LITTLE WOODHOUSE

GREEN INFRASTRUCTURE PROJECT

GROUP 4

HEIDI BOOT

LUCY HENWOOD

JOANNE NAYLOR

BETHANY SHAW

KATIE WRIGHT

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Introduction

This report has been developed by Group 10 students as an aid for the Little Woodhouse Community Group, aiming to provide guidance on best practice to achieve a sustainable neighbourhood, whilst maintaining the character of Little Woodhouse. The Little Woodhouse Neighbourhood Development Plan (NDP) stipulates the importance of enhancing and promoting green infrastructure opportunities and how evidence within National and Local Policy promotes this. With the support of the Little Woodhouse NDP, this report will focus on the existing green infrastructure and green corridors within the area, and how those areas can be improved through planting improvement to promote sustainability and biodiversity. New proposals will also be addressed within the report which will seek to recommend new green corridors and spaces, achieving sustainability whilst maintaining the focus that community is at the heart of each proposal. Case studies will be used throughout the report to provide a strong evidence base to support our proposals, whilst highlighting successful improvements which would positively impact Little Woodhouse.

Context

What is Green Infrastructure?

"Green Infrastructure, put simply, is the great variety of green and natural spaces, such as parks, woodlands, gardens, waterways, and street trees, that frame and connect our villages, towns, and cities in a sustainable way." (RTPI, 2022).

As urban places transform into their next generation of development, green infrastructure must be included as a vital component of city design (Star Tribune, 2005). In recent years, there has been a strive for sustainable development due to climate change issues. In our current world, where population growth, bio-diversity depletion, and high carbon emissions are major concerns, integrating green networks into cities has become a key method of resistance to these future challenges. Therefore, there presence in planning policies has become prominent due to a wide range of social, economic, and environmental benefits they provide for urban communities. The table below lists these:

SOCIAL	ECONOMIC	ENVIRONMENTAL
Green spaces can be described as a 'calm refuge' in urban environments (Grey to Green, 2022).	Green corridors become spaces for recreation and local cultural events which may increase the number of visitors who will spend their time and money in the area.	Green corridors promote the use of cycling and walking as a means of travel, which helps reduce carbon emissions from vehicle usage such as cars or public transport (Grey to Green, 2020).
They encourage an active lifestyle which considerably improves mental and physical health and wellbeing.	They add to the local amenity of the area creating an attractive setting for surrounding residential and commercial properties, enticing new residents and businesses (Locality, 2022).	They can increase biodiversity which has positive effects on the ecosystem.
Green infrastructure allows for social contact and connectivity as people move through and actively participate in the environment, bringing people out onto the streets and forming cohesion between different groups of people (Public Health England, 2020).	The planting of trees and creation of green spaces can increase property prices and the willingness to pay for, or relocate to, greener environments (Forest Research, 2022).	Planting and soil provide the areas with creatures and soil which can protect people and wildlife from air pollution as they reduce carbon emissions in the atmosphere (Grey to Green, 2020).

Understanding the value of green space

Public Health England (2020) have produced a report on the important role greenspace has in everyday life. The PHE report identified values and benefits of greenspace as follows:

- Natural England estimated that £2.1 billion per year is saved in health costs if everyone had good access to greenspace for physical activity in England
- Where physical activity guidelines are met through using greenspace, the resulting improvements to life are quantified at £2 billion per year
- Where one or more active visits (30 minutes activity) to urban greenspace occur, the welfare gain is £1.2 billion. Where a person undertook one or more active visits to greenspace, there would be an annual saving of £760 million through avoiding medical costs.
- London's greenspace saves £580 million per year through contributing to physical health, and £370 million to better mental health. Health benefits represent 20% of the economic value of London's greenspace.
- The net benefit to society of Birmingham's greenspace and parks was valued at £600 million, of which £192 million in health benefits.
- In Sheffield, a valuation of urban parks identified that for every £1 spent on maintaining parks, it realised benefits worth £34 in health costs saved, which especially benefitted residents.
- The benefit to individuals of having a view of greenspace was valued at £135 to £452 per person per year, and the value of having access to a garden was valued at £171 to £575 per person per year, indicating the value of greenspace views and gardens to individuals.
- In 2016, houses and flats which have public greenspace within 100 metres realised an increase of £2,500 in value than if the greenspace was 500 metres away. Since Covid 19, it is very probable that this value has increased. This highlights how greenspace increases the value of property and could motivate developers to include greenspace within new developments.

Impact of COVID-19 on green infrastructure

The RTPI (2020) state that almost 2.7 million people in the UK do not have a publicly accessible green space within a ten-minute walk of their home. The COVID-19 pandemic re-emphasized the need for green space in our local areas. As UK residents were confined to their homes to stop the spread of the disease, the populations mental and physical health suffered significantly (Okech and Nyadera, 2021). Intertwining public health and urban planning has become prominent following the pandemic in 2020 as those living in inner city areas should be able to get the benefits from nature despite living in urban areas. Therefore, as green spaces have scientifically been recognised to support human health, their value to urban spaces is high, consequently adding an additional dimension for the development of green corridors.

National Policy Context

To gauge an understanding of the local context relevant to the development of Little Woodhouse' Neighbourhood Plan, exploring the importance of policy implementation at the National level is vital.

Sustainable development

The drive for sustainability is no new concept, where serving the needs of communities and the environment without compromising for future generations has been a common rhetoric within planning policy. The Sustainable Development goals were introduced by the UN in 2015 and sought to encourage a blend of "economic development, environmental sustainability and social inclusion" (Sachs, 2012, p.379; Agyeman and Angus, 2003). The Sustainable Development Goals (SDGs) consisted of 17 goals. Goal 11 refers to 'Sustainable Cities and Communities' which aims to encourage safety and sustainability within cities (United Nations, 2022) and thus, can be used as a model to construct green infrastructure which is sustainable, yet encourages economic and social growth. The concept of green infrastructure plays an important role in encouraging social, economic, and environmental development. Therefore, the concept explores the harmonious coexistence between human construction and nature protection, whilst advocating the maintenance and restoration of green networks (Ying et al,.2021).

Figure 1- UN Sustainable Development Goals, Source: United Nations 2022

National Planning Policy Framework (NPPF)

At the National level, the National Planning Policy Framework (NPPF) provides guidance on implementing policies which address the significance of protecting and enhancing green infrastructure within England. Within the Framework, section 8 addresses Promoting healthy and safe communities (MHCLG, 2021). The section within the Framework draws a specific focus on ensuring that policies and decisions within the planning realm should achieve healthy and inclusive safe places that seek to promote and support healthy lifestyles through the provision of accessible and safe green infrastructure (MHCLG, 2021). This includes encouraging walking and cycling routes, whilst ensuring that streets are well designed to encourage community cohesion (MHCLG, 2021). Additionally, within Section 8, the NPPF refers to Open spaces and the designation of Local Green Space, stipulating that designation of green space can only be achieved through local or neighbourhood plans. The NPPF underlines that designation of Local Green Space should be used when green space is close to the community, holds significance through beauty or history and is local in character (MHCLG, 2021). This designation should be consistent with that of the Local Plan and ensure that community value has been considered.

The launch of the Environment Act 2021 has been a catalyst in the movement towards sustainable development in planning. Under the Act, biodiversity has been placed at the forefront of planning, where a delivery of 10% net biodiversity gain will become a condition for planning permissions within England from 2023 (Jones, 2021). Therefore, the shift in the biodiversity rhetoric has changed from placing responsibility on Local Planning authorities to contribute, to mandatory policies at the National level. Both the NPPF and the Environment Act 2021 are key documents for assisting in the development of green infrastructure and maximising the impact of already established green infrastructure within Little Woodhouse, whilst also informing the remainder of this report.

Leeds city council Local Plan

There are five main policies within Leeds Local Plan (2019) which are relevant to protecting and maintaining green infrastructure:

- Policy G1 Enhancing and Extending Green Infrastructure refers to the extension of green infrastructure, specifically linking green spaces and enhancing green corridors;
- Policy G2 Creation of New Tree Cover seeks to increase appropriate species of woodland cover and aims to plant in rural and urban areas of the district to increase tree canopy cover;
- Policy G6 Protection and Redevelopment of Existing Green Space protects existing green spaces from development and discourages this;
- Policy G9 Biodiversity Improvements refers to the latest Environment Act and requires development to have a net gain for biodiversity and enhance habitats to provide opportunities for wildlife; and
- Spatial Policy 13 Strategic Green Infrastructure aims to provide improvements to the "quantity, quality and accessibility of green spaces" (LCC, 2019, p.57) and therefore will do so by establishing green spaces within the district and promote opportunities to maintain and enhance them.

Whilst the policies listed within the Local Plan are broad in scale, they remain an important tool when measuring green infrastructure within the Little Woodhouse area. Therefore, the suggested proposals of this report will be considered in conjunction with the above policies to encourage, enhance and protect green infrastructure, whilst linking green spaces and enhancing biodiversity within Little Woodhouse.

