# **APPENDIX D**

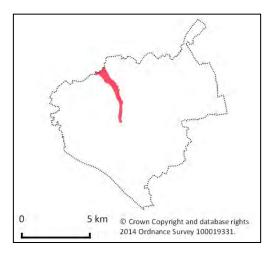
# Profiles for Local GI Network Components

#### **Northampton Green Infrastructure Local Network Component**

#### A: BRAMPTON ARM OF THE RIVER NENE

#### **Location within Northampton**

The Brampton Arm Local GI Network Component forms a corridor approx. 5km long. It follows the valley formed by the Brampton Arm of the River Nene, and runs from the NRDA boundary to the north-west of Northampton into the centre of the town. It is adjacent to the King's Heath SUE, and incorporates the proposed Strategic Greenspace associated with the development. At its southern end it connects with the Northampton Waterside Enterprise Zone.





Valley floor scene in the Brampton Arm, as seen from the Rugby-Northampton railway

#### Strategic Green Infrastructure Context (See map 2.1)

The Brampton Arm Component is part of the larger Sub-Regional GI Corridor 8 (The Brampton Arm- Northampton to Market Harborough) which continues to the north. It also contributes to Local GI Corridor 6 (Northampton- Daventry) which runs broadly east- west. At its southern end the component connects with Sub-Regional GI Corridors 1 and 2 (The Nene Valley).

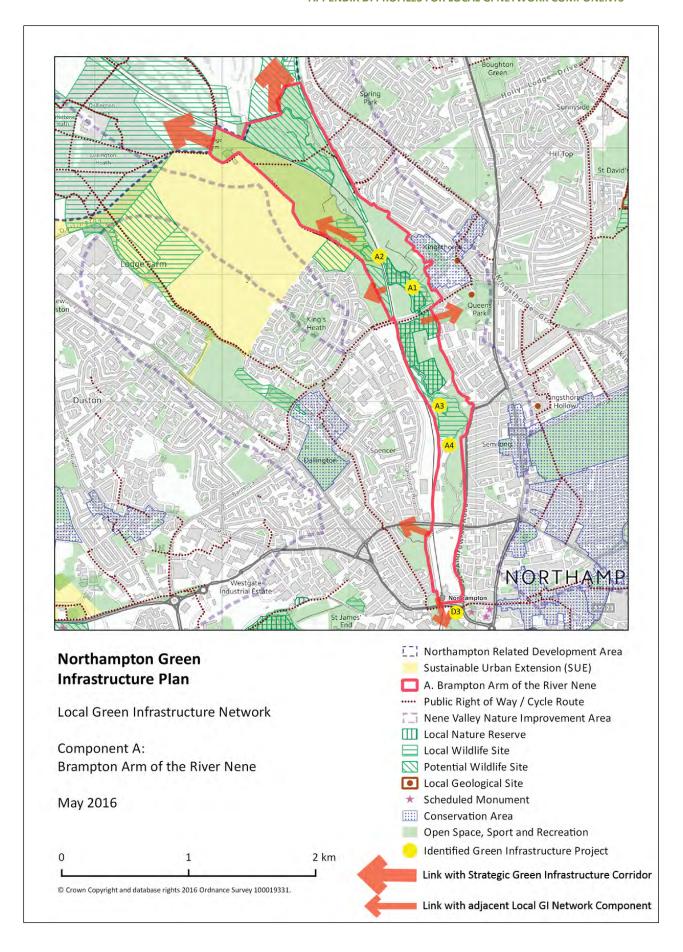
#### **Identified GI projects within this Local GI Network Component:**

A1: Kingsthorpe Nature Reserve Improvements

A2: Kingsthorpe Wildlife Trust Reserve to Kingsthorpe North Meadow Linkage Project

A3: Kingsthorpe Lake Restoration

A4: Cycle Path extension into the Town Centre



#### **Functions of the Brampton Arm Local GI Network Component**

# Existing Opportunities

#### **Biodiversity**

- Kingsthorpe Local Nature Reserve (LNR), comprising riverside meadows.
- Five Local Wildlife Sites including Kingsthorpe Meadows and Kingsthorpe Tussocks.
- Potential Wildlife Site extending northwards beyond the NRDA boundary.
- Brampton Arm forms an open water habitat corridor, flanked by a lowland meadow corridor. Both extend beyond the NRDA boundary to the north and join with the wider habitat network, including Pitsford Water.
- The entire area is within the Nene Valley Nature Improvement Area (NIA), which continues north and north-west to encompass Pitsford Water and part of the Brampton Brook.

- Improve management of streams, wetlands and riverside meadows to increase their biodiversity value.
- Provide better habitat linkages to increase the biodiversity value within the corridor, and strengthen the biodiversity network between town and countryside.
- Enhance interpretation of the natural environment within the valley.

#### **Connectivity and Access**

- Kingsthorpe LNR provides public access to riverside meadow habitats. There is easy access to the Nature Reserve for the communities of Kingsthorpe, King's Heath and Queen's Park.
- Brampton Valley Way (to Market Harborough)
  follows an old railway line through northern
  part of the area and is part of the Primary
  Movement Network. However, there is no
  direct connection from the Brampton Valley
  Way into Northampton Town Centre; instead it
  leaves the valley floor and follows roads.
- The public bridleway along the western side of the valley is a popular route for walks to Harlestone Firs.
- Access into or through the southern part of the area is very limited.

- Create links between Kings
   Heath and North of Whitehills
   SUEs and the Town Centre via the Brampton Valley.
- Improve public access into the southern part of the area.
- Extend the Brampton Valley Way into Northampton Town Centre through the Brampton Arm via a new riverside path. Create links into and across the adjacent Enterprise Zone, potentially connecting with Delapre.
- Connect seamlessly with Structural Greenspace associated with King's Heath SUE
- Improve accessibility at Kingsthorpe LNR, replacing bridges, benches etc. where necessary.

#### Community and Public Health

- Allotments on the eastern edge of the area are used by the local community.
- Kingsthorpe LNR has public access (by road) from King's Heath and Kingsthorpe, but there is no riverside path.

#### (Continued)

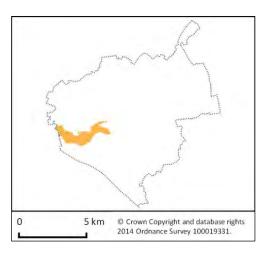
- Engage the local community in projects at the LNR.
- Provide open space exercise opportunities for existing local communities and also future residents of King's Heath SUE.

Existing	Opportunities
Community and Public Health (continued)	
The Brampton Valley Way contributes to the wider cycle network, providing opportunities for exercise and sustainable transport.	<ul> <li>Long-term aspiration for a riverside path providing off- road access into the town centre, also used by future residents of SUE.</li> </ul>
Landscape	
<ul> <li>The area provides an attractive and open approach into Northampton when approaching by train from the north. It also forms the setting for Kingsthorpe historic core.</li> <li>Entire area is within the 'River Valley Floodplain' Landscape Character Type.</li> <li>High visual quality, and of high sensitivity to change.</li> </ul>	<ul> <li>Further enhance the visual and landscape qualities of the area through positive management.</li> <li>Strengthen the identity of the area, for example through the introduction of gateway features.</li> </ul>
Heritage	
<ul> <li>Scheduled Monument (site of Saxon Palace) at the southern end of the area. Site of Northampton Castle nearby (now under the railway station).</li> <li>Northampton Heritage Gateway Project aims to open up a new park space near the railway station to celebrate Northampton's rich history. It will focus on the site of Northampton Castle, but will also emphasise other important heritage features in the area (including St Peter's church), and include a heritage trail and interpretation.</li> <li>Conservation area and listed buildings at Kingsthorpe, at the eastern edge of the area.</li> <li>Flooding and water management</li> <li>Valley floor is within flood zone 2 and/ or 3.</li> <li>Run-off from the railway line can compound</li> </ul>	<ul> <li>Work with the Heritage         Gateway Project to ensure         that GI is fully integrated into         the project.</li> <li>Investigate opportunities for         conservation/ enhancement/         interpretation of heritage         assets, e.g. former mill sites</li> <li>Potential for SUDS/ wetland         creation schemes to reduce</li> </ul>
drainage problems and impact on water quality.	flooding and improve water quality, including any SUDS schemes associated with the SUE at Kings Heath.
Ecosystem Services (See section 15.7)	
<ul> <li>The area makes important contributions to regulating services, particularly with regard to flood risk management, water quality, plant pollination, and climate regulation. Some provisioning services are provided by animals and crops farmed in the area. The area also provides a number of cultural services, including recreation, education and a positive aesthetic experience.</li> </ul>	<ul> <li>Increase contributions to a range of ecosystem services through continued good habitat management and improved access.</li> </ul>

#### **B: WESTERN NENE, UPTON AND DUSTON MILL**

#### **Location within Northampton**

This Local GI Network Component is located on the western side of Northampton. It is approx. 4km long, and forms a corridor on both banks of the river Nene from the western boundary of the NRDA into the town centre as far as the Milton Keynes railway line. It also includes part of the Grand Union Canal (Northampton Arm). It encompasses Storton's Pits Local Nature Reserve, Upton Country Park and some of the open spaces associated with the Upton SUE. It is adjacent to (and partially within) the Northampton Waterside Enterprise Zone.





