Exploring Greater Manchester

a fieldwork guide



Series editors: Paul Hindle and Cathy Delaney

The Mersey Valley from Didsbury to Chorlton Water Park and Jackson's Boat: transformed landscapes in an urban green/blue corridor.

The Nigel Lawson Memorial Walk

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Aims: This walk covers a highly popular section of the Mersey Valley through south Manchester and explores the evidence for many changes to the river and its flood plain. This area has been transformed over the last 300 years from a meandering river that flooded rural hay meadows every winter; to an industrial waste disposal ground; to a sporting landscape (of golf courses and sports pitches); and to a major transport routeway, and now provides providing many ecosystem services and recreational opportunities amidst a highly urbanised environment. It highlights the recreational opportunities provided by the use of the floodplain by golf courses and the two water parks at Chorlton and Sale, which were developed from former gravel pits. It also considers the important flood mitigation role played by the operation of the two floodbasins at Didsbury and Sale.

Starting point: Fletcher Moss Park, East Didsbury (1.3 km to Didsbury Village Metrolink station). Bus 142 runs daily every 10 minutes from Manchester Piccadilly bus station, through Didsbury village, to East Didsbury. Alight at the "Didsbury, Wilmslow Road/opposite Fletcher Moss" bus stop.

Finishing Point: Sale Water Park Metrolink Station.

Estimated time: 4-5 hours.

Total distance: Following all the bends in the river, approximately 13 km. The walk can be split into two sections by leaving the river at Northenden (Point of Interest 5) where there are frequent buses (routes 41 and 43) along Palatine Road to Manchester, Sale, Wythenshawe and the Airport.

Related Walks: This walk links to four other walks in south Manchester that are parts of the Manchester Geographical Society's 'Exploring Greater Manchester' Series:

- Discovering history, spiritual peace and tranquillity in Didsbury: West Didsbury and Albert Park (PDF, 8.7 MB).
- Chorlton-cum-Hardy: From village to lively, diverse suburban centre in 150 years. (PDF, 6 MB).
- Discovering history and conservation in East Didsbury. (PDF, 3.4 MB)
- Sale Water Park, the River Mersey and Bridgewater Canal Aqueduct (PDF, 7.9 MB).

All are available at: https://www.mangeogsoc.org.uk/publications/exploring-greater-manchester/

Maps: Geographers' Greater Manchester A-Z Street Atlas (4.25 inches to 1 mile); Ordnance Survey Explorer (1:25,000) no. 277 Manchester and Salford; Google Maps.

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Dedication

We dedicate this walk to the memory of Nigel Lawson, who died in August 2022 before the final revisions of this walk were completed. Nigel knew this part of the Mersey Valley well, having born in north Manchester he lived in West Didsbury for over 30 years. After some years in Israel in the 1980s he studied geography as a mature student at Manchester University. He delighted in fieldwork and travelling, from the Himalaya to the Antarctic including cycling across the USA and taking the Trans-Siberian railway across Asia. He lectured to the Manchester Geographical Society about some of these journeys. He participated in many sports, from rugby and skiing to golf. He passed away after making a powerful drive at Dunham Forest Golf club. An obituary for Nigel Lawson may be found at: https://www.mangeogsoc.org. uk/pdfs/lawson obit 23 1.pdf.



Nigel Lawson in 2020 (photo courtesy of Hanah Lawson).



Figure 1: The route through the Mersey Valley in South Manchester.

Introduction

The River Mersey's name is derived from Anglo-Saxon *mæres*, 'of a boundary' and *ëa*, 'a river'. The Mersey commences in Stockport at the confluence of the Goyt with the Tame and it defined the boundary between Lancashire to the north and Cheshire to the south until the urbanised areas were devolved to the newly created Metropolitan County of Greater Manchester in 1974.

The Google Earth image below (Figure 2) shows the Mersey Valley between Northenden and Didsbury and reveals the striking land cover pattern of three golf courses with smaller patches of woodland to the northwest and southeast. This walk looks at the land use pattern and asks which of these elements came first and whether the meanders have been in their present positions for more than 100 years. The bright tones along the riverbank are the embankments which today help to prevent flooding. Although there has been some form of flood protection banks along the river for centuries, the present high embankments were completed in the 1960s. A century before that, annual inundation of the flood plain was commonplace. This description from a book published in 1903 summaries the common winter state of the floodplain:

"On either side are wide-stretching water meadows, where in winter, the floods often lie for weeks ... Today, the fields are green, and the young hay grass – a most precious crop in these moist "ees" as they are called – is flourishing, but woe betide the poor farmer if rain falls before hay is cut for carting, for the mountain streams, the Goyt and the Etherow, will pour their roaring peat-stained

waters into the narrow channel, and for the safety of the banks, the sluices must be lifted" (Coward, 1903, p.4).

At the time Coward wrote, three of the five golf courses in this section of the valley covered by this walk had already been established and their subsequent histories include several major adjustments to floods and other adjustments caused by the insertion of the M60 motorway into the floodplain. Not only did a great embankment carry the traffic through the valley, but large sand and gravel pits were opened and later developed into water bodies such as Chorlton Water Park, which is included in this walk.

