

# UUWR\_85

## PR24 Draft Determination: Enhancement Case

# PR24 Draft Determination: Staveley - 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.

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Enhancement submission				
Enhancement headline:	Enhancement expenditure to deliver an improvement to Staveley WwTW storm tanks to meet the needs of the AMP8 WINEP following the inclusion of deliverables on a new version of the WINEP issued on the 5 <sup>th</sup> July 2024.			
<i>One or two sentences summarising the headlines</i>				
Enhancement expenditure (FY23 prices)		AMP8 Capex inc TI (£m)	AMP8 Opex (£m)	AMP8 Totex (£m)
	<b>Pre RPE and Frontier Shift</b>	13.7	0.003	13.7
	<b>Post RPE and Frontier Shift</b>	13.5	0.003	13.5
	<p>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.</p>			
This case aligns to :	<p><a href="#">UUWR 77 New WINEP</a></p> <p>Expenditure and cost driver information relating to this case can be found in data tables: CWW3.22-24, CWW20 and ADD20.</p>			
PCD	<p>Price control deliverables applied to this enhancement case:</p> <ul style="list-style-type: none"> <li>• Storm overflow</li> <li>• Storm overflows – pass forward flow</li> </ul>			

# 1. Enhancement case summary

Gate	Summary	Location reference
Need for enhancement investment	<p>Our base expenditure only covers the cost of meeting the current Environmental Permit requirement. This enhancement investment is driven by the following statutory drivers:</p> <ul style="list-style-type: none"> <li>• Environment Act 2021</li> </ul>	Section 3
Best option for customers	<p>We have undertaken an exercise to identify the most cost effective way of meeting the need and the likely future permit requirements associated with the solution.</p> <p>By delivering an integrated solution for Staveley WwTW storm tanks at the same time as the solution for Staveley WwTW inlet overflow we have been able to develop an integrated catchment solution which is more efficient for customers than delivering them separately.</p>	Section 4
Cost efficiency	<p>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) updated to reflect present market conditions under which we and the UK Water Industry are operating. We have reviewed our costs against industry data.</p>	Section 5
Customer protection	<p>Customers are protected from non-delivery through the following ODIs:</p> <ul style="list-style-type: none"> <li>• 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.</li> <li>• Pollution ODI – if we fail to deliver this improvement on time we would expect the Environment Agency to classify this as pollution</li> </ul> <p>Additional consequences of non-delivery include:</p> <ul style="list-style-type: none"> <li>• Prosecution and fines due to non-compliance with permits</li> <li>• Reputational impact of reducing Environmental Performance</li> <li>• Loss of trust with customers and stakeholders</li> <li>• Loss of trust with the Environment Agency leading to less support for innovative approaches to delivering environmental improvement</li> </ul>	Section 6
Price Control Deliverable	<p>Price control deliverables applied to this enhancement case:</p> <ul style="list-style-type: none"> <li>• Storm overflows</li> <li>• Storm overflows – Pass forward flow</li> </ul>	Section 6

## 2. Introduction

- 2.1.1 This document sets out the enhancement case for an additional £13.7m totex to allow UUW to deliver improvements to Staveley WwTW storm tanks as a result of new drivers being included in the AMP8 WINEP.**
- 2.1.2 This enhancement case covers Staveley WwTW storm tanks which have been included in the WINEP since our initial business plan submission in October 2023. Details of other changes to the WINEP are summarised in [UUWR 77 New WINEP](#).
- 2.1.3 The development of the WINEP has been informed by the 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 The Environment Agency included Staveley WwTW storm tanks in the WINEP issued on the 5<sup>th</sup> July 2024 under EnvAct\_IMP2 and EnvAct\_IMP4 drivers to reduce spill frequency by the 31<sup>st</sup> March 2030.
- 2.1.5 This enables us to deliver a combined solution with Staveley WwTW inlet overflow which was already included in the AMP8 WINEP under EnvAct\_IMP2 and EnvAct\_IMP4 drivers. The two assets are hydraulically linked so a combined solution will reduce abortive expenditure and be more efficient over the long term.
- 2.1.6 Both overflows discharge via the same outfall pipe into the River Kent, a Site of Special Scientific Interest (SSSI) and Special Area of Conservation (SAC). They are therefore both classified as high priority overflows under the Storm Overflow Discharge Reduction Plan.
- 2.1.7 The current preferred option is an integrated solution which addresses both overflows. It involves, a significant increase to flow to full treatment at Staveley WwTW, a storage tank and a series of network improvements including separation and SuDS. The total cost of this integrated solution is £19.1m totex.
- 2.1.8 There is considerable local support for improvements to be made to reduce spill frequency from the overflow at Staveley WwTW from the Clean River Kent Campaign, the local parish council and local MP. We are working with the community to ensure they are fully engaged in the development of this solution.

