



Drainage and Wastewater Management Plan

Peel Common
Wastewater System Plan



from
**Southern
Water** 

Contents

Wastewater System Map

Problem Characterisation

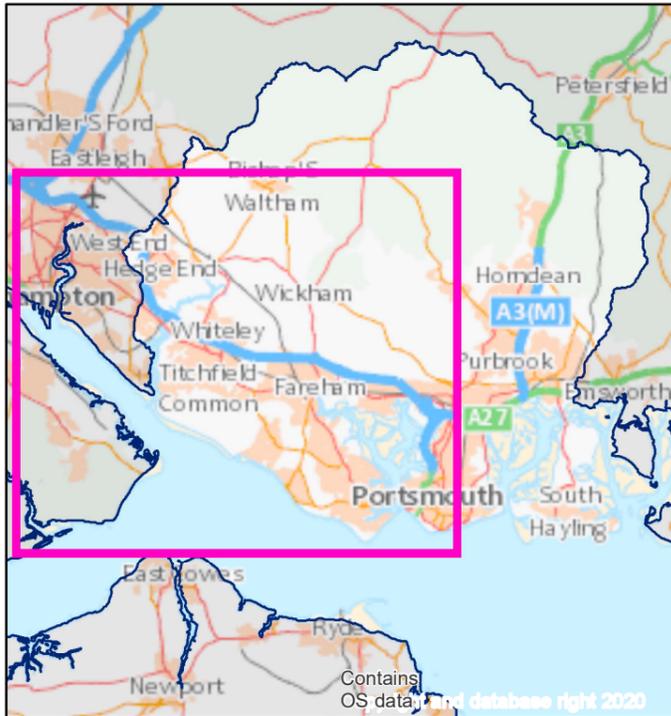
Generic Options

Outline Option Appraisal

Investment Needs

Location of Potential Options

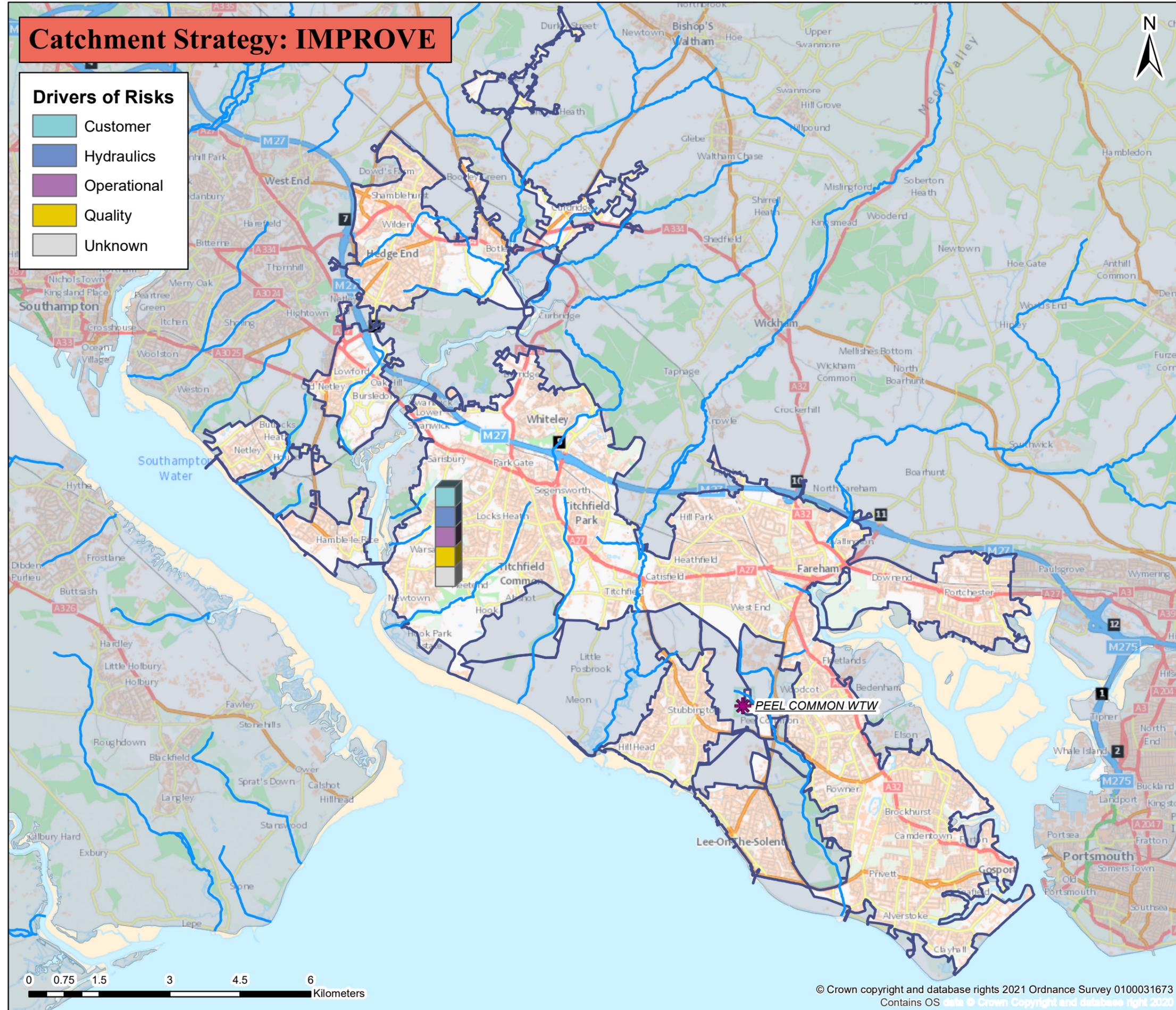
Peel Common wastewater system: map and key facts



Catchment Strategy: IMPROVE

Drivers of Risks

- Customer
- Hydraulics
- Operational
- Quality
- Unknown



| | |
|-----------------------------------|--|
| Population Equivalent (PE) | 256,119 |
| Discharge Waterbody | Long overland outfall into Solent |
| Number of Pumping Stations | 268 |
| Number of Overflows | 76 |
| Length of Sewer (km) | 2664.6 |
| Catchment Reference | PEEL |

| BRAVA Results Table | | |
|--|------|------|
| Planning Objective | 2020 | 2050 |
| 1 Internal Sewer Flooding Risk | 1 | |
| 2 Pollution Risk | 2 | |
| 3 Sewer Collapse Risk | 0 | |
| 4 Risk of Sewer Flooding in a 1 in 50 year storm | 1 | 1 |
| 5 Storm Overflow performance | 2 | 2 |
| 6 Risk of WTW Compliance Failure | 2 | 2 |
| 7 Risk of flooding due to Hydraulic Overload | 0 | 0 |
| 8 Dry Weather Flow Compliance | 1 | 2 |
| 9 Good Ecological Status / Potential | 1 | |
| 10 Surface Water Management | 1 | |
| 11 Nutrient Neutrality | 2 | 2 |
| 12 Groundwater Pollution | 0 | |
| 13 Bathing Waters | 1 | |
| 14 Shellfish Waters | 2 | |



Problem Characterisation

Peel Common (PEEL)

This document describes the causes of the risks identified by the Baseline Risk and Vulnerability Assessment (BRAVA). The BRAVA results for this wastewater system are summarised in Table 1. The results indicate that flooding, pollution and water quality are the main concerns in this wastewater system. We have completed risk assessments for 2050 where we have the data and tools available to do so. For the other planning objectives, we will explore how we can predict future risks for the next cycle of DWMPs. All the risk assessment methods need to be reviewed after the first DWMPs have been produced with a view to improve the methods and data for future planning cycles.

Table 1: Results of the BRAVA for Peel Common wastewater system

| Planning Objectives | | 2020 | Driver | 2050 |
|---------------------|--|------|-------------|------|
| 1 | Internal Sewer Flooding Risk | 1 | Customer | |
| 2 | Pollution Risk | 2 | Operational | |
| 3 | Sewer Collapse Risk | 0 | - | |
| 4 | Sewer Flooding in a 1 in 50-year storm | 1 | Hydraulic | 1 |
| 5 | Storm Overflow Performance | 2 | Hydraulic | 2 |
| 6 | WTW Water Quality Compliance | 2 | Quality | 2 |
| 7 | Flooding due to Hydraulic Overload | 0 | - | 0 |
| 8 | WTW Dry Weather Flow Compliance | 1 | Quality | 2 |
| 9 | Good Ecological Status / Good Ecological Potential | 1 | Quality | |
| 10 | Surface Water Management | 1 | Hydraulic | |
| 11 | Nutrient Neutrality | 2 | Unknown | 2 |
| 12 | Groundwater Pollution | 0 | - | |
| 13 | Bathing Waters | 1 | Unknown | |
| 14 | Shellfish Waters | 2 | Unknown | |

Key

| BRAVA Risk Band | |
|-----------------|------------------------|
| NA | Not Applicable* |
| 0 | Not Significant |
| 1 | Moderately Significant |
| 2 | Very Significant |

*No issues relevant to planning objective within Wastewater System

Investment Strategy

The risks identified in this wastewater system mean that we have assigned the following investment strategy:

Improve

This means that we consider that the current performance of the drainage and wastewater system needs to be improved to reduce the impacts on our customers and/or the environment. We will plan investment to reduce the current risks by actively looking to invest capital funding in the short term to address current performance issues (and consider future risks when implementing improvements).

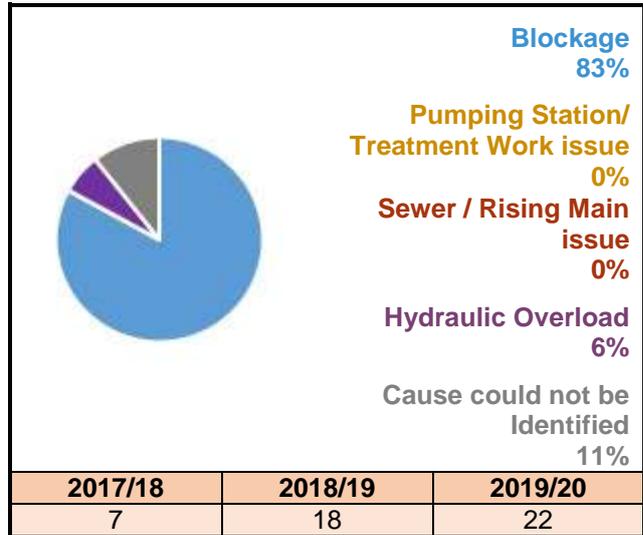


Planning Objective 1: Internal Sewer Flooding Risk

The number of internal sewer flooding incidents reported during the three years considered by the risk assessment are shown in Figure 1. The total number of connections in this wastewater system means there have been between 1.68 and 3.35 incidents per 10,000 connections per year (a threshold set by Ofwat) so the risk is in the 'moderately significant' band.

