Drainage and Wastewater Management Plan

Tunbridge Wells North Wastewater System Plan

from Southern Water

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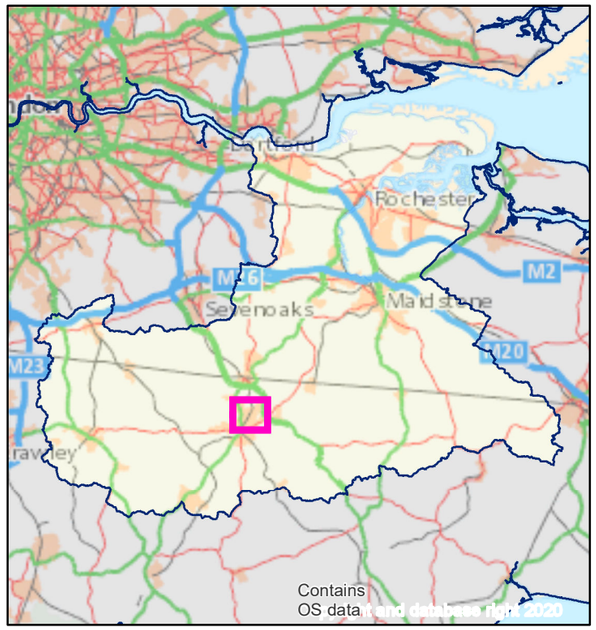
Tunbridge Wells North wastewater system: map and key facts



Population Equivalent (PE)	**31,414**
Discharge Waterbody	**Somerhill Stream**
Number of Pumping Stations	**15**
Number of Overflows	**5**
Length of Sewer (km)	**187.3**
Catchment Reference	**TUWN**

BRAVA Results Table (TUWN)			
	Planning Objective	**2020**	**2050**
1	Internal Sewer Flooding Risk	1	
2	Pollution Risk	2	
3	Sewer Collapse Risk	1	
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	1	1
8	Dry Weather Flow Compliance	0	1
9	Good Ecological Status / Potential	0	
10	Surface Water Management	0	
11	Nutrient Neutrality	NA	NA
12	Groundwater Pollution	0	
13	Bathing Waters	NA	
14	Shellfish Waters	NA	

Drivers of Risks

- Customer
- Hydraulics
- Operational
- Quality
- Unknown

Catchment Strategy: IMPROVE

TUNBRIDGE WELLS NORTH WTW

Southborough
High Brooms
Colebrooke
Sewage Wks
Old Forge Fm
Yew Tree Fm
Gregg's Wood
Sherwood Park
Ferndale
Cemy
Blackhurst
Sandown Park
Oakley Sch
St John's Sch
Mouseden
ROYAL

0 0.25 0.5 1 1.5 2 Kilometers

Problem Characterisation
Tunbridge Wells North (TUWN)

This document describes the causes of the risks identified by the Baseline Risk and Vulnerability Assessment (BRAVA). The BRAVA results for this catchment are summarised in Table 1. The results indicate that flooding, pollution and water quality are the main concerns in this wastewater catchment. 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 Tunbridge Wells North wastewater system

Planning Objectives		2020	Driver	2050
1	Internal Sewer Flooding Risk	1	Hydraulic	
2	Pollution Risk	2	Operational	
3	Sewer Collapse Risk	1	Operational	
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	1	Hydraulic	1
8	WTW Dry Weather Flow Compliance	0	-	1
9	Good Ecological Status / Good Ecological Potential	0	-	
10	Surface Water Management	0	-	
11	Nutrient Neutrality	NA	-	NA
12	Groundwater Pollution	0	-	
13	Bathing Waters	NA	-	
14	Shellfish Waters	NA	-	

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

Catchment Investment Strategy

The risks identified in this wastewater catchment 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 'Hydraulic'. The lack of capacity of the sewer network to convey rainfall is the main cause of internal flooding, contributing to 86% of all incidents recorded in this wastewater system. This is known as Hydraulic Overload.

