



# Creating Sustainable and Equitable Communities in a Post-Covid Context

Development of the Scottish 20-minute Neighbourhood Concept

Anna Mackenzie

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<b>Author</b> Mackenzie, Anna Catriona	<b>Publication type</b> Thesis	<b>Completion year</b> 2022
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<b>Supervisor I</b> Dr. Craig Thomson	<b>Supervisor II</b> Prof. Rohinton Emmanuel	
<b>Title</b> Creating Sustainable and Equitable Communities in a Post-Covid Context Development of the Scottish 20-minute Neighbourhood Concept		
<b>Degree:</b> Master in Urban Climate & Sustainability		
<b>Abstract</b> (400-500 words) <p>The aim of the research is to contextualise the 20-minute neighbourhood in Scotland as a place-based approach to a post-pandemic green recovery; to understand how the concept is being received and understood by stakeholders, including residents, planners, and policy makers; and to gain insight into the opportunities and barriers to implementation and success.</p> <p>A mixed-methods qualitative approach was taken with four phases of study and analysis based on evidence gathered from a diverse range of primary and secondary sources, including literature, interviews, workshops, and comments from a public consultation project.</p> <p>Emergent themes of Liveability, Community, Resilience, Changing Behaviour, Barriers &amp; Constraints were found from interviews with stakeholders, working or involved in research, decision making, or project delivery within urbanism, policy, and planning in Dundee &amp; the Tay region, and across Scotland.</p> <p>Workshops with residents used the Place Standard tool to understand how they felt about, used, and moved around their neighbourhoods as well as their experiences of place during the pandemic. Mapping was used to understand how the neighbourhoods were performing as 20-minute neighbourhoods and to identify significant barriers to access and connectivity. Physical and mental barriers included accessibility, safety, topography and a lack of infrastructure. Neighbourhoods with greater access to amenities, greenspace, and community support, were more resilient to the negative impacts of Covid-19 restrictions.</p> <p>The 20-minute neighbourhood is about living well locally, by meeting the daily needs of residents in their local areas, including the opportunity to live, work, support and enhance their local neighbourhoods. This study shows the importance of it being adaptable and localised, recognising that especially place-based solutions are unique to each community or area. It also shows that critical infrastructure is needed before new areas are developed and that incremental interventions are vital for achieving and sustaining meaningful cultural change in attitudes and habits.</p> <p>The study shows the importance of connectivity, supporting active travel networks and public transport infrastructure to connect people and communities with thriving, liveable, healthy, safe, and accessible neighbourhoods, while reducing car-dependency and emissions.</p> <p>Local planning policy and priorities need to be aligned with actions to achieve national and global climate targets, while building a stronger, fairer, more economically, socially, and environmentally sustainable world.</p> <p>20-minute neighbourhoods provide an easily understood and transparent tool, which if adopted in an overarching strategy, can empower communities and coordinate stakeholders' efforts and actions towards a timely solution to our critical climate problem.</p>		
<b>Keywords</b> 20-minute, Neighbourhood, Community, Placemaking, Covid-19, Green Recovery, Just Transition, Scotland		
<b>Originality statement.</b> I hereby declare that this Master's dissertation is my own original work, does not contain other people's work without this being stated, cited and referenced, has not been submitted elsewhere in fulfilment of the requirements of this or any other award.	<b>Signature</b>	

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## Dedication

Til Pappa,  
Takk for alt.



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## 1.0 Introduction

### 1.1 Rationale

In response to the climate crisis, and in line with the Paris Climate Agreement, Scotland committed in 2019 to stringent and ambitious net zero target for emissions of all greenhouse gases by 2045. The aim of this target is to keep the average global temperature rise well below 2°C. Following COP26 it is clear that our current plans are not doing enough to achieve this target and our planet is on course for a minimum global temperature rise of 3, if not 4°C. (Climate Change Committee, 2021).

In Scotland, rising global temperatures and sea level rises will result in increased flooding, and extreme weather events such as heatwaves and storms. (Adaption Scotland, 2019). Urban Heat Island effects will increasingly impact our cities and our fauna, flora and biodiversity will be adversely affected. (Emmanuel & Loconsole, 2015)

Adapting and adjusting our physical and mental spaces will be vital in creating resilience within our communities, and in mitigating the worst impacts of climate change while ensuring that we are equipped to deal with the economic, social, and environmental shocks. Essential changes to achieve these goals involve, among other issues, reducing car-dependency and improving active travel networks.

Transport is the largest sector source of greenhouse gas emissions in Scotland, equivalent to 36% of total emissions (14.8 million tonnes of CO<sub>2</sub>) in 2018. The transport sector has achieved only a 0.5% reduction in emissions from 1990 levels. A 41% reduction is expected by 2032, due in part by a reduction in distances travelled by car and a move towards ultra-low emission vehicles. (Berry *et al.*, 2021).

During the Covid-19 pandemic, travel restrictions resulted in a significant but temporary reduction in transport emissions. Cars account for the single biggest source of emissions, with over 39% of total transport emissions. As restrictions ease, a rebound in emissions is expected. In order to achieve our net zero targets a significant behavioural shift is required. (Berry *et al.*, 2021)

The global Covid-19 pandemic has had a devastating economic and social impact worldwide. It has accelerated the need for, and pace of change in, our economy and tested the resilience of communities. It has brought into focus the limits and opportunities of place and highlighted

vast inequalities of resilience and experience of individuals and communities in the types of access and quality of space and services (strongly influenced by quality of amenities, travel networks, and public green spaces).

The pandemic has affected the way that many governments (Scotland included) will action their emission reduction targets to ensure that priority is given to the wellbeing of their citizens through supporting the economy. In some cases, this has resulted in downgrading and reducing climate targets in order to bolster economic recovery. In Scotland the focus is on a “Green Recovery” as a solution to the “tough balancing act to meet our economic, environmental and social needs in order to overcome Covid-19 and the climate crisis so we can build a stronger, fairer, more sustainable world.” (Zero Waste Scotland, 2020) A key part of achieving these goals is by supporting the creation of a net-zero economy and reducing health and transport inequalities while ensuring a fair and just-transition for workers. (Just Transition Commission, 2022)

The 20-minute neighbourhood concept, (also known as the 15-minute city; these concepts are largely interchangeable (Moreno *et al.*, 2021)) is one of the many solutions that is currently being explored by politicians, planners, citizens, and decision-makers around the world as a tool or framework to help cities decarbonise. It aims to do this by reducing car dependency and promoting active and green travel, while keeping the social wellbeing of its citizens at the forefront of plans (C40 Knowledge Hub, 2020; O’Gorman & Dillon-Robinson, 2021).

The premise is that people can access all of their daily needs within a 15 or 20-minute walk (or “wheel”, i.e. active travel) from their home. Broadly speaking this includes opportunities for work, recreation, education, and access to goods and services such as healthcare, groceries, transport infrastructure and greenspaces.

The long-term impact of the Covid-19 pandemic on our communities is largely unknown, with the full impact on the economy still to be felt. The economic impact on city and town centres has been particularly acute. A concern for planners and policy makers is that because people are no longer tied to a specific location for work, other priorities, such as access to outdoor space, green infrastructure or better housing encourage people to move out of the cities and add to the pressures of urban sprawl (Liu & Su, 2021).

In attempting to address this issue, two questions immediately present themselves; firstly, how do we adapt and develop neighbourhoods to improve sustainability in the post-Covid landscape of increased digital home working, greater need for accessible quality greenspaces and strong community support networks? And how can we reorganise our urban centres to improve liveability and therefore maintain density and promote sustainability?

The longer-term effects of the shift in behaviour patterns due to the pandemic is yet to be seen but as we start to recover many nations and leaders are seeing it as an opportunity to shift the economic recovery towards a new greener and fairer society.

The ambition and hope for the 20-minute neighbourhood is that it can help communities deal with 3 key issues – ever increasing social inequality, a growing mental health crisis (exacerbated by the pandemic) and the climate crisis which requires urgent action.

## **1.2 Aim:**

The aim of the research is to contextualise the 20-minute neighbourhood as a place-based approach to a green recovery, and to gain insight into the opportunities and barriers to successful implementation; and to understand how experiences during the Covid-19 pandemic are shaping placemaking, planning and policy in Scotland.

## **1.3 Objectives:**

### **Objective 1.0**

Explore the definition and understanding of the 20-minute neighbourhood in the Scottish policy and planning context; ultimately, to understand how the concept is being received and understood by stakeholders.

### **Objective 2.0**

Understand the impact of the Covid-19 pandemic on perceptions of neighbourhood, community, sustainability, and place.

### **Objective 3.0**

Explore how existing neighbourhoods are performing as 20-minute neighbourhoods, and to explore barriers and opportunities to implementation and success of the concept.

## 2.0 Literature Review

### 2.1 Background

The emergence of the Covid-19 pandemic has exposed vulnerabilities within cities, and has sparked conversations around the resilience of cities, particularly to the kind of social, economic and health shocks that have been brought about by the Covid-19 pandemic and associated lockdown measures. For many the experience has highlighted the importance of place in supporting the health and wellbeing of residents. (Moreno *et al.*, 2021)

The 15-minute city /20-minute neighbourhood is a relatively simple concept where a citizen should be able to access all of their everyday needs, including essential services, jobs, culture and leisure activities within a 15 or 20-minute walk or cycle from their homes. The concept has gained popularity in the media and has been adopted by cities, mayors, urban planners, and organisations such as C40 Cities and the Global Covenant of Mayors for Climate and Energy. (C40 Knowledge Hub, 2020; Moreno, 2020; Nieuwenhuijsen, 2021; Whittle, 2020)

There are many similar proximity and place based urban planning concepts which have emerged in recent years. Variations exist in the criteria, definitions, outcomes and aims but there is shared recognition of the relationship between sustainability, health, and wellbeing. (Nieuwenhuijsen, 2021) .Walkable neighbourhoods in Shanghai were found to promote social equality and improve health outcomes (Weng *et al.*, 2019). The 3 – 30 – 300 Rule (3 visible trees from your home, 30% tree cover in your neighbourhood and 300 metres from the nearest park of green space)(Konijnendijk van den Bosch, Cecil, 2021) is being promoted in policy circles following research showing that urban forests can improve mental health and increase social cohesion (Rugel, 2019). Critically, green infrastructure helps to mitigate the effects of climate change in our cities by reducing the heat island effect, providing shade, improving natural habitats, and can reduce pollution and flooding. (Emmanuel & Loconsole, 2015).

The 20-minute neighbourhood incorporates many of these ideas and focusses attention on a recovery from the pandemic based on the human experience of city. The concept supports and shares many aspects of the Circular Economy, such as promoting local investment; business use; connectivity and connections; social enterprise and sharing resources (Ellen Macarthur Foundation, 2017).

Only a few cities globally have so far adopted the concept, each has developed its own local approach to implementation. Notable examples include; Portland (Portland Plan: Complete Neighbourhoods 2012), Melbourne (Plan Melbourne 2017 – 2050: 20-minute Neighbourhoods 2017) and Paris (Ville Du Quart D’Huere 2021).

## 2.2 The 15-minute City Model

In a TED Talk in 2016 Carlos Moreno proffered the 15-minute city, an innovative urban planning concept based on proximity of services (Moreno, 2020) Working with Paris Mayor Anne Hidalgo, this developed a place-based urban planning approach to transform Paris (Moreno, 2020).

Mayor Hidalgo won re-election as Paris mayor on a campaign of transforming Paris to a people-friendly city, building on the idea that most people should be able to meet their daily needs within a short walk or bike ride. The ambition is to remove over 75% of parking places and have dedicated and protected cycle paths on all Paris streets. The concept of a 15-minute city has been adopted as part of the plan – “Ville Du Quart D’Huere”, creating a series of neighbourhoods where everything you need is 15 minutes from home.

For the present “15-minute” concept, Moreno proposes that residents will be able to enjoy a higher quality of life where they will be able to effectively fulfil six essential urban social functions to sustain a decent urban life. Those include (a) living, (b) working, (c) commerce, (d) healthcare, (e) education and (f) entertainment.”(Moreno *et al.*, 2021).

It has been argued that many of the attributes of a 15-minute city are common to past “design flagship” schemes, projects and proposals. These include Accessibility, Walkability, Density, and Design Diversity; however, the defining difference for 15-minute cities is the change from *accessibility* to *proximity* of services. The concept is a “Rethink of resource allocation on a city-wide scale” (GeorgiaPozoukidou & Zoi Chatziyiannaki, 2021).

(Moreno *et al.*, 2021) propose a modified “15-minute city” framework to support urban recovery from Covid-19 which builds on the original concept developed by Moreno (2016). They argue that cities would be better placed to deal with the effects of the pandemic on city dwellers if they had prioritized the 4 dimensions (identified in table 1 below).



Table 1 - 4 Dimensions of 15-Minute City Framework (Adapted from Moreno et al. 2021)

Dimension	Attributes
Density	Optimum density to support local service and economy while ensuring adequate provision of open and recreational space.
Proximity	Proximity of services over accessibility better in terms of infection control and safety in the context of a pandemic Proximity to food, medical care, leisure, culture, transit and education
Diversity	Mixed use neighbourhoods are key to an economic sustainability of urban centres Recognition that not everyone's needs are the same. Community consultation is important to ensure that a wide range of needs are met, and no one is left out.
Digitalization	Bike sharing and sensor technologies for safety Online shopping Digitalisation to allow for working from home



Figure 1 - Proposed Dimensions of a 15-Minute City (Moreno et al., 2021)

### 2.3 The 20-minute Neighbourhood Model

In Scotland, the consensus between national and local governments and key partners is to work towards a 20-minute neighbourhood concept, where service proximity is based on a 20-minute walk; 10 there and 10 back. (Brice & Sustrans, 2019; O'Gorman & Dillon-Robinson, 2021).

The Scottish Government has defined this distance as 800m. (Director-General Communities & The Scottish Government, 2021). This distance is based upon Melbourne's 20-minute neighbourhood model (Gunn *et al.*, 2017; Victoria State Government, 2019). The Melbourne model was developed for new suburban developments on the outskirts of Melbourne, with a focus on creating walkable neighbourhoods to foster healthy, liveable communities with a strong sense of community (Victoria State Government, 2021).

The Melbourne plan has developed a framework which identifies a number of elements central to a 20-minute neighbourhood. These elements are grouped into 6 categories (see Fig.2); travel & transport, employment & economic opportunities, access to commerce & healthcare, education, greenery & recreation, and housing & safety. (Victoria State Government, 2021).

The context of this and similar were mostly developed pre-pandemic and focus on tackling climate change through improving active travel or promoting health and wellbeing; although key aspects are easily transposed and adopted, care should be taken to ensure the suitability and relevance of proposals for post-pandemic planning.



Figure 2 - Features of a 20-Minute Neighbourhood, Melbourne Model (Victoria State Government, 2021)

## 2.4 Impact of the Pandemic

The global pandemic caused by Covid-19 has changed the way we live, work and interact with our local communities. It is accelerating changes that are already occurring in the context of the digital economy and globalisation.