The primary driver for internal sewer flooding in this wastewater system is *Customer*. Blockages caused 83% of all incidents recorded in this wastewater system. Blockages are often caused by fats, oils, grease, nappies, wet wipes and sanitary products within the system. These items are non-flushable and should not be disposed of into wastewater systems.

Figure 1: Number of internal flooding incidents per annum and causes

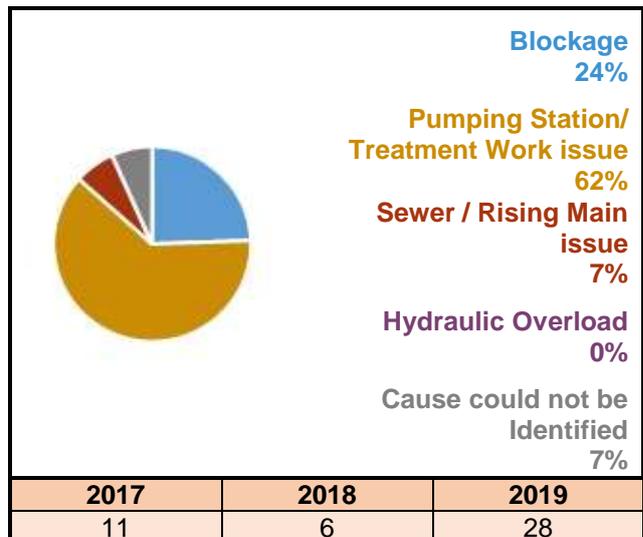


Planning Objective 2: Pollution Risk

The number of pollution incidents reported during the three years considered by the risk assessment are shown in Figure 2. The length of sewer in this wastewater system means there have been more than 49.01 incidents per 10,000km per year (a threshold set by Ofwat) so the risk is in the 'very significant' band.

The primary driver for pollution is 'Operational' due to asset operational issues. Asset operational issues at our pumping stations and treatments works are the main cause of incidents, contributing to 62% of all incidents recorded in this wastewater system.

Figure 2: Number of pollution incidents per annum and causes



Planning Objective 3: Sewer Collapse Risk

The number of sewer collapses reported during the three years considered by the risk assessment are shown in Table 2. The length of sewer in this wastewater system means there have been less than 5.72 incidents per 1,000km per year (a threshold set by Ofwat) so the risk is in the 'not significant' band.

Table 2: Sewer collapses and rising main bursts

| | | |
|--------------------|---------|----|
| Sewer Collapse | 2017/18 | 4 |
| | 2018/19 | 12 |
| | 2019/20 | 5 |
| Rising Main Bursts | 2017/18 | 5 |
| | 2018/19 | 6 |
| | 2019/20 | 5 |

Planning Objective 4: Sewer Flooding in a 1 in 50 Year Storm

The risk of flooding in a 1 in 50 year storm is moderately significant in 2020 and 2050. This is because our computer model of the sewer network indicate for 2020 that approximately 7600 - 7700 properties within this wastewater system are in areas that could flood by water escaping from sewers. This model prediction increases the number of properties in areas at risk from flooding to approximately 12200 - 12300 by 2050.

Our wastewater networks are generally designed with capacity for up to a 1 in 30 year storm, hence flooding is expected to occur during more severe storms such as a 1 in 50 year event. Flooding will occur due to insufficient capacity of the drainage system either on the surface before it enters the drainage system, and/or from manholes, in people's homes or at a low point elsewhere in the system.

Planning Objective 5: Storm Overflow Performance

The storm overflow performance risk has been assessed as very significant for both 2020 and 2050. Table 3 shows the overflows that discharge above the low threshold set for storm overflow discharges to Shellfish Water, Bathing Water and inland rivers.

The primary driver for the Storm Overflow Performance is 'Hydraulic.'

Table 3: Overflows exceeding discharge frequency threshold per annum

| | Number of overflows | | Threshold for number of discharges per annum | | |
|------------------|---------------------|--------|--|---------------|------------|
| | 2020 | 2050 | Low | Medium | High |
| Shellfish Waters | 9 High | 9 High | Less than 8 | Between 8-10 | 10 or more |
| Bathing Waters | 1 Medium | 1 High | Less than 3 | Between 3-10 | 10 or more |
| Freshwater | 3 High | 3 High | Less than 20 | Between 20-40 | 40 or more |

Planning Objective 6: Wastewater Treatment Works Water Quality Compliance

The risk of non-compliance with our wastewater quality permit has been assessed as very significant for both 2020 and 2050. This is because the compliance status of the wastewater treatment works in 2018 and 2020 was Sub Critical and Fail respectively. It was also assessed to not have adequate capacity to cope with future growth in the wastewater system. We have since invested in our treatment works to improve the resilience of the power supply that caused the compliance issue in 2020.

Planning Objective 7: Flooding due to Hydraulic Overload

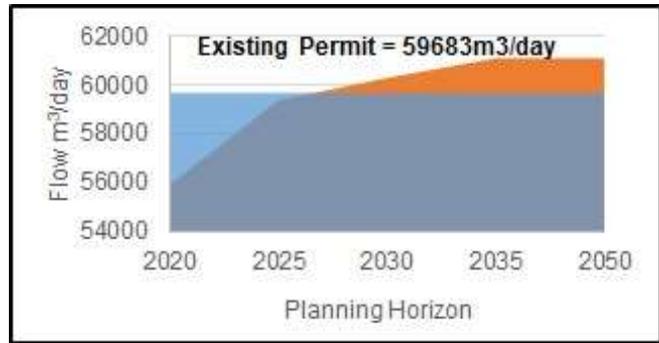
Our initial assessment is that flooding from hydraulic overload is not significant in this wastewater system for both 2020 and 2050. We will use a hydraulic model for the wastewater system to investigate the performance of the wastewater system to determine the risk of hydraulic overload across various storm events, and update this risk assessment accordingly for the next cycle of DWMPs.

Planning Objective 8: Wastewater Treatment Works Dry Weather Flow Compliance

The risk of wastewater treatment works Dry Weather Flow (DWF) compliance is moderately significant for 2020 but is predicted to increase to very significant by 2050. This is because the average annual dry weather flow for 2017, 2018 and 2019 has been between 80% and 100% of the current permit, shown in Figure 3 and might exceed the current permit by 2050.

The primary driver is 'Quality' due to the permit and capacity at the treatment work.

Figure 3: Recorded and predicted dry weather flow with existing permit



Planning Objective 9: Good Ecological Status / Good Ecological Potential

Table 4 shows the waterbodies connected to this wastewater system are not achieving Good Ecological Status or Potential (GES/GEP). The Environment Agency has attributed the 'reasons for not achieving good status' to water company operations. Our risk assessment has been assessed based on the worst assigned status (Moderate) and is moderately significant. This is because we are might not be complying with our permit from the Environment Agency, or the permits need to be tightened to reduce the risk.

Table 4: Waterbodies not achieving GES/GEP

| Waterbody | Classification | EA-Status | Activity |
|--------------------|------------------------------|-----------|-------------------------------|
| Portsmouth Harbour | Dissolved Inorganic Nitrogen | Moderate | Sewage discharge (continuous) |
| Southampton Water | Dissolved Inorganic Nitrogen | Moderate | Sewage discharge (continuous) |

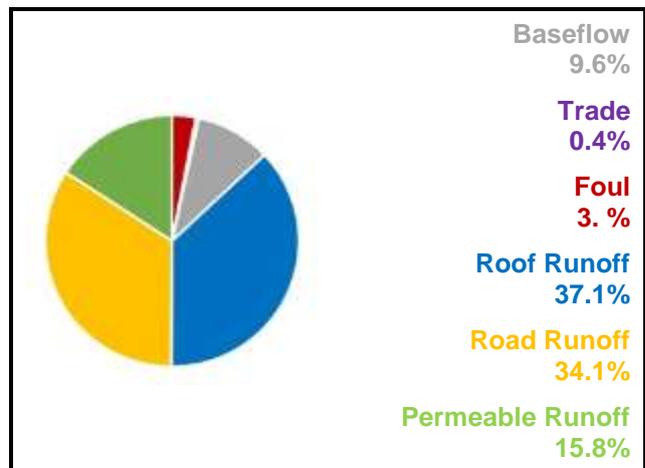
The primary driver is 'Quality'.

Planning Objective 10: Surface Water Management

Our initial high level assessment indicated that there is moderately significant interaction between surface water flooding and flooding from sewers in this wastewater system. The cause of this localised flooding is the capacity of the drainage network in these areas to convey both wastewater and surface water run-off.

Figure 4 illustrates the sources of water flowing in the wastewater system during a 1 in 20 year storm. It shows that surface water runoff from roofs, road and permeable surfaces constitutes more than 87% of the flow in the sewers. The total contribution of foul water from homes is 3% with business contributing 0.4%. The baseflow is infiltration from water in the ground and makes up 9.6% of the flow in the system.

Figure 4: Sources of water flowing in sewers during a 1 in 20 year storm



Planning Objective 11: Nutrient Neutrality

The risk to internationally designated habitat sites from this wastewater system is very significant in 2020 and 2050. This is because Natural England have advised that there is a risk to condition for the habitat sites that are hydraulically linked to our wastewater system, as shown in Table 5.

Table 5: Habitat Sites hydraulically linked to wastewater system

| Habitat Sites | |
|-------------------------|---|
| Portsmouth Harbour | Phosphate permit review required Overflow Spills |
| Solent and Dorset Coast | Phosphate permit review required Overflow Spills |

Planning Objective 12: Groundwater Pollution

The risk of Groundwater Pollution is not significant. This is because the wastewater network in this wastewater system does not overlap with any groundwater Source Protection Zones (SPZ) used for water supply.