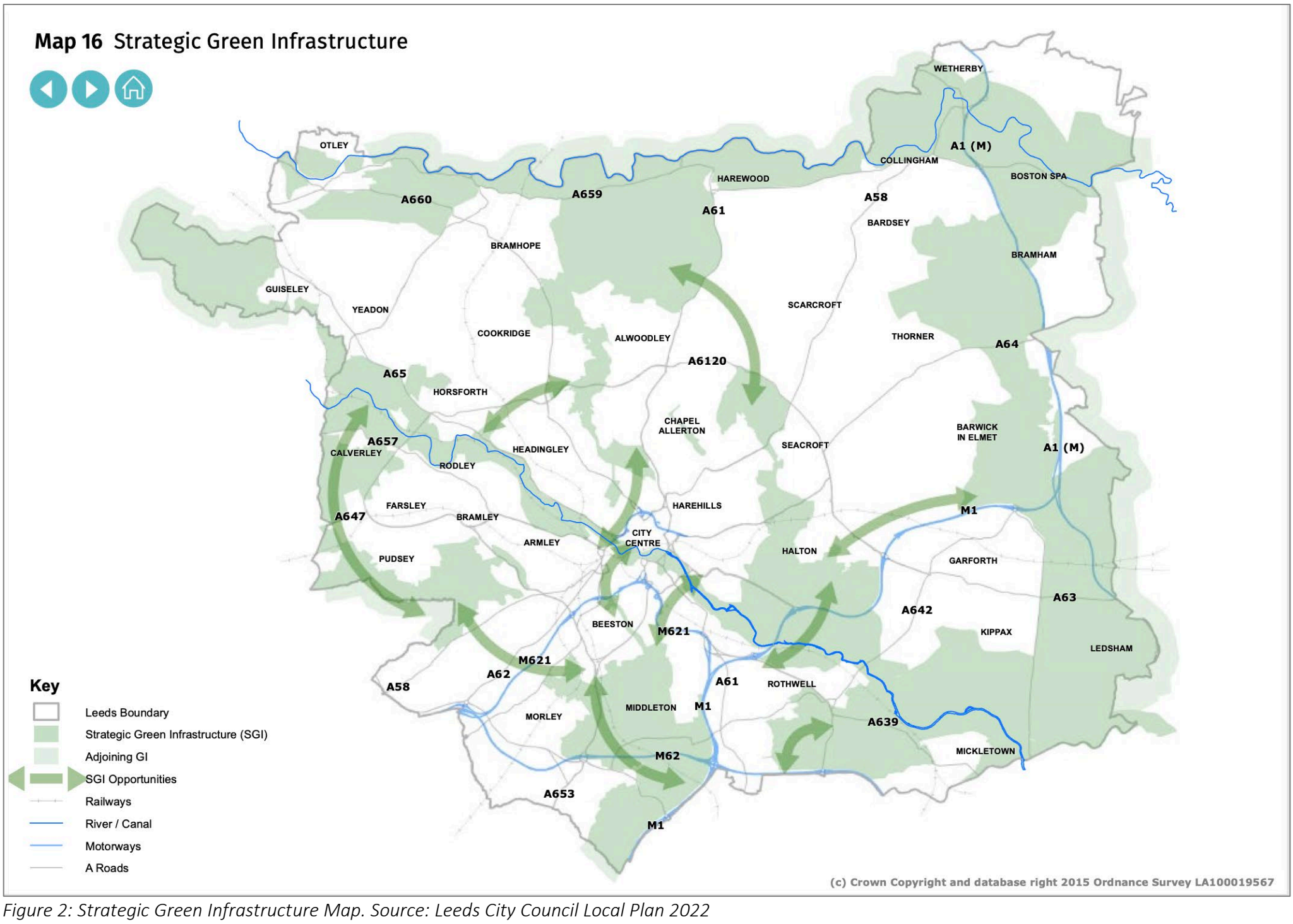


Figure 2: Strategic Green Infrastructure Map. Source: Leeds City Council Local Plan 2022

Little Woodhouse

Demographics of little woodhouse

A 2019 Ward Profile states that there are 44,823 residents in Little Woodhouse. In this inner-city location, students compirise 76% of the population (Hyde, 2019). One of the key initiatives for Leeds City Council is to create green corridors which encourage students to walk or cycle to university from Little Woodhouse, rather than using public transport or driving. A key drawback for the area is that student housing is forcing out families (Matthews, 2011). Therefore, there is only one existing school in the area: Rosebank Primary School. The enhancement and creation of attractive, safe, and open green areas could entice families back into the area. Additionally, Leeds Observatory (2019) reveals that Little Woodhouse is in mid-range deprivation which often leads to a variety of health concerns. The Government has a 25-Year Environmental Plan revealing that our natural surroundings are essential in improving the physical health of the population and therefore, we should ensure places which may lack green space are developed in a way which enhances access to them (Public Health England, 2020).

Recommended planting

Landscape architect consultation

To establish a stronger understanding of planting design, green corridors and enhancing green spaces, we have consulted with a Landscape Architect to gauge their opinion on Little Woodhouse as a whole. Overall, the opinion of the Landscape Architect was that Little Woodhouse is considered to have sufficient green space and infrastructure for a neighbourhood within an urban environment. Despite this, improvements could be made to enhance the space and create green corridors. The recommended planting are as follows.

Recommended planting types

Based on discussions with the consultant and our own research, we have categorised the types of planting required to enhance and improve Little Woodhouse. The following sections are trees and shrubs (high level planting), grasses and perennials (medium level planting) and bulbs and annuals (low level planting). For this report, we have separated the suggested planting types in to high, medium and low-level planting. Whilst any of the level planting types suggested would be an improvement of the site, to achieve optimum biodiversity gain all three should be used in conjunction with one another to create a diverse planting mix.

Planting designer research

Nigel Dunnetts' literature defines the importance of creating a well-designed planting scheme that enhances biodiversity through his research in his published work "Naturalistic Planting Design" (Dunnett, 2022). Dunnetts' work within the field suggests that the key to planting design is to promote a "high density of plants" which creates "layering of planting to give structure" which is "naturalistic" (Dunnett, 2022). A mixed use of non-native and native plants can achieve this outcome through design, creating multiple layers also through form and texture. Layered planting allows for differences in shade and allows for planting to grow successionally between one another to achieve this. Grasses are also considered to be an important feature in 'naturalistic planting' and contribute to enhancing biodiversity within planting design (Dunnett, 2022)

High level planting

Trees and shrubs	Visual example	Facts about the plant	Maintenence	How would it enhance the space?
Ginkgo biloba Maidenhair tree		• Sun/partial shade. • Well-drained soils. • Flowers from April-May. • Fully hardy. • Mature trees- yellow catkins in late spring • Bright green leaves turn bright gold in follower period. • Mature height – 5m • Mature width – 15m	• Minimal pruning. • All broken, diseased, or crossing branches should be removed in late autumn or winter.	• Seasonal interest. • Can grow within many city conditions, including pollution and adaptable to climate change. • Minimal maintenance needed. • Habitat for wildlife. • Suitable for an inner-city climate.

Medium level planting

Grasses and perennials	Visual example	Facts about the plant	Maintenence	How would it enhance the space?
Calamagrostis × acutiflora 'Karl Foerster' feather reed grass		• The plant should be planted/positioned in full sun or partial shade • Is a fully hardy perennial grass • Can be planted in a range of dry, wet, and well-drained soil types • Has a fast-growing rate • Flowers during early summer to autumn • Perennial grass flowers early, shoots appear in early spring followed by flowers that are green and then fade to buff • Grass dies in autumn to ground level and fresh new growth appears in the following spring	• Perennial grass is low maintenance • Should be cut down to the ground once a year in February. • Mature height and spread: • 0.6m in width. • Height of 1.8m.	• Structural plant which is fully hardy and can be planted in a range of different soil types and positions. • Can be planted in large drifts to form a feathery screen. • Textural. • Provides structure/interest all year round. • Important for biodiversity. • Adds height and definition to a perennial border;
Verbena bonariensis purple top		• Planted/positioned in full sun or partial shade • Can be planted in a range of moist, well-drained soil • Average – fast growing rate • Flowers during June-September • Hardy Perennial • Mature height – 2m • Mature width – 0.5m	• Cut back old growth when new shoots emerge at the base in early spring • If plant is grown in partial shade, stems could potentially need to be supported (stick);	• Seasonal interest lilac purple flowers (June-sept) • Tall stiff stems • Transparent nature means in can be planted in a range of locations • Supports other planting types • Attracts pollinators (sustains bees and butterflies into autumn)
Rudbeckia fulgida var. sullivantii 'Goldsturm' black-eyed susan		• Planted/positioned in full sun • Can be planted in heavy well-drained soil • Average growth rate • Flowers from August to October • Fully hardy perennial • Mature height – 0.6m • Mature width – 0.5m	• Congested colonies should be divided in autumn or spring • Perennial dies back to ground level in autumn, new growth appears in spring;	• Attracts pollinators (sustains bees and butterflies into autumn) • Seasonal interest large golden yellow flowers • Can be included in a range of planting designs • Hardy perennial suitable for all conditions;

LOW LEVEL PLANTING

BULBS AND ANNUALS	VISUAL EXAMPLE	FACTS ABOUT THE PLANT	MAINTENENCE	HOW WOULD IT ENHANCE THE SPACE?
Allium 'Globemaster' ornamental onion or allium bulb		• Bulb – size 18/20 • Ideally planted in well-drained soil • Short seasonal flowering period for the month of July, although buds appear in early spring • Fully hardy • Mature height – 0.8m • Mature width - 0.2m	• No maintenance required dies back during late summer • If large clumps form, they should be divided in autumn or spring;	• Can be woven though any planting scheme • Planted in drifts or scattered in large numbers • Bright seasonal interest/focal point • Attracts pollinators and enhances biodiversity • Large flower heads attract interest;
Galanthus nivalis common snowdrop bulbs		• Bulb – size 4/5 • Ideally planted in well-drained soil • Short seasonal flowering period for the months of January to February • Fully hardy • Mature height – 0.1m • Mature width - 0.1m • Honey scented	• Planted in September/ October • If planted with grasses the plant should not be cut until leaves have died right back	• Adds seasonal interest and colour • Attracts pollinators and enhances biodiversity • Can be planted in clumps or scattered in borders (preferably to the front) • Naturalise quickly with other planting types
Perennial/annual meadows (Pictorial Meadows – can be used as a replacement to traditional 'turf grass')		• Combining British wildflowers and non-invasive plant species • Seed mix with a wide range of different plants • Sewing time – spring	• Cut back during winter months re-growth for summer period	• Adds seasonal interest and colour • Attracts pollinators and enhances biodiversity • Can be planted in large areas • Versatile • Easily maintained;

Figure 3: K. Wright, High-, Medium- and Low-Level Planting table. (Source: Online Garden Centre for a wide variety of plants, garden tools, furniture and equipment., 2022)

Case study: grey to green

Grey to Green is a scheme located in Sheffield it is the UK's largest retro-fit SuDS project, and also the UK's largest inner city 'Green Street'. In 2014 design work began, with Phase 1 starting in 2016, and Phase 2 under construction. The scheme has been established by Sheffield City Council and Partners.

The scheme aims to respond to three key areas:

1. The need to re-connect the Castlegate area, with the rest of the city centre.
2. re-use of a large amount of redundant highway.
3. Respond to the impacts of the floods in June 2007.

Key features of Grey to Green:

- implemented along the length of an inner-city dual carriageway
- extensive areas of rain gardens and bioswales and widened areas for pedestrians.
- surface water management increase urban biodiversity and create a wildlife corridor,
- Reducing air pollution though multi-layered planting, treat contaminated water whilst also promoting health and well-being.
- Provides a catalyst for further inward investment in the area.
- In the early establishment phase weeding is necessary, perennials and grasses are cut back during the winter months, seed heads and stems are maintained, the majority of the maintenance takes place in December and February. However, winter green perennials are not cut back.