The move to working from home for many people made them realise the amount of time wasted commuting and the inefficiency of “clock-watching” hours in the office. As a society we are beginning to realise the difference between productivity and time. (Whittle, 2020). For many, the pandemic has resulted in a “new relationship between citizens and the rhythm of life in cities.” (Moreno et al., 2021)

“People want to live somewhere where they can comfortably work from home, and if people are going into the office in the middle of town less often, they also want some of that infrastructure—the gyms, restaurants, bars—closer to home” (Bloomfield, 2020).

The pandemic also highlighted the deep-rooted inequalities in terms of health, wealth, physical space, safety, and comfort that impacted people’s experiences. (Bambra, Riordan, Ford & Matthews, 2020).

In terms of how the design of our homes and communities impacted our experiences, a survey of 2,500 UK households by the Place Alliance during the first UK Lockdown in March 2020 found that the distance to services from your home is a key indicator of satisfaction. A 5 to 10-minute walk had greatest satisfaction, with satisfaction dropping down with distance. (The Place Alliance *et al.*, 2020). This aligns with research from Melbourne, where the term 20-minute neighbourhood originates, showing that people are willing to travel up to 10-minutes by bike or foot to reach local services or amenities. (Gunn *et al.*, 2017).

The research also found that newer homes were less comfortable than older homes (The Place Alliance *et al.*, 2020). This could in part be due to the fact that new homes are up to 20% smaller than they were in the 1970s (Wayne Hemingway, 2018) with the resulting low ceilings, small rooms, and lack of adequate storage, flexibility and adaptability in terms of layout, all having a negative impact.

There was a progressive deterioration of the neighbourhood experience during lockdown relating to how recently neighbourhoods had been established (the older the better).

Access to private outdoor and quality green space was a key indicator of comfort during the pandemic. Houses fared better than flats, as these were more likely to have access to private outdoor space (The Place Alliance *et al.*, 2020).

## 2.5 Diversity

Diversity in the context of the 20-minute neighbourhood is multifaceted. At its most basic level it refers to the diversity of services and amenities required for the “complete” mixed-use neighbourhood with “a healthy mix of residential, commercial and entertainment components” in order to meet the needs of the people who inhabit it (Moreno *et al.*, 2021).

Most importantly however, it refers to the recognition that not everyone’s needs, or experiences are the same. “This diversity of experience, or “experiential equity,” needs to be accounted for in urban design decisions.” (Capasso Da Silva, King & Lemar, 2019).

Inclusive, careful, and systematic consultation with the people who live, work and experience these communities is important to ensure that the needs of a community are properly understood before any intervention takes place. (Capasso Da Silva, King & Lemar, 2019).

In terms of housing, this translates to making sure our neighbourhoods are designed and built to encourage and support these needs, by ensuring that new communities are provided with the necessary infrastructure and services, and that existing communities are adequately supplied with a variety of housing types and tenures in order to ensure a vibrant and inclusive community that can actively support the local economy and services (Beautyman & Douglas, 2020; C40 Knowledge Hub, 2020; Moreno *et al.*, 2021; O’Gorman & Dillon-Robinson, 2021; Scottish Government, 2020a).

The benefit of mixed housing types and sizes in supporting multi-generational communities, where it is also important to ensure that the urban landscape is suitable for people with different mobility and care needs, was noted by Beautyman & Douglas, 2020. Examples given included landmarks within the urban form to assist people with cognitive impairments to navigate (Beautyman & Douglas, 2020)

## 2.6 Density

Density is an important factor in the 20-minute neighbourhood concept. The competing priorities of ensuring a diversity of land use, ensuring the critical mass of people to support these services and providing adequate open green space for the population mean that the optimum density for a 20-minute neighbourhood needs to be carefully considered (Moreno *et al.*, 2021; Shatu & Kamruzzaman, 2021).

Historically, overpopulation, high-density and poor housing quality are a public health issue and have been linked to poor health outcomes. Climate change is increasingly impacting the spread of infectious disease (Semenza & Menne, 2009) and high-density poor-quality housing has been associated with Covid-19 outbreaks during the current crisis (Lai, Webster, Kumari & Sarkar, 2020). In the context of emerging from and avoiding the devastating effects of a future viral pandemics, it is important that the right balance is found (Lai *et al.*, 2020)

The specific density required for a successful 20-minute neighbourhood is hard to quantify as each country, city or neighbourhood is different and has a different topographical, economic and historic character, presenting various issues and opportunities.

A study exploring the Melbourne Plan concluded that the optimum density for “A city of 20-minute neighbourhoods” in Greater Melbourne, Australia was approximately 92 persons per hectare or 36 households. This density was arrived at through mathematical modelling to provide the maximum number of “opportunities” to access community infrastructure such as schools, healthcare, sports facilities and public transport (Shatu & Kamruzzaman, 2021).

The current density of developer-led suburban housing in Scotland is approximately 30-35 houses per hectare; this would be classified low density when compared to the UK as a whole. These developments are typically constructed on peripheral greenfield sites and would include detached and semi-detached homes with gardens and driveways and maybe include some flats or terraced houses. The population of these developments is typically too low to sustain and support local services, and so these are typically car oriented. The provision of affordable housing within these estates could bring with it issues of inequality and isolation if there is no local access to services without a car. (Beautyman & Douglas, 2020)

Edinburgh City Council proposes a minimum density of 65 dwellings per hectare, preferably within mixed use developments on brownfield sites to achieve 20-minute neighbourhoods.

A benefit of a “critical mass” of population means that neighbourhoods can support more amenities and services within walkable distances. Mixed-use dense developments should safeguard the provision of local business and employment opportunities to ensure that spaces and amenities are available (Beautyman & Douglas, 2020). Higher populations and denser communities can support alternative transport options such as frequent bus services and car and bike sharing schemes, thus reducing car dependency and use (Beautyman & Douglas, 2020).

## **2.7 Health and Wellbeing**

20-minute neighbourhoods have the potential to improve health inequalities by improving access to primary health services. If these services are within walkable distances, they are more accessible and can benefit a larger and more diverse range of users. Walkable neighbourhoods can have a positive impact upon health and wellbeing and have been found to reduce obesity and diabetes related illnesses by encouraging walking and exercise (Howell *et al.*, 2019; Weng *et al.*, 2019). Research has shown that people are generally happy to travel up to 20 minutes by foot in order to access day to day services (Gunn *et al.*, 2017; O’Gorman & Dillon-Robinson, 2021).

Before the pandemic (2019) less than half (43%) of all journeys under 2 miles were made by foot, with less than 2% of these by cycle (Transport Scotland, 2019). However, research has also shown that 80% of journeys under a mile are made on foot. Increasing the proximity and accessibility of services and amenities to under a mile should therefore reduce the number of short car journeys and increase the total number of journeys made by foot.

Access to Urban Green Space (UGS) for exercise and recreation has positive physical and mental health benefits and can reduce stress and anxiety (Brooks *et al.*, 2020). This is especially important during times of stress, such as the Covid-19 Pandemic where social distancing policies increased peoples’ stress, grief and isolation (Brooks *et al.*, 2020). The pandemic and associated travel restrictions also had the positive effect of helping people discover and better utilise the existing greenspaces in their local communities (Venter *et al.*, 2020).

However, restrictions imposed throughout 1<sup>st</sup> and 2<sup>nd</sup> waves of the pandemic resulted in the closure of some public parks and recreational spaces amid concerns of a lack of social

distancing and potentially overcrowded UGS. These closures compounded perceived inequalities in access (Lopez, Kennedy, Field & McPhearson, 2021).

## 2.8 Transport Inequality

A study of several new and recent housing developments in England found that most developments were oriented towards, and encouraged, car use. Whether by deliberate or accidental design, there was a lack of opportunities for public transport, with poor transport links and a lack of infrastructure creating physical and psychological barriers to walking and cycling (Transport for New Homes, 2018).

Many of the new housing developments in Scotland follow a similar pattern of out of town or peripheral development without an integrated approach to transport or services.

Building housing developments or communities that are only accessible by car increases inequality and has a negative economic and social impact on the community. People who are not able to own or drive a car are excluded from accessing services and jobs. These communities more likely to become isolated and trapped in a cycle of poverty and deprivation. (Architecture and Design Scotland, 2018b)

Low-income households are less likely to have access to a car, with 40% with no access to a car. This has a negative impact on access to healthcare, education, and local shops, and reduces opportunities for employment. (Lucas, Stokes, Bastiaanssen & Burkinshaw, 2019)

Increasing options and opportunity for active travel gives people choices but also addresses some of these inequalities in line with the principles set out by the Just Transition Commission (Just Transition Commission, 2022; O'Gorman & Dillon-Robinson, 2021).

The infrastructure for active travel such as walking and cycling to access services - as well as the services themselves - needs to be in place before residents move in or this might have a negative impact on the residents. Particularly vulnerable are the health outcomes of high-density and isolated neighbourhoods (Architecture and Design Scotland, 2018a; Beautyman & Douglas, 2020; Beveridge, Biberbach, Hamilton & C, 2016; Brice & Sustrans, 2019; The Scottish Government, 2020b).

The proposed National Planning Framework (NPF4) seeks to address some of these issues by proposing an “infrastructure first approach” to development and planning (Director-General Communities & The Scottish Government, 2021).



## 2.9 Scottish Policy & Context

The Scottish government is “committed to delivering a place-based approach to support Scotland’s Green Recovery” (O’Gorman & Dillon-Robinson, 2021)

As part of this commitment the adoption of a 20-minute neighbourhood approach “where people can meet their needs within a 20-minute walk from their house” is currently being supported by a number of policies and commitments as set out by the Scottish government in the wake of the Covid-19 pandemic. This is aimed at “enabling people to live better, healthier lives and supporting our net zero ambitions” (Scottish Government, 2020a).

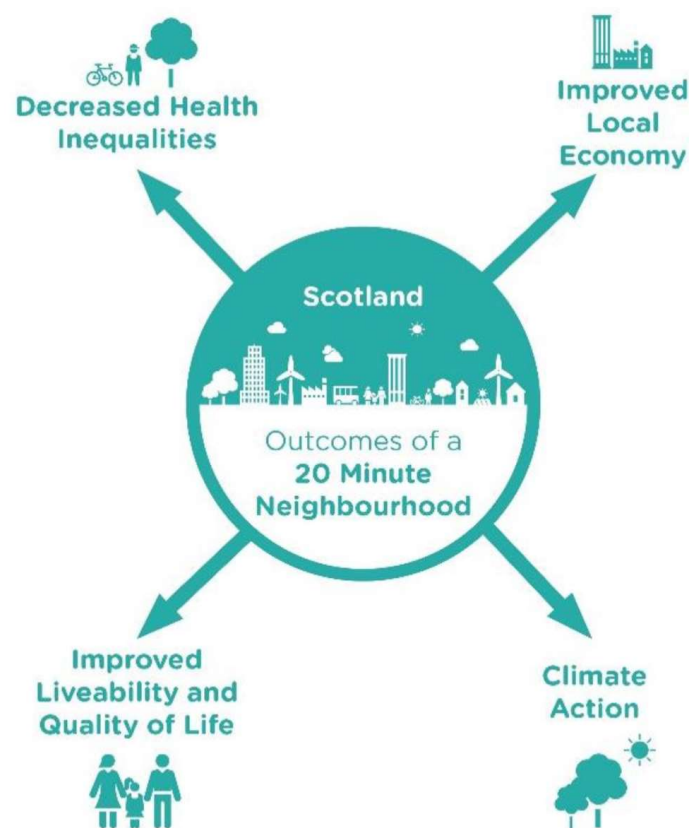


Figure 3 - Outcomes of a 20-minute neighbourhood - Ramboll / Climate Xchange (O’Gorman & Dillon-Robinson, 2021)

20-minute neighbourhoods are mentioned in The Programme for Government 2020, Infrastructure Investment Plan for Scotland 2021-22 to 2023-26, the Climate Change Plan Update 2020 and the proposed NPF4 (Director-General Communities & The Scottish Government, 2021; O’Gorman & Dillon-Robinson, 2021; Scottish Government, 2020a; The Scottish Government, 2019; The Scottish Government, 2020a).

The National Planning Framework 4 (NPF4) is the long-term spatial plan setting out proposed development and infrastructure, national planning policies and a decision-making framework to support sustainable and inclusive growth for Scotland to 2050 (Director-General Communities & The Scottish Government, 2021). The plan (currently out for consultation) recognises and prioritises climate change action as the driver for its vision and plans. The Plan for Scotland 2050 includes a plan for net-zero emissions, a plan for resilient communities, a plan for a well-being economy and a plan for better greener places (Director-General Communities & The Scottish Government, 2021).

All of these plans and outcomes can be supported and enhanced by the 20-minute neighbourhood concept.

With the aim of ensuring that neighbourhoods are “walkable, liveable and thriving”, there are three 3 necessary elements proposed for a well performing 20-minute neighbourhood in Scotland; there is adequate provision of the required Features and Infrastructure (i.e. services, shops, active travel, and green infrastructure); there is a minimum Quality of Services and Experience and there is a community willing to participate in Engagement and Behavioural Change (O’Gorman & Dillon-Robinson, 2021)

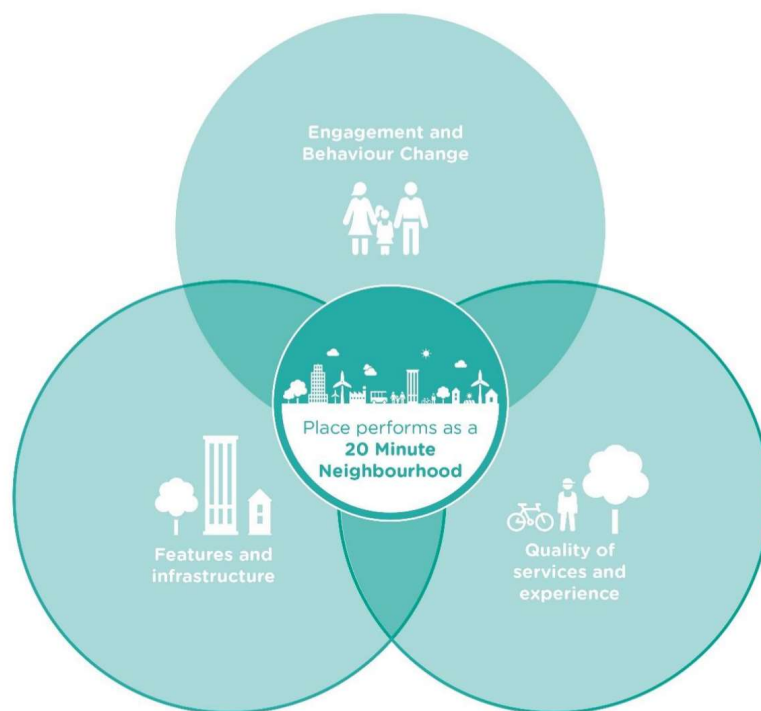


Figure 4 - Necessary elements of a performing 20-minute neighbourhood - Ramboll / Climate Xchange (O’Gorman & Dillon-Robinson, 2021)

## 2. 10 Dundee Context

Dundee is Scotland's 4<sup>th</sup> largest city, with an estimated population of 148,820. It has the second highest population density in Scotland, due in part to tight city boundaries and rapid industrial development in the 19<sup>th</sup> century (National Register of Scotland, 2021). The city has an Oceanic (Köppen-Geiger classification Cfb) climate, with typical rainfall and temperature for the east coast of Scotland (Grieser *et al.*, 2006).