Planning Objective 13: Bathing Waters

The designated bathing waters that could be affected by discharges from this wastewater system are shown in Table 6, along with the current classification from the Environment Agency.

Table 6: Bathing Water annual results

| Bathing Waters | Annual Results | | |
|----------------|----------------|-----------|-----------|
| | 2017 | 2018 | 2019 |
| Hillhead | Poor | Excellent | Excellent |
| Lee-on-Solent | Excellent | Excellent | Excellent |
| Highcliffe | Excellent | Excellent | Excellent |
| Stokes Bay | Excellent | Excellent | Excellent |

The risks from this wastewater system on Hillhead bathing waters has led to an assessment of moderately significant.

Planning Objective 14: Shellfish Waters

The discharges from this wastewater system might affect the designated shellfish waters shown in Table 7. The risk of not achieving the faecal standards for shellfish in these designated waters from this wastewater system is very significant. This is because the CEFAS classification for the shellfish waters is in class C, prohibited or seasonal class B or C.

Table 7: Shellfish Waters linked to wastewater system

| Shellfish Waters |
|---------------------------------|
| Southampton Water Sw |
| Approaches To Southampton Water |
| Central Solent |
| Portsmouth Harbour Sw |
| Spithead & Stokes Bay |

Generic Options Assessment for: Peel Common (PEEL)



| Planning Objectives | | 2020 | Driver | 2050 | Type of Measures | Generic Option Categories | Icon | Take Forward? | Reasons | Examples of Generic Options |
|---------------------|--|------|-------------|------|--|--|------|---------------|--|--|
| PO1 | Internal Flooding | 1 | Customer | - | Source (Demand) Measures (to reduce likelihood) | Control / Reduce surface water run-off | | Y | - | Natural Flood Management; rural land management and catchment management; SuDS including blue and green infrastructure; storm management |
| PO2 | Pollution Risk | 2 | Operational | - | | Reduce groundwater levels | | N | Reducing groundwater levels would reduce the risks from infiltration into the network. However, in practice, reducing groundwater levels will be detrimental to the environment, ground conditions and is prohibitively too costly to implement. For these reasons, this generic option has been discounted. | Reduce leakage from water supply pipes; pump away schemes to locally lower groundwater near sewer network |
| PO3 | Sewer Collapse | 0 | - | - | | Improve quality of wastewater | | Y | - | Domestic and business customer education; incentives and behaviour change (reduce Fats, Oils & Grease, wet wipes etc.); monitoring trade waste at source; on-site black water and/or greywater pre-treatment |
| PO4 | Risk of Sewer Flooding in 1 in 50 yr | 1 | Hydraulic | 1 | | Reduce the quantity / demand | | Y | - | Water efficient appliances; water efficient measures; blackwater and/or greywater re-use; treatment at source |
| PO5 | Storm Overflow Performance | 2 | Hydraulic | 2 | Pathway (Supply) Measures (to reduce likelihood) | Network Improvements | | Y | - | Asset optimisation; additional network capacity; storage; separate flows; structural repairs; re-line sewer pipe and manholes; smart networks. |
| PO6 | Risk of WTW Compliance Failure | 2 | Quality | 2 | | Improve Treatment Quality | | Y | - | Increase treatment capacity; rationalisation of treatment works (centralisation / de-centralisation); install tertiary plant; UV plant or disinfection facilities; innovation; improve Technical Achievable Limits; new WTWs |
| PO7 | Annualised Flood Risk/Hydraulic Overload | 0 | - | 0 | | Wastewater Transfer to treatment elsewhere | | Y | - | Transfer flow to other network or treatment sites; transport sewage by tanker to other sites |
| PO8 | DWF Compliance | 1 | Quality | 2 | Receptor Measures (to reduce consequences) | Mitigate impacts on Air Quality | | N/A | Not included in first round of DWMPs | Carbon offsetting; noise suppression /filtering; odour control and treatments |
| PO9 | Achieve Good Ecological Status | 1 | Quality | - | | Improve Land and Soils | | N/A | Not included in first round of DWMPs | Sludge soil enhancement |
| PO10 | Improve Surface Water Management | 1 | Hydraulic | - | | Mitigate impacts on receiving waters | | Y | - | River enhancement, aeration |
| PO11 | Secure Nutrient Neutrality | 2 | Unknown | 2 | | Reduce impact on properties | | Y | - | Property flood resilience; non-return valves; flood guards / doors; air brick covers |
| PO12 | Reduce Groundwater Pollution | 0 | - | - | Other | Study / Investigation | | Y | - | Additional data required; hydraulic model development; WQ monitoring and modelling |
| PO13 | Improve Bathing Water Quality | 1 | Unknown | - | | | | | | |
| PO14 | Improve Shellfish Water Quality | 2 | Unknown | - | | | | | | |

Peel Common Wastewater System - Outline Options Appraisal

| Generic Option | Location of Risk | Planning Objective and Description of Risk | Option Reference | Description | Further Description | Unconstrained Option? | Constrained Option? | Feasible Option? | Net Benefits | Estimated Cost | Preferred Option | Best value / Least cost or Reasons for Rejection |
|---|--|--|------------------|--|---|-----------------------|---------------------|------------------|------------------|----------------|------------------|--|
| Control/ Reduce surface water entering the sewers | Fareham | PO1, PO4 & PO7 - Flooding | PEEL.SC01.1 | Surface water separation | Surface water separation. | Yes | No | | | | | Environmental - Strategic Environmental Assessment |
| Control/ Reduce surface water entering the sewers | Gosport | PO1, PO4 & PO7 - Flooding | PEEL.SC01.2 | Surface water separation | Surface water separation. | Yes | No | | | | | Environmental - Strategic Environmental Assessment |
| Control/ Reduce surface water entering the sewers | Catchment Wide | PO1, PO4 & PO7 - Flooding PO8 - DWF | PEEL.SC01.3 | Relocate Surface water discharge | Surface water to discharge direct to watercourse. | Yes | No | | | | | Environmental - Strategic Environmental Assessment |
| Control/ Reduce surface water entering the sewers | Catchment Wide | PO1, PO4 & PO7 - Flooding | PEEL.SC01.4 | SUDs | SUDs schemes on new developments and connect in existing surface water systems. | Yes | No | | | | | Environmental - Strategic Environmental Assessment |
| Control / Reduce groundwater infiltration | | | | | | | | | | | | |
| Improve quality of wastewater entering sewers (inc reducing FOG, RAG, pre-treatment, trade waste) | Catchment Wide | PO1 - Internal Sewer Flooding | PEEL.SC03.1 | Domestic Education Plan | Customer education to reduce sewer blockages / FOG campaign. | Yes | No | | | | | Performance and Sustainability |
| Improve quality of wastewater entering sewers (inc reducing FOG, RAG, pre-treatment, trade waste) | Catchment Wide | PO8 - Dry Weather Flow | PEEL.SC03.2 | Water Efficient Appliances | Water Efficient Appliances. | Yes | No | | | | | Environmental - Strategic Environmental Assessment |
| Improve quality of wastewater entering sewers (inc reducing FOG, RAG, pre-treatment, trade waste) | Catchment Wide | PO8 - Dry Weather Flow | PEEL.SC03.3 | Water Efficient Measures | Water Efficient Measures. | Yes | No | | | | | Environmental - Strategic Environmental Assessment |
| Improve quality of wastewater entering sewers (inc reducing FOG, RAG, pre-treatment, trade waste) | Catchment Wide | PO8 - Dry Weather Flow | PEEL.SC03.4 | Blackwater Reuse | Blackwater Reuse. | No | | | | | | Technically feasible and Do customer support it |
| Improve quality of wastewater entering sewers (inc reducing FOG, RAG, pre-treatment, trade waste) | Catchment Wide | PO8 - Dry Weather Flow | PEEL.SC03.5 | Grey water Reuse | Grey water Reuse. | Yes | No | | | | | Performance and Sustainability |
| Improve quality of wastewater entering sewers (inc reducing FOG, RAG, pre-treatment, trade waste) | Catchment Wide | PO1- Internal Flooding | PEEL.SC03.6 | Customer Education Programme | Customer education programme to reduce the risk. | Yes | Yes | Yes | Minor Positive + | £115K | Yes | Best Value |
| Improve quality of wastewater entering sewers (inc reducing FOG, RAG, pre-treatment, trade waste) | Catchment Wide | PO2- Pollution Risk | PEEL.SC03.7 | Customer Education Programme | Customer education programme. | Yes | Yes | Yes | Minor Positive + | £115K | Yes | Best Value |
| Control / Reduce the quantity / flow of wastewater entering sewer system | Catchment Wide | DWF | PEEL.SC04.1 | Water Efficient Appliance / Measures | Southern Water aims to reduce water consumption to 100 l/h/d by 2040. | Yes | No | | | | | Environmental - Strategic Environmental Assessment |
| Network Improvements (eg increase capacity, storage, conveyance) | Fareham | PO5 - Storm Overflows | PEEL.PW01.1 | Additional Storage Capacity | Additional Storage Capacity. | Yes | No | | | | | Operational |
| Network Improvements (eg increase capacity, storage, conveyance) | Gosport | PO5 - Storm Overflows | PEEL.PW01.2 | Additional Storage Capacity | Additional Storage Capacity. | Yes | No | | | | | Operational |
| Network Improvements (eg increase capacity, storage, conveyance) | Fareham | PO5 - Storm Overflows | PEEL.PW01.3 | Network Improvements | Smart Networks. | Yes | No | | | | | Operational |
| Network Improvements (eg increase capacity, storage, conveyance) | Gosport | PO5 - Storm Overflows | PEEL.PW01.4 | Network Improvements | Smart Networks. | Yes | No | | | | | Operational |
| Network Improvements (eg increase capacity, storage, conveyance) | Hedge End | PO5 - Storm Overflows PO1, PO4 & PO7 Flooding | PEEL.PW01.5 | Smart Networks | Improve network in NW of catchment at PS to hold back flow during storm events. | Yes | No | | | | | Operational |
| Network Improvements (eg increase capacity, storage, conveyance) | Fareham | PO5 - Storm Overflows | PEEL.PW01.6 | Additional Conveyance Capacity | Additional Conveyance Capacity Capacity. | Yes | No | | | | | Environmental - Strategic Environmental Assessment |
| Network Improvements (eg increase capacity, storage, conveyance) | Gosport | PO5 - Storm Overflows | PEEL.PW01.7 | Additional Conveyance Capacity | Additional Conveyance Capacity Capacity. | Yes | No | | | | | Environmental - Strategic Environmental Assessment |
| Network Improvements (eg increase capacity, storage, conveyance) | Wickham Rd/ Serpentine Road, North Fareham | PO1, PO4 & PO7 - Flooding | PEEL.PW01.8 | Upsizing and Online Storage | DAP Option. | Yes | No | | | | | Feasibility and Risk |
| Network Improvements (eg increase capacity, storage, conveyance) | Foxbury Lane, Bridgemary, Gosport | PO1, PO4 & PO7 - Flooding | PEEL.PW01.9 | Online Tank and new storm outfall | DAP Option. | Yes | No | | | | | Feasibility and Risk |
| Network Improvements (eg increase capacity, storage, conveyance) | No.104, Highlands Road, Fareham | PO4, PO7 & PO10 - Flooding | PEEL.PW01.10 | Online Storage Tank | DAP Option. | Yes | No | | | | | Feasibility and Risk |
| Network Improvements (eg increase capacity, storage, conveyance) | Catchment Wide | PO4, PO5 and PO7- Growth | PEEL.PW01.11 | Upsizing, Online Storage and PS capacity | DAP Option. | Yes | No | | | | | Feasibility and Risk |
| Network Improvements (eg increase capacity, storage, conveyance) | Heathen Street, Nordik Gardens | PO1- Internal Flooding | PEEL.PW01.12 | Additional Storage | Additional Storage. | Yes | No | | | | | Feasibility and Risk |