Before the motorway there were other intrusions associated with urban development, particularly the building of sewage works and landfill facilities to cope with solid and liquid wastes. The walk will examine the vestiges of some landfill sites and will explore some of the woodlands that have been developed on those former waste disposal areas. What perhaps is counter-intuitive is that the woodland and water bodies seen in this walk are among the newest landscape features, having been created since 1980. Nature protection here involves biodiversity restoration, reafforestation and habitat improvement, especially for some rare bird species such as the willow tit. The walk examines three local nature reserves: Stenner Woods and Millgate Fields, Kenworthy Woods and Chorlton Water Park.

The hay-growing water meadows, which existed from the Middle Ages and became an urban dumping ground during and after the industrial revolution, are now, in patches, woodland again for the first time since farmers



Figure 2: Google Earth image of part of the Mersey Valley.

cleared them centuries ago. This walk thus provides a story of local land cover change and adaptation to the social and economic needs of an expanding city, while at the same time reminding us of the critical role of flooding through all those changes and how we must continue to *make space for water* in the present climate emergency.

The key element in this *making space for water* to be seen on this walk is the Didsbury Flood Basin with its inlet sluice in Didsbury and outlet sluice at Northenden.

The current global heating, driven by human activity, is altering rainfall patterns and making heavy rainstorms



Figure 3: Schematic diagram of the major flood control work in the Mersey basin showing the upland reservoirs, urban drainage system, embankments and two flood basins, one of which is seen on this walk at Didsbury.

more frequent. Our ability to cope with flooding is being tested. For centuries the River Mersey in this area has been embanked. Landowners built river embankments to prevent the river flooding their lands. The last major improvement to the embankments in this part of the River Mersey occurred in the 1970s when the motorway was built and the Didsbury flood basin and, further downstream, Sale Water Park flood basin were created. These flood storage areas operate by opening a weir gate at their upper end and having an outlet weir at their lower end. As water levels in the river are monitored constantly, decisions to open an inlet weir can be taken when flows from higher up the catchment are rising to dangerously high levels. Water diverted into the flood basins is held until the water level in the river has dropped to a safe level and the outlet weir gate (Figure 3) is opened. In addition to the main channel of the Mersey which flows into the Manchester Ship Canal near Carrington, the southernmost parts of Greater Manchester are drained by the Sinderland Brook and River Bollin that flow separately into the Ship Canal near Partington and near Warburton. There is another, smaller, flood basin on the Sinderland Brook just upstream of where the brook passes beneath the Bridgewater Canal in Timperley. By 2009 there were over 67 km of raised flood defences in the whole of the Upper Mersey catchment management area, including the Bollin and the Sinderland Brook (Environment Agency, 2009).

While an embankment is an obvious defence of a particular area, it does not reduce the overall flood problem, it merely pushes the floodwater to somewhere else downstream. It shifts the problem onto to someone else. Flood mitigation must consider the river catchment as a whole and to make space for water. Figure 3 indicates some of the components of the catchment to be considered. The upland headwaters include the peat-covered moorland within the High Peak area. In the past, the peat was drained and burnt, thereby lowering its water retention capacity. In many places the peat became severely eroded and deep gullies developed. This erosion and gullying speeded up the runoff of storm water to local upland rivers. Since 2005 there has been a concerted collaborative effort by organisations, including the Moors for the Future Partnership, United Utilities and the University of Manchester, to restore these eroding peatlands by blocking gullies and thereby regulating storm flows to downstream areas (Shuttleworth et al., 2019; see Figure 95 in Anderson, 2021 for excellent photos of methods of gully blocking). Moorland areas feed the reservoirs in the Goyt and Etherow headwaters of the River Mersey, basically for water supply or to maintain water levels in canals. To meet these needs, these upland reservoirs are usually kept fairly full, but may have some extra storage capacity for runoff from major storms. If available, such storage would also reduce the amount of water entering the Mersey tributaries above Stockport.

Once the tributaries enter the urban area, they receive some runoff from compacted urban surfaces. However, many of these little streams, such as the Chorlton Brook, have been diverted through culverts under roads or buried in large pipes for parts of their courses. Such culverted or piped sections have restricted capacity for high flows. Culverts also tended to become partially blocked by debris. Such conditions create a risk of localised flooding. However, most of the runoff of rainwater from the paved and roofed sections of the urban area goes into drains, which may be storm drains or combined sewers. Both may feed into sewage works, such as that at Davyhulme, but they may have provision for stormwater overflows direct into the Mersey. Whichever path the water takes, the rate of runoff from the impermeable surfaces of the built-up areas is far higher per unit area than that from vegetated surfaces. Space for such run off is limited, due to sewer, culvert and bridge capacities. If we are to avoid properties and other assets being inundated, we have to find more space for water, whether by allowing more of it to infiltrate into the ground, by slowing the rate of runoff to rivers, or by creating opportunities for water to move out of the river and be held somewhere else (Douglas and Douglas 2022).