The city is located on the north bank of the Tay estuary on the east coast of Scotland. An established and important trading and whaling port, the city expanded rapidly in the 18<sup>th</sup> and 19<sup>th</sup> century with the manufacture of jute products which relied on the ready supply of whale oil. The economy grew on "Jute, Jam and Journalism" and in. In the post war years, Dundee became the principal manufacturing base for light engineering, and microelectronics companies. These industries declined at the end of the last century. The city has suffered from post-industrial economic decline but is reinventing itself as a design and cultural centre, propelled by the opening of the V&A and proposed Eden Project. The city is now an important centre of development and education for the biomedical science, and video game industries.

Most of the land is classified as Dense Urban, typical for most of the population of Scotland (71%) who live in 'Dense Urban' or 'Other Urban' areas - as defined by the Scottish Government Urban Rural Classification 2016 (Scottish Government, 2018).

The city has been chosen as the base for this study, because it exemplifies a typical Scottish city, being a post-industrial city, which developed rapidly in the 19<sup>th</sup> century. The housing stock and nature of urban expansion over the years reflects national construction and planning policies and trends and a similar pattern of growth can be found in most Scottish towns and cities. It suffers from a range of social and economic issues related to industrial decline, unemployment, poverty, and ill health. Demographic issues include an ageing and declining population (National Register of Scotland, 2021).

It is also the home of the author and therefore, along with the knowledge and experience of the interviewees, stakeholders, and residents, allowed additional insights and reflection on the local conditions.

The lessons and outcomes from this study are however equally applicable to other towns and cities throughout Scotland, as it aims to identify commonalities in a Scottish context.



### 3.0 Methods

#### 3.1 Approach

A mixed-methods qualitative approach was taken, to allow analysis of diverse data from a range of primary and secondary sources.

A pragmatic approach was taken regarding the collection of primary data (interviews, workshops, and public comments). The pandemic and associated restrictions presented opportunities to gain specific insight into the public’s experiences and feeling of place. It also presented some limitations; interviews were necessarily mostly conducted via videoconferencing software, and the number of residents able to participate in the workshop was limited by restrictions on households meeting.

The aim of the research is to contextualise the 20-minute neighbourhood as a place-based approach to a green recovery, and to understand how the concept is being received and understood by stakeholders, including residents, planners and policy makers, and to gain insight into the opportunities and barriers to implementation and success.

In line with the research aims and outcomes, 4 phases of study and analysis were conducted in order to collect, review, and critically analyse various sources of primary and secondary data (literature, interviews, workshops, and public comments).

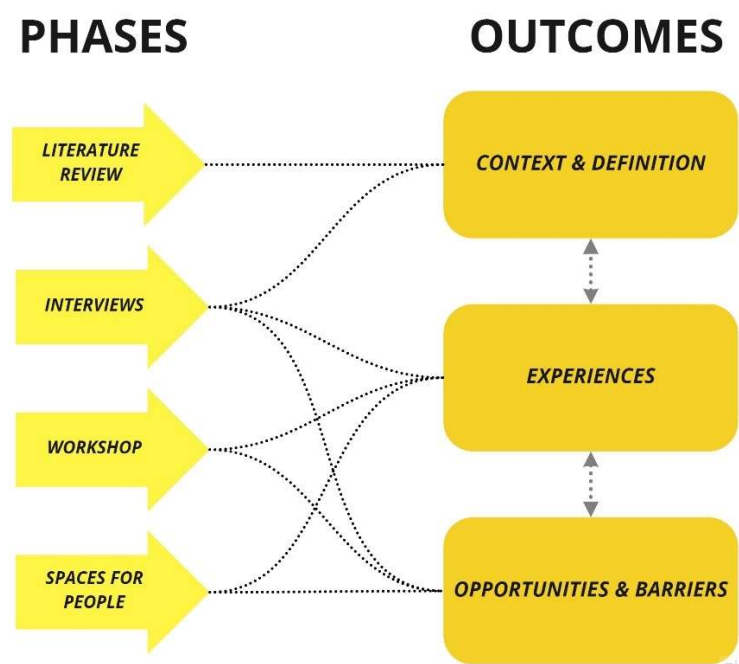


Figure 5 - Illustrated Methodology - phases of study and related outcome (Mackenzie, 2022)

### 3.2 Phase 1: Literature Review

In order to understand the definition and context of the 20-minute neighbourhood concept, and review and apply lessons from international and local examples, the first phase of research was to conduct a literature and scoping review. This was performed as a qualitative narrative review.

The aim of this was to understand the background, academic literature, and policy context of this relatively new and emerging urban concept. A structured, systematic search utilising Boolean logic (*e.g.*, “15-minute” OR “20-minute” OR 20 AND minute AND community OR neighbourhood – green recovery, walkable neighbourhood, liveability *etc.*) was performed utilising the university library to access appropriate databases with published journal articles and research papers, as well as web-based search engines and additional databases (Google Scholar.)

Using a modified PRISMA guideline approach, results were then filtered based on relevance; a citation search was also used to find further relevant papers or data in papers identified in the first round. The included papers were then assessed for relevance at an abstract level, and again at a full-paper level. Relevant policy papers and reports, news and blog articles were found by searching the official websites of the relevant organisations (related to planning policy, built environment, urbanism *etc.*), and included in the analysis where relevant.

Included literature was then coded and qualitatively synthesised into a structured narrative review in order to provide context and understanding of the definition of a 20-minute neighbourhood.

### 3.3 Phase 2: Interviews

Semi-structured Interviews with relevant professionals and stakeholders were carried out in order to gain understanding of how the 20-minute neighbourhood concept is being received and understood, and to gain insight into the impact of the pandemic and opportunities and barriers to implementation and success.

Stakeholders were defined as people or organisations working or involved in research, decision making, or project delivery within urbanism, policy, and planning in Dundee & the Tay region, and across Scotland (Appendix 1).

The resultant stakeholders who agreed and were able to be interviewed included experienced urban and planning practitioners, politicians, decisions makers and academics.

Four interviews were carried out with five stakeholders in October and November 2021. The interviews were carried out both in person and via video-conferencing software and lasted between 30 minutes and an hour. A semi-structured interview process was utilised to enable wider discussion of themes and ideas and gain valuable insight into individual (subjective) opinions and experiences. The questions were tailored to the individual depending on their background, role and experience.

Typical questions included:

- *What is your understanding or definition of the 20-minute neighbourhood?*
- *How has the pandemic affected you / your work/ projects?*
- *Do you think it will have a lasting impact on the way we work / live / urban / place?*
- *What do you think the barriers to success and implementation are?*
- *What do you consider the most important aspect for a sustainable place / community success / wellbeing?*
- *Who do you think is responsible? Local or national government, planners, policy makers or individuals?*

The interviews were recorded and transcribed. Following this a process of thematic analysis was performed using qualitative analysis software (NVivo 12 Pro) to code data and find emergent themes. An editing and immersive approach was used in a process of data familiarisation, coding, and reviewing to define the themes and generate findings (Bloomberg & Volpe, 2015).

### 3.4 Phase 3: Workshop:

To understand how residents feel about, use, and move around their neighbourhoods and to gain insight into how the pandemic has impacted them, a workshop was organised with a number of local residents. The residents were all mothers with young children and lived in a diverse selection of neighbourhoods across the city. Due to Covid-19 restrictions, the number of participants was limited; 5 workshop participants volunteered to participate in the workshop, however, due to rules relating to track and trace, (testing and isolation) only 2 participants were able to attend the workshop on the day. The workshop was held in July 2021.

The workshop was facilitated by the author and conducted using the Place Standard Tool and a mapping exercise as a framework for discussion.

The Place Standard Tool helps to structure conversations and discussions about both the physical and social aspects of place. (The Scottish Government, NHS Scotland & Architecture and Design Scotland, 2017). The participants are asked to rank 14 aspects (i.e. feeling safe, access to green space, transport, etc) from 1 to 7 (1 is the lowest score and 7 is the highest) this is then plotted on a compass and produces a graph that shows us the relative strength of a place. It is an easy and accessible way of graphically illustrating aspects of the neighbourhood that are performing well and aspects that need improving. (The Scottish Government, NHS Scotland & Architecture and Design Scotland, 2017). The Place Standard Tool supports the delivery of the Place Principle and aligns with the Place and Wellbeing Outcomes and the National Performance Framework. (Improvement Service, 2021) The Place Standard aspects align with many of the outcomes of the 20-minute neighbourhood.

The mapping exercise asked participants to locate the services and amenities they use and identify the physical limits and perceptions of their neighbourhood area. Participants also indicated the typical walking or travel routes they use and identify any barriers or missing services (physical, social, perceived), as well as suggestions for positive intervention or opportunities for improvement.

In addition, workshop participants were specifically asked about their experiences during the pandemic; questions focused on how the experience affected them and their families, and whether it changed how they felt about or interacted with their home and local area?



### 3.5 Phase 4: Spaces for People

In order to gain insight into how Dundee City is performing as a 20-minute city, data analysis was carried out on qualitative secondary data in the form of public comments on the Spaces for People project website. (Dundee City Council, 2021) The Spaces for People project was a public consultation process that allowed the public to comment on conditions and highlight the locations where interventions or improvements could be made to support active travel during the Covid-19 Pandemic.

The data provides a contemporary record of public views and opinions, which gives us a unique insight into the impact of the pandemic on how people use, perceive, and move about the city. The data is publicly available to view (at the time of writing) via the Spaces for People Dundee website - <https://dundeespacesforpeople.commonplace.is/>

Analysis was performed by using measuring incidence of key phrases (comments) relating to two questions: “What is the problem?” and “How could we make it better” .

The participant leaving the comment would answers these questions by selecting a series of pre-determined phrases or comments. (e.g. “Fast traffic“, “No safe way to cross road” or “Make the crossing automatic”)

These specific phrases were unique to each question which allowed for accurate measurement.

The comments were all pinned to a location on a map of the city giving us graphic information about the areas that were performing well or poorly.

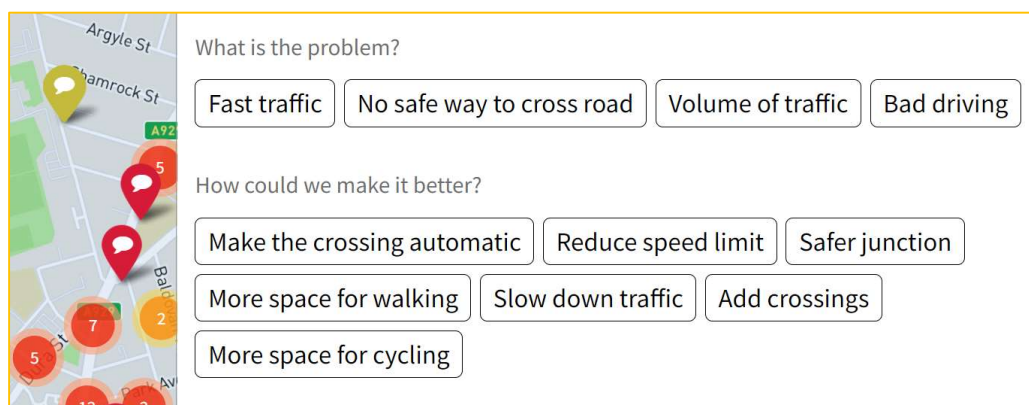
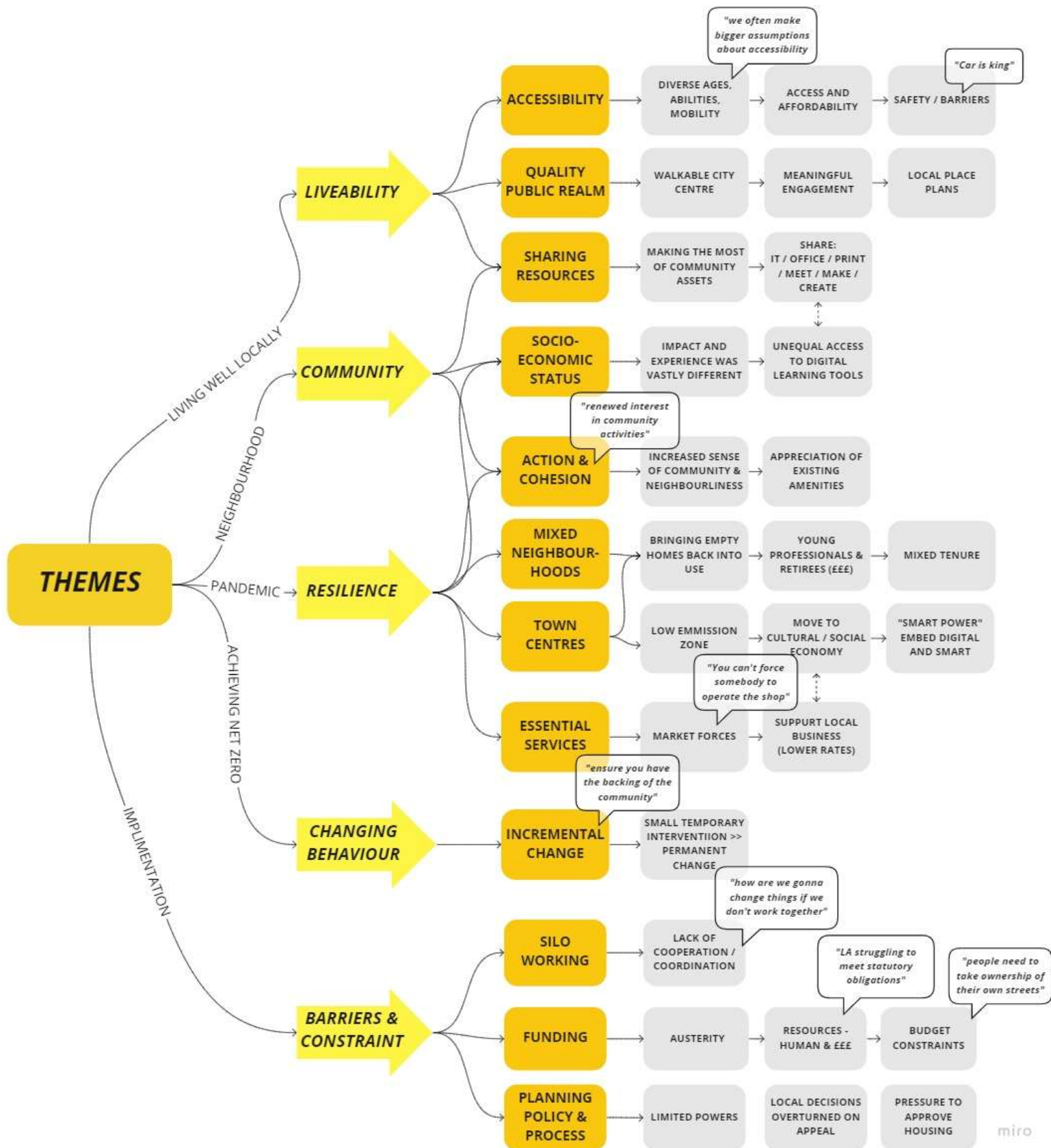


Figure 6 - Screenshot of Spaces for People Dundee website showing example of selected (tagged) comments (Dundee City Council & Commonplace, 2021)





Figure 8 - Emergent themes, subthemes and quotes from interviews (Mackenzie, 2022)



#### 4.1.2 Liveability

Stakeholders agreed that the concept boiled down to “living well locally”, the creation of truly liveable spaces where you can access your basic needs. Spaces that are safe, accessible, and comfortable and foster a sense of community.