Peel Common Wastewater System - Outline Options Appraisal

| Generic Option | Location of Risk | Planning Objective and Description of Risk | Option Reference | Description | Further Description | Unconstrained Option? | Constrained Option? | Feasible Option? | Net Benefits | Estimated Cost | Preferred Option | Best value / Least cost or Reasons for Rejection |
|--|---|--|------------------|---|--|-----------------------|---------------------|------------------|--------------------|----------------|------------------|--|
| Network Improvements (eg increase capacity, storage, conveyance) | Catchment Wide | PO2- Pollution Risk | PEEL.PW01.13 | Maintenance Programme WPS | Improve resilience: Enhanced maintenance programme for pumping stations to eliminate the risk of a pollution incident due to an operational failure. | Yes | Yes | Yes | Minor Negative - | £3,725K | Yes | Least Cost |
| Network Improvements (eg increase capacity, storage, conveyance) | Catchment Wide | PO8 (2050)- Dry Weather Flow | PEEL.PW01.14 | Pipe Rehabilitation Programme | Relining/improving structural grades of sewers across the catchment. | Yes | No | | | | | Feasibility and Risk |
| Network Improvements (eg increase capacity, storage, conveyance) | Catchment Wide | PO2- Pollution Risk | PEEL.PW01.15 | Pipe Rehabilitation Programme | Pipe Rehabilitation Programme. | Yes | No | | | | | Feasibility and Risk |
| Network Improvements (eg increase capacity, storage, conveyance) | Catchment Wide | PO1- Internal Flooding | PEEL.PW01.16 | Jetting Programme | Jetting Programme. | Yes | Yes | Yes | Minor Negative - | £445K | Yes | Least Cost |
| Network Improvements (eg increase capacity, storage, conveyance) | Catchment Wide | PO2- Pollution Risk | PEEL.PW01.17 | Jetting Programme | Jetting Programme. | Yes | Yes | Yes | Minor Negative - | £125K | Yes | Least Cost |
| Network Improvements (eg increase capacity, storage, conveyance) | PEEL FC01 Serpentine Road | PO1, PO4 & PO7 - Flooding | PEEL.PW01.18 | Upsizing and online tank (PEEL068 Option 1) | DAP Option. | Yes | No | | | | | Feasibility and Risk |
| Network Improvements (eg increase capacity, storage, conveyance) | PEEL FC02 Foxbury Lane | PO1, PO4 & PO7 - Flooding | PEEL.PW01.19 | Online Tank and New Storm Outfall (PEEL073 Option 2) | DAP Option. | Yes | No | | | | | Feasibility and Risk |
| Network Improvements (eg increase capacity, storage, conveyance) | PEEL FC03 Special Needs Facility, No.104 Highlands Road | PO4, PO7 & PO10 - Flooding | PEEL.PW01.20 | Upsizing & Online Storage Tank (PEEL075 Option 2) | DAP Option. | Yes | No | | | | | Feasibility and Risk |
| Network Improvements (eg increase capacity, storage, conveyance) | PEEL FC04 Swanwick Shore Road, Swanwick | PO4, PO5 and PO7- Growth | PEEL.PW01.21 | Upsizing (PEELGR078 Option 2 Plan 1) | DAP Option. | Yes | Yes | Yes | Major Positive +++ | £2,416K | Yes | Best Value |
| Network Improvements (eg increase capacity, storage, conveyance) | PEEL FC05 Fareham | PO4, PO5 and PO7- Growth | PEEL.PW01.22 | Ring Sewer (PEELGR078 Option 2 Plan 2) | DAP Option. | Yes | Yes | Yes | Major Positive +++ | £2,416K | Yes | Best Value |
| Network Improvements (eg increase capacity, storage, conveyance) | PEEL FC06 Bridge Road, Bursledon | PO4, PO5 and PO7- Growth | PEEL.PW01.23 | New sewer and Offline tank (PEELGR078 Option 2 Plan 3) | DAP Option. | Yes | Yes | Yes | Major Positive +++ | £2,416K | Yes | Best Value |
| Network Improvements (eg increase capacity, storage, conveyance) | PEEL FC07 Ingleside, Netley | PO4, PO5 and PO7- Growth | PEEL.PW01.24 | Upsizing (PEELGR078 Option 2 Plan 4) | DAP Option. | Yes | Yes | Yes | Major Positive +++ | £2,416K | Yes | Best Value |
| Network Improvements (eg increase capacity, storage, conveyance) | PEEL FC08 Woolston WTW | PO4, PO5 and PO7- Growth | PEEL.PW01.25 | New gravity sewer to transfer flows (PEELGR078 Option 2 Plan 5) | DAP Option. | Yes | Yes | Yes | Major Positive +++ | £2,416K | Yes | Best Value |
| Network Improvements (eg increase capacity, storage, conveyance) | PEEL FC09 Hook Park | PO4, PO5 and PO7- Growth | PEEL.PW01.26 | Upsizing (PEELGR078 Option 2 Plan 6) | DAP Option. | Yes | Yes | Yes | Major Positive +++ | £2,416K | Yes | Best Value |
| Network Improvements (eg increase capacity, storage, conveyance) | PEEL FC10 Castle Trading Estate | PO4, PO5 and PO7- Growth | PEEL.PW01.27 | Upsizing (PEELGR078 Option 2 Plan 7) | DAP Option. | Yes | Yes | Yes | Major Positive +++ | £2,416K | Yes | Best Value |
| Network Improvements (eg increase capacity, storage, conveyance) | PEEL FC11 Hound Road, Netley Abbey | PO4, PO5 and PO7- Growth | PEEL.PW01.28 | Offline Tank (PEELGR078 Option 2 Plan 8) | DAP Option. | Yes | Yes | Yes | Major Positive +++ | £2,416K | Yes | Best Value |
| Network Improvements (eg increase capacity, storage, conveyance) | PEEL FC12 Hamble Development | PO4, PO5 and PO7- Growth | PEEL.PW01.29 | New Pumping Station (PEELGR078 Option 2 Plan 9) | DAP Option. | Yes | Yes | Yes | Major Positive +++ | £2,416K | Yes | Best Value |

