UUWR_84

PR24 Draft Determination: Enhancement Case

PR24 Draft Determination: Princes Street - Enhancement Case

August 2024

This document sets out the service enhancement expenditure and activity that we will undertake through AMP8 and supports our draft determination response documents, UUWR_75 and UUWR_77.

United Utilities

Water for the North West

Contents

<table>
<tr><th colspan="2">Enhancement submission</th></tr>
<tr><td>Title:</td><td>UUWR_84_ Princes Street</td></tr>
<tr><td>Price Control:</td><td>Ww Network +</td></tr>
<tr><td>Enhancement headline:

One or two sentences summarising the headlines</td><td>Enhancement expenditure to deliver an improvement to Princes Street CSO (STK0108) to meet the needs of the AMP8 WINEP following the inclusion of deliverables on a new version of the WINEP issued on the 5 July 2024.</td></tr>
<tr><td>Enhancement expenditure

(FY23 prices)</td><td>
<table>
<tr><th></th><th>AMP8 Capex inc TI (£m)</th><th>AMP8 Opex (£m)</th><th>AMP8 Totex (£m)</th></tr>
<tr><td>Pre RPE and Frontier Shift</td><td>4.9</td><td>0.008</td><td>4.9</td></tr>
<tr><td>Post RPE and Frontier Shift</td><td>4.9</td><td>0.008</td><td>4.9</td></tr>
</table>

The table above shows the total expenditure on both a pre-efficiency (i.e. pre frontier shift and real price effects basis, consistent with the cost data tables), and a post efficiency and RPE basis (i.e. consistent with the value we propose to be recovered from price controls). All numbers referenced hereafter in this enhancement case are on a pre efficiency and RPE basis.
</td></tr>
<tr><td>This case aligns to:</td><td>UUWR_77_New WINEP

Expenditure and cost driver information relating to this case can be found in data tables: CWW3.22-24 and CWW3.46-48, CWW20 and ADD20.</td></tr>
<tr><td>PCD</td><td>Incorporated into existing PCD mechanisms:

• Storm overflows</td></tr>
</table>

1. Enhancement case summary

Gate	Summary	Location reference
Need for enhancement investment	Our base expenditure only covers the cost of meeting current Environmental Permit requirements. This enhancement investment is driven by the following statutory drivers: • Urban Waste Water Treatment Regulations 1994 • Environment Act 2021	Section 3
Best option for customers	We have undertaken an exercise to identify the cost effective way to meet the need and the likely future permit requirements associated with the solution.	Section 4
Cost efficiency	To ensure robust and efficient costs in our programme we have used an estimating approach based on data collected over a number of AMPs (AMP3 to AMP7). This has been updated to reflect present market conditions under which we and the UK Water Industry are operating. We have reviewed our costs against industry data.	Section 5
Customer protection	Customers are protected from non-delivery through the following ODIs: • Storm overflow ODI – the overflow spill reduction projects are built into the baseline of this performance commitment, therefore if they are not delivered, the overflows will not meet the spill frequency requirements and we will incur an underperformance payment through this ODI. • Pollution ODI – if we fail to deliver this improvement on time, we would expect the Environment Agency to classify this as pollution due to the evidence established through the Storm Overflow Assessment Framework (SOAF) investigation at this site. Additional consequences of non-delivery include: • Prosecution and fines due to non-compliance with permits. • Reputational impact of reducing Environmental Performance. • Loss of trust with customers and stakeholders. • Loss of trust with the Environment Agency leading to less support for innovative approaches to delivering environmental improvement.	Section 6
Price Control Deliverable	Price control deliverables applied to this enhancement case: • Storm overflows	Section 7

2. Introduction

2.1.1 This document sets out the enhancement case for £4.9m totex to allow UUW to deliver an improvement at Princes Street CSO as a result of new drivers included in the AMP8 WINEP, updated on 5th July 2024.

2.1.2 This enhancement case covers Princes Street CSO to meet the needs of the AMP8 WINEP requirements. This requirement was confirmed by the Environment Agency in a letter dated 29 February 2024 and subsequently included in the updated WINEP issued on the 5 July 2024.

