

ENVIRONMENT SCRUTINY PANEL
FLOOD RISK MANAGEMENT – UPDATE

8th November 2022

Stewart Williams - Public Rights of Way Officer

Flood Risk - Context

- The Middlesbrough drainage system is extensive and complex in nature comprising open and culverted watercourses and a surface water/combined sewerage system.
- Flooding can come from a variety of sources including surface water run off, ordinary watercourses, surcharging sewers and from road gullies.
- Surface water flooding occurs when intense rainfall, often of short duration, is unable to permeate into the ground or enter drainage systems quickly enough, resulting in ponding or overland flows. It can cause considerable problems in urban areas.
- During periods of heavy rainfall standing water may accumulate even if the road gullies are in good working order. Some gullies just cannot drain the water away fast enough and therefore will surcharge during periods of intense rain fall. These intense periods of rain fall often don't last for long and once over, the gully will usually drain away the water without needing any attention.

Areas Susceptible to Surface Water Flooding



	Head of Service:	Ref:
	Service Area:	Scale:
	Created by:	Date: 25th January 2011
	© Crown copyright. All rights reserved. Middlesbrough Council, LA 100023413, 2010.	

Management of Flood Risk

NWL Integrated Drainage Studies

- The Strategic Studies highlight and prioritise the areas of greatest risk from combined flooding within each of the catchment areas.
- Middlesbrough is covered by several catchment Areas.
- Each area will have a Stage 1 and Stage 2 study undertaken.
- Stage 1 focuses on the collection, collation, analysis and prioritisation of information to identify areas of High Risk from Flooding
- Stage 2 focuses on identifying opportunities within the top 3 or 4 High Risk areas to reduce or prevent flooding

Middlesbrough East Integrated study

- Stage 1 study undertaken in 2018
- 10 Flood Risk Areas Identified
- 3 or 4 Areas taken to Stage 2
- Stage 2 study undertaken in 2021

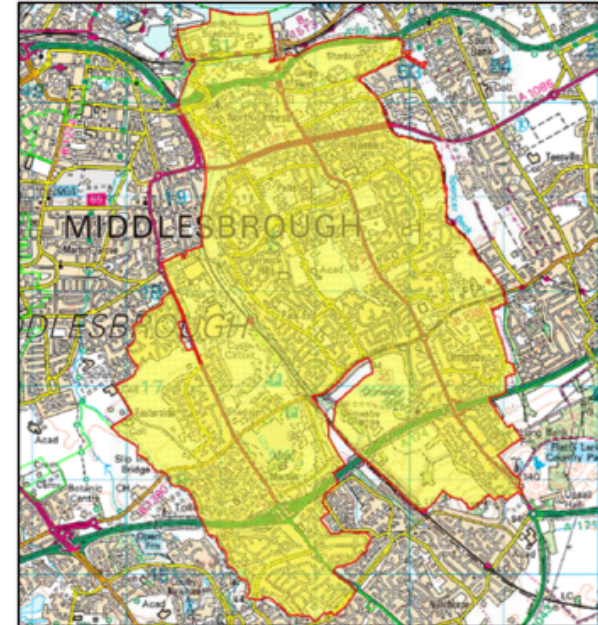


Figure 1 – Middlesbrough East drainage area 11-D46

Future Planning

Flood Defence Grant in Aid (FDGiA)

The Environment Agency 'Medium term plan' is a rolling list of schemes which are refreshed yearly and are funded from Government funding allocation. The funding set by the Government is for 6 year's and the current funding runs from 21/22 – 26/27

Following a recent refresh of the EA's Medium Term Plan. The following potential scheme areas were included:

- Ormesby High Street 21/22
- Berwick Hills 23/24
- NIDP - Thornfield Road 23/24
- Pallister Area 23/24
- Whinney Banks 23/24
- Barrington Crescent 24/25
- Connaught Road Nunthorpe 24/25
- Gresham Road and Newport 24/25
- Shevington Grove Marton 24/25
- NIDP – Middlesbrough South 26/27
- NIDP – Middlesbrough East (the Greenway) 27/28

11 Schemes better protecting potentially 636 further homes

Current Schemes

Saltersgill Fields Scheme

- Construction of the Scheme started back in 2019 and was completed in 2021.
- The finished scheme was larger than originally planned and involved the creation of ponds and scrapes between Saltersgill Road and the allotments; and a bund around the open space between the allotments and Marton Road
- It is envisaged that around 306 properties are now better protected.
- Additional benefits were realised as part of the scheme which included the provision of a number of surfaced footpaths one of which has provided a short cut to a nearby school. The site was also protected from vehicle trespass.