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

Blockage 14%
Pumping Station/ Treatment Work issue 0%
Sewer / Rising Main issue 0%
Hydraulic Overload 86%
Cause could not be Identified 0%

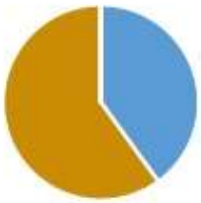
2017/18	2018/19	2019/20
12	0	2

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 60% of all incidents recorded in this wastewater system.

Figure 2: Number of pollution incidents per annum and causes



Blockage 40%
Pumping Station/ Treatment Work issue 60%
Sewer / Rising Main issue 0%
Hydraulic Overload 0%
Cause could not be Identified 0%

2017	2018	2019
1	1	3

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 between 5.72 and 9.44 incidents per 1,000km per year (a threshold set by Ofwat), the risk is in the 'moderately significant' band.

Table 2: Sewer collapses and rising main bursts

Sewer Collapse	**2017/18**	2
	2018/19	1
	2019/20	2
Rising Main Bursts	**2017/18**	0
	2018/19	0
	2019/20	0

The primary driver is 'Operational' as the cause of these collapses and bursts is due to the age and condition of the sewers.

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 800 - 900 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 1300 - 1400 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	0 Medium	0 Medium	Less than 8	Between 8-10	10 or more
Bathing Waters	0 Medium	0 Medium	Less than 3	Between 3-10	10 or more
Freshwater	1 High	1 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 2020 was Fail. It was also assessed to not have adequate capacity to cope with future growth in the wastewater system.

Planning Objective 7: Flooding due to Hydraulic Overload

This is an assessment of the risk of flooding from sewers during a 1 in 30 year storm, and more frequent rainfall, to understand where flooding could occur. The risk of sewer flooding due to hydraulic overload is moderately significant in 2020 and 2050. The annualised number of properties in areas at risk of flooding is shown in Table 4.

Table 4: Annualised number of properties at risk per 10,000 connections.

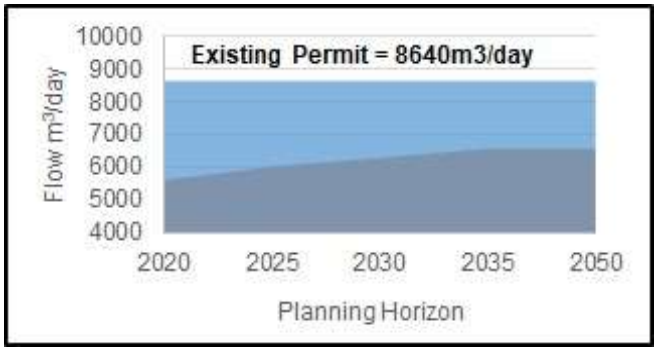
Rainfall Return Period (yr)	Number of Properties at Risk		Annualised per 10,000 connections	
	2020	2050	2020	2050
1 in 1	0	0	0	0
1 in 2	0	9	0	4
1 in 5	64	235	12	43
1 in 10	234	585	22	56
1 in 20	450	861	22	42
1 in 30	598	1078	20	35
Total Annualised			**75**	**179**

This indicates that the capacity of the wastewater network can be exceeded during 1 in 30 year storms (or more frequent events). Future growth, creep and/or climate change are not anticapted to significantly increase the risk by 2050.

Planning Objective 8: Wastewater Treatment Works Dry Weather Flow Compliance

The risk of Wastewater Treatment Works Dry Weather Flow Compliance is not significant for 2020 but is predicted to increase to moderately significant in 2050, shown in Figure 3. This is because the predicted DWF in 2050 is expected to be between 80% and 100% of the current permit.