This case study demonstrates how large areas of redundant highway can incorporate green infrastructure along inner city dual carriage ways whilst providing a green corridor and a place that improves overall wellbeing. (What is Grey to Green? – Grey to Green – Sheffield, 2022)

Figure 4: Grey to Green. Source: Grey to Green, 2022)

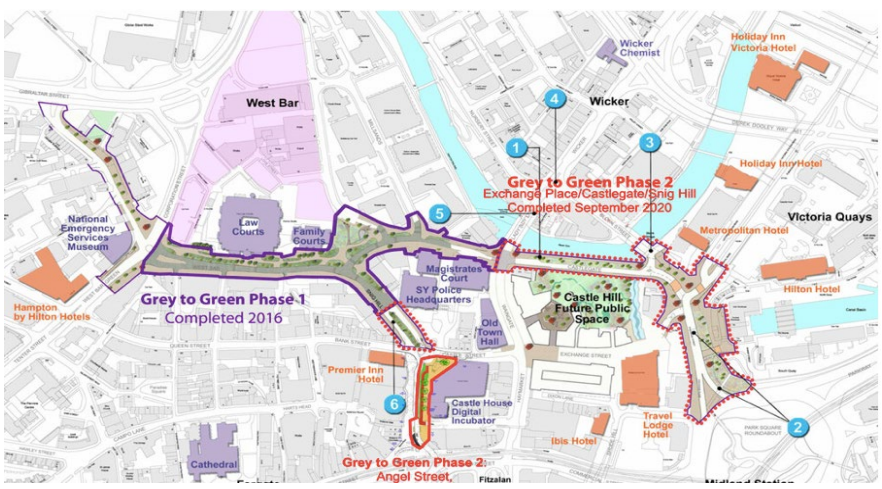


Figure 5: What is Grey to Green?
(Source: What is Grey to Green? — Grey to Green – Sheffield, 2022)

Our proposals

Green corridors

The infrastructure map below identifies the strategic green infrastructure (GI) designated in the local plan, with GI Corridors located south of Kirkstall Road and a GI Corridor located at Woodhouse Moor and extending into the square created by Moorland Road, Clarendon Road, Woodsley Road and Belle Vue Road, this square is located within the Little Woodhouse Neighbourhood Area. The West Yorkshire Cycle Lane includes Kirkstall Road, Burley Road, and Woodhouse Lane. The Leeds Liverpool Canal is part of the National Cycle Lane.

Leeds City Region Infrastructure Map: Green Infrastructure and Open Space; and West Yorkshire Cycle Lanes

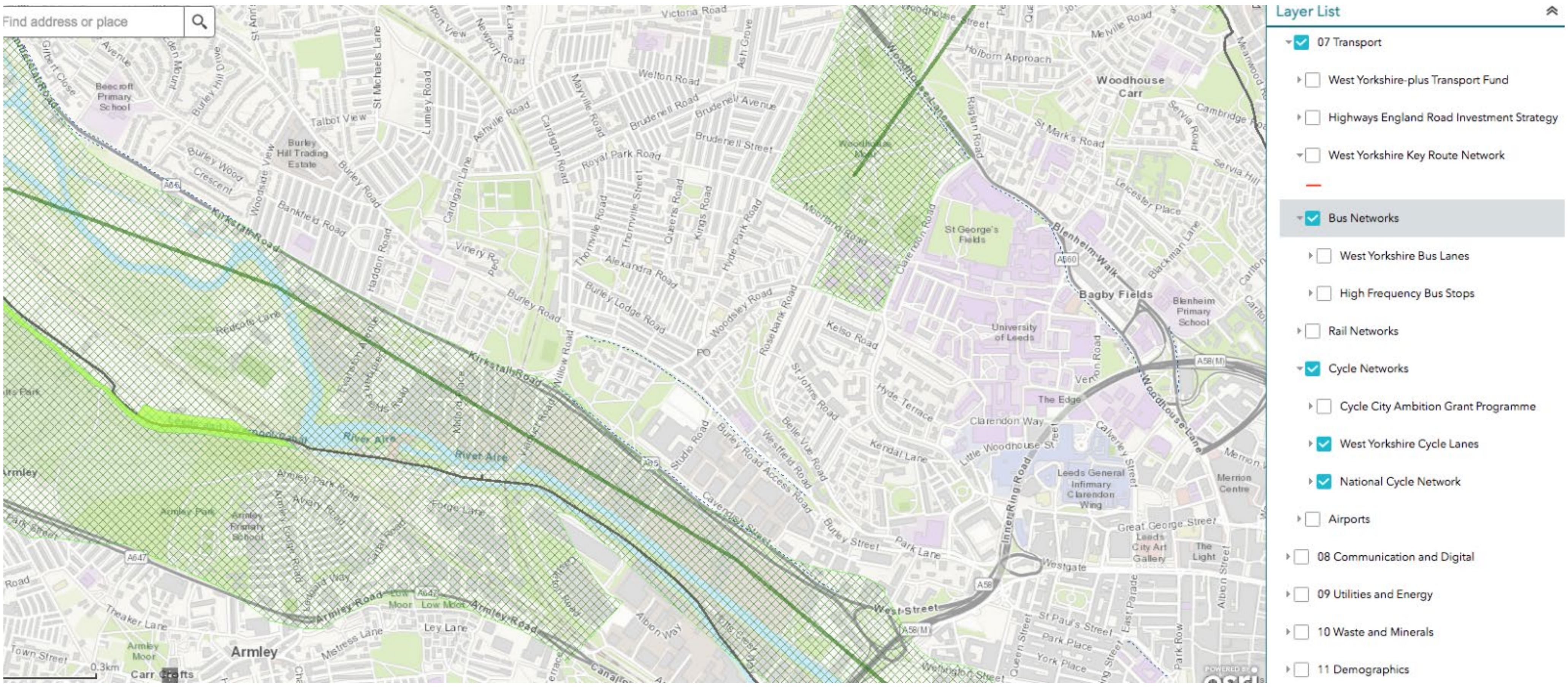


Figure 6: Source: https://westyorks-ca.maps.arcgis.com)

The map below identifies the existing public rights of way and the pedestrian routes and cycling routes within Little Woodhouse. A critical aspect of green corridors is that they can be utilised to create safe and healthy routes for active travel and generate health and wellbeing benefits to the community. By marrying the routes and green infrastructure together, it logically identifies the spatial setting of green corridors and active travel routes to maximise the benefits.

Leeds Public Right of Way Map: PROW and Cycle Routes

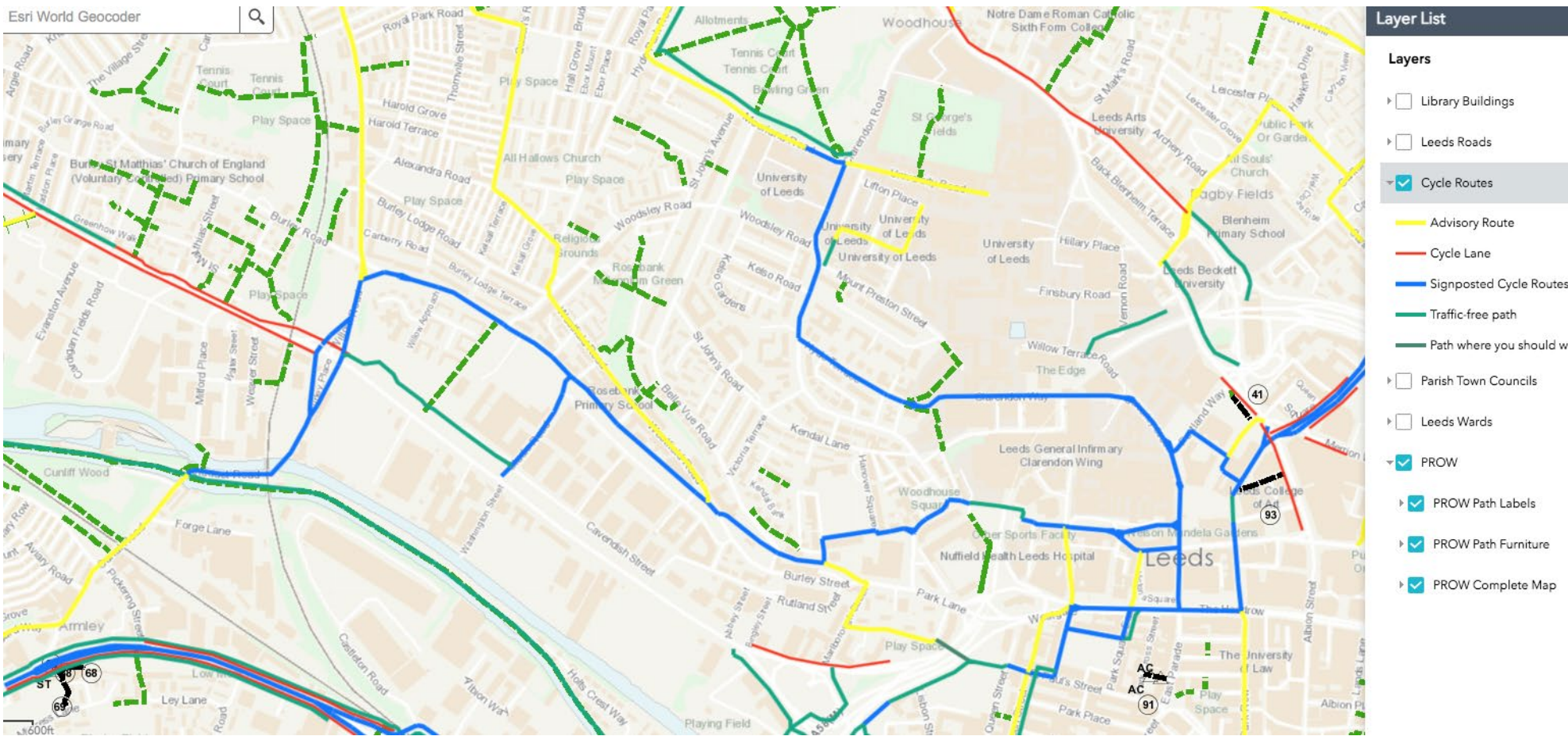


Figure 7: Leeds Public Rights of Way Map: Prow and Cycle Routes (Source: https://Leedscc.maps.arcgis.com) by J. Naylor

A key component of green infrastructure is to create a network of green spaces, green infrastructure and green corridors through joining up these assets with the aim of creating a national framework and that active travel routes are routed in the green corridors.

A critical aspect of green corridors is that they can be utilised to create safe and healthy routes for active travel and generate health and wellbeing benefits to the community. By marrying the routes and green infrastructure together, it logically identifies the spatial setting of green corridors and active travel routes to maximise the benefits.

The map below identifies the green corridor routes and the active travel routes within the neighbourhood area. The pink lines identify the routes where active travel should be encouraged, these routes are based upon the Leeds Public Right of Way map and the Leeds City Region Infrastructure Map. By planning green corridors and active travel routes based upon existing designations this should help facilitate GI Corridors and the development of active travel routes and their delivery. In addition, the blue lines indicate where links to green infrastructure out with the neighbourhood area could be created, increasing the green infrastructure network available to the community. Additional networks to the south enable the use of the national cycle network and access to the blue infrastructure of the River Aire and the Leeds Liverpool Canal, and would be a positive addition to Little Woodhouse which has limited blue infrastructure.