Ormesby High Street Scheme

- Work is currently being undertaken on the Outline Business Case which is due to be completed in early January 2023.
- A 2nd surface water flow from the fields was identified and as such the scope of the scheme was expanded.
- The scheme could involve the creation of a bund within the NT land and so further discussions with the National Trust are taking place.
- The scheme looks to capture overland flows from the Farm Land to the south of the National Trust property.
- Potential flood risk from the culvert under the High Street was identified and improvements have been made by the EA to the Trash Screen to prevent obstructions to flow.

Environment Agency Projects

Marton West Beck Scheme

- Construction of the Scheme started back in Summer 2020 and was completed in 2022.
- The Scheme has better protected around 500 homes and businesses.
- The finished scheme has seen:
 - Improved and extended trash screen at Albert Park
 - New flood walls and surface water storage area at the park
 - New flood walls at Borough Road
 - New drainage system
 - Surface water storage area in Acklam behind the Crematorium

KEY RISKS AND CONSTRAINTS

Albert Park

- Midlandsbrough's 'People's Park', opened in 1868: popular and much-loved following major refurbishment in 2001-2004 through support of a £3.5 million Heritage Lottery Fund grant.
- Land was bought and donated by Henry Blocklow, a founder of one of the local iron and steel industries.
- Includes new facilities such as visitor centre, roller skating rink, boathouse and play area; alongside restoration of original features such as war memorials, bandstand and fountain.
- Park is a Registered Park and Garden, Grade II listed, with Grade II listed features such as the clock and sundial. Interventions will need to consider heritage, amenity, recreational and landscape/visual sensitivities.
- Popular for informal recreation, ParkRun, events.
- Large numbers of mature trees contribute to character and habitat value of park.
- Areas of wildflower meadow to north-eastern area.
- Lake is a key component along eastern boundary, drained during restoration works.
- Mid-20th century railings to northern boundary, with [?] relatively recently planted hedge.
- Stone wall (original?) and reconstituted stone wall/railings (part of restoration?) either side of Marton Beck, enclosing vegetation.

Borough Road/Douglas Street

- Functional area, mainly commercial business, low quality public/private realm.
- Few trees, but ones present are mature and provide rare green infrastructure in immediate area, including views from Care Home and adjacent footpaths/underpass.
- 'Leftover' amenity grass and concrete areas as part of routes under Borough Road.

OUTLINE MITIGATION

- Avoid loss or damage to trees, including through repeated inundation during flood storage and during construction. Protection to extend to Root Protection Zones.
- Avoid damage/loss of features to northern boundary, including railings, gates, hedges and mature trees (i.e. both storage area and underground works to outfall).
- Avoid loss/damage to vegetation between Beck and Park Vale Road during wall rebuilding, although with scope to open up/thin to allow views, increase informal surveillance and enhance habitats.
- Avoid loss/damage to trees around Borough Road, close to existing walls.

POTENTIAL ENHANCEMENTS

- Extension of wildflower areas within park, to include 'wet meadows' (depending on hydraulic behaviour) of species-rich grassland in storage area.
- Thinning of woodland between Lake and Park Vale Road (as noted above): localised habitat improvements within channel.
- Improvements around trash screen on junction of Park Vale Road and Park Road North: unattractive feature but scope to screen if maintenance constraints allow.

