Hydro International
A CRH COMPANY

THE WINEP CHALLENGE

CONTENTS

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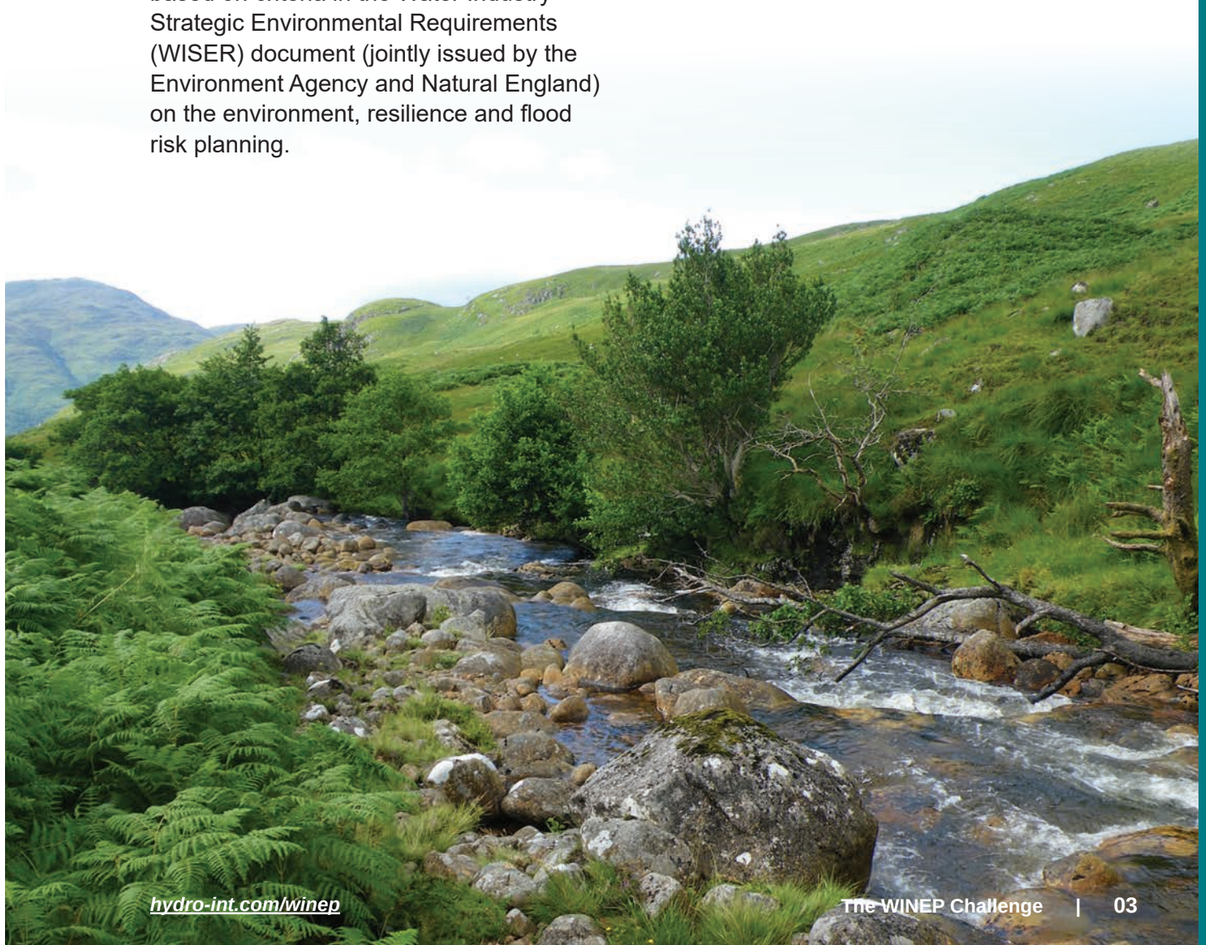
What is the Water Industry National Environment Programme?

The Water Industry National Environment Programme (WINEP) is a database of actions that the Environment Agency has requested water companies (WASCs) in England to action as part of their business plans in order to meet their environmental obligations. It was issued to water companies on 27 March 2020.

This list of projects has been compiled based on criteria in the Water Industry Strategic Environmental Requirements (WISER) document (jointly issued by the Environment Agency and Natural England) on the environment, resilience and flood risk planning.

