



The Metropolitan Glasgow Strategic Drainage Partnership

The Metropolitan Glasgow Strategic Drainage Partnership (MGSDP) is an innovative and collaborative venture between local authorities (Glasgow City Council leading), the Scottish Environment Protection Agency (SEPA), Scottish Water, Scottish Enterprise and now British Waterways Scotland that will upgrade and modernise the Glasgow area's drainage and sewerage network, reduce flooding and support urban development requirements while improving water quality and the environment.

British Waterways Scotland joins the Metropolitan Glasgow Strategic Drainage Partnership



Steve Dunlop, Director of British Waterways Scotland

British Waterways Scotland, the organisation responsible for managing the Scottish canals on behalf of the Scottish Government, has joined the Metropolitan Glasgow Strategic Drainage Partnership.

Steve Dunlop, Director of British Waterways Scotland, said of the move: "We are delighted to join the Metropolitan Glasgow Strategic Drainage Partnership and look forward to playing a dynamic role in this project, which will be so critical in ensuring the Glasgow area has the necessary infrastructure to evolve and flourish over coming decades.

"Delivering against the Scottish Government's Strategic Objectives like the other partners in the MGSDP, we have a common focus and experience in multi-agency strategy planning and delivery.

"The most important responsibility for us, as an organisation, will be to ensure that this new role is developed and sustained in harmony with all the other successful activity in and around the increasingly vibrant waterspace.

"I am confident that, working together with our many stakeholders, we will achieve this and see the Scottish canals contributing more public value than ever before."

Sandy Gillon, Chair of the MGSDP Steering Group, welcomed British Waterways Scotland to the MGSDP and said: "Tackling flooding in the metropolitan Glasgow area is a complex challenge.

"It is one that has brought together a multi-agency partnership that has led the way in integrated flood management.

"British Waterways has brought a new dimension to the partnership, which will enhance our ability to bring forward innovative solutions that will mitigate flooding and support economic growth and environmental improvements across the metropolitan Glasgow area."

Canals could help provide solution for managing urban drainage



The five Scottish canals were built over two hundred years ago and played a vital role during the Industrial Revolution.

Today, the Forth & Clyde Canal (which runs between Grangemouth and Bowling with a spur into north Glasgow); the Monkland Canal (which runs through Coatbridge); the Union Canal (extending between Edinburgh and The Falkirk Wheel); the Crinan Canal (in Mid Argyll) and the Caledonian Canal (in the Highlands) make a similarly significant contribution.

They stimulate national and international tourism and corridor-long sustainable economic development, promote active living and play a key role in our national biodiversity network.

Harnessing the Forth & Clyde Canal to assist in flood risk management and urban drainage as part of the MGSDP will demonstrate the growing importance and further possibilities of what, appears on the surface to be a relatively small piece of infrastructure.

Indeed, what does the canal infrastructure offer the MGSDP? You could be forgiven for assuming that these Scheduled Ancient Monuments and the drainage system, for example, are opposing entities – one a linear channel of sitting water, the other a fast flowing network.

Yet, look more closely at the canals and you will find a vast, untapped water system of reservoirs and water courses, of moving and, most importantly, manageable water.

It is this interconnected system and the possibilities of connecting into other infrastructure which presents potential for the north of Glasgow and the MGSDP.

To put it in perspective, the five Scottish canals hold almost 8000 megalitres (or 8000 million litres) of water but that is less than a third of the total network volume of just over 26,000 megalitres.

This extra capacity (around 8000 hectares of water space) comes from the 20 supply reservoirs which constantly replenish the water as it flows through the canal channel at around 0.1 metres per second.



In terms of metropolitan Glasgow, this large body of water includes the Birkenburn Reservoir, where a multi-million pound investment programme was recently completed, and Townhead Reservoir. Together, they hold 7520 megalitres – equivalent to 94 million bathfuls – and feed the 56km long Forth & Clyde Canal.

A further three reservoirs supply the Monkland Canal and, through this, the interconnected Forth & Clyde Canal.

The final modelling will be complete in a few months time but initial findings confirm that the canals have the capacity to be a realistic and significant green solution for managing urban drainage in north Glasgow.

They can take and, where necessary, treat incoming water (the canals are included in the Scotland River Basin Management Plan and classified by the Scottish Environment Protection Agency to be at Good Ecological Potential) then move unwanted surface water through planned Sustainable Urban Drainage Systems (SUDS) and other drainage processes.

The findings also demonstrate that the canals, with their locking systems, could potentially have the ability to interconnect with adjacent natural and man-made infrastructure, adapting water levels to take in some of the unwanted waters during flood episodes, diverting it away from stricken areas and sensitively regulating its discharge where there will be little or no impact.

Glasgow flood prevention scheme inaugurated

The Leader of Glasgow City Council inaugurated Scotland's largest flood prevention scheme, which will protect hundreds of homes and businesses on the south side of the city, on October 31.

