

What impacts did Sheffield's Grey to Grey scheme have on social inclusion?

Note: All images and maps that are not cited are the author's own

Acknowledgements

I'd like to express my heartfelt thanks to the following, without whom this essay would not have been possible:

Megan Waller of Arup, for the interesting and useful discussions we had right at the start about how I could approach this work. Also, for getting me in touch with so many useful contacts!

Zac Tudor of Arup, for agreeing to be interviewed and shedding light on the initial history and development of Grey-to-Green in particular.

Nicola Dempsey of the University of Sheffield, for giving your perspective on the scheme in our interview, and for the interesting and useful paper you provided!

Lucia Lorente-Arnau of Sheffield City Council, for sharing the council's monitoring and evaluation reports on the scheme with me. These were of a great help in understanding what the Council's aims for the scheme were and provided key statistics for how these have been achieved.

Sylvie Manga of the Sheffield and District African Caribbean Community Association (SADACCA), for liaising with me on behalf of SADACCA and enabling me to conduct my survey within the organisation.

All SADACCA staff and members who filled in the survey or helped distribute it and collect the results. I look forward to presenting my work to you in the spring!

My Transport Planning Society (TPS) Bursary mentor, James Gleave, for your friendly help, support and tips throughout the process of researching and writing this essay.

Laura Putt and the TPS Bursary committee, firstly for giving me the opportunity to undertake this research and, secondly, for accepting my request for a deadline extension to incorporate the survey results from SADACCA.

My parents, Beatrice and Robert, for reading through and providing comments and suggestions on my essay drafts, for helping with all of the maps and figures, and for reminding me to keep calm (and providing lots of good food!) during the more intense phases of essay-writing.

Contents

1	Introduction	4
1.1	Grey-to-Green and Social Inclusion	4
1.2	Methodology.....	5
2	What is Grey-to-Green?	6
2.1	Scheme history.....	6
2.2	Scheme aims	8
2.3	Key scheme components	8
2.4	Spatial context of Grey-to-Green.....	12
2.4.1	Relationship with the Town Centre and key pre-existing residential and employment sites	12
2.5	Deprivation in the Grey-to-Green area.....	13
2.6	Grey-to-Green within the transport network.....	14
2.6.1	Bus and Tram Network	14
2.6.2	Active Travel Network.....	16
2.6.3	Grey to Green and Sheffield Train Station.....	17
3	How has Grey-to-Green performed?.....	17
3.1	How can Grey-to-Green be related to social inclusion?	17
3.2	Impact on those experiencing the scheme: Scheme Design	18
3.2.1	Nature and Biodiversity	18
3.2.2	Flood Prevention.....	19
3.2.3	Active Travel.....	19
3.2.4	Impact of pre-existing land use on social inclusion	21
3.3	Impact on Deprivation	21
3.4	Impact on Land-Use and Nearby Development.....	22
3.4.1	New developments facilitated by the scheme	23
3.4.2	Potential Future Development Sites.....	23
3.4.3	How can these changes to land-use be related to social inclusion?	23
4	SADACCA Survey Results: What impact has Grey-to-Green had on people in nearby areas?	24
4.1	Have you noticed the changes that have taken place on Castlegate and the surrounding streets as part of Grey-to-Green?.....	25
4.2	How often do you visit or pass through Grey-to-Green?	25
4.3	What things do you do in Grey-to-Green?.....	26
4.4	Do you have any suggestions for what would make Grey-to-Green even better?	26
4.5	Conclusions from survey results	26
5	How applicable is the Grey-to-Green concept to elsewhere?	28

6	Conclusion.....	28
7	Bibliography	29
8	Appendix 1: SADACCA Survey Questions.....	30

1 Introduction



Figure 1: Castlegate before Grey-to-Green (Google, 2019)



Figure 2: Castlegate today

Sheffield's Grey-to-Green scheme represents a pioneering transformation of former highway land to uses including active travel, public realm and planting. While similar concepts have been applied in other UK cities, arguably Grey-to-Green and similar interventions in Sheffield are on a significantly greater scale than seen elsewhere.

Grey-to-Green-style interventions can be used to help our cities tackle the effects of the climate and biodiversity crises, for example through increased flood resilience, reducing the urban heat island effect and providing habitats for a range of species. From a transport perspective, key benefits of Grey-to-Green include creating more attractive environments for walking and cycling and reducing car dominance.

1.1 Grey-to-Green and Social Inclusion

This essay examines the performance of Grey-to-Green through the lens of its interaction with social inclusion, a term for which there are several definitions. For example, the World

Bank defines the term as “the process of improving the terms on which individuals and groups take part in society—improving the ability, opportunity, and dignity of those disadvantaged on the basis of their identity”.¹ The European Foundation for the Improvement of Living and Working Conditions, an agency of the European Union, describes it as “a process that ensures citizens have the opportunities and resources necessary to participate fully in economic, social and cultural life and to enjoy a standard of living and well-being that is considered normal in the society in which they live”.²

This essay will use a combination of these two definitions, to define the process of social inclusion in relation to Grey-to-Green as: “A process that improves the terms on which currently disadvantaged people take part in society and their standard of wellbeing.”

1.2 Methodology

This report begins with a description of the scheme history and context to understand how and why the scheme developed its current form. This will include an examination of indicators of deprivation, pre-existing developments, and transport provision in the surrounding area. This is followed by an evaluation of the scheme’s performance in relation to social exclusion in particular, as well as more generally, as indicated by elements of the scheme design and changes to land use that the scheme has supported. A summary of a survey of members of the Sheffield and District African-Caribbean Community Association (SADACCA), based in the Wicker, close to the scheme (see Figure 5) is also provided. This survey was carried out to better understand the impacts of the scheme of the local community.

¹ <https://www.worldbank.org/en/topic/social-inclusion>

² <https://www.eurofound.europa.eu/en/topic/social-inclusion>

2 What is Grey-to-Green?

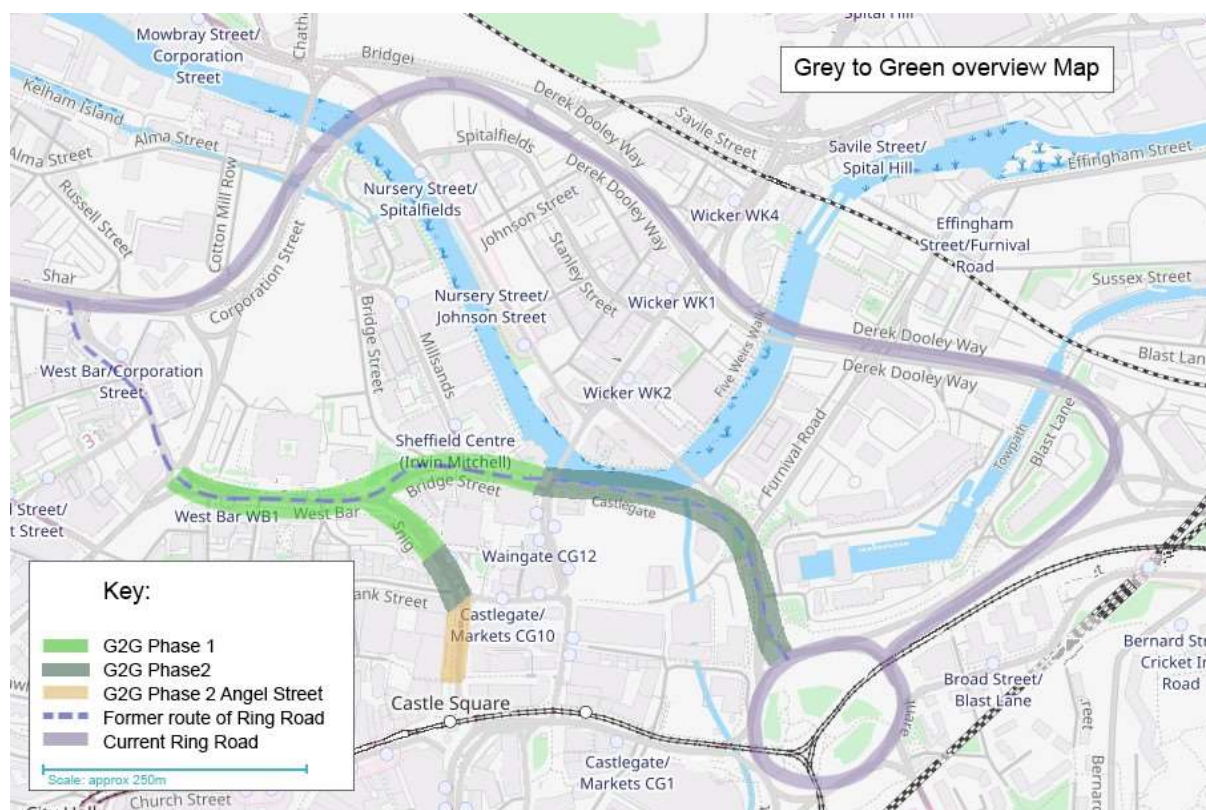


Figure 3: Map of Grey-to-Green scheme

Grey-to-Green encompasses a total of 1.6km³ of formerly predominantly “grey” highway land, that has been converted into a mix of blue-green infrastructure (i.e. “blue” flood-prevention and alleviation measures combined with “green” planting features), improved walking and cycling facilities, and seating and public realm. More detail on the key features of Grey-to-Green can be found in Section 2.3 (“Key scheme components”) below.