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



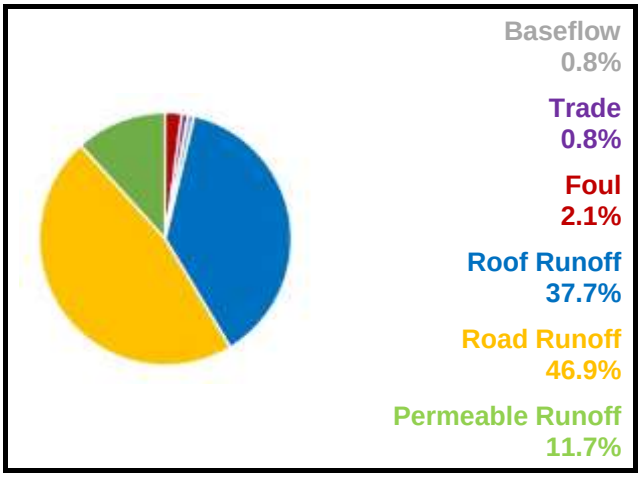
Planning Objective 9: Good Ecological Status / Good Ecological Potential

This wastewater system is not hydraulically linked to a waterbody where wastewater operations are contributing to not achieving GES/GEP, therefore the risk is not significant.

Planning Objective 10: Surface Water Management

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 96.3% of the flow in the sewers. The total contribution of foul water from homes is 2.1% with business contributing 0.8%. The baseflow is infiltration from water in the ground and makes up 0.8% 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

This wastewater system is not hydraulically linked to Habitat Sites noted as under threat by Natural England.

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

This wastewater system does not discharge into a designated bathing water.

Planning Objective 14: Shellfish Waters

The discharges from this wastewater system do not impact on any designated shellfish waters.

Southern Water
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Generic Options Assessment for: Tunbridge Wells North (TUWN)

Planning Objectives		2020	Driver	2050
PO1	Internal Flooding	1	Hydraulic	-
PO2	Pollution Risk	2	Operational	-
PO3	Sewer Collapse	1	Operational	-
PO4	Risk of Sewer Flooding in 1 in 50 yr	1	Hydraulic	1
PO5	Storm Overflow Performance	2	Hydraulic	2
PO6	Risk of WTW Compliance Failure	2	Quality	2
PO7	Annualised Flood Risk/Hydraulic Overload	1	Hydraulic	1
PO8	DWF Compliance	0	-	1
PO9	Achieve Good Ecological Status	0	-	-
PO10	Improve Surface Water Management	0	-	-
PO11	Secure Nutrient Neutrality	NA	-	NA
PO12	Reduce Groundwater Pollution	0	-	-
PO13	Improve Bathing Water Quality	NA	-	-
PO14	Improve Shellfish Water Quality	NA	-	-

Type of Measures	Generic Option Categories	Icon	Take Forward?	Reasons	Examples of Generic Options
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
	Reduce groundwater levels		N	None of the significant risks in this catchment are caused by high groundwater levels. Hence reducing groundwater levels will not impact any of the risks in this catchment.	Reduce leakage from water supply pipes; pump away schemes to locally lower groundwater near sewer network
	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
	Reduce the **quantity** / demand		Y	-	Water efficient appliances; water efficient measures; blackwater and/or greywater re-use; treatment at source
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.
	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
	Wastewater Transfer to treatment elsewhere		Y	-	Transfer flow to other network or treatment sites; transport sewage by tanker to other sites
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
	Improve Land and Soils		N/A	Not included in first round of DWMPs	Sludge soil enhancement
	Mitigate impacts on receiving waters		N	The receiving waters are not advserly impacted by our wastewater operations. Hence, offsetting any adverse impacts on receiving waters will not reduce any of the significant risks in this catchment.	River enhancement, aeration
	Reduce impact on properties		Y	-	Property flood resilience; non-return valves; flood guards / doors; air brick covers
Other	Study / Investigation		N	No further studies required at this stage	Additional data required; hydraulic model development; WQ monitoring and modelling

