

Drainage and Wastewater Management Plan

Isles of Scilly

May 2023



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Introduction

Isles of Scilly – Drainage and Wastewater Management Plan

The Isles of Scilly catchments form the Isles of Scilly Strategic Planning Unit (Level 2) in our Drainage and Wastewater Management Plans (DWMP). The DWMP assessment and categorisation of risk depends on a detailed knowledge of the asset base and performance.

On 1 April 2020, South West Water began operations on the Isles of Scilly, when our licence to operate was varied to include the communities on the Islands. The assets that had been installed over time by others to manage wastewater services were transferred to SWW under statute at the same time. In addition, the Environmental Regulations that have driven the improvements to the environment, particularly regarding wastewater discharges were enacted and/or enforced on the islands for the first time in 2020.

Given our limited experience operating the Isles of Scilly and the acknowledged need to invest to improve resilience and environmental protection, we have not generated a quantitative data driven DWMP for the Isles of Scilly at this time, as we only have two years of operational data and experience, for a legacy asset base designed and installed by others who were operating outside of our regulatory regime. We have, however, reviewed the most recent performance data and combined this with our growing knowledge of the asset base, risks and issues and our investment programme to 2025, to develop a DWMP based upon this experience, and our planned programme of investment to 2030. This has been compiled and shared with Regulators as part of the PR19 business plan submission.

Background

In April 2020 South West Water became the licensed water service provider for the Isles of Scilly. This followed an Expression of Interest request from Defra in 2016, to which SWW responded positively. In 2018, South West Water then carried out extensive due diligence surveys and investigations with our supply chain to inform our business plan on the investment priorities for the islands from 2020 to 2030. This formed the basis of our PR19 business plan for the Isles of Scilly. The focus of the PR19 business plan for the Isles of Scilly was to improve the resilience and sustainability of wastewater systems on the Islands.

There are limited wastewater networks on two of the five inhabited islands; St Mary's and Tresco. The other three inhabited islands (Bryher, St Agnes and St Martins) do not have public wastewater networks but instead rely on local private systems and septic tanks. The wastewater networks are operated under a Local Enforcement Position (LEP), during which time, improvements are made to enable formal permitting, to be agreed with the Environment Agency at the start of operations. Our performance data has been collected in line with mainland metrics, and shadow reported to Regulators since the start of operations. Once the benefits of our investment plan are realised in 2025, formal reporting will be undertaken and SWW will become fully responsible for maintaining a compliant and resilient wastewater asset base, as we are on the mainland.

Isles of Scilly - Wastewater Performance Metrics

Flooding, Pollutions and Asset Health

The principal risks that SWW has identified on St Mary's relate to the resilience of the entire wastewater network. Internal and external flooding performance is better than company average, with no flooding events attributed to hydraulic overloading. Instead flooding events are related to other causes, such as blockages and pump failure. Our capital maintenance programmes will generate improvements in these asset health metrics.

| WASTE | Total 2021-22 | Total 2022-23 |
|-----------------------------------|---------------|---------------|
| Sewer blockages | 33 | 24 |
| Sewer collapses | 0 | 2 |
| Pollution incidents (Cat 1-3) | 0 | 0 |
| Internal sewer flooding | 1 | 1 |
| External sewer flooding incidents | 3 | 4 |

Table 1. Isles of Scilly Performance for Flooding, Pollution and Asset Health

Overflows

Overflows from Atlantic storm overflow and New Grimsby Sewage Pumping Station (SPS) emergency overflows are monitored recorded by Event Duration Monitoring (EDM) systems under the terms of their permits and the LEP since March 2021.

Spills from Atlantic storm overflow take place following heavy rainfall when the hydraulic capacity of the network is exceeded. As part of the design and planning for the new wastewater treatment facility on St Mary's, the performance (both the frequency and duration of spills) at Atlantic storm overflow will be reviewed and if appropriate additional or alternative network storage will be provided to manage and minimise overflow spills.

Spills from New Grimsby SPS emergency overflow are infrequent (2 spills recorded in 2021 and 8 in 2022) and relatively short in duration. We have delivered the following improvements in resilience:

- Improving operational procedures and out of hours emergency response,
- Upgrading the pumps and controls,
- Providing an emergency standby power generation,
- Installing level monitoring, in the wet well, connected to our telemetry system
- Completion of a new storm tank at New Grimsby STW
- Repairing the outfall to remove ingress and installing a non-return valve to prevent sea water ingress to the pumping station.

South West Water and our supply chain are also planning the delivery of additional network storage at New Grimsby SPS by 31 March 2023. This will reduce further the overflow spills currently going into New Grimsby Harbour.