The project forms a key part of Sheffield City Council’s strategy of regenerating the northern part of the town centre, where Grey-to-Green is located, following the relocation of the inner ring-road (see Section 2.1 below), stimulating the development of offices, services and residential dwellings in the immediate surroundings of Grey-to-Green. While the scheme focuses on the former inner ring-road, parts also extend to the surrounding highway network.

2.1 Scheme history

Unless otherwise noted, the source for this history is an interview between the author and Zac Tudor, who was instrumental in developing Grey-to-Green while working for Sheffield City Council.

³ <https://www.nigeldunnett.com/grey-to-green-2/>

The opportunity for Grey-to-Green was first identified in the mid-2000s in connection with the scheme to relocate Sheffield's inner ring-road from the north of the town centre, which was completed in 2007.⁴ While one of the aims of this relocation was to stimulate the regeneration of the surrounding area, there were two differing precedents from the late 1990s and early 2000s within Sheffield for how this could be achieved (Alister Scott, 2023, pp. 295-6):

- The Peace Gardens, in the town centre, is an award-winning and well-used public space, but had relatively high costs and made heavy use of artificial features
- Manor Fields Park, in the Manor area in the eastern suburbs of Sheffield, emphasised natural features and the use of Sustainable Urban Drainage Systems (SUDS) to regenerate a previously neglected public space while aiding the city's flood resilience.

The designers of Grey-to-Green opted for a Manor Fields Park-style emphasis on a nature-based SUDS approach, thus providing flood alleviation benefits while reducing costs. This drew on research at the University of Sheffield, including ideas concerning the use of aggregate soils in urban contexts. The 2007 floods, which caused approximately £1bn of damage to flood-prone areas in Sheffield,⁵ also provided further impetus and support for the scheme.



Figure 4: SUDS features in Manor Fields Park

Whereas the ring-road had created an effective barrier to further expansion of the town centre to the north, the Council sought with Grey-to-Green to attract development in what had previously been a generally poorly perceived area (Lorente-Arnau, 2015, p. 2), and thus unlock the last remaining potential Grade A office site in the town centre for redevelopment (Sheffield City Council, 2020, p. 6)

⁴ <https://www.transportxtra.com/publications/local-transport-today/project-monitor/11168/sheffield-inner-relief-road-phase-2-sheffield>

⁵ <https://www.thestar.co.uk/news/weather/sheffield-floods-2007-pictures-reveal-how-heavy-rainfall-devastated-parts-of-the-city-2898254>

Grey-to-Green phase 1 had a length of 0.492km (Sheffield City Council, 2020, p. 3) and was formally approved in 2014 and completed in 2016⁶.

Phase 2 was approved in 2019 and completed in summer 2020, apart from a small section on Angel Street on which construction began in August 2021 and was completed in early 2022.⁷ This represents an acceleration compared to the programme for Phase 1, despite Phase 2 being significantly longer.

2.2 Scheme aims

The key aims of Grey-to-Green are as follows (Sheffield City Council, 2020, pp. 2-3):

- To attract new businesses to the area around the scheme and counter prevailing negative perceptions of this area
- To encourage investment in new employment sites, notably in professional and knowledge-intensive office-based businesses.
- To improve links between the core of the city centre and areas immediately to its north, including Kelham Island, the Wicker, Castlegate and Victoria Quays.
- To enhance the natural assets of the River Don
- To improve flood defences following the flooding of the Wicker area in 2007
- To create an iconic public space along the lines of New York's "High Line" linear urban park.
- To increase tree street cover and shade in order to mitigate the urban heat island effect, particularly in light of climate change.

The scheme also aimed to support Sheffield's bid for a High Speed 2 station at the disused Sheffield Victoria station site, which is immediately to the north of the Wicker.

2.3 Key scheme components

The key features of Grey-to-Green are its use of nature-based SUDS solutions within a high-quality public realm, the provision of space for walking, wheeling, cycling, and the scheme location focused on Sheffield's former inner ring-road. More detail and pictures of key scheme features are provided in Table 1 below.

⁶ <https://www.greytogreen.org.uk/background>

⁷ <https://www.greytogreen.org.uk/background>

Table 1: Key features of Grey-to-Green

<p>Planting with a distinctive mix of species The planting for Grey-to-Green uses a mix of wildflower and grass species, which are designed to be visually interesting while supporting wildlife.⁸</p>	
	<p>Bioswales The planting takes place within Bioswales. These channels are designed to concentrate and slowly release stormwater runoff and mimic natural flood management, while filtering out pollutants from the urban environment.</p>
<p>Aggregate soil The soil in the scheme is predominantly aggregate-based, from a local quarry.⁹ This aids the water retention function of Grey-to-Green and provides a good environment for the plant mix used.</p>	 <p>Picture: Grey to Green during construction, © Nigel Dunnett¹⁰</p>

⁸ [overview with scale - anshelcohen@gmail.com](mailto:anshelcohen@gmail.com) - Gmail (nigeldunnett.com)

⁹ Author interview with Zac Tudor

¹⁰ [Grey to Green – Nigel Dunnett](http://GreytoGreen.com)



Public art / structures for insects

Sculptural artworks are also distributed throughout the scheme. These often simultaneously serve as shelters for insect life, including ladybirds and bees.

Information boards

Information boards are also found throughout the scheme, including descriptions of the scheme itself and the importance of biodiversity. On Castlegate, information is provided about the history of the area.



Trees

Fast-growing trees, including birches, are planted at intervals throughout the scheme. When mature, these will provide shading and additional urban greening, helping to mitigate the urban heat island effect.

High-quality seating

Benches are provided along the edges of the planting throughout the scheme.



Wide shared spaces (Phase 1)

Phase 1 contains wide shared spaces for pedestrians and cyclists throughout, separated by planting from the carriageway that exists throughout phase 1.

Separate spaces for pedestrians and cyclists (phase 2)

In phase 2, pedestrians and cyclists are provided with separate spaces, although these overlap in some areas, notably on Castlegate. The separation reflects lessons learned from Grey-to-Green Phase 1.



Different levels of vehicle movement allowed throughout the scheme:

Both phases incorporate areas with significant bus traffic (Phase 1: West Bar, Phase 2: Angel Street and Snig Hill), while other parts of the scheme have extremely limited or no traffic movements (vehicular traffic is banned on Castlegate apart from specifically authorised vehicles).

2.4 Spatial context of Grey-to-Green

This section details the spatial context of Grey-to-Green, including its relationship with the wider transport network, as well as land use in the surrounding area.

2.4.1 Relationship with the Town Centre and key pre-existing residential and employment sites

Grey-to-Green is located close to a mix of existing residential and office developments, in addition to a local high street on the Wicker. Key pre-existing sites are shown in Figure 5 and Table 2 below. As noted above, Grey-to-Green is also located at the northern edge of Sheffield city centre.