WISER replaces the Defra Statement of Obligations and the Environment Agency's letter of expectations from PR14. It highlights the main obligations of the water companies and sets out actions for them to include in their business plans. Regulatory expectations include statutory and non-statutory obligations.



THE **WINEP CHALLENGE**

The **WINEP Challenge**

Delivery of the Water Industry National Environment Programme (WINEP) sits at the heart of each of the water & sewerage companies' (WASC's) business plans.

Hydro International understands the challenge that the WINEP projects brings to the WASCs and their business partners – **improving networks and assets** to reduce unnecessary CSO (Combined Sewer Overflow) spills and **improving water quality** in rivers by actioning the monitoring, investigating and improvement projects in the programme.

Performance against statutory and non-statutory obligations and water company business plans(which include WINEP objectives) is monitored by the water regulator, Ofwat who can impose fines on WASCs that are not meeting these objectives.

HOW WE CAN **HELP**

With a proven track record of installations around the world, Hydro International's range of products can help you find the right solutions for the WINEP challenge.

From sewer network and CSO monitoring to high performance inlet and storm tank overflow screens at WWTW's to retrofit, small footprint SuDS for surface water separation projects, Hydro International's products can help water company engineers and their business partners complete WINEP projects, whilst keeping maintenance and whole-life costs to a minimum.

Hydro International's solutions have been continuously **developed** and **improved** over **more than 40 years.**

Hydro International can provide application-specific technologies which have been developed and improved over more than 40 years, to help with the WINEP programme. Our teams of engineers and consultants deliver high quality monitoring and analysis, reliable maintenance and repair services, and bespoke design and installation services for packaged plant for small inlet works.

Packaged inlet works

Spot flow measurement

Small footprint stormwater treatment

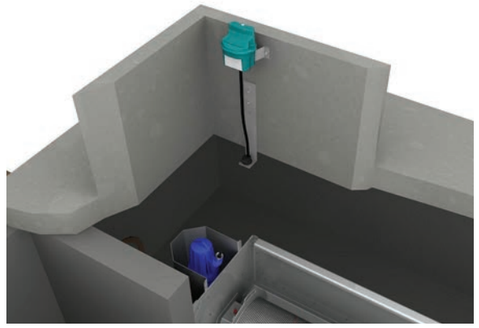
SEWER NETWORK AND EVENT DURATION MONITORING (EDM)

Understand sewer network and CSO behaviour to enable you to reduce or prevent CSO spills and prevent flooding.

Water company engineers can get **accurate, reliable** CSO spill event data and level and flow data in sewer networks with a Hydro-Logic® Smart Monitoring package.

The system helps water company engineers understand what is happening in sewer networks and at CSO points and provide them with data to allow them to provide solutions to **mitigate CSO spills** and **protect the water environment**.

Hydro International's Hydro-Logic® Smart Monitoring package requires no separate power supply and no civils works to install so is ideal for use in remote locations.



Hydro-Logic® Smart Monitoring on a Heliscreen® at a combined sewer overflow (CSO).

Hydro-Logic® Smart Monitoring of a sewer network.

RIVER FLOW, RESERVOIR LEVEL AND WATER QUALITY MONITORING

Meet WINEP objectives with continuous monitoring and spot measurements for flow, level and quality.

Our Hydro-Logic® Services team is the leading hydrometric service company in the UK, having provided these services since 1985. We have been the hydrometric training provider to the Environment Agency and SEPA for over **25 years**.

Hydro International's expert **Hydro-Logic® Services team** operate a network of over **1400** telemetered monitoring sites

We currently operate a **network of over 1400** telemetered continuous flow, level, water quality and weather monitoring sites, and carry out spot flow and quality measurements at thousands more.

We deliver Water Company National Environment Programme (WINEP) work for nearly every major water company in the UK, largely through framework agreements.

Reservoir level monitoring

River flow monitoring

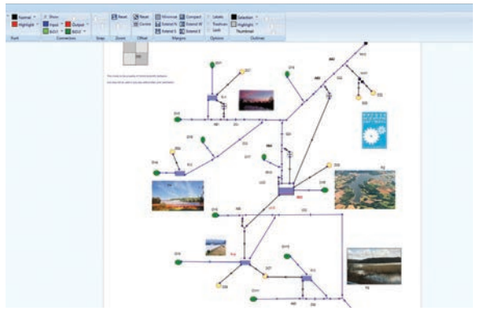
Water quality sampling

WATER RESOURCE CONSULTANCY SERVICES

Our Hydro-Logic® Services team offers a full range of water resources consultancy services, enabling water providers to effectively understand the performance of their water resources systems, and create both tactical and strategic plans to meet the challenge of an uncertain future.