Councillor Gordon Matheson was joined by children from Battlefield Primary School as he unveiled the plaque for the new £53 million White Cart Water Flood Prevention Scheme.



Councillor Gordon Matheson was joined in Glasgow by children from Battlefield Primary School to unveil the plaque

The new scheme will reduce the risk of flood damages of over £100 million by protecting approximately 1750 homes and businesses along the river.

As part of the design of the ambitious engineering project there have been major enhancements made for Glasgow's biodiversity and wildlife habitats with the creation of new woodland, scrub, species-rich wet grasslands, shallow scrapes and ponds and other artificial habitats.

Councillor Matheson, at the ceremony overlooking the White Cart, said: "We have been very ambitious for this scheme. The White Cart Flood Prevention Scheme is not just about great engineering.

"At its heart, it is a regeneration project – both in terms of the environmental improvements and the significant enhancements made to allow future economic development to take place. It has not only improved the quality of life of many residents living close to the White Cart Water but will also help support future growth in the local economy. Indeed, this project has secured the future viability of communities affected by flooding from the White Cart.

"I am delighted to be able to inaugurate this fantastic scheme and commend the wonderful innovative work carried out to make this such a success."

Normally a shallow river, White Cart Water is prone to flash flooding. As little as twelve hours of rain can cause water levels to rise by six metres with the potential to turn the river into a raging torrent as it gathers momentum downstream towards the vulnerable suburbs of the city.

Since 1908 there have been more than 20 significant floods caused by relatively minor storms.

Public awareness of the 1980s and 1990s floods, coupled with increasing awareness that meteorologists predict more intense periods of rainfall in future as a result of Climate Change, made finding the solution for a scheme a major priority for Glasgow City Council.

In addition, the insurance industry began to threaten higher premiums or even to refuse flood insurance for high-risk areas. The prospect that residents might not be able to sell properties or that businesses may be unsustainable was a portent of neglect for an area which was desperately in need of regeneration.

An area of 90,000 square metres (a size equivalent to approximately 15 football pitches) of rich and diverse wetland habitats has been created. As part of the scheme design, plans were made to enhance biodiversity and wildlife habitat of the area with the creation of woodland, scrub, and species-rich wet grasslands, shallow scrapes and ponds and other artificial habitats.

The scheme is also supported by the MGSDP. The overarching aim of MGSDP is to provide a holistic approach to managing surface water which will reduce flood risk and unlock development potential while improving water quality and allowing residential areas to co-exist with the natural landscape.

The White Cart Water Flood Prevention Scheme facts and figures

- 1750 homes and 45 businesses protected from flooding
- 3 flood storage areas and associated dams created – Blackhouse (Earn Water) in East Renfrewshire, Kirkland Bridge (White Cart Water) and Kittoch Bridge (Kittoch Water) – which can hold 572 million gallons of flood water, the same amount as 1000 Olympic-size swimming pools
- 4.5km of flood defence walls created
- 6 surface water pumping stations built
- The installation of the world's largest Hydro-Brake flow control devices – the five hydro-brakes each have the capacity to hold a new mini-sized car
- 2 new bridges built
- 2 existing footbridges were raised
- 180,000 cubic metres of earth shifted and reused in the creation of the three dams.

Extensive consultation

- 900 people visited an information caravan during a two week community engagement and consultation on the scheme proposals
- 800 statutory notices published
- 11 separate planning applications made

Environmental improvements

- 6843 new trees planted
- 90,000 square metres (or 22 acres) of new wetlands created. This has led to the return of dozens of species of birds to the area
- Artificial Sand Martin wall created at Kirkland Bridge on new wetland
- 1 Badger artificial sett created and four otter holts
- 75 Bird nesting boxes installed
- 10 Bat boxes installed

Flood prevention scheme passes test with flying colours

The new flood defences at the White Cart Flood Prevention Scheme held back rising water and helped protect hundreds of homes and businesses in late November, despite heavy rain causing flooding in many parts of Scotland.

Only four weeks after the scheme was officially inaugurated, all the defences were monitored throughout the flood threat and they worked extremely well during the storm.

It is estimated that nearly £11m of flood damage would have been inflicted on homes and businesses in the south side of Glasgow without these new defences.

Gordon Matheson, Leader of Glasgow City Council, said: "This was a major test for these new flood defences since its inauguration and they have passed with flying colours." The White Cart Water Flood Prevention Scheme was recognised at the prestigious Saltire Society Civil Engineering Awards held in Edinburgh on October 20.

The scheme was entered for two categories – Environmental and Project – and won a commendation in the projects category for 'proactive collaboration in the successful delivery of a holistic solution to flooding'.

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Councillor Gordon Matheson, Leader of Glasgow City Council, said: 'The commendation for the White Cart scheme is a brilliant achievement. I would like to commend the hard work and commitment of everyone who was involved in this engineering project.'

The Saltire Society Civil Engineering Awards were established in 1981 and are organised jointly with the Scottish Association of the Institution of Civil Engineers (ICE). It is intended to encourage the highest standards in the design, conservation, environmentally sustainable construction and construction of civil engineering projects in Scotland.