The Scottish government defines the 20-minute neighbourhood as a walkable distance of 800m; 10 minutes there, 10 minutes back. Stakeholders largely agreed with this assessment of distance but noted the importance of topography and safety when measuring and assessing the viability of route and distances. Stakeholders agreed that the number of minutes to an extent was inconsequential, particularly when considering the diversity of abilities, health, and opportunity.

All stakeholders agreed that safe, suitable, and accessible active travel routes to good quality local services and amenities, as well as access to a reliable and affordable, high quality public transport network that connected neighbourhoods and services was the most important element for success. Participants uniformly agreed that strategies should focus on improving access and connectivity.

One stakeholder felt that their local area already worked well as 20-minute neighbourhood, and that they were able to access services further afield by bike or bus. Another disagreed, stating they wouldn't feel safe to cycle. The bus system in Dundee is almost entirely privatised and the stakeholders expressed frustration that the local authority had no power to influence or control the availability, frequency of affordability of the service.

Most stakeholders felt strongly that development was still too focussed on the car as the dominant mode of transport, with neighbourhoods and streets designed and constructed in a way that prioritises driving and car parking with the “car is king” attitude where drivers can feel entitled. Most participants expressed concerns regarding the safety of other road users.

Stakeholders felt that the proposed low emission zone (LEZ) in Dundee was a step in the right direction and hoped it would improve the quality of the city centre; it was however felt to be too small to make any significant difference. Participants expressed frustration with the process of introducing a LEZ, stating “*getting it through took years of compromise*”, with fighting between council, shopkeepers and stakeholders.

Stakeholders raised concerns that policy and plans might not result in tangible projects on the ground or meaningful change, stating a concern that there is no mechanism by which policies can be made enforceable.

#### 4.1.3 Community

Stakeholders had found that since the reopening of services post lockdowns, there has been renewed interest and drive from the local community to utilise the existing facilities and assets. New community groups and classes have been created, and there was a perception of a renewed feeling of community and support.

Stakeholders commented that people in Dundee have become more aware of the amenities, facilities and opportunities available on their own doorstep. Access to quality public or private greenspace was stated as becoming more critically important during the pandemic.

Stakeholders highlighted that the pandemic affected communities very differently depending on their social-economic circumstances and revealed endemic inequalities of experience; some families experienced significant economic and social distress, especially without access to adequate space (indoor or outdoor) or digital tools to access education. Some struggled financially with the loss of jobs affecting their ability to clothe, house or feed themselves. Social and health services were, and continue to be, under enormous strain. However, participants noted a “surge in neighbourliness” and a sense of people looking out for one another.

Stakeholders felt there is now an appetite for change, but also an increased awareness and understanding of personal and collective responsibility, following the Covid-19 pandemic. There was recognition that this requires strong local personalities / actors / to push things forward.

There was strong support for the idea of integrating more services into existing community assets such as libraries by offering a broad range of resources to share, such as study / work desks, meeting spaces, café, printing facilities, cultural activities, or equipment to support creativity or enterprise. This was suggested as being able to support working from home, encourage local business, and generate strong community cohesion for a 20-minute neighbourhood.

#### 4.1.4 Resilience

Most stakeholders agreed that the pandemic accelerated the move away from a retail to a service-based city centre, the survival of city centres a move away from an over reliance on commerce and offices (lunchtime economy) but a sustained move towards a social, cultural and night-time economy. A good quality urban realm and safe streets is essential for the success of this transition.

Stakeholders agreed that Greenfield / edge of town developments need to be curbed with brownfield developments given priority. Local planners and stakeholders should be given more control over local development.

Urban regeneration projects should focus on Mixed use developments, including a range of housing types and tenures to promote diversity and lifetime neighbourhoods. One stakeholder believed the focus should be on attracting young professionals and older residents (with disposable incomes) into city centres

Stakeholders highlighted projects in Dundee and Perth to bring empty homes, particularly empty residential flats above retail units back into use.

Many new developments were noted as poor quality, missing essential services and infrastructure. "People moved to these really lovely new build houses and discovered there wasn't even a pavement, there wasn't a school, there wasn't a shop"

Stakeholders noted that planning required greater influence and control at the masterplan stage to ensure that 20-minute elements such as community centres, shops and playparks were core aspects of the plan rather than an afterthought.

The stakeholders reflected on the challenges of maintaining essential services and shops to certain neighbourhoods or areas. In a capitalist system, the provision of amenities is based on market forces, i.e. supply and demand and the ability to turn a profit "we can't force a shop to remain open if it's losing money hand over fist."

Stakeholders highlighted recent digitalisation and smart city projects including, e-bikes, pop-up EV car chargers and highspeed public Wi-Fi. Local renewable energy production and storage is creating energy security and building resilience.

#### 4.1.5 Changing Behaviour

Stakeholders agreed that a green recovery and transition to net-zero would require significant behavioural change. This is not going to happen overnight and needs a sustained push.

Stakeholders strongly felt that for a meaningful change in attitudes, habits and everyday lives to occur then the change must be gradual, as per Jan Gehl's pedestrianisation of Copenhagen.

One of the participants quoted from the "Soft Cities Book" by David Sim which illustrates how small human scale interventions accumulation to create a vibrant and soft urban landscape; "Incremental Urbanism" where densification happens at "a pace where local businesses and residents can be part of the journey".

It was also stressed by several stakeholders the importance of meaningful and high-quality engagement with the local community in order to bring the community with it and allow a positive environment to develop slowly.



#### 4.1.6 Barriers and Constraints

A number of barriers and constraints to implementation were noted by stakeholders.

Silo-working within local government departments and a lack of cooperation with other agencies and organisations. With different groups often working in parallel or at cross purposes. This was made worse by the pandemic, with working from home, creating barriers to collaboration. It was observed that an uncoordinated approach can result in wasted resources and missed opportunities for collaboration.

One of the themes that reoccurred was the limitations of planning legislation and the reality of market driven developments mean that their powers to enforce sustainable place making was limited. There was dissatisfaction regarding the limited power of planners and due consideration of local residents through existing structures and processes such as community councils.

Several participants expressed frustration that local planning decisions were often overturned on appeal at a national government level. It was felt that this undermined local politicians and planners to make decisions based on the needs and wants of their local communities.

One stakeholder felt strongly that planners were too focused on “micromanagement of the system” and should instead be starting to develop great places and start working with communities.

Funding, or the lack of, came up as a limiting factor in many of the ambitions of local government. Consecutive years of austerity and millions of pounds of funding cuts have resulted in the local council “struggling to keep up their statutory obligations”. It is expected that council budgets will continue shrinking in the years to come, particularly after the unprecedented government borrowing and spending during the pandemic.

Participants also commented on the way projects were funded and procured and the enormous effort and resources required with projects given limited scope and time, resulting in a struggle to see lasting or meaningful change. That while the ambitions of local and national government were great, the public should understand the critical levels of stress that public funds are under, especially after more than a decade of austerity and the impact of the pandemic.

Some participants felt that residents should take ownership of their own immediate environment and neighbourhood. “The council has more important things to spend money on than street cleaning and this could be something that local residents and neighbourhoods take pride in” This is maybe a cultural or historic issue.

Stakeholders needed to think carefully about the funding and resources that are allocated to a project. Funding was also putting pressure on the human resources available for projects, with the loss of expertise and local knowledge.

It was noted that the pandemic has caused delay and cost increases to many projects.

#### 4.1.6 Discussion

There has been an inevitable delay in projects as a result of the lock-down measures, with physical restrictions and home working. Resources (both in terms of funding and human capacity) will continue to be stretched. It is important to recognise the limitations of funding, policy, political will, capacity to deliver radical and large-scale infrastructure projects. An incremental approach, working with the community to identify interventions and utilise existing resources and social capital is the best approach to successfully realise the 20-minute neighbourhood. Success will take years of investment and intervention to replan neighbourhoods to integrate active travel and create walkable routes and environments (Wright, 2021).

Small and temporary interventions or events can enhance diversity, richness and contribute to positive experience of a place by building awareness, and testing ideas in place. “Building momentum from these smaller interventions can help to introduce radical changes to the urban form in a sustainable and acceptable manner to a sceptical public while offering an opportunity for proposals to be tested, feedback collected and refined before being fully implemented” (Glasgow City Council, 2021).

It is important to ensure that best practice is used for community engagement and collaboration to identify interventions and target local funding. The proposed Local Place Plans are aimed at providing communities and neighbourhoods with the structure, investment, collaborative opportunities to influence, and invest in their local communities. The Communities Regeneration Fund intended to provide communities with funds and the opportunity to decide how and where this spending is directed through Participatory

Budgeting principles (PB). In Scotland the aim is that 1% of Local Authority community spending should be allocated using PB. In Paris, the aim is to allocate 25% of its communities' budget participatory budgeting, giving communities significantly more control over shaping their communities (Lynch, 2021). In addition, £275 million worth of funding is being made available for "community-led regeneration and town-centre revitalisation" through the proposed Place Based Investment Programme, (which forms part of the draft Infrastructure Investment Plan for Scotland 2021-22 to 2023-26) (O'Gorman & Dillon-Robinson, 2021).

The pandemic exposed how a 20-minute neighbourhood could help to build resilience in times of crisis. The negative effects of the pandemic adversely affected communities without access to basic amenities such as food shops and greenspace, or digital resources. Restrictions on travel and exercise imposed for disease and infection control, including a reduction or cancelation of public transport will have compounded these inequalities and isolation. These communities will be socially and economically vulnerable by the lack of access to affordable good food, quality green spaces and community support networks.

The pandemic saw the hospitality sector making the most of the outdoors and available public realm; this has been positively received by stakeholders. The city should build on this to encourage economically active and vibrant streets; however, care should be taken find a balance between private and public spaces within the public realm.

Improving the quality of the public realm and improving the connectivity of neighbourhoods will help stimulate the local economy by making services and amenities more attractive and accessible. Doubling up on services or the offering within existing community assets (e.g. with additional facilities for work/play/create and, culture and community activities) can help make these more resilient, helping services reach the critical mass of users / customers to support them. This is especially important in low density neighbourhoods where they might struggle to sustain and support local services, where losing the last available might exacerbate issues of isolation and inequality. Ensuring the financial viability of services is an important part of successfully creating 20-minute neighbourhoods.

Active travel infrastructure, including affordable and reliable public transport are important to connectivity allow people to equal access services, support and employment opportunities. Reducing inequalities and improving the health outcomes by improving access to healthcare,

quality green spaces and community and support services will inevitably reduce spending on health and social care budgets.

To support the aims of the 20-minute neighbourhood, local planners need greater authority and influence at masterplan stages to ensure proper transport, economic, digital, and community infrastructure and quality green spaces are available. This is particularly critical for new-build suburban or greenfield developments as these are less likely to have existing infrastructure to utilise. Brownfield development needs to be prioritised in order to increase density and revitalise city centres. Unfortunately, it is understood that local authorities are under significant pressure from national government to provide and approve housing giving developers the upper hand.

The interviews highlighted that there is already understanding, policy and a significant amount work being done of the various aspects of a 15-minute city; resilience, density, proximity, and digitalisation (Moreno et al. 2021). The 20-minute neighbourhood concept as an overarching strategy or goal can help to coordinate projects, agencies and stakeholder's and unify the city's 'Strategic Priorities and Outcomes' with climate targets.

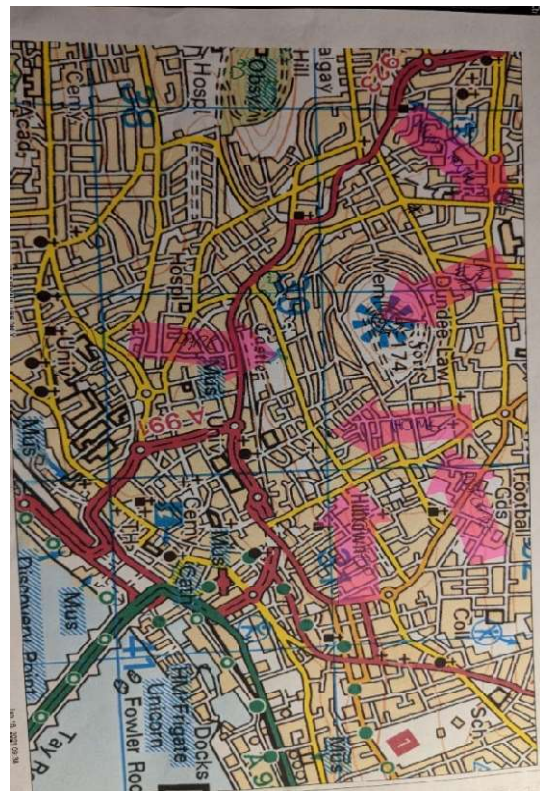
## 4.2 Workshop

To explore the impact of the pandemic and gain an understanding of how residents feel about, use, and move around their neighbourhoods, a workshop was arranged with local residents using the place standard tool as a framework for discussion. Included participants lived in two different and distinct neighbourhoods of the city; the first located in a recent new-build developer led housing development on a greenfield site to the west of the city, and the second living adjacent to 'the Hilltown', a historic neighbourhood to the north of the city centre which has suffered economic decline.

### 4.2.1 Mapping

The workshop began with a mapping exercise, where residents mapped the limits of their walking boundaries and the area, they considered to be their neighbourhood, also indicating the location of services and amenities. Physical barriers to accessing services, amenities and active were quickly identified. Both participants indicated that they were willing to walk to some local services; however accessibility, safety, and topography (the Hilltown in particular being on a steep hill) were all identified as barriers. Participants indicated they would be willing to walk over 20 minutes in single direction to access services.