2.1.3 The development of the WINEP has been informed by key regulatory guidance including the WINEP methodology, WINEP options development guidance, WINEP options assessment guidance, WINEP driver and supporting guidance. Our approach reflects the specific context within which we operate in the North West of England.

2.1.4 On 29 February 2024 the Environment Agency wrote to United Utilities confirming a new driver, U_IMP4, had been added to its guidance for PR24 to enable improvements to high spilling overflows that are identified as non-compliant with the Urban Wastewater Treatment Directive (UWWTD). This new driver was subsequently included in the updated WINEP, issued on 5 July 2024.

2.1.5 Overflows identified under this new driver were already included in the WINEP under one or more other drivers, except for Princes Street CSO. The addition of Princes Street CSO was a new WINEP requirement with an obligation to deliver the improvement by 1 April 2028. It had not been included in previous versions of the WINEP under any other driver.

2.1.6 A review of the current asset condition and performance was undertaken. Our solution development process identified that a transfer the spill flows via new pipes to a new tank was the only cost effective, viable solution.

2.1.7 The cost of this enhancement has been calculated following process that have been benchmarked and assured, and we have challenged our assumptions to ensure we develop efficient costs.

2.1.8 We propose that this enhancement is included in our storm overflows price control deliverable (PCD) to ensure customers have confidence that we will deliver the enhancement scheme, and they are protected in the event of non-delivery or material change to the scheme.

3. Need for enhancement investment

3.1 Environmental need

3.1.1 This section details the environmental driver and legislation which supports the need for this investment and our approach to addressing these requirements.

3.1.2 The Environment Agency included Princes Street CSO in the WINEP issued on the 5 July 2024 under a U_IMP4 driver for delivery by the 1 April 2028.

3.1.3 The Storm Overflow Assessment Framework (SOAF)[1] published in June 2018 provides a methodology for assessing the environmental impacts of high spilling storm overflows from wastewater treatment systems. It provides a structured approach for identifying, quantifying, and mitigating the impacts of these overflows.

3.1.4 Justice Holgate (paragraph 84 - 86, Judicial Review case CO/4438/2022 and CO/4445/2022) observed that the Environment Agency introduced the SOAF expressly to assess whether overflows and/or treatment works were in breach of regulation 4 of the Urban Wastewater Treatment Directive 1994 (UWWTD). This extends to an assessment of whether or not potential solutions to address frequently spilling overflows are considered cost-beneficial.

3.1.5 On 29 February 2024 the Environment Agency wrote to United Utilities confirming a new driver U_IMP4 had been added to their guidance for PR24, to enable improvements to high spilling overflows that are identified as non-compliant with the UWWTD. These improvements were to be delivered within three years from the 1 April 2025, and were subsequently included in the updated WINEP issued on 5 July 2024.

3.1.6 Princes Street CSO was a new requirement under the driver U_IMP4 with an obligation to deliver the improvement by 1 April 2028. It had not been included in previous versions of the WINEP under any other driver.

3.2 Customer support

3.2.1 Customer research indicates protecting the environment is a key priority in the North West. Research for the DWMP identified that 76% of customers said, 'protecting lakes, rivers, reservoirs, fish and other aquatics plants and wildlife is really important to me'. This was also echoed by our PR24 research where customers identified that they wanted UUW to go further with its plans to address pollution and requested area specific interventions to tackle local issues. More detail can be found within our PR24 supplementary document from our business plan submission, Affordability and Acceptability Testing Research UUW22.

3.2.2 There is also increasing, customer and stakeholder concern over spills from storm overflows which can be demonstrated through the significant increase in media coverage in recent years.

3.3 Management control

3.3.1 The enhancement needs for overflows included in the WINEP are outside of management control and driven by new statutory requirements. Botex allowances maintain compliance with current permits. To enable compliance with new, more onerous requirements and permits, investment to enhance current assets or to deliver new assets is required. Unlike sanitary determinands, there are no opportunities to optimise performance of overflow assets to achieve intermittent standards. These assets have been modelled as operating to their full capacity to give a baseline performance. Any improvement from this requires enhancement investment.

