

Ashlett Creek Fawley 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	Along route of A326 highways corridor	PO5 - Hydraulic Drivers	ASHL.SC01.1	Surface Water Separation	Study / Investigation: Identify suitable location/s for surface water separation along route of A326, partnering with NFs recreational mitigation project (update hydraulic model) Removal of connected surface water into the sewer in partnership with Hampshire Highways, during the A326 highways corridor improvements.	Yes	Yes	Yes	Moderate Positive ++	£TBC - With Partners	No	Best Value
Control/ Reduce surface water entering the sewers	Catchment Wide / L4	PO5 - Hydraulic Drivers	ASHL.SC01.2	Surface Water Separation	Removal of connected surface water into the sewer network at source.	No						Deliver the required outcome
Control/ Reduce surface water entering the sewers	Northwest of Catchment / Springfield Avenue	PO5 - Hydraulic Drivers	ASHL.SC01.3	Changes in Rural Land Drainage	Council naturalisation project at the north west of the catchment/Springfield Avenue.	No						Risk and uncertainty - future resilience
Control/ Reduce surface water entering the sewers	Northwest of Catchment / Springfield Avenue	PO5 - Hydraulic Drivers	ASHL.SC01.4	Natural Flood Management	Council naturalisation project at the north west of the catchment/Springfield Avenue.	No						Risk and uncertainty - future resilience
Control/ Reduce surface water entering the sewers	Catchment Wide / L4	PO5 - Hydraulic Drivers	ASHL.SC01.5	Changes in Rural Land Drainage	Swales, sediment traps, bunds, ponds, wetland/constructed farm - areas identified using Hydraulic model.	No						Cost Effective
Control/ Reduce surface water entering the sewers	Catchment Wide / L4	PO5 - Hydraulic Drivers	ASHL.SC01.6	Natural Flood Management	Storing water by planting hedgerows and trees, slowing water through bunds/ditches/ponds, increasing soil infiltration via improved soil structure, intercepting rainfall via increased vegetation - areas identified using Hydraulic model.	No						Deliver the required outcome and Risk and uncertainty - future resilience
Control/ Reduce surface water entering the sewers	Calshot	PO5 - Hydraulic Drivers	ASHL.SC01.7	Natural Flood Management	Opportunity to separate runoff and divert into NFMs in Calshot area.	No						Deliver the required outcome and Risk and uncertainty - future resilience
Control/ Reduce surface water entering the sewers	Calshot	PO5 - Hydraulic Drivers	ASHL.SC01.8	Surface Water Separation	Opportunity to separate runoff and divert into NFMs in Calshot area.	No						Deliver the required outcome and Risk and uncertainty - future resilience
Control/ Reduce surface water entering the sewers	Fawley refinery Complex	PO5 - Hydraulic Drivers	ASHL.SC01.9	Surface Water Separation	Opportunity to separate runoff and SuDS at the new development at the Fawley refinery complex.	No						Deliver the required outcome and Risk and uncertainty - future resilience
Control/ Reduce surface water entering the sewers	Fawley refinery Complex	PO5 - Hydraulic Drivers	ASHL.SC01.10	SuDS	Opportunity to separate runoff and SuDS at the new development at the Fawley refinery complex.	No						Deliver the required outcome and Risk and uncertainty - future resilience
Control/ Reduce surface water entering the sewers	Catchment Wide/ L4	PO5 - Hydraulic Drivers	ASHL.SC01.11	Rain Water harvesting	Collect rainwater from roofs and other paved surfaces for use on site.	No						Cost Effective, Deliver the required outcome, Environmental risk mitigatable and Risk and uncertainty - future resilience
Control/ Reduce surface water entering the sewers	Catchment Wide / L4	PO5 - Hydraulic Drivers	ASHL.SC01.12	SuDS	Installation of SuDS - areas identified using Hydraulic model.	No						Deliver the required outcome
Control / Reduce groundwater infiltration												
Improve quality of wastewater entering sewers (inc reducing FOG, RAG, pre-treatment, trade waste)												
Control / Reduce the quantity / flow of wastewater entering sewer system												
Network Improvements (eg increase capacity, storage, conveyance)	Catchment Wide	PO5 - Hydraulic Drivers PO14 - Shellfish Waters	ASHL.PW01.1	Additional Storage Capacity	Construction of online/offline storage as stipulated point across the catchment, as outlines in the hydraulic model - using DAP results.	No						Do customer support it
Network Improvements (eg increase capacity, storage, conveyance)	Catchment Wide	PO5 - Hydraulic Drivers PO14 - Shellfish Waters	ASHL.PW01.2	Additional Conveyance Capacity	Based on results of hydraulic model (option PENN.	No						Environmental risk mitigatable