In the industrial era, rivers and their flood plains were also seen as ideal areas for depositing waste materials. Much of this waste is still evident in the valley in now closed landfill sites which have invariably become land raise. In 1985 the then Environment Minister Michael Heseltine described the River Mersey as "an affront to the standards a civilised society should demand from its environment". Much of the subsequent reclamation and improvement in the environmental status of the river valley can be ascribed to the decline in highly polluting manufacturing industries, the activities of the Mersey Basin Campaign which began in 1985 as a 25-year, government-backed movement to clean up the entire Mersey river system, increased finance in the water sector following the 1989 privatisation of water and the efforts of local governmental organisations such as the Mersey Valley Countryside Warden Service. This has seen birdlife returning in greater numbers with species such as grey wagtail, little grebe, cormorant, grey heron, goosander and kingfisher more common both as winter visitors and breeding residents. Various volunteer groups have emerged following cutbacks to governmental and local authority services.

In 2014 Manchester City Council and the RSPB developed an exciting new vision to connect people with nature in the Mersey Valley to improve access, usage and biodiversity (RSPB, 2014). In 2019 a new River Valley officer post was created within the Manchester City Council to work with the RSPB for the development of an inter-connected network of appropriately managed and accessible greenspaces. In November 2021, the RSPB acquired a project officer for its innovative Saving Nature Through People strategy at a local level in Greater Manchester, inspiring people to connect with nature and empowering them to be active in nature conservation. RSPB's ability to achieve this in large urban areas is key for its success. The two organisations work closely with local people and groups at Chorlton Water Park and Fletcher Moss, to explore ways of encouraging people to do something positive for wildlife, reconnect with nature and help look after the Mersey Valley by getting actively involved. This continuing ecological restoration and encouragement of biodiversity applies also to the river, with great improvements in water quality since the 1980's. These improvements throughout the Mersey have enabled salmon to return and some of them may ascend as far as this area (Ikediashi *et al.*, 2012). However, the sediments in the channel bed still contain metal contaminants that are the result of earlier industrial waste disposal and leachates from the many old landfill sites along the valley (Hurley *et al.*, 2017).

This part of the Mersey Valley has become a landscape dominated by places for golf, places for other sport and recreation, and places for nature. All these places can become space for water in extreme flood conditions. The walk will show that these floodplain golf courses are carefully constructed and unique landscapes (Perkins, 2015) that for a few days in a decade become lakes.

Learning outcomes

The geographical concepts addressed here embrace:

- Fluvial geomorphology and disaster risk reduction,
- Peri-urban environmental change,
- Urban ecosystem management,
- · Geography of sport and recreation,
- · Economic geography of the leisure industry,
- Transport geography,
- · Historical geography of land use change,
- Multi-functional land use for receation, transport, nature and water amangement,
- Environmental pollution: water and noise.

The Walk

Starting from the Didsbury Village tram stop walk west along School Lane to Wilmslow Road by the Station Clock. Cross over the road and walk south along Wilmslow Road past the Didsbury Hotel and turn right into Millgate Lane. The entrance to Fletcher Moss Park is on the right, 100 m down the lane. On entering the Park turn immediately left parallel to Millgate Lane for about 50 metres before bearing right down the steps.

Point of interest 1: Stenner Woods

Access to the Mersey Valley from Fletcher Moss Park is through Stenner Woods, an area of wet woodland dominated by a rare willow carr, with patches of drier woodland. Access is over a wooden boardwalk through an overgrown waterlogged area which was formed when streams draining farmland into the Mersey were cut off by the dumping of waste into the river valley during and after the industrial revolution. The area remains wet for most of the year.

Willow carr was once a common form of wet woodland on poorly drained river valleys floors. With the embanking and control of rivers such as the Mersey, natural willow carr has become rare. This habitat type is associated with a range of flood conditions, particularly those of medium to long duration inundation (Morris et al., 2005). The willows thrive in waterlogged soil where other trees drown or suffer from rotten roots. In the drier areas there is an interesting mix of trees, including alder, sycamore, birch, ash, poplars and wych elm. There is interesting ground flora of woodland wildflowers. Some of the marshy areas support a variety of marginal plants - those which grow in shallow water, but whose leaves emerge from the water. This includes marsh orchids, dotted and purple loosestrife, wild angelica and marsh woundwort. Dead trees are left standing where they will not be hazardous. Beetle larvae and other invertebrates inhabit the trees. These become the larders of food for birds such as great spotted woodpeckers and treecreepers. Look out for the small round holes in the wood drilled by the larvae, and larger holes where the birds have dug the grubs out with their beaks. (https://www.didsburycivicsociety.org/ places-to-visit).

> At the end of the Boardwalk go up the steps. At the junction at top of the steps bear left on to the path and continue ahead.

This path and the surrounding area sit above an old landfill site, one of many historic landfill sites along this



Figure 4: The Boardwalk over the waterlogged ground of the willow carr in Stenner Woods.

part of the Mersey Valley (Figure 5). Prior to the 1956 and 1968 Clean Air Acts that established urban smokeless zones and restricted the burning of coal in both domestic fires and industrial furnaces, waste delivered to landfill sites contained a great deal of ash and clinker. These coarse-grained materials made the tips sufficiently permeable to be flushed by percolating rainwater and the leachate produced was



Figure 5: Map of the known Historic Landfill Sites in the Mersey Valley from Disbury to Sale showing those visited on this walk, from the Rivers Trust database. © *Ribble Rivers Trust 2021. Produced using data:* © *Natural England copyright 2021. Contains Ordnance Survey data* © *Crown copyright and database right 2021.*

dissipated by dilution and dispersion. Consequently, the residue is now well composted and supports substantial trees. Evidence of the existence of these waste dumps can be found at the top of the steps of the boardwalk in the form of an old inspection chamber (Figure 6).