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Tunbridge Wells North 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	Catchment Wide	PO1, PO4 & PO7 - Sewer Flooding	TUWN.SC01.1	Surface Water Separation	Remove Surface Water connected to the network and build SuDS.	Yes	Yes	Yes	Moderate Positive ++	£TBC - With Partners	No	Best Value
Control / Reduce groundwater infiltration												
Improve quality of wastewater entering sewers (inc reducing FOG, RAG, pre-treatment, trade waste)	Catchment Wide	PO1 - Internal Flooding	TUWN.SC03.1	Customer Education Programme	Target domestic and business customers in the cluster with a campaign to stop discharges of FOG and unflushables into the sewer network to reduce risk of flooding due to sewer blockages.	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	TUWN.SC03.2	Customer Education Programme	Target domestic and business customers in the cluster with a campaign to stop discharges of FOG and unflushables into the sewer network to reduce risk of pollution due to sewer blockages.	Yes	Yes	Yes	Minor Positive +	£115K	Yes	Best Value
Control / Reduce the quantity / flow of wastewater entering sewer system	TUNBRIDGE WELLS NORTH WTW	PO8 (2050)- Dry Weather Flow	TUWN.SC04.1	Water Efficient Appliance / Measures	Southern Water aims to reduce water consumption to 100 l/h/d by 2040.	No						Deliver the required outcome
Network Improvements (eg increase capacity, storage, conveyance)	TUWN FC01 - Dowding Way	PO4 & PO7 - Growth	TUWN.PW01.1	New ring sewer	DAP Option.	Yes	Yes	Yes	Major Positive +++	£1,715K	Yes	Best Value
Network Improvements (eg increase capacity, storage, conveyance)	TUWN FC02 - Dowding Way	PO4 & PO7 - Growth	TUWN.PW01.2	Upsizing of existing sewer adjacent Dowding Way	DAP Option.	Yes	Yes	Yes	Major Positive +++	£1,715K	Yes	Best Value
Network Improvements (eg increase capacity, storage, conveyance)	TUWN FC03 - St John's Road	PO4 & PO7 - Growth	TUWN.PW01.3	Construction of new sewer on St John's Road	DAP Option.	Yes	Yes	Yes	Major Positive +++	£1,715K	Yes	Best Value
Network Improvements (eg increase capacity, storage, conveyance)	TUWN FC04- Medway Road	PO4 & PO7 - Growth	TUWN.PW01.4	Upsize of 4 Manholes	DAP Option.	Yes	Yes	Yes	Major Positive +++	£1,715K	Yes	Best Value
Network Improvements (eg increase capacity, storage, conveyance)	Catchment Wide	PO8 (2050)- Dry Weather Flow	TUWN.PW01.5	Infiltration Reduction	Relining/improving structural grades of sewers across the catchment.	No						Cost EffectiveRisk and uncertainty - future resilience
Network Improvements (eg increase capacity, storage, conveyance)	Catchment Wide	PO12- Ground Water Pollution	TUWN.PW01.6	Pipe Rehabilitation Programme	Total length of sewer within protection zones- km Sewer Rehab Score- Infiltration therefore Band 2 Infiltration- m3/d/km therefore Band 0 Targeted CCTV / electroscan surveys and proactive sewer rehabilitation to reduce risk of sewer collapse.	No						Risk and uncertainty - future resilience
Network Improvements (eg increase capacity, storage, conveyance)	Catchment Wide	PO3- Sewer Collapse	TUWN.PW01.7	Pipe Rehabilitation Programme	Targeted CCTV / electroscan surveys (21km or 10% of network) and proactive sewer rehabilitation (2.	Yes	Yes	Yes	Minor Positive +	£2,110K	Yes	Best Value
Network Improvements (eg increase capacity, storage, conveyance)	APPLE TREE LANE TUNBRIDGE WELLS CSO	PO5 - Storm Overflow Performance	TUWN.PW01.8	Storage Tank	Conventional storage tank.	Yes	Yes	Yes	Major Positive +++	£1,000K	Yes	Best Value
Improve treatment (capacity and quality at existing works or develop new WTWs)	TUNBRIDGE WELLS NORTH WTW	PO2- Pollution Risk	TUWN.PW02.1	Maintenance Programme WTW	An efficient maintenance programme for the treatment works to elimate the risk of a pollution incident due to an operational failure.	Yes	Yes	Yes	Minor Positive +	£6,970K	Yes	Best Value
Improve treatment (capacity and quality at existing works or develop new WTWs)	TUNBRIDGE WELLS NORTH WTW	PO6 - WTW Compliance	TUWN.PW02.2	Improve WTW Treatment	Improve WTW Treatment Process to address current and future Compliance Risk.	Yes			Minor Positive +		Yes	Best Value
Improve treatment (capacity and quality at existing works or develop new WTWs)	TUNBRIDGE WELLS NORTH WTW	PO8 (2050)- Dry Weather Flow	TUWN.PW02.3	DWF Permit Increase	Increase Capacity at WTW for New DWF Permit Proposed permit-8937m3.	Yes	Yes	Yes	Minor Positive +	£4,300K	Yes	Best Value
Wastewater Transfer	TUNBRIDGE WELLS NORTH WTW	PO8 (2050)- Dry Weather Flow	TUWN.PW03.1	Construct New WPS & Rising Main	Within 5km radius of TUWN is SPEL which in 2050 will have approximately 435m3day of headroom (until it is above 80% of its DWF permit)Within 10km radius of TUWN is WADG which in 2050 will have approximately 416m3day of headroom (until it is above 80% of its DWF permit); Within 15km radius of TUWN is CRST which in 2050 will have approximately 241m3day of headroom (until it is above 80% of its DWF permit)Within 20km radius of TUWN is DITT which in 2050 will have approximately 306m3day of headroom (until it is above 80% of its DWF permit).	No						Do customer support it
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												
Reduce consequences Properties (e.g. Property Flood Resilience)	Catchment Wide	PO1 - Internal Sewer Flooding	TUWN.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
Reduce consequences Properties (e.g. Property Flood Resilience)	Catchment Wide	PO4 & PO7 - Sewer Flooding	TUWN.RC04.2	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	PO1, PO4, PO7 - Sewer Flooding PO5 - Storm Overflow Performance	TUWN.OT01.1	Improve Hydraulic Model	Hydraulic surveys and reverification to improve model confidence and accuracy of simulations.	Yes	Yes	Yes	Minor Positive +	£200K	Yes	Best Value
Study/ investigation to gather more data	Medway Road, Jackwood Way, St Johns Road, Newcomen Road	PO1- Internal Flooding	TUWN.OT01.2	Flooding Investigation	Further investigation to define hydraulic issues causing internal flooding.	Yes	Yes	Yes	Minor Positive +	£230K	Yes	Best Value