[1] water.org.uk/wp-content/uploads/2018/12/SOAF.pdf

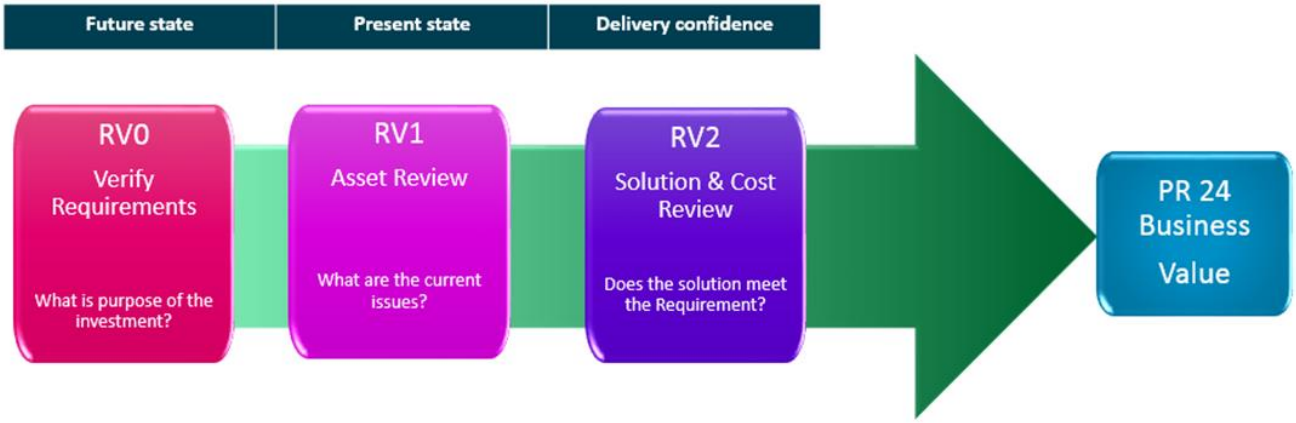
4. Best option for customers

4.1 Approach to options development

4.1.1 PR24 options development followed the fundamental principles of the UUW defined value management process. Risk and Value for PR24 (RV) was a three stage process (Figure 1), aimed at positively challenging our projects to ensure we have sufficient evidence behind decisions. It provides UUW with confidence that we are proposing the right projects for the AMP8 Programme and therefore managing and maximising the value for customers from their investments. It also ensures that we adopt the correct approach to option identification, development and selection to maximise the realisation of benefits associated with these investments.

4.1.2 Due to the late addition of these schemes to the WINEP, we have not been able to assess the scope and develop interventions through the standard process (Figure 1). However, the principles of this process have been followed, ensuring we have adopted the correct approach to option identification, development and selection, to maximise the realisation of benefits.

Figure 1: PR24 Risk and Value approach



4.1.3 The solution for Princes Street CSO was developed following the Storm Overflow Assessment Framework (SOAF)[2] . The framework, published in June 2018, provides a methodology for assessing the environmental impacts of high spilling storm overflows from wastewater treatment systems. It provides a structured approach to identify, quantify, and mitigate the impacts of the overflow. Princes Street CSO was identified as requiring an improvement solution.

4.2 Option Development for Princes Street

4.2.1 During AMP7 a SOAF investigation was conducted for Princes Street, this included a review of the current asset condition and performance. This confirmed the root cause and identified the cost beneficial spill solution to deliver the minimum SOAF requirement of screen and a reduction to 40 spills per year.

4.2.2 Following the confirmation of the driver at Princes Street CSO, this was reviewed, and solutions were developed to improve performance to 10 spills per year. High level screening was applied to refine the feasible solutions and determine solution development and estimating. Due to the highly urban location of Princes Street CSO, options were constrained. However, a preferred solution was identified.