Investment Programme for AMP7

St Mary's

In AMP7 (2020-2025) our plans include the following:

- Conduct investigations into the special features of the Marine Special Area of Conservation that surrounds the islands. Special features include the vast sea grass beds (*Zostera Marina*) that flourish in the ocean around the islands.
- Deliver a new resilient wastewater treatment facility on St Mary's to provide treatment in line with the Urban Wastewater Treatment Directive (UWWTD) requirements.
- Ensure improvements are made at Telegraph WwTW to improve resilience and to enable a permit application to be made and granted by 2025.
- Invest in improvements at St Mary's WwTW (Bio-Bubble plant) to improve safety, operability and resilience and this will enable urgent new connections to the network.
- Upgrade sewage pumping station assets to improve safety, efficiency and resilience to protect against flooding and overflow spills caused by pumping failures.
- Install Event Duration Monitoring (EDM) at Atlantic storm overflow on St Mary's to understand the frequency and duration of spills from the Atlantic storm overflow, to inform network improvements required for the new wastewater treatment facility and to reduce spills.
- Install online real time flow and other monitoring to deliver our vision of remote control and operation on the Islands and, to advise on hydraulic model building and wastewater treatment facility design.
- Initiate a programme of sewer cleansing and rehabilitation to reduce blockages caused by non-flushable items, Fats, Oils and Greases (FOG) and vegetation / root ingress into sewers. This will contribute to reducing the risk of sewer flooding.

Tresco

In AMP7 (2020-2025) our plans include the following:

- Install EDM at New Grimsby storm overflow on Tresco to understand the frequency and duration of spills to New Grimsby Harbour, to inform network upgrades and reduce spills.
- Upgrade all sewage pumping stations, renewing these assets and improving operability and resilience.
- Construct new storm storage in the network at New Grimsby SPS.
- Upgrade the screening plant at Old Grimsby including power supply, flow monitoring, control and telemetry and replacement screening plant, screens to better protect the environment.
- Monitoring and telemetry roll out of all wastewater sites to reduce the risk of local flooding and pollution.

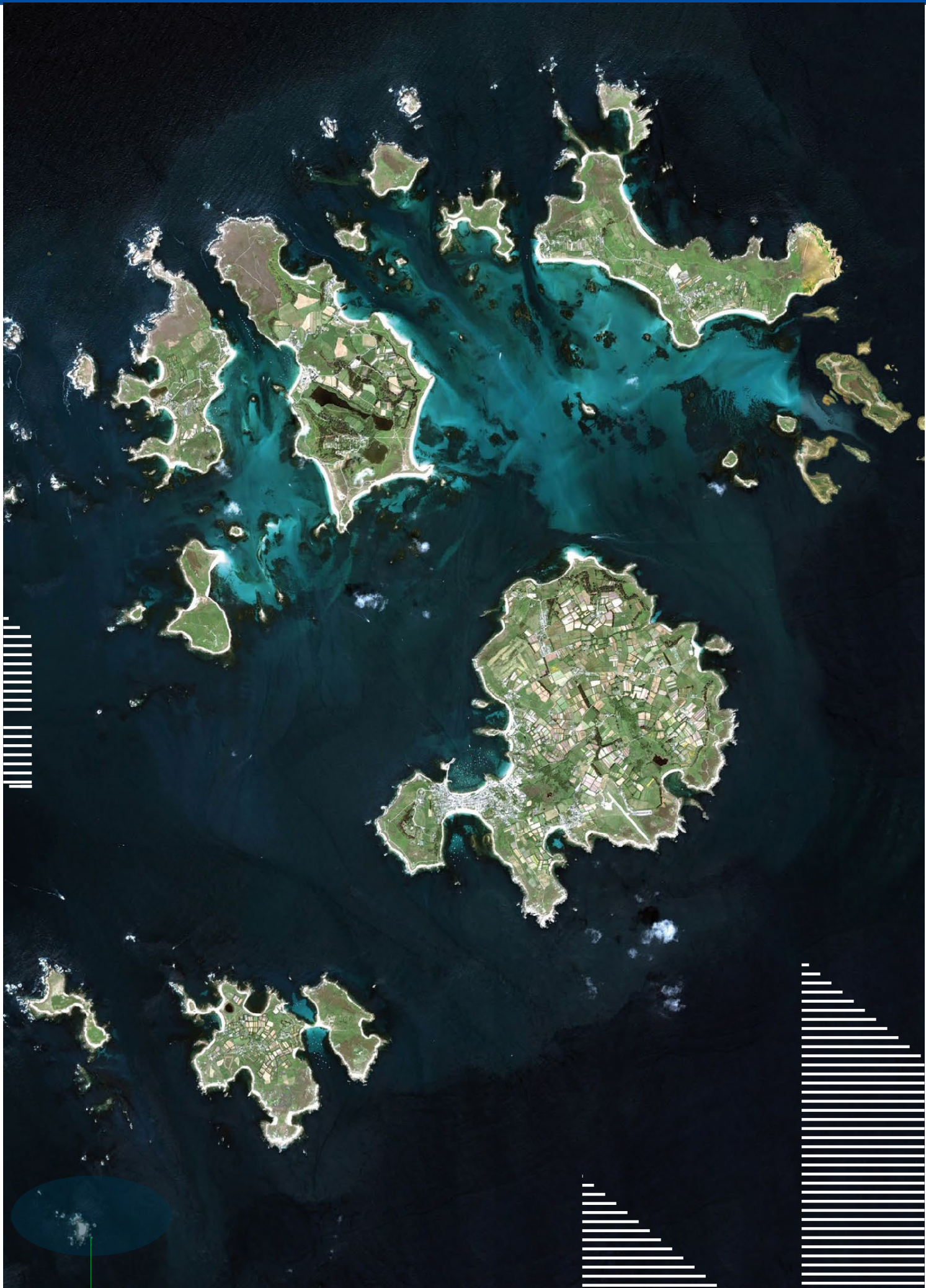
AMP7 Water Industry National Environment Programme (WINEP)