## 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 Staveley WwTW storm tanks in the WINEP issued on the 5<sup>th</sup> July 2024 under EnvAct\_IMP2 and EnvAct\_IMP4 drivers for delivery by 31<sup>st</sup> March 2030.**
- 3.1.3 The development of the WINEP has been informed by the 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.
- 3.1.4 Since the submission of our business plan in October 2023, drivers have been included in the WINEP to reduce the spill frequency from Staveley WwTW storm tanks. The storm overflow at the inlet of Staveley WwTW was previously included in the WINEP and October submission. The two overflows are hydraulically linked and currently discharge through the same outfall pipe. There is therefore a significant efficiency in delivering solutions for the two overflows together. By taking this approach we have been able to develop an integrated solution which also reduces flood risk in the village of Staveley. Costs associated with addressing the flooding have not been included in this enhancement case.
- 3.1.5 Staveley WwTW storm tanks has been identified as a high spilling overflow which requires investment to meet standards set out under the Environment Act. It was included in the WINEP issued on the 5<sup>th</sup> July 2024 under an EnvAct\_IMP2 and EnvAct\_IMP4 drivers for delivery by 31<sup>st</sup> March 2030.
- 3.1.6 The EnvAct\_IMP2 driver requires us to reduce spills from Staveley WwTW storm tanks to ensure they have no local adverse ecological impact. The EnvAct\_IMP4 driver requires us to ensure that Staveley WwTW storm tanks does not discharge above an average of 10 rainfall events per year by 2050. This is a step change in performance and therefore requires significant investment.
- 3.1.7 The outfall for Staveley WwTW storm tanks discharges into the River Kent, a Site of Special Scientific Interest (SSSI) and Special Area of Conservation (SAC). It is therefore classified as a high priority site. The Storm Overflow Discharge Reduction Plan requires 75% of high priority overflows to be addressed by 2035.
- 3.1.8 Addressing Staveley WwTW storm tanks was originally profiled for delivery in AMP9. However, by accelerating this investment from AMP9 to AMP8 to align with the driver for Staveley WwTW storm overflow, we have been able to develop an integrated catchment solution which seeks to reduce infiltration into the drainage system and will also reduce abortive work from having to return to the same location twice.

### 3.2 Customer support

- 3.2.1 Customer research indicates that protecting the environment is a key priority in the North West. Research for 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 our plans for addressing pollution and also requested area specific interventions to tackle local issues, more details can be found within our PR24 supplementary document Affordability and Acceptability Testing Research UUW22.
- 3.2.2 There is also ongoing increasing customer and stakeholder concern over spills from storm overflows which can be demonstrated through the significant increase in media coverage over recent years.

- 3.2.3 In the local area the Clean River Kent Campaign has been very supportive of the need for improvements to be made to be made in Staveley and the local MP, Tim Farron, has been engaged by the community on the issue.