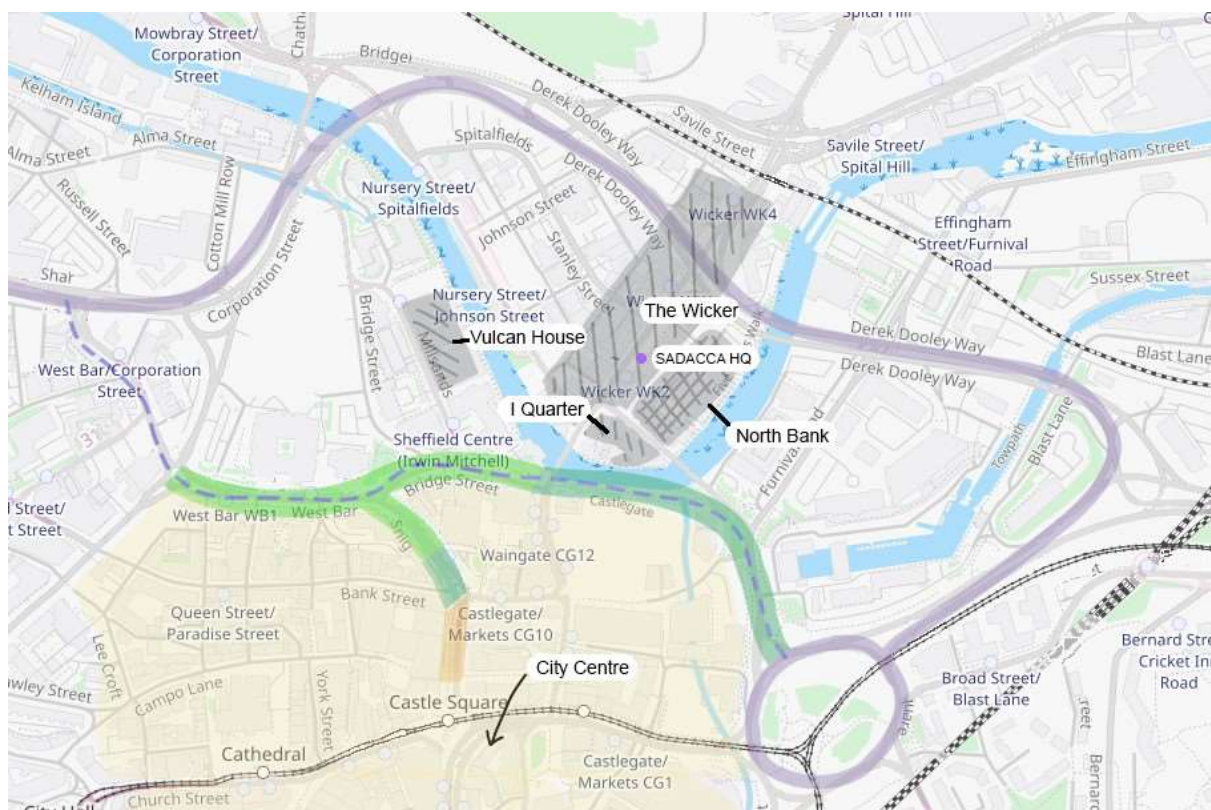


Figure 5: Nearby pre-existing developments and key sites

Table 2: Existing office, commercial and residential sites in the scheme area (selection).

<u>Site name</u>	<u>Description</u>
Vulcan House	A collection of office buildings providing 10,100 square metres of workspace ¹¹
The Wicker	A high street including shops, restaurants and other amenities, several providing specifically for ethnic minorities. This also includes the SADACCA community centre

¹¹ <https://www.newcivilengineer.com/archive/vulcan-house-an-environmentally-clever-cube-21-09-2007/>

North Bank	A redevelopment of flats and office space alongside the River Don
I Quarter	A mixed-use development including 123 apartments and commercial space ¹²
Victoria Quays	Canal Basin including a mix of flats and offices in former warehouses

2.5 Deprivation in the Grey-to-Green area

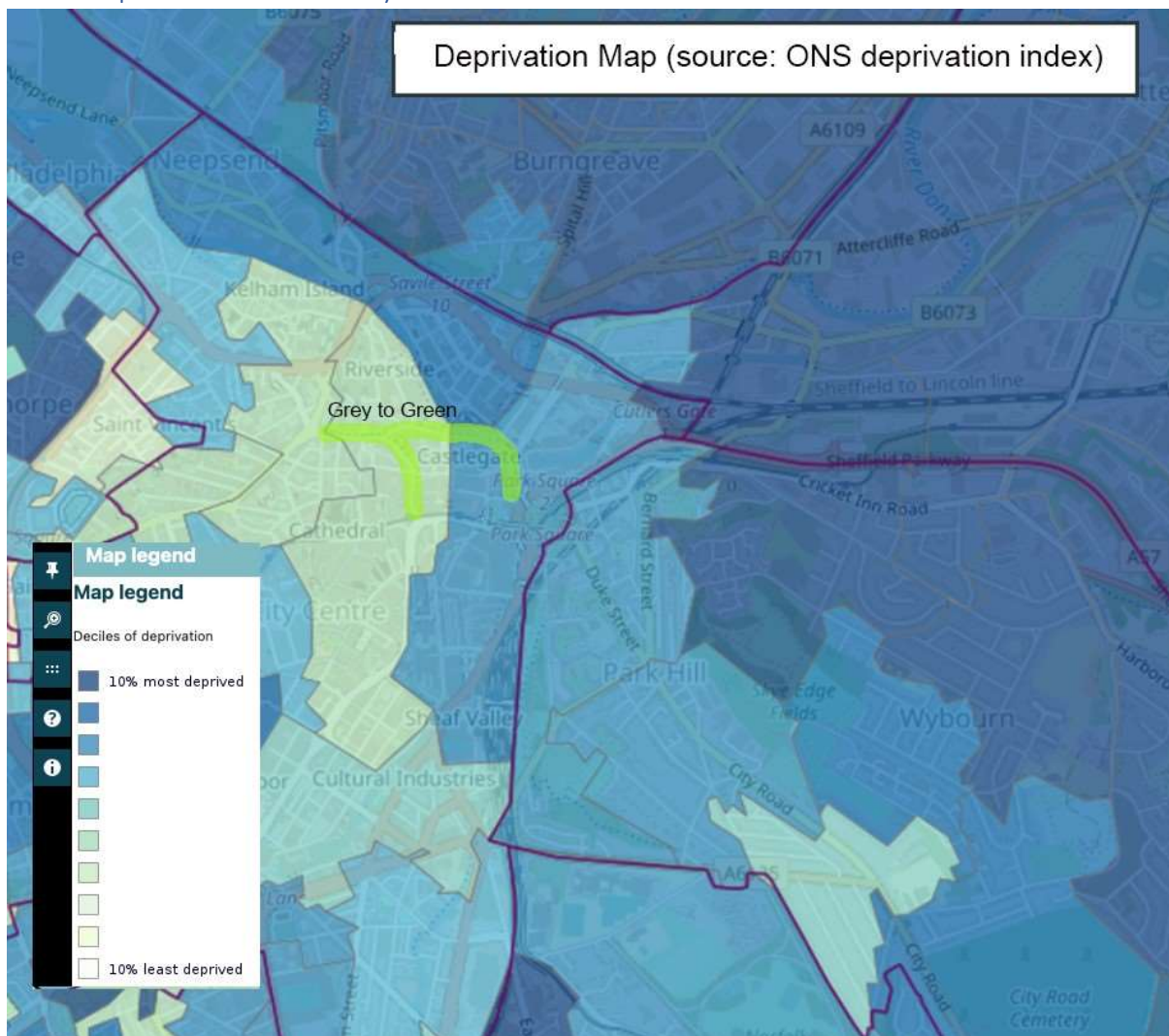


Figure 6: 2019 Deprivation data for Grey-to-Green and the surrounding area¹³

This section analyses deprivation data in and around the scheme area for 2019 and, where relevant, 2015. Deprivation data for more recent years is not readily available.

¹² https://www.rightmove.co.uk/properties/123947276#/?channel=COM_BUY

¹³ http://dclgapps.communities.gov.uk/imd/ioid_index.html

As the map above highlights, areas within a 1km buffer of the Grey-to-Green scheme are within the 10% most deprived Lower Super Output Areas (LSOAs)¹⁴ in England (as of 2019), while the LSOA encompassing the Wicker, across the River Don from Phase 2 of the scheme, is within the most deprived 20%. Grey-to-Green lies between these areas and the town centre and so may provide environmental, transport and health benefits to those accessing the town centre from these areas (see section 3.3).

