DRAINAGE & WASTEWATER MANAGEMENT PLAN

Dŵr Cymru Welsh Water
Drainage and Wastewater Management Plan 2024
Data Table Commentary

November 2023

IN PARTNERSHIP WITH

rps ATKINS Member of the SNC-Lavalin Group wsp

Contents

1. Introduction

As part of the final Drainage and Wastewater Management Plan (DWMP) submission we have completed data tables for our regulator, Ofwat. These allow us to submit data in a consistent manner across all water companies to allow comparison.

This is our first DWMP for Wales and the neighbouring parts of England which we serve. It builds on our 2050 Vision, directions from Welsh Government, our regulators, our stakeholders, and customers.

We have undertaken the stages as outlined within the Water UK Framework for developing our DWMP. We started with a review of Risk, i.e. a Baseline Risk and Vulnerability Assessment (BRAVA) for all our wastewater catchments within our operating area, then narrowed down to focus our effort on the production of best value solutions to the highest priority catchments as identified in the Problem Characterisation phase. Further information on how the stages of the DWMP has been approached can be found in the Main DWMP Plan.

The OFWAT tables have been populated purely with DWMP-driven solutions, where in comparison the OFWAT methodology for Long Term Delivery Strategies is broader, covering aspects of security, biodiversity and water framework directive drivers. There are overlaps with regards to sewer flooding and storm overflow operations.

Our DWMP assessment has included the following Planning Objectives:

- The capability of our system to accommodate flows in both dry and extreme weather conditions,
- The impacts of storm discharges on our rivers and coastal waters
- The extent of pollution likely to occur from escapes from our wastewater system
- The risk of flooding in severe storm conditions
- The potential impact of sewer collapses and blockages

Based purely on the methodology we have had to adopt for this first cycle, and recognising the extent of extrapolation and assumption that has been necessary from the detailed work in the 44 priority catchments, our Strategic Plan indicates that investment in the region of £13bn will be required. This will enable the drainage system to handle the projected flows within the central climate change scenario adopted by Welsh Government, without causing customer flooding and with storm overflows only operating in very exceptional circumstances. This drops to £11.6bn with overflows operating around 10 times a year. A sum of £5,5bn (included in these calculations) is associated with eliminating the risk of sewer flooding to homes and businesses. At the current level of investment in AMP 7 this would not be achieved until after 2100. To achieve these outcomes sooner, by 2075 for example, we need to increase our performance enhancement investment over the next 25 years from circa £1bn per AMP to circa £2bn per AMP and maintain this level of investment thereafter. Starting in AMP8 we are proposing to invest £1.16bn on such enhancement.

Given the extent of the required future investment indicated by this first cycle we will seek to initiate discussions with Government, regulators and stakeholders so that by the completion of cycle 2 in 2028, we will have developed a programme of work that is affordable, deliverable and financeable. This will form a long-term integrated sewerage and drainage investment programme covering the whole of our operational area, and which provides a localised programme of solutions to support the Strategic Plan. In our PR24 submission, the Long-Term Delivery Strategy (LTDS) sets out an estimate of the scale of future investment to meet interim milestones, particularly around sewer overflows (SOs) and network improvements to contain flows.

As part of our engagement with customers during the cycle 1 consultation period, we explored the potential impact on affordability and customer bills. Customers were provided with a range of scenarios and provided feedback on these. Generally, customers advocated an incremental rise in bills to avoid any sudden increases, supporting our long term progamme. We have reflected this feedback in the profile of the indicative investment in our Price Review Plan alongside the outputs of our work on the Company's LTDS. Welsh Government's draft report from Stantec has also provided useful validation of our cost estimates.

This Plan has developed solutions to reach the two 'end destinations', which is what customers had indicated. The trial during the non statutory phase has provided information to take forward into future cycles, such as understanding pace of change, deliverability, level of detail required to drive resilience of service and a pristine environment.

This Plan has produced detailed programmes of work for 44 Level 4 Welsh Water Treatment Works (WWTW) catchment areas. This information is presented within the tables utilising the headings required by OFWAT. It was not considered appropriate at this point to provide information from the Strategic Plan assessment. We have therefore presented this application of data. It is our intention to continue to refine and develop more Level 4 catchment areas in future.

