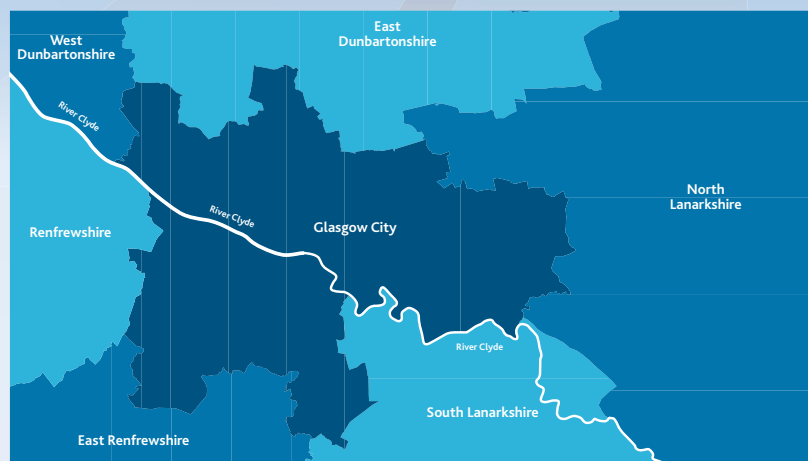




The Metropolitan Glasgow Strategic Drainage Partnership

Protecting economic prosperity

Metropolitan Glasgow's ageing drainage and sewerage network needs upgrading. This is an outline of what has been done and what is still required. This work will reduce the risk of flooding from extreme weather conditions, improve the environment and ensure Glasgow and its neighbouring local authorities can undertake the urban development essential for their continued prosperity.



The Metropolitan Glasgow Strategic Drainage Partnership is a national planning priority which encompasses seven councils (see map).

Urban underground drainage systems are made up of complex networks of sewer pipes, gullies, burns and culverts (covered watercourses). Ownership and duties are split between various agencies and landowners.

On 30th July 2002 the average monthly rainfall usually experienced by Glasgow fell in just 10 hours.

The flooding that followed highlighted major problems with the ageing drainage system. Problems associated with the way that the main sewerage and drainage systems evolved over the last 100 years had remained largely unaddressed. This meant that they simply could not cope with such extreme weather conditions.

Similarly, burns and culverts also known as watercourses, have suffered centuries of misuse with significant pollution and a lack of capacity to cope with heavy rainfall.

Significant efforts have been made since 2002 to reduce the risk of flooding and there has been no repeat despite a number of wettest months on record in the subsequent

years. There is no quick fix and exceptional rainfall still has the potential to flood areas of the city.

Major investment and effort will be required over the next 25 years to ensure that Glasgow's drainage network can cope with a changing climate, improve the environment and support modern development requirements.

This investment is also critical for Metropolitan Glasgow's future economic prosperity. Without an effective drainage system progress of urban development would be inhibited in some areas outside Glasgow as it would be simply adding to the problem.

More developments mean less open land is available to absorb rainfall, creating greater and faster surface water run off which can overwhelm the drainage system and contribute to flooding. This can often be several miles away from the development itself.



The Metropolitan Glasgow Strategic Drainage Partnership

The five key objectives of the MGSDP:

1. Flood Risk Reduction
2. River Water Quality Improvement
3. Enabling Economic Development
4. Habitat Improvement
5. Integrated Investment Planning.



Flooding at Elmvale Row, Glasgow in 2002.

Reducing flooding

In order to develop relevant, sustainable solutions following the flooding in 2002, an innovative multi-agency taskforce was created to evaluate the city's complex drainage network, and those in the surrounding areas that impact on it.

The Metropolitan Glasgow Strategic Drainage Partnership (MGSDP) is a unique partnership formed by organisations most closely involved with the operation of the sewerage and drainage network – Scottish Water, Glasgow City Council and the Scottish Environment Protection Agency (SEPA). Scottish Enterprise is also a partner.

Scottish Water is responsible for the sewerage network; Glasgow City Council is responsible for roads drainage, watercourses and flood risk; and SEPA is responsible for water quality and flood advice. Scottish Enterprise considers economic development issues and their impacts.

Since 2002, the partners have progressed a range of measures to reduce the risk of flooding:

- Fast action response 'choke squads' – Scottish Water

teams to clear sewers and help reduce the impact of flooding.

- Council 'hit squads' to clear watercourses on a regular basis throughout the year.
- Multimillion pound investment in sewerage improvement – including those at Cardowan Road Link Sewer, Bishopbriggs and Tollcross.
- Almost 500 properties in the Glasgow area have been removed from the At Risk Flood register since 2002.
- Replacement of significant lengths of sewers – including projects to increase capacity to cope with storm volumes.
- A £6 million initial investment to tackle intermittent discharges from the sewer network.
- A major Council-led flood alleviation scheme.
- A £16 million Council watercourse related scheme.
- SEPA's Floodline and Flood warning scheme service.