1 Potential storage area (left of view) within Albert Park.



2 Gates at entrance to park, with mature trees.



3 Lake, with stone wall and trees along Marton Beck to left.



[FULL KEY TO BE COMPLETED]

Red text: Environmental risks, sensitivities and constraints; general baseline notes

Black text (capitals): Proposed intervention detail (locations/alignments in red)

Designations

★ Grade II listed buildings

1 Photo locations

INITIAL DRAFT

SCALE AT A1 1:10000

PROJECT NUMBER

60516163

SHEET TITLE

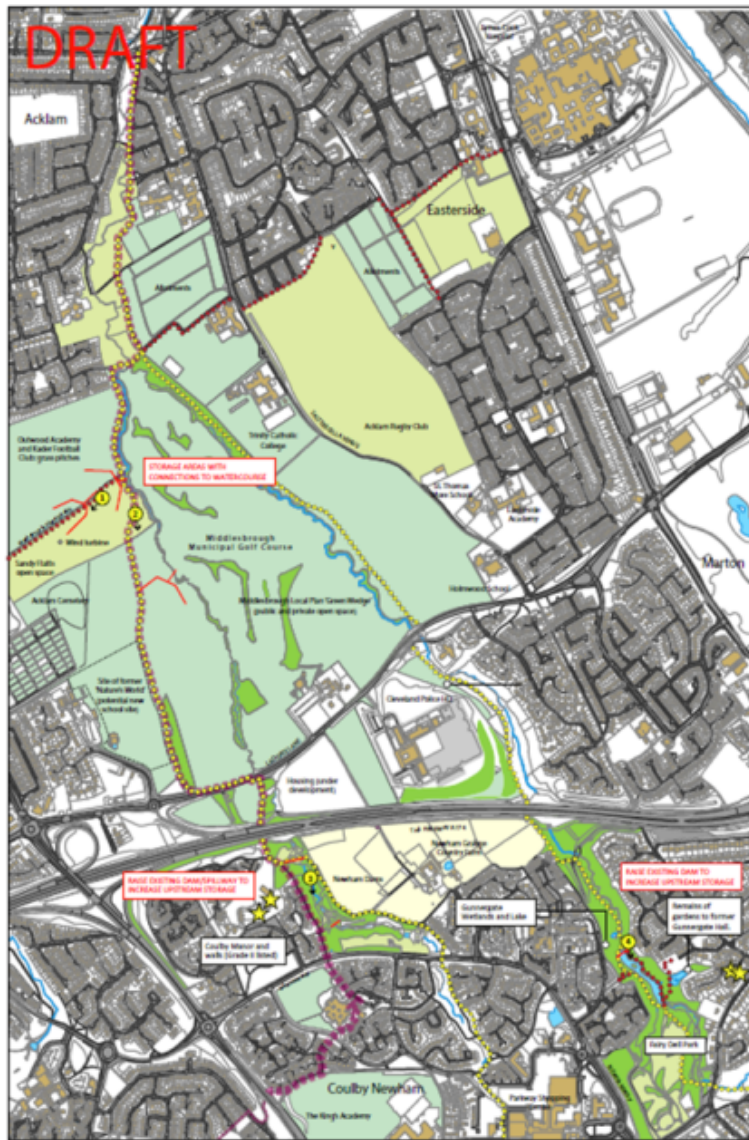
MARTON WEST BECK (DOWNSTREAM)

SHEET NUMBER

IMNE640164-ACM-00-00-DR-EN-

00002-02-C01-B1400-EA3-LOD3

DRAFT



AECOM

PROJECT
Teesside South
Appraisal Package

CLIENT
Environment Agency

COMBES TRUST
AECOM
Roper Court, Badd Chace
Chesham, Bucks, UK
01494 470000
www.aecom.com

Scale bar (approx) Proposed Interventions

- Open space (available to public)
- Open space (restricted or private access)
- Agricultural land
- Woodland/woodlands
- Temporary (disturbance) Local Plan (open and walking routes)
- Other (public/private routes)
- National Cycle Route 65
- Designations**
- ★ Grade I listed building
- 1 Photo location