Grand Union Canal near Duston Mill, looking towards Northampton town centre

#### Strategic Green Infrastructure Context (See Map 2.1)

This Local GI Network Component sits within Sub-Regional GI Corridor 1 (The Nene Valley Newnham- Northampton) which runs east-west. Beyond the eastern end of Component B, Sub-Regional GI Corridor 2 (The Nene Valley Northampton-Wansford) continues eastward. Sub-Regional GI Corridor 8 (The Brampton Arm) continues northwards to Market Harborough. The eastern part of Component B is also within Local GI corridor 10 (the Grand Union Canal Spur) which connects to Nether Heyford and Milton Keynes.

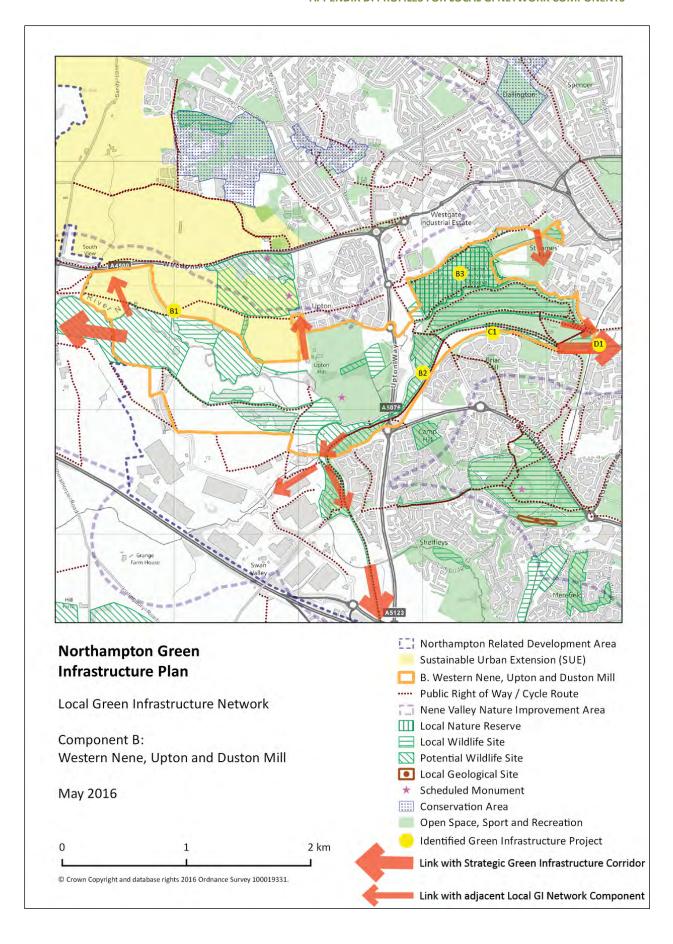
#### Identified GI projects within or close to this Local GI Network Component:

B1: Upton Country Park, Phases 1 and 2

**B2: Duston Wetland Creation** 

B3: Storton's Pits Nature Reserve

C1: East-West Cycle and Footpath Links (Canal towpath and former railway)



#### Functions of the Western Nene, Upton and Duston Mill Local GI Network Component

## **Existing**

#### **Biodiversity**

- Storton's Pits wetland Local Nature Reserve (LNR).
- Numerous Potential and Local Wildlife Sites between Upton and Kislingbury (wetland and grassland habitats).
- Riparian woodland sites, including a heronry at Upton.
- River Nene, Grand Union Canal (Northampton Arm), and flooded gravel pits contribute to an open water habitat corridor, flanked by a lowland meadow habitat corridor within the floodplain.
- The majority of the area is of Major Floodplain Biodiversity Character Type.
- The entire area is within the Nene Valley NIA.

## **Opportunities**

- Conserve and enhance the wetland, meadow and open water habitat reservoirs to increase biodiversity value and connectivity.
- Seek opportunities to introduce new wet meadow habitats (instead of further lake creation) to enrich and strengthen the biodiversity value of the Nene Corridor.

#### Connectivity and Access

- Located adjacent to (and partially within) the Northampton Waterside Enterprise Zone.
- Nene Way (long distance footpath) runs east-west through the area and the Grand Union Canal Walk also passes through the eastern part of the area. There is good public access via a number of routes including open access at Upton Country Park which provides connectivity with Upton SUE, although there is currently limited public access to the River Nene itself west of Duston Mill. Storton's Pits LNR also has public access.
- The Nene Way is a component of the Primary Movement Network. Also within the area are Countryside Connectors (elements of the Secondary Movement Network) which link the Nene Valley with the developed areas to the north and south.

- Create links between Upton Park and Upton Lodge/ Norwood Farm SUEs and Duston Mill via the River Nene.
- Enhance links between the Enterprise Zone and the river Nene (and its associated valley landscapes), making the river a recreational, environmental and aesthetic asset for businesses, residents and visitors.
- Improve public access to the River Nene from Duston Mill westwards.

#### Community and Public Health

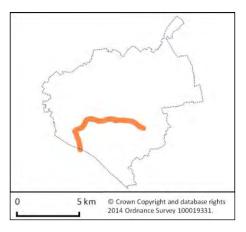
- Storton's Pits LNR provides public and community access to nature conservation sites, and there are significant areas of public open space at Upton Mill and Upton Country Park which provide opportunities for outdoor recreation, and serve the new communities at Upton. The Nene Way long distance route also allows for longer walks, especially in conjunction with other routes such as the Midshires Way and the MacMillan Way.
- Link with SUEs on the west side of Northampton, to create a connection through the valley into the town centre.
- Potential for communitybased enterprise at Duston Mill (e.g. café, cycle hire).
- Improve public awareness of the role and function of the floodplain.

#### **Existing Opportunities** Landscape • The area's 'Broad River Floodplain' landscape Retain the current character character type makes an important contribution to and distinctive qualities of the the character of this part of the town, particularly landscape when designing east of the A5076 where wetlands extend into the Country Parks and other Strategic Greenspace town centre. associated with SUEs. West of the A5076 is a working pastoral farming landscape, with few urban fringe influences, and of high visual quality. The area also forms the setting of the new developments at Upton SUE. Heritage Historic mill buildings (Listed II) on the Nene at Increase public awareness of Upton, and site of mill at Duston, with associated the area's heritage, ponds, leats etc. particularly the mill sites. Section of the Grand Union Canal and associated structures such as towpath, bridges and locks creating a distinctive historic landscape. There are also some areas of ridge and furrow (from Medieval ploughing patterns) on the valley sides around the area. Flooding and water management • This area is within the Nene Valley floodplain. The Increase the multifunctionality of engineered majority of the area is within Flood Zone 3, with an annual risk of flooding of 1% or greater. flood-management solutions e.g. by increasing their range Bunded areas provide important flood storage of biodiversity habitats. capacity upstream of Northampton. Remediate surface runoff SUDS scheme at Upton SUE aims to both reduce flood risk and improve water quality on discharge from development using wetland fringes and filter into the river. strips. Ecosystem Services (See section 15.7) Sheep grazing on the floodplain contribute to Continue positive provisioning services of food and textiles. The management of the area so it valley floor plays an important role in regulating can increase its role in flooding, and also contributes to climatic providing a range of regulation. Cultural services provided by the area ecosystem services. include recreation, education and positive aesthetic experiences.

#### C: EAST-WEST PEDESTRIAN AND CYCLE LINK

#### **Location within Northampton**

This linear Local GI Network Component is situated to the south of the River Nene. It forms an arc between M1 junction 15A (at the south-west edge of the NRDA area), the town centre, and Brackmills (south-east of Northampton town centre), passing through the Northampton Waterside Enterprise Zone at the Avon and Nunn Mills sites. It follows existing routes along the canal towpath in the western section, and a disused railway line in the eastern section.





