HITRANS
Living Well Locally Study

Tool Manual and Methodology

Contents

Introduction

This booklet is made to accompany the "Living Well Locally" baselining tool available on the HITRANS website. This booklet explains the reasons for the tool, the methodology and data used to develop and a summary of the findings. It also sets out recommendations for applications of the tool and how it could be adapted in the future.

The Programme for Government 2021 committed the Scottish Government to working with local government and other partners to take forward ambitions for 20 minute neighbourhoods: places that are designed so residents have the ability to meet the vast majority of their day-to-day needs within a 20 minute walk (approximately 800 metres) of their home, through access to safe walking and cycling routes, or by public transport.

In March 2021, with support from the Scottish Government, ClimateXChange published "20 Minute Neighbourhoods in a Scottish Context", written by Ramboll. The paper considers the ambition for 20-minute neighbourhoods in Scotland, taking account of the differing settlement patterns across the country (urban and rural), and highlights interventions that would support delivery of the concept, supported by findings from baseline analysis. The report concluded that Scotland has the opportunity to be a global leader in delivering the

concept of a 20-minute neighbourhood across the country, showing that it is feasible in both urban and rural locations. The team has since been exploring the implications of the report's recommendations in different places. It was recently presented alongside the Scottish Government at the Nordic Pavilion at COP26: Choosing Green – Nordic Perspectives: Climate and Citizen Participation on Co-creation and Co-benefits. This event showcased Nordic and Scottish examples of how citizen participation in spatial planning can contribute to building climate-resilient net-zero communities. It demonstrated how the Place Standard Tool can deliver sustainable, climate conscious and healthy places, with a particular focus on rural communities.

Features of a 20 minutes neighbourhood
©Ramboll, 2021, '20 minute
neighbourhoods in a Scottish context'

One of the key findings of the March 2021 research is that tailored local considerations are required to realise the vision of 20-minute neighbourhoods, and that the plan must be people-centred and developed in collaboration with community stakeholders. The findings of the Scottish Context study must be refined and implemented in smaller local contexts.

Since 2021, the concept has been a major policy focus in Scotland. A core principle of the proposed National Planning Framework 4 is the delivery of 20-minute neighbourhoods. There is a special emphasis on rural areas.

'Create carbon neutral coastal and island communities: Future-proofing local liveability will benefit people as well as the planet. Island and coastal communities will need a bespoke and flexible approach to the concept of 20 minute neighbourhoods, for example by identifying service hubs in key locations with good public transport links. This can build long-term resilience and self-reliance whilst sustaining dispersed communities and rural patterns of development'.

Outcomes of a 20 minutes neighbourhood
©Ramboll, 2021, '20 minute
neighbourhoods in a Scottish context'

The Highlands and Islands Transport Partnership (HITRANS) is a statutory regional transport partnership that serves Eilean Siar (the Western Isles), Orkney, Highland, Moray, and the majority of Argyll and Bute (Helensburgh and Lomond are covered by SPT). Ramboll's baseline tool builds on the Scottish Government's "20 Minute Neighbourhoods in a Scottish Context" research for ClimateXChange, which has been adapted to address the needs of HITRANS.

The baselining tool was designed to support the delivery of the 20 minute neighbourhood concept in a rural context by providing a strong evidence base for understanding the opportunities and challenges for implementing intervention policies across the HITRANS region.

The tool is described in further detail in this booklet, but in summary, it employs five dimensions to capture the characteristics and infrastructure, as well as the quality of services and experience, that comprise a 20 minute neighbourhood: Stewardship, Civic, Movement, Resources, and Spaces. These dimensions are used together to determine the extent to which neighbourhoods across HITRANS exhibit characteristics that meet the 20 minute neighbourhood concept.

ORKNEY

EILEAN
SIAR

MORAY

HIGHLANDS

ARGYLL
AND
BUTE

The Highlands and Islands Transport Partnership (HITRANS) area

Methodology and Data

The approach outlined below examines how close places in the HITRANS region are to meeting the nationally recognised definition of a 20-minute neighbourhood, while adapting the baseline to cater for rural areas.

Table 1 categorises the nationally recognised concept of a 20-minute neighbourhood. It lists the data assigned for quantitative features and qualitative indicators assigned for this study under these categories.

Methodology Advancement
This methodology is based on that applied in the national research network '20 minute neighbourhoods in a Scottish context' for the HITRANS region. A detailed methodology can be found on page 7 of this document.