KEY FEATURES, RISKS AND CONSTRAINTS

Sandy Flats area

- Public and private/restricted access open space, as an important element of Millburn Brook's Green Infrastructure, connecting the town centre, suburbs and rural landscape. Protected through Local Plan policy on 'Green Wedges'.
- Mainly grassland (mowed or no mowing), with some areas of scrub. Woodland and tree belts along Beck and boundaries create physical/buffer barriers to Golf Course, former Marton's World site and surrounding, but also open areas towards the lake.
- Mainly open pedestrian and cycle routes, including sections of National Cycle Network. Provide important, multi-use links between activities and opportunities for accessible operation of recreational facilities and open areas. Actively valued for local residents.
- Sports pitches to Academy bounded by road fencing, well-maintained and used by football clubs.
- Areas of potentially higher habitat value, e.g. around watercourse and along areas.
- Wind turbine requires access for maintenance.

Woodland/Gorsewagge Lake and Holly Dell

- Strong character contrasting with wider residential area, defined from steep wooded banks to Beck.
- Important, extensive Green Infrastructure habitat corridor that permeates into both urban/suburban.
- Walking and cycle routes offer welcome opportunities for on-the-side between often road-dominated residential areas, with scope to experience nature of the 'Woodland'.
- Clear evidence of connectivity value within Holly Dell Park, with repeated recorded great occasions for access, habitat and landscape works. Active Friends group and evidence of high biodiversity.
- Recreation routes around Gorsewagge Lake, with sculpture, seating, signage, interpretation and landscaping creating a distinctive identity that is unlikely to change.

Historical links to (now designated) former gardens to derelictised Gorsewagge Lake: walls include upper lake, rock gardens and waterfalls, although visually and spatially separate from extended lower lake which is a more recent (2010s) development.

OFFSHORE INTERVENTIONS

- Avoid loss or damage to trees, including through potential repeated foundation during flood storage events and during construction. Protection to extend to Root Protection Devices. Rooting may affect health and longevity of trees along valley floor.
- Ensure that tree-related policies and cycle routes are not compromised, with suitable access maintained and avoidance of new changes to gradient.
- Avoid long-term damage to features that inform the high connectivity value of Holly Dell Park, particularly the circular lake path/footpath and features close to the lake edge. Regular foundation may compromise access and quality of park. Close consultation with stakeholders, including Friends group, would be required.
- Minimise or avoid storage areas within formal playing pitches, which may affect visibility and use.

POTENTIAL ENHANCEMENTS

- Provision of extended or enhanced habitats within Sandy Flats area, e.g. through changes in mowing regimes and introduction of water-rich grasslands or wetlands.
- Improvements to existing or provision of new temporary/cycle routes as part of wider joined-up Green Infrastructure strategy, linked to enhanced health/well-being outcomes, such as on the route between connecting schools and housing.
- Thinning of woodland along valley floor where appropriate, with scope to create more diverse habitats and ground flora, working with local stakeholders and input from ecologists.

SCALE AT A1 1:5000
PROJECT NUMBER
SHEET ID
SHEET TITLE
MARTON WEST BECK (UPSTREAM)
ENVIRONMENTAL SITE APPRAISAL
PLAN (ESAP)
SHEET NUMBER
MWS41515ACM-02-02-01-01
www.aecom.com

Ormesby Beck Restoration Scheme

- The scheme started in early August 2022 and is due to be completed by the end of the year.
- The scheme will remove the existing tidal structure which is often over topped by high tides and will remove the screen near to the Navigation Pub.
- The Grills from the structures are being saved to reuse at a later date when a location is identified.





Other Flood Risk Prevention Improvements

Highway Drainage

- We continue to investigate the highway drainage system, which has not been previously recorded or mapped, thereby increasing our knowledge of the system and the interactions with sewers and watercourses. We are then able to repair and cleanse the system where required.

Developments

- We continue to work with developers to ensure that Sustainable Drainage (SuDS) techniques are a part of all major developments.

Gully Smart Asset management Software

- The Software 'Gully Smart' was purchased in January 2022 to enable both a proactive and reactive response to tackling flood risk and help with the management of the highway drainage network.

<https://middlesbrough-gully.kaarbontech.co.uk/landing-page.html>