Disused railway line looking east towards Brackmills, from the level crossing on London Road

#### Strategic Green Infrastructure Context (See Map 2.1)

This route links three existing Strategic GI Corridors: Sub-Regional Corridor 1 (The Nene Valley Newnham- Northampton) and Sub-Regional Corridor 2 (The Nene Valley Northampton – Wansford) which run east-west, and Local GI Corridor 10 (Grand Union Canal Spur link to Milton Keynes and Nether Heyford) which runs north-south.

#### Identified GI projects within or close to this Local GI Network Component:

C1: East-west cycle and footpath links (Canal Towpath and former railway)

C2: Northampton London Road- Brackmills Railway Line Redevelopment

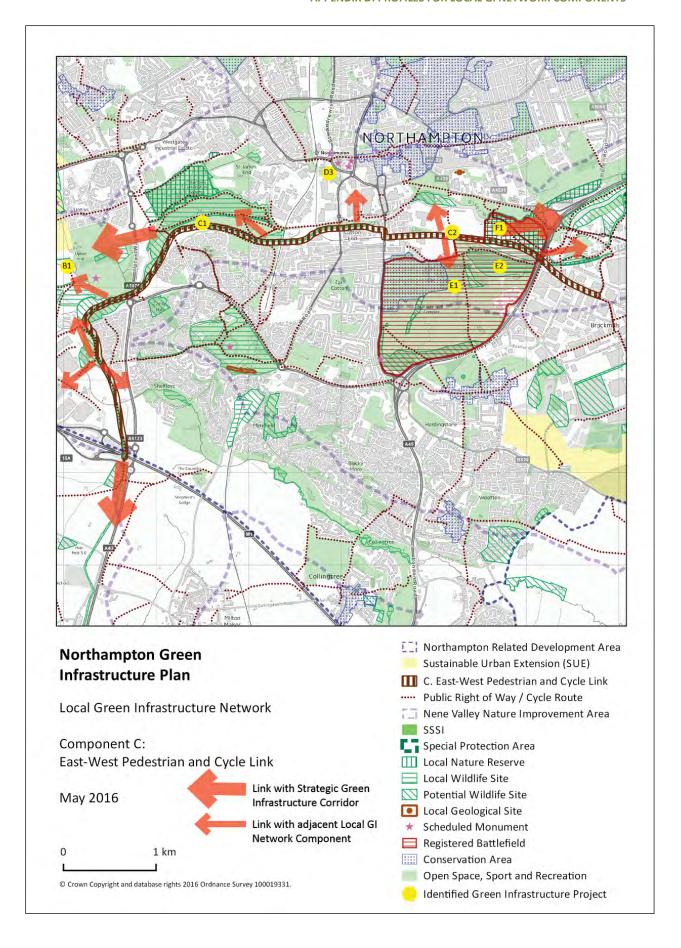
**B2: Duston Wetland Creation** 

E1: Northampton Battlefield

E2: Delapre Lake Local Wildlife Site

F1: Barnes Meadow Local Nature Reserve

There is also potential to link with the Town Centre Waterside developments, including the new university campus, and other projects associated with the Enterprise Zone.



#### Functions of the East-West Pedestrian and Cycle Link Local GI Network Component **Existing Opportunities Biodiversity** Canal and river are biodiversity assets. Enhance wildlife corridors through verge wildflower Partially within lowland meadow and woodland habitat corridors. planting etc. where Five Local Wildlife Sites, including meadows, appropriate. scrub and watercourses. Entire route is within the Nene Valley NIA. Route along former railway line will provide sustainable access to Barnes Meadow Nature Reserve. **Connectivity and Access** The canal towpath is already open as the Grand • Develop links between the Union Canal Walk from M1 Junction 15 to town centre and the River Towcester Road. It forms part of the Primary Nene Corridor. Movement Network (a blue way, associated with • Provide a sustainable transport the Grand Union Canal Northampton Arm). The link (for leisure, recreation and former railway line forms part of the Secondary work-based travel) between movement network, as an inter-urban the Enterprise Zone, the M1, neighbourhood connector, although it does not and Brackmills. currently have public access. Upgrade the Canal towpath where necessary for use as a cycle path. Link the end of the south bank Canal towpath at Towcester Road and the start of the disused railway line at London Road. Reopen the railway line as a pedestrian/ cycle route to provide a sustainable connection between Brackmills and the town centre. Community and Public Health The connection will provide recreational and Consider opening up the route travel-to-work opportunities for exercise, and will (where practical) as a 'linear contribute to a modal shift towards sustainable park', removing physical forms of transport. barriers to access, and making It will also provide an opportunity for local new access points.

industrial heritage.

communities to engage with historic routes and

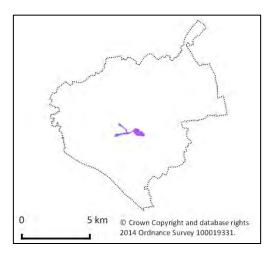
Existing	Opportunities	
Landscape		
<ul> <li>Existing routes are currently generally well integrated into the landscape, and are historic landscape features.</li> </ul>	<ul> <li>Enhance the appearance of the former railway line through linear planting schemes and imaginative design.</li> </ul>	
Heritage		
Numerous heritage features (both designated and non-designated assets) associated with historic transport routes (locks, bridges etc.).	<ul> <li>Integrate interpretation and imaginative design so users and local communities can become aware of these historic transport routes.</li> </ul>	
Flooding and water management		
Largely within Flood Zone 3 (with an annual chance of flooding greater than 1%).	<ul> <li>Consider using porous paving/ surfacing to minimise additional surface run-off and incorporating linear filter strips into the design.</li> </ul>	
Ecosystem Services (See section 15.7)		
The extant sections of the Component (ie the canal path) currently contribute to cultural services, including recreation and cultural heritage.	Upgrading the canal path for cycle use, and extending the route to Brackmills employment site will enable people to regularly travel by cycle rather than car. This will contribute to a number of regulating services, including climate regulation, hazard regulation, noise regulation and pollution regulation.	

#### D: TOWN CENTRE WATERSIDE

#### **Location within Northampton**

This Local GI Network Component is located in the heart of Northampton Town Centre, and is within or adjacent to the Northampton Waterside Enterprise Zone. It covers a relatively small area, but includes or adjoins important urban development sites such as the Waterfront Development Area, new University Campus, and sites within the Enterprise Zone.

Component D includes both banks of the River Nene, and part of the Brampton Arm. It connects with five other Local GI Network Components.





The site of the new University of Northampton Campus, as seen from the north bank of the Nene

#### Strategic Green Infrastructure Context (See Map 2.1)

This Local GI Network Component is located at the meeting-point of four Sub-Regional GI Corridors, which radiate out from it. To the north is the Corridor 8 (The Brampton Arm) connecting Northampton and Market Harborough; to the south is Corridor 7 (Northampton to Salcey); to the west is the Corridor 1 (The Nene Valley Newnham to Northampton) and to the East is Corridor 2 (The Nene Valley Corridor Northampton to Wansford).

#### **Identified GI projects within this Local GI Network Component:**

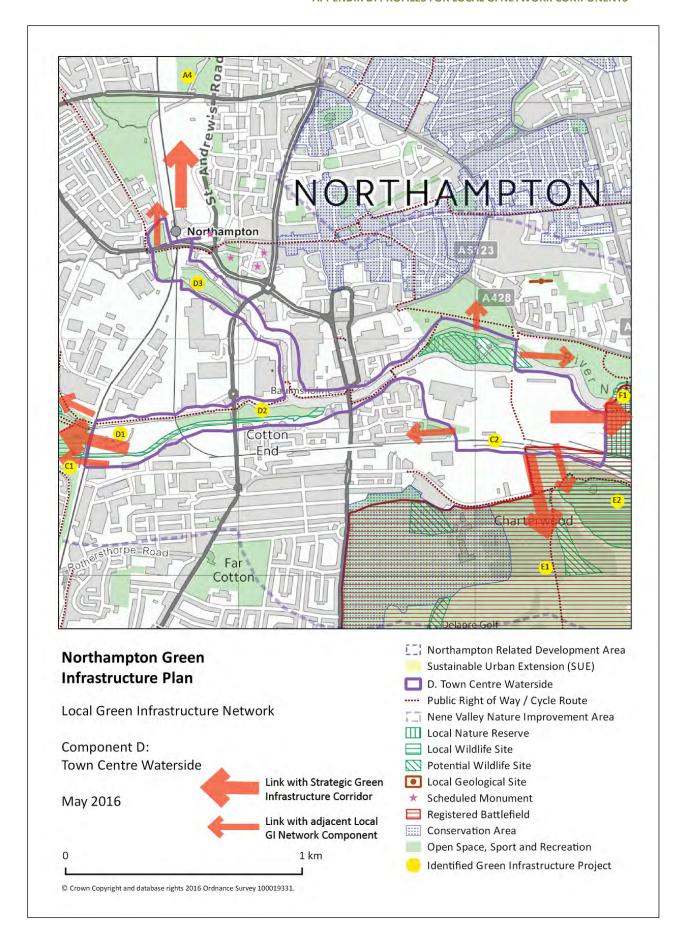
D1: River Nene Meander Reconnection

D2: Habitat creation South of Nene Valley Retail Park

D3: Foot Meadow Project

C1: East-West cycle and Footpath Links

C2: Northampton London Road to Brackmills Railway Line Redevelopment There is also potential to connect with other development projects, such as the new University Campus, and developments associated with the Enterprise Zone.