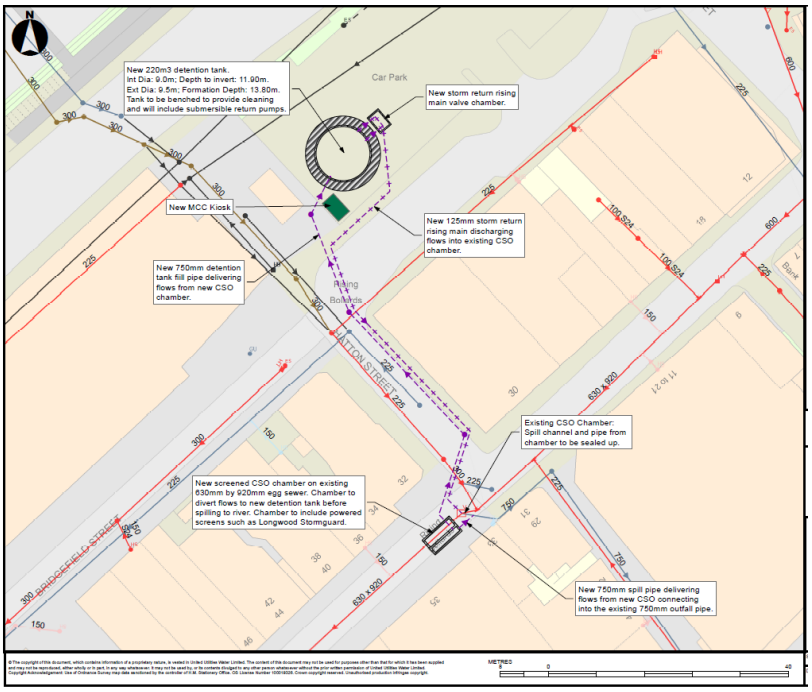
4.2.3 During the solution development process, it was identified that there were very limited location options. The existing CSO is in a narrow urban shopping street in Stockport town centre. There is no space in the

[2] water.org.uk/wp-content/uploads/2018/12/SOAF.pdf

immediate surrounds of the CSO to deliver a solution without major disruption to local businesses and potential structural risk to the adjacent buildings (Figure 2).

4.2.4 Therefore, it was decided that the viable solution was to transfer the spill flows via new pipes to a new tank located in a nearby car park. This would provide more space for construction, as well as a compound and minimise disruption to the local community.

Figure 2: Urban location of Princes Street CSO and proposed solution



The existing CSO, to the south of the map, is located in the centre of a shopping street with buildings in close proximity. Therefore the preferred solution is to build a tank to the north in a car park.

4.3 Innovation

4.3.1 Throughout AMP7 United Utilities has undertaken rapid learning from the deployment of AMP6 innovation (such as that demonstrated with Nereda and Typhon) and has developed a new Technology Approval Process. This process identifies opportunities for innovative technologies and nature-based solutions. It provides a methodical approach to due diligence, innovation risk identification and mitigation planning. The approved technologies and solutions include:

- those we have identified directly
- those suggested by our construction partners
- those identified by other WaSCs but not yet progressed by United Utilities in AMP7 i.e. I-PHYC Algal bioreactors
- global innovation insights such as that secured through our engineering service provider Jacobs and other consultants such as Stantec.

4.3.2 Our technology approval process has allowed us to progress technologies into approval without the need to trial, for example the mobile organic biofilm technology approved and now in detailed design and construction for our Macclesfield AMP7 scheme. This approach highlights UUW's credentials as a fast adopter of new technology but with deeper awareness of the risks associated with innovation that need to be managed.

4.3.3 To develop our PR24 submission we have incorporated the technologies that have now secured ‘approved’ status in our process decision support tool which was used to identify innovation

opportunities by driver and site details. Where these innovation opportunities present the best value solutions, they have been selected to be taken forward as the preferred solution. For storm overflows, we have maximised the amount of SuDS solutions put forward as the preferred option, and we continue to seek opportunities to deliver more value for customers.

4.3.4 When assessing this, if the value of these novel solutions cannot be determined with sufficient certainty, they have been identified as an opportunity for UUW to pursue in the period between submission and delivery. Alongside this we will continue to review those innovations/solutions not yet approved but relevant to AMP8 drivers, and progress these through our technology approval process.