South West Water has two deliverables under the AMP7 WINEP. These relate to:

- Investigations into the impact of existing discharges on the special features of the Marine Special Area of Conservation (SAC) around the islands, under the Habitats Directive, and,
- The provision of appropriate wastewater treatment on St Mary's under the UWWTD. Further information is shown in Table 2:

| WINEP ID | Name of Waterbody | Waterbody Type | Driver Code | Planned Completion Date | Investigations Scope |
|----------|-------------------|-----------------|-------------|-------------------------|--|
| DCS00611 | Catchment Scale | Catchment Scale | HD_INV | 2022-03-31 | Investigation to quantify the Suspended Solids and Nutrient loading (N) of sewage discharges into the SAC and assess their impact on the interest features of the SAC in terms of siltation/smothering, phytoplankton blooms, growth of green algae. |
| DCS00613 | Isles of Scilly | Coastal | U_IMP1 | 2025-03-31 | Appropriate treatment required. |

Table 2. WINEP Programme for the Isles of Scilly



Isles of Scilly DWMP to 2030

St Mary's and Tresco

Following the delivery of our ambitious and extensive round of AMP7 investments, wastewater services on St Mary's and Tresco will be on a secure footing. However, to improve our resilience and performance, such as reducing blockages and spills, we will need to continue and even increase our planned capital maintenance. This will involve more sewer cleansing and rehabilitation (re-rounding) combined with sewer upgrades and replacement on both islands.

In addition, there are a significant number of properties on St Mary's, not currently connected to the wastewater network. From April 2025, applications for first time wastewater connections will be possible under the legislation as enacted for the Isles of Scilly. This could result in a significant number of requests to connect to our network. The Council of the Isles of Scilly have indicated that they are supportive of this approach and may facilitate the first-time wastewater application. Additional infrastructure in the form of pipework and pumping stations as well as potential further upgrades to treatment facilities will be required to manage this additional demand.

The Isles of Scilly Local Plan has identified a need for additional housing on all five islands, with the majority of these c. 110 on St Mary's. Some of this development has already started on St Mary's. This will require additional treatment capacity and has already been factored into our current design calculations for treatment and network replacement.

To protect the groundwater on St Mary's, we are currently planning to replace a number of private discharges to ground via soakaways with a discharge to surface water, most likely to sea. In order to accommodate this, it is proposed to include a first-time sewerage scheme on the northern part of the island serving c.110 properties. It is expected that secondary treatment will be required to protect the Special Area of Conservation surrounding the islands.

St Martin's, St Agnes and Bryher

At present there is no public wastewater network for the collection of sewerage on the islands of St Martin's, St Agnes or Bryher. Instead, most properties are served by either their own individual septic tanks, or via a shared common septic tank provision. On St Martin's, one hotel has a package wastewater treatment plant, on Bryher another hotel is considering the installation of a new package wastewater treatment plant and similarly on St Agnes, the Island Hall has a small Bio-Bubble secondary treatment plant. There is a considerable demand from residents, the Duchy of Cornwall and the Council of the Isles of Scilly to establish a public network on each island, particularly St Martin's and St Agnes.

The main benefit of a public wastewater system would be to protect groundwater from potential contamination from the large number of septic tanks present, some of which are beyond their original design life. Easy amalgamation of the private installations is not possible; therefore, a first-time wastewater mechanism would be applied in the evaluation of locations most requiring of public wastewater provision. A rolling programme over two or more price control periods would be required for delivery of this complex solution.

For AMP8 it has been decided to protect groundwaters by the replacement of a number of discharges to ground with discharges to surface water. Due to the size of the islands these discharges will mostly likely be to coastal waters. To achieve this, improvement first-time sewerage schemes will be required on all three islands: St Martin's, St Agnes and Bryher. It is expected that the minimum standard of treatment required to protect the SAC surrounding the islands will be a full secondary treatment.

It is intended that the first phase of first-time sewerage systems will serve 100 properties on St Martin's, 40 properties on St Agnes and 45 properties on Bryher.

First-time Sewerage Schemes

Taking into account the likely impact on the Marine SAC it was concluded that secondary treatment options were preferred. It must also be borne in mind that, though there are currently no designated bathing waters, there are 13 beaches that have the potential for such designation. Where possible and practicable, Nature Based Solutions will be the preferred option to allow wider environmental benefits to be realised. In developing the range of solutions, consultation with external stakeholders will be undertaken, including the local Wildlife Trust, the Environment Agency and Natural England.

All plans are subject to agreement with Ofwat as part of the 2024 Price Review (PR24) process, so are unconfirmed until that process concluded in December 2024.