Supporting this, our Hydro-Logic® Aquator software platform offers an industry-leading tool for complex water supply systems. It simulates the interaction between resources (rivers, groundwater and reservoirs) and is able to analyse the future availability of water in different scenarios, eg. demand, drought and climate change conditions.

This enables engineers to make informed decisions about assets and forecast operation risks and outage scenarios.



Hydro-Logic® Aquator simulation tool

Hydro-Logic® Aquator
an industry-leading simulation tool for water resource networks

As well as providing user licences for this software, we offer expert consultancy in the custom application of this software to help solve complex water resource planning problems.

Hydro-Logic® Aquator is also the only water resource supply software in the world approved to use Microsoft Visual Basic® for Applications (VBA) to customise its models - making it uniquely capable of helping people to address their most important water management challenges.

SURFACE WATER SEPARATION & SUDS

Reduce the load on the combined sewer network and control surface water with retrofit Sustainable Drainage Systems (SuDS) in space-constrained urban areas.

Separating surface water out of combined sewers in urban areas to reduce flow volumes can be difficult due to the lack of space available.

Design engineers looking to retrofit SuDS to deal with the surface water can choose from a range of **proven** management solutions for controlling the flow, storing or infiltrating excess volumes and providing reliable treatment to **preserve the quality** of receiving watercourses.

All our surface water products work with, **enable**, **enhance** or **protect** natural SuDS such as ponds and swales, helping design engineers to deliver compliant SuDS in space-constrained urban areas.

For example:

- Providing pre-treatment for a pond will ensure a good water quality and eliminate the need for a sediment forebay, **saving space** and **simplifying maintenance** procedures.

- Siting storage or infiltration beneath an existing green space can **preserve a community amenity area** whilst still preventing flooding.

Enable *- treatment and flow control in a tight space*

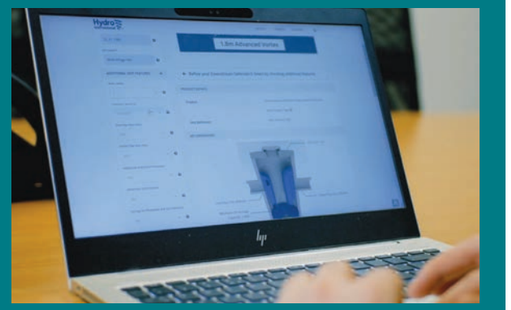
Enhance *- retaining green space with underground storage*

Protect *- a stormwater storage area with pre-treatment*

Try the online design tool

Design your own flow control or stormwater treatment separator with our free online design tool.

hydro-int.design



Flow control

Design engineers can select the most appropriate flow control to meet site objectives from our range of Hydro-Brake® Flow Controls - from simple orifice plates to **precision-engineered** vortex flow controls, they can be used to regulate surface, foul/combined and watercourse flows preventing flooding.

Simple, predictable, **low-maintenance regimes** make them straightforward for management organisations to take on and remove any concerns for adopting authorities.

Storage & infiltration

Our easy to maintain geocellular storage solutions can help engineers **increase the capacity** of swales, ponds or rain gardens, or fit surface water storage below ground to retain amenity areas, or beneath roads and car parks and **reduce land take** of surface SuDS.

Balance flows between connected storage ponds

Control flows into a watercourse

Retrofit infiltration, storage and control to mitigate flooding at a town car park

Find out more:

Read about how a **community in Southwark achieved flood prevention** but still kept the green space in their park.

Read it here: hydro-int.com/southwark

Pollution prevention

Engineers can help protect the water environment from harmful pollutants carried in surface water with targeted pollutant removal delivered by our range of reliable, small footprint surface water treatment devices.

Hydro International's Downstream Defender® Select hydrodynamic vortex separator has **no moving parts, no power requirement**, and is ideal for retrofit SuDS/surface water schemes. It can provide pre-treatment to ponds and swales, **reducing maintenance** commitments by removing litter and oils from the flows and preventing build-up of silts and associated pollutants. With the addition of Hydro-Logic® Smart Maintenance, **automatic alerts** for maintenance can be sent only when required.