Active Travel Routes within GI Corridors

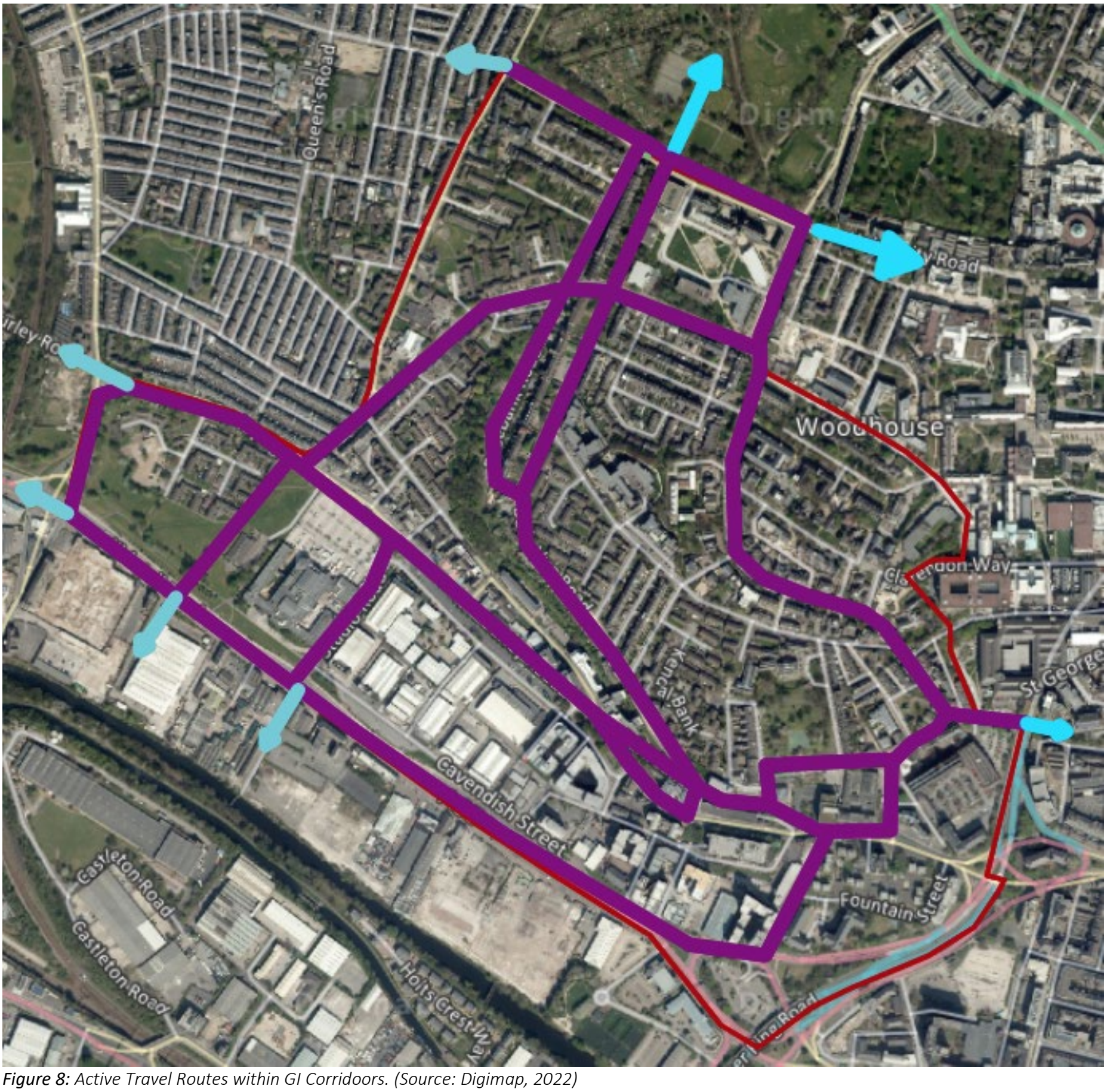


Figure 8: *Active Travel Routes within GI Corridoors. (Source: Digimap, 2022)*

Nominated proposal sites

Sites we are nominating for Local Green Space designation

1. LGS designation and the creation of a pocket park on Woodsley Road
2. LGS designation and improved landscaping of the strip of land in between the two A65 carriageways
3. Long term proposal to enhance landscaping and green the car park to form a new green space

The following tables include the required justification points to present these sites to the council and demonstrates the benefits they would provide and that they are policy compliant (with para 102 of the 2021 NPPF).

The NPPF policies have been categorised as follows:

1. In reasonably close proximity to the community it serves.

2. Demonstrably special to a local community and holds a particular significance, for example because of its beauty, historic significance, recreational value (including as a playing field), tranquillity, or richness of wildlife.

3. Local in character and not an extensive tract of land.

Proposal 1- Pocket park on Woodsley Road

Proposal	**Proposal 1: Pocket park on Woodsley Road**
Site name/location	**Intersection between Woodsley Road and Belle Vue Road**
Site area (ha)	**0.07**
Map	 *Figure 9: Proposal 1 site location (Source: Google Earth, 2022)*
Description of green space	**The site is located at the end of Woodsley Road where it originally adjoined Belle Vue Road at the junction. However, this connection has since been blocked up and is now only accessible for pedestrians and cyclists. This portion of road is therefore wasted space and should not be kept this way when it no longer functions as a road.**
Live planning applications on the site?	**No**
Adjacent to existing properties?	**The site is directly bordered by a guesthouse and a university sports centre. There are houses further up the road.**
Designated in existing SAP? (Site Allocations Plan)	**No**
NPPF Criteria: **1) In reasonably close proximity to the community it serves**	**Yes, the site is in very close proximity to dwellings as well as community facilities.**
2) Demonstrably special to a local community and holds a particular	**The site, which is currently a portion of road rendered useless, holds a lot of potential for becoming a highly valued green space for the local community. It will not only be an attractive, tranquil area to walk and cycle through, but it will bring many benefits for wildlife through the introduction of a variety of plant species which will provide a range of new habitats.**

significance, for example because of its beauty, historic significance, recreational value (including as a playing field), tranquility, or richness of wildlife	
3) Local in character and not an extensive tract of land	The area is only small, but with some small-scale landscaping works, this section of disused road could be greened into a pocket park which would much better reflect the character of the highly greened neighbourhood. The recommended planting takes the local character into consideration so the pocket park blends in with its surroundings.
Photograph	 *Figure 10: View of the blocked-up end of Woodsley Road (Source: Google Earth, 2022)*
How the site will benefit local people (e.g. by linking 2 existing green spaces or providing pedestrian/cycling routes or additional recreational space etc)	The proposed pocket park would add to the existing green infrastructure located further up Woodsley Road outside the M&S Archives and the university sports centre. It would therefore fit into the character of the local area and make Woodsley Road a green corridor – a very pleasant pedestrian and cyclist route which is likely to be used by predominantly students to access university buildings. The implementation of a pocket park in this location would prevent vehicles from continuing to drive over the pavement to access Belle Vue Road/St Johns Terrace despite the end of Woodsley Road being blocked up. This causes danger for pedestrians and drivers alike, so greening this area with various types of vegetation would prevent this from happening. The pocket park would only result in the loss of 4 car parking spaces and will improve the air quality of the immediate area, which is in the best interest of the local community and their health, particularly living so close to a city centre. If the loss of the 4 car parking spaces is not welcomed by the council, an alternative option would be to rotate those spaces horizontally at the far side of the proposal site, away from the junction onto Belle Vue Road.

Case study / future vision for the site:	Baylis Road Pocket Park, Waterloo, London Here, a disused plot of pavement land was transformed and repurposed into an engaging, sustainable, biodiverse green space. They implemented modular timber planters which weave and undulate across the site to frame a new pathway, bringing local people of all ages into the park and closer to nature and creating a really pleasant walking and cycling route. Close work with local businesses facilitated the supply of materials and gathered interest among local people to help bring the project to life. A number of community planting days were arranged and advertised in advance, where local businesses and residents came together to learn about the new plants and deliver the finishing touches to the scheme. This encouraged community participation and fostered more community bonds. In order to be as sustainable as possible, they repurposed single-use plastic bottles that were collected from the streets and used them to create a drainage layer below the soil. In terms of planting, a selection of perennials, annuals, shrubs and herbs have been incorporated into a diverse and well-considered planting schedule to promote biodiversity and ensure the park remains animated, fragrant and colourful, throughout the year.  *Figure 11: Baylis Road Pocket Park (Source: Weston Williamson + Partners, n.d.)*

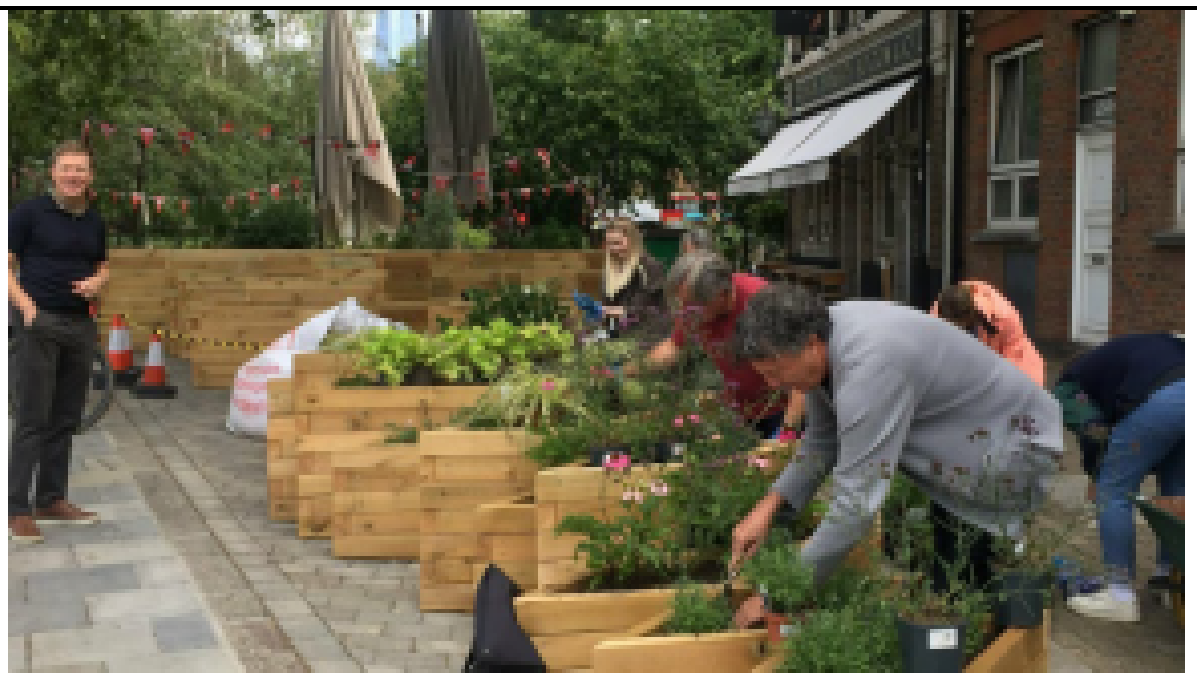


Figure 12: Community Planting Efforts at Baylis Road Pocket Park (Source: Weston Wlliamson + Partners, n.d.)