Figure 9 - Results of the mapping exercises of each neighbourhood (Mackenzie, 2022)



#### 4.2.2 Place Standard Assessments

The results of the Place Standard Tool assessments were graphically presented on a compass graph. They show us how each neighbourhood is performing differently; the new-build development performs well in aspects of feeling safe in well looked after streets and spaces, with good access to greenery, but performed poorly in aspects of public transport, facilities, and amenities, and moving around. The historic urban neighbourhood performs well with good access to natural space, play and recreation, facilities, and amenities due to proximity to a park and the city centre, but performs poorly in terms of public transport, sense of influence and control and identity and belonging. (For full results of the Place Standard Tool exercise see Appendices 2 & 3).



Figure 10 - Results from Space Standard Tool assessment for Denhead of Gray, Dundee (Mackenzie, 2022)

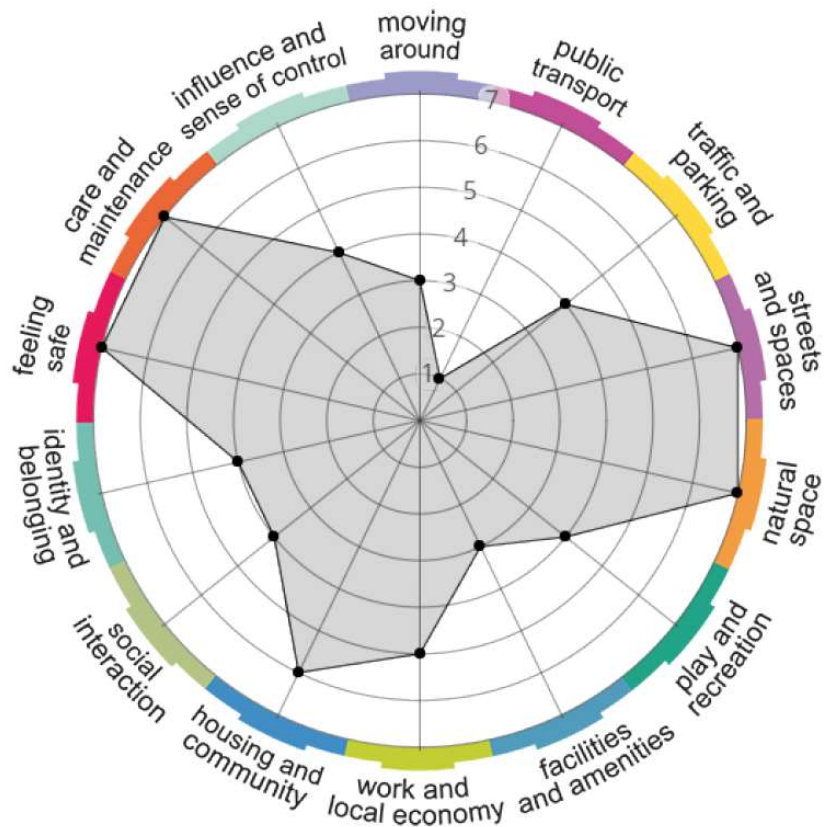
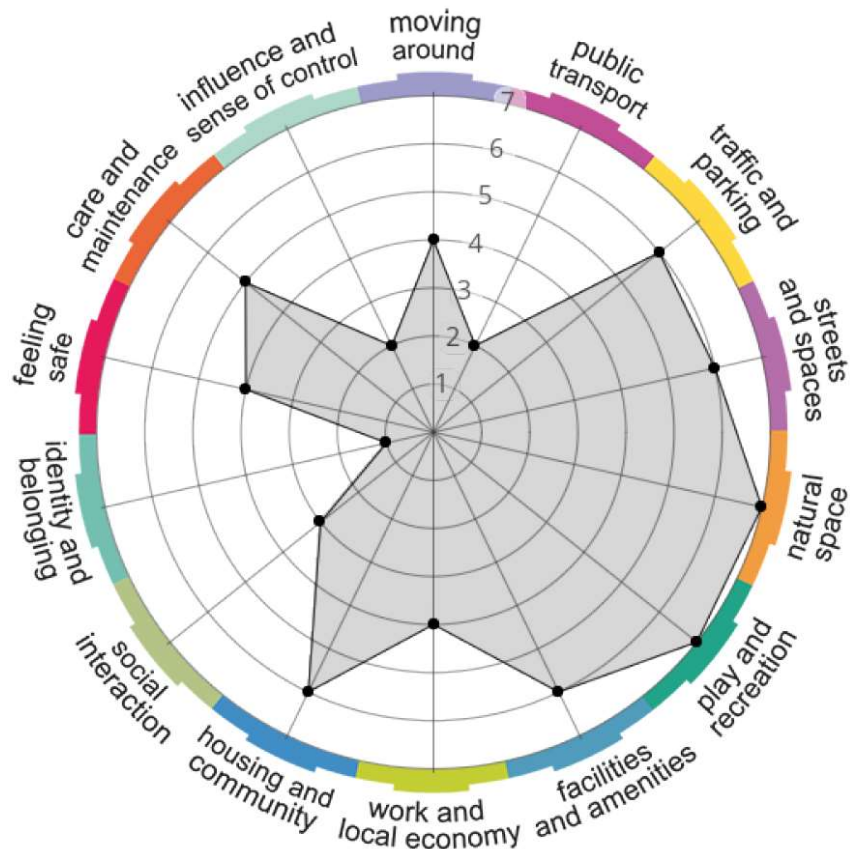


Figure 11 - Results from Space Standard Tool assessment for Hilltown, Dundee (Mackenzie, 2022)



#### 4.2.3 Feedback and Analysis: Denhead of Gray

The new development scored highly in factors influenced by cost, affluence, and exclusivity. A key quote here being *"It's well-maintained but we pay for it"*. There is a 'village' centre with a small corner shop (Spar) with post office facilities which serves coffee and playgrounds catering to different ages of children.

There is a significant lack of infrastructure, particularly in relation to active travel and public transport. There is a lack of safe pedestrian access into and out of the development, the pavement ends abruptly and does not connect to existing networks or amenities.

There are currently no bus routes which pass the development, so no access to public transport, and the workshop participant stated a car was "a must". The resident reflected how this would particularly isolate older residents or anyone without access to a car.

The new homes were stated to be putting pressure on existing services in the area, such as the GP and schools. The two nearest primary schools are within a walkable distance but are both within different council areas so students will not be accepted from the development. Students are currently required to travel by bus or car to a school.

The lack of infrastructure was felt to be having a detrimental effect on residents and the surrounding community. There is an active community committee that is pushing for infrastructure to be installed or improved e.g., post box, footpaths, but progress is slow, and the local community is having to fight for basic infrastructure and amenities.

The development is located on the boundary of 3 local authority areas, resulting in a lack of a coordinated approach for the area, especially in relation to schools and infrastructure with each local authority having different budgets and priorities within 5 minutes' walk.

Incredibly, there are a full range of services and amenities available at Invergowrie, within an 800 metres radius of the development. However, this village is located within Perth and Kinross Council's boundaries, so residents of the development do not have access to the school or healthcare facilities.

There is no pedestrian crossing over the motorway that separates the development from this village and rest of the city; this road is the single biggest barrier to active travel.



There is a pedestrian underpass under the motorway into Invergowrie, but the resident noted that this was not maintained, is often flooded, is poorly lit, and feels unsafe. It is not well sign marked or accessible without crossing the road at an unsafe junction.

Overall, the resident is happy within their local community; they are friendly with all of their immediate neighbours, and felt it was a safe and welcoming environment for children.

The main community activity is via the Facebook page which “acts like a noticeboard”. The area would really benefit from a community hall or space to host baby groups, kids’ clubs, coffee mornings and exercise classes etc.

#### 4.2.4 Feedback and Analysis: Hilltown

The Hilltown scored highly in categories relating to physical attributes; The participant is able to access most amenities, and services are within a 10-minute walk with the exception of cafes, social or dedicated community space. Outdoor recreation and quality green space is available nearby in the local park. There are a range of housing, types, sizes and tenures available in the local area.

There was no supermarket within walking distance. The local corner shops provide basic supplies but food in these was generally felt to be expensive, poor quality, or have a poor selection. There is a dominance of fast-food and lack of healthy options available.

In terms of public transport there is a bus service available, but the route is indirect and loops “in the wrong direction” to be of much use to the participant. The topography of the area would present challenges to the less able-bodied resident, and there were some issues noted around pavement clutter and accessibility with a pram or wheelchair.

The participant felt that there were limited opportunities for employment within the neighbourhood, with the high-street suffering a marked decline in recent years

In terms of feelings of neighbourhood and support, the participant did not participate in any local activity and felt a lack of identity with the area.

#### 4.2.5 Impact of the pandemic

Both participants felt that their neighbourhoods had adequately supported them during the pandemic. Both have moved to working from home and felt privileged that their homes had space to comfortably accommodate a dedicated workplace. Both also benefited from private

outdoor space and an increased interaction with neighbours. They had also both changed their shopping habits and increasingly bought online in the first instance, recognising that this could have a detrimental effect on local businesses.

#### 4.2.6 Discussion

Denhead of Gray could have the potential to be a 20-minute neighbourhood if it was better connected to local amenities in Invergowrie and the rest of the city. A safe pedestrian crossing across the motorway connecting it to the green-circular cycle route and the adjacent technology park, would improve connectivity and employment opportunities. The lack of an active travel infrastructure, unsafe and incomplete pavements, and busy roads are real barriers to it being able to work well as a 20-minute neighbourhood. The structure of the local authority boundaries impacts the potential to share resources and access service between neighbourhoods.

In terms of the Scottish Index of Multiple Deprivation (SIMD), Denhead of Gray scores quite highly, in the 8th centile (1-10 with 1 most deprived, 10 least deprived) (Scottish Government, 2020b). Scoring highly in income, employment, health and education categories, but poorly in geographic access, which is a measure of the “issues of financial cost, time and inconvenience of having to travel to access basic services” (conversely, the Hilltown has the highest score for geographic access – 10/10.) It will be interesting to see the impact of demographic changes over time; most residents are now owner-occupier families; creating a homogenous demographic with an increasingly ageing population. Will the infrastructure and services manage to match the needs of the residents or is there a risk of isolation, poverty, or burden on social services? Will people be able to age in place or will they need to move away from their communities if they require more support?

This is a good example of where an infrastructure first approach, stronger planning regulations and influence, and an overarching 20-minute neighbourhood plan could have created a more successful, sustainable, and resilient community.

The Hilltown has all the services, amenities, and attributes of a 20-minute neighbourhood and also benefits from a good connectivity to the rest of the city. However, the quality of certain amenities (food shopping) was low. The high street in particular is suffering the effects of poverty and deprivation; it currently ranks 1 in the SIMD (most deprived).

There are a number of vacant retail units and gap sites on the high street. A new development of mixed tenure housing for the local housing association is nearing completion; this will increase the density and hopefully reinvigorate the area, bringing in a much-needed boost to the local economy.

The existing gap sites should be targeted for development. This might require some incentivisation or support; in the meantime it could give the community the opportunity to utilise the spaces for something positive and productive, such as a community garden or theatre space.

The socio-economic circumstances of the participants made them resilient to the economic shock of the pandemic. What came across clearly was the importance of access to outdoor green space, the adaptability of their homes, and a good relationship with their neighbours helped to make it a positive experience. It is important to reflect that not everyone was privileged to have access to private green space, and in these circumstances the additional space and recreational facilities within the local parks and green spaces becomes more important.



The respondents were asked about the problem and what could be done to make it better by tagging topics.

The comments related equally to the 4 themes, with a slightly high proportion not attributed to a theme.

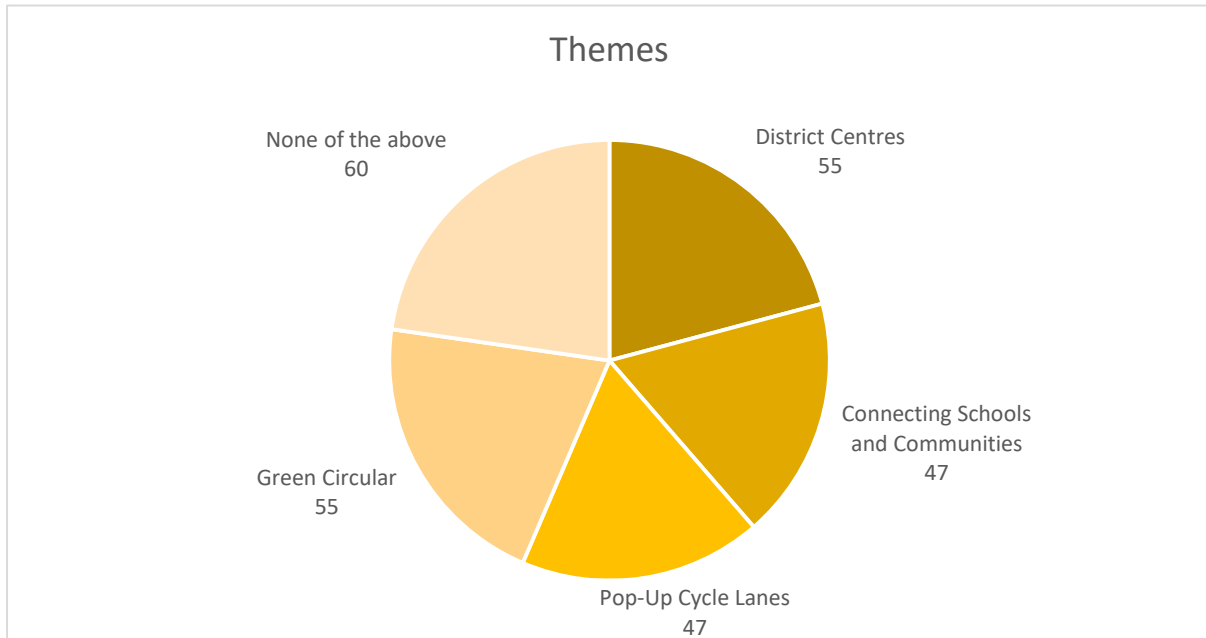


Figure 13- Frequency of comments relating to key themes (Various & Anonymous, 2021)

This publicly available data gives us unique insight into public opinion on the state of active travel infrastructure in the city during the pandemic. It provides us with information on the perceived barriers to access and concerns of the public as well as suggestions for intervention and improvement.

Safety was the most commonly cited problem, with no safe space for cycling mentioned 87 times, other concerns include the speed and volume of traffic, poor driving and dominating the remarks. Accessibility is also a common problem, with complaints about crossings and pavement clutter. Not enough space for physical distancing is a pandemic specific issue, which might not be as relevant as restrictions ease.

In terms of suggestions for improvement, equal weight is given to strategies to improve safety and accessibility. Slowing down or reducing the speed of traffic is the most cited suggestion for improvement. Safe junctions and crossings that priorities pedestrians are a popular suggestion, as is keeping pavements clear of parked cars and clutter, so that paths can be effectively and

safely used by a variety of users. Other suggestions relate to the maintenance and improvement of existing infrastructure.