2.6 Grey-to-Green within the transport network

This section describes Grey-to-Green’s interaction with the surrounding transport network. Transport network stops and stations serve as key gathering points for people, including socially excluded groups, and they represent a key means by which the benefits of Grey-to-Green can be experienced by those passing through the surrounding area.

2.6.1 Bus and Tram Network



Figure 7: Bus and tram stops in the Grey-to-Green area

2.6.1.1 Bus Network

Several bus routes between the north and north-west of Sheffield and the city centre cross the scheme. Some of these routes stop within the scheme, with key concentrations of bus stops at locations including Angel Street and Snig Hill. Key groups of bus stops within 200 metres of the scheme include Waingate and Haymarket.

Overall, the stops that are close to the scheme have a significantly higher frequency of service than those within the scheme. While stops within the scheme were served by a total

¹⁴ Areas used for the UK census and other governmental reporting purposes, usually with an average population of 1,500.

of 46 buses per hour, those less than 200 metres of the scheme, but not within it, were served by 121 buses per hour.

2.6.1.2 Tram Network

The closest stop on Sheffield's tram network to the scheme is Castle Square, which is located approximately 50 metres to the south of the end of Phase 2a on Angel Street. However, passengers waiting at this stop are visually disconnected from Grey-to-Green and are unlikely to interact with the scheme during their journey as most of the town centre is in the opposite direction.

2.6.2 Active Travel Network

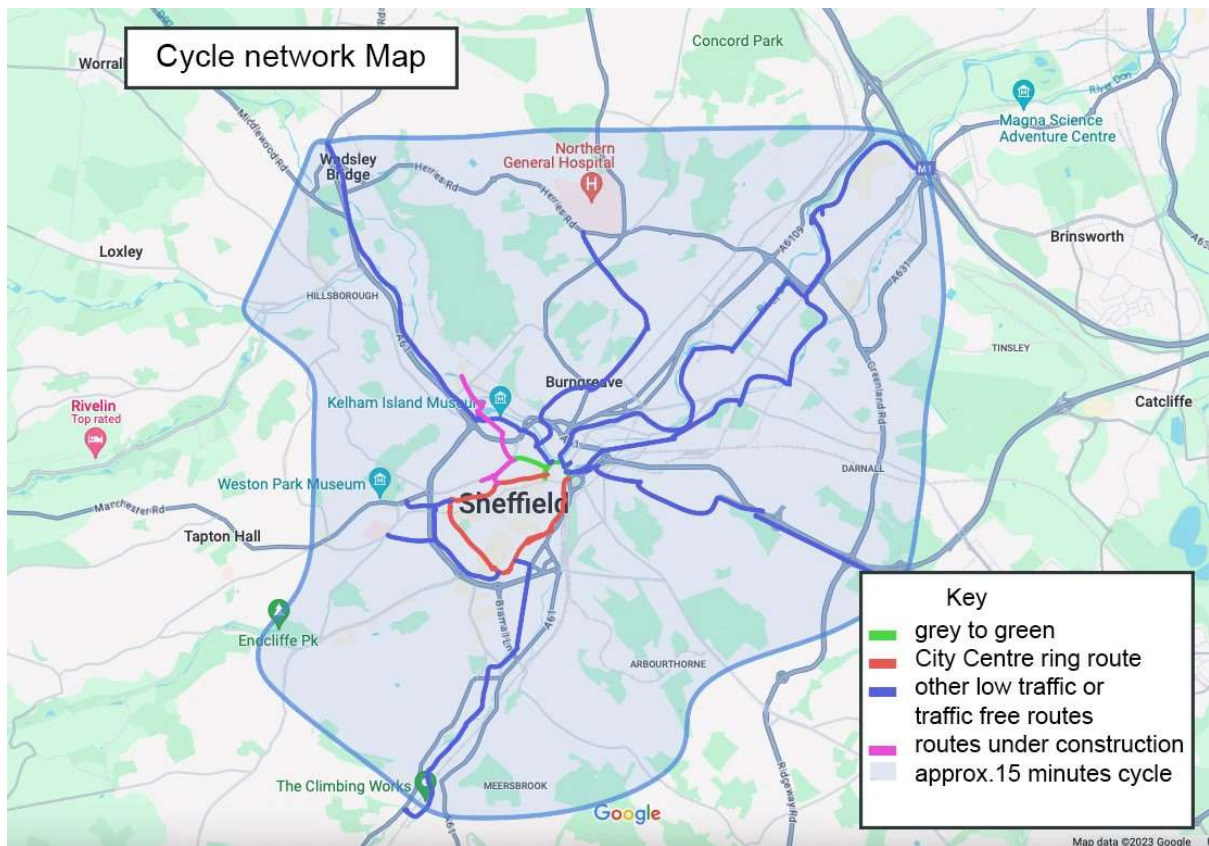
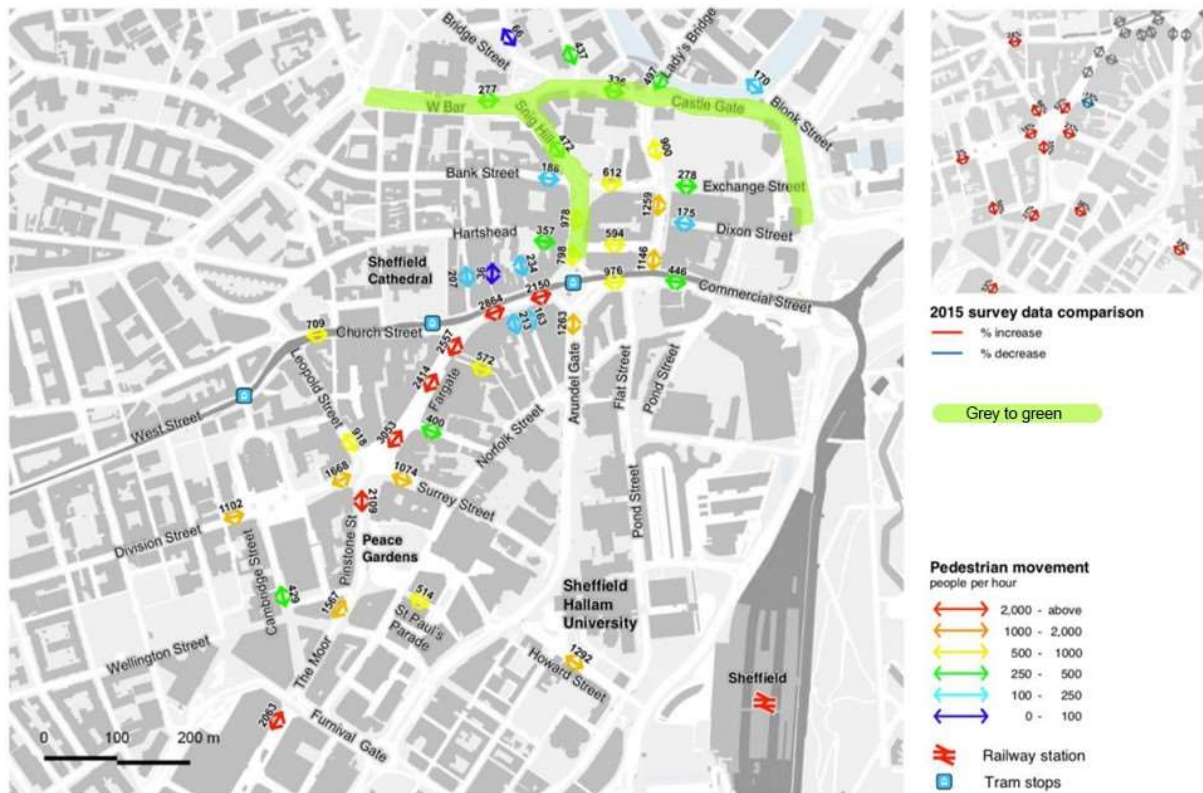


Figure 8: Role of Grey-to-Green within Sheffield's cycling network (15-minute travel time isochrone based on [15 Minutes Cycling Radius Map | Drive Time Radius & Other Modes \(traveltime.com\)](#)).