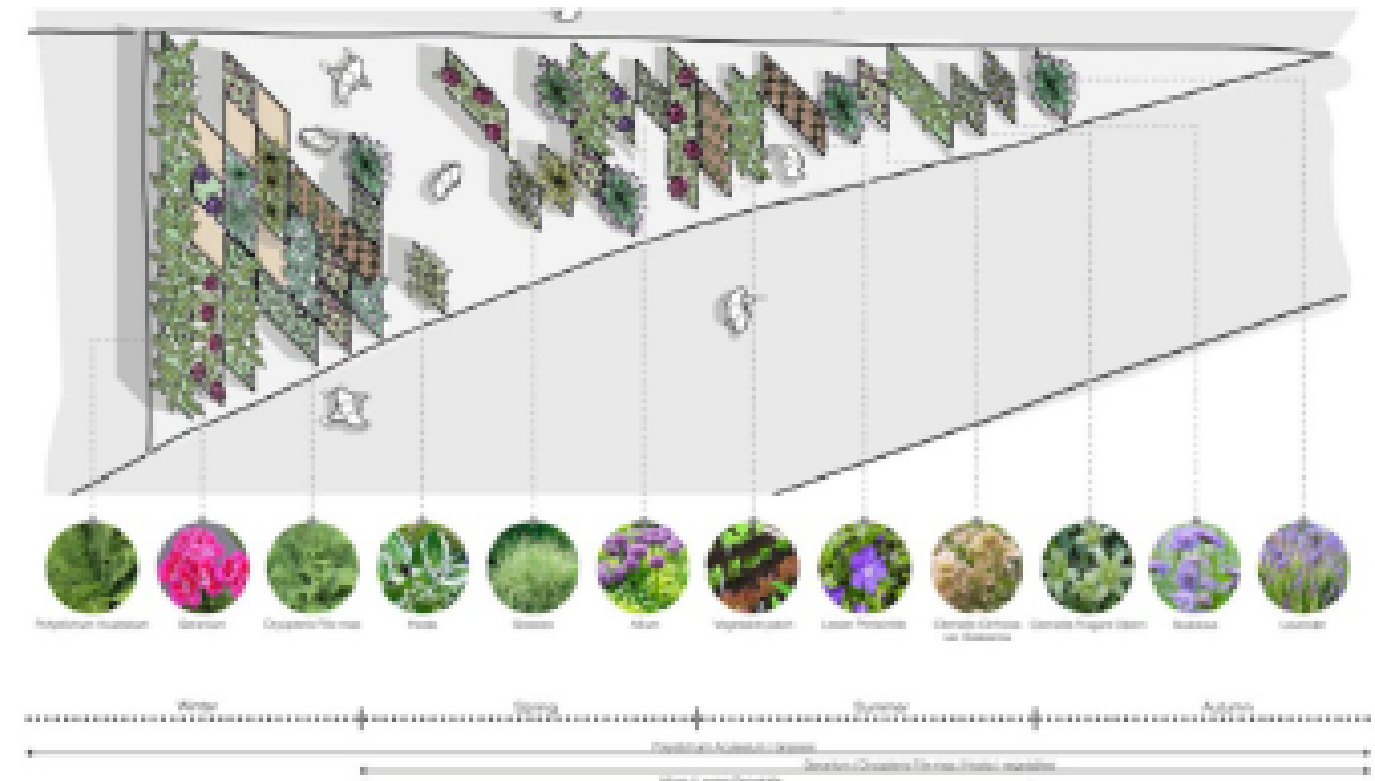


Figure 13: Planting Scheme at Baylis Road Pocket Park (Source: Weston Wlliamson + Partners, n.d.)

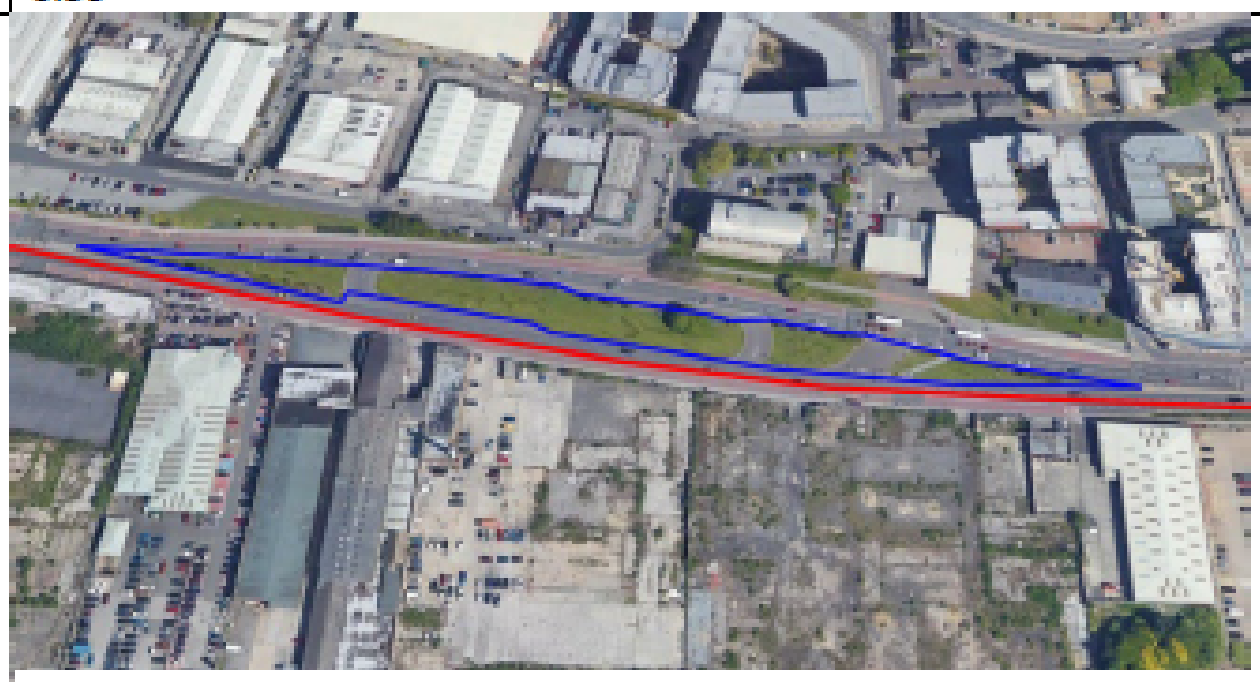
Proposal 2- LGS designation and improved landscaping of the strip of land in between the two A65 carriageways

Proposal	**Proposal 2: LGS designation and improved landscaping of the strip of land in between the two A65 carriageways**
Site name/location	Kirkstall Road
Site area (ha)	0.59
Map	 *Figure 14: Proposal 2 site location (Source: Google Earth, 2022)*
Description of green space	This narrow strip of land is located in between the two carriageways of the A65 (Kirkstall Road) at the far south of the Neighbourhood Area (marked on the map in red). It is currently covered by fairly simple vegetation; predominantly grass, a couple of trees and hedges and some daffodils.
Live planning applications on the site?	No
Adjacent to existing properties?	No, only employment sites and a hotel.
Designated in existing SAP? (Site Allocations Plan)	No
NPPF Criteria: 1) In reasonably close proximity to the community it serves	The site is located within the Neighbourhood Area of Little Woodhouse, just a few minutes' walk away from the nearest houses.

2) Demonstrably special to a local community and holds a particular significance, for example because of its beauty, historic significance, recreational value (including as a playing field), tranquility, or richness of wildlife	This site is an important, rare, green open space in an area largely dominated by roads, employment sites and car parks. When more plant species are added to the site, it will not only be more attractive, but it will be much more species-rich and therefore accommodate a lot more biodiversity than as currently stands. The additional planting will also help to absorb surface water and reduce air pollution in the immediate area, both of which are in the best interest of the local community.
3) Local in character and not an extensive tract of land	The recommended planting for the site fits into the local character and is suitable for a city-centre site. The site is very much not extensive, as it is a small strip of land, but its enhancement will bring bigger benefits to the area.
Photograph	 *Figure 15: View of Kirkstall Road looking away from The Willows (Source: Google Earth, 2022)*  *Figure 16: View of Kirkstall Road looking towards The Willows (Source: Google Earth, 2022)*
How the site will benefit local people (e.g. by	Due to the site's proximity to the A65, a major arterial road into the city centre, recreational use is not feasible. By designating this site as

How the site will benefit local people (e.g. by linking 2 existing green spaces or providing pedestrian/cycling routes or additional recreational space etc)	Due to the site's proximity to the A65, a major arterial road into the city centre, recreational use is not feasible. By designating this site as another Local Green Space and enhancing the landscaping, various benefits will be introduced into the immediate area including a wider variety of plant species to provide habitats for more wildlife, a more attractive street scene, and a healthier, less polluted environment. The site will then have a much more valuable function and use than it does today, both aesthetically and ecologically. This site is also in very close proximity to The Willows, an existing large Local Green Space located to the east. The designation of this site would therefore link the two together nicely.
Case study / future vision for the site:	The vision for the site is to transform it into something similar to the image below taken from a roadside wildflower meadow in Rotherham.  *Figure 17: Example of roadside wildflower meadow in Rotherham (Source: Greysnet, 2020)*

Proposal 3– Long term proposal to enhance landscaping and green the car park to form a new green space

Proposal	**Proposal 3: LGS designation and improved landscaping of the strip of land in between the two A65 carriageways**
Site name/location	Narrow strip of land next to Kirkstall Road.
Site area (ha)	0.59
Map	 *Figure 18: Proposal 3 site location (Source: Google Earth, 2022)*
Description of green space	This narrow strip of land is located in between the two carriageways of the A65 (Kirkstall Road) at the far south of the Neighbourhood Area (marked on the map in red). It is currently covered by fairly simple vegetation; predominantly grass, a couple of trees and hedges and some daffodils.
Live planning applications on the site?	No
Adjacent to existing properties?	No, only employment sites and a hotel.
Designated in existing SAP? (Site Allocations Plan)	No
<u>NPPF Criteria:</u> 1) In reasonably close proximity to the community it serves	The site is located within the Neighbourhood Area of Little Woodhouse, just a few minutes' walk away from the nearest houses.
2) Demonstrably special to a local community and holds a particular significance, for example because of its beauty, historic significance, recreational value (including as a playing field),	This site is an important, rare, green open space in an area largely dominated by roads, employment sites and car parks. When more plant species are added to the site, it will not only be more attractive, but it will be much more species-rich and therefore accommodate a lot more biodiversity than as currently stands. The additional planting will also help to absorb surface water and reduce air pollution in the immediate area, both of which are in the best interest of the local community.