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
Medway								
Tunbridge Wells North								
TUWN.SC03.1	Medway	Tunbridge Wells North	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
TUWN.SC03.2	Medway	Tunbridge Wells North	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
TUWN.PW01.1	Medway	Tunbridge Wells North	Dowding Way	Growth scheme from our Drainage Area Plan (DAP): Construct 225mm diameter ring sewer	£1,715K	AMP9	-	PO4 PO7
TUWN.PW01.2	Medway	Tunbridge Wells North	Dowding Way	Growth scheme from our Drainage Area Plan (DAP): Upsize section of local sewer from 225mm to 450mm diameter in Dowding Way	£1,715K	AMP9	-	PO4 PO7
TUWN.PW01.3	Medway	Tunbridge Wells North	St John's Road	Growth scheme from our Drainage Area Plan (DAP): Growth scheme from our Drainage Area Plan (DAP): Construct new 300mm diameter sewer on St John's Road	£1,715K	AMP9	-	PO4 PO7
TUWN.PW01.4	Medway	Tunbridge Wells North	Medway Road	Growth scheme from our Drainage Area Plan (DAP): Upsize 4 manholes to 3m diameter chambers	£1,715K	AMP9	-	PO4 PO7
TUWN.PW01.7	Medway	Tunbridge Wells North	St. Lukes, Nursery Road, North Farm Road, Camden Road, Upper Grosvenor Road, Sandhurst Road & Woodland Road	Sewer Rehabilitation: Targeted CCTV or electroscan surveys and sewer rehabilitation to reduce the risk of sewer bursts and collapses	£2,110K	AMP8 onwards	-	PO3
TUWN.PW02.1	Medway	Tunbridge Wells North	Tunbridge Wells North WTW	Improve the operational resilience of wastewater pumping station (WPS) to reduce pollution incidents	£6,970K	AMP8 onwards	-	PO2
TUWN.PW02.2	Medway	Tunbridge Wells North	Tunbridge Wells North WTW	Increase treatment capacity to allow for planned new development	£4,170K	AMP9	Environment Agency	PO6
TUWN.PW02.3	Medway	Tunbridge Wells North	Tunbridge Wells North WTW	Increase capacity to allow for planned new development	£4,300K	AMP9	Environment Agency	PO8
TUWN.OT01.1	Medway	Tunbridge Wells North	System Wide	Improve the Hydraulic Model: Surveys and reverification of model to improve confidence and accuracy	£200K	AMP8	-	PO1 PO4 PO5 PO7
TUWN.OT01.2	Medway	Tunbridge Wells North	Medway Road, Jackwood Way, St Johns Road, Newcomen Road	Study and Investigation: Investigation to identify the root cause of internal flooding and measures to reduce the number of incidents	£230K	AMP8	-	PO1
TUWN.WINEP01.1	Medway	Tunbridge Wells North	APPLE TREE LANE TUNBRIDGE WELLS CSO	Reduce the number of storm discharges from APPLE TREE LANE TUNBRIDGE WELLS CSO by a combination of SuDS and storage options	£14,725K	AMP8	-	PO4 PO5 PO7
TUWN.WINEP01.2	Medway	Tunbridge Wells North	NORTH FARM ROAD TUNBRIDGE WELLS CSO	New or improved screen to reduce aesthetics impacts from storm discharges at NORTH FARM ROAD TUNBRIDGE WELLS CSO	£130K	AMP12	-	PO5

