Slowhill Copse Marchwood 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	Hazel Grove	PO1, PO5, PO7 - Hydraulic	SLOW.SC01.1	Natural Flood Management	Study / Investigation: Identify suitable location/s for NFMs in the Slowhill Copse Marchwood catchment (update hydraulic model).	Yes	Yes	Yes	Moderate Positive ++	£TBC - With Partners	No	Best Value
Control/ Reduce surface water entering the sewers	Catchment Wide	PO1, PO5, PO7 - Hydraulic	SLOW.SC01.2	Surface Water Seperation	Study / Investigation: Identify suitable location/s for surface water separation in the Slowhill Copse Marchwood catchment (update hydraulic model).	Yes	Yes	Yes	Moderate Positive ++	£TBC - With Partners	No	Best Value
Control/ Reduce surface water entering the sewers	North of Catchment	PO1, PO5, PO7 - Hydraulic PO11 and PO14 - Nutrient Neutality & Shellfish Waters	SLOW.SC01.3	Changes in Rural Land Management	Study / Investigation: Identify suitable location/s for wetland construction in the north of the Slowhill Copse Marchwood catchment (update hydraulic model).	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)	Central Totton (Commercial Road, Osborne Road, Rumbridge Street) West Totton (Ethelred Gardens, Alfred Close, Calmore Road) Ashurst (Princess Road)	PO1- Internal Flooding	SLOW.SC03.1	Customer Education Programme	Enhanced Customer Education Programme to prevent blockages.	Yes	Yes	Yes	Minor Positive +	£115K	Yes	Best Value
Control / Reduce the quantity / flow of wastewater entering sewer system	SLOWHILL COPSE MARCHWOOD WTW	PO8 (2050)- Dry Weather Flow	SLOW.SC04.1	Water Efficient Appliance / Measures	Southern Water aims to reduce water consumption to 100 l/h/d by 2040.	No						Risk and uncertainty - future resilience
Network Improvements (eg increase capacity, storage, conveyance)	Fulmar Drive, Princess Road, Jacobs Gutter Lane	PO1- Internal Flooding	SLOW.PW01.1	Additional Storage	Storage in targetted L4 locations to alleviate internal flooding issues.	No						Deliver the required outcome
Network Improvements (eg increase capacity, storage, conveyance)	Downes Park Totton Wps	PO2- Pollution Risk	SLOW.PW01.2	Maintenance Programme WPS	Improve resilience: Review operation and maintenance of Downes Park Totton pumping station to improve resilience.	Yes	Yes	Yes	Minor Negative -	£465K	Yes	Least Cost
Network Improvements (eg increase capacity, storage, conveyance)	Totton Hotspot (Russel Place, Totton; Whitcombe Close, Totton)	PO3- Sewer Collapse	SLOW.PW01.3	Pipe Rehabilitation Programme	Targeted CCTV/Electroscan surveys and proactive sewer rehabilitation to reduce risk of sewer collapse.	Yes	Yes	Yes	Minor Positive +	£1,580K	Yes	Best Value
Network Improvements (eg increase capacity, storage, conveyance)	Catchment Wide	PO8 (2050)- Dry Weather Flow	SLOW.PW01.4	Pipe Rehabilitation Programme	Relining/improving structural grades of sewers across the catchment.	No						Risk and uncertainty - future resilience
Network Improvements (eg increase capacity, storage, conveyance)	POLLARDS MOOR CADNAM WPS, NORTH DIBDEN WPS, DOWNES PARK TOTTON WPS, SLOWHILL COPSE MARCHWOOD WTW, ASHURST BRIDGE WPS	PO2- Pollution Risk	SLOW.PW01.5	Pipe Rehabilitation Programme	Programme of works to rehab pipe network in identified L4 locations.	No						Risk and uncertainty - future resilience