Grey-to-Green is part of a network of cycle infrastructure that forms a ring around the city centre, with links to different parts of Sheffield. This includes areas with significant deprivation, (see section 2.5), many of which are within 15 minutes' cycle of the scheme. However, the quality of the infrastructure along these areas is variable, limiting the potential benefits that Grey-to-Green can bring to them as part of an integrated cycle network.



Source: Space Syntax for Sheffield City Council, Jan 2020

Figure 9: Pedestrian movements in and around Sheffield town centre, including Grey-to-Green, January 2020¹⁵

In terms of pedestrian movement data from January 2020 (see Figure 9 above), when Phase 1 had already been completed, 978 hourly movements on an average weekday are recorded along Angel Street. No remaining part of the scheme for which data is available exceeds 500 per hour. On other roads close to the scheme, Waingate records 900 pedestrians per hour and Haymarket in excess of 1,100. Routes between the Castle Square tram stop, Fargate, and the town centre record in excess of 2,000 pedestrians per hour. This reflects the position of bus and tram stops and the heart of the town centre in relation to the scheme.

2.6.3 Grey to Green and Sheffield Train Station

As Grey-to-Green is not on any direct route between Sheffield Train station and the town centre, it primarily provides benefits to those accessing the train station by walking, wheeling or cycling to the north of the town centre.

3 How has Grey-to-Green performed?

3.1 How can Grey-to-Green be related to social inclusion?

As Grey-to-Green is primarily a public realm project, with related flood-prevention aims, its ability affect social inclusion primarily arises from its impact on people who use the space,

¹⁵[gateway to sheffield luf bid 0.pdf](#) (Sheffield Levelling Up Fund bid), p.24

and any changes it could have caused to the surrounding area, such as through regeneration.

Therefore, this section will focus on the following impacts of Grey-to-Green:

- Its effects on people living or working near the scheme, or passing through it, through features within the scheme design.
- Its impact on development in the surrounding area. This includes changes to land use and any resulting jobs created.
- Its role within Sheffield's wider active travel and public transport network, including facilitating travel by walking, wheeling, cycling and public transport.

3.2 Impact on those experiencing the scheme: Scheme Design

Analysis by the University of Sheffield suggests that “20-30% of people working in the area use a different route to be able to walk through the Grey to Green corridor” (Sheffield City Council, 2020, p. 7), indicating its value to the wellbeing of those passing through the area and, potentially, its ability to encourage those living and working in the scheme to make healthier travel choices. The scheme is also a source of civic pride and excitement for Sheffield and has received delegations from around the world (Sheffield City Council, 2020, p. 7).

This section details the positive impacts of the design of Grey-to-Green on those who directly interact with the scheme, along with information concerning their performance in connection with social inclusion where this is available.

3.2.1 Nature and Biodiversity

The creation of urban green spaces can have benefits including improved mental and physical health for those who experience them, whether through being immersed in the urban green space or just by having a view of it. Such benefits can apply to home, workplace, or educational settings¹⁶.

Grey-to-Green has had transformative effects on biodiversity within the scheme area, with BREEAM (Building Research Establishment Environmental Assessment Method) calculations estimating a 561% increase in biodiversity value along phase 2 of the scheme compared to the previous infrastructure.¹⁷

Grey-to-Green is therefore likely to improve the mental wellbeing of those who live and work in the scheme area or pass through it, particularly where their daily access to green space is otherwise limited, thus promoting social inclusion.

¹⁶ [WHO-EURO-2023-7508-47275-69347-eng.pdf](#)

¹⁷ [Biodiversity — Grey to Green — Sheffield](#)

3.2.2 Flood Prevention

Flood prevention is an important aspect of social inclusion because those who are poorer and less able to choose where they live are more likely to be affected by flooding.¹⁸ As discussed in Section 2, flood prevention was a key goal of the scheme, particularly in light of the 2007 floods.

The scheme's success in this area is indicated by the adoption of Grey-to-Green Phase 1 by CIRIA (Construction Industry Research and Information Association) as a national case study in water management (Sheffield City Council, 2020, p. 7). However, it is difficult, based on publicly available information, to identify any reduction in flood damage since 2007 in Sheffield to Grey-to-Green as opposed to other UK Environment Agency flood alleviation projects that have taken place since then.

3.2.3 Active Travel

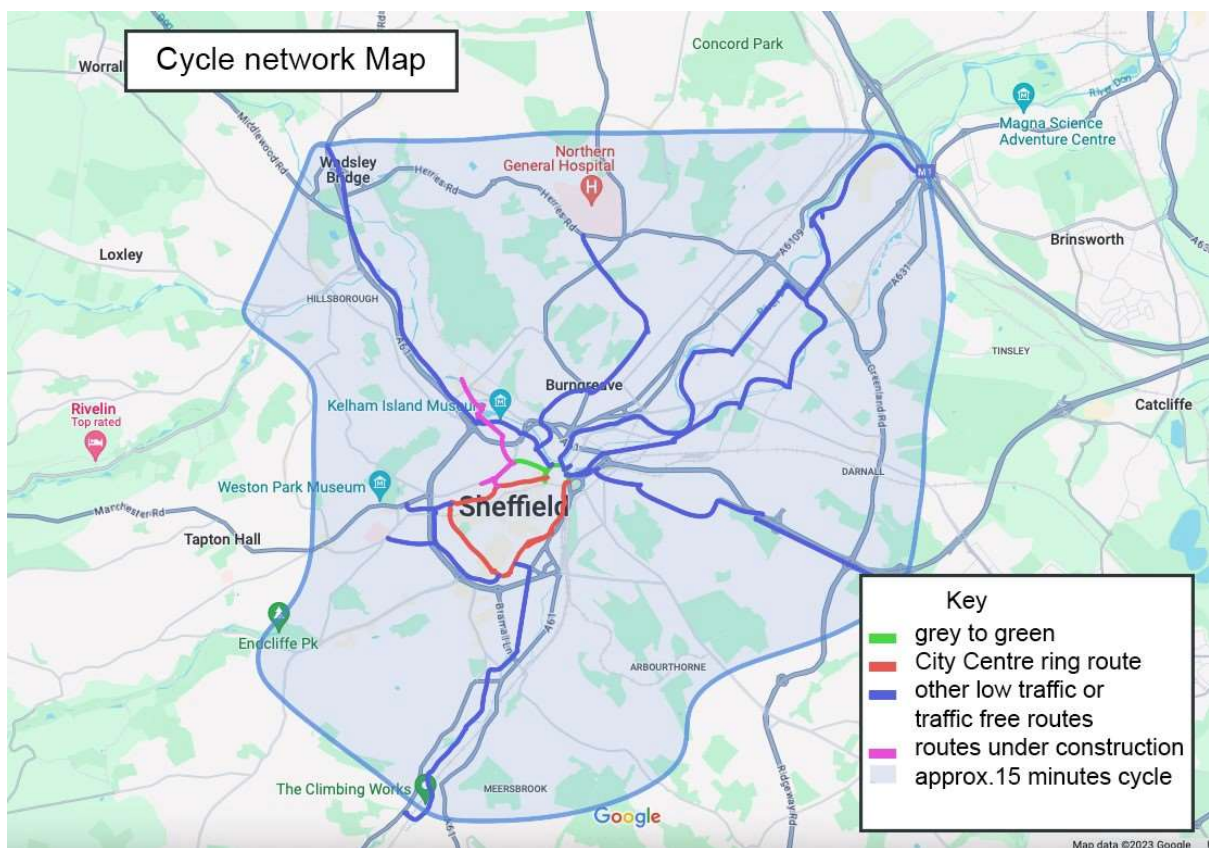


Figure 10: Grey-to-Green in Sheffield's cycling network (repeat of Figure 9)

Grey-to-Green's facilities for walking and wheeling are generally of a high standard, with high-quality separate cycling facilities also provided throughout phase 2. The provision of separate pedestrian and cycling infrastructure was one of the lessons learned from phase 1,

¹⁸ <https://www.gov.uk/government/publications/social-deprivation-and-the-likelihood-of-flooding/social-deprivation-and-the-likelihood-of-flooding-summary>

where the provision of a shared footway had in practice led to most cyclists using the carriageway.¹⁹ The benches available throughout much of the scheme cater well to the needs of pedestrians who need to rest more frequently, such as the elderly. This has the co-benefit of facilitating these groups' immersion in green space.