Reference	River Basin (L2)	Wastewater System (L3)	Location	Option	Indicative Cost	Indicative Timescales	Potential Partners	Applicable Planning Objectives
TUWN.WINEP01.3	Medway	Tunbridge Wells North	GROSVENOR REC GROUND TUNBRIDGE WELLS CSO	New or improved screen to reduce aesthetics impacts from storm discharges at GROSVENOR REC GROUND TUNBRIDGE WELLS CSO	£130K	AMP12	-	PO5
TUWN.WINEP01.4	Medway	Tunbridge Wells North	TUNBRIDGE WELLS NORTH SSO	Reduce the number of storm discharges from TUNBRIDGE WELLS NORTH SSO by a combination of SuDS and storage options	£4,060K	AMP12	-	PO4 PO5 PO7
TUWN.WINEP.PO2.1	Medway	Tunbridge Wells North	Tunbridge Wells North WwTW	Conversion of exising treatment process to activated sludge plant (WINEP OAR 08SO104998)	£29,218K	AMP8		PO9
TUWN.WINEP.PO2.2	Medway	Tunbridge Wells North	Tunbridge Wells North WTW	Conversion of existing treatment process to Activated Slude Process to achieve 0.25mg/l Total P permit and 1mg/l ammonia permit (WINEP OAR 08SO104761)	£41,228K	AMP8		PO9