Network Improvements (eg increase capacity, storage, conveyance)	Central Totton (Commercial Road, Osborne Road, Rumbridge Street) West Totton (Ethelred Gardens, Alfred Close, Calmore Road) Ashurst (Princess Road)	PO1- Internal Flooding	SLOW.PW01.6	Jetting Programme	Enhanced Maintenance: Review and enhance jetting programme of the pipe network in this location to maximise the capacity of the network for rainfall.	Yes	Yes	Yes	Minor Positive +	£115K	Yes	Best Value
Network Improvements (eg increase capacity, storage, conveyance)	SLOW FC03 Cook's Lane	PO4, PO7 - Growth	SLOW.PW01.7	Upsizing	DAP Option.	Yes	Yes	Yes	Major Positive +++	£345K	Yes	Best Value
Network Improvements (eg increase capacity, storage, conveyance)	SLOW FC04 Ashurst Bridge WPS	PO4, PO7 - Growth	SLOW.PW01.8	Upsizing	DAP Option.	Yes	Yes	Yes	Major Positive +++	£40K	Yes	Best Value
Network Improvements (eg increase capacity, storage, conveyance)	SLOW FC05 Butts Ash Lane	PO4, PO7 - Growth	SLOW.PW01.9	Upsizing	DAP Option.	Yes	Yes	Yes	Major Positive +++	£155K	Yes	Best Value
Network Improvements (eg increase capacity, storage, conveyance)	SLOW FC06 Eling Lane	PO4, PO7 - Growth	SLOW.PW01.10	Upsizing	DAP Option.	Yes	Yes	Yes	Major Positive +++	£155K	Yes	Best Value
Network Improvements (eg increase capacity, storage, conveyance)	SLOW FC07 North Dibden	PO4, PO7 - Growth	SLOW.PW01.11	Upsizing	DAP Option.	Yes	Yes	Yes	Major Positive +++	£150K	Yes	Best Value
Network Improvements (eg increase capacity, storage, conveyance)	SLOW FC08 Mulberry Road	PO4, PO7 - Growth	SLOW.PW01.12	Upsizing	DAP Option.	Yes	Yes	Yes	Major Positive +++	£85K	Yes	Best Value
Network Improvements (eg increase capacity, storage, conveyance)	SLOW FC09 Downes Park Totton	PO4, PO7 - Growth	SLOW.PW01.13	Storage	DAP Option.	No						
Network Improvements (eg increase capacity, storage, conveyance)	SLOW FC10 Slowhill Copse Marchwood WTW	PO4, PO7 - Growth	SLOW.PW01.14	Storage	DAP Option.	No						
Network Improvements (eg increase capacity, storage, conveyance)	SLOW FC11 Alexandra Road Hythe	PO4, PO7 - Growth	SLOW.PW01.15	Storage	DAP Option.	No						
Network Improvements (eg increase capacity, storage, conveyance)	SLOW FC01 - SLOWHILL COPSE MARCHWOOD WTW	PO5 and PO14 - Spill Assessments	SLOW.PW01.16	Storage	Use Hydraulic Model to identify storage volume needed to prevent the high spilling CSO from discharging into Shellfish Waters.	Yes	Yes	Yes	Major Positive +++	£2,560K	Yes	Best Value
Network Improvements (eg increase capacity, storage, conveyance)	SLOW FC02 - ASHDENE ROAD ASHURST CSO	PO5 - Spill Assessments	SLOW.PW01.17	Storage	Use Hydraulic Model to identify storage volume needed to prevent the high spilling CSO from discharging into Shellfish Waters.	Yes	Yes	Yes	Major Positive +++	£790K	Yes	Best Value
Network Improvements (eg increase capacity, storage, conveyance)	Catchment Wide/Treatment Works	PO5 - Spill Assessment	SLOW.PW01.18	Overflow improvements	Installation of automatic storm tank return valves at CSOs.	No						Risk and uncertainty - future resilience
Network Improvements (eg increase capacity, storage, conveyance)	North Dibden WPS/Downes Park Totton WPS/All catchment WPS	PO2 - Pollution Risk (Operational)	SLOW.PW01.19	Pumping Station Improvements	Variable speed drives at pumping stations/refurbish these older ones - standard at all new istallations.	Yes	No					Environmental - Strategic Environmental Assessment