Select targeted pollutant removal from **litter and coarse sediments** to **dissolved pollutants**

For sites where a higher level of treatment is required, our Up-Flo™ Filter can provide multi-stage treatment, including screening and filtration, all in a **small footprint**. Engineers can also design in **additional biodiversity** with our small footprint Hydro Biofilter™ biofiltration system with its shrub or small tree to provide a high level of surface water treatment, including dissolved pollutants.

Biofiltration in a small-footprint and enhancing biodiversity

Multi-stage treatment underground to save space

Find out more:

Read about how a **Downstream Defender® is protecting a pond from harmful pollutant build-up.**

Read it here: hydro-int.com/shortwood

CSO SCREENING & TREATMENT

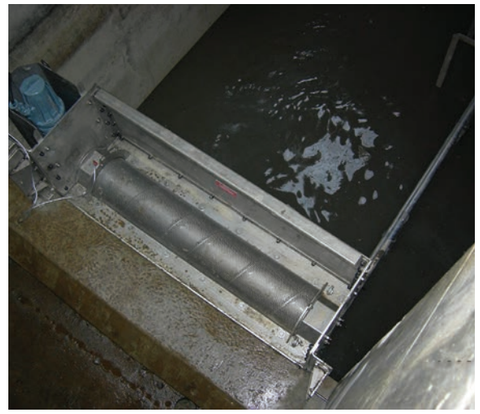
Get reliable CSO screening and treatment to protect water bodies from harmful sewer spills.

Water company engineers and operators can rely on our range of CSO screens and separators to provide reliable screening and treatment to CSOs, ensuring that any spills are treated before discharge. They have a **proven track record** in the UK and around the world.

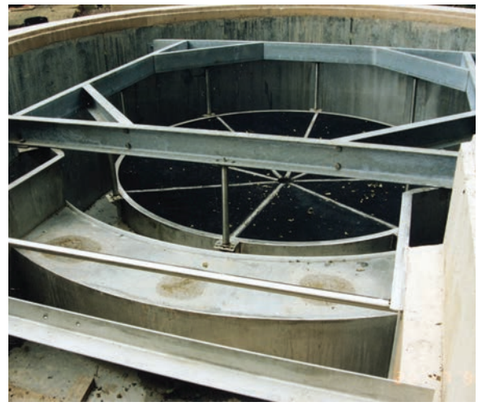
Collect **reliable** and **accurate** data on CSO spills by adding our **Hydro-Logic® Event Duration Monitoring** (EDM) package to new or existing CSO points.

All our screens provide at least 6 mm in two direction screening and engineers can select from static screens, hydraulically cleaned screens and powered self-cleansing screens. We can also **combine screening** with **hydrodynamic separation** to additionally remove total suspended solids (TSS) and biochemical oxygen demand (BOD), with a further option for chemically enhanced removal.

These CSO devices provide engineers with ideal solutions for new CSO points or where aging assets are in need of replacement or upgrade.



Powered, hydraulically cleaned screening



Screening with hydrodynamic vortex separation

Find out more:

Read about a **Combined Sewer Overflow (CSO) upgrade in urban Sheffield.**

Read it here: hydro-int.com/cso-sheffield

IMPROVING WwTW CAPACITY

Inlet works screening

Remove more screening solids and reduce TOTEX and OPEX with small packaged inlet works and larger escalator inlet screens.

Upgrading small WwTWs can be made easier for engineers using Hydro International's inlet works packages. They deliver screening, washing, transport, compaction and de-watering in a **single 'stand-alone' package**.

Deliver **screening**, **washing**, **transport**, **compaction** and **de-watering** in a stand-alone package.

Engineers and operators can benefit from the many key operational features that provide both **OPEX** and **TOTEX** savings; including low power consumption, hard wearing components and easy access for routine maintenance as screens are fitted on pivotal frames.

Find out more:

Watch a video of the modular, turn key inlet works package at **Southern Water's Isle of Grain WwTW.**

Read it here: hydro-int.com/isleofgrain

Bespoke packaged inlet works

Complete screens and screens handling package

For larger WwTWs with flows over 150 l/s an escalator or centre flow band screen will provide operators with an average capture ratio of over 85%.

Deliver over **85% average** screenings capture with an escalator or centre flow band screen.

Engineers can also **increase flow throughput by up to 30%** in the same footprint by switching to a specialised Frankenberger screen.