Peel Common Wastewater System - Outline Options Appraisal

| Generic Option | Location of Risk | Planning Objective and Description of Risk | Option Reference | Description | Further Description | Unconstrained Option? | Constrained Option? | Feasible Option? | Net Benefits | Estimated Cost | Preferred Option | Best value / Least cost or Reasons for Rejection |
|--|--|--|------------------|--|---|-----------------------|---------------------|------------------|--------------------|----------------|------------------|--|
| Network Improvements (eg increase capacity, storage, conveyance) | PEEL FC13 Hungerford Bottom | PO4, PO5 and PO7- Growth | PEEL.PW01.30 | Sewer upsize and new Offline Storage Tank (PEELGR078 Option 2 Plan 10) | DAP Option. | Yes | Yes | Yes | Major Positive +++ | £2,416K | Yes | Best Value |
| Network Improvements (eg increase capacity, storage, conveyance) | PEEL FC14 Redlands Lane, Fareham | PO4, PO5 and PO7- Growth | PEEL.PW01.31 | Upsizing (PEELGR078 Option 2 Plan 11) | DAP Option. | Yes | Yes | Yes | Major Positive +++ | £2,416K | Yes | Best Value |
| Network Improvements (eg increase capacity, storage, conveyance) | PEEL FC15 Botley Park | PO4, PO5 and PO7- Growth | PEEL.PW01.32 | New sewer (PEELGR078 Option 2 Plan 12) | DAP Option. | Yes | Yes | Yes | Major Positive +++ | £2,416K | Yes | Best Value |
| Network Improvements (eg increase capacity, storage, conveyance) | PEEL FC16 Barwell Lane | PO4, PO5 and PO7- Growth | PEEL.PW01.33 | Upsizing (PEELGR078 Option 2 Plan 13) | DAP Option. | Yes | Yes | Yes | Major Positive +++ | £2,416K | Yes | Best Value |
| Network Improvements (eg increase capacity, storage, conveyance) | PEEL Shearwater Avenue | PO4, PO5 and PO7- Growth | PEEL.PW01.34 | Upsizing and storage (PEELGR078 Option 2 Plan 14) | DAP Option. | Yes | Yes | Yes | Major Positive +++ | £2,416K | Yes | Best Value |
| Network Improvements (eg increase capacity, storage, conveyance) | PEEL FC18 Botley Park Development | PO4, PO5 and PO7- Growth | PEEL.PW01.35 | Increase pump rate (PEELGR078 Option 2 Plan 15) | DAP Option. | Yes | Yes | Yes | Major Positive +++ | £2,416K | Yes | Best Value |
| Network Improvements (eg increase capacity, storage, conveyance) | PEEL FC19 Development upstream of Berry Lane WPS | PO4, PO5 and PO7- Growth | PEEL.PW01.36 | New Storage Chamber and Sewer (PEELGR078 Option 2 Plan 16) | DAP Option. | Yes | Yes | Yes | Major Positive +++ | £2,416K | Yes | Best Value |
| Network Improvements (eg increase capacity, storage, conveyance) | PEEL FC20 Upper Hamble Country Park | PO4, PO5 and PO7- Growth | PEEL.PW01.37 | Upsizing (PEELGR078 Option 2 Plan 17) | DAP Option. | Yes | Yes | Yes | Major Positive +++ | £2,416K | Yes | Best Value |
| Network Improvements (eg increase capacity, storage, conveyance) | PEEL FC21 Hillson Drive | PO4, PO5 and PO7- Growth | PEEL.PW01.38 | New sewer (PEELGR078 Option 2 Plan 18) | DAP Option. | Yes | Yes | Yes | Major Positive +++ | £2,416K | Yes | Best Value |
| Network Improvements (eg increase capacity, storage, conveyance) | PEEL FC22 Peel Common | PO4, PO5 and PO7- Growth | PEEL.PW01.39 | Additional storage manholes (PEELGR078 Option 2 Plan n/a) | DAP Option. | Yes | Yes | Yes | Major Positive +++ | £2,416K | Yes | Best Value |
| Network Improvements (eg increase capacity, storage, conveyance) | PEEL FC01 - PEEL COMMON WTW | PO5, PO13 and PO14 - Spill Assessments | PEEL.PW01.40 | Storage (FC01 - PEEL COMMON WTW) | The DAP model has a confidence score of 2 and was last verified in 2012 The key risk between DAP and DWMP models is the FEH rainfall file applied. | Yes | Yes | Yes | Major Positive +++ | £2,270K | Yes | Best Value |
| Network Improvements (eg increase capacity, storage, conveyance) | PEEL FC02 - HOOK PARK WPS | PO5, PO13 and PO14 - Spill Assessments | PEEL.PW01.41 | Storage (FC02 - HOOK PARK WPS) | The DAP model has a confidence score of 2 and was last verified in 2012 The key risk between DAP and DWMP models is the FEH rainfall file applied. | Yes | Yes | Yes | Major Positive +++ | £625K | Yes | Best Value |
| Network Improvements (eg increase capacity, storage, conveyance) | PEEL FC03 - ELMHURST ROAD FAREHAM CSO | PO5, PO13 and PO14 - Spill Assessments | PEEL.PW01.42 | Storage (FC03 - ELMHURST ROAD FAREHAM CSO) | The DAP model has a confidence score of 2 and was last verified in 2012 The key risk between DAP and DWMP models is the FEH rainfall file applied. | Yes | Yes | Yes | Major Positive +++ | £945K | Yes | Best Value |
| Network Improvements (eg increase capacity, storage, conveyance) | PEEL FC04 - QUAY STREET FAREHAM CSO | PO5, PO13 and PO14 - Spill Assessments | PEEL.PW01.43 | Storage (FC04 - QUAY STREET FAREHAM CSO) | The DAP model has a confidence score of 2 and was last verified in 2012 The key risk between DAP and DWMP models is the FEH rainfall file applied. | Yes | Yes | Yes | Major Positive +++ | £740K | Yes | Best Value |
| Network Improvements (eg increase capacity, storage, conveyance) | HEATHEN LANE DURLEY WPS | PO5, PO13 and PO14 - Spill Assessments | PEEL.PW01.47 | Storage | The DAP model has a confidence score of 2 and was last verified in 2012 The key risk between DAP and DWMP models is the FEH rainfall file applied. | Yes | Yes | Yes | Major Positive +++ | £1,000K | Yes | Best Value |
| Improve treatment (capacity and quality at existing works or develop new WTWs) | Hedge End | PO6 Water Quality | PEEL.PW02.1 | Construct new treatment works | Separation of the system by reinstating a WTW at Bursledon (location of previous WTW) creating new discharge into River Hamble . | Yes | No | | | | | Operational |
| Improve treatment (capacity and quality at existing works or develop new WTWs) | Hedge End | PO6 Water Quality | PEEL.PW02.2 | Construct new treatment works | Separation of the system by reinstating a WTW at Brook Lane Pumping Station. | Yes | No | | | | | Operational |
| Improve treatment (capacity and quality at existing works or develop new WTWs) | Treatment Works | PO6 & PO8 Water Quality & DWF | PEEL.PW02.3 | Increase Treatment Capacity | Optimisation or extension of site. | Yes | No | | | | | Operational |
| Improve treatment (capacity and quality at existing works or develop new WTWs) | Treatment Works | PO6 & PO8 Water Quality & DWF | PEEL.PW02.4 | Expand Existing Site | Expand Existing Site. | Yes | No | | | | | Operational |
| Improve treatment (capacity and quality at existing works or develop new WTWs) | Treatment Works | PO6 & PO8 Water Quality & DWF | PEEL.PW02.5 | Bio-resource Re-use | Bio-resource Re-use. | Yes | No | | | | | Operational |
| Improve treatment (capacity and quality at existing works or develop new WTWs) | Treatment Works | PO6 & PO8 Water Quality & DWF | PEEL.PW02.6 | Pre-treatment Within The Network | Pre-treatment Within The Network. | Yes | No | | | | | Operational |
| Improve treatment (capacity and quality at existing works or develop new WTWs) | Treatment Works | PO6 & PO8 Water Quality & DWF | PEEL.PW02.7 | Optimisation of treatment process | Optimisation of treatment process. | Yes | No | | | | | Operational |
| Improve treatment (capacity and quality at existing works or develop new WTWs) | PEEL COMMON WTW | PO2- Pollution Risk | PEEL.PW02.8 | Maintenance Programme WTW | Improve resilience: An efficient maintenance programme for the treatment works to eliminate the risk of a pollution incident due to an operational failure. | No | | | | | | Risk and uncertainty - future resilience |
| Improve treatment (capacity and quality at existing works or develop new WTWs) | PEEL COMMON WTW | PO6 (2050)- WTW compliance | PEEL.PW02.9 | Increase Capacity | Increase Capacity. | No | | | | | | Risk and uncertainty - future resilience |

Peel Common Wastewater System - Outline Options Appraisal

| Generic Option | Location of Risk | Planning Objective and Description of Risk | Option Reference | Description | Further Description | Unconstrained Option? | Constrained Option? | Feasible Option? | Net Benefits | Estimated Cost | Preferred Option | Best value / Least cost or Reasons for Rejection |
|--|--|--|------------------|--|---|-----------------------|---------------------|------------------|--------------------|----------------|------------------|--|
| Improve treatment (capacity and quality at existing works or develop new WTWs) | PEEL COMMON WTW | PO8 (2050)- Dry Weather Flow | PEEL.PW02.10 | Permit Review | Diameter of settlement tanks required- Primary at 32m diameter Secondary at 45. | Yes | Yes | Yes | Minor Positive + | £4,450K | Yes | Best Value |
| Wastewater Transfer | PEEL COMMON WTW | PO8 (2050)- Dry Weather Flow | PEEL.PW03.1 | Construct New WPS & Rising Main | No other WTWs are within a 20km radius of PEEL COMMON WTW with spare capacity to take DWF. | No | | | | | | |
| Mitigate impacts on Air Quality (e.g. Carbon neutrality, noise, odour) | | | | | | | | | | | | Not included in the first round of DWMPs |
| Improve Land and Soils | | | | | | | | | | | | Not included in the first round of DWMPs |
| Mitigate impacts on Water Quality | Catchment Wide | PO11 - Nutrient Neutrality | PEEL.RC03.1 | Effluent Reuse | Effluent Reuse. | No | | | | | | Cost Effective |
| Reduce consequences Properties (e.g. Property Flood Resilience) | Hedge End Durley Mill | PO1- Internal Flooding | PEEL.RC04.1 | Property Flood Mitigation / Resistance | Short-term property level protection ahead of flood alleviation scheme - Non-return valves and flood mitigation doors / gates. | No | | | | | | Risk and uncertainty - future resilience |
| Study/ investigation to gather more data | Catchment Wide | Odour / H2S / sewer condition | PEEL.OT01.1 | Odour investigation | Investigation of the odour and H2S issues in the catchment to identify the scale of the risks, future impacts and longer term solutions. | Yes | No | | | | | Operational |
| Study/ investigation to gather more data | Hotspot 1 - Fareham Hotspot 2 - Stubbington | PO1- Internal Flooding | PEEL.OT01.2 | Investigation into causes | Further investigation to identify the cause of the internal flooding incident. | No | | | | | | Cost Effective |
| Study/ investigation to gather more data | Catchment Wide | PO2- Pollution Risk | PEEL.OT01.3 | Investigation into causes | Further investigation to identify the cause of the pollution incident. | Yes | Yes | Yes | Minor Positive + | - | Yes | Best Value |
| Study/ investigation to gather more data | Catchment Wide | PO8 (2050)- Dry Weather Flow | PEEL.OT01.4 | Infiltration Reduction Plan | Relining/improving structural grades of sewers across the catchment. | No | | | | | | Risk and uncertainty - future resilience |
| Study/ investigation to gather more data | PORTSMOUTH HARBOUR SOUTHAMPTON WATER | PO9- GE Status / Potential Sewage discharge (continuous) | PEEL.OT01.5 | Study and Investigation | Dissolved Inorganic Nitrogen - Catchment was banded 1 in because; PORTSMOUTH HARBOUR-Dissolved Inorganic Nitrogen (Moderate Sewage discharge (continuous)) SOUTHAMPTON WATER-Dissolved Inorganic Nitrogen (Moderate Sewage discharge (continuous)). | Yes | Yes | Yes | Minor Positive + | £75K | No | Best Value |
| Study/ investigation to gather more data | Portsmouth Harbour Solent and Dorset Coast | PO11 - Nutrient Neutrality | PEEL.OT01.6 | Nutrient Budget | Catchment is Hydraulically linked to; Portsmouth Harbour (Threat/Remedy Identified or Anticipated) Solent and Dorset Coast (Threat/Remedy Identified or Anticipated). | Yes | Yes | Yes | Minor Positive + | £75K | Yes | Best Value |
| Study/ investigation to gather more data | Catchment Wide | PO4- 1 in 50 year PO5- Storm Overflow PO10- Surface Water Management | PEEL.OT01.7 | Improve Hydraulic Model | Improve Hydraulic Model. | Yes | Yes | Yes | Minor Positive + | £450K | Yes | Best Value |
| Study/ investigation to gather more data | PEEL FC01 - THE GILLIES FAREHAM CSO | PO5 and PO14 - Spill Assessments | PEEL.OT01.8 | Storage (FC01 - THE GILLIES FAREHAM CSO) | The DAP model has a confidence score of 2 and was last verified in 2012 The key risk between DAP and DWMP models is the FEH rainfall file applied. | Yes | Yes | Yes | Major Positive +++ | £1,000K | Yes | Best Value |
| Study/ investigation to gather more data | PEEL FC02 - HAMBLE LANE BURSLEDON WPS | PO5 and PO14 - Spill Assessments | PEEL.OT01.9 | Storage (FC02 - HAMBLE LANE BURSLEDON WPS) | The DAP model has a confidence score of 2 and was last verified in 2012 The key risk between DAP and DWMP models is the FEH rainfall file applied. | Yes | Yes | Yes | Major Positive +++ | £1,000K | Yes | Best Value |
| Study/ investigation to gather more data | PEEL FC03 - ARUNDEL DRIVE FAREHAM CSO | PO5 and PO14 - Spill Assessments | PEEL.OT01.10 | Storage (FC03 - ARUNDEL DRIVE FAREHAM CSO) | The DAP model has a confidence score of 2 and was last verified in 2012 The key risk between DAP and DWMP models is the FEH rainfall file applied. | Yes | Yes | Yes | Major Positive +++ | £1,000K | Yes | Best Value |
| Study/ investigation to gather more data | PEEL FC04 - SALTERNS LANE BURSLEDON WPS | PO5 and PO14 - Spill Assessments | PEEL.OT01.11 | Storage (FC04 - SALTERNS LANE BURSLEDON WPS) | The DAP model has a confidence score of 2 and was last verified in 2012 The key risk between DAP and DWMP models is the FEH rainfall file applied. | Yes | Yes | Yes | Major Positive +++ | £1,000K | Yes | Best Value |
| Study/ investigation to gather more data | PEEL FC05 - FAREHAM ROAD GOSPORT OUTSIDE 359 CSO | PO5 and PO14 - Spill Assessments | PEEL.OT01.12 | Storage (FC05 - FAREHAM ROAD GOSPORT OUTSIDE 359 CSO) | The DAP model has a confidence score of 2 and was last verified in 2012 The key risk between DAP and DWMP models is the FEH rainfall file applied. | Yes | Yes | Yes | Major Positive +++ | £1,000K | Yes | Best Value |
| Study/ investigation to gather more data | Catchment Wide | PO4 & PO7 - Flooding | PEEL.OT01.13 | Study and Investigation | Study / Investigation into the causes of flooding and suitable solutions to manage including surface water seperation. | Yes | Yes | Yes | Minor Positive + | £230K | Yes | Best Value |

