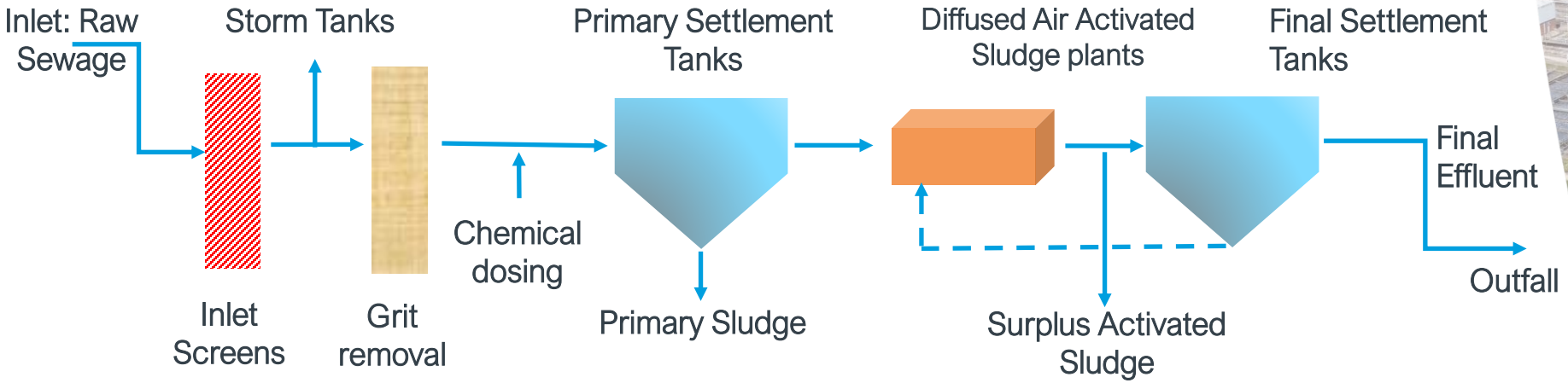
Oxford Sewage Treatment Process

The diagram below summarises the current treatment process at Oxford STW

Downstream of the inlet screens is a weir to the storm tanks which provide extra storage during a rainstorm

The primary stage separates solids from liquids where gravity encourages solids to settle at the bottom





Sewage entering the plant is passed through fine screens to remove large solids for disposal

A Detritor and rake removes grit for disposal

Sludge is further treated by Thermal Hydrolysis and Digestion for green energy recovery & volume reduction and then dewatered prior to disposal / reuse

Environmental Obligations

In addition to planning for population growth Thames Water has an obligation to comply with its environmental permits. The Environment Agency sets the standards we are required to meet. This is delivered through the Water Industry National Environment Programme (WINEP). These obligations, which were due for completion by 31 March 2025, are set out below.

WINEP Drivers

- There is a requirement to increase Flow to Full Treatment (FtFT) to 1,434 l/s (from 1,040 l/s). Increasing FtFT will reduce the frequency and volume of spills to the environment.
- There is a requirement to reduce Ammonia in the final effluent from 3mg/l to 1mg/l to maintain water quality and protect aquatic life.
- There is a requirement to reduce Phosphorus from 1mg/l to 0.25mg/l (stretch target 0.15mg/l) to improve water quality and minimise algal blooms.
- There is a requirement to increase Dissolved Oxygen (DO) in the final effluent. DO is required for the survival of fish and other aquatic life.

Timeline – Phased solution

The work at Oxford STW has been split into four phases. Phases 1, 2 and 3 will reduce spills and improve effluent quality in the Northfield Brook. Completion of phase 4 (The main scheme) will further increase treatment capacity and deliver our environmental obligations for flow and quality required by WINEP.

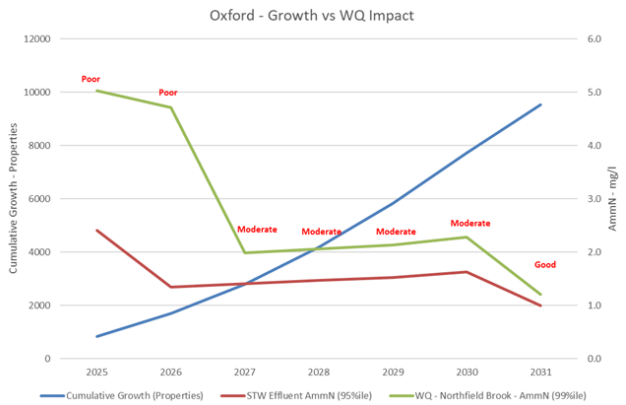
Phase 1 – Target Date 2027
Inlet Works to accommodate FtFT of 1,434 l/s (currently 1,040 l/s).