The scheme integrates well with Sheffield's wider active travel network, including routes towards the Lower Don Valley and a network of protected or low-traffic cycle routes that forms a ring around Sheffield town centre, which should facilitate the inclusion of people from deprived areas in the wider life of the city (see section 2.6.2). Expansion of walking and cycling facilities will also connect Grey-to-Green better with the Kelham Island area in the near future.²⁰ However, the quality of these routes is mixed, with the route towards the Northern General Hospital in particular unlikely to be attractive to many potential cyclists due to the steep gradients and poor condition of parts of the infrastructure (see Figure 11 below). This limits the extent to which other routes can be used in conjunction with Grey-to-Green to enhance people's health and wellbeing by encouraging them to walk and cycle.



Figure 11: Section of the cycle route towards the Northern General Hospital, including steep gradient and pigeon droppings on ground

¹⁹ Author interview with Zac Tudor

²⁰ <https://connectingsheffield.commonplace.is/en-GB/proposals/neepsend-kelham-city-centre-february-2023-update/start>

3.2.4 Impact of pre-existing land use on social inclusion



Figure 12: Areas of Grey-to-Green where natural surveillance may be limited, particularly at night

Land-use alongside the scheme that reflects its history as part of the inner ring-road continues to have an impact on the scheme and reduces the success of the space. This is because these pre-existing structures alongside the scheme can reduce natural surveillance and thus the safety that more vulnerable user groups may feel when using the scheme, particularly at night. Natural surveillance, also known as “eyes on the street”, is fundamental to making spaces feel safe because users know that the presence of onlookers at all times reduces the potential for antisocial or criminal activity, and increases the likelihood of receiving help when this occurs. Some of these locations are likely to improve in the future, notably on Castlegate.

3.3 Impact on Deprivation

While Grey-to-Green was judged to unlikely to have significant short-term impacts on most deprivation indicators, an exception, where Grey-to-Green could provide noticeable and immediate impacts, was the quality local environment. A significant difference in this quality was recorded in the area encompassing Grey-to-Green phase 1 between 2015 and 2019 (more recent data is not available and so it is not yet possible to assess the impact of phase 2). The relevant LSOA (Sheffield 037D; see Figure 12 below) ranked 495 out of 32,844 in 2015, and 4,232 in 2019, where 1 is the most deprived LSOA. While major development in

the form of the Heart of the City project, which is likely to lead to further environmental improvements, has since been completed within the LSOA, the only other major change to the local environment that was completed between 2015 and 2019 was an improvement to Charter Row, itself a Grey-to-Green style scheme.

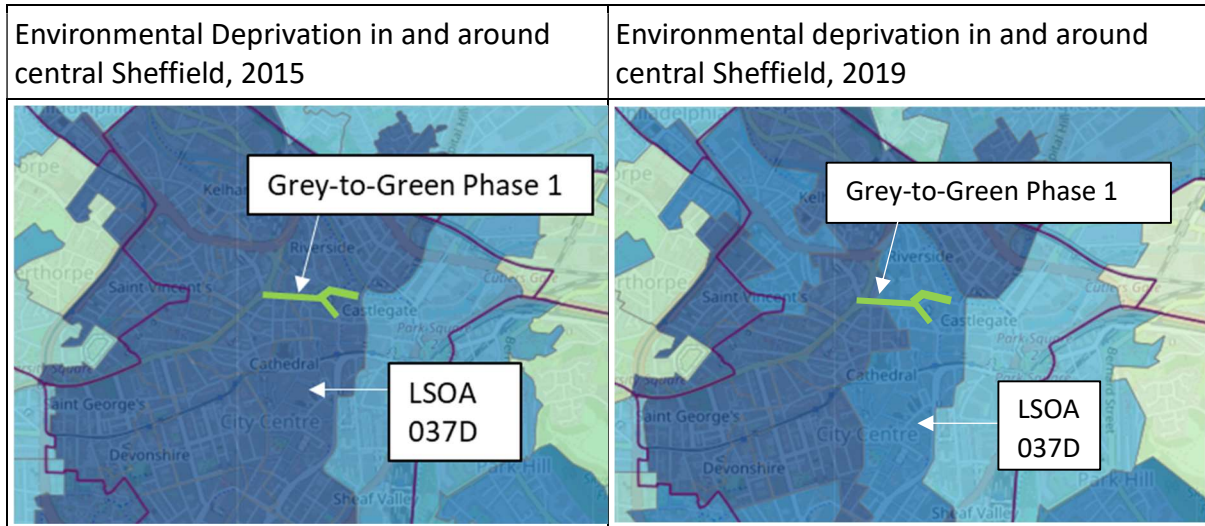


Figure 13: Environmental deprivation in and around Central Sheffield, 2015 and 2019

3.4 Impact on Land-Use and Nearby Development

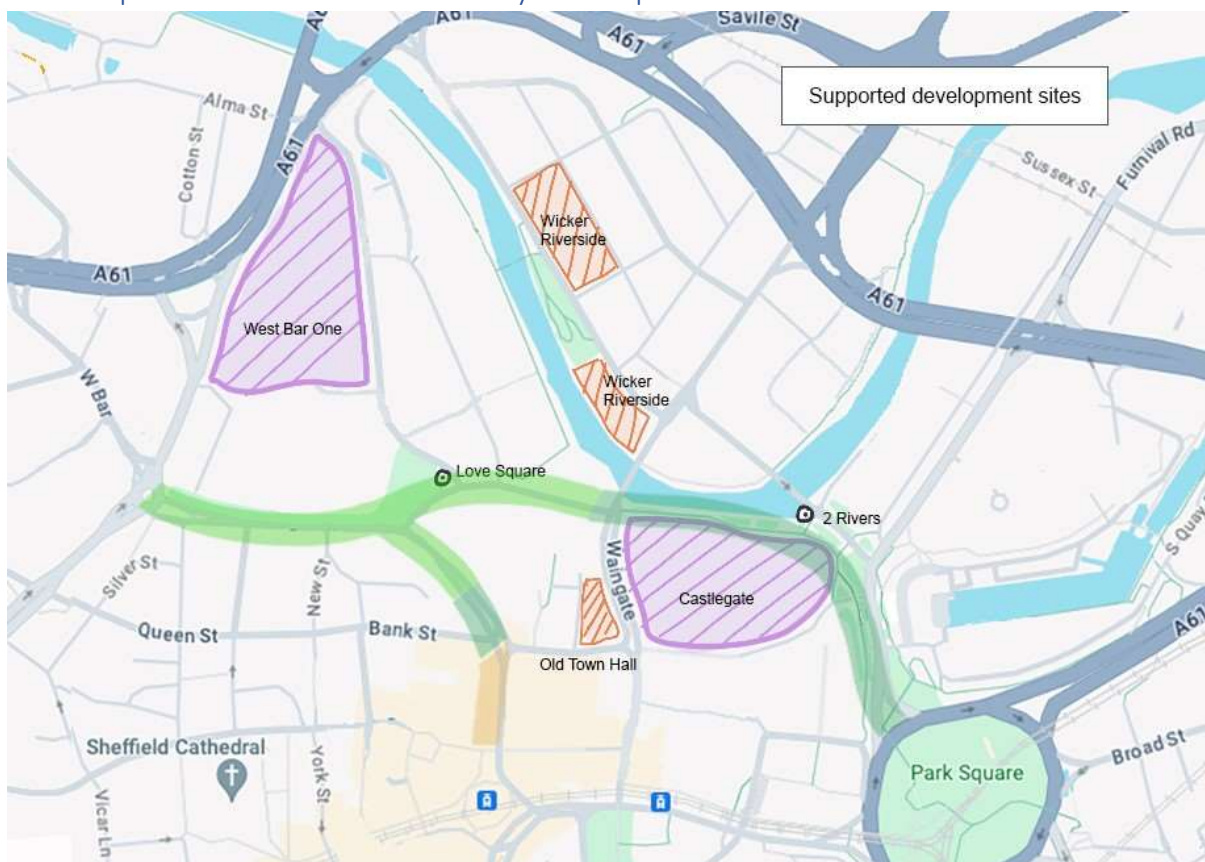


Figure 14: Supported developments (purple) and potential future developments (orange) in the vicinity of Grey-to-Green