historic significance, recreational value (including as a playing field), tranquility, or richness of wildlife	significance in itself. The use of such environmentally friendly, cellular grassed paving introduces a much more permeable surface than tarmac will also help to absorb any surface water and decrease flood risk and greatly improve the attractiveness of the area.
6) Local in character and not an extensive tract of land	The recommended planting fits into the local character and is suitable for a city centre site. The site is very much not extensive, as it is a small strip of land, but as with proposal 2, its enhancement will bring bigger benefits to the area.
Photograph	 *Figure 19: View of lower Kirkstall Road (Source: Google Earth, 2022)*
How the site will benefit local people (e.g. by linking 2 existing green spaces or providing pedestrian/cycling routes or additional recreational space etc)	Due to the site's proximity to the A65, a major arterial road into the city centre, recreational use is not feasible. By designating this site as another Local Green Space and enhancing the landscaping, various benefits will be introduced into the immediate area including a wider variety of plant species to provide habitats for more wildlife, a more attractive street scene, and a healthier, less polluted environment. The site will then have a much more valuable function and use than it does today, both aesthetically and ecologically. This site is also in very close proximity to The Willows, an existing large Local Green Space located to the east. The designation of this site would therefore link nicely with proposal 2 and the Willows, making Kirkstall Road one long green corridor.
Case study / future vision for the site:	There are various types of material that can be used to green car parks which vary in price, sturdiness, structure and appearance. For this aspect of the landscaping enhancements of proposal 3, we propose that the Little Woodhouse Neighbourhood Forum keep this idea in mind for more of a long-term plan. This way, it allows time for the greening of car parks to be more widely experimented with across the UK and they can then learn from the experience of others as to what works best in terms of materials and techniques. It would further enhance the car park if a car parking space could be lost at the end of each row and planters were

	implemented containing flowering plants which require minimal maintenance. **The image below illustrates of what the car park could look similar to when greened, but with flowers in planters in some of the locations where there are hedges and trees.**  *Figure 20: Example of green car park through the use of Grasscrete (Source: Brown, 2016)*

Enhancing Existing Local Green Space

Figure 21: Existing green space in Little Woodhouse. (Source: Google Earth, 2022)

Sites we are nominating for landscaping enhancements:

1. Rosebank steps
2. Woodhouse Square
3. The Willows
4. Marlbrough Street
5. Chorley Lane

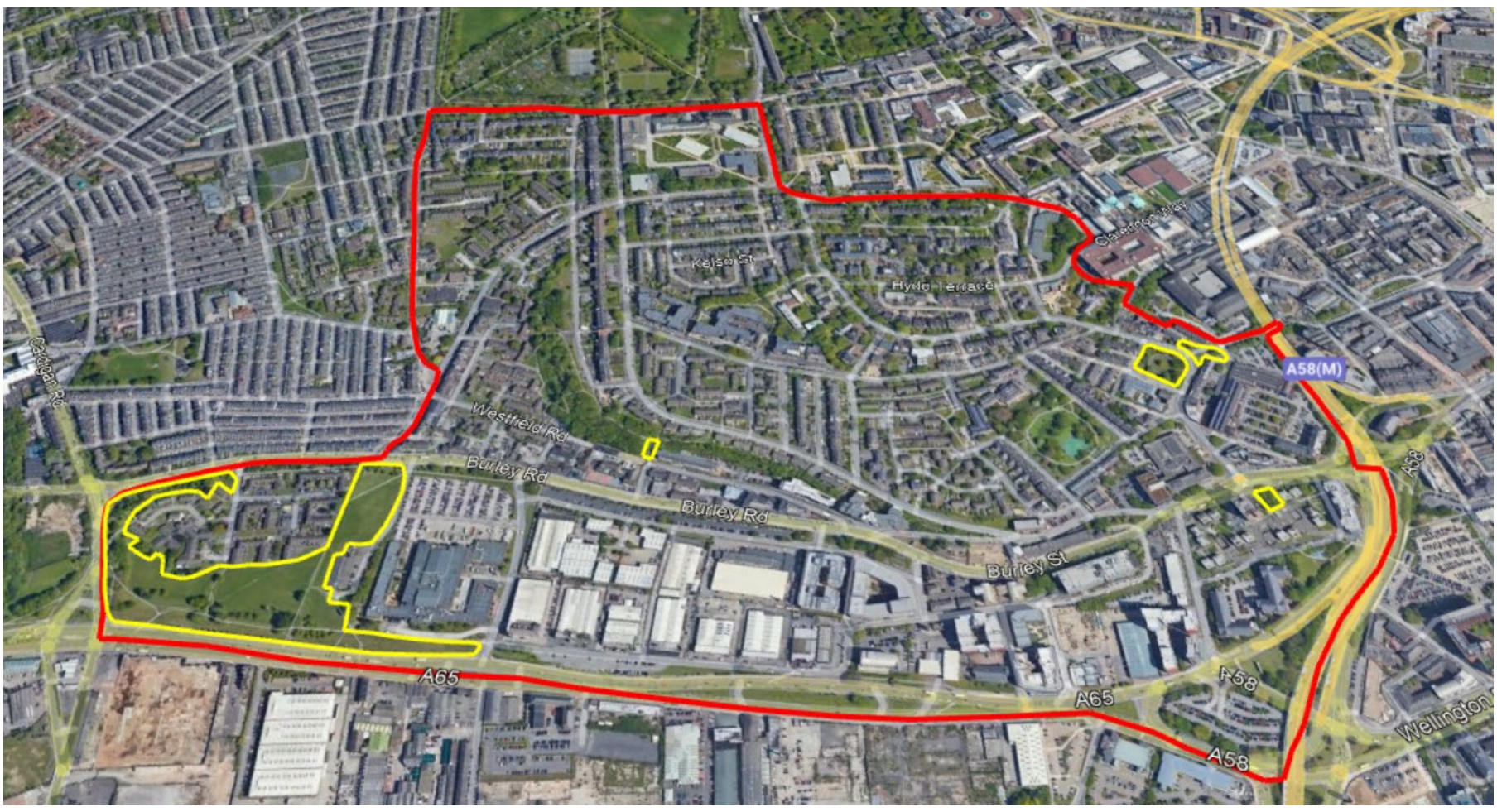


Figure 22: A map to show our 5 landscaping enhancement proposals. (Source: Google Earth, 2022)

1. Rosebank steps

Rosebank Steps are an important area of woodland greenspace and pedestrian routes for Rosebank school, Westfield Road, Belle Vue Road and Rosebank Road. On the site visit, the steps shown in the photo below are one of two access routes into the greenspace.

Figure 23: View up Rosebank Steps (Source: Google Earth, 2022)

Figure 24: Rosebank Steps Site Location (Source: Google Earth, 2022)

The proposal is to improve the steps in terms of planting, biodiversity, and safety. It is proposed to reduce the height of vegetation either side of the steps, introduce low level planting schemes and footpath lighting. This will encourage greater plant species, pollinators, and more wildlife, as well as improving the access and feeling of safety along this route. Ideally, this proposal would be applied throughout the pedestrian routes in this greenspace.

Figure 25: Vision for Rosebank steps (Source: Homes England, 2020)

2. Woodhouse Square

Figure 26: Woodhouse Square Site Location (Source: Google Earth, 2022)

In the Leeds Open Space Sport and Recreation Assessment Woodhouse Square scored 6.29, with Leeds City Council identifying that 7 as good quality. The South side of the square contains mature trees and cut grass, and the East, North and West side has mature trees and low-level shrubs. On the site visit, one bench was noted. It is proposed that additional seating is provided throughout Woodhouse Square and to sow meadow grass as an alternative to cut grass.

Figure 27: View of Woodhouse Square from road (Source Google Earth, 2022)

A more ambitious proposal is to create a fountain in the circular structure which was originally a water tank as shown in the photo below, adding much needed blue infrastructure.

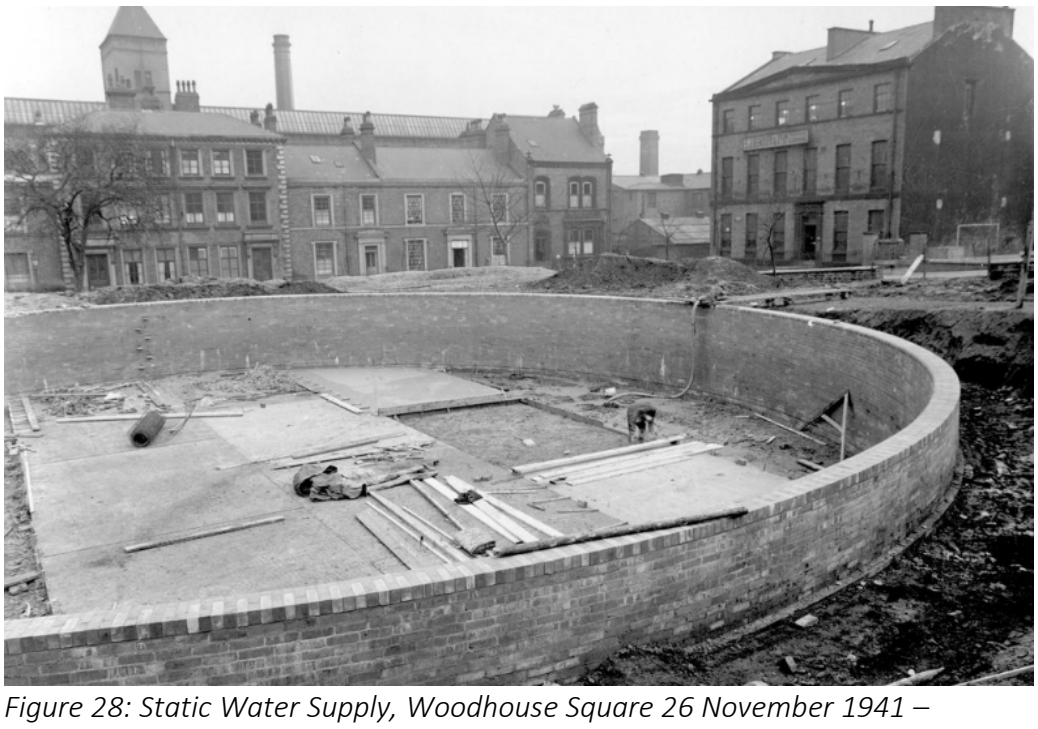


Figure 28: Static Water Supply, Woodhouse Square 26 November 1941 – water tank under construction. (Source: leodiscollections.net/photo/299)

Figure 29: New Fountain at Woodhouse Square. (Source: Wikimedia Commons and photo of fountain by J Naylor).

3. The Willows

Figure 30: Site Location of The Willows (Source: Google Earth, 2022)

We have responded to your comments in the draft Neighbourhood Plan regarding the Willows' great potential for additional planting and enhanced landscaping and after visiting the site in person we believe meadow mix planting would be ideal for this site. On the earth mounds and in the area to the south and south-west of the site where most of the trees are planted. Our thinking behind this is that this leaves the flat, open green space for recreational and sport activities. It would enhance the area in a variety of ways; it would be more attractive by introducing colourful plants to the site, it would increase the biodiversity in the area and support the lives of a wider variety of species. The idea is that the meadow grass would be left to grow in the summer and then mowed in the autumn, hence how low maintenance this planting option is. Perhaps paths could be mowed through it in the summer to allow people using the site to engage with nature. This has been done in Green Estate, Manor Fields Park in Sheffield (see example images below of what could be created).

Figure 31: Wildflower meadows at Green Estate, Manor Fields Park, Sheffield (Green Estate, n.d.)