Suggestions and comments included the freeing up parking spaces for parklets, rationalising junctions and prioritising safety of pedestrians.

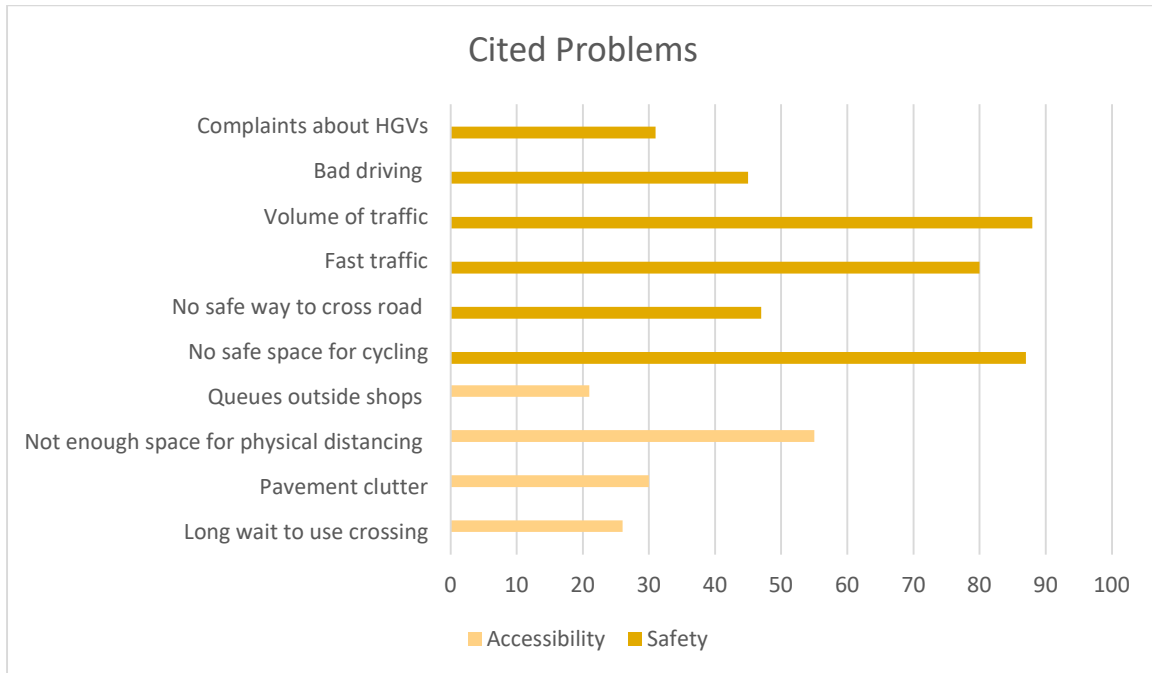


Figure 14- Frequency of responses to question "What's the problem" (Anon. Spaces for People Dundee, 2021)

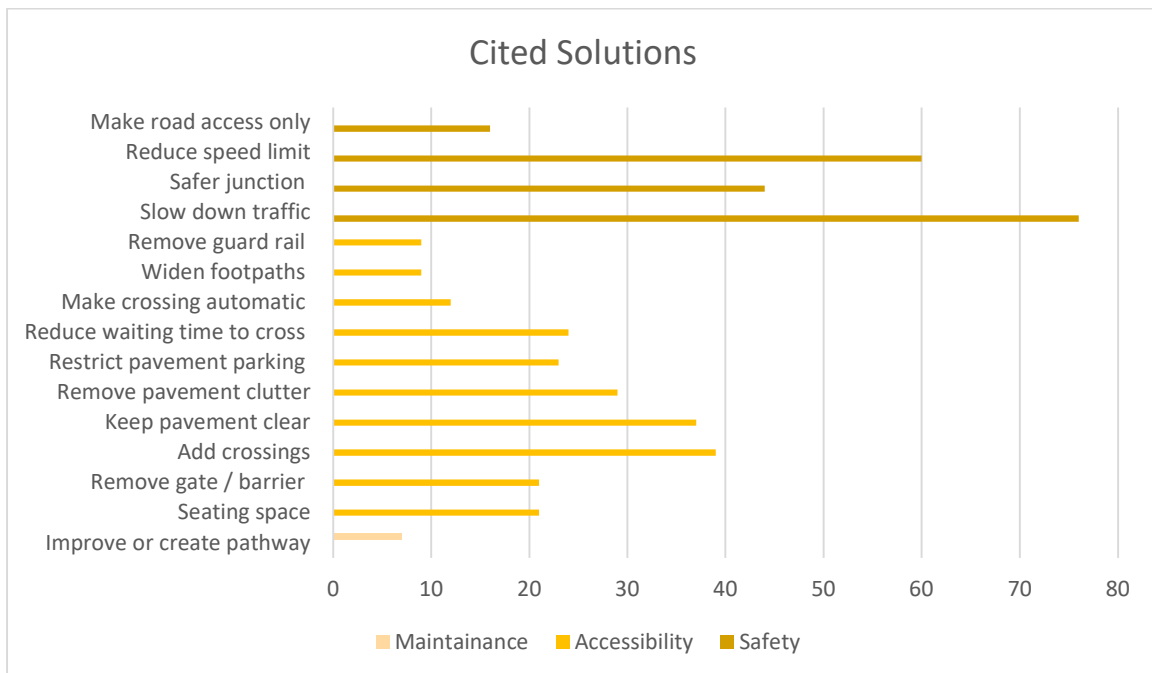


Figure 15- Frequency of responses to question "How could we make it better" (Anon. Dundee Spaces for People, 2021)

#### 4.3.2 Discussion

The mapping element is useful for pinpointing specific problem areas and junctions, particularly highlighting high traffic routes with safety concerns. The highest incidences of negative comments from residents relates to one particular route, which cuts through the city from the A9 Aberdeen Junction in the North towards the Tay Road Bridge. This route is used by large volumes of Heavy Goods Vehicles (HGVs) and other large and fast traffic heading towards Fife. There were over 31 specific complaints relating to HGVs in the city-wide comments. The route described is not designed for such volumes and speeds of traffic, it passes by schools, residential areas, and bisects Stobswell, a district centre. Comments include *“Large lorries, vans / HGV’s crossing routes and driving at speed”*, *“inappropriate use of peripheral roads for large vehicles”* *“Unsafe volume and speed of traffic”* (Various & Anonymous, 2021). There is no designated cycle path along this route and comments relating to safety of cyclists and pedestrians were common, as are comments about the safety of junctions.

Stobswell is an example of a “naturally occurring” 20-minute neighbourhood, containing a district centre with shops, parks, health care services, pubs, schools and a variety of housing. The traffic in this area due to inappropriate use of the road and a lack of priority and protection for active travel is however negatively affecting the area and its performance. As a result of the Spaces for People initiative, funding has successfully been utilised for the creation of two *“pocket parks”*, transforming 2 streets to pedestrian and people-friendly spaces. (Dundee City Council, 2021). Co-designed with the local community, the spaces have been closed to vehicular through traffic, temporary installations of planters integrating urban greenery with seating have been installed, and street art has added vibrancy and colour. Sustrans is working with the local community to continue to develop proposals for Stobswell Pocket Places over the coming months.(Pocket Places, 2021) (Figure 16)

The funding made available in Dundee was used for reducing speed limits in district centres, closing Union Street in the city centre to vehicular traffic and the installation of pop-up cycle lanes along key commuter routes. Since the end of the programme, some of these cycle routes have been made more permanent with the installation of bollards to separate traffic, remove parking and provide dedicated routes. This has improved safety. There are also a number of improvement works to the existing green circular cycle route which encompasses the city.



*Figure 16 - Community engagement event in September 2021, temporary interventions at Craigie Streets pocket park. (Pocket Places, Sustrans, 2021)*

The closure of Union Street to traffic and the addition of planters and greenery, outdoor seating for businesses and street art have contributed to the creation of a vibrant, popular, and successful intervention that has improved the street and neighbourhood quality. The interventions in union street were made after careful consultation with traders and local residents. A co-design approach was taken, delivered via online workshops. This resulted in a high level of engagement and concerns regarding deliveries and access were considered with the final scheme. (Sustrans, 2021)

The Green Circular, conceived as Scotland's first "sustainable ring road" (Dundee City Council, 2021) circumnavigates the city and connects a number of parks and green space, though has suffered from a lack of maintenance. The provision of traffic free or designated cycle / walking paths is a positive step, but incomplete with a number of dangerous and ill-considered junctions. It is also not well connected and integrated with the rest of the city. Spaces for People funding has been used for various projects along the route, improving the surface, widening paths, clearing foliage and debris and improving the safety of junctions. (Dundee City Council, 2021) Work is needed to better integrate and connect the route to other routes and the city centre.



## 5.0 Next steps

### 5.1 Implementation and Approach across Scotland

#### 5.1.1 Edinburgh

Both Edinburgh and Glasgow have developed various approaches to the implementation of a 20-minute neighbourhood concept as part of their wider strategic plans to tackle climate change and reach their net zero targets, whilst improving liveability and supporting their residents.

Edinburgh city council has adopted a 20-minute neighbourhood strategy named “living well locally” as a central part of their business plan “Our Future Council, Our Future City”(Policy and Sustainability Committee & The City of Edinburgh Council, 2021). The model forms a central part of their strategy which aims to deliver and support local services, work with and support local communities, improve sustainable transport networks and connectivity, and provide high-quality and people focused green and open spaces. The strategy also aims to aid delivery of a digital and smart city strategy to provide access to council services online.

19 areas of the city have been identified priority areas for the delivery of a targeted place-based approach. Working with the local community and residents to understand the “unique cultural identify and local heritage” of each neighbourhood and understand “the differing role each neighbourhood plays socially, culturally and economically” through workshops and surveys will help to identify and implement appropriate interventions (Policy and Sustainability Committee & The City of Edinburgh Council, 2021).

#### 5.1.2 Glasgow

Glasgow has adopted a “liveable neighbourhoods” strategy, incorporating the 20-minute city concept into a cohesive city-wide policy to improve the quality and liveability of neighbourhoods. A significant amount of work has already been done. The council have developed a toolkit which provides community and place-based approach to addresses the issues, sets out themes and provides resources and concrete outcomes. It serves as a model approach and illustrates work done with the community to identify barriers and improve local neighbourhoods with interventions already implemented.

“This Toolkit... seeks to balance interventions associated with the streetscape and the wider social and economic potential of Glasgow’s districts. To create areas that are an inclusive

network of accessible neighbourhoods designed for the benefit of all with enhanced public space and integrated green infrastructure.”

“In its simplest form and given Glasgow’s commitment to being Carbon Neutral by 2030, we’re looking to reduce the amount of space that road vehicles use and re-balance it with more people based, environmentally conscious and community inspired interventions.” (Glasgow City Council, 2021)

Figure 17- The 4 "key themes of a liveable neighbourhood" developed by Glasgow City Council as part of their Liveable Neighbourhoods Toolkit (Glasgow City Council, 2021)

### THEMES

The four key themes of a 'Liveable Neighbourhood' are:





LOCAL TOWN CENTRES	EVERYDAY JOURNEYS	ACTIVE TRAVEL	STREETS FOR PEOPLE
 <p>Local centres enable communities to meet their everyday needs locally and bring vibrancy, activity and jobs. The Liveable Neighbourhoods approach supports local centres by making them easier to get to by walking and cycling, and more pleasant places to spend time outdoors.</p>	 <p>Many short journeys are made by car that could happen on foot or by bike: for example to school, childcare, shops, or family and friends. The Liveable Neighbourhoods approach will focus on improving the quality and safety of short walking and cycling journeys.</p>	 <p>Walking, cycling and moving around on your own helps health, wellbeing and carbon emissions. To help more people walk and cycle more, the Liveable Neighbourhoods approach will help people to choose walking and cycling with infrastructure, public transport integration and local delivery networks.</p>	 <p>Streets should be for people as well as vehicles, with space to meet and greet as well as drive and park. The Liveable Neighbourhoods approach achieves a better balance between vehicles and people by working with local communities, learning from best practice elsewhere, and sharing design guidance.</p>

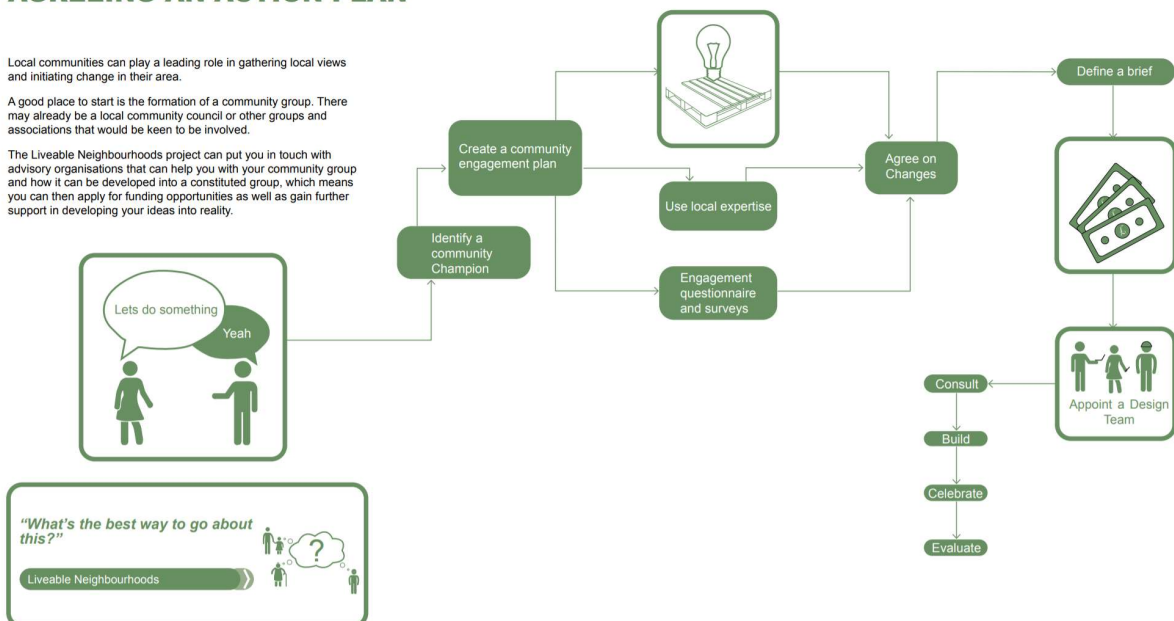
Figure 18- Guidance for residents, illustrating how the toolkit can help them make tangible improvements to their local place or communities (Glasgow City Council, 2021)

### AGREEING AN ACTION PLAN

Local communities can play a leading role in gathering local views and initiating change in their area.

A good place to start is the formation of a community group. There may already be a local community council or other groups and associations that would be keen to be involved.

The Liveable Neighbourhoods project can put you in touch with advisory organisations that can help you with your community group and how it can be developed into a constituted group, which means you can then apply for funding opportunities as well as gain further support in developing your ideas into reality.