#### **Functions of the Town Centre Waterside Local GI Network Component**

### **Biodiversity**

**Existing** 

- All of this area is within the Nene Valley NIA boundary.
- Three Local Wildlife Sites including meadow, scrub and open water habitats. There is also a potential wildlife site on the islands in the River Nene to the south of Becket's Park.
- The River Nene itself is an open water habitat corridor. The area is also an important link between the lowland meadow and wetland habitats to the east and west.

#### **Opportunities**

- Re-profile and/ or soften the river banks in canalised/ artificial bank sections to enhance the green corridors through the town centre.
- Follow opportunities for ecological enhancement, especially outside of public realm areas (for example at the western end of the area, on the promontory between the canal and the river Nene).
- Address issues of disturbance to overwintering birds.

#### **Connectivity and Access**

- The area has a strategically-important central location, within / adjacent to the town centre, Enterprise Zone and Waterside Development Area.
- Existing GI links along the Nene Valley mean that this area is relatively easy to access from the east and west. The Nene Way and Grand Union Canal Walk follow the north bank of the River Nene. Together, these routes form a blue way in the Primary Movement Network. The area can also be accessed through several inter-urban neighbourhood connectors within the Secondary Movement Network.
- Enhance links between sites within the Enterprise Zone and the river Nene, making the river a recreational, environmental and aesthetic asset for businesses, residents and visitors.
- Use the redevelopment of Enterprise Zone sites along the Brampton Arm to enable pedestrian/ cycle connections between the Brampton Arm and the River Nene.
- Examine ways of improving sustainable access to the north and south GI Corridors (Components A and E), including through the new University campus.
- Connect with Local GI Network Component C (East-west pedestrian and cycle route), and aspirational project A4 (extension of cycle route along the Brampton Valley into the town centre).
- Reinstall bridges over the river in Foot Meadow to improve accessibility and create helpful through routes e.g. to the railway station.

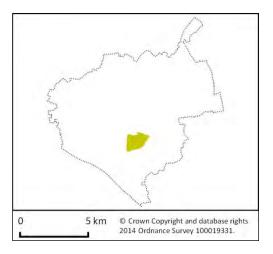
#### **Existing Opportunities** Community and Public Health The long-distance routes along the north bank of Improve community facilities the Nene provide opportunities for open-air and access to open space in exercise. the heart of the town through Becket's Park (adjacent to this Component) is a potential new developments. popular and well-used urban park adjacent to the Rejuvenate 'tired' public river. realm areas with a legacy of past lack if investment and Waterfront open space can suffer from a lack of maintenance and community ownership. maintenance. Landscape • The River Nene makes an important contribution Further enhance the scenic to the special character and unique identity of this quality and distinctive landscape of this part of part of Northampton town centre. Northampton through This Component provides the setting for big businesses (e.g. Avon and Carlsberg) as well as enhancements to the river smaller businesses and employers, and potential and its surroundings. new developments associated with the Enterprise Careful and imaginative Zone. It is therefore important that the design of new development should celebrate the river Component looks attractive and well cared-for, rather than turn its back on it. particularly in public realm areas. Heritage • This part of Northampton has seen major changes Use the rich history of this in recent years, and change will continue to part of Northampton as a happen. A very few historic riverside buildings source of inspiration when remain, along with canal and river features such as planning for future bridges and locks. development. Flooding and water management • The vast majority of the area is within Flood Zone 3 Soften river banks, re-grade (i.e. the likelihood of it flooding in any one year is channels and plant wetlands more than 1%). to slow river flows, especially during periods of heavy rain. Ecosystem Services (See section 15.7) The presence of water and waterside vegetation in Enable this component to the heart of the town centre plays an important further contribute to role in regulating services, particularly the local ecosystem services through climate (for example through temperature continued careful amelioration). It also contributes to cultural management. services through enhancing the aesthetic experience and providing opportunities for

recreation.

#### E: DELAPRE

#### **Location within Northampton**

This Local GI Network Component is located to the south of Northampton town centre, on the south side of the River Nene. It encompasses the majority of the Northampton Battlefield site (a small northern section of the Battlefield is included within component F: Northampton Washlands) and the grounds of Delapre Abbey. It is adjacent to the eastern end of the Northampton Waterside Enterprise Zone.





View south from Delapre Abbey, across the Abbey grounds and battlefield

#### Strategic Green Infrastructure Context (See Map 2.1)

The northern part of the area is within Sub-Regional GI Corridor 2 (The Nene Valley Northampton to Wansford), which runs east-west following the Nene Valley. The southern part of the area is within Sub-Regional GI Corridor 7 (Northampton to Salcey), which runs roughly NW-SE.

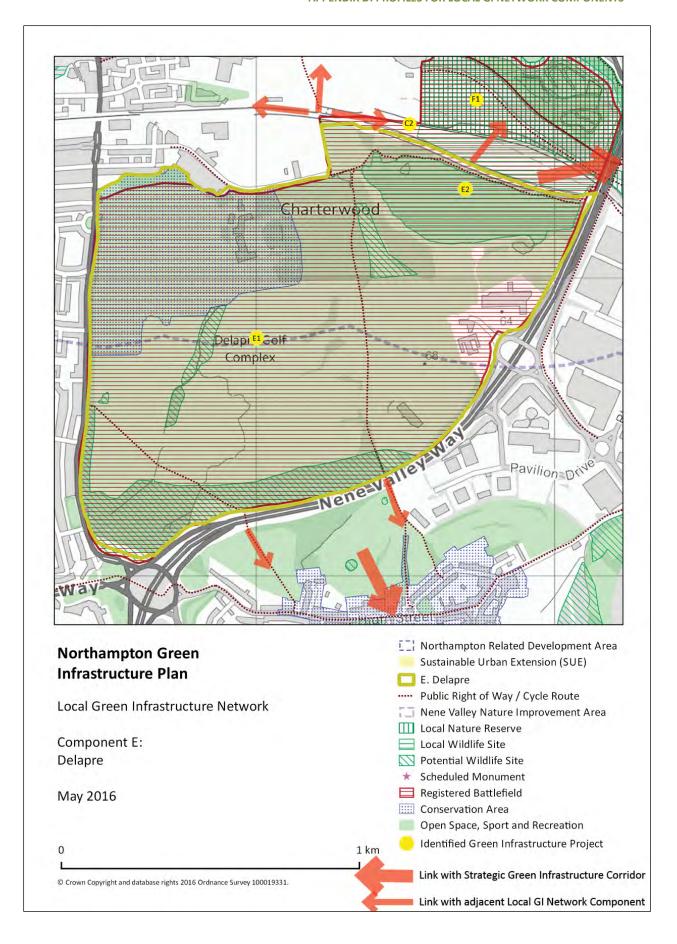
#### Identified GI projects within or close to this Local GI Network Component:

E1: Northampton Battlefield

E2: Delapre Lake

C2: Northampton London Road to Brackmills Railway Line Redevelopment

F1: Barnes Meadow Local Nature Reserve



#### **Functions of the Delapre Local GI Network Component**

#### **Biodiversity**

**Existing** 

- Local Wildlife Site at Delapre Lake.
- Potential Wildlife Sites at Delapre Wood and at an oak stand on peaty soil between Delapre lake and Abbey.
- Ornamental and veteran trees in parkland.
- The northern part of the area contributes to open water and lowland meadow habitat corridors associated with the Nene Valley. It is in the 'Major Floodplains' Biodiversity Habitat Type.
- The southern part of the area contributes to woodland habitat corridors linked to Yardley Chase and Salcey Forest. It is in the 'Limestone Slopes' Biodiversity Habitat Type.

#### **Opportunities**

- Meadow restoration/ enhancement in grassland areas.
- Enhancement of woodland, lake and wetland habitats.