Drainage and Wastewater Management Plan (DWMP)

DWMP Investment Needs

1. The options listed in the DWMP Investment Needs below are the preferred options in our DWMP. They will need further refinement as we implement the DWMP to confirm the exact location and scope of action needed, and the cost.
2. The costs are indicative costs for planning purposes only. The basis for the cost estimates, including assumptions and uncertainties, are explained in our DWMP Investment Plans.
3. The table of Investment Need provides an indicative cost so we know what level of funding is needed to reduce the risks. It is not a commitment to fund or deliver any option.
4. The Indicative Timescale is when the investment is needed. Some options may take several investment periods to achieve the desired outcomes.
5. Potential Partners have been identified in the table of Investment Needs. This is to indicate where there may be opportunities for us to work with these partners when developing and delivering these options. It is not a commitment by any of the partners to work with us.
6. These options will inform our future business plans as part of the Ofwat periodic review process to secure the finance to implement these options.
7. The options listed are prioritised by the method stated in the [Programme Appraisal Technical Summary](#).

Date : May 2023

Version : 1.0

| Reference | River Basin (L2) | Wastewater System (L3) | Location | Option | Indicative Cost | Indicative Timescales | Potential Partners | Applicable Planning Objectives |
|-----------------------|------------------|------------------------|--------------------------------------|--|-----------------|-----------------------|---|--------------------------------|
| East Hampshire | | | | | | | | |
| Peel Common | | | | | | | | |
| PEEL.SC03.6 | East Hampshire | Peel Common | System Wide | Customer Education Programme: Targeted campaign to reduce the amount of FOG (fats, oils and grease) and unflushables discharged into the sewer network | £115K | AMP8 onwards | - | PO1 |
| PEEL.SC03.7 | East Hampshire | Peel Common | System Wide | Customer Education Programme: Targeted campaign to reduce the amount of FOG (fats, oils and grease) and unflushables discharged into the sewer network | £115K | AMP8 onwards | - | PO2 |
| PEEL.PW01.9 | East Hampshire | Peel Common | Foxbury Lane, Bridgemary, Gosport | Growth scheme from our Drainage Area Plan (DAP): Surface water separation to manage flooding in the area including a new surface water storm outfall. | £TBC | AMP9 | Local Lead Flood Authority, Gosport Borough Council | PO1 PO4 PO7 |
| PEEL.PW01.13 | East Hampshire | Peel Common | System Wide | Improve the operational resilience of wastewater pumping station (WPS) to reduce pollution incidents | £3,725K | AMP8 onwards | - | PO2 |
| PEEL.PW01.16 | East Hampshire | Peel Common | System Wide | Enhanced Sewer Maintenance: Increase targeted sewer jetting to reduce the number of blockages in the network | £445K | AMP8 onwards | - | PO1 |
| PEEL.PW01.17 | East Hampshire | Peel Common | System Wide | Enhanced Sewer Maintenance: Increase targeted sewer jetting to reduce the number of blockages in the network | £125K | AMP8 onwards | - | PO2 |
| PEEL.PW02.10 | East Hampshire | Peel Common | Treatment Works | Increase capacity to allow for planned new development | £20,000K | AMP8 | - | PO8 |
| PEEL.OT01.3 | East Hampshire | Peel Common | System Wide | Study and Investigation: Investigation to identify the root cause of pollution and measures to reduce the number of incidents | £TBC | AMP8 | - | PO2 |
| PEEL.OT01.5 | East Hampshire | Peel Common | PORTSMOUTH HARBOUR SOUTHAMPTON WATER | Study and Investigation to understand the impact of wastewater discharges on the local environment and identify measures required to achieve good ecological status in the receiving waterbody | £75K | AMP8 | NE, Environment Agency | PO9 |
| PEEL.OT01.7 | East Hampshire | Peel Common | System Wide | Improve the Hydraulic Model: Surveys and reverification of model to improve confidence and accuracy | £450K | AMP8 | - | PO4 PO5 PO10 |
| PEEL.OT01.13 | East Hampshire | Peel Common | System Wide | Study and Investigation: Investigation to identify the root cause of internal flooding and measures to reduce the number of incidents | £230K | AMP8 | - | PO4 PO7 |
| PEEL.WINEP01.1 | East Hampshire | Peel Common | HEATHEN LANE DURLEY CEO | Reduce the number of storm discharges from HEATHEN LANE DURLEY CEO by creating below-ground storage | £2,075K | AMP8 | - | PO5 |
| PEEL.WINEP01.2 | East Hampshire | Peel Common | PEEL COMMON SSO | Reduce the number of storm discharges from PEEL COMMON SSO by creating below-ground storage | £5,095K | AMP8 | - | PO5 PO14 |
| PEEL.WINEP01.3 | East Hampshire | Peel Common | DURLEY LANE DURLEY CEO | Reduce the number of storm discharges from DURLEY LANE DURLEY CEO by a combination of SuDS and storage options | £6,270K | AMP10 | - | PO4 PO5 |