The Scottish Government's definition of a 20-minute neighbourhood takes accessibility into account and utilises 800 metres as the walkable distance. However, as several HITRANS forums have indicated, there are difficulties in adopting this distance. For example, in January 2022, SRA, SRITC, and SURF stated that "*in vast areas of the Highlands and Islands, it is simply pie-in-the-sky to assume that daily services, facilities, and amenities can be provided within 20 minutes of walking or cycling.*" Many of these are included on page 8 of HITRANS and SUSTRANS (2022)' 'Living Well Locally - 20 Minutes Communities in the Highlands and Islands'.

In order to improve the tool, a 3km radius covering a 20-minute bicycle journey was recommended in addition to the 800m radius. The 3km radius differentiation improved the data calculation in two ways: it allowed for a comparison of pedestrian and cycling areas and it added depth to the scores of each movement scale.

'Living Well Locally – 20 Minutes Communities in the Highlands and Islands' the author, Nick

Place Standard Dimension	Place Standard Category	Sub-category	Quantity Features	Quality Indicators
Movement	Public Transport		Point data sets including: Airports, Bus stations, bus stops, railway stations, subway stations, ferry ports	SMID - "Access" ranking
	Moving Around	Safe Cycle Networks	Point data sets including: cycle Parking, bike rental Line data including: sustrans cycle routes, national cycle routes	SMID - "Access" ranking, NPF - Journeys by active travel
		Walkability	Line data including: Core paths	SMID - "Access" ranking, NPF - Journeys by active travel
	Traffic and parking	Vehicle parking and charging	Point data sets including: Car parking locations, Electric Vehicle Charing Point	SMID - "Access" ranking
Civic	Identity and Belonging	Flexible Community Spaces	Point data sets including: Church Hall / Religious Meeting Place / Hall, Conference / Exhibition Centre, Public / Village Hall / Other Community Facility	NPF - Community ownership, NPF - Social Capital
		Cultural spaces and Heritage Assets	Point data sets including: Historic / Disused Cemetery / Graveyard, Historic Structure / Object, Museum / Gallery, Castle / Historic Ruin, Monument, Heritage Centre, Public Libraries, Public Mobile Libraries, Category A Listed Buildings, Properties in Care Polygon data including: Conservation Areas, World heritage sites, scheduled monuments	NPF - Culture (4 indicators), NPF - State of historic sites
	Feeling Safe	No applicable data	No applicable data	
Stewardship	Influence and sense of control	No applicable data	No applicable data	SMID - "Crime" ranking, NPF Children's Voices, NPF - Influence over local decisions
	Care and Maintenance	No applicable data	No applicable data	SMID - "Crime" ranking, NPF - Perceptions of Local Area NPF - perceptions of crime rate, NPF - Quality of Public Services

Table 1: Data Sources used in dashboard

Wright, states the difference between applying the 20-minute policy to urban and rural areas in Scotland in reference to both distance and services. It summarises the daily needs for rural residents in the area: health, community life, home, work, learning, and getting about.

This project uses these parameters to align with this research and calculate the basic or 'bare minimum' score. The score compiled only quantitative scores of the following elements: facilities and services, natural spaces, walkability, and safe cycle networks. Natural spaces are not defined in the 'Living Well Locally – 20 Minutes Communities in the Highlands and Islands' case study, but given that natural spaces are an important part of their environment, it was taken into consideration.

Data Constraints
In relation to the data overall, there are qualitative indicators that are missing, which tends to be the case in these studies. Up-to-date data would also improve the outcomes of the calculations and the scores.

Data Visualisation
As an advancement from the previous methodology the data is visualised in several ways. It is visualised as polygons as per the previous methodology and as centroids.

The visualisation of centroids allows a different visual output of the scoring. It shows changes in scores between the 800m and 3km, and movement patterns can be identified.

The data has also been visualised in a bar chart dashboard format which breaks down the individual scores for each category.

The dashboard and how to use it can be seen from page 8.