#### Connectivity and Access

- The northern part of the Delapre Abbey grounds are public open space and have public access, and a public footpath runs north-south across the area. This footpath forms a green way within the Primary Movement Network, linking Northampton town centre with Salcey Forest.
- Footpaths across the area also contribute to the Secondary Movement Network, comprising interurban neighbourhood connectors and countryside connectors.
- Delapre Lake is also accessible via a public footpath.

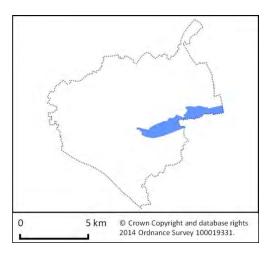
- Link with Local GI Network Component C (East-west footpath and cycle link) to improve access into the northern part of this area.
- Develop direct access between Delapre and the town centre through the Enterprise Zone and new University Campus (Component D). This could also be extended northwards into the Brampton Valley (Component A).
- Develop opportunities to enhance the sustainable movement network to the south, along the Sub-regional GI corridor which connects Northampton with Salcey Forest, via South of Brackmills SUE.

Existing	Opportunities		
Community and Public Health			
<ul> <li>Delapre Abbey and grounds, gardens and tea shop are a popular community resource, which has recently received a grant from the National Lottery. The open space is well-used for outdoor recreation, and provides a 'green lung' and open space within the urban area which is important for public health.</li> <li>The golf course which covers the southern part of the site is also used for outdoor recreation, but does not have public access.</li> </ul>	Involve the local community in tidying up sites and improve sense of pride and ownership.		
Landscape			
<ul> <li>From within the area, the landscape appears as historic parkland, with trees screening the surrounding urban development. Views towards the area are also dominated by trees. The Abbey gardens have a much more designed appearance, and are a popular local attraction.</li> </ul>	<ul> <li>Manage/ plant trees to ensure their continued presence in the landscape, and to enhance woodland links.</li> </ul>		
Heritage			
<ul> <li>Entire area is Registered Battlefield (1460)</li> <li>Eleanor Cross Scheduled Monument in southwest of area. Delapre Abbey is Listed Building (Grade II*).</li> <li>Home Farm Farmhouse recently listed (Grade II)</li> <li>Some areas of surviving ridge and furrow in the south of the area.</li> </ul>	<ul> <li>Enhance interpretation of the area's rich history, for example through a heritage trail encompassing the battlefield and Queen Eleanor's Cross.</li> <li>Celebrate cultural assets through the conservation management of parkland.</li> </ul>		
Flooding and water management			
<ul> <li>Northern (lowest lying) parts of area closest to the River Nene are within Flood Zone 3.</li> </ul>			
Ecosystem Services (see section 15.7)			
<ul> <li>As an extensive area of grassland and woodland within a built-up setting, this Component contributes to many regulating services, including rainwater infiltration, water quality, air quality and temperature. It also provides a number of cultural services, including cultural heritage, recreation and a positive aesthetic experience.</li> </ul>	<ul> <li>Provide a range of ecosystem services though continued positive management of the area.</li> </ul>		

#### F: WASHLANDS AND EASTERN NENE

#### **Location within Northampton**

This Local GI Network Component extends from the town centre eastward to the NRDA boundary. The western end of the Component adjoins the Northampton Waterside Enterprise Zone. It follows the Nene Valley for approx. 6km, and encompasses the River Nene and the surrounding meadows, wetlands and lakes. This area has seen extensive aggregate extraction in the past.



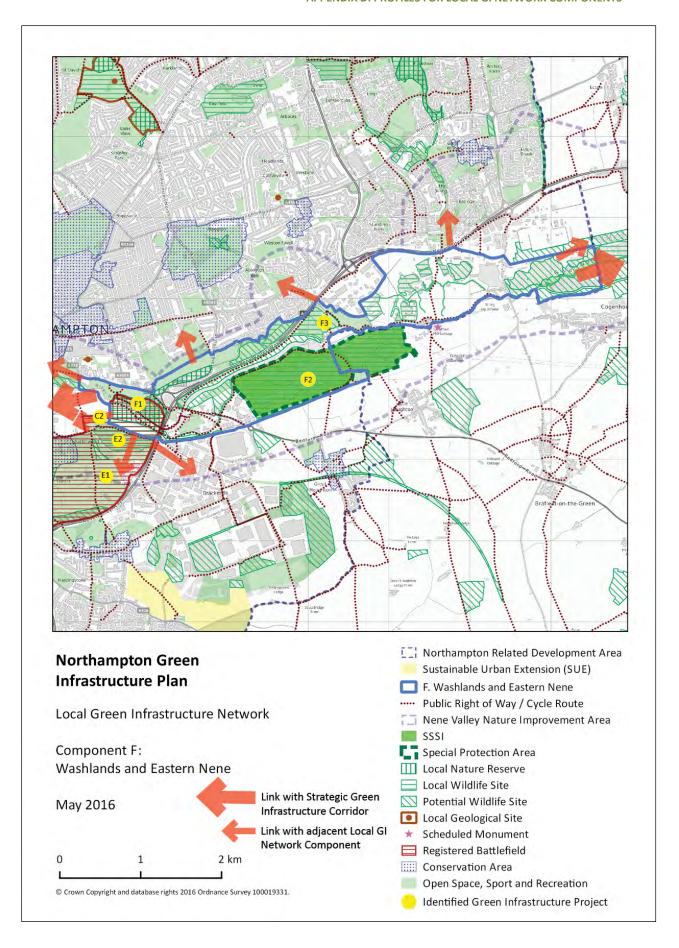


#### Strategic Green Infrastructure Context (See Map 2.1)

This Component includes the western part of the Sub-Regional GI Corridor 2 (The Nene Valley Northampton to Wansford).

#### Identified GI Projects within/ adjacent to this Local GI Network Component:

- F1: Barnes Meadow Local Nature Reserve
- F2: Northampton Washlands
- F3: Abingdon Meadow Improvements
- C2: Northampton London Road to Brackmills Railway Line Redevelopment
- E1: Northampton Battlefield
- E2: Delapre Lake Local Wildlife Site



#### Functions of the Washlands and Eastern Nene Local GI Network Component

## **Existing**

#### **Biodiversity**

- This area is of international importance for its biodiversity.
- The Nene Washlands are designated Site of Special Scientific Interest (SSSI) and Special Protection Area (SPA), for their breeding bird populations. There are also extensive open water, wetland and meadow Local Wildlife Sites, and further Potential Wildlife Sites. The whole of the area is within the Nene Valley NIA. It is a key component of the River Nene habitat corridors, comprising open water, wetlands and lowland meadows.
- Public access to a range of wetland habitats at Barnes Meadow Local Nature Reserve (LNR).
- It is a Major Floodplain Biodiversity Habitat Type.

## **Opportunities**

- Improve management of the area to increase the extent and quality of its wetland and open water wildlife habitats, balancing public access with the needs of wildlife.
- Seek opportunities to introduce wet meadow habitats (instead of lake creation) to enrich and strengthen the biodiversity value of the Nene Corridor.

#### Connectivity and Access

- The Nene Way follows the river bank east-west for the length of the area, connecting this Component with the Town Centre and Enterprise Zone. It occasionally crosses the river using foot bridges.
- The Nene Way forms a blue way in the Primary Movement Network. Access from built-up areas to the north (via the Secondary Movement Network) is limited by the provision of foot bridges across the A45.
- Enhance links between the Town Centre/ Enterprise Zone and the eastern Nene Valley.
- Extend the Nene Way eastwards along the river bank, removing diversion through Cogenhoe village.
- Improve the accessibility of the area from residential developments north of A45.
- Make visitors feel welcome, but also aware of their responsibilities.

#### Community and Public Health

- High-quality and extensive natural environments contributing to the environmental quality of the town.
- Biodiversity sites are also an important educational resource.
- Barnes Meadow LNR enables the public to experience nature close to hand, and possibly to become involved in habitat management as volunteers.
- Nene Way path is a long-distance route, encouraging outdoor activities (Walking and cycling) with associated public health benefits.
- Water sports facilities are available for local communities to use.

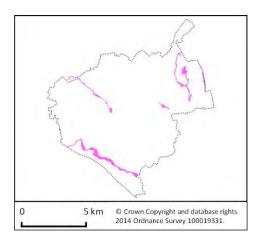
- Increase the number of circular walks for local people to enjoy, for example whilst dog-walking.
- Reduce incidence of informal access which can damage sensitive habitats and disturb birds.

