

Action C.15.1: Moston Brook and development of an urban catchment operations approach

End of project report highlighting lessons learned (C.15.D.4)

1. General Background

Urban diffuse pollution has been recognised as the reason for failure to meet Good Status in 10% of waterbodies in the Northwest River Basin District. Opportunities to tackle this issue are often restricted by the infrastructure of the urban built environment and by the fragmented responsibility for tackling sources of pollution across a range of stakeholders, including Natural Course Beneficiaries and other organisations.

Meanwhile, the cost of implementing measures to address urban diffuse pollution is frequently considered to be prohibitively expensive. Surveys conducted during Natural Course Phases 1 & 2, and the evidence gathered, show that the issue of urban diffuse pollution is particularly prevalent in the urban catchments of Greater Manchester

2. Natural Course Action C.15.1.

The Moston Brook urban diffuse pollution project, which was part of Natural Course C.15.1, had two elements:

C.15.D.1: Report on impact of existing green infrastructure at the Mill Lane site in the Moston Brook catchment.

C.15.D.2: Capital improvement works in the Mill Lane section of the Moston Brook waterbody.

The duration of the Action was from January 2020 to September 2021

C.15.D.1. Specification

The issue addressed was diffuse pollution, from the adjacent vehicle processing business, which was entering Moston Brook via overland flow across the site. The photos below show the site conditions and challenges.



Figure 1: Concrete “drainage channels” discharging surface runoff from vehicle processing yard towards Moston Brook

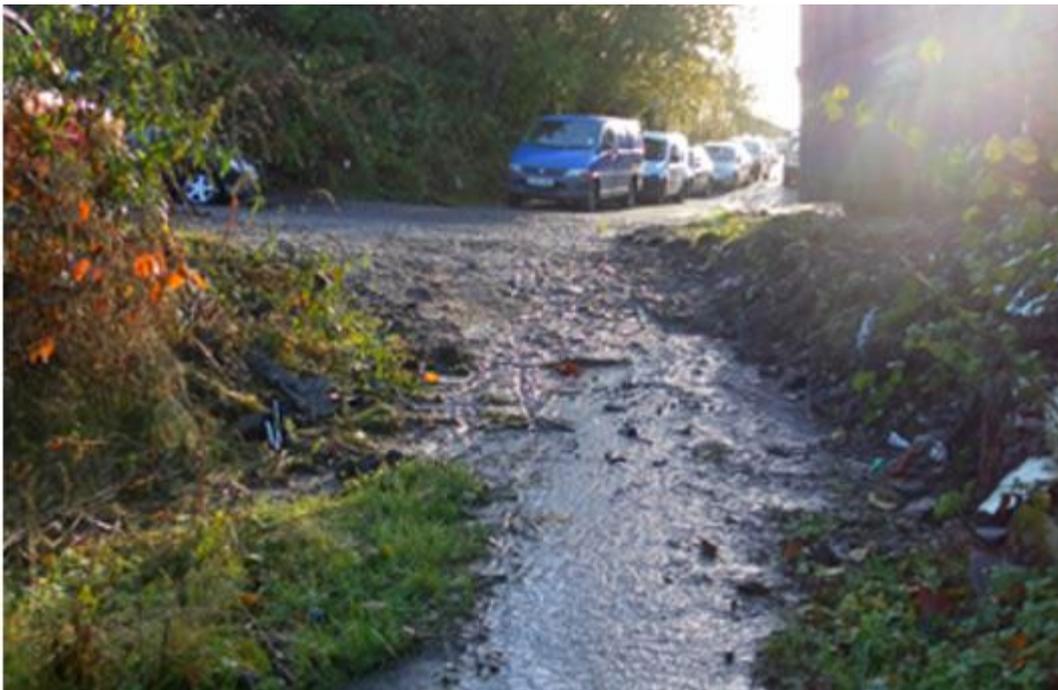


Figure 2: Flow along the path on the western side of the Mill Lane site. This surface water flow discharges directly into the watercourse.