The 2011 awards were supported by Transport Scotland, the Scottish Environment Protection Agency, the ICE, the Civil Engineering Contractors Association (Scotland), the Building and Civil Engineering Benefit Schemes, the Association of Consulting Engineers, the Institution of Structural Engineers, the Chartered Institution of Water and Environmental Management and the Construction Skills Certification Scheme.



Key MGSDP project in Partick under way



Scottish Water has started a major upgrade of Partick Pumping Station in Glasgow – a key part of the city's waste water infrastructure which still serves hundreds of thousands of people more than 100 years after it was built.

The £2.3m project at the ornate Renaissance red sandstone building, which was opened in 1904 by the then Glasgow Corporation, started in September and is expected to be completed by about the end of 2012.

The investment will modernise and improve the operability and reliability of the pumping station, which sits in Dumbarton Road on the banks of the River Kelvin.

The capital maintenance work will help protect the local environment in the Kelvin and the River Clyde and will improve the efficiency of the pumping station and so help Scottish Water reduce its carbon footprint.

It will also help Scottish Water to meet the objectives of the MGSDP, which will modernise the drainage and sewerage network to reduce flooding and support urban development requirements, while improving water quality and the environment.

Mr Gary Caig, Scottish Water's wastewater assets manager, said: "Scottish Water is delighted to have started this major investment in the capital maintenance of a key facility in our waste water infrastructure in Glasgow.

"Partick Pumping Station plays a very important role in providing waste water services to customers in parts of the Glasgow area and, although it has been improved in the past, this new investment will ensure it continues to provide a first-class service for years to come."

Scottish Water's investment was welcomed by Councillor Kenny McLean, who represents ward 12 – Partick West on Glasgow City Council.

He said: "I'm delighted to welcome the £2.3m investment to upgrade Partick Pumping Station. I'm very pleased to hear from Scottish Water that this investment will improve the efficient working and reliability of the pumping station.

"This can only improve the quality of the local environment and I'm sure it will be welcomed by my constituents in Partick West ward."

The pumping station is an important part of the waste water infrastructure because two major sewers come into it and it lifts flows from those sewers to a gravity sewer which takes waste water to Dalmuir Waste Water Treatment Works in Clydebank for treatment.

Dalmuir WWTW is one of the four key WWTWs in the Greater Glasgow area and serves about 600,000 people throughout north west Glasgow, East Dunbartonshire and parts of North Lanarkshire.

The pumping station project will involve the removal of four existing pumps, which were installed in the 1960s, and the installation of four new submersible pumps which will pump waste water more efficiently and will be more reliable and reduce the risk of spills to the River Kelvin via Combined Sewer Overflows (CSOs).

The project is being carried out by contractor Clancy Docwra for Scottish Water Solutions, a joint venture partnership between Scottish Water and some of the world's leading construction, engineering and water companies.

Scottish Water starts main phase of environmental project at Dalmarnock WWTW

Scottish Water has started the main phase of major improvement work to tackle odour issues at one of its key waste water treatment works, which serves up to 370,000 people in parts of the Glasgow area.

The £1.5m investment at the Dalmarnock WWTW in the East End of the city – which will involve the refurbishment of part of the existing odour control system along with the installation of new odour control equipment – follows completion of the first phase of the project.

The main phase of the project, which will take investment to tackle odour there to a total of £2m, will also involve the installation of a new control system to the existing storm tank scraper bridges which will optimise control and operation of the odour control system.

The first phase included the cleaning of storm tanks and the refurbishing of isolation valves.

Mr Gary Caig, Scottish Water's west area wastewater assets manager, said: "Scottish Water has made good progress with the first phase of this project and is delighted to have started the main part of this important work which will improve our services for local residents and help improve and protect the natural environment in the area.

"Scottish Water recognises that odour issues at Dalmarnock WWTW – which serves people across the East End of Glasgow and in the north east of the city – are important for residents and businesses in the vicinity of the WWTW and for the development of the area.

"We are committed to supporting the regeneration of the Glasgow area and to improving our infrastructure in the city as it prepares for the Glasgow 2014 Commonwealth Games and other major events."

This improvement work will contribute towards achieving the objectives of the MGSDP.

The odour improvement work at Dalmarnock WWTW, which is expected to be completed next summer, is being carried out by contractors for Scottish Water Solutions, a joint venture partnership between Scottish Water and some of the world's leading construction, engineering and water companies. Dalmarnock is one of the four key waste water treatment works which serves people in the Glasgow area and beyond. The others are at Dalmuir, Shieldhall and Daldowie.

Visit our website at www.mgsdp.org for more information on our work and previous briefing notes.

For additional information



www.gcvsdpa.gov.uk



www.scottishwater.co.uk



www.sepa.org.uk



www.clydegateway.com



www.southlanarkshire.gov.uk



www.glasgow.gov.uk

Further update in Summer 2012