> Further along this track bear left along a narrower path that heads down to Millgate Lane. Cross the lane and continue along the path with a hawthorn hedge on your right and the flood scheme inlet channel on your left. You will soon reach the sluice gate that can be opened to allow water to flow from the river into the Didsbury Flood Basin (Figure 8).

Point of interest 2: The River Mersey and its flood alleviation scheme

The banks of this naturally meandering river have long been reinforced by embankments, built originally by landowners. The owners of land along rivers are responsible for maintaining the bed and banks of the watercourse and the trees and shrubs growing on the banks. Thus although the present embankments were constructed in the 1960s to provide a consistent flood defence over most of the distance from Didsbury to Ashton Weir (below the A6144 spur from the M60 to Carrington) there are still instances of individual riparian landowners taking action to protect their property.

One example of individual action is found immediately



Figure 6: Manhole cover of a former inspection chamber on the old landfill site.

upstream of Didsbury, where, just below Cheadle Bridge, the built-up area reaches almost to the very edge of the channel with some riparian properties needing to take protective action. On the outside bend of a pronounced meander of the river, in 2015-17, channel bank erosion was progressing precariously towards the access route of the Waterside Hotel and Leisure Club. Work was undertaken to prevent further bank erosion by installing a rock rip-rap fill to push the river back to its earlier position. This showed how the river contin-



Figure 7: 1960s map of Didsbury showing the location of the former landfill site.



Figure 8: The sluice gate that allows water to flow out of the river. The artwork on the building housing the gate mechanism was designed by pupils of Parrs Wood Secondary School and painted by them with help from Unity Arts as a project to reduce vandalism and graffiti.

ues to adjust its meandering channel and how engineering work is needed to keep it in the present position. (Photos of the work are available at: <u>https://cainbioengineering.co.uk/</u> <u>project/river-mersey-ersosion-control/</u>).

As explained earlier two flood storage basins were constructed in the early 1970s, one here in Didsbury and another at Sale Water Park. The land to the north of the river at this point is the eastern side of the Didsbury Flood Storage Basin and is also used by Didsbury Toc H Rugby Club and contains Withington Golf Club's course.

The Didsbury (upstream) temporary storage basin comprises most of Fletcher Moss Park (east basin) and Withington golf course (west basin) and is dammed in the west by Palatine Road. At times of flood the sluice gate at Millgate Lane is opened to allow water to pass from the river into the temporary storage basin, thereby lowering the level of the water in the river. As the basin fills and the river lowers, the outlet sluice about 2.5 km downriver at Northenden weir is opened to allow water to pass out of the basin and back into the river.

> At the sluicegate turn right and follow the Riverside footpath.

The channel here is not the river's natural course, the river having been diverted when the motorway was constructed to avoid the need for bridges over the former river channel (Figure 9).

As the river bends round to the right there is a fine example of a point bar on the near side (Figure 9) which



Figure 9: Diversion of the River Mersey during construction of the M60 motorway.



Figure 10: The remains of the bridge providing acess to the landfill sites adjoining Fletcher Moss.

is usually visible unless the river is in a state of high flow.

A little further along there are two massive concrete blocks, one on each side of the river (Figure 10). These supported a bridge formerly used by refuse tipping vehicles to access the landfill site.

A note on the golf courses on this walk:

The walk passes five golf courses, all established between

1890 and 1914, with private members' courses being developed on lower lying land on the edge of the urban development that had been stimulated by railway and tram routes to the centre of Manchester. These five courses are part of a string of courses along the Mersey Valley (Perkins, 2010).

Name Da	e Characteristics	Com
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Didsbury	1891	Originally near Didsbury rail station: moved to present site in 1901.	Course redesigned after motorway construction in 1973. Course is divided in two with a footbridge giving access to 5 holes on the west side of the motorway.
Withington	1892	New clubhouse built in 1976 following construction of the motorway.	Course redesigned after motorway construction. The only course within the flood aleviation scheme. Flooding issues affect play regularly.
Northenden	1913	New clubhouse built in 2016 following a fire in 2014.	Affected by construction of the motorway. Long history of flood problems.
Chorlton- cum-Hardy	1902	Club house is listed 13 th century Barlow Old Hall.	Ancient embankment across course is challenging hazard.
Sale	1913	Club house is former lodge of Sale Old Hall c. 1830.	Becomes waterlogged during heavy rainfall events.

In 2009 the Environment Agency had concerns about water in the temporary basin not flowing rapidly enough from the eastern



Figure 11: Didsbury temporary flood basin.

part of the basin at Fletcher Moss Park (north of Point 2 on Figure 11) to the western part at Withington Golf Course and thus backing up and potentially flooding the cottages on Stenner Lane (Figure 11). Following an original proposal to put a channel through the allotments, which would have taken away 40% of their area, the eventual solution was the construction of a flood wall at Stenner Lane and a new outlet sluice from the basin to the river at a total cost of over £400,000 (Figure 12). However, during the flood events of 2021 and 2022, this sluice proved totally ineffective and the playing fields and club building at Didsbury Toc H were cleared of water only after 3 days use of heavy pumping gear by the Environment Agency.