Existing	Opportunities		
Landscape			
<ul> <li>Distinctive valley-floor landscape of lakes and meadows adds to the visual quality of the town, and creates a distinctive landscape setting for the surrounding developed areas.</li> </ul>	<ul> <li>Plant trees along the A45         to enhance the woodland         corridor, and reduce the         visual and noise impacts of         the road on this area.</li> </ul>		
Heritage			
<ul> <li>Historic transport routes (Nene Navigation) and routes of former railway line running on embankment alongside.</li> <li>Clifford Hill Motte Scheduled Monument adjacent to the area (just outside NRDA boundary).</li> </ul>	<ul> <li>Through interpretation schemes, show how the landscape of this area has changed through aggregate extraction, and the construction of floodwater storage schemes.</li> </ul>		
Flooding and water management			
<ul> <li>Entire area is within flood zone three (Probability of flooding in any one year is greater than 1%).</li> <li>Open water and lowland meadows play an important role in providing flood storage capacity.</li> </ul>	<ul> <li>Increase wetland areas where appropriate, and improve river management to reduce flood impacts.</li> </ul>		
Ecosystem Services (see section 15.7)			
<ul> <li>This Component plays in important role in regulating services within Northampton, particularly with regard to floodwater. Wetlands and flower-rich meadows provide conditions for pollination, and the area also regulates climate and pollution. Cultural services are provided through the area's recreation and educational sites, and its contribution to a positive aesthetic experience.</li> </ul>	Continue positive management of the area, enabling it to provide a range of ecosystem services.		

#### **G: URBAN BROOK CORRIDORS**

#### **Location within Northampton**

These Local GI Network Components comprise the narrow corridors of the various brooks which flow through the urban area of Northampton (principally the Wootton Brook, Billing Brook, Abingdon Brook, Ecton Brook and Dallington Brook). All are tributaries of the River Nene. Several of the Urban Brook Corridors overlap with the Strategic Greenspace associated with the SUEs.





The Billing Brook near Billing Arbours

#### Strategic Green Infrastructure Context (See Map 2.1)

The lower ends of some of the urban brooks (near to their confluences with the River Nene) are within Sub-Regional GI Corridor 1 (The Nene Valley Newnham to Northampton) or 2 (The Nene Valley Northampton to Wansford). Other parts of the Urban Brooks are outside of the Strategic GI framework, but nevertheless make an important contribution to GI at a local level.

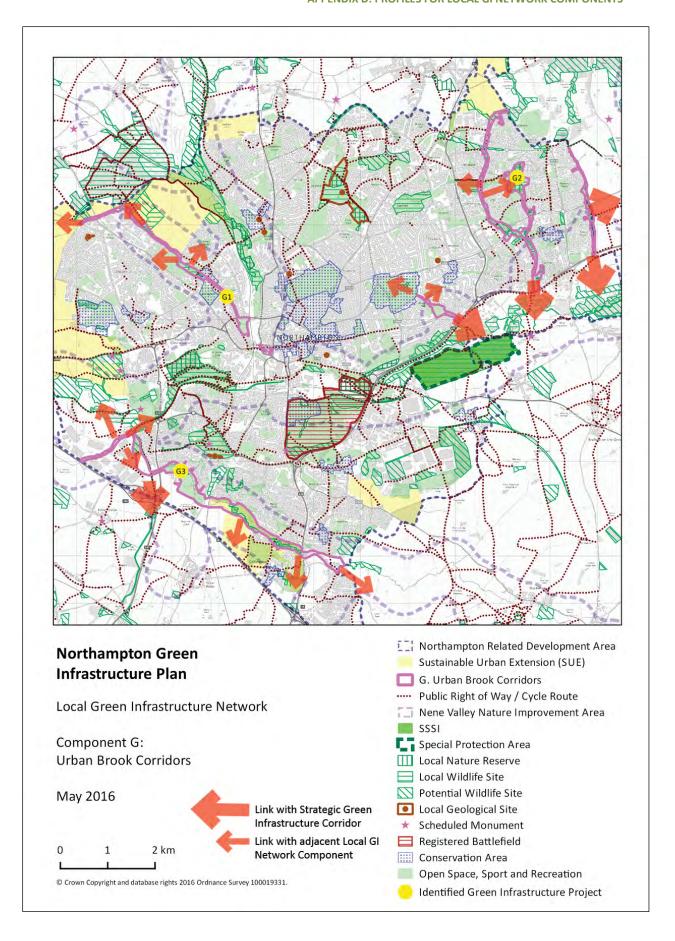
#### **Identified GI projects within this Local GI Network Component:**

G1: Aberdare Road Park

G2: Lings Wood Nature Reserve

G3: Shelfleys Lake, Wootton Brook

There are also potential future links between the Dallington Brook and the Kings Heath SUE, the Billing Brook and the Northampton North (Overstone Leys) SUE, and the Wootton Brook and the Northampton South (Collingtree) SUE.



#### **Functions of the Urban Brook Corridors Local GI Network Component**

١	Existing	Opportunities
ı	EXISTING	Opportunities

#### **Biodiversity**

- Lings Wood Local Nature Reserve (LNR) (woodland) on a tributary of the Billing Brook provides public access into a nature conservation site.
- Several Urban Brook Corridors contribute to the wider biodiversity network, as open water, and/or woodland corridors. Others are partly culverted and currently have little biodiversity value.
- Several Local Wildlife Sites, including open water, watercourses and grassland.
- Some Urban Brooks are identified as Minor Floodplain Biodiversity Character Types.
- All of the Urban Brook Corridors are fully or partially within the Nene Valley NIA.

- S
  - Improve management of watercourses and their surrounding habitats to increase their biodiversity value, and water quality.
  - Enhance the biodiversity of **Urban Brook Corridors** through sensitive design of the SUEs and their associated structural greenspace.

#### Connectivity and Access

- Some of the Urban Brook Corridors (e.g. Billing Brook; Ecton Brook) are used for routeways, or are surrounded by public open space. Others are inaccessible.
- Several of these routes contribute to the Secondary Movement Network as inter-urban neighbourhood connectors.
- Sensitively enhance Urban Brook Corridors as sustainable access routes where appropriate.
- Enhance access routes through the design of the SUEs and their associated structural greenspace, including a link between the Northampton North SUE and the Billing Brook.

#### Community and Public Health

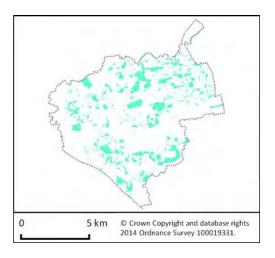
- The Urban Brook Corridors are generally located close to housing areas, and are often accessed (formally or informally) by local people. They also improve the urban environment by introducing trees, wetlands and water.
- **Encourage community** involvement in projects to enhance the Urban Brook Corridors, thereby improving management and reducing anti-social behaviour.

#### **Existing Opportunities** Landscape Urban Brook Corridors appear as lines of green Improve the visual and biodiversity value of sections within the urban area. They can also add to an of Urban Brook Corridors area's sense of place, particularly where they have which are currently culverted, been incorporated into the design of an area (e.g. the Wootton Brook at Shelfleys Lake, and the or hidden by buildings, fences Billing Brook at Weston Favell). or trees. Make Urban Brook Corridors positive features of the landscape/ townscape. Heritage • Historic water features (e.g. the lower lakes on the Improve the interpretation of Dallington Brook appear on the 1833 OS map, heritage features associated associated with nearby Dallington Hall). with Urban Brook Corridors. Some Urban Brook Corridors are associated with the historic cores of settlements (often now Conservation Areas) e.g. Dallington on the Dallington Brook. Others provide more recent examples of naturally-occurring water courses which have been modified and incorporated into the design of residential areas. Flooding and water management Most Urban Brook Corridors are all or in part Utilise the potential for water within Flood Zone 2. retention upstream to help reduce flooding further Because they discharge into the River Nene, they also impact on its water quality and flood downstream. Where possible, use careful responses. design to obtain additional GI Some Urban Brook Corridors function as flood benefits from extant flood storage and management infrastructure, e.g. management features. Dallington Brook. Improve water quality and reduce flood risk through small-scale wetland creation and SUDS within developed areas. Ecosystem Services (See section 15.7) **Urban Brook Corridors provide provisioning** Continue improvements in services in the form of fresh water. Associated the management of Urban regulating services include local-level climate Brook Corridors (and careful regulation, and regulation of flooding and water planning of any future quality. In addition they provide a range of development), so they can cultural services, including recreation, education continue to fulfil a range of and a positive aesthetic experience. ecosystem services.