We are presenting a single Core Plan as part of this DWMP at the localised level. We have chosen many catchment programmes as a first stage delivery, with a second stage delivery programmed between 2030 and 2050. Additional scenarios at the company level are contained within the long term delivery strategies captured in the LS tables of our Price Review 2024 submission.

The DWMP tables have provided an opportunity to categorise the work that has been undertaken to complete the DWMP Framework approach and trials for its implementation.

A number of learning outcomes have been achieved as part of this DWMP implementation. We intend to consider these in full as part of developing the industry-wide Framework that will drive improved table consistency across all companies, particularly for cycle 2 of the Plan.

The Company's full Statement of Response (SOR) contains further recommendations for cycle 2, which has been provided to explain areas where a true single DWMP Framework was not possible to be delivered. All companies have interpreted the meaning behind DWMP's differently and our company welcomes an opportunity to work together as soon as possible in the DWMP cycle 2 process, using the principles of co-creation, collaboration and early trialling to develop best practice.

The following sections of this report are a line by line commentary of the calculation and inclusion of the DWMP outputs. It explains how the information has been categorised and proportioned to meet a specific category.

2. Categorisation and Calculations

2.1. CSO schemes

2.1.1. Storm overflow categorisation

Outcomes 4-7 will be achieved through implementation of schemes to resolve issues caused by storm overflow discharges. As definitions were not available for Ecological Harm (high priority) and Ecological Harm (all), it was not possible to categorise CSOs. It was therefore decided that every CSO solution is resolving an assumed site of ecological harm (high priority) and reducing it to 0 spills.

Work regarding the definition of ecological harm and how it is to be derived and represented in hydraulic model forecasts is still ongoing. In the meantime the company's approach is to achieve removal of environmental harm and ecological harm, in these tables we have made the assumption that they are the same thing and once achieve the milestone is thereafter 10 spills.

2.1.2. Spill projections

A prediction/projection of an asset's future performance is required to assess whether the asset will be failing against the companies target of removal of environmental harm. This has been undertaken using historical spill values from the Event duration monitoring (EDM), and BRAVA modelled spill data. BRAVA modelled spill data exists for years 2020, 2025, 2030 and 2050. By combining this with EDM spill values, as set out in Table 1, we can generate spill projections. Epochs not included in the BRAVA assessment, years 2035, 2040 and 2045, have been calculated through interpolation. As not all assets have both historical spill values and BRAVA data available, different methods for projection are used. They are detailed in Table 1 and applied in order.

Method #	Criteria	Methodology
1	BRAVA data exists	Take median spills to be 2020 value. Apply ratios of change between BRAVA data to 2020 spills to project. E.g. $$2025\ spills = median\ EDM\ spills \times \frac{2025\ BRAVA\ spills}{2020\ BRAVA\ spills}$$ $$2030\ spills = 2025\ spills \times \frac{2030\ BRAVA\ spills}{2025\ BRAVA\ spills}$$
2	No BRAVA data	The same calculations are used as in method #1, but as there is no BRAVA data for an asset in this category, an average of BRAVA data was used to calculate ratios. BRAVA averages were calculated for assets falling into 4 categories (inland network, inland WwTW, bathing water and shellfish), and the relevant BRAVA average applied to an asset. $$2025\ spills = median\ EDM\ spills \times \frac{2025\ average\ BRAVA\ spills\ for\ category}{2020\ average\ BRAVA\ spills\ for\ category}$$ $$2030\ spills = 2025\ spills \times \frac{2030\ average\ BRAVA\ spills\ for\ asset's\ category}{2025\ average\ BRAVA\ spills\ for\ asset's\ category}$$

Table 1 shows the approach undertaken during the BRAVA Phase.

2.2. WwTW schemes

One scheme, 873-A-RZTW-Llanfaglan WwTW-2025-2050-T1, has been designed with the primary outcome of addressing compliance at WwTWs. It will be included in outcome 2 of data tables.

2.3. Flooding schemes

Outcomes 9 and 11 relate to flooding schemes resolving internal and external flooding. The schemes have been linked to our Definitive Flooding List (DFL) of properties. The DFL register contains details about the property types for each flooding location.

For each scheme, the total number of properties per year affected by flooding are calculated. This is the sum of properties with a relevant property code, multiplied by the frequency associated with that code. For example a property with ARR(1:10) will contribute 0.1 to the total flooding property count per year, as the probability of flooding occurring in any given year at this property is 10%.

