

# Portswood 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, PO2, PO5, PO10                        | POOD.SC01.1      | Surface water separation                | Greening the city – manage water in a different way.   | Yes                   | No                  |                  |                      |                      |                  | Environmental - Strategic Environmental Assessment          |
| Control/ Reduce surface water entering the sewers   | Catchment Wide                    | PO1, PO2, PO5, PO10                        | POOD.SC01.2      | Rain Gardens                            | Rain gardens to take roof runoff.  | Yes                   | No                  |                  |                      |                      |                  | Environmental - Strategic Environmental Assessment          |
| Control/ Reduce surface water entering the sewers   | Catchment Wide                    | PO1, PO2, PO5, PO10                        | POOD.SC01.3      | SUDs                                    | Smaller SuDS interventions – the flow can be held, intercepted, infiltrated.   | Yes                   | Yes                 | Yes              | Moderate Positive ++ | £TBC - With Partners | No               | Best Value  |
| Control/ Reduce surface water entering the sewers   | Catchment Wide                    | PO1, PO2, PO5, PO10                        | POOD.SC01.4      | Rainwater harvesting - industrial       | Target larger industrial units – roof runoff into tanks, for example, Tesco.   | 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, PO2, PO5, PO10                        | POOD.SC03.1      | Customer Education Plan                 | Partnership with manufacturers to make it clearer what can and can't be flushed/removal of non-flushable products from market.                           | No                    |                     |                  |                      |                      |                  | Deliver the required outcome and Do customer support it     |
| Improve quality of wastewater entering sewers (inc reducing FOG, RAG, pre-treatment, trade waste) | West of catchment/ University     | PO1, PO2, PO5, PO10                        | POOD.SC03.2      | Customer Education Plan                 | Customer communication and education.  | Yes                   | No                  |                  |                      |                      |                  | Performance and Sustainability                              |
| Improve quality of wastewater entering sewers (inc reducing FOG, RAG, pre-treatment, trade waste) | West of catchment/ University     | PO1, PO2, PO5, PO10                        | POOD.SC03.3      | Customer Education Plan                 | Sharing messages in different languages through the local media.   | Yes                   | No                  |                  |                      |                      |                  | Performance and Sustainability                              |
| Improve quality of wastewater entering sewers (inc reducing FOG, RAG, pre-treatment, trade waste) | Catchment Wide                    | PO1- Internal Flooding                     | POOD.SC03.4      | 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                        | POOD.SC03.5      | 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                          |                                   |  |                  |   |  |                       |                     |                  |                      |                      |                  |   |
| Network Improvements (eg increase capacity, storage, conveyance)                                  | Catchment Wide                    | PO1, PO2, PO5, PO10                        | POOD.PW01.1      | Smart networks                          | Smart networks – to better understand what is taking place in the sewer and improve incident response time.  | Yes                   | No                  |                  |                      |                      |                  | Operational   |
| Network Improvements (eg increase capacity, storage, conveyance)                                  | Catchment Wide                    | PO6, PO11                                  | POOD.PW01.2      | Increase / improve screening in network | More intervention and protection for surface water sewers.   | Yes                   | No                  |                  |                      |                      |                  | Operational   |
| Network Improvements (eg increase capacity, storage, conveyance)                                  | Catchment Wide                    | PO1, PO2                                   | POOD.PW01.3      | Operations improvements                 | Improved jetting and washing programme.  | Yes                   | No                  |                  |                      |                      |                  | Operational   |
| Network Improvements (eg increase capacity, storage, conveyance)                                  | Treatment Works                   | PO6, PO11                                  | POOD.PW01.4      | In network treatment                    | Upstream solutions to mitigate impacts at works.   | Yes                   | Yes                 | Yes              | Minor Positive +     | £TBC - With Partners | No               | Best Value  |
| Network Improvements (eg increase capacity, storage, conveyance)                                  | Catchment Wide                    | PO1, PO2, PO5, PO10                        | POOD.PW01.5      | Network upsize and increased storage    | DAP Option.  | Yes                   | No                  |                  |                      |                      |                  | Feasibility and Risk  |
| Network Improvements (eg increase capacity, storage, conveyance)                                  | Catchment Wide                    | PO1, PO2, PO5, PO10                        | POOD.PW01.6      | Tunnel under river                      | To manage storm flow from POOD, MILL and WOOL (plus PEEL?).  | Yes                   | No                  |                  |                      |                      |                  | Operational   |
| Network Improvements (eg increase capacity, storage, conveyance)                                  | Catchment Wide                    | PO1- Internal Flooding                     | POOD.PW01.7      | Maintenance Programme                   | An efficient maintenance programme for pumping stations and/Treatment works to eliminate the risk of a pollution incident due to an operational failure. | Yes                   | Yes                 | Yes              | Minor Positive +     | £6,970K              | Yes              | Best Value  |