### **3.3 Management control**

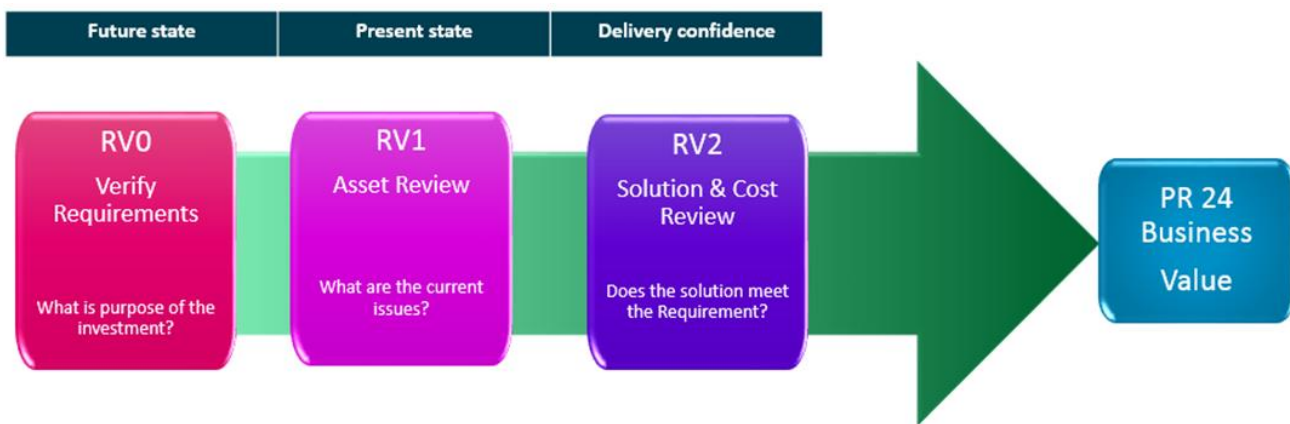
- 3.3.1 The enhancements needs for overflows included in the WINEP are outside of management control and driven by new statutory requirements. Botex allowance maintains compliance with current permits. To enable compliance with new, more onerous requirements and permits, investment to enhance current assets or to deliver new assets is required. Unlike sanitary determinands, there are no opportunities to optimise performance of intermittent 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.

## 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 fully assess the scope and develop interventions through the standard process Figure 1, although 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 requirements have been clearly verified and a review of the current asset condition and performance was undertaken to set the initial baseline and identify solutions. In developing feasible options the engineering teams always consider which solution will represent the best value to the customers.
- 4.1.4 In our options development, we considered the impact of our overflow options on the receiving wastewater treatment works and have included costs for necessary upgrades to increase the permitted flow to full treatment to accommodate additional storm water.
- 4.1.5 Options to address requirements were reviewed through a series of stages and gateways before the agreed solution was confirmed; from an initial ‘un-constrained’ list of options through to confirmation of the defined and estimated scope associated with a preferred solution.

### 4.2 Options development for Staveley WwTW storm tanks

- 4.2.1 Due to the hydraulic configuration of Staveley WwTW when exploring options to address the new drivers at the storm tanks the opportunity to explore a combined solution became apparent. By addressing the EnvAct\_IMP2 and EnvAct\_IMP4 drivers at the inlet overflow and the storm tank overflow simultaneously it allows us to deliver one solution rather than needing to return in the future.
- 4.2.2 A review of the current asset issues in the location also identified some sewer flooding risk. A decision was therefore made to consider the potential benefit to this in the development of the solution. The



costs for addressing the flood risk are not included in this enhancement case and will be funded through base maintenance.

- 4.2.3 Within the options development process, an un-constrained series of potential options were identified against a list of 'Generic High Level Solutions' (GHLs) categories as per the standard PR24 processes. This identified a number of viable options and the preferred solution was an optimised combination of all of these. The proposed solution consists of a significant increase in the flow to full treatment of Staveley WwTW, storage and network improvements including surface water separation and sustainable drainage (SuDS).

## 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 our credentials as a fast adopter of new technology but with deeper awareness of the innovation risks 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<sup>1</sup> 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.

<sup>1</sup> <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 Staveley have been assessed using location specific information. Due to combining the delivery of the solutions for the inlet overflow and the storm tank overflow significant efficiencies have been realised relative to the previous arrangement of delivering a solution to the inlet overflow in AMP8 and the storm tank overflow in AMP9.