A key process on a WwTW for phosphorus removal is the Membrane Bioreactor (MBR). Removing more solids than conventional screens, at fine screen levels can not only improve the efficiency of ferric dosing plants, but it can protect MBR processes and lead to a reduction in the amount of phosphorus that needs to be removed before discharge. We can deliver fine screening, often down to 1-3 mm for MBR protection.

85% capture ratio for flows over 150 l/s

Remove more solids & improve downstream efficiency

Find out more about inlet works screening:

Read about an packaged upgrade screening solution for **Southern Water's Whitewall Creek WwTW**.

Read it here: hydro-int.com/whitewall

Find out more about inlet works grit removal:

Read how a grit removal system is **protecting a treatment plant** from the impacts of grit.

Read it here: hydro-int.com/cs-kewaskum

Inlet works grit removal

Prevent abrasion and clogging of plant equipment, and protect capacity and efficiency, by removing more and finer grit at the inlet works.

When upgrading WwTWs, **adding or improving** grit removal systems at the inlet works can help to prevent downstream processes from clogging with grit and reduce wear on conveyor systems including pumps.

Prevent abrasion damage and clogging by capturing grit down to **75 microns** with hydraulically driven **vortex grit separation**.

Our range of grit management systems include grit removal, grit washing and grit classifying technologies that enable WwTW operators to **remove more and finer grit** more efficiently. This helps to reduce Totex costs by reducing wear on pumps and removal of grit from primary settlement tanks and **improving efficiency** of aeration and digesters.

Hydrodynamic vortex grit removal

Clean, dewatered grit ready for disposal.

Screw Pumping

Increase capacity in the same footprint by upgrading to an enclosed compact Kuhn Archimedean Screw Pump.

On sites where there is an existing screw pump, capacity can be increased easily by upgrading to a compact, enclosed Archimedean Screw Pump which fits neatly into existing troughs. This means that extensive civils such as trough retouching or new trough construction are not required, **significantly cutting costs and speeding up installation**.

The gentle action of the Archimedean Screw Pump **prevents break-up of solids and flocs,** enabling downstream process to more easily separate solids, saving costs and energy.

Increase conveyance capacity **without the need** for extensive civils costs such as renovation of, or new build troughs.

The durability and reliability of the machine and it's resistance to clogging means it requires little maintenance which helps operators keep **OPEX** and **TOTEX** costs low.

Kuhn Archimedean Screw Pumps

INCREASING CAPACITY TO MANAGE LARGER FLOWS & STORM TANK SCREENING

Protect watercourses from untreated sewer discharges from storm flows and storm tanks with reliable powered or non-powered screening.

Where additional storm tanks are added to increase stormwater storage at a WwTW, including screening at the inlet will ensure that there is **no build-up of solids** in the tank that could reduce the capacity. This will reduce the maintenance and clean out commitment. When the tank capacity is exceeded during storm events, only pre-screened flows will be discharged to the watercourse.

Reduce storm tank cleaning by pre-screening storm flows with powered or non-powered screens

Our range of screens can provide WwTW operators with reliable 6 mm in two direction screening with a **powered** Heliscreen® or with a simple **non-powered** Hydro-Static® Screen.

Engineers can also screen flows that bypass direct to the watercourse with either an MNSS Combined Screen or an FSM Escalator screen, depending on flow rates.

Storm tank pre-screening

Bypass storm flow screening for low to medium flow rates

Bypass storm flow screening for higher flow rates

WHO WE ARE

We are a global company who provide **advanced products, services** and expertise to help municipal, industrial and construction customers to **improve** their water management processes, **increase** operational performance and **reduce** environmental impact.

With over **40 years of experience** and a reputation for engineering excellence, Hydro International's wastewater screening, grit removal and CSO screening range of products have helped water and sewerage companies around the world save costs by **improving** their process performance and reducing maintenance, while **helping to protect** the water environment from pollution. Hydro International also has a **proven** and reliable range of products to control, store or infiltrate surface water, delivering **exemplary** stormwater management systems and SuDS (Sustainable Drainage Systems).

Headquartered in Clevedon, UK we have a network of over **80 distribution partners** and serve customers in more than **40 countries**

THE NEXT STEP

Contact us

To find out more about **how our solutions can help you meet your WINEP objectives**, please get in touch:

01275 878371
enquiries@hydro-int.com

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Scan to find out more:

hydro-int.com/winep