Here, Didsbury Golf Course can be seen on the south side of the river. At this point you might wish to stop a while about 300 metres further along at the bench dedicated to Nigel Lawson's late wife (Figure. 13).

Some 50 metres further on a green metal bridge spans the river.

Point of interest 3: Simon's Bridge and the allotment gardens

Simon's Bridge was built in 1901 to help access to Poor's Field. It is on the site of a major medieval crossing place of the Mersey on the 'Salt Road' from Cheshire to Manchester (http://www.northendenpast.co.uk/history/). The bridge was paid for by the estate of Henry Simon, first Baron Simon of Wythenshawe, an industrialist and politician who agreed to build the bridge if the council would rent the Poor's Field from the owner Samuel Yates and sublet it to working men for allotment gardens (France and Woodall, 1976). Henry Simon had emigrated from Breslau (Poland) to Manchester in 1860 to join the city's German community. Simon became an engineer with a knack for inventing, and his ideas included steel rollers and sieving machines for the milling industry. His company later became the Simon Carves engineering company, which is still located in South Manchester (https://signsiren.blogspot.com/2014/10/simonsbridge.html).

The allotments, which are still well used, are accessed from Ford Lane but are just visible from the embankment. The allotment users were one of the community groups most concerned about the impact of the new flood alleviation work.

> Remain on the same (north) bank of the river and contine downstream.

Point of interest 4: Withington Golf Club To the north of the river is Withington Golf Course which



Figure 12: Stenner Lane sluice gate into the Mersey at Fletcher Moss.



Figure 13: The bench dedicated to Nigel Lawson's late wife. Simon's Bridge can be seen in the background.

doubles up as the western part of the temporary flood storage basin.

The Golf Club was founded in 1892. Prior to that date the area was used as grazing land. It was divided up into around 20 fields of varying size, most of which were detached parts of farms lying elsewhere in the township of Didsbury. The principal landowners and tennants in 1845 are shown on the Tithe map (Figure 14). At that time the embankments would not have been as high as the are today and there would have been sluices to deliberately flood the fields as a means of introducing fertile fluvial sediments. Since the embankments were raised and the course was incorporated into the flood alleviation scheme the sluices at Millgate Lane have been opened 3 times, firstly in December 1991, and then in January 2021 and February 2022 (Figure 15).



Figure 15: Flood water in the storage basin at Withington Golf Club in December 1991.

> Proceed down river passing under the bridge carrying the M60 motorway.



Figure. 14: 1845 Tithe Map of the area now occupied by Withington Golf Course.

Point of interest 5: The flood basin outflow sluice at Northenden weir and the site of the old mill

Just below Northenden weir, on the north bank of the river, water held in the Didsbury temporary flood storage basin (Figure 15 above) is returned to the river through several culverts under the motorway embankment and then through a sluice into the river (Figures 16 and 17).

The weir itself is by-passed by a fish ladder constructed in 2003, which has allowed salmon to gradually return to the upper reaches of the River Mersey (Figure 18) (<u>https://environment.data.gov.uk/catchment-planning/</u> <u>ManagementCatchment/3106/Summary</u>).

On the south bank of the river at Northenden it is likely that there has been a water mill grinding corn since at least the 13th century (Figure 18). In the 16th century it was said to belong to the Tatton family of Wythenshawe Hall, who had the right to make all their tenants use the mill on payment of a fee. The last mill on the site was demolished in the early 1960s (http://www.northendenpast.co.uk/history/).



Figure 16: Culvert under the motorway embankment.



Figure 17: The flood basin outflow sluice and the fish ladder at Northenden.

The photograph below (Figure 19a) was taken early June 2020 when the river was exceptionally low following a two month period with virtually no rainfall and clearly demonstrates the build-up of river sediments below the weir, which are deposited when the flow of the river slows down. However, at high flows (Figure 19b) the weir and gravel bar cannot be seen.

In recent post-industrial years the quality of the water in the River Mersey has been much improved and the river is becoming a healthier ecosystem. Following the building



Figure 18: Northenden Mill notice board.



Figure 19a: Northenden weir and sediment bar in June 2020.



Figure 19b: Northenden weir in October 2020 with the river at high flow. The water covers the weir and sediment bar.

of the fish ladder, herons are regularly seen just below the weir waiting for an easy meal.

Figures 20a and 20b show the river from Tatton Bridge looking downstream at the fish ladder in early June 2020. The build-up of river debris and the results of fly tipping are clearly visible and need to be cleared away occasionally.

The Tatton Arms alongside the bridge (Figure 21) is currently derelict. It closed as a public house in 2000 and has been the subject of several attempts at renovation and conversion into flats with little progress to date. The new houses and flats a little further downstream from the Tatton Bridge were built in 2013-14.

> Cross Tatton Bridge and turn right to follow the path alongside the river past the playground, houses and flats.

Point of interest 6: M60 Motorway

This section of the M60 motorway was constructed between 1972 and 1975. The main engineering problem in deciding



Figure 20a (left): Fish ladder at Northenden weir at low water prior to debris removal. Figure 20b (right): The fish ladder after removal of debris.