### 5.1.3 Dundee

Unlike Edinburgh and Glasgow, Dundee has (as yet) no published plan to implement a 20-minute neighbourhood approach as part of its climate change, net zero or covid-recovery plans.

The 20-minute neighbourhood concept could support delivery of the strategic priorities set out in the local development plan (Dundee City Plan 2017-2026), in particular in building stronger communities, as well as health, care and wellbeing and community safety and justice outcomes.

Figure 19- Dundee City Plan - Strategic Priorities and Outcomes (Dundee City Council, 2017)

Strategic Priority	Dundee Outcome
 <b>Fair Work and Enterprise</b>	Raise regional productivity
	Close the jobs gap
	Reduce unemployment
 <b>Children and Families</b>	Improve early years outcomes
	Close the attainment gap
	Improve physical, mental and emotional health for children and young people
	Improve health and wellbeing outcomes for children and young people who experience inequalities
 <b>Health, Care and Wellbeing</b>	Increase safety and protection of young people
	Reduce obesity
	Reduce substance misuse
 <b>Community Safety and Justice</b>	Improve mental health and wellbeing
	Reduce levels of crime
	Reduce levels of domestic abuse
	Reduce levels of re-offending
	Reduce risk to life, property and fire
	Improve road safety
 <b>Building Stronger Communities</b>	Reduce levels of antisocial behaviour
	Improve quality of neighbourhoods
	Increase empowerment of local people
	Improve housing quality, choice and affordability
	Improve access to healthy green and open spaces
	Improve transport connections to communities

A similar approach to Edinburgh in identifying existing neighbourhoods for targeted intervention could be successfully implemented in Dundee. Working within historic and established neighbourhoods as nodes for 20-minute neighbourhoods, this would allow Dundee to utilise and build on existing resources and services.

The Liveable Neighbourhoods Toolkit as developed in Glasgow could be successfully applied to a Dundonian context as part of a community led, place-based approach.

Dundee City Council's current covid-recovery strategies include the proposed adoption of a Community Wealth Building model aims to increase social and environmental benefits through

a focus on economic activity. The Dundee City Centre Review, a proposal written to tap into a city centre recovery fund set up by the Scottish Government, was criticised for having no overarching policy or vision to guide delivery.

The adoption of a 20-minute approach could help to strengthen existing policies and projects, by engaging citizens and supporting a number of key themes; active travel, proximity of services, housing diversity, connectivity and providing a cohesive strategy to tackle the issues of climate change, emissions reduction, and placemaking; enabling people to live better, healthier lives.

## 5.5 Measuring the 20-minute Neighbourhood

There are several examples of tools and frameworks which have been developed to measure the performance and progress of 20-minute neighbourhood (or similar) concepts from around the globe. These range from simple measurable benchmarks (Portland – complete neighbourhoods) to in depth analysis utilising GIS based tools which incorporate qualitative and quantitative data to map performance against a defined measure (Climate Xchange report / Sustrans tool).

The Climate XChange (O'Gorman & Dillon-Robinson, 2021) report developed a methodology for carrying out baseline assessment of how communities across were performing as 20-minute neighbourhoods. Measuring a baseline helps us understand how a place is performing as a 20-minute neighbourhood, and this in turn helps to target funding and interventions and identify areas for improvement and 'easy wins'; small interventions which could drastically improve the performance of a neighbourhood. The framework for assessment is based on defined aspects of a 20-minute neighbourhood, which have been derived from the place and wellbeing outcomes, Stewardship, Movement, Spaces, Resources and Civic (Improvement Service, 2021). Each aspect has a goal and defines qualitative and quantitative measure, which can be measured using a mix of observation and secondary data (SIMD, ONS etc).

Figure 20 - Proposed Place and Wellbeing Outcomes (Improvement Service, 2021)



The principles of equality, net-zero emissions and sustainability underpin all of these themes, and all themes should be embedded in policy and action

Following on from this, Sustrans are developing a self-service GIS based tool for planners, architects, and experienced urban professionals, to aid facilitation of discussion with communities, again the tool will provide information about how a neighbourhood is performing in terms of the services and amenities required for a 20-minute neighbourhood. Unfortunately, (at the time of writing) the development of the tool has stalled due to a lack of funding for further development. This tool, if made available, is a key resource in the planning and development of the 20-minute neighbourhood in a Scottish context and should be prioritised for funding.

A key issue with these tools is that they rely on Euclidian distances for measuring the distance to services; this does not consider the routes or barriers residents might face which would limit access to amenities.

The most easily accessible map-based tool for assessment is the “15-minute city map”, a web-based app developed by HERE Technologies; a location service based in the Netherlands. The app uses their location data to tell you whether you are living in a 15 / 20 (walking) or 20-minute (car) neighbourhood by identifying the proximity of Groceries, Medical, Culture, Education, Transit (public) and Leisure facilities, (based on Moreno’s 15-minute city concept). 20 minutes’ walk is defined as approximately 1 km distance, though this is measured as the distance along the road network as opposed to a radial proximity measure. How services are defined in the app is not clear (e.g. it doesn’t identify the local shop in Denhead of Gray), however, it shows an innovative use of GIS and location data to provide easy and accessible insight into the availability and proximity of services, and with further development may represent a useful tool for the layman and planner alike.

Figures 21 and 22 demonstrates use of the HERE Technologies map to assess the areas discussed in the workshop above. This clearly demonstrates differences between the two areas, with Denhead of Gray not meeting any of its criteria, and Hilltown meeting all of the criteria for a 15-minute city; this is in line with the workshop participant’s comments, suggesting that at least in this limited study it appears to correlate well with the lived experience of residents.

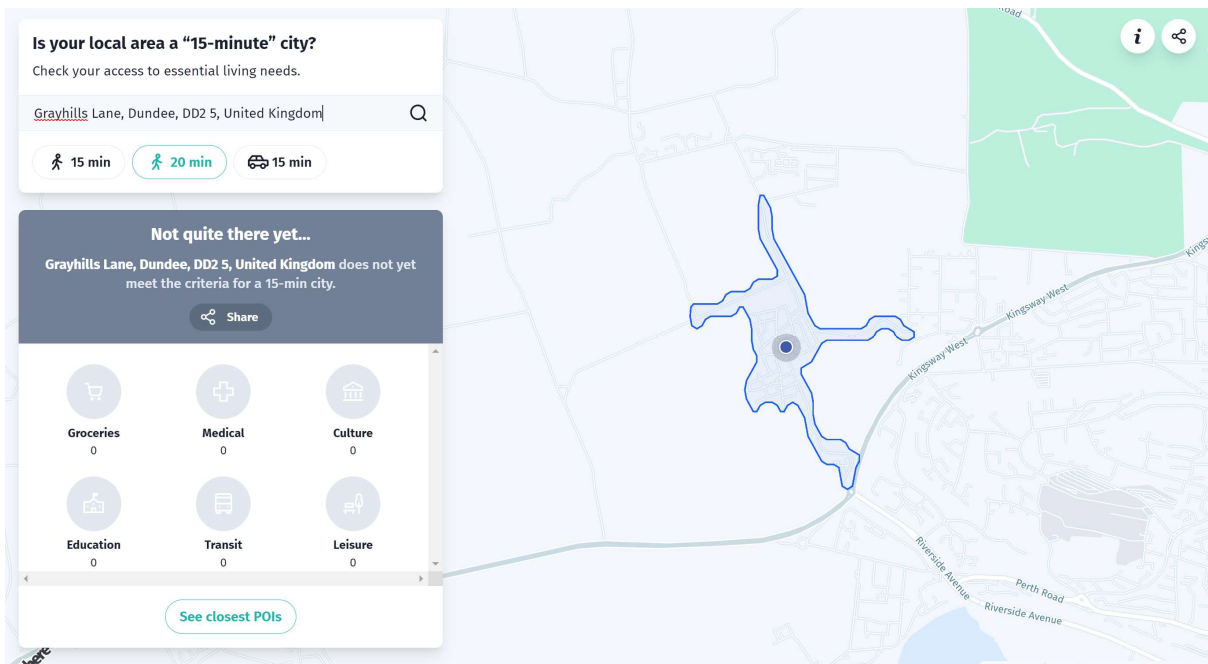


Figure 21 - Results for Denhead of Gray - 15-minute city map (HERE Technologies, 2021)

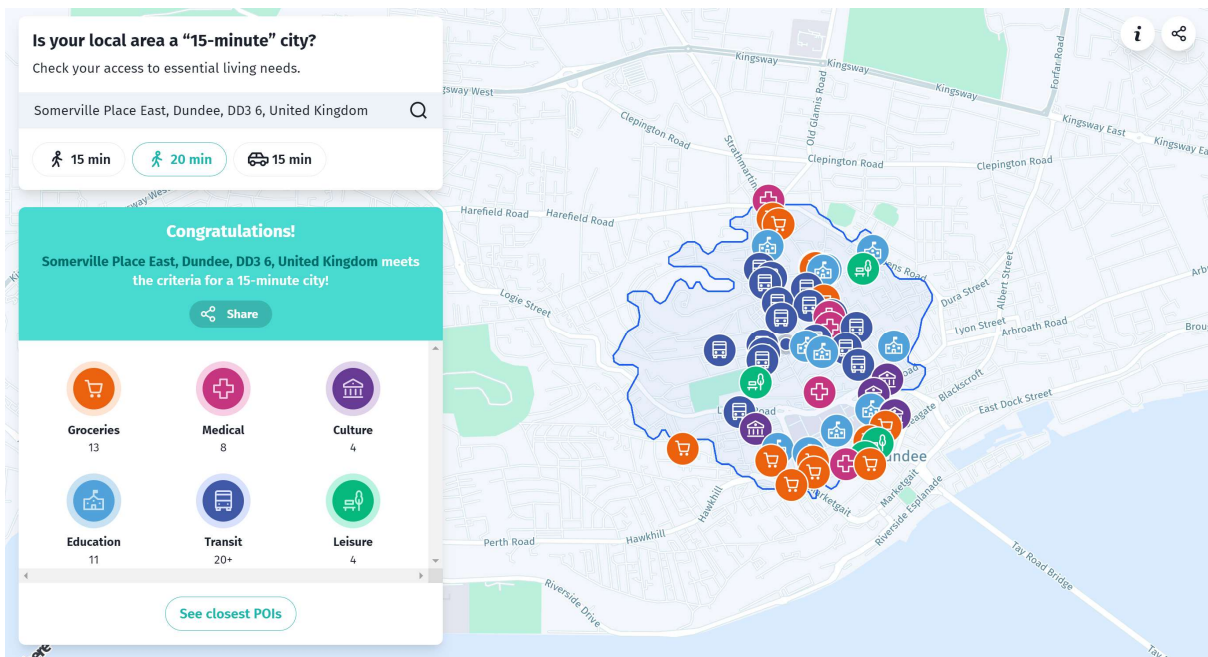


Figure 22 - Results for Hilltown - 15-minute city map (HERE Technologies, 2021)





## 6.0 Conclusions

The aim of this study was to investigate the development of the 20-minute neighbourhood concept as a tool for a green and just recovery from the Covid-19 pandemic and address urgent climate issues. This research has gathered together primary and secondary sources to gain insight into how the concept is being received and understood by planners, policy makers and urban professionals. The aim was also to gain insight into the experiences of residents, planners, policy makers and relevant stakeholders during the Covid-19 pandemic and understand how these experiences will be shaping our neighbourhoods in the future.

### 6.1 Context & Definition

The Scottish definition of the 20-minute neighbourhood concept is still evolving, but some key themes and elements have emerged from this study.

The concept boils down to the phrase “Living Well Locally”, i.e. meeting your daily needs in your local area, without relying on a car. As a place-based concept, it is easily understood by the public and well received by urban professionals. The concept is about giving residents the opportunity to live, work, support and enhance their local neighbourhoods.

It is widely accepted that everyone has a different understanding of what those ‘needs’ are. The consensus of literature, policy documents, and stakeholders is that services and amenities fall into 6 broad categories: Commerce (equitable access to affordable, healthy food choices as a priority); Healthcare, (primary healthcare, dentists, mental health support services, or pharmacies); Education (at least primary and secondary, but also further and lifetime learning opportunities); Greenspace (high quality greenspace that provides health and leisure opportunities); Cultural and Recreation (including community and sports facilities); and Connectivity (Active Travel & Public Transport).

The Scottish policy context gives a clear definition in terms of proposed time, distance and mode of travel (800 metres, 10 minutes, Walking), however, this study found that this does not reflect the diversity of abilities, health, and opportunities of citizens.

The concept should be adaptable and localised with recognition that especially place-based solutions are needed that are unique to each community or area. The key to understanding the various and diverse needs of a community in the context of a 20-minute neighbourhood is to ensure that community consultations are as inclusive as possible. Meaningful and high-

quality engagement is required with a cross-section of residents, users, and community groups to give a true reflection of diverse experiences and evaluate proposed interventions. Community input can identify opportunities to improve and localise existing services and make the most of existing community assets.

Active travel and reliable and affordable public transport can unlock opportunities for employment, recreation, participation, civic life, and shared resources.

Sharing resources or amenities (cultural, leisure, healthcare, digital, or support services) between different areas or neighbourhoods, will be an essential part of realising the concept in the current economic climate.

Achieving these aims requires improved connectivity and permeability with integrated and well supported transport infrastructure. Working towards providing equitable, safe, and accessible active travel networks will promote connectivity and improve health and wellbeing outcomes and reduce carbon emissions.

## 6.2 Experiences

The pandemic revealed widespread inequalities in terms experience with, 20-minute neighbourhoods would improve resilience by improving access to amenities, greenspace, and community support. In general neighbourhoods came together and became strong communities during the pandemic; a surge in community spirit. Residents have rediscovered their local environments and amenities, promoting localism and activism. 20-minute neighbourhoods can build on this momentum.

Quality urban green spaces with opportunities for recreation and exercise improve physical and mental health. These spaces became critically important to residents during restrictions on travel and exercise during the Covid-19 pandemic.

The volume and speed of traffic, and safety concerns had a negative effect on resident's physical experience of the city during the pandemic. Tackling speed limits, congestion, improving pedestrian access, and the safety of road crossings, improves equitable access by removing physical, mental and economic barriers to accessing services.

### 6.3 Opportunities and Barriers

Small and temporary interventions or events can enhance diversity, richness and contribute to positive experience of a place by building awareness, and testing ideas in place. Successful interventions implemented during the pandemic, such as closing Union Street in Dundee to traffic, have illustrated the positive impact of prioritising liveability. Pocket Parks are being proposed and developed to improve the urban realm and introduce urban green space into neighbourhoods, these are a great opportunity for introducing trees and green infrastructure into the city for the benefit of all. Increased urban greening will help to tackle urban heat island effects, flooding, and urban drainage, and improve public health and wellbeing.

Funding issues will be one of the biggest barriers to successful implementation of the concept. City Centre Recovery plans will aim to promote social, night, and cultural economies. Densifying town centres with high quality mixed-use developments with a mix of house types and tenures will help to support and sustain local businesses and essential services, and promote diverse, vibrant, and lifetime neighbourhoods.