| Reference | River Basin (L2) | Wastewater System (L3) | Location | Option | Indicative Cost | Indicative Timescales | Potential Partners | Applicable Planning Objectives |
|-----------------|------------------|------------------------|---------------------------------|---|-----------------|-----------------------|--------------------|--------------------------------|
| PEEL.WINEP01.4 | East Hampshire | Peel Common | HOOK PARK NO.1 CEO | Reduce the number of storm discharges from HOOK PARK NO.1 CEO by a combination of SuDS and storage options | £5,735K | AMP8 | - | PO4 PO5 PO14 |
| PEEL.WINEP01.5 | East Hampshire | Peel Common | ELMHURST ROAD FAREHAM CSO | Reduce the number of storm discharges from ELMHURST ROAD FAREHAM CSO by a combination of SuDS and storage options | £5,490K | AMP8 | - | PO4 PO5 PO14 |
| PEEL.WINEP01.6 | East Hampshire | Peel Common | HOOK PARK NO.2 CEO | Reduce the number of storm discharges from HOOK PARK NO.2 CEO by creating below-ground storage | £955K | AMP8 | - | PO5 PO14 |
| PEEL.WINEP01.7 | East Hampshire | Peel Common | ENSIGN PARK HAMBLE CEO | Reduce the number of storm discharges from ENSIGN PARK HAMBLE CEO by a combination of SuDS and storage options | £5,000K | AMP8 | - | PO4 PO5 PO14 |
| PEEL.WINEP01.8 | East Hampshire | Peel Common | GROVE ROAD GOSPORT CEO | Reduce the number of storm discharges from GROVE ROAD GOSPORT CEO by a combination of SuDS and storage options | £4,710K | AMP8 | - | PO4 PO5 PO14 |
| PEEL.WINEP01.9 | East Hampshire | Peel Common | QUAY STREET FAREHAM CSO | Reduce the number of storm discharges from QUAY STREET FAREHAM CSO by a combination of SuDS and storage options | £3,250K | AMP8 | - | PO4 PO5 PO14 |
| PEEL.WINEP01.10 | East Hampshire | Peel Common | HAMBLEWOOD BOTLEY CSO | Reduce the number of storm discharges from HAMBLEWOOD BOTLEY CSO by a combination of SuDS and storage options | £2,380K | AMP12 | - | PO4 PO5 |
| PEEL.WINEP01.11 | East Hampshire | Peel Common | POUND ROAD BURSLEDON CEO | New or improved screen to reduce aesthetics impacts from storm discharges at POUND ROAD BURSLEDON CEO | £130K | AMP12 | - | PO5 |
| PEEL.WINEP01.12 | East Hampshire | Peel Common | NEWTOWN ROAD NEWTOWN CEO | New or improved screen to reduce aesthetics impacts from storm discharges at NEWTOWN ROAD NEWTOWN CEO | £130K | AMP11 | - | PO5 |
| PEEL.WINEP01.13 | East Hampshire | Peel Common | BROADOAK BOTLEY CSO | Reduce the number of storm discharges from BROADOAK BOTLEY CSO by a combination of SuDS and storage options | £3,155K | AMP12 | - | PO4 PO5 |
| PEEL.WINEP01.14 | East Hampshire | Peel Common | CAMS HILL FAREHAM CSO | Reduce the number of storm discharges from CAMS HILL FAREHAM CSO by creating below-ground storage | £1,950K | AMP8 | - | PO5 PO14 |
| PEEL.WINEP01.15 | East Hampshire | Peel Common | CHURCH LANE BOTLEY CEO | New or improved screen to reduce aesthetics impacts from storm discharges at CHURCH LANE BOTLEY CEO | £130K | AMP12 | - | PO5 |
| PEEL.WINEP01.16 | East Hampshire | Peel Common | HIGH STREET FAREHAM CSO | Reduce the number of storm discharges from HIGH STREET FAREHAM CSO by a combination of SuDS and storage options | £2,070K | AMP8 | - | PO4 PO5 PO14 |
| PEEL.WINEP01.17 | East Hampshire | Peel Common | WICOR MILL LANE PORTCHESTER CEO | Reduce the number of storm discharges from WICOR MILL LANE PORTCHESTER CEO by a combination of SuDS and storage options | £1,320K | AMP8 | - | PO4 PO5 PO14 |
| PEEL.WINEP01.18 | East Hampshire | Peel Common | FOSTER ROAD GOSPORT CEO | Reduce the number of storm discharges from FOSTER ROAD GOSPORT CEO by a combination of SuDS and storage options | £2,165K | AMP11 | - | PO4 PO5 |

| Reference | River Basin (L2) | Wastewater System (L3) | Location | Option | Indicative Cost | Indicative Timescales | Potential Partners | Applicable Planning Objectives |
|-----------------|------------------|------------------------|--------------------------------------|---|-----------------|-----------------------|--------------------|--------------------------------|
| PEEL.WINEP01.21 | East Hampshire | Peel Common | GREEN CRESCENT GOSPORT CSO | New or improved screen to reduce aesthetics impacts from storm discharges at GREEN CRESCENT GOSPORT CSO | £130K | AMP12 | - | PO5 |
| PEEL.WINEP01.22 | East Hampshire | Peel Common | FAIRTHORNE MANOR CEO | New or improved screen to reduce aesthetics impacts from storm discharges at FAIRTHORNE MANOR CEO | £130K | AMP12 | - | PO5 |
| PEEL.WINEP01.23 | East Hampshire | Peel Common | DIBLES ROAD WARSASH CEO | New or improved screen to reduce aesthetics impacts from storm discharges at DIBLES ROAD WARSASH CEO | £130K | AMP12 | - | PO5 |
| PEEL.WINEP01.24 | East Hampshire | Peel Common | THE GILLIES FAREHAM CSO | Reduce the number of storm discharges from THE GILLIES FAREHAM CSO by a combination of SuDS and storage options | £5,150K | AMP8 | - | PO4 PO5 PO14 |
| PEEL.WINEP01.25 | East Hampshire | Peel Common | BROOK LANE BOTLEY CEO | New or improved screen to reduce aesthetics impacts from storm discharges at BROOK LANE BOTLEY CEO | £130K | AMP11 | - | PO5 |
| PEEL.WINEP01.26 | East Hampshire | Peel Common | FAREHAM ROAD GOSPORT OUTSIDE 68 CSO | New or improved screen to reduce aesthetics impacts from storm discharges at FAREHAM ROAD GOSPORT OUTSIDE 68 CSO | £130K | AMP11 | - | PO5 |
| PEEL.WINEP01.27 | East Hampshire | Peel Common | REDLANDS LANE FAREHAM CSO | New or improved screen to reduce aesthetics impacts from storm discharges at REDLANDS LANE FAREHAM CSO | £130K | AMP12 | - | PO5 |
| PEEL.WINEP01.28 | East Hampshire | Peel Common | SALTERNS LANE FAREHAM CEO | New or improved screen to reduce aesthetics impacts from storm discharges at SALTERNS LANE FAREHAM CEO | £130K | AMP11 | - | PO5 |
| PEEL.WINEP01.29 | East Hampshire | Peel Common | LAKESIDE LEE ON THE SOLENT CEO | New or improved screen to reduce aesthetics impacts from storm discharges at LAKESIDE LEE ON THE SOLENT CEO | £130K | AMP9 | - | PO5 PO13 |
| PEEL.WINEP01.30 | East Hampshire | Peel Common | HOEFORD FAREHAM CEO | Reduce the number of storm discharges from HOEFORD FAREHAM CEO by a combination of SuDS and storage options | £3,460K | AMP8 | - | PO4 PO5 PO14 |
| PEEL.WINEP01.31 | East Hampshire | Peel Common | ARUNDEL DRIVE FAREHAM CSO | Reduce the number of storm discharges from ARUNDEL DRIVE FAREHAM CSO by a combination of SuDS and storage options | £3,775K | AMP12 | - | PO4 PO5 |
| PEEL.WINEP01.32 | East Hampshire | Peel Common | SALTERNS LANE FAREHAM OUTSIDE 12 CSO | New or improved screen to reduce aesthetics impacts from storm discharges at SALTERNS LANE FAREHAM OUTSIDE 12 CSO | £130K | AMP11 | - | PO5 |
| PEEL.WINEP01.33 | East Hampshire | Peel Common | HARDWAY CEO | New or improved screen to reduce aesthetics impacts from storm discharges at HARDWAY CEO | £130K | AMP11 | - | PO5 |
| PEEL.WINEP01.34 | East Hampshire | Peel Common | BEACH LANE NETLEY CEO | New or improved screen to reduce aesthetics impacts from storm discharges at BEACH LANE NETLEY CEO | £130K | AMP11 | - | PO5 |
| PEEL.WINEP01.35 | East Hampshire | Peel Common | SALTERNS LANE BURSLEDON CEO | Reduce the number of storm discharges from SALTERNS LANE BURSLEDON CEO by a combination of SuDS and storage options | £6,070K | AMP10 | - | PO4 PO5 |