#### **H: Urban Open Spaces**

#### **Location within Northampton**

This Local GI Network Component is scattered throughout the built-up area of Northampton, and comprises a variety of parks, country parks, allotments, cemeteries, playing fields, and other public and non-public open spaces. The Urban Open Spaces range in size from local allotment sites to large country parks, but most are surrounded by residential development. Some (e.g. Becket's Park) are associated with river corridors.





Paths, mature trees and playing fields at Northampton Racecourse

#### **Strategic Green Infrastructure Context (See Map 2.1)**

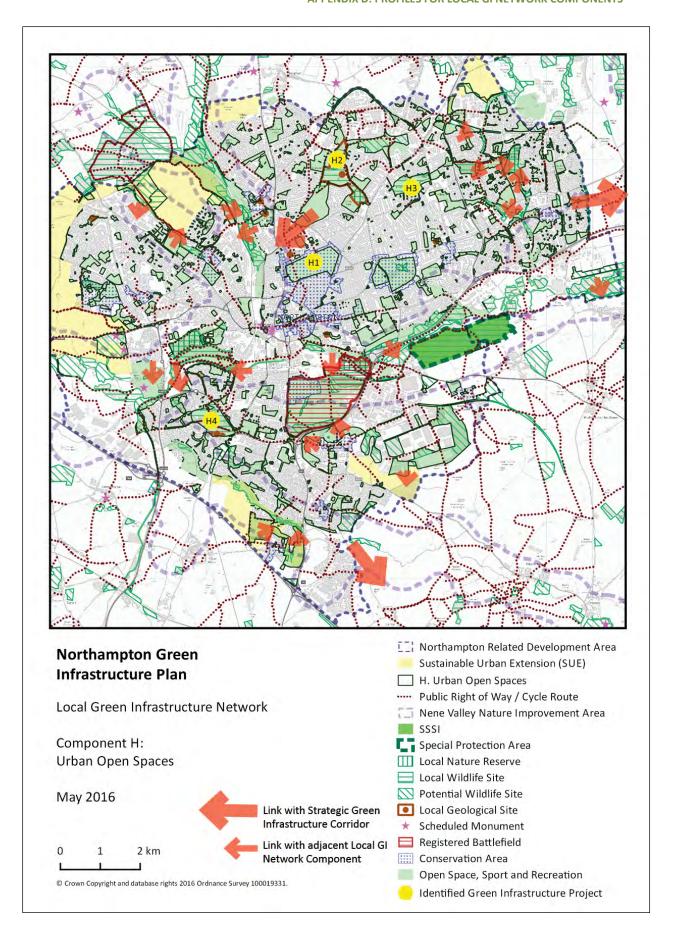
Some of the Urban Open Spaces (Eastfield Park, for example) are within Local GI Corridors. Others are located outside the Strategic GI Framework, but nevertheless make an important contribution to the town's Green Infrastructure provision, particularly where they are connected by Urban Brook Corridors or other linkages.

#### **Identified GI projects within this Local GI Network Component:**

H1: Northampton Racecourse H3: Eastfield Park

H2: Bradlaugh Fields Nature Reserve H4: Hunsbury Hill Country Park Project

NOTE: When assessing a specific open space for enhancement, please refer to the most recent Open Space, Sport and Recreation Strategy to obtain an accurate site-specific overview.



#### **Functions of the Urban Open Spaces Local GI Network Component**

#### **Opportunities Existing**

#### **Biodiversity**

- Some Urban Open Spaces (e.g. Eastfield Park, Spinney Hill; Hunsbury Hill) are Local Wildlife Sites (LWS), containing a variety of woodland, grassland and wetland habitats. There are also some Potential Wildlife Sites, such as the lake in Abingdon Park.
- Several Local Geological Sites occur within Urban Open Spaces. The largest is Bradlaugh Fields, designated for its limestone and sandstone formations. Other smaller sites include cuttings (e.g. Hunsbury Hill) and quarries/ cliffs which show sections through Northampton Sands formations.
- Trees and woodlands within Urban Open Spaces make a valuable contribution to biodiversity.
- Some Urban Open Spaces are located on woodland or grassland corridors within the wider habitat network.

- Enhance the biodiversity value of Urban Open Spaces though increased range & extent of habitats.
- Increasing the number of LWS through positive conservation management.
- Explore opportunities for GI provision within urban areas, e.g. green roofs and walls, tree planting, etc.
- Raise public awareness of **Local Geological Sites** through increased interpretation.

#### Connectivity and Access

- All of the Urban Open Spaces are surrounded by development (mostly residential) and are therefore easily accessed by local residents. Many are directly overlooked by housing. Several parks (e.g the Racecourse) have an exceptionally permeable perimeter, enabling easy access from all directions.
- The larger sites (e.g Hunsbury Hill) are served by car parks. Many Open Space sites can be accessed by public transport or via footpath links (most are served by inter-urban neighbourhood connectors within the Secondary Movement Network).
- **Encourage improved** access using Urban Brook Corridors and other linkages.
- Improve signage to sites and within sites where appropriate, including from within the wider urban area.

#### Community and Public Health

- Urban Open Spaces have an important function as 'green lungs' within the town. They enable people to access open space close to where they live, without needing to drive or travel long distances. They are popular amongst all age groups.
- The opportunities they provide for open air exercise and relaxation are important for public health.
- Some sites (e.g. the Racecourse) provide sports facilities which can be used by clubs beyond Northampton Borough.
- Some have associated community facilities/ attractions such as Abington Museum and Hunsbury railway museum which fulfil an educational role.
- Volunteering in parks, e.g. helping with maintenance can be excellent training for socially-excluded groups.

- When opportunities arise, enhance facilities for all age groups using Urban Open Spaces, to encourage fitness and an enjoyment of the outdoors.
- Build on existing enthusiastic community support, e.g. the 'Friends of' Groups which are associated with many sites.
- Use a range of publicity to increase public awareness of accessible Urban Open Spaces in Northampton.

## **Existing** Opportunities

#### Landscape

- Urban Open Spaces contribute to the town's sense of place, and are attractive places to be, encouraging people to enjoy where they live and to take pride in it.
- They also create a green and open appearance to the town which usually adds to its visual quality.
- Consider opening up strategic views (e.g. through selective thinning of secondary woodland at Hunsbury Hill) to enhance visual connectivity between sites and their surroundings.

#### Heritage

- Hunsbury Hillfort is a Scheduled Monument, and the surrounding Country Park forms its setting.
- Many of the Urban Open Spaces have interesting histories, including several public open spaces which were formerly the grounds of private estates (e.g. Eastfield Park).
- The Racecourse and Abingdon Park are fully or partially designated as Conservation Areas, and several Urban Open Spaces have associated Listed Buildings.
- Improve interpretation of the heritage of Urban Open Spaces, encouraging residents to engage with the history of where they live.

#### Flooding and water management

- The Urban Open Spaces are generally located on relatively high ground, and are therefore outside the Flood Zones. However, their size and permeability means that they are important in the storage of rainwater and prevention of flooding.
- Use Urban Open Spaces to help reduce runoff and downstream flooding, for example through tree planting, replacement of hard surfaces with permeable paving, etc.

#### Ecosystem Services (See section 15.7)

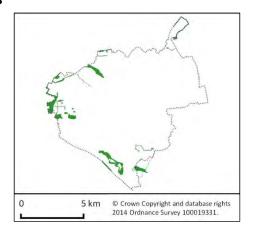
- Urban Open Spaces (and their associated trees, lakes and grassland) function as 'green lungs' within the urban area of Northampton. They contribute to various regulating services, including climate regulation, noise regulation, pollination, water regulation (through absorption of rainwater) and air quality regulation.
- They also play an important role in providing cultural services, particularly recreation and positive aesthetic experience. Many Urban Open Space sites are rich in cultural heritage.
- Allotment sites contribute to provisioning services through food production.
- Increase the 'urban forest' resource through careful planting of appropriate tree species in order to build local resilience to climate change, specifically higher temperatures and increased rainfall.
- Continue positive
   management of Urban
   Open Spaces and the
   habitats within them, so
   that they can continue to
   contribute to a wide range
   of ecosystem services.

#### I: STRUCTURAL GREENSPACE ASSOCIATED WITH SUES

#### **Location within Northampton**

A series of Sustainable Urban Extensions (SUEs) are proposed on currently undeveloped land around the peripheries of Northampton. Eight SUEs are proposed, on the north, north-east, south-east, south, west and north-west of the town. Each SUE includes proposed areas of development, and associated Structural Greenspace.

There is some overlap between the SUE sites and other Local GI Network Components, specifically Components A, B and G.