As part of Action C.15.D.1. consultants were commissioned to survey and review attenuation features that were installed as part of an earlier project. The consultants were asked to carry out:

- A review of the efficacy of trial works (drainage channel and scrape) which were undertaken in 2015-2016.
- A design of a new costed scheme backed by robust site survey data to 'prevent' surface water and potential diffuse pollution entering the watercourse and flooding the footpaths.
- A water quality test on the United Utilities surface water drain discharging into the watercourse at this location.

Dynamic Rivers (Survey and Design) Ltd were commissioned to undertake the review and modelling. An implementation scheme was subsequently drawn up, based on their findings,

C.15.D.2. Delivery of capital improvement works in the Moston Brook waterbody

The consultant carried out a survey using LIDAR data, a technical drone survey and established a flow model. A design was drawn up consisting of a mixture of four medium and large sized attenuation ponds and a contour channel. All designs followed specific contours along their downslope margin. These features were designed to both spread and attenuate (up to their capacity) any excess contaminated surface water emanating from the vehicle breakers yard. The pre-existing attenuation feature was incorporated as part of the new arrangement. Five water quality tests were undertaken at the United Utilities surface water drain.

A local contractor, Saddleworth Plant Hire, was appointed to undertake the works to the exact specifications under the supervision of Dynamic Rivers. The delivery was based on the design and on-site survey work and discussions. The site was seeded with a wildflower mix on completion.

3. Project successes

1. The principal success was in appointing a consultancy who adopted a robust scientific approach using a water flow model and taking climate change into consideration. However, the LIDAR data did not include the trial attenuation feature and so did not present an accurate overall picture.
2. Other Oldham Council departments including planning and drainage and flooding, finance and environmental protection teams were very prompt and supportive in project preparation and delivery.
3. The chosen site met the criteria for successful delivery of the project. It was of a suitable size to accommodate the attenuation features with no limiting factors.
4. One of the principal successes was the delivery of a cost-effective scheme using a GI approach to mitigate urban diffuse pollution. Heavily engineered projects can be complex and costly and usually address flooding issues rather than focusing on diffuse pollution. The GI approach also delivered multiple project benefits including improved access and opportunities to create new habitats.

4. Lessons learnt and areas of learning to develop

1. In general, there appears to be a larger evidence base for how to address agricultural and rural diffuse pollution mitigation projects and more practitioners working in this area. Urban diffuse pollution is a complex issue and so sharing urban case studies via the Catchment Partnerships and Natural Course would be very useful tool to foster future project delivery. Where possible it would also be beneficial to share case studies within Local Authorities to highlight opportunities across Greater Manchester and the wider Northwest River Basin District.

2. One difficulty lay in finding suitable consultants to undertake the work to the specification and standard expected. There was a general lack of capacity and interest to submit proposals to survey and design the project. As a commissioner it was perhaps necessary to undertake more research and enquiries about comparable projects undertaken in the Northwest. Notwithstanding those difficulties, what was evident was that the advice and experience of colleagues and partners was instrumental in finding and recruiting the best consultants.
3. Project scale was also an issue as an initial call for quotations on the local authority procurement portal did not receive any responses despite a number of introductory discussions with consultants. This seems to reflect a relatively small market for these services. Survey and design consultancies tend to be interested in larger schemes with larger budgets. This scheme was relatively small scale. In the future it might be beneficial to partner with other organisations and landowners to deliver urban demonstration projects on a bigger scale.
4. Future plans include citizen science water quality testing. The Covid-19 pandemic prevented this monitoring project from taking place. Training and monitoring are due to take place starting Spring 2022. Under different circumstances it would have been beneficial to have the water testing under way in advance of the capital works and to continue monitoring thereafter.
5. Local authority budgets and capacity are under pressure however there are opportunities to design and bid for GI projects which deliver multiple benefits - delivering under the climate change agenda, addressing urban diffuse pollution issues, dealing with surface water flooding, improving public access whilst creating biodiversity opportunities. Local authorities may be unwilling or unable to secure funding for single issue projects focusing solely on urban diffuse pollution.
6. Site size and suitability can be a limiting factor in urban locations. The chosen site met the criteria for successful delivery of the project however land availability can often be restricted, and of course historic and complex land contamination often present obstacles to project implementation. We are unable to do similar projects in other areas of Moston Brook for these reasons.