Figure 21: Tatton Bridge with the derelict Tatton Arms in the background (taken in May 2023).

to build a motorway through the Mersey Valley – partly across the actual flood plain of the river – was the need to keep it above the flood level of the river. To achieve this, the motorway was built mainly on a high embankment with only short lengths in cuttings.

The flood plain itself is made up of post-glacial materials such as consolidated alluvium and terrace gravels. Below these deposits, the 'solid' rocks of the Triassic system were found at depths of from less than 6 metres to more than 18 metres. Dealing with these recent deposits was a critical part of the motorway project, both how to use them as a source of fill and how to construct an embankment up to 12 metres high without causing failure either of the embankment or within the weak alluvium below.

The embankment required some 2 million cubic metres of material. Had it been brought in from sources outside the site, the many heavy vehicles transporting that material would have added to the traffic on already congested local roads. It was decided, therefore, to excavate the necessary material for the embankments from two areas between the motorway and the River Mersey known as Sale Ees and Chorlton Ees, and thereby reduce the material costs substantially. The gravel pits so created were to be permanently filled with water from the river, with so that Manchester City Council (Chorlton Ees) and Sale Borough Council (Sale Ees could develop them for recreational purposes. It would also provide the Mersey River with increased flood storage capacity. This gravel extraction resulted in the creation of Chorlton Water Park and Sale Water Park.

Another technical problem inherent in planning a motorway through the valley was the need for repeated crossings of the river. The route chosen on the south side involved fewer points of crossing then any alternative but, even so, it crossed the course of the river five times. However, the diversion of a bend of the river near Didsbury Golf Course (Figure 9) to keep the flow on the north side of the new motorway avoided the construction of two of these crossings, making further cost savings. This diversion was carried out in advance of the motorway construction by the Mersey and Weaver River Authority.

The Palatine Road viaduct (Figure 22) has eight and nine spans carrying the west and east bound carriageways of the M60 motorway over Palatine Road and the River Mersey (http://www.ukmotorwayarchive.org.uk/en/motorways/motorway-listing/m60-manchester-orbital-motorway/ m63-now-m60-sale-eastern-and-northenden-bypass-andsharston-bypass-j2j7).

> Cross Palatine Road via the pedestrian crossing and turn right to cross the river on Palatine Bridge.

Point of interest 7: Palatine Road Bridge

The wording of the inscriptions on the bridge remind us that the River was for centuries the boundary between Cheshire and Lancashire (Figure 23).

> Turn on to the right-hand (north) riverbank. Follow this path for approximately 1.5km. On the opposite side of the river is Northenden Golf Course.



Figure 22: The M60 viaduct crossing the Mersey near Palatine Road.

Point of interest 8: Darley Avenue settlement tanks About 1.2 km further downstream along the riverside path a concrete structure with a set of steps down the path can be seen (Figure 24). This is part of the sewer overflow management system for urban drainage in the Mersey River catchment. Beneath the open area around the structure are large concrete tanks into which stormwater from the combined sewers draining the local area flows. The purpose of the tanks is to hold the storm water and allow the solid matter entrained within them to settle to the bottom of the tanks. Excess water normally flows through a connector sewer to the nearest sewage works. However, when storm flows exceed the capacity of that connector sewer and the tanks become nearly full, the water at the top of the tank will flow through an outlet pipe into the river. The settling tanks help to reduce the amount of contaminants entering the river. The solids form a sludge at the bottom of the tank which is periodically removed. These tanks were substantially enlarged around 2010. United Utilities recognise that further improvements to minimise storm sewage discharges are required as part of the continuing campaign to improve the River Mersey ecosystem.

- > Continue downstream passing under the bridges carrying Princess Parkway and continue to the footbridge over the river. Chorlton Water Park is to the right and Kenworthy Wood is over the bridge on the opposite side of the river.
- > Turn in the direction to Wythenshawe as indicated on the signpost and cross over the bridge to the left hand (south) bank of the river and take the half-left path going southeast away from the river embankment (Figure 25).



Figure 23: Palatine Road bridge at Northenden.



Figure 24: Settlement tanks at Darley Avenue.

Point of interest 9: Kenworthy Wood

Occupying a former landfill site (Figure 5), the 36 ha Kenworthy Woods was planted in the 1980s as part of the Red Rose Forest project (Figure 26). It has varied grassland, scrub, woodland plantation and hedgerow habitats. There is a small community orchard, a coppice trail and a poplar trail (an avenue of cultivar Populus and Salix species). This is the second example of a 30- to 40-year-old woodland occupying a landfill site.

Several fallen trees with exposed root plates, which suggests that most of these trees are relatively shallow rooted, were visible in the Spring of 2022 (Figures 27a and b). In the first two months of the year several heavy storms occurred, thoroughly wetting the ground and softening the soil. The extreme wind gusts were then powerful enough to topple the trees, creating gaps in the canopy and thus opportunities for change in the vegetation pattern.

> Follow the trail until you reach a clearing on the left where



Figure 25: The path leading into Kenworthy Wood from the bridge over the Mersey.

the river is visible and a white post (indicating a buried gas pipe running along the valley) can be seen (Figure 28). Turn left to the river and turn left again to walk back along the south bank of the river towards the footbridge.