View towards proposed Country Park site in the Nene Valley associated with Upton Park SUE

#### Strategic Green Infrastructure Context (See Map 2.1)

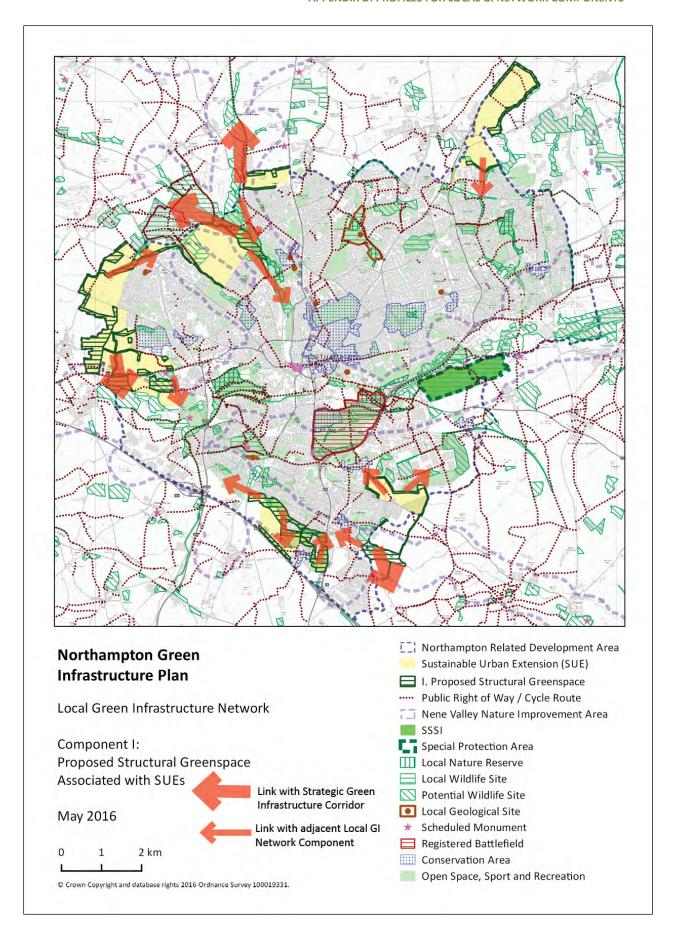
Several of the SUE sites are within Sub-Regional Green Infrastructure Corridors. The North of Whitehills and Kings Heath SUEs are partially within the Sub-Regional GI Corridor 8 (The Brampton Arm Northampton to Market Harborough). The Upton Park SUE is fully within Sub-Regional GI Corridor 1 (The Nene Valley Newnham to Northampton), and the Upton Lodge SUE is partially within it. The South of Brackmills SUE is partially within Sub-Regional GI Corridor 7 (Northampton to Salcey).

#### **Identified GI projects within this Local GI Network Component:**

There are eight SUEs currently proposed, at different stages of the planning process.

I:1 Northampton Upton Park SUE	I:5 Northampton North of Whitehills SUE
I:2 Upton Lodge/ Norwood Farm SUE	I:6 Northampton North SUE (Overstone Leys)
I:3 Northampton West SUE	I:7 Northampton South of Brackmills SUE
I:4 Northampton King's Heath SUE	I:8 Northampton South (Collingtree) SUE

NOTE: See Appendix I for a summary of the proposed Structural Greenspace associated with each SUE. Map 4 shows indicative links between the SUEs and the wider GI Network.



#### Functions of Structural Greenspace Associated with SUEs Local GI Network Component

## Existing Opportunties

#### **Biodiversity**

- Five of the SUE sites (North of Whitehills, Collingtree, Upton Park, Upton Lodge and King's Heath) are partially within the Nene Valley NIA.
- There is a Local Wildlife Site within the King's Heath SUE, and Potential Wildlife Sites in the Upton Park, King's Heath, Northampton West and Overstone Leys SUEs, but none are within the areas proposed as Structural Greenspace. The 'Cowpasture Spinney' Wildlife Site at the Overstone Leys SUE is within the proposed area of Structural Greenspace.
- With the exception of Upton Lodge, all the SUE sites are fully or partially within habitat corridors. Overstone Leys, North of Whitehills, King's Heath and Northampton West SUEs are within acid grassland habitat corridors. Upton Park, Collingtree, King's Heath and South of Brackmills SUEs are within lowland meadow habitat corridors. Overstone Leys and Northampton West are within woodland habitat corridors.

- Incorporate designated wildlife sites into Structural Greenspace areas within SUEs, and protect and manage them appropriately.
- Bear in mind the SUEs' roles as contributors to habitat corridors throughout the design and planning process, and enhance the sites' functions as future habitat corridors. Therefore corridor width and function should be considered, corridors should be fit for purpose, and adequate space for multifunctionality should be allocated.
- Enhance the biodiversity of Urban Brook Corridors where they overlap or link with SUE sites.

#### Connectivity and Access

- Three of the SUE sites (King's Heath, Upton Park and South of Brackmills) contain Green Ways within the Primary Movement Network. All the SUE sites except North of Whitehills contain Countryside Connectors within the Secondary Movement Network.
- Retain (and preferably enhance)
   existing links within the
   movement network through the
   development of the SUEs,
   enabling good connections
   between Northampton and the
   surrounding countryside.
- South of Brackmills SUE can contribute to enhancement of sustainable movement network along Sub-regional GI corridor connecting Northampton (Delapre) with Salcey Forest.
- South of Brackmills, Northampton West and Upton Lodge/ Norwood Farm SUEs all have opportunities to enhance sections of the local movement network which are currently on roads.

Existing	Opportunities
Connectivity and Access (Contd.)	
	<ul> <li>Enhance connectivity/ access of other Local GI Network         Components through off-site contributions.</li> <li>Through the masterplanning process, ensure that smaller areas of Structural Greenspace within SUEs connect with the wider GI network.</li> </ul>
Community and Public Health	
Collingtree Golf Course (within Collingtree SUE Structural Greenspace) is currently a formal recreation site.	<ul> <li>Provide a pleasant living environment and outdoor recreation opportunities through the Open Space associated with the proposed SUEs.</li> <li>Make SUE Structural Greenspace accessible for use by the wider community. For example, Overstone Leys SUE can contribute to Open Space, Sport and Recreation opportunities for residents of Moulton village.</li> </ul>
Landscape	
<ul> <li>The majority of the proposed SUE sites are currently farmland around the edges of Northampton, and currently contribute to the rural setting of the town. Some of the sites (e.g. King's Heath and Upton Lodge) are on visually prominent slopes.</li> <li>SUE sites fall within several different landscape character areas: Rolling Ironstone Valley Slopes to the north of the town; Undulating Hills and Valleys and Broad River Valley Floodplain to the west, and Undulating Claylands and Limestone Valley slopes to the south.</li> </ul>	<ul> <li>The development of the SUEs will represent a major change in land use from agriculture to development, with consequent effects on their appearance and impacts on the setting of Northampton.</li> <li>Sensitively design Structural Greenspace to make the SUEs as visually attractive as possible, providing a soft edge to the town, and enabling the new developments to sit comfortably within their wider landscape context.</li> <li>Retain landscape diversity as much as possible, for example through massing of planting and choice of species.</li> </ul>

#### **Existing Opportunities** Heritage Scheduled Monument (deserted medieval Where appropriate, reflect village) to the north of Upton Park SUE. historic landscape features (e.g. Overstone Leys, Northampton West, Upton lanes and field patterns) in the Lodge, Upton Park and Collingtree SUEs all design of new development and associated Structural Greenspace, contain small areas of ridge and furrow, encouraging residents to engage resulting from medieval ploughing. with the history of where they Some SUE sites are within the settings of live. existing Conservation Areas. Use GI provision to preserve or enhance the immediate settings of existing Conservation Areas. Flooding and water management The lowest-lying parts of some SUEs are within Minimise future increase in surface water runoff from Flood Zone 2. Most of these are also within Component G: Urban Brook Corridors, and are development by introducing within the areas of proposed Structural permeable surfaces (where underlying geology is porous), Greenspace. retention ponds, and other SUDS. The SUE sites are currently (or have been) farmland and enabled natural infiltration of ainwater, reducing the effects of flooding downstream. Ecosystem Services (See section 15.7) The SUE sites currently provide provisioning SUEs will continue to regulate services through their use as farmland. They flooding and contribute to water also contribute to regulating services, management through SUDS. including regulation of water, flooding, soil Carefully design Structural quality, air quality, climate and pollination. Greenspace to enable it to fulfil new roles providing cultural services (e.g. recreation).

 Plant suitable tree species to increase future local resilience

specifically rising temperatures

against climate change,

and increased rainfall.