New-build, developer homes are being built missing critical infrastructure, leaving them vulnerable, isolated, and unsustainable.

Planning policy and powers need to be more adaptable, flexible, and coordinated. Local needs and priorities need to be aligned with actions to achieve national and global climate targets, while building a stronger, fairer, more economically, socially, and environmentally sustainable urban communities.

What emerges from this study is the importance of connectivity, supporting active travel networks and public transport infrastructure to connect people and communities with thriving, liveable, healthy, safe, and accessible neighbourhoods, while reducing car-dependency and emissions.

20-minute neighbourhoods are an easily understood concept, which if adopted into overarching strategy, can empower communities, coordinating efforts and actions towards a timely solution to the critical climate problem.



## **7.0 Limitations and Avenues for Further Research:**

The study focuses on the Dense Urban and Urban environment of a medium sized Scottish City and does not investigate the concept in terms of implementation in a rural context. Scotland has a large land mass and a relatively small population. It has several demographic issues, including an ageing and a declining rural population. Over 30% of the population live in areas classified as rural (Scottish Government, 2018). There are significant, and unique challenges in regard to adapting and implementing the concept into rural and remote communities. Further study and exploration of the specific barriers and opportunities within a rural context in order to understand how the concept can be successfully applied.

As well as being the subject of this study, the Covid-19 pandemic presented some significant challenges, with restrictions in data collection; Most of the stakeholder interviews were conducted online and the selection and final number of participants of the workshop was impacted. This was a small and selective sample of views from residents who were of a similar age, socio-economic background, class, background, and circumstances. A more accurate and holistic understanding of the neighbourhoods and the impact of the pandemic, would require a wider sample, encompassing a diverse range of residents from different socio-economic groups, ages and backgrounds.

This study focuses on the policies and frameworks legislation specific to Scotland, the analysis of which will have limited applicability to the rest of the UK due to differences in planning legislation and processes.

This study used participatory workshops and the Place Standard tool to understand how different neighbourhoods are performing as 20-minute neighbourhoods. This is important in order to identify barriers, opportunities, and interventions. Further studies using one of the GIS tools discussed to perform benchmarking analysis may give a clearer understanding of the baseline performance and help targeted intervention. As part of any further studies, an audit of the quality of active travel routes would help to identify barriers to access and improve connectivity.



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## 9.0 Appendices:

### 9.1 Appendix 1: List of organisations contacted for interview

The following organisations were approached for interview:

- Dundee City Council
- Perth and Kinross Council
- University of Dundee
- Dundee Civic Trust
- Collective (Architects)
- Improvement Services (Scotland)
- Sustrans
- Public Health Scotland

## 9.2 Appendix 2: Workshop Data - Place Standard Assessment: Denhead of Gray, Liff, Dundee

# PLACE STANDARD - RESULTS

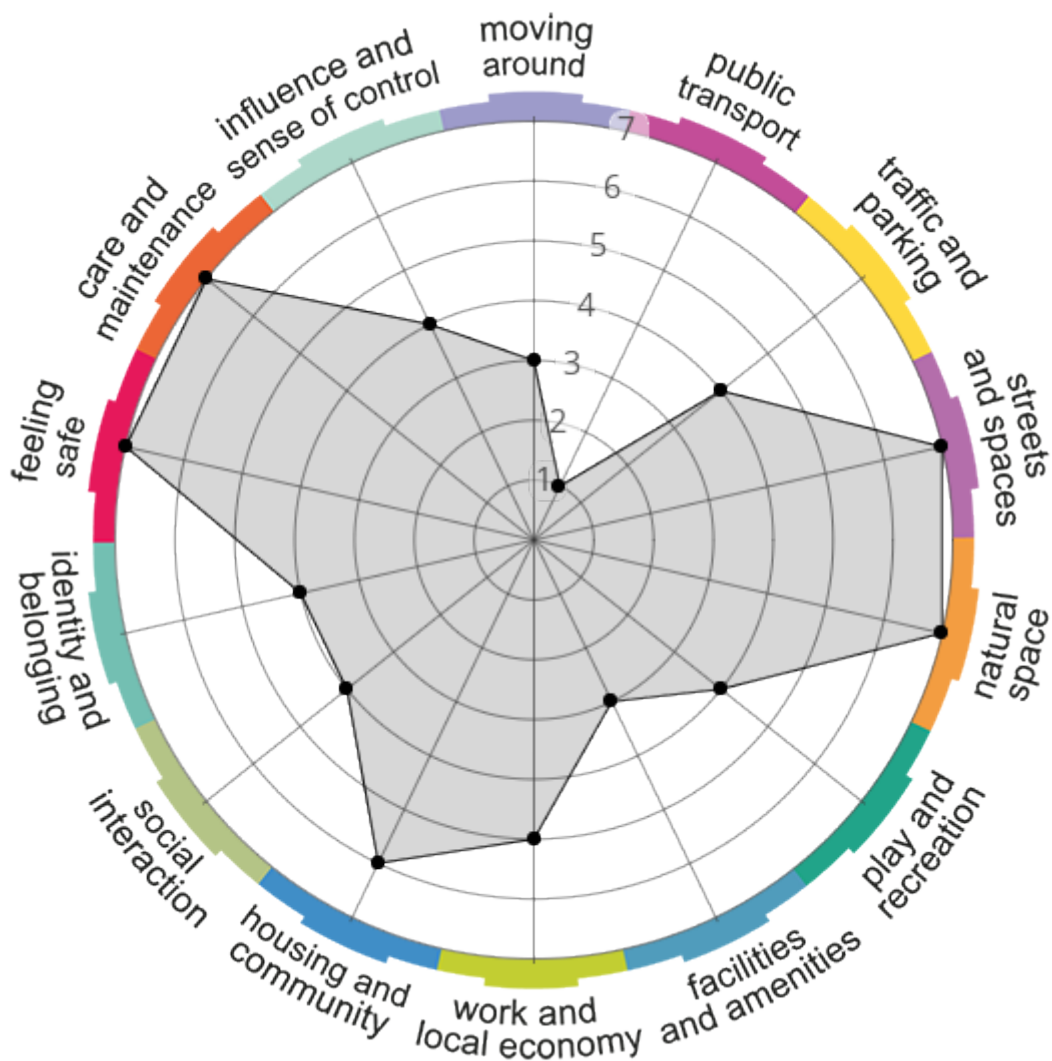
DATE: 16TH JAN 2022

## Assessment Area:

Date of Assessment: 16th Jan 2022

When you have answered all the questions, each point on the compass can be joined to produce a graph that indicates the relative strengths of the place.

The diagram will show you at a glance, where your place has done well, and where there is room for improvement. Where it has done well, the diagram will reach the edge of the circle. Where it has done poorly, it will touch the centre.



# 1. MOVING AROUND

Can I easily walk and cycle around using good quality routes?

**RATING: 3**

**Comment:**

Infrastructure incomplete - pavements end abruptly and there are no safe crossing points

---

# 2. PUBLIC TRANSPORT

Does public transport meet my needs?

**RATING: 1**

**Comment:**

No public transport available

---

# 3. TRAFFIC AND PARKING

Do traffic and parking arrangements allow people to move around safely and meet the community's needs?

**RATING: 4**

**Comment:**

Houses have private parking and streets are generally quiet and safe

---



## 4. STREETS AND SPACES

Do buildings, streets and public spaces create an attractive place that is easy to get around?

**RATING: 7**

**Comment:**

"Its well maintained but we pay for it"  
Factor looks after communal areas

---

## 5. NATURAL SPACE

Can I regularly experience good quality natural space?

**RATING: 7**

**Comment:**

greenfield development at outskirts of city  
access to nearby estate with parkland

---

## 6. PLAY AND RECREATION

Do I have access to a range of spaces and opportunities for play and recreation?

**RATING: 4**

---

## 7. FACILITIES AND AMENITIES

Do facilities and amenities meet my needs?

**RATING: 3**

**Comment:**

single local shop, otherwise lack of amenities. amenities are a distance or inaccessible by active travel

---

## 8. WORK AND LOCAL ECONOMY

Is there an active local economy and the opportunity to access good quality work?

**RATING: 5**

---

## 9. HOUSING AND COMMUNITY

Does housing support the needs of the community and contribute to a positive environment?

**RATING: 6**

**Comment:**

new development - owner-occupied homes  
active choice to live there "for community"

---

## 10. SOCIAL INTERACTION

Is there a range of spaces and opportunities to meet people?

**RATING: 4**

**Comment:**

no purpose-built community facilities within the development. Established village community with primary school in liff

---

## 11. IDENTITY AND BELONGING

Does this place have a positive identity and do I feel I belong?

**RATING: 4**

**Comment:**

only through involvement with committee of local residents association

---

## 12. FEELING SAFE

Do I feel safe?

**RATING: 7**

---

## 13. CARE AND MAINTENANCE

Are buildings and spaces well cared for?

**RATING: 7**

**Comment:**

Service fee -  
maintainance organised by developer  
council look after play park

---

## 14. INFLUENCE AND SENSE OF CONTROL

Do I feel able to participate in decisions and help change things for the better?

**RATING: 4**

**Comment:**

through involvement with committee

---

# PRIORITIES FOR ACTION

What are the main issues and priorities for change that you have identified?

**Comment:**

**No public transport or safe access to green circular / Invergowrie / local services**

**Car is a must**

**Not considered as a lifetime neighbourhood - without car you would be isolated**

**mostly families with children - no space at schools**

# PRIORITIES FOR ACTION

What actions could be taken to address these?

**Comment:**

**New school with community facilities / play group**

**Public transport**

**Joined up infrastructure**

### 9.3 Appendix 3: Workshop Data - Place Standard Assessment: Hilltown Dundee, Dundee

# PLACE STANDARD - RESULTS

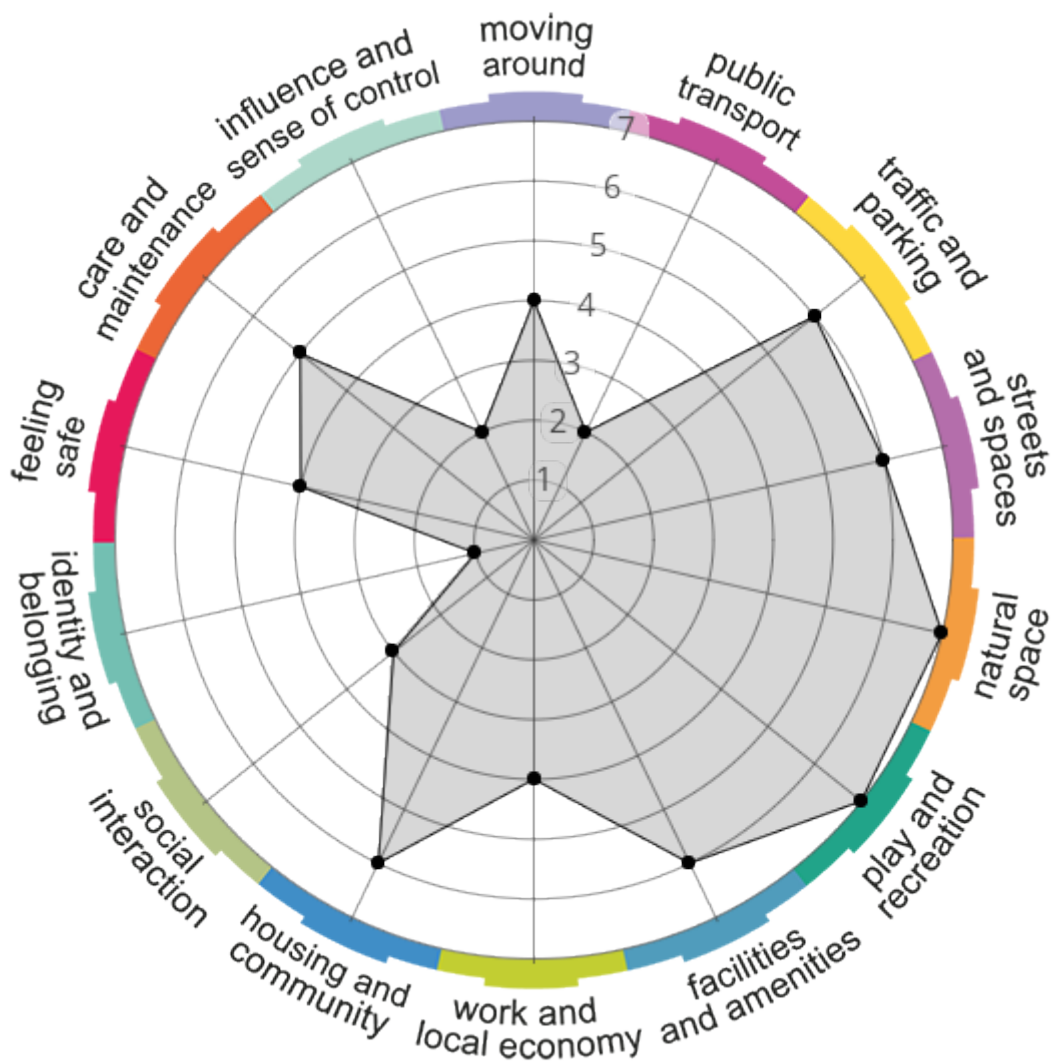
DATE: 16TH JAN 2022

## Assessment Area:

Date of Assessment: 1st Jul 2021

When you have answered all the questions, each point on the compass can be joined to produce a graph that indicates the relative strengths of the place.

The diagram will show you at a glance, where your place has done well, and where there is room for improvement. Where it has done well, the diagram will reach the edge of the circle. Where it has done poorly, it will touch the centre.



# 1. MOVING AROUND

Can I easily walk and cycle around using good quality routes?

**RATING: 4**

**Comment:**

Walking - yes

Cycling no (would score 1)

Improved access for less able-bodied or prams etc

---

# 2. PUBLIC TRANSPORT

Does public transport meet my needs?

**RATING: 2**

**Comment:**

Not convenient - faster to walk or drive

Bus route loops in the wrong direction - would take a long time to reach destination (City Centre)

---

# 3. TRAFFIC AND PARKING

Do traffic and parking arrangements allow people to move around safely and meet the community's needs?

**RATING: 6**

**Comment:**

City centre workers use the free parking spaces in the street - causes a problem for residents  
noticeable difference in traffic and numbers of parked cars during covid-19  
back to pre-pandemic levels

---



## 4. STREETS AND SPACES

Do buildings, streets and public spaces create an attractive place that is easy to get around?

**RATING: 6**

**Comment:**

Nice residential area

---

## 5. NATURAL SPACE

Can I regularly experience good quality natural space?

**RATING: 7**

**Comment:**

Private garden - feel green

---

## 6. PLAY AND RECREATION

Do I have access to a range of spaces and opportunities for play and recreation?

**RATING: 7**

**Comment:**

Dudhope park easily accessible

---