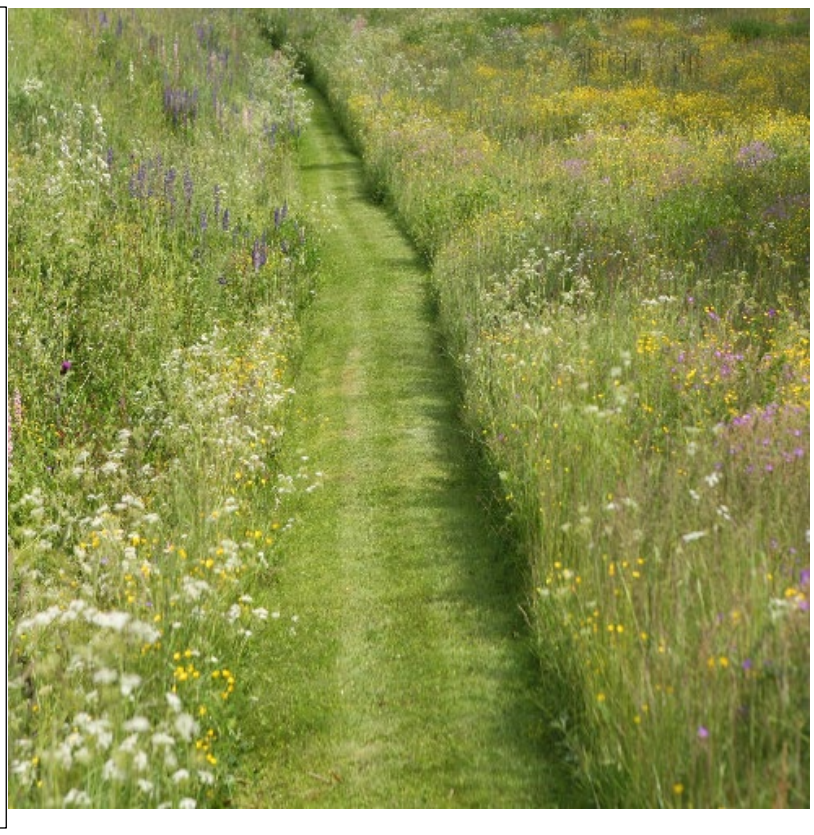


Figure 32: Image of paths mown through wildflower meadows at Green Estate, Manor Fields Park, Sheffield to allow more intimate engagement with nature (Green Estate, n.d.)

4. Marlbrough Street

Figure 33: Streetside view of Local Green Space (Source: Google Earth, 2022)

Figure 34: Site Location (Source: Google Earth, 2022)

An additional site we identified for enhancement was the patch of land on Marlborough Street outside Marlborough Towers. This space could be created into a community garden for the entire residency of Little Woodhouse to enjoy. According to Kingman (2020) one in eight households have no garden space at all. The COVID-19 pandemic which put the UK into lockdown meant that those without a private garden were denied the benefits which green spaces can provide for a long time. Therefore, the development of this existing green space could enhance the ability of the families, elderly, and single people who live here to enjoy their environment. Whilst remaining gated to provide a safe space for the community, it could also include a public path through it adding to the green corridors to the centre. Urban communities have limited available land and a community garden would ensure the people who live here can interact with the green environment. This space would be less formal than a park but would include planters and picnic benches and trees for shelter, bringing out people into a wild-life hub (Uckfield Millennium Green, 2022).

An example of this is the Walkley Millennium Green in Sheffield. It is a gated area providing the surrounding homes to be able to utilise as their own shared garden. This space created a much needed “off the road” play space which the local families could enjoy. This style of development would be ideal for the Little Woodhouse patch of land.

Case Study: Walkley Millennium Green

Figure 35: Shared community garden at Walkley Millenium Green, Sheffield (Source B.Shaw, 2022)

5. Chorley Lane

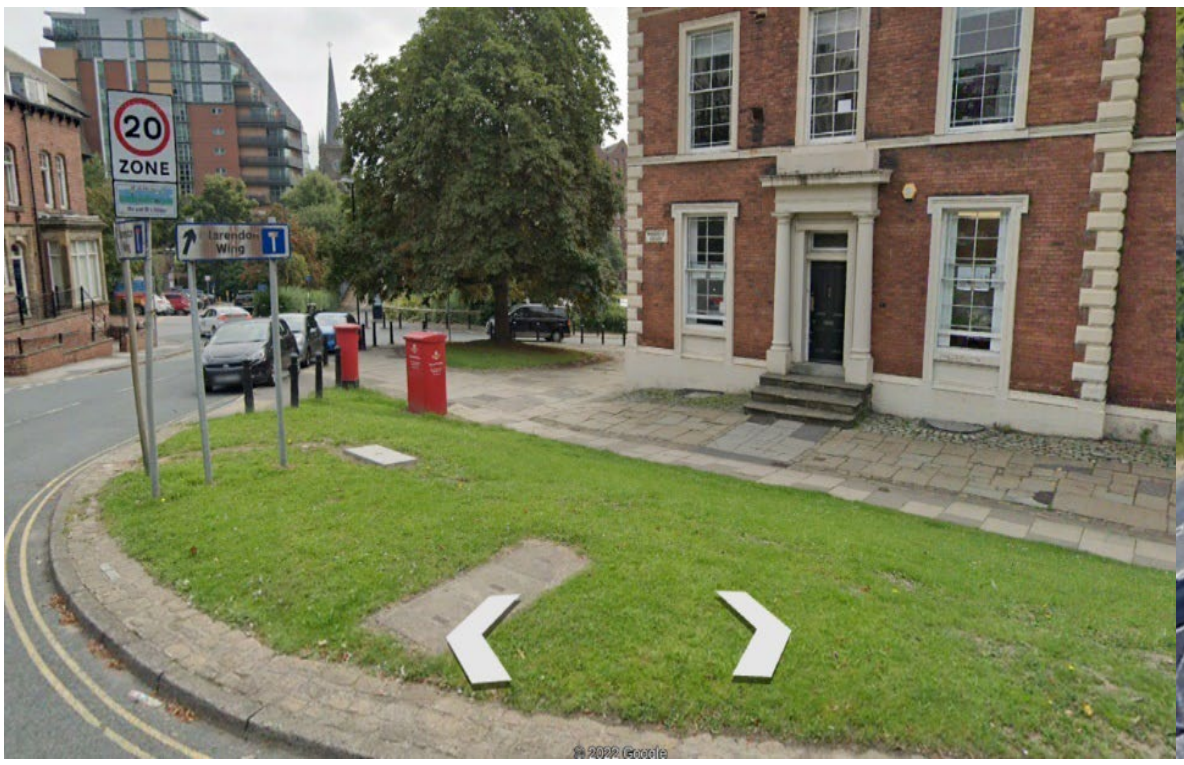


Figure 36: Grassy Kerb on Chorley Lane (Source Google Earth, 2022)

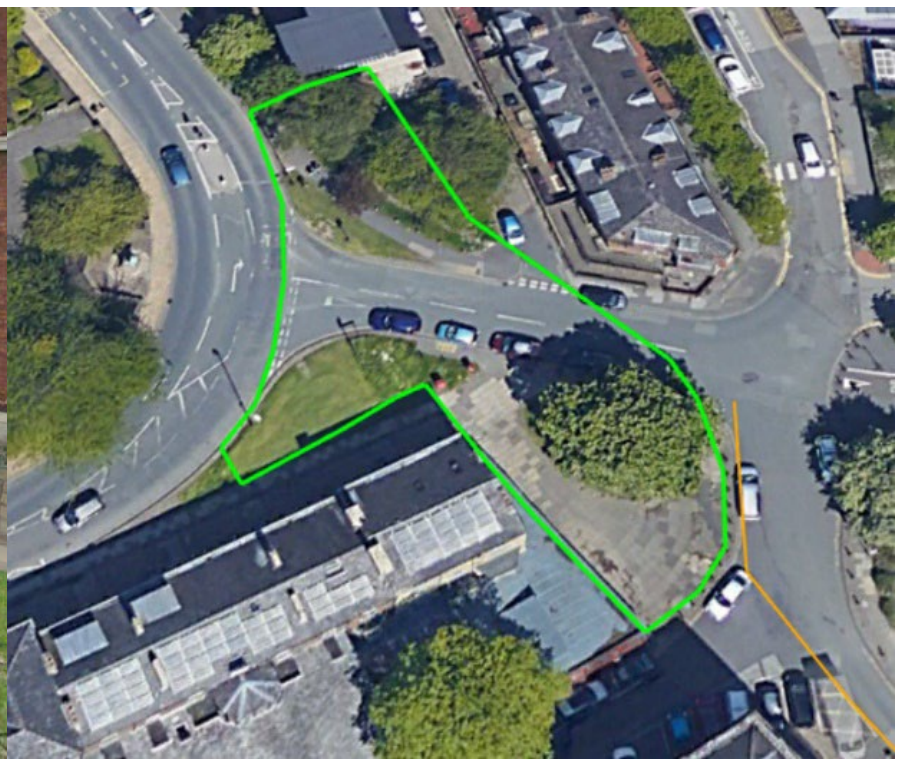


Figure 37: Chorley Lane Local Green Space designation area. (Source Google Earth, 2022)

Figure 38: Poor condition of planting on kerb (Source: Google Earth, 2022)

We have also responded to your comments in the draft Neighbourhood Plan regarding the ambition for additional planting on Chorley Lane. After visiting the site, we concluded that meadow mix would also be appropriate for this site. In comparison to the grass that is currently there, which doesn't look to be in the best condition or very well maintained, meadow mix would involve less maintenance, and improve the biodiversity in the area. The idea is that the grass would be left to grow and flower in the summer and mowed in the autumn. This would hugely improve the streetscape by turning the grassy area at the side of the road into a visual feature. The increased height of the meadow grass would also deter people from trampling and driving or parking on it and instead encourage people to stick to the pavement and cars to the road, enhancing safety for all and keeping the vegetation in much better condition.

Additional Greening Ideas

1. Green Lampposts

These green lampposts have been implemented in the cities of Westminster and London and have been very successful (Conservatives Association, 2019). They are a great way of greening the street while avoiding all the issues that are associated with planting trees in a built-up area. Forward-thinking and futuristic, this greening technique transforms regular lampposts into mini vertical gardens. Not only are they attractive, as they add vegetation of all kinds to the street scene, but they also improve biodiversity and air quality. They are also low maintenance and highly sustainable; the installation process is not damaging, and once this is complete, they require very little attention (Medium, 2019). Green lampposts recirculate water from the street which sits in a reservoir, while passive solar panels at the top of the vegetation provide the small amount of power needed to keep the irrigation system functioning. They are very practical as they do not take up the amount of space that street trees would and therefore do not take away much-needed space on pavements and they are above head height so do not interfere with pedestrians' walking routes. And lastly, they are a very effective green infrastructure tool used to link green corridors together which reflects the aims of the Little Woodhouse Neighbourhood Forum.