| Place Standard Dimension	Place Standard Category	Sub-category	Quantity Features	Quality Indicators
Resources	Work / Local Economy	Local Employment Opportunities	Polygon data sets including: SCRIG - Number Of Businesses (at ward level)	SMID - "Employment" ranking
		Flexible work space	Point data sets including: Offices / work Studios	SMID - "Broadband" ranking
	Facilities and Services	Local Schools and Education Opportunities	Point data sets including: Colleges, Education, First School, Further Education, Higher Education, Higher Education, Junior School, Non-State Secondary School, Other Education Establishment, Primary School, Secondary School, High School, University	SMID - "Education" ranking, NPF - Quality of children's services
		Local Shopping Centres	Point data sets including: Retail, Shop / Showroom	NPF - Perceptions of Local Area?
		Restaurant / Cafe	Point data sets including: Fast Food Outlet / Takeaway (Hot / Cold), Restaurant / Cafeteria	NPF - Perceptions of Local Area?
		Local health Facilities and Services	Point data sets including: Care / Nursing Home, Dentist, General Practice Surgery / Clinic, Health Care Services, Health Centre, Hospice, Hospital	SMID - "Health" ranking, NPF - Quality of Care experience
		Supermarket	Supermarket	
	Housing / Community	Housing diversity and flexibility	Point data sets including: house types: Detached, Semi-detached, terraced, self contained flats, dwellings, residential	SMID - "Housing" ranking, NPF - Satisfaction with housing
	Social Interactions		Point data sets including: Art Centre / Gallery, Bowls Facility, Cinema, Entertainment Complex, Market (Indoor / Outdoor), Museum / Gallery, Tenpin Bowling Facility, Theatre, Wildlife / Zoological Park, Zoo / Theme Park	NPF - Places to interact
Spaces	Play and recreation	Local playgrounds and parks	Point data sets including: Play Area, Playground	NPF - Visits to the outdoors
		Sport and recreation facilities	Point data sets including: Activity / Leisure / Sports Centre, Cricket Facility, Football Facility, Golf Facility, Indoor / Outdoor Leisure / Sporting Activity / Centre, Leisure - Applicable to recreational sites and enterprises, Rugby Facility, Sport / Leisure Support, Water Sports Facility, Shinty Facility	NPF - Physical Activity
	Natural Space		Point data sets including: Forest / Arboretum / Pinetum (Managed / Unmanaged), Forestry, Park, Private Park / Garden, Public Open Space / Nature Reserve, Public Park / Garden, Recreation Ground, Woodland Polygon data sets including: Open OS Greenspace polygon, Surface Water polygons (over a certain size)	NPF - Access to green and blue space
	Streets and spaces		Point data sets including: Cemeteries, Bench, Dog Litter Bins, Litter Bins, Memorial, Street Lighting	NPF - Places to interact (duplicated)

Table 1: Data Sources used in dashboard

Methodology

The following steps show the process used to create the baseline tool:

1. Create output areas with population-weighted centroids.

2. Create 800m and 3km buffers around each of the output areas' population-weighted centroids.

3. Collate the data.

4. Assign data source to a category.

5. Count the number of physical assets for each category that fall within each of the buffers. For example, count all airports, bus stops and stations, railway stations, subway stations, and ferry ports.

6. If there are multiple sub-categories of data, then the counts for each of the sub-categories are added together to get a final category score.

7. Determine the percentile (out of 10) in which the count of the physical assets falls when compared to the count of physical assets for all other 800 m polygons. This gives a quantitative score out of 10 for each category.

8. Reorder the ranking so 10 is the value for the buffers with the most physical assets.

9. Some of the qualitative data comes as a rank (e.g. SMID), some of it comes in as percentage scores (e.g. National Performance Indicators). To ensure the data is comparable all data is then put into a rank, and then orientated to the direction where highest rank value is the "best". This rank is applied to the raw data.

10. The qualitative data is derived from polygons that are larger than the output areas. As a result, assign the qualitative data value to the polygon in which it falls.

11. If there are multiple sub-categories of data, then the ranks for each of the sub-categories are averaged together to get a final category score.

12. For the qualitative data, the percentile is then determined when compared to the rank for all other polygons.

13. Reorder the ranking so 10 is the value for the buffers with the "best" qualitative rank.

14. This gives a score for the qualitative data out of 10 for each category.

15. At this stage we have two scores for each category: a quantitative score (out of 10); and a qualitative score (out of 10). To get a final score for each category, the quantitative and qualitative scores are added together to get a score out of 20.

16. To get an overall score for each buffer, the scores for each category are added together.

17. The bare minimum score was established by taking into account the minimum quantity of amenities and services, natural spaces, walkability, and safe cycle networks.