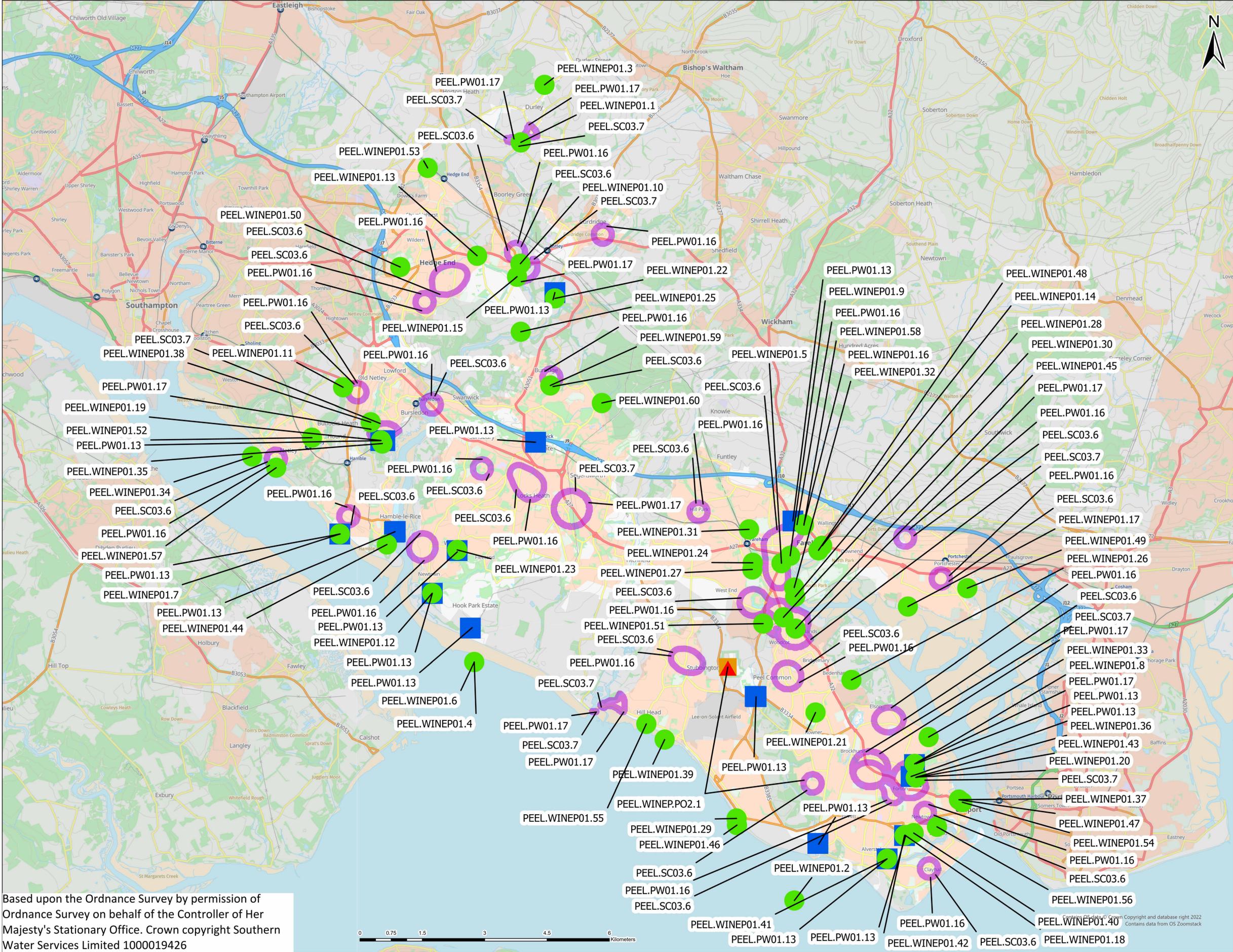
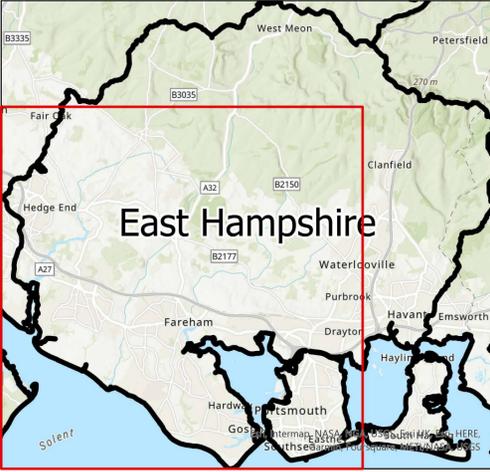
| Reference | River Basin (L2) | Wastewater System (L3) | Location | Option | Indicative Cost | Indicative Timescales | Potential Partners | Applicable Planning Objectives |
|-----------------|------------------|------------------------|--------------------------------------|--|-----------------|-----------------------|--------------------|--------------------------------|
| PEEL.WINEP01.36 | East Hampshire | Peel Common | LEES LANE GOSPORT CEO | New or improved screen to reduce aesthetics impacts from storm discharges at LEES LANE GOSPORT CEO | £130K | AMP11 | - | PO5 |
| PEEL.WINEP01.37 | East Hampshire | Peel Common | HARBOUR ROAD GOSPORT CSO | New or improved screen to reduce aesthetics impacts from storm discharges at HARBOUR ROAD GOSPORT CSO | £130K | AMP11 | - | PO5 |
| PEEL.WINEP01.38 | East Hampshire | Peel Common | HUNGERFORD BOTTOM BURSLEDON CEO | Reduce the number of storm discharges from HUNGERFORD BOTTOM BURSLEDON CEO by a combination of SuDS and storage options | £3,265K | AMP12 | - | PO4 PO5 |
| PEEL.WINEP01.39 | East Hampshire | Peel Common | SALTERNS ROAD STUBBINGTON CSO | New or improved screen to reduce aesthetics impacts from storm discharges at SALTERNS ROAD STUBBINGTON CSO | £130K | AMP11 | - | PO5 |
| PEEL.WINEP01.40 | East Hampshire | Peel Common | ALVER ROAD GOSPORT CEO | New or improved screen to reduce aesthetics impacts from storm discharges at ALVER ROAD GOSPORT CEO | £130K | AMP11 | - | PO5 |
| PEEL.WINEP01.41 | East Hampshire | Peel Common | VILLAGE ROAD ALVERSTOKE CEO | New or improved screen to reduce aesthetics impacts from storm discharges at VILLAGE ROAD ALVERSTOKE CEO | £130K | AMP11 | - | PO5 |
| PEEL.WINEP01.42 | East Hampshire | Peel Common | BURY ROAD GOSPORT CEO | New or improved screen to reduce aesthetics impacts from storm discharges at BURY ROAD GOSPORT CEO | £130K | AMP11 | - | PO5 |
| PEEL.WINEP01.43 | East Hampshire | Peel Common | MIDDLECROFT LANE GOSPORT CSO | New or improved screen to reduce aesthetics impacts from storm discharges at MIDDLECROFT LANE GOSPORT CSO | £130K | AMP11 | - | PO5 |
| PEEL.WINEP01.44 | East Hampshire | Peel Common | SCHOOL LANE HAMBLE CEO | Reduce the number of storm discharges from SCHOOL LANE HAMBLE CEO by a combination of SuDS and storage options | £3,675K | AMP8 | - | PO4 PO5 PO14 |
| PEEL.WINEP01.45 | East Hampshire | Peel Common | FAREHAM ROAD GOSPORT OUTSIDE 359 CSO | Reduce the number of storm discharges from FAREHAM ROAD GOSPORT OUTSIDE 359 CSO by a combination of SuDS and storage options | £6,060K | AMP8 | - | PO4 PO5 PO14 |
| PEEL.WINEP01.47 | East Hampshire | Peel Common | ST MATTHEWS SQUARE GOSPORT CEO | New or improved screen to reduce aesthetics impacts from storm discharges at ST MATTHEWS SQUARE GOSPORT CEO | £130K | AMP11 | - | PO5 |
| PEEL.WINEP01.48 | East Hampshire | Peel Common | BRIDGEFOOT FAREHAM CEO | New or improved screen to reduce aesthetics impacts from storm discharges at BRIDGEFOOT FAREHAM CEO | £130K | AMP11 | - | PO5 |
| PEEL.WINEP01.49 | East Hampshire | Peel Common | COW LANE PORTCHESTER CEO | New or improved screen to reduce aesthetics impacts from storm discharges at COW LANE PORTCHESTER CEO | £130K | AMP11 | - | PO5 |
| PEEL.WINEP01.50 | East Hampshire | Peel Common | CHALICE COURT HEDGE END CEO | Reduce the number of storm discharges from CHALICE COURT HEDGE END CEO by a combination of SuDS and storage options | £3,075K | AMP12 | - | PO4 PO5 |
| PEEL.WINEP01.51 | East Hampshire | Peel Common | COTSWOLD WALK FAREHAM CSO | Reduce the number of storm discharges from COTSWOLD WALK FAREHAM CSO by a combination of SuDS and storage options | £3,105K | AMP12 | - | PO4 PO5 |

| Reference | River Basin (L2) | Wastewater System (L3) | Location | Option | Indicative Cost | Indicative Timescales | Potential Partners | Applicable Planning Objectives |
|-----------------|------------------|------------------------|-----------------------------------|---|-----------------|-----------------------|--------------------|--------------------------------|
| PEEL.WINEP01.52 | East Hampshire | Peel Common | INGLESIDE NETLEY CEO | Reduce the number of storm discharges from INGLESIDE NETLEY CEO by a combination of SuDS and storage options | £3,335K | AMP10 | - | PO4 PO5 |
| PEEL.WINEP01.53 | East Hampshire | Peel Common | MARLBOROUGH GARDENS HEDGE END CEO | Reduce the number of storm discharges from MARLBOROUGH GARDENS HEDGE END CEO by a combination of SuDS and storage options | £3,115K | AMP10 | - | PO4 PO5 |
| PEEL.WINEP01.56 | East Hampshire | Peel Common | THE ANCHORAGE GOSPORT CEO | Reduce the number of storm discharges from THE ANCHORAGE GOSPORT CEO by a combination of SuDS and storage options | £3,350K | AMP11 | - | PO4 PO5 |
| PEEL.WINEP01.57 | East Hampshire | Peel Common | VICTORIA ROAD NETLEY CEO | Reduce the number of storm discharges from VICTORIA ROAD NETLEY CEO by a combination of SuDS and storage options | £3,110K | AMP11 | - | PO4 PO5 |
| PEEL.WINEP01.58 | East Hampshire | Peel Common | WALLINGTON HILL FAREHAM CSO | Reduce the number of storm discharges from WALLINGTON HILL FAREHAM CSO by a combination of SuDS and storage options | £3,115K | AMP12 | - | PO4 PO5 |
| PEEL.WINEP01.59 | East Hampshire | Peel Common | WELLS CLOSE WHITELEY CEO | Reduce the number of storm discharges from WELLS CLOSE WHITELEY CEO by a combination of SuDS and storage options | £3,260K | AMP12 | - | PO4 PO5 |
| PEEL.WINEP01.60 | East Hampshire | Peel Common | WHITELEY LANE WHITELEY CEO | Reduce the number of storm discharges from WHITELEY LANE WHITELEY CEO by a combination of SuDS and storage options | £6,440K | AMP11 | - | PO4 PO5 |
| PEEL.WINEP01.19 | East Hampshire | Peel Common | HAMBLE LANE BURSLEDON CEO | Reduce the number of storm discharges from HAMBLE LANE BURSLEDON CEO by a combination of SuDS and storage options | £6,705K | AMP10 | - | PO4 PO5 |
| PEEL.WINEP01.20 | East Hampshire | Peel Common | CAMBRIDGE ROAD GOSPORT CEO | New or improved screen to reduce aesthetics impacts from storm discharges at CAMBRIDGE ROAD GOSPORT CEO | £130K | AMP11 | - | PO5 |
| PEEL.WINEP01.46 | East Hampshire | Peel Common | QUEENS RD LEE ON THE SOLENT CEO | New or improved screen to reduce aesthetics impacts from storm discharges at QUEENS RD LEE ON THE SOLENT CEO | £130K | AMP11 | - | PO5 |
| PEEL.WINEP01.54 | East Hampshire | Peel Common | MUMBY ROAD GOSPORT CEO | Reduce the number of storm discharges from MUMBY ROAD GOSPORT CEO by a combination of SuDS and storage options | £3,285K | AMP11 | - | PO4 PO5 |
| PEEL.WINEP01.55 | East Hampshire | Peel Common | SALTERNS ROAD HILL HEAD CEO | Reduce the number of storm discharges from SALTERNS ROAD HILL HEAD CEO by a combination of SuDS and storage options | £4,010K | AMP9 | - | PO4 PO5 PO13 |

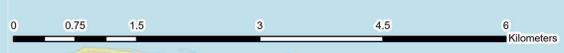
Drainage and Wastewater Management Plan: Location of Potential Options PEEL COMMON Wastewater system in East Hampshire River Basin Catchment



(i) This map should be read in conjunction with the list of Investment Needs for this wastewater system
 (ii) The areas shown on this map are the potential locations for the options. The location of the risk may be elsewhere in the system.
 (iii) Labels for each location are the option references in the list of Investment Needs
 (iv) Drainage Area Plan (DAP) options on flooding and growth are not shown.



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