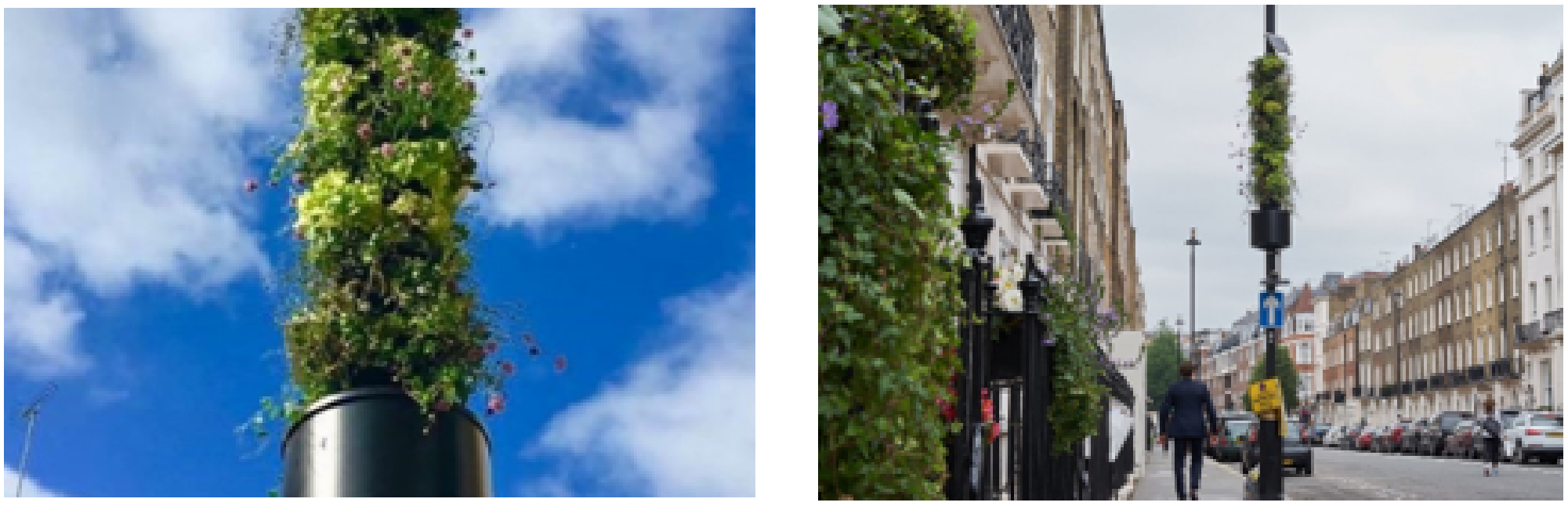


Figure 39: Images of Living Lampposts in Westminster (Source: Conservatives Association)

2. Large plant pots

The inspiration for this idea was taken from our recent trip to Hamburg, where we saw how large plant pots can be used effectively to green an otherwise very built-up area with few permeable surfaces. The pots are so big that trees can be planted in them, which avoids planting them in the ground as this can have various negative consequences for the built-up area around it. These are another effective green infrastructure tool which can be used to connect existing green spaces together or to bridge gaps in green corridors.

Figure 40: Photograph of large plant pots in Hamburg (Source: Heidi Boot, May 2022)

Suggested new policies

Suggested Policies:

- Every new development proposal within the Little Woodhouse neighbourhood area must include an element of new green infrastructure which will be agreed on via discussions with both the Neighbourhood Forum and Leeds City Council. The implementation of green walls and roofs is encouraged. Any existing green infrastructure on the site should also be retained.

Suggested conditions:

- For the redevelopment of sites such as the old college site to the south of Hannover Square on Park Lane, green infrastructure must be a major design focus. We recommend a policy is written for the Neighbourhood Plan, which sets out a design guide for the redevelopment of this site including retaining the trees around the perimeter to retain the green corridors and specifying the green infrastructure required on the site.
- An idea to consider for this site is to create an underground car park and using the ground level space for a park/square for recreational use. This would make much better use of the land available and decrease air pollution, improve the attractiveness of the site, and increase its biodiversity.

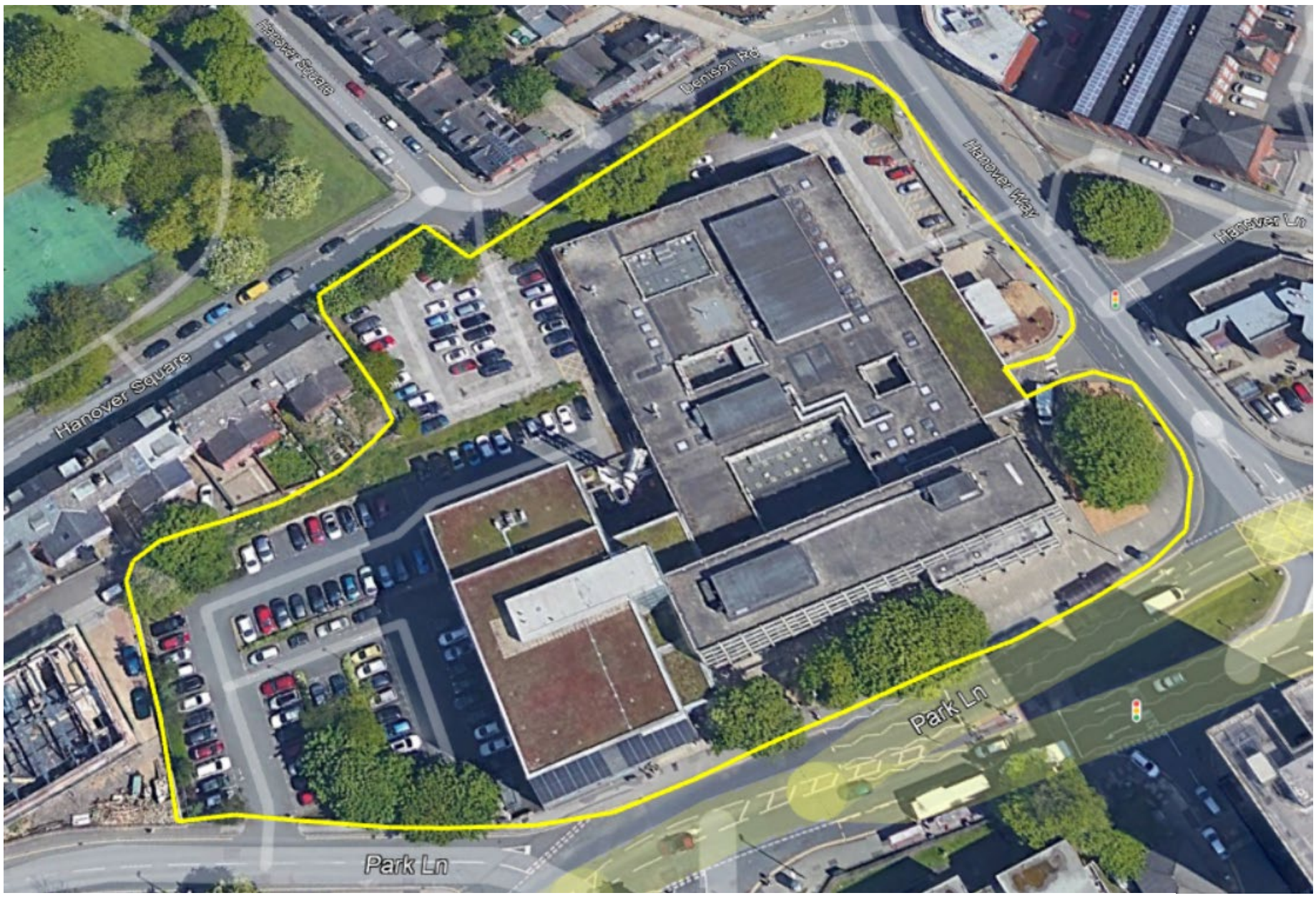


Figure 41: Old college site to be redeveloped (Source: Google Earth, 2022)

Future steps and conclusions

Following our research of green space national policies, the Little Woodhouse Neighbourhood Plan and a variety of case studies, this report has put forth proposals and recommendations which we hope are realistic, implementable, and aspirational for this inner-city area's future. Through visiting the site, we recognized that green spaces were of abundance, however, through enhancement and the designation of new sites, we believe that the area could reach a stage where sustainability and community health and wellbeing are supported continuously through the natural environment. Our focuses were to improve the established areas, suggest new green spaces to be designated which are compliant with planning policy, and suggest new policies and planning conditions for future development. Our proposals included active travel routes, three new local green spaces, and five areas which would benefit from landscaping enhancements. The key initiatives were to promote cycling and walking for students in the area, entice families to live here again, and to create a breathable, open, and enjoyable urban space packed full of biodiversity. We hope that Little Woodhouse enjoy and consider our proposals as we identified great potential for the area to create green infrastructure and corridors. It will be beneficial for Little Woodhouse to include green infrastructure as a key component of future developments and policies.

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List of figures

Appendix 1:

(DISCLAIMER, I am a DA student and will have to work with some of these group members next year, so if submitting this sheet means they are contacted about it, which will have negative repercussions on my relationship with them next year, I wish for this sheet to be ignored. Despite wanting to be recognized for all my hard work on this, it is not worth damaging relationships with my coursemates.)

Division of labour

In order of those who have done the most to those who have done the least:

1) Heidi
2) Joanne
3) Katie
4) Beth
5) Lucy

- Joanne and Heidi are the only ones that have attended each meeting and have been the only ones
- Joanne and Heidi are the only ones who have been willing to pick up the more difficult tasks and the additional work which came as a result of the presentation
- Despite the formatting of the report being Lucy's role, this was very poorly done and old versions of work was included rather than the most up-to-date versions which had been sent across in plenty time. Heidi then did a large majority of the formatting the night the report was due in order to get it up to date.
- Heidi has spent significantly more hours than the other group members, as recognized by Joanne

The Breakdown

Lucy – intro and policy sections, attempted formatting but done very poorly and had to be re-done

Beth – background context info, a case study with pictures and the conclusion

Katie – planting tables, 2 case studies, references list

Joanne – green corridor proposals with 3 maps to illustrate, 2 landscaping enhancement proposals

Heidi – consulted landscape architect, 2 case studies, all 3 new local green space proposals, 3 landscape enhancement proposals, suggested new policies/conditions section, all google earth maps and images, additional greening ideas section, list of figures, organized all meetings, and taken minutes from each meeting

I (Heidi) have had a message tonight from Joanne thanking me and prompting me to add an appendix like this, confirming that I've done the most out of the group and had the biggest leadership and management role in the project.

But I would like to say that Joanne worked really hard particularly on the green corridors proposals section and I was really impressed with what she came up with. We tried to conquer this section as a group in one of our meetings but found it impossible to coordinate our ideas and didn't make any progress. So, without Joanne's efforts here, we wouldn't have come up with such a great section on that.