In the river channel an artificial riffle is visible, with turbulent flow over rock particles (Figure 29). The rocks in the channel divert water and increase the rate of flow locally, allowing more oxygen to be dissolved, so improving conditions for aquatic life. As the water depth over the riffle is less than in the reaches above and below it, the water temperature changes and the increased flow-rate means that sediment is removed more rapidly. You will see several other riffles along the river but may ask whether their spacing is sufficiently close together to produce the desired outcomes for aquatic ecology (Newbury, 2013).

> On reaching the footbridge, walk across it back to the north side and continue straight ahead away from the river and into Chorlton Water park. Turn right and follow the wide path round the lake, passing the children's playground (Figure 31) on your right.



Figure 27a: Fallen trees in Kenworthy Wood early Spring 2022.



Figure 26: The closely spaced, planted woodland in early Spring 2022.



Figure 27b: The root plate of a fallen tree.

Point of Interest 10: Chorlton Water Park

Chorlton Water Park (Figures 30 and 32) is a local nature reserve in the Mersey floodplain on what was Barlow Moor Farm prior to the construction of the M60 in the 1970s. As indicated earlier, the Water Park resulted from the flooding of a gravel pit dug to provide fill for the construction of the motorway's embankments. Opened in 1978, the Park is owned and managed by Manchester City Council. The 80 ha site has about 68 ha open water, woodland and grassland all of which is accessible to visitors. The lake is stocked with coarse fish and has developed into a popular fishery. Water sports are not permitted which has allowed the lake to become a nationally important refuge for wildfowl. The Park caters for a multitude of outdoor leisure activities from exercise to interaction with nature. It includes walkways, nature trails, a modern children's play area, and picnic tables. Activities are organised at the Park by the Warden Service which is complemented by the Friends of Chorlton



Birds at Chorlton Water Park

The water park is home to lots of Canada geese, herons, coot, moorhen, black-headed gulls, mute swans, mallards, tufted ducks, robins, tits, warblers, woodpigeons, crows, magpies, house sparrows, woodpeckers and nuthatches. Goldeneye, pochard, jays, great crested grebes, goosanders, and collared doves are also often seen.

In the autumn and winter, many migrant ducks make a stop at the lake when they are on the move. Tufted ducks that gather in the middle of the lake are among the commonest visitors, along with pochard whose numbers sometimes reach 300 to 400 during January or February. (Reports on birds seen at Chorlton Water Park can be viewed at: <u>https://manchesterbirding.activeboard.com/t8967729/</u> <u>chorlton-wp/</u>, while other accounts of rare sightings are on: <u>https://www.birdguides.com/sites/europe/britain-ireland/</u> <u>britain/england/greater-manchester/chorlton-water-park/</u>).



Figure 28: The gas pipe marker post.



Figure 30: Chorlton Water Park.



Figure 29: Riffle in the River Mersey near Kenworthy Wood.



Figure 31: The children's playground at Chorlton Water Park, showing the proximity of local housing.



Figure 32: Chorlton Water Park showing the route around Kenworthy Woods, the Water Park and Barlow Tip.

The wide path round the north side of the Water park passes the main vehicle access to the park and a disabled access ramp leading down to the water's edge. Many platforms for people who wish to fish have been built around the lake. Several of the benches around the lake have been installed in memory of local people. One of them on this north side opposite the main island in the lake is a second bench in memory of Susan, Nigel Lawson's late wife.

It is evident that the City of Manchester has invested in infrastructure to increase public enjoyment of nature, particularly the abundant bird life. Such scenes might lead the visitor to forget that this is landscape created in the second half of the twentieth century from gravel extraction and waste dumping. This is anthropogenic geomorphology: the landscapes of the Anthropocene. It is also creative conservation (Luscombe and Scott, 2021) where new woodland, meadow, and aquatic ecosystems have been established through human ingenuity.

> Continue following the broad path along the north of the lake until it dips down and starts to turn to the left. In front a path runs up a steep slope (Figure 33a). Walk up this path for about 30m until you see a small path on the right (Figure 33b and being indicated in Figure 33c).

Point of Interest 11: Barlow Tip

The uphill slope is the edge of the former Barlow Tip, a land raise site that was receiving waste until the 1980s (Figure 34). When the tipping ceased, the area was capped with clay and planted with some trees and allowed to develop though natural processes into an area of wild nature. As you walk up the narrow path you are likely to encounter wet areas, even in relatively dry conditions. The permeability of the clay capping on the tip is low, with surface water infiltrating extremely slowly. This is a major contrast with Kenworthy Wood on the floodplain surface which dries out relatively quickly.

At the flat summit of the former tip, the ground becomes so damp that the vegetation is almost like that of a wetland. Beneath this damp surface and the underlying clay capping are substantial amounts of organic waste material that continues to decompose and release gases created by the actions of microorganisms within the landfill. The complex mix of gases from landfills typically comprise forty to sixty percent methane, with the remainder being mostly carbon dioxide and with trace amounts of other volatile organic compounds (VOCs). These gases are treated at the plant at the north-western end of the tip (Figures 36a and



Figures 33 a, b and c: The path uphill and the entrance to the side path to the right. (Warning: parts of the walk up hill here, and on the summit of the old tip, can be extremely wet and overgrown. If the conditions are difficult, keep on the main path down to the river bank and turn right. A broad path, wide enough for a vehicle runs upslope towards the summit of the old tip. This is usually drier than the direct route across the tip and eventually leads to the landfill gas treatment plant).