3.4.1 New developments facilitated by the scheme

According to Sheffield City Council (Monitoring and Evaluation report), progress on two development sites can be directly linked to Grey-to-Green:

- West Bar One: A 7-acre former brownfield site to the north-west of the scheme, currently under construction. It will generate an estimated one million sq ft of mixed office and residential use, and expects to create up to 8,000 new jobs. It has won multiple awards and represents Sheffield City Centre's largest ever investment deal.²¹ It incorporates grey-to-green landscaping guidelines into its public realm, and references its proximity to the grey-to-green scheme in its advertising (Sheffield City Council, 2020, p. 7)
- Crown House: Originally built in 2010 as an office block but not occupied, this had become an anti-social behaviour hotspot. Following a successful planning application for conversion to mixed-use, focused on student accommodation, redevelopment was completed in 2017 (Sheffield City Council, 2020, p. 5)

The development of the Castlegate site is also likely to have been facilitated by Grey-to-Green. The plans include a new park, a grassed events space and opening up a currently covered section of the River Sheaf, as well as exposing part of the foundations of Sheffield's former Castle, and buildings that would be suitable for residential, community, commercial or educational uses.²² Sheffield City Council's successful bid for £20 million of UK government Levelling up funding referenced how the nearby Grey-to-Green infrastructure provided a suitable context for Castlegate, and how the Castlegate redevelopment would enable more people to benefit from Grey-to-Green.²³

3.4.2 Potential Future Development Sites

Two further potential development sites are close to Grey-to-Green, namely Wicker Riverside and Old Town Hall, along with two premises originally intended to be intended to be occupied by businesses: Love Square and 2 Rivers.

In the original plans for Phase 1, Love Square was intended to form the site of a café (Lorente-Arnau, 2015, p. 6) while 2 Rivers Café and Bar, based on a former public toilet as part of Grey-to-Green Phase 2, did not open due to the planned opening date coinciding with the onset of the Covid-19 pandemic.²⁴ An increase in footfall once the planned West Bar One and Castlegate developments are open (see section 3.4 above) could potentially create the conditions for these businesses to open.

3.4.3 How can these changes to land-use be related to social inclusion?

²¹ <https://westbar.co.uk/news/sheffield-development-wins-national-award-for-groundbreaking-regeneration-deal/>

²² <https://www.bbc.co.uk/news/uk-england-south-yorkshire-64743503>

²³ https://www.sheffield.gov.uk/sites/default/files/2023-05/gateway_to_sheffield_luf_bid_0.pdf, p.22.

²⁴ Interview between Zac Tudor and author

The new developments in the surrounding area are creating local economic growth through new jobs and accommodation opportunities, although specifically relating these to social inclusion is difficult. This is because there is no indication that they are comprised of social or affordable accommodation, or that the developments cater to those with additional needs which may have wider social inclusion benefits. The most likely new development to drive social inclusion directly is that at Castlegate, due to its inclusion of community and educational spaces.

They also facilitate the inclusion of all groups visiting or passing through the area. This is because, by making the area busier, they increase natural surveillance while providing new custom for existing local businesses. Other beneficial impacts to the public realm include new high-quality public spaces (West Bar One) or the removal of spaces associated with antisocial activity (Crown House). As more developments are completed, these benefits can then spread to the remaining parts of the scheme and the surrounding area.

Overall, the current developments close to Grey-to-Green that would have been less likely without the scheme also serve to multiply the scheme's positive impacts. As the perception of the area improves, aided by these new developments and Grey-to-Green itself, further developments may come forward in areas such as Wicker Riverside and the Old Town Hall, amplifying the positive impacts of Grey-to-Green.

4 SADACCA Survey Results: What impact has Grey-to-Green had on people in nearby areas?



SADACCA

To indicate the impact of the scheme on those living or visiting the nearby area, I organised a survey in partnership with SADACCA, a local organisation providing a range of services, including sewing, a boxing club, educational services and day care for older adults, focused on Sheffield's African and Caribbean community. While open to all SADACCA members, the survey was primarily distributed through the day care centre and so responses are likely to have been concentrated among older adults. Twenty-one survey responses were received. This section contains a summary of these results.

A copy of the survey can be found in Appendix A.

4.1 Have you noticed the changes that have taken place on Castlegate and the surrounding streets as part of Grey-to-Green?

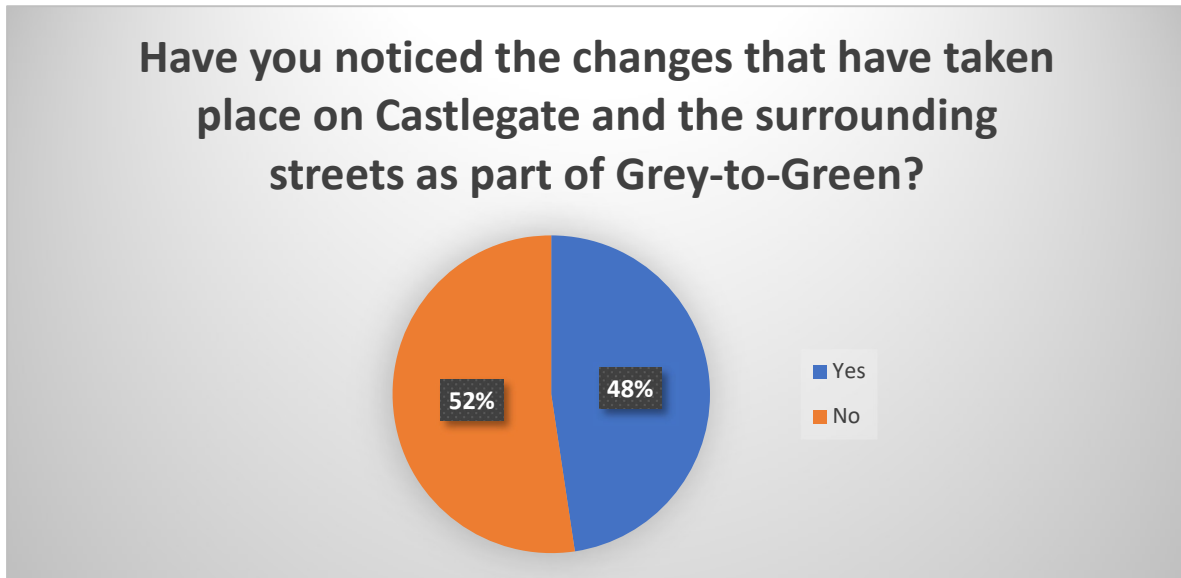


Figure 15: Responses to Survey Question 1

Roughly 50% of respondents indicated that they were aware of changes to the area as part of the scheme. 10 (48%) respondents selected “yes”, while 11 (52%) selected “no”. The responses to subsequent questions, however, indicate that there may be a higher level of engagement with the scheme, at about 75% of respondents.