2.3.1. Internal sewer flooding

The following property types are classified as internal sewer flooding. A scheme will resolve any property on the DFL register with the following internal sewer flooding code, DFL.

ARR (1:10)
ARR (2:10)
DG5 (1:20)
DG5 (1:20+)
DG5 (2:10)

2.3.2. External sewer flooding

The following property types are classified as external sewer flooding. A scheme will resolve any active item in the DFL register with an external sewer flooding code.

OF (1:10)
OF (1:20)
OF (1:20+)
OF (2:10)
OSF (1:10)
OSF (1:20)
OSF (1:20+)
OSF (2:10)
SEF (1:10)
SEF (1:20)
SEF (1:20+)
SEF (2:10)

2.3.3. Normalising factor

When reporting, the number of flooding incidents must be normalised to 10,000 sewer connections. The number of sewer connections is taken to be 1,448,246 (see Annual Performance Review 2022-2023 Table 3G). A normalising factor of 0.00672 was calculated and applied.

$$Normalising\ factor\ = \frac{10{,}000}{1{,}488{,}246} = 0.00672$$

3. Outcome Summary

3.1. Pollution Incidents

3.1.1. 1a baseline

Baseline pollution incidents are calculated using BRAVA data. The projected “sewer incidents for HO causes” was used as the data.

3.1.2. 1b base

This is the same as the baseline since the base spend to address this issue is unknown.

3.1.3. 1c post enhancement

This will show no improvement as there are no DWMP schemes addressing pollution incidents.

3.1.4. 1ci capex

This will be 0 as there are no schemes with a primary outcome addressing pollution.

3.1.5. 1cii opex

This will be 0 as there are no schemes with a primary outcome addressing pollution.

3.1.6. 1ciii totex

This will be 0 as there are no schemes with a primary outcome addressing pollution.

3.2. Compliance at WwTWs

This section details WwTW compliance with permit conditions.

3.2.1. 2a baseline

For each AMP, this is the total number of compliant sites divided by the 835 catchments in the BRAVA data. Compliance/Non-Compliance is determined by headroom exceedance being above 0% and is taken from BRAVA data.

3.2.2. 2b base

This number should match the baseline as the base spend to address this issue is unknown.

3.2.3. 2c post enhancement

There is only one proposed scheme that will affect headroom compliance: 873-A-RZTW-Llanfaglan WwTW-2025-2050-T1. This row will match the baseline up until the AMP this scheme is due to be delivered, when the total number of compliant schemes for this and subsequent AMPs will be improved by 1, or 0.12% (1 in 835 catchments).

3.2.4. 2ci capex

The total capex on the Llanfaglan scheme noted above in the AMP it is delivered.

3.2.5. 2cii opex

This is 2 years of opex in the AMP the scheme is delivered in.

3.2.6. 2ciii totex

The total spend on the Llanfaglan scheme noted above.

3.3. Risk of Sewer flooding in a 1 in 50 storm

3.3.1. 3a baseline

This is taken from reported data as the percentage of population vulnerable to flooding. Projections to 2050 have not been completed so that value for this row is the reported value in 2023.

3.3.2. 3b base

This number should match the baseline as the base spending to address this issue is unknown.

3.3.3. 3c post enhancement

This will show an improvement of 10% linearly across AMP8 due to model improvements.

3.3.4. 3ci capex

This will show an investment of £6m in AMP for model improvements. This will be spread across AMP8 at £1.2m per year.

3.3.5. 3cii opex

This will be 0 as there are no schemes with a primary outcome of 1 in 50 storm sewer flooding.

3.3.6. 3ciii totex

This will be 0 as there are no schemes with a primary outcome of 1 in 50 storm sewer flooding.

3.4. Storm overflows – more than 10 spills per year

This section regards storm overflows that spill >10 times per year. Predicted using a typical rainfall time series.

3.4.1. 4a baseline

As it was not possible to categorise CSOs, this line was intentionally left blank.

3.4.2. 4b base

As it was not possible to categorise CSOs, this line was intentionally left blank.

3.4.3. 4c post enhancement

For each AMP, this is the improvement in number of assets that spill > 10 times a year remaining after DWMP schemes in and prior to that AMP have been implemented. This line should show no improvement as all CSO schemes resolve assumed sites of ecological harm (high priority) as an outcome.

3.4.4. 4ci capex

The total capex for the relevant AMP on schemes whose outcome is to address storm overflows that spill > 10 times a year.