36b).

> Continue along the path across the summit surface until it joins a vehicle track. Turn right and walk about 200 metres to the landfill gas treatment site (Figure 36).

Treated leachate from this plant descends to Hardy Farm which is located near the Metrolink line at Hardy Lane in Chorlton. Then the effluent from the pumping station is transferred up to Hardy Lane via a rising main that pumps leachate approximately 300 meters up to a local gravity sewer.

> From the treatment plant turn back along the vehicle track. Walk past the narrow track that you came along earlier and look across the relatively open wet area on the righthand side of the vehicle track. Ignore the first small track on the right. 20 metres after trees appear close to the right hand side of the vehicle track is a second small track into which you should turn (Figures 37a and 37b).



Figure 34: 1980s map (from Digimap) showing the location and extent of the Barlow Tip and the recently created Chorlton Water Park (note the Chorlton-cum-Hardy Golf Course to the north and the Sale Golf Course on the south side of the river).

The woodland in this part of the former tip is considerably younger than Kenworthy Wood, as the sizes of the trees suggest. Because the canopy is thinner and often incomplete, the ground cover storey is denser and brambles are abundant. There are no old large trees that have been affected by wind throw as were seen in Kenworthy Wood.



Figures 35a and b: Wet terrain on the summit surface of the revegetated Barlow Tip.



Figures 36a and b: The landfill gas treatment plant at Barlow Tip.

> Follow this track downhill to the river and turn right to walk in a downstream direction towards Stretford.

This reach of the river runs between two of the golf courses, Chorlton-cum-Hardy and Sale, listed at the start of this itinerary. Clearly their surfaces are well below the level to the top of the river embankment on which the path is situated (Figure 38). This means that golf here is a leisure pursuit sometimes interrupted by flooding, but less frequently than at the golf courses that lie within the Didsbury flood basin. In the spring of 2023 this stretch of riverbank was undergoing extensive remedial work (Figure 39) and the construction methods and materials can clearly be seen.

> Continue to walk downstream along the river embankment, passing under the Metrolink tramway bridge, for the Metrolink line between the city and Wythenshawe and Manchester Airport, until you reach the footbridge across the river.

Point of Interest 12: Jackson's Bridge and Jackson's



Figures 37a and b: Views of the side track leading down to the river from the summit of Barlow Tip.



Figure 38: Looking down from the river embankment at Chorlton-cum-Hardy golfers.



Figure 39: Remedial work on the river bank (viewed from the south bank in May 2023).

Boat public house

The wrought-iron bridge was Grade II listed in 2019 for three main reasons, in that it is:

- a daring design, producing an unusually long and light single-span, wrought-iron footbridge;
- an extremely rare use of through trusses with semicircular struts to maximise strength and to minimise weight; being at the very limit of wrought-iron technology when it was built;
- an important survival of a rare form of 19th century wrought-iron footbridge.

The bridge (Figure 40) is situated at an important and well-established historic crossing point of the River Mersey. Before the bridge was constructed a ferry operated here. The bridge was built in 1881, replacing an 1816 timber trestle bridge that was washed away by a flood in 1880, resulting in the then publican John Brooks contracting the well-known Manchester engineers and iron founders E T Bellhouse and Co, Eagle Foundry, to build a new single-span wrought-iron toll footbridge. Tolls were collected for crossing the bridge until the late 1940s, when the tolls were abolished after it was purchased by Manchester Corporation. The bridge was originally approached from either end by stone sett ramps; however, during the late 20th century, the north-eastern ramp was removed and replaced by a short flight of steps, which proved an obstacle for cyclists and disabled users alike. These were replaced in 2014 by a concrete ramp. The bridge is now situated on two popular cycling routes. https://historicengland.org.uk/listing/the-list/listentry/1458867.

> Cross over the bridge to the Jackson's Boat public house



Figure 40: Jackson's Bridge.

(Figure 41).

Long known as Jackson's Boat, this public house, once named the Bridge Inn (Figure 42) or The Greyhound, was reputedly a haunt of Jacobite sympathisers in the 18th century. According to local tales, they drank to the health of the Pretender Prince Charles 'across the water' in France, symbolising this with a bowl of water placed in the centre of the table.

The changing river course before the modern embankments were built, is relevant here. Historically the River Mersey was the traditional boundary between Cheshire and Lancashire. However in the 19th century following channel changes, the Inn was in Lancashire, despite sitting on the Cheshire side of the river (Figure 42).

> From the pub continue down Rifle Road to Sale Water Park Metrolink Station, where the walk terminates (Note there are two large car parks, the first on the left after the roundabout by the Station is for Metrolink passengers and that at the top of the slope to the left is for the Mersey Valley Visitor Centre).

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Figure 41: The Jackson's Boat public house.



Figure 42: The Jackson's Boat reach of the River Mersey in 1900 showing the County Boundary south of the river. Note the public house is named the Bridge Inn and the river crossing is Jackson's Bridge. Rifle Road take its name from a 19th century rifle range parallel to the river immediately downstream of the then Bridge Inn. (The labels for the Bridge Inn and Jackson's Bridge are highlighted for clarity).

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