5.2.2 Post submission of the original business plan we have continued to develop our approach. We appointed Jacobs as our Strategic Solution Partner in early 2024, and since then we have been working with their global experts to leverage advancements in technology and identify efficiencies in this catchment solution.

5.2.3 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.

5.2.4 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.

5.2.5 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.

5.2.6 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).

5.2.7 We commissioned Arup to run an independent scrutiny and challenge process on the development of the PR24 WINEP prior to the development of the integrated solution for Staveley. Arup spent time working with specialists across UW to understand how we had arrived at the scope, the approach to developing costs and whether the programme had been appropriately optimised.

5.2.8 Feedback from Arup was that 'Overall, we note the very significant amount of work that was done by UW in the short time between our reviews... We found that UW 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 UW 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.’

- 5.2.9 Following the initial review by Arup we incorporated their feedback into our plan and process for developing solutions. Particularly relevant to this case is the cost estimating methodology which following the second review they concluded that UW costing methodologies largely comply with the requirements of WINEP guidance as well as standard industry practice. However, they did raise concern that “across a broad programme the level of risk allowance is at the lower end of the range we would expect’ we have further developed our plan to ensure concerns raised are addressed within the final estimates.
- 5.2.10 We have run internal cost challenge processes since the 5th July ’24 WINEP, but a full cost challenge and assurance has not been possible in the time available.

### 5.3 Benchmarking UW’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 UW 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 October’s main business plan submission<sup>[1]</sup> along with supporting supplementary documents<sup>[2]</sup>.

<sup>[1]</sup> UW (2023) UW08: *Delivering at efficient cost*. Available here:

[https://www.unitedutilities.com/globalassets/z\\_corporate-site/pr24/main-documents/uw08.pdf](https://www.unitedutilities.com/globalassets/z_corporate-site/pr24/main-documents/uw08.pdf)

<sup>[2]</sup> UW (2023) UW45: Our approach to best value totex. Available here:

- 5.4.2 This process was subject to third party assurance during the development of our business plan. Full details of UW's approach to assuring our business plan was set out in our October submission<sup>[3]</sup>. As set out within this submission, a number of third party organisations were involved in providing assurance including Deloitte, PWC and Faithful & Gould.
- 5.4.3 UW'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<sup>[4]</sup>.
- 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 unique aspects of this particular investment proposed. As such, we consider this to represent compelling evidence that the forecasted costs set out within this case are robust and efficient.

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[https://www.unitedutilities.com/globalassets/z\\_corporate-site/pr24/supplementary-documents/uw45.pdf](https://www.unitedutilities.com/globalassets/z_corporate-site/pr24/supplementary-documents/uw45.pdf)

<sup>[3]</sup> UW (2023) *UW76: Confidence and assurance of the submission*. Available here:

[https://www.unitedutilities.com/globalassets/z\\_corporate-site/pr24/supplementary-documents/uw76.pdf](https://www.unitedutilities.com/globalassets/z_corporate-site/pr24/supplementary-documents/uw76.pdf)

<sup>[4]</sup> UW (2023) *UW11: Board Assurance Statement*. Available here:

[https://www.unitedutilities.com/globalassets/z\\_corporate-site/pr24/main-documents/uw11.pdf](https://www.unitedutilities.com/globalassets/z_corporate-site/pr24/main-documents/uw11.pdf)

## 6. Customer protection

### 6.1 Introduction

- 6.1.1 It is important that customers have confidence that we will deliver the enhancement schemes that get reflected in our PR24 final determinations and they are 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, then 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, such 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 requirements which has been added to the WINEP post the October 2023 submission of our PR24 plan, we propose that it should be incorporate within the relevant price control deliverable (PCD).
- Storm Overflows
  - Storm Overflows – Pass Forward Flows
- 6.1.3 UUW have represented on Ofwat's proposed PCD mechanism within [UUWR 10 Overflows](#).

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