3.4.5. 4cii opex

The total opex for the relevant AMP on schemes whose outcome is to address storm overflows that spill > 10 times a year.

3.4.6. 4ciii totex

The sum totex for the relevant AMP on schemes whose outcome is to address storm overflows that spill > 10 times a year.

3.5. Storm overflows (high priority) - ecological harm

This section regards high priority assets causing ecological harm.

3.5.1. 5a baseline

As it was not possible to categorise CSOs, this line was intentionally left blank.

3.5.2. 5b base

As it was not possible to categorise CSOs, this line was intentionally left blank.

3.5.3. 5c post enhancement

For each AMP, this is the number of CSO schemes implemented in and prior to that AMP. Every CSO scheme is resolving an assumed site of ecological harm and reducing it to 0 spills so all CSO schemes fall into this category. The number will be negative as it is showing a reduction in CSOs failing this category.

3.5.4. 5ci capex

The total capex scheme spend for the relevant AMP on schemes whose outcome is to address high priority overflows causing ecological harm.

3.5.5. 5cii opex

The total opex scheme spend for the relevant AMP on schemes whose outcome is to address high priority overflows causing ecological harm.

3.5.6. 5ciii totex

The total totex scheme spend for the relevant AMP on schemes whose outcome is to address high priority overflows causing ecological harm.

3.6. Storm overflows (all) - ecological harm

This section regards spilling assets causing ecological harm.

3.6.1. 6a baseline

This line was intentionally left blank.

3.6.2. 6b base

This line was intentionally left blank.

3.6.3. 6c post enhancement

For each AMP, this is the improvement in number of spilling storm overflows causing ecological harm remaining after DWMP schemes, in and prior to that AMP, have been implemented. This line should show no improvement as all CSO schemes resolve assumed sites of ecological harm (high priority) as an outcome.

3.6.4. 6ci capex

The total capex scheme spend for the relevant AMP on schemes whose outcome is to address spilling assets causing ecological harm.

3.6.5. 6cii opex

The total opex scheme spend for the relevant AMP on schemes whose outcome is to address spilling assets causing ecological harm.

3.6.6. 6ciii totex

The total totex scheme spend for the relevant AMP on schemes whose outcome is to address spilling assets causing ecological harm.

3.7. Storm overflows (designated bathing waters)

This section regards spilling assets in designated bathing waters.

3.7.1. 7a baseline

It has not been possible to categorise the data for this line currently

3.7.2. 7b base

It has not been possible to categorise the data for this line currently

3.7.3. 7c post enhancement

For each AMP, this is the improvement in number of spilling assets in designated bathing waters remaining after DWMP schemes, in and prior to that AMP, have been implemented. This line should show no improvement as all CSO schemes resolve assumed sites of ecological harm (high priority) as an outcome.

3.7.4. 7ci capex

The total capex for the relevant AMP on schemes whose outcome is to address spilling assets in designated bathing waters.

3.7.5. 7cii opex

The total opex or the relevant AMP on schemes whose outcome is to address spilling assets in designated bathing waters.

3.7.6. 7ciii totex

The sum totex for the relevant AMP on schemes whose outcome is to address spilling assets in designated bathing waters.

3.8. Sewer Collapses

3.8.1. 8a baseline

Baseline sewer collapses are taken from BRAVA data.

3.8.2. 8b base

This is the same as the baseline since the base spend to address this issue is unknown.

3.8.3. 8ci capex

This will be 0 as there are no schemes with an outcome of addressing sewer collapses.

3.8.4. 8cii opex

This will be 0 as there are no schemes with an outcome of addressing sewer collapses.

3.8.5. 8ciii totex

This will be 0 as there are no schemes with an outcome of addressing sewer collapses.

3.9. Internal sewer flooding

3.9.1. 9a baseline

Baseline internal sewer flooding is calculated using Internal Flooding BRAVA data. A normalising factor is applied as per section 2.3.3.

3.9.2. 9b base

This is the same as the baseline as the base spend to address this issue is unknown.

3.9.3. 9c post enhancement

For each AMP, this value is the 9b base value minus the total number of internal flooding properties associated with the schemes allocated from the data set. The normalising factor is applied to the property count.

3.9.4. 9ci capex

The total capex for the relevant AMP for any scheme addressing internal flooding. Where a scheme may address both internal and external flooding, the costs will be split proportionally by the number of schemes in each category.