4.3.5 UUW is also leading a trial in this area through the Ofwat Innovation Fund. The Mainstreaming Nature-Based Solutions programme[3] seeks to bring together multi-sectoral expertise and leadership to collaboratively create and test new solutions to surface water management. This is being delivered through real-life case studies to facilitate and enable the transition of nature-based solutions into business as usual, to deliver greater value for customers, society and the environment. This will enable the exploration of lower cost options for nature-based solutions to deliver wider environmental outcomes and include customers in decision making which we can feed into our AMP8 plans.

4.3.6 We believe this sets UUW in good standing to understand the key opportunities that innovation can deliver within our PR24 submission and enables further efficiency driven by our innovation programme.

[3] https://waterinnovation.challenges.org/winners/mainstreaming-nature-based-solutions/

5. Cost efficiency

5.1 Introduction

5.1.1 This section sets out how we have calculated the value of this enhancement case, how we have challenged our assumptions to develop efficient costs and how these have been benchmarked and assured.

5.2 Approach to cost build

5.2.1 Costs for Prince's Street CSO have been assessed using location specific information. Our UUW engineering team developed a preferred solution through the application of the SOAF process, considering factors such as constructability and land availability.

5.2.2 To develop robust and efficient costs we have used an estimating approach based on data collected over a number of AMPs (AMP3 to AMP7), updated to reflect present market conditions under which we and the UK water industry are operating. We have partnered with Mott Macdonald who provide us and other UK water and sewerage companies with an estimating service, which allows them to provide a benchmarked approach to our PR24 capital cost estimates.

5.2.3 Our Investment Programme Estimating System (referred to as the PR24 Estimating Database / IPES) is an in-house estimating tool which is used to provide costs for the Price Review and scheme development. The system is a robust repository for data from previous AMP periods, which sits alongside estimated data, to allow us to develop project and programme estimating.

5.2.4 Mott MacDonald has provided us with a specialist estimating function utilising costing data derived from our construction data, which supports our scheme estimates. Post business plan submission, to give us additional confidence that our cost estimates produced by Mott MacDonald were accurate, we undertook a self-assurance exercise by appointing ChandlerKBS. We asked ChandlerKBS to price up a selection of our projects using their Cost Intelligence Database (CID). ChandlerKBS are an international commercial company who have provided estimating services to a number of UK infrastructure businesses, including a number of water companies. Their CID contains data derived from their clients over 20 years, including tens of thousands of cost curves and capital projects.

5.2.5 The outcome of this review was that an overall variance of 3% against the Mott MacDonald estimate shows a close level of correlation and gives us confidence in the costs we have developed for our schemes. This was backed up by the output report: "The overall ChandlerKBS estimate total for the fourteen projects is 3% lower than the UU PR24 estimates. ChandlerKBS consider the UU PR24 estimates to be comparable with our industry cost data" (ChandlerKBS 2024).

5.2.6 We commissioned Arup to run an independent scrutiny and challenge process on the development of the PR24 WINEP before Princes Street CSO was identified for investment. Arup spent time working with specialists across UUW to understand how we had arrived at the scope, the approach to developing costs and whether the programme had been appropriately optimised.

5.2.7 Feedback from Arup was that "Overall, we note the very significant amount of work that was done by UUW in the short time between our reviews…We found that UUW responded positively to the challenge and scrutiny applied to it from Arup and the panel members, with a very significant amount of work undertaken after our initial review. We observed that progress had been made by UUW in many areas that we highlighted in our original review. As part of this, we also noted a strong push across the leadership and the operational teams on trying to ensure that the programme achieves a balance of solutions across traditional engineered approaches and alternative solutions where these are feasible and appropriate."

5.2.8 Following the initial review by Arup we incorporated their feedback into our plan and process for developing solutions. Of particular relevance to Princes Street CSO is the cost estimating methodology

which, following the second review Arup concluded, that UUW costing methodologies largely comply with the requirements of WINEP guidance and standard industry practice. Arup raised a concern that "across a broad programme the level of risk allowance is at the lower end of the range we would expect" and in response we have further developed our plan to ensure concerns raised are addressed within the final estimates.