While significant, these only begin to scratch the surface of what is required to renovate a drainage network in an area the size of Metropolitan Glasgow. The Partnership believes this programme will take some 25 years to complete.

Action over the next five years:

1. Further development of computer modelling tools to target future investment
2. Commitment to integrated drainage and sewerage infrastructure within the Clyde Gateway and Commonwealth Games sites, ensuring we play our part in their success
3. Development of strategic improvements for the whole of the Metropolitan area.

"We recognise the complexity and scale of what has to be done, and that this can only be achieved in partnership. The commitment to this partnership from each organisation is there, and we now need the right building blocks to be put in place which will help us achieve our shared vision."

David Sigsworth, SEPA Chairman

The way forward

The MGSDP has undertaken a considerable amount of work to date to evaluate Glasgow's complex drainage infrastructure. This has led to a clearer understanding of the modernisation that needs to be done.

Computer modelling has begun to show how rivers, sewers and watercourses work during normal and storm conditions. This helps better understand problems and helps identify the most effective long-term solutions.

A range of measures will be required including:

- Improved surface water management to prevent the sewerage system from being overwhelmed by diverting into 'green corridors', flood plains or storage areas until a storm passes.
- Allowing the water to flow more freely by opening up historic watercourse culverts covered over in the past.
- Engineering works such as upgrades for waste water treatment works (WWTW) and, possibly, building storm attenuation tanks.
- Integrating solutions for watercourses and sewers to make best use of resources.

Modern approaches mean that many technically and environmentally sustainable solutions are now available which can reduce the need for major, disruptive

engineering works. These Sustainable Urban Drainage Systems (SUDS) are often based on more natural solutions for storing water and then controlling its release. Examples include ponds and wetlands which also contribute to biodiversity and nature conservation.

This integrated approach will not only reduce flood risk throughout Metropolitan Glasgow, but will also:

- Improve water quality in the rivers and burns – including the River Clyde where water quality is currently poor and unlikely to achieve the 'good status' as required under the EU Water Framework Directive (WFD).
- Support sustainable economic growth and infrastructure development.
- Allow nature and the environment to flourish.
- Make improvements to green space that will improve the quality of life for residents and visitors.

To help achieve this the MGSDP has sought to involve all seven councils which encompass Metropolitan Glasgow – in addition to Glasgow City Council, these include North and South Lanarkshire, Renfrewshire, East Renfrewshire and West and East Dunbartonshire.



Sustainable Urban Drainage Systems (SUDS) utilise techniques such as swales, basins, ponds and wetlands to help prevent flooding.

"The pioneering work that has taken place to develop the vision and Strategic Drainage Plan for a city area as large as Metropolitan Glasgow has been considerable. This innovative partnership approach is already attracting interest from Europe."

Geoff Aitkenhead,
Asset Management Director, Scottish Water

"Modernising and upgrading Glasgow's drainage network is critical for the city's future development. We also need to ensure that the city is on course to achieve a solution that will be flexible enough to meet the uncertainties of climate change."

Steven Purcell,
Leader, Glasgow City Council



2006



2014

Improvements to the sewerage and drainage network between 2006 and 2014 will enable developments linked to the Commonwealth Games.

What must happen?

Further work to facilitate the improvement of Glasgow's sewerage and drainage network is already underway or planned as part of major regeneration projects linked to Clyde Gateway in the east end of Glasgow and the Commonwealth Games. It is vital that these are considered as part of a metropolitan city wide solution if the full benefits for Glasgow and surrounding areas are to be realised.

The city area can only grow and attract people to live, work and visit if it has the appropriate infrastructure to cope.

The Metropolitan Glasgow Strategic Drainage Partnership is at a crucial stage. We need to put the building blocks in place quickly to ensure we can deliver the vision in the timescales required. This may not be possible under current administrative/governance agreements.

For example, we need to ensure there is:

- A clear mandate to develop and implement the Strategic Drainage Plan on a city-wide basis. This would provide the authority required to work with and co-ordinate the many organisations that will become involved in this process.
- Build on current working relationships to promote clear

legal agreement and terms of reference between the partners – current regulations/legislation related to urban drainage and flooding responsibilities can be in conflict or have gaps.

- Alignment of the investment programmes and funding cycles of the partners. This is essential for a co-ordinated approach.
- Appropriate fiscal authority to prioritise and direct funding where it is required. This will be required to make the most effective and efficient use of the partners' funding and other resources.
- Alignment of all programmes that will impact on the Strategic Drainage Plan. There is the real possibility that a solution for one area could simply transfer the risk to another.
- Sufficient dedicated resources to deliver the Strategic Drainage Plan. This will include fully funded Ministerial objectives for Scottish Water, access to appropriate funding for Glasgow City Council and the ability to source external funding routes including private developer funding.
- Clear consistency in land-use planning strategies.

This will require close consultation with the Scottish Government and support through emerging legislation.

For additional information



www.scottishwater.co.uk



www.sepa.org.uk



www.scottish-enterprise.com



www.glasgow.gov.uk

Further update in Autumn 2008