| Network Improvements (eg increase capacity, storage, conveyance)                                  | Catchment Wide                    | PO1- Internal Flooding                     | POOD.PW01.8      | Additional Storage                      | Additional Storage.  | No                    |                     |                  |                      |                      |                  | Risk and uncertainty - future resilience                    |
| Network Improvements (eg increase capacity, storage, conveyance)                                  | Catchment Wide                    | PO1- Internal Flooding                     | POOD.PW01.9      | Pipe Rehabilitation Programme           | Pipe Rehabilitation Programme.   | No                    |                     |                  |                      |                      |                  | Cost Effective  |
| Network Improvements (eg increase capacity, storage, conveyance)                                  | Catchment Wide                    | PO2- Pollution Risk                        | POOD.PW01.10     | Maintenance Programme WPS               | Improve resilience: An efficient maintenance programme for pumping stations to eliminate the risk of a pollution incident due to an operational failure. | No                    |                     |                  |                      |                      |                  | Environmental risk mitigatable                              |
| Network Improvements (eg increase capacity, storage, conveyance)                                  | Catchment Wide                    | PO2- Pollution Risk                        | POOD.PW01.11     | Additional Storage                      | Additional Storage.  | No                    |                     |                  |                      |                      |                  | Risk and uncertainty - future resilience                    |
| Network Improvements (eg increase capacity, storage, conveyance)                                  | Catchment Wide                    | PO3- Sewer Collapse                        | POOD.PW01.12     | Pipe Rehabilitation Programme           | Targeted CCTV / electroscan surveys and proactive sewer rehabilitation to reduce risk of sewer collapse.   | No                    |                     |                  |                      |                      |                  | Deliver the required outcome                                |
| Network Improvements (eg increase capacity, storage, conveyance)                                  | Catchment Wide                    | PO8 (2050)- Dry Weather Flow               | POOD.PW01.13     | Pipe Rehabilitation Programme           | Relining/improving structural grades of sewers across the catchment.   | No                    |                     |                  |                      |                      |                  | Cost Effective and Risk and uncertainty - future resilience |
| Network Improvements (eg increase capacity, storage, conveyance)                                  | Catchment Wide                    | PO9- GE Status / Potential                 | POOD.PW01.14     | Additional Storage                      | Additional Storage.  | No                    |                     |                  |                      |                      |                  | Risk and uncertainty - future resilience                    |
| Network Improvements (eg increase capacity, storage, conveyance)                                  | Catchment Wide                    | PO9- GE Status / Potential                 | POOD.PW01.15     | Pipe Rehabilitation Programme           | Pipe Rehabilitation Programme.   | No                    |                     |                  |                      |                      |                  | Cost Effective and Risk and uncertainty - future resilience |
| Network Improvements (eg increase capacity, storage, conveyance)                                  | Catchment Wide                    | PO12- Ground Water Pollution               | POOD.PW01.16     | Pipe Rehabilitation Programme           | Targeted CCTV / electroscan surveys and proactive sewer rehabilitation to reduce risk of sewer collapse.   | No                    |                     |                  |                      |                      |                  | Cost Effective and Risk and uncertainty - future resilience |
| Network Improvements (eg increase capacity, storage, conveyance)                                  | Catchment Wide                    | PO2- Pollution Risk                        | POOD.PW01.17     | Pipe Rehabilitation Programme           | Pipe Rehabilitation Programme.   | Yes                   | Yes                 | Yes              | Minor Positive +     | £65K                 | Yes              | Best Value  |
| Network Improvements (eg increase capacity, storage, conveyance)                                  | Catchment Wide                    | PO1- Internal Flooding                     | POOD.PW01.18     | Jetting Programme                       | Jetting Programme.   | Yes                   | Yes                 | Yes              | Minor Positive +     | £240K                | Yes              | Best Value  |
| Network Improvements (eg increase capacity, storage, conveyance)                                  | Catchment Wide                    | PO2- Pollution Risk                        | POOD.PW01.19     | Jetting Programme                       | Jetting Programme.   | Yes                   | Yes                 | Yes              | Minor Positive +     | £80K                 | Yes              | Best Value  |
| Network Improvements (eg increase capacity, storage, conveyance)                                  | POOD FC01 GLEN EYRE ROAD          | PO4 and PO7 - Growth                       | POOD.PW01.20     | Upsize and offline storage              | DAP Option.  | Yes                   | Yes                 | Yes              | Major Positive +++   | £7,005K              | Yes              | Best Value  |
| Network Improvements (eg increase capacity, storage, conveyance)                                  | POOD FC02 MEGGESON AVENUE         | PO4 and PO7 - Growth                       | POOD.PW01.21     | New sewer and manhole                   | DAP Option.  | Yes                   | Yes                 | Yes              | Major Positive +++   | £490K                | Yes              | Best Value  |