5.2.9 We have run internal cost challenge processes since the 5 July 2024 WINEP, but a full cost challenge and assurance has not been possible in the time available.

5.3 Benchmarking UUW's capital costs

5.3.1 In July 2024 United Utilities commissioned Mott MacDonald to carry out a benchmarking exercise of United Utilities major capital construction costs.

5.3.2 The benchmarking of costs between companies is a challenging task, as such costs are often commercially sensitive, and are not readily shared. The sharing of out-turn costs could affect market competition between contractors and suppliers.

5.3.3 Mott MacDonald provide engineering and capital delivery services to three UK water and waste water companies, and were able to determine the costs incurred by those companies in the delivery of their major capital programme. United Utilities costs were compared to the other two water and waste water companies (whose identity was not revealed to United Utilities, and who were referred to as "Benchmark 1" and Benchmark 2") and the outcome of this comparison was shared.

5.3.4 United Utilities provided cost breakdowns for high value construction projects, for use in the benchmarking exercise. The comparable project costs included elements such as materials, construction costs, and so on.

5.3.5 The benchmarking exercise found that all companies were most expensive for some line items, and least expensive for other line items.

5.3.6 When comparing all of the most expensive line items from across the three companies, and all of the least expensive line items (the max of maxs, and min of mins), United Utilities costs were 18% below the max of max, and 19% above the min of mins.

5.3.7 Looking at overall average costs, United Utilities was 2% above Benchmark 1 costs, and 3% below Benchmark 2 costs, with an average variance of 1%.

5.3.8 This indicates that United Utilities costs are comparable to other companies in the sector, and that we are not high cost outliers. We will continue to work with contractors and partners to secure cost efficiencies as we move into the delivery phase of the programme.

5.4 Third party assurance of our cost estimates

5.4.1 UUW has put in place a robust process to identify, scope and cost all solutions proposed within our business plan. This process is set out in detail in the October 2023 business plan submission [1] along with supporting supplementary documents[2].

5.4.2 This process was subject to third party assurance during the development of our business plan. Full details of UUW's approach to assuring our business plan was set out in our October 2023 submission [3]. As set out within this submission, a number of third-party organisations were involved in providing assurance including Deloitte, PWC and Faithful & Gould.

[2] UUW (2023) UUW45: Our approach to best value totex. Available here:
https://www.unitedutilities.com/globalassets/z_corporate-site/pr24/supplementary-documents/uuw45.pdf

5.4.3 UUW's Board provided assurance that the solution development process underpinning our plan was appropriate, included extensive optioneering and that resulting expenditure forecasts were robust and efficient [4].

5.4.4 The scope and associated costs set out within this enhancement case have been developed using the same process described and assured in the above documents. This enhancement case has also set out specific evidence to support the enhancement investment proposed. As such, we consider this to represent compelling evidence that the forecasted costs set out within this case are robust and efficient.

6. Customer protection

6.1 Introduction

6.1.1 It is important that customers have confidence that we will deliver the enhancement schemes which will be reflected in our PR24 final determinations. They need to be suitably protected in the event of non-delivery, or if there are material changes to deliverables (including changes to dates), which leads to a change in cost (including changes in the timing of required expenditure). Ofwat proposes that, if companies fail to deliver or are late delivering improvements to customers, the price control deliverables (PCDs) should, where appropriate, be used to compensate customers. In our PR24 *Chapter 8 – Delivering at Efficient Cost, section 8.8.9* we have proposed an approach to PCDs that aims to provide customer protection. This ensures that customers are fairly compensated for non-delivery (such as due to a change in regulatory requirements) or late delivery (including as a result of a change to a regulatory date), between PCDs, any related ODI underperformance payments, and cost sharing arrangements.

6.1.2 For this enhancement requirement, which has been added to the WINEP post the October 2023 submission of our PR24 plan, we propose that it should be incorporated within the relevant price control deliverable (PCD).

- Storm Overflows

6.1.3 UUW have represented on Ofwat's proposed PCD mechanism within *UUWR_10_Overflows*.

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