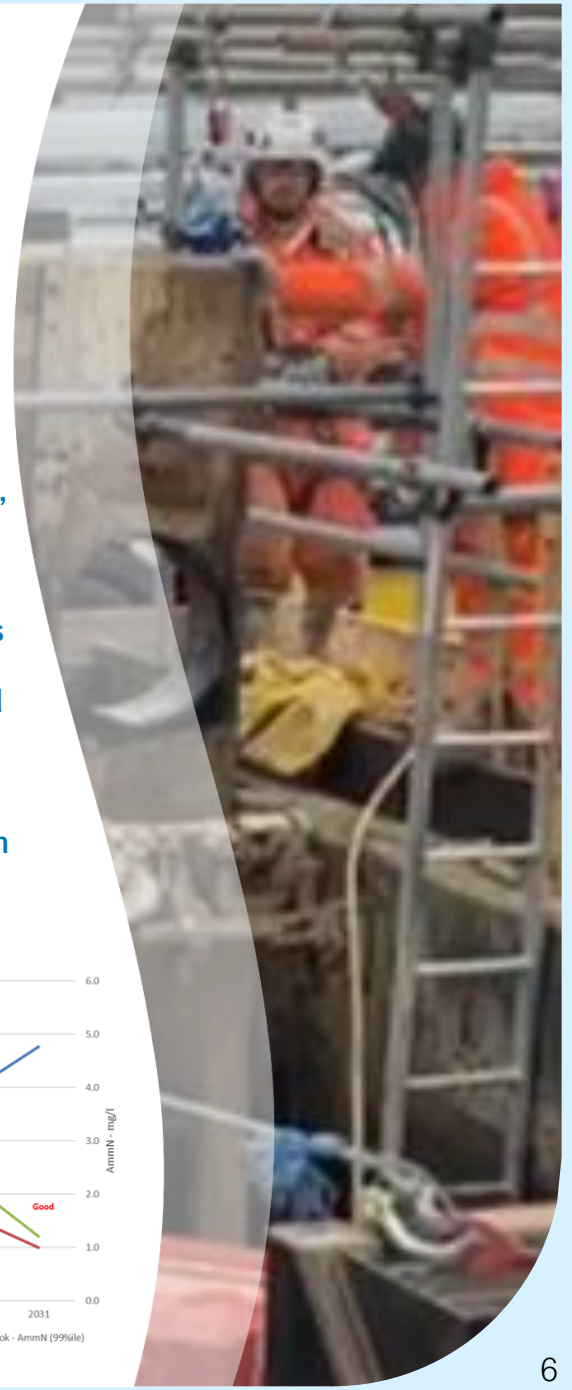
Phase 2 – Target Date 2027
Optimisation of existing works to maximise process performance at 1,434 l/s with increased DO in the final effluent.

Phase 3 – Target Date 2027
Cleaning and control system established on **Oxford Sewer Tunnels** to maximise benefit of latent storage in the local sewer network.

Phase 4 – Target Date 2030
Main Scheme to accommodate FtFT of 1,434 l/s and reduce Ammonia to 1.0mg/l and Phosphorous to 0.25 mg/l in the final effluent.

Treated effluent from Oxford STW discharges into the Northfield Brook, a tributary of the River Thames. The quality of the Northfield Brook is currently classified as 'Poor' under the Water Framework Directive. This will improve to moderate once the Phase 1 & 2 works are commissioned in 2027. This improvement is driven primarily by reduced storm spills. This improves further to "Good" when the main project is delivered in 2030.





Stakeholder Engagement

We have and will continue to engage fully with all our stakeholders during the phased upgrade to Oxford STW

Stakeholder engagement meetings

- There have been regular roundtable meetings with Stakeholders including Local Planning Authorities, the Environment Agency, Defra, Ofwat and developers giving progress updates and assurance on the upgrade scheme. Update meetings will be held quarterly going forward.

Environment Agency

- The Environment Agency has withdrawn their objection to additional planned developments in the Oxford area because the phased approach will prevent further deterioration whilst the full scheme is being developed.

Stakeholder Assurance and Engagement plan

- We will provide quarterly updates on progress. Our reports will identify main risks to delivery and any actions being undertaken or proposed to mitigate them. We will explain any changes to the programme and explain how they might impact the upgrade.

Developers meeting

- We held a meeting with developers and other key stakeholders in March 2025 to explain our proposed upgrade programme. Future meetings will be held quarterly going forward to provide assurance that we will deliver an interim solution in 2027 and a permanent solution by 2030.

Work to deliver the Phase 1 upgrade is underway

Temporary pumps to allow flow restriction removal and increase FtFT.

1. Inlet Works - hydraulic restrictions removed.
2. Restrictions limiting flow to the rectangular PSTs removed.
3. Permanent pipes to increase flow to the PST distribution chamber underway.


Suction Intake


Main Pumps (600 l/s each)


Rectangular PST
Section of wall removed


Rectangular PST
Section of wall removed


Discharge to existing channels

We have already removed the existing hydraulic restrictions to the inlet allowing a higher flow to pass through the inlet works. The remaining work, that will be undertaken over the summer, includes flow balancing and process optimising of the works that is likely to result in reduced storm spills and improved ammonia treatment.

Next 6 months

Increased flow capacity to the treatment works

Phase 1

- Detailed design complete by November 2025.

Phase 2

- Planned real-time control of Activated Sludge Plants (ASPs) complete.
- Reconfiguration of ASP2 commenced.
- Final Effluent increased Dissolved Oxygen (DO) solution design commenced.

Phase 3

- Design approach and assess feasibility.

Phase 4

- Main contract awarded to Contractor.
- Design stage 1 commenced.

It's everyone's water