3.9.5. 9cii opex

The total opex for the relevant AMP for any scheme addressing internal flooding. Where a scheme may address both internal and external flooding, the costs will be split proportionally by the number of schemes in each category.

3.9.6. 9ciii totex

The total scheme spend for the relevant AMP for any scheme addressing internal flooding. Where a scheme may address both internal and external flooding, the costs will be split proportionally by the number of schemes in each category.

3.10. Screening storm overflows

To meet aesthetic control standards for storm overflows, according to EA guidelines, a CSO must have a screen that complies with the following:

- 6mm solids separation: separation from the effluent, of a significant quantity of persistent material, and faecal and organic solids, greater than 6mm in any 2 dimensions
- 10mm solids separation: separation from the effluent, of a significant quantity of persistent material, and faecal and organic solids, giving a performance equivalent to that of a 10mm bar screen

In order to meeting these regulations, CSOs without a screen or with a screen not meeting a 6mm 2D standard has been classed as failing.

3.10.1. 10a baseline

Information about an asset's screen has been linked to the asset data from the Environmental Permit Register. The baseline is the number of failing assets, 1604.

3.10.2. 10b base

This is the same as the 16a baseline number as the base spend to address this issue is unknown.

3.10.3. 10c post enhancement

The 1604 CSOs with failing screens are resolved linearly from AMP9 to AMP12. Within this 1604, 500 CSOs require a new screen fitting and rest require the existing screen retrofitting. Within each AMP there will be a proportional split between these two categories.

3.10.4. 10ci capex

Using "THE UCD COST & CARBON ESTIMATING TOOL", the capex cost to install a compliant screen where there is currently no screen and to replace a non-compliant screen have been calculated. This is £465,650.95 for both circumstances. The capex per AMP will be the total capex cost for all screens being resolved in each AMP.

3.10.5. 10cii opex

The opex cost for a screen is unknown so this line has been left as 0.

3.10.6. 10ciii totex

This will be the sum of the capex and opex per AMP.

3.11. External sewer flooding

The calculations for external sewer flooding can be seen in Expenditure Analysis.

3.11.1. 11a baseline

Baseline external sewer flooding is calculated using External Flooding BRAVA data. A normalising factor is applied as per section 2.3.3.

3.11.2. 11b base

This is the same as the baseline as the base spend to address this issue is unknown.

3.11.3. 11c post enhancement

For each AMP, this value is the 9b base value minus the total number of external flooding properties associated with that scheme. The normalising factor is applied to the property count.

3.11.4. 11ci capex

The total capex for the relevant AMP for any scheme addressing external flooding. Where a scheme may address both internal and external flooding, the costs will be split proportionally by the number of schemes in each category.

3.11.5. 11cii opex

The total opex for the relevant for the relevant AMP for any scheme addressing external flooding. Where a scheme may address both internal and external flooding, the costs will be split proportionally by the number of schemes in each category.

3.11.6. 11ciii totex

The total scheme spend for the relevant for the relevant AMP for any scheme addressing external flooding. Where a scheme may address both internal and external flooding, the costs will be split proportionally by the number of schemes in each category.

4. Expenditure Analysis

The Expenditure Analysis is a series of tables for the core plan split into scheme type. The lines in the tables were calculated as follows.

4.1. Additional network storage/conveyance (Traditional Grey Interventions)

4.1.1. Additional offline grey storage volume to be delivered in the network (enhancement)

Total additional storage tank volume per AMP/year supplied by schemes of this type