| Network Improvements (eg increase capacity, storage, conveyance)                                  | POOD FC03 PORTWOOD CRICKET GROUND | PO4 and PO7 - Growth                       | POOD.PW01.22     | Online tank, new sewer and manhole      | DAP Option.  | Yes                   | Yes                 | Yes              | Major Positive +++   | £4,450K              | Yes              | Best Value  |
| Network Improvements (eg increase capacity, storage, conveyance)                                  | POOD FC04 BURGESS ROAD            | PO4 and PO7 - Growth                       | POOD.PW01.23     | New sewer                               | DAP Option.  | Yes                   | No                  |                  |                      |                      |                  | Feasibility and Risk  |
| Network Improvements (eg increase capacity, storage, conveyance)                                  | POOD FC05 ON-LINE STORAGE         | PO4 and PO7 - Growth                       | POOD.PW01.24     | Online storage                          | DAP Option.  | Yes                   | Yes                 | Yes              | Major Positive +++   | £325K                | Yes              | Best Value  |
| Improve treatment (capacity and quality at existing works or develop new WTWs)                    | Treatment Works                   | PO6  | POOD.PW02.1      | Increase Capacity                       | Storm storage increase.  | Yes                   | Yes                 | Yes              | Minor Positive +     | £4,720K              | Yes              | Best Value  |
| Improve treatment (capacity and quality at existing works or develop new WTWs)                    | Treatment Works                   | PO11                                       | POOD.PW02.2      | Tertiary Treatment - reedbeds           | Reedbeds to help with nutrient neutrality.   | Yes                   | Yes                 | Yes              | Minor Positive +     | £TBC - With Partners | No               | Best Value  |

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| Improve treatment (capacity and quality at existing works or develop new WTWs) | Treatment Works                                    | PO6, PO11                                  | POOD.PW02.3      | Centralise treatment  | Convert into a terminal pumping station, transferring flows to Chickenhall Eastleigh.   | Yes                   | Yes                 | Yes              | Minor Positive +   | £TBC - With Partners | No               | Best Value                                       |
| Improve treatment (capacity and quality at existing works or develop new WTWs) | Treatment Works                                    | PO6, PO11                                  | POOD.PW02.4      | Screening for micro-plastics                                | Improve infrastructure (screens) for dealing with micro plastics – there is a key site for this in the northern Portswood catchment.  | No                    |                     |                  |                    |                      |                  | Deliver the required outcome                     |
| 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  |  |  |                  |   |   |                       |                     |                  |                    |                      |                  |  |
| Reduce consequences Properties (e.g. Property Flood Resilience)                |  |  |                  |   |   |                       |                     |                  |                    |                      |                  |  |
| Study/ investigation to gather more data                                       | Catchment Wide                                     | PO1, PO2, PO5, PO10                        | POOD.OT01.1      | Data sharing study  | Better data sharing between partners – if we all know the full picture we will be better equipped to apply for funding to undertake flooding schemes throughout the catchment.      | Yes                   | Yes                 | Yes              | Minor Positive +   | £TBC - With Partners | No               | Best Value                                       |
| Study/ investigation to gather more data                                       | POOD FC01 - PORTSWOOD WTW                          | PO5 and PO14 - Spill Assessments           | POOD.OT01.2      | Storage   | The model has a DAP confidence score of 2 and was last verified in 2012.  | Yes                   | Yes                 | Yes              | Major Positive +++ | £TBC - With Partners | Yes              | Best Value                                       |
| Study/ investigation to gather more data                                       | POOD FC02 - SIRDAR ROAD SOUTHAMPTON CSO            | PO5 and PO14 - Spill Assessments           | POOD.OT01.3      | Storage   | The model has a DAP confidence score of 2 and was last verified in 2012.  | Yes                   | Yes                 | Yes              | Major Positive +++ | £TBC - With Partners | Yes              | Best Value                                       |
| Study/ investigation to gather more data                                       | Solent and Dorset Coast Solent & Southampton Water | PO11 - Nutrient Neutrality                 | POOD.OT01.4      | Nutrient Budget   | Catchment is Hydraulically linked to; Solent and Dorset Coast (Threat/Remedy Identified or Anticipated)<br>Solent & Southampton Water (NO Threat/Remedy Identified or Anticipated). | Yes                   | Yes                 | Yes              | Minor Positive +   | £75K                 | Yes              | Best Value                                       |
| Study/ investigation to gather more data                                       | Catchment Wide                                     | PO4 PO5 PO7 PO10                           | POOD.OT01.5      | Improve Hydraulic Model                                     | Study / Investigation: Update and re-verify the Portswood Hydraulic Model to improve model confidence.  | Yes                   | Yes                 | Yes              | Minor Positive +   | £265K                | Yes              | Best Value                                       |
| Study/ investigation to gather more data                                       | Riverside Park                                     | PO11                                       | POOD.OT01.6      | Study / Investigation - Riverside Park inland bathing water | Study / Investigation: Identify potential opportunities to designate Riverside Park an inland bathing water.  | Yes                   | Yes                 | Yes              | Minor Positive +   | £TBC - With Partners | Yes              | Best Value                                       |