4.2 How often do you visit or pass through Grey-to-Green?

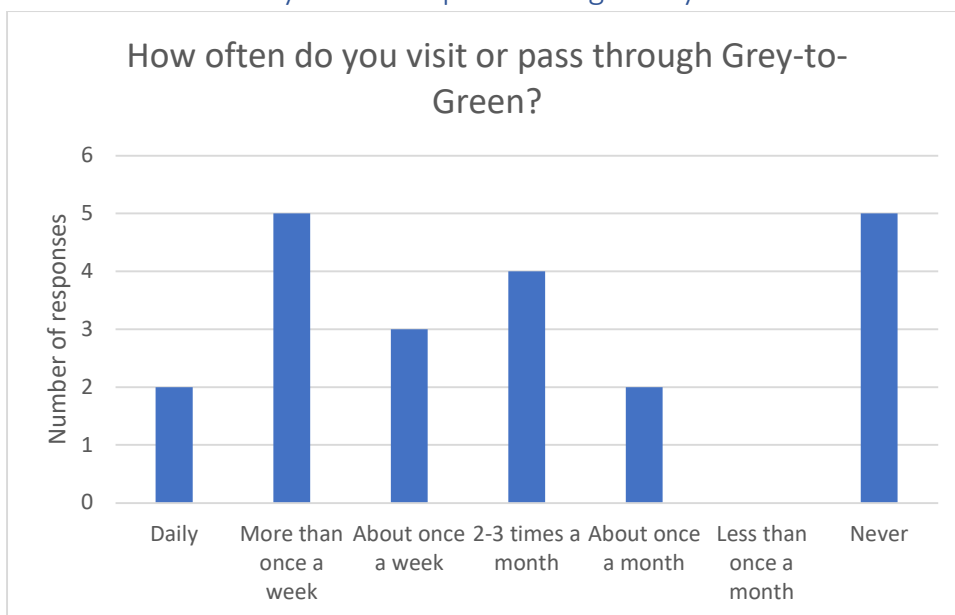
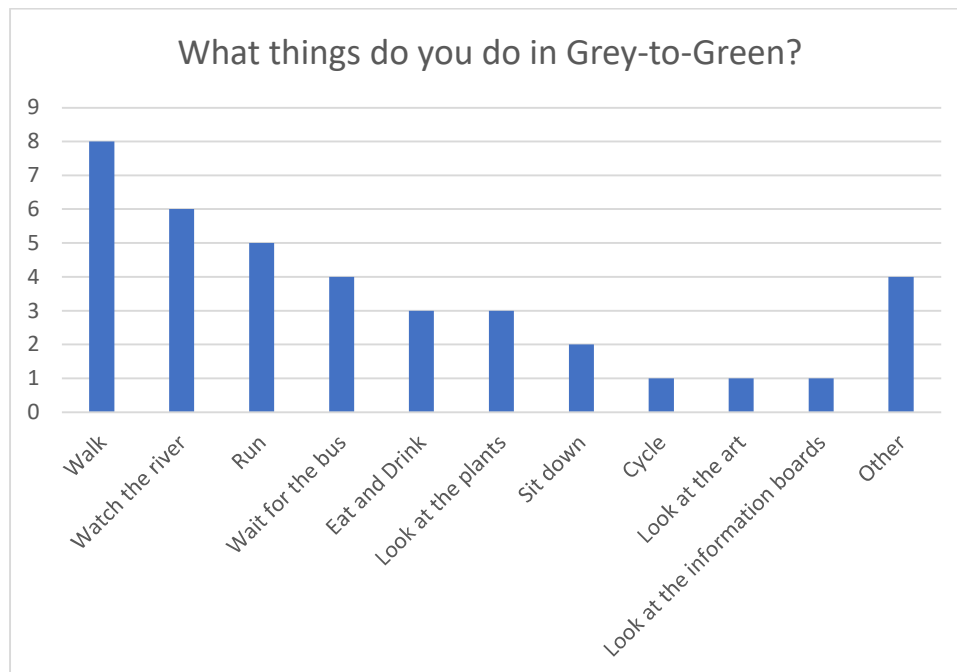


Figure 16: Responses to survey question 2

Just under half of respondents (10 responses), visited or passed through the scheme area at least once a week. Another 6 reported visiting or passing through at least once a month but less than once a week, while 5 respondents reported never passing through the scheme.

4.3 What things do you do in Grey-to-Green?



For this question, respondents were asked to select all the responses that applied to them. The most popular activities in Grey-to-Green were walking, selected by 8 respondents (38%), watching the river, selected by 6 respondents (29%), and running, which was reported by 5 respondents (25%). Reflecting the location of several bus stops within and close to the scheme area, 4 respondents (19%) reported waiting for the bus within the Grey-to-Green area. Of those selecting "other", 2 did not specify further, while one person reported passing through to access the nearby Tesco superstore and one mentioned shopping.

4.4 Do you have any suggestions for what would make Grey-to-Green even better?

9 responses (43%) provided an answer to this question, with four of these focusing on the need for more events or businesses in the scheme area (namely, requests for a market or food market in the area, an ice cream shop & pizza, and more frequent events on Castlegate). Two respondents suggested that more seating would improve the scheme. One requested fresh paint for the wall and guardrail overlooking the river, while the remaining respondents did not have specific suggestions for improvement. One stated that they had not noticed and had not heard anyone mention Grey-to-Green, while the last respondent reported that Grey-to-Green was "great for now".

4.5 Conclusions from survey results

Overall, the results indicate that there is some local awareness of the scheme and its impact, but with potential for improvement. While approximately 50% of respondents

reported being aware of the scheme, approximately 75% reported interacting with Grey-to-Green in some way. The most common activities undertaken in Grey-to-Green were walking, running and watching the river.

Among the suggestions for improvement, four centred around the need for more businesses or events within the scheme, while two requested more seating. The latter request may reflect the concentration of seating in certain parts of the scheme, with much larger gaps between seating areas on Bridge Street in particular.

In terms of social inclusion, the survey results suggest that Grey-to-Green is aiding social inclusion by improving people's standard of wellbeing. One way it does this is by enabling people to access nature in an urban setting. In particular, 6 respondents (29%), reported watching the river from the scheme, while 3 respondents (14%) spent time looking at the plants. The scheme may also have encouraged walking (reported by 38% of respondents) and running (25%), or caused survey respondents to change their walking and running routes to incorporate Grey-to-Green in accordance with the finding that 20-30% of those working in the scheme area had done so (see section 3.2).

The suggestions for improvement suggest that providing additional businesses and events within Grey-to-Green may attract more people to it, which also accords with the original Grey-to-Green provision for a coffee stand on Love Square, and a Café/Bar on Blonk Street. The completion of planned developments near the scheme, notably West Bar One and Castlegate (see section 3.4.2) may provide the footfall needed for these prospective businesses to become viable.

5 How applicable is the Grey-to-Green concept to elsewhere?

While the combination of the relocation of the inner ring-road within Sheffield and the local context of the need to reduce flooding are relatively unique to the scheme, it also shares commonalities with existing and planned schemes elsewhere that indicate the broader relevance of Grey-to-Green's ideas. Three aspects of Grey-to-Green that are relevant to elsewhere and have resulted in Grey-to-Green style initiatives being applied in other schemes, include flood alleviation concerns (as in Cardiff's Greener Grangetown scheme),²⁵ traffic reduction (Connecting Leeds)²⁶, and town centre regeneration (Sheffield Fargate).²⁷

6 Conclusion

Overall, Grey-to-Green has several pioneering elements that have led to it becoming an object of pride for the city of Sheffield, and an example that is looked up to elsewhere. However, this report has highlighted areas where it may improve further in the future, as the scheme gradually helps to bring life to the northern part of Sheffield town centre through planned developments such as Castlegate and West Bar One.

²⁵ <https://www.arup.com/projects/greener-grangetown>

²⁶ <https://www.leeds.gov.uk/parking-roads-and-travel/connecting-leeds-and-transforming-travel/cycling/cycling-strategy-and-development>

²⁷ <https://www.sheffieldguide.blog/2021/01/14/fargate-and-high-street-to-be-reinvented-as-social-hubs-with-15million-future-high-streets-funding/>

7 Bibliography

(Note: this only includes published documents, including those available online. Links for remaining websites used are provided directly in the document).

Alister Scott, E. B. N. D., 2023. Case studies of blue-green infrastructure in spatial planning. *ICE manual of Blue-Green Infrastructure*, pp. 287-303.

Lorente-Arnau, L., 2015. *Project Learning Review Report/ Final Evaluation: Grey to Green Phase 1 - Sheffield Riverside Business District*, Sheffield: Sheffield City Council.

Sheffield City Council, 2020. *Project Learning Review: Grey-to-Green Phase 1*, Sheffield: Sheffield City Council.

The World Bank, 2023. *Social Inclusion*. [Online]

Available at: <https://www.worldbank.org/en/topic/social-inclusion>

[Accessed 11 12 2023].

8 Appendix 1: SADACCA Survey Questions

SADACCA Grey-to-Green Survey

Have you noticed the changes that have taken place on Castlegate and the surrounding streets as part of Grey-to-Green?

- Yes No

How often do you visit or pass through Grey-to-Green?

- Daily About once a month
 More than once a week Less than once a month
 About once a week Never
 2-3 times a month

What things do you do in Grey-to-Green? (Please tick all that apply)

- Walk Sit down
 Run Eat and drink
 Cycle Look at the plants
 Look at the art Look at the information boards
 Wait for the bus Watch the river
 Other:

Do you have any suggestions for what would make Grey to Green even better?

If yes, please write them here

All survey responses will be kept anonymous