4.1.2. Number of individual schemes

Count of schemes of this type per AMP/year

4.1.3. Projected spend on grey network storage – capex

Total capex per AMP/year for schemes of this type

4.1.4. Projected spend on grey network storage – opex

Total opex per AMP/year for schemes of this type

4.1.5. Projected spend on grey network storage – totex

Total spend per AMP/year for schemes of this type

4.2. Upstream surface water separation / removal or other network storage (Blue / Green separation & storage)

4.2.1. Permeable area inflow removed from entering the network or stored in environment (enhancement)

Total area of catchment separation per AMP/year for schemes of this type

4.2.2. Number of individual schemes

Count of schemes of this type per AMP/year

4.2.3. Projected spend on grey network storage – capex

Total capex per AMP/year for schemes of this type

4.2.4. Projected spend on grey network storage – opex

Total opex per AMP/year for schemes of this type

4.2.5. Projected spend on grey network storage – totex

Total spend per AMP/year for schemes of this type

4.3. Additional WwTW Storage (Traditional Grey Interventions)

4.3.1. Additional grey storage volume required at WwTW (enhancement)

Total grey storage volume per AMP/year supplied by schemes of this type

4.3.2. Number of individual schemes

Count of schemes of this type per AMP/year

4.3.3. Projected spend on grey network storage – capex

Total capex per AMP/year for schemes of this type

4.3.4. Projected spend on grey network storage – opex

Total opex per AMP/year for schemes of this type

4.3.5. Projected spend on grey network storage – totex

Total spend per AMP/year for schemes of this type

4.4. Blue/Green Interventions at WwTW

4.4.1. Number of individual blue/green interventions (schemes) required at WwTW to increase storm storage/reduce need for storm tanks on site

Count of schemes of this type per AMP/year

4.4.2. Projected spend on grey network storage – capex

Total capex per AMP/year for schemes of this type

4.4.3. Projected spend on grey network storage – opex

Total opex per AMP/year for schemes of this type

4.4.4. Projected spend on grey network storage – totex

Total spend per AMP/year for schemes of this type

4.5. Interventions At WwTW - Additional Treatment Capacity

4.5.1. Additional FFT treatment capacity required at WwTWs

Total additional FFT treatment capacity required at STWs per AMP/ year for schemes of this type

4.5.2. Number of individual schemes

Count of schemes of this type per AMP/year

4.5.3. Projected spend on grey network storage – capex

Total capex per AMP/year for schemes of this type

4.5.4. Projected spend on grey network storage – opex

Total opex per AMP/year for schemes of this type

4.5.5. Projected spend on grey network storage – totex

Total spend per AMP/year for schemes of this type

4.6. Expenditure Scenarios Planning Objectives

4.6.1. Reduced number of category 3 pollution incidents

This will be 0 as there are no schemes directly addressing pollution incidents.

4.6.2. Improvement in WwTW compliance

This calculated as the number of schemes of each type in an AMP where an outcome is improvement in WwTW compliance, as a percentage of the total number of catchments.

4.6.3. Percentage of properties at risk of sewer flooding in a 1 in 50 storm

This will be 0 for all AMPs as there are no schemes addressing this issue.

4.6.4. Storm overflow average spill reduction

This row is a sum of all projected spills as detailed in section 2.1.2, for each scheme type.

4.6.5. Reduced number of overflows spilling 10 or more per year

This is calculated as the number of schemes of each type that are started to be built in each AMP that improve assets that spill >10 times a year. As all CSO's are assumed to resolve sites of ecological harm (high priority) as an outcome, this line shows no schemes.

4.6.6. Reduction in high priority overflows causing ecological harm per year

This is calculated as the number of schemes of each type that are started to be built in each AMP that improve high priority assets that cause ecological harm. All CSO have been assumed to resolve sites of ecological harm (high priority) as an outcome, this line is the total number of CSO schemes in the DWMP programme.

4.6.7. Reduction in overflows causing ecological harm per year

This is calculated as the number of schemes of each type that are started to be built in each AMP that improve assets that cause ecological harm. As all CSO's have been assumed to resolve sites of ecological harm (high priority) as an outcome, this line shows no schemes.

4.6.8. Reduction in households with internal sewer flooding

For each AMP, this is the total number of properties at risk of internal flooding resolved by DWMP schemes being implemented in that AMP. A normalising factor of 0.00672 was calculated and applied as per section 2.3.3.

4.6.9. Reduction in households with external sewer flooding

For each AMP, this is the total number of properties at risk of external flooding resolved by DWMP schemes being implemented in that AMP. A normalising factor of 0.00672 was calculated and applied as per section 2.3.3.

4.7. Reduction in operational GHG emissions

This is the sum per AMP of operational carbon associated with schemes delivered in that AMP.

4.8. Reduction in embodied GHG emissions

This is the sum per AMP of embodied carbon associated with schemes delivered in that AMP.

4.9. Key partnership schemes

This section includes two SuDS schemes for schools and public spaces in partnership with local councils. The total cost of the scheme is split equally between DCWW and the Partner. The costs of these schemes are not included in the Outcomes and Expenditure Analysis totals.