Improve treatment (capacity and quality at existing works or develop new WTWs)	SLOWHILL COPSE MARCHWOOD WTW	PO2- Pollution Risk	SLOW.PW02.1	Maintenance Programme WTW	Improve resilience: Identify potential locations across the catchment for suface water removal to enhance the efficacy of the existing tertiary treatment at the works and reducing storm spills.	Yes	Yes	Yes	Major Positive +++	£695K	Yes	Best Value
Improve treatment (capacity and quality at existing works or develop new WTWs)	SLOWHILL COPSE MARCHWOOD WTW	PO8 (2050)- Dry Weather Flow	SLOW.PW02.2	Permit Review	Incease capacity of the Wastewater Treatment Works (WTW).	Yes	Yes	Yes	Minor Positive +	£2,270K	Yes	Best Value
Wastewater Transfer	SLOWHILL COPSE MARCHWOOD WTW	PO8 (2050)- Dry Weather Flow	SLOW.PW03.1	Construct New WPS & Rising Main	Within 10km radius of SLOW is POOD which in 2050 will have approximately 2690m3day of headroom (until it is above 80% of its DWF permit).	No						Technically feasible
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

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Mitigate impacts on Water Quality												
Reduce consequences Properties (e.g. Property Flood Resilience)	Fulmar Drive, Princess Road, Jacobs Gutter Lane	PO1- Internal Flooding	SLOW.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	Testwood Lane	PO1- Internal Flooding	SLOW.OT01.1	Investigation into causes	Further investigation to identify the cause of the internal flooding incident.	Yes	No					Environmental - Strategic Environmental Assessment
Study/ investigation to gather more data	Catchment Wide	PO8 (2050)- Dry Weather Flow	SLOW.OT01.2	Infiltration Reduction Plan	Relining/improving structural grades of sewers across the catchment.	Yes	No					Operational
Study/ investigation to gather more data	Solent and Dorset Coast Solent & Southampton Water Solent Maritime	PO11 - Nutrient Neutrality	SLOW.OT01.3	Nutrient Budget	Study / Investigation: Develop a nutrient budget and investigate the risks and sources impacting these named Habitat sites.	Yes	Yes	Yes	Minor Positive +	£75K	Yes	Best Value
Study/ investigation to gather more data	Catchment Wide	PO1- Internal Flooding PO5- Storm Overflow PO7- Hydraulic Overload	SLOW.OT01.4	Improve Hydraulic Model	Study / Investigation: Update and re-verify the Slowhill Copse Marchwood Hydraulic Model to improve model confidence.	Yes	Yes	Yes	Minor Positive +	£225K	Yes	Best Value
Study/ investigation to gather more data	SLOW FC01 - SLOWHILL COPSE MARCHWOOD WTW	PO5 and PO14 - Spill Assessments	SLOW.OT01.5	Storage	The DAP model has a confidence score of 3 and was last verified in 1998 to 2012 The key risk between DAP and DWMP models is the model and FEH rainfall used.	Yes	No					Feasibility and Risk
Study/ investigation to gather more data	SLOW FC01 - DOWNES PARK TOTTON WPS	PO5 and PO14 - Spill Assessments	SLOW.OT01.6	Storage	Use Hydraulic Model to identify storage volume needed to prevent the high spilling CSO from discharging into Shellfish Waters.	Yes	Yes	Yes	Major Positive +++	£TBC - With Partners	Yes	Best Value
Study/ investigation to gather more data	Treatment Works/North Dibden WPS	PO2 - Pollution Risk (Operational)	SLOW.OT01.7	Storage	Use Hydraulic Model to identify storage volume needed to prevent the high spilling CSO.	No						Deliver the required outcome
Study/ investigation to gather more data	Treatment Works	PO11 - Nutrient Neutrality	SLOW.OT01.8	Study / Investigations	Investigation of use of treatment works doubling as greenhouses available for the public to use.	Yes	No					Feasibility and Risk