Network Improvements (eg increase capacity, storage, conveyance)	Catchment Wide	PO5 - Hydraulic Drivers PO14 - Shellfish Waters	ASHL.PW01.3	Separate Flows (WfL-H)	Construction of new surface water sewers to channel excess flow away from combined/foul sewers, instead utilising water to assist in capture of further water for WfL-H project.	No						Deliver the required outcome and Risk and uncertainty - future resilience
Improve treatment (capacity and quality at existing works or develop new WTWs)	Ashlett Creek Fawley WTW	PO11 - Nutrient Neutrality	ASHL.PW02.1	Install P removal tertiary plant	Remove more P from final effluent, past the currently allowed 1Mg/L permitted rate.	No						Risk and uncertainty - future resilience
Improve treatment (capacity and quality at existing works or develop new WTWs)	Ashlett Creek Fawley WTW	PO11 - Nutrient Neutrality	ASHL.PW02.2	Install N removal tertiary plant	Currently no Nitrate permit, although there is an Ammonia permit.	No						Risk and uncertainty - future resilience
Improve treatment (capacity and quality at existing works or develop new WTWs)	Ashlett Creek Fawley WTW	PO11 - Nutrient Neutrality PO14 - Shellfish Waters	ASHL.PW02.3	Install UV removal tertiary plant	Install to remove from final effluent.	No						Cost Effective and Risk and uncertainty - future resilience
Wastewater Transfer												
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	Ashlett Creek Fawley WTW	PO11 - Nutrient Neutrality	ASHL.RC03.1	Catchment permits	Reduce consented permit levels for nutrients and solids in the final effluent from treatment works.	No						Deliver the required outcome
Mitigate impacts on Water Quality	Ashlett Creek Fawley WTW	PO11 - Nutrient Neutrality	ASHL.RC03.2	Effluent re-use	Re-use of effluent from site - pumping of this effluent to potable process treatment works.	No						Cost Effective
Reduce consequences Properties (e.g. Property Flood Resilience)												
Study/ investigation to gather more data	Calshot	PO5 - Hydraulic Drivers PO11 - Nutrient Neutrality PO14 - Improve Shellfish Water Quality	ASHL.OT01.1	Further Study/Investigation	Model cause of spill at WPS and MH at Calshot.	Yes	No					Environmental - Strategic Environmental Assessment
Study/ investigation to gather more data	Catchment Wide	PO5 - Hydraulic Drivers PO11 - Nutrient Neutrality PO14 - Improve Shellfish Water Quality	ASHL.OT01.2	Further Study/Investigation	Further Study/Investigation - Identifying ideal locations to separate foul and surface water systems, after updating of hydraulic model.	Yes	No					Environmental - Strategic Environmental Assessment

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Study/ investigation to gather more data	Solent and Dorset Coast Solent & Southampton Water Solent Maritime	PO11 - Nutrient Neutrality	ASHL.OT01.3	Nutrient Budget	Study / Investigation: Develop a nutrient budget and investigate the risks and sources impacting these named Habitat sites Study / Investigation required to understand the impact of wastewater discharges and achieve or prevent deterioration from Natural England's revised Common Standards Monitoring Guidance (rCSMG) targets Total Phosphorus (TP) and Total Nitrogen (TN).	Yes	Yes	Yes	Minor Positive +	£75K	Yes	Best Value
Study/ investigation to gather more data	Ashlett Creek Fawley WTW CSO	PO5 - High Spilling CSOs PO14 - Shellfish Waters	ASHL.OT01.4	Further Study/Investigation	Surface water separation to reduce spills from Ashlett Creek Fawley storm overflow.	Yes	Yes	Yes	Major Positive +++	£1,000K	Yes	Best Value
Study/ investigation to gather more data	Approaches To Southampton Water	PO14- Shellfish Water Quality	ASHL.OT01.5	Shellfish Study- Overflows discharging to Shellfish waters	Study / Investigation: Shellfish water study.	Yes	Yes	Yes	Minor Positive +	£TBC - With Partners	Yes	Best Value
Study/ investigation to gather more data	Catchment Wide	PO5- Storm Overflow	ASHL.OT01.6	Improve Hydraulic Model	Study / Investigation: Update and re-verify the Ashlett Creek Fawley Hydraulic Model to improve model confidence.	Yes	Yes	Yes	Minor Positive +	£250K	Yes	Best Value
Study/ investigation to gather more data	Fawley refinery complex	PO5- Storm Overflow	ASHL.OT01.7	Further Study/Investigation	Study / Investigation: Identify suitable location/s for surface water separation in the Fawley refinery complex.	Yes	Yes	Yes	Minor Positive +	£TBC - With Partners	Yes	Best Value