18. There are two visualisation possibilities: showing the results on the output centroids or re-assigning them back to the output area polygons.
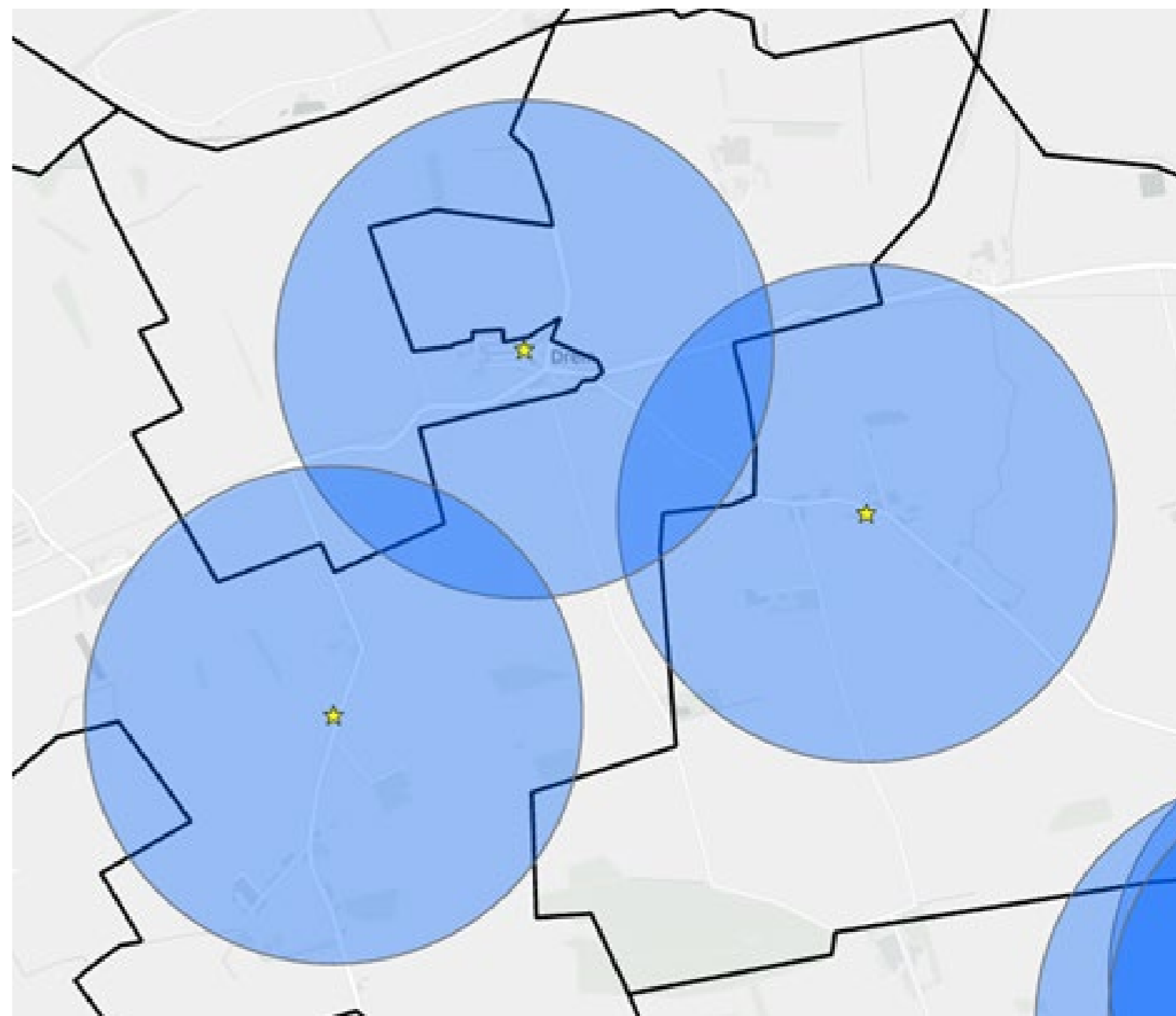
Population centres and 800m buffer

Baselining Tool

Description of the baselining tool, how to use it and the potential applications of the tool.

The dashboard is a visual output of the methodology explained above. It is composed of different layers that show different outputs from the data. The diagram below explains the functions of the dashboard and where the data outputs are displayed.

The image below shows the dashboard as it will be displayed when the tool is opened and a neighbourhood area is selected.

1   Map view of the baseline and data outputs

2   Selection tool to select neighbourhood area

3   Address or postcode search bar

4   Map legend

5   Data layer selection

6   Map zoom function

7   Refinement of data selection

8   Output area population number and density

9   Percentage score against full definition of 20 minute neighbourhoods

10   Percentage score against bare minimum characteristics of 20 minute neighbourhoods

11   Score breakdown against 20 minute neighbourhood categories

12   Scores for access within 3km and 800m neighbourhood areas scores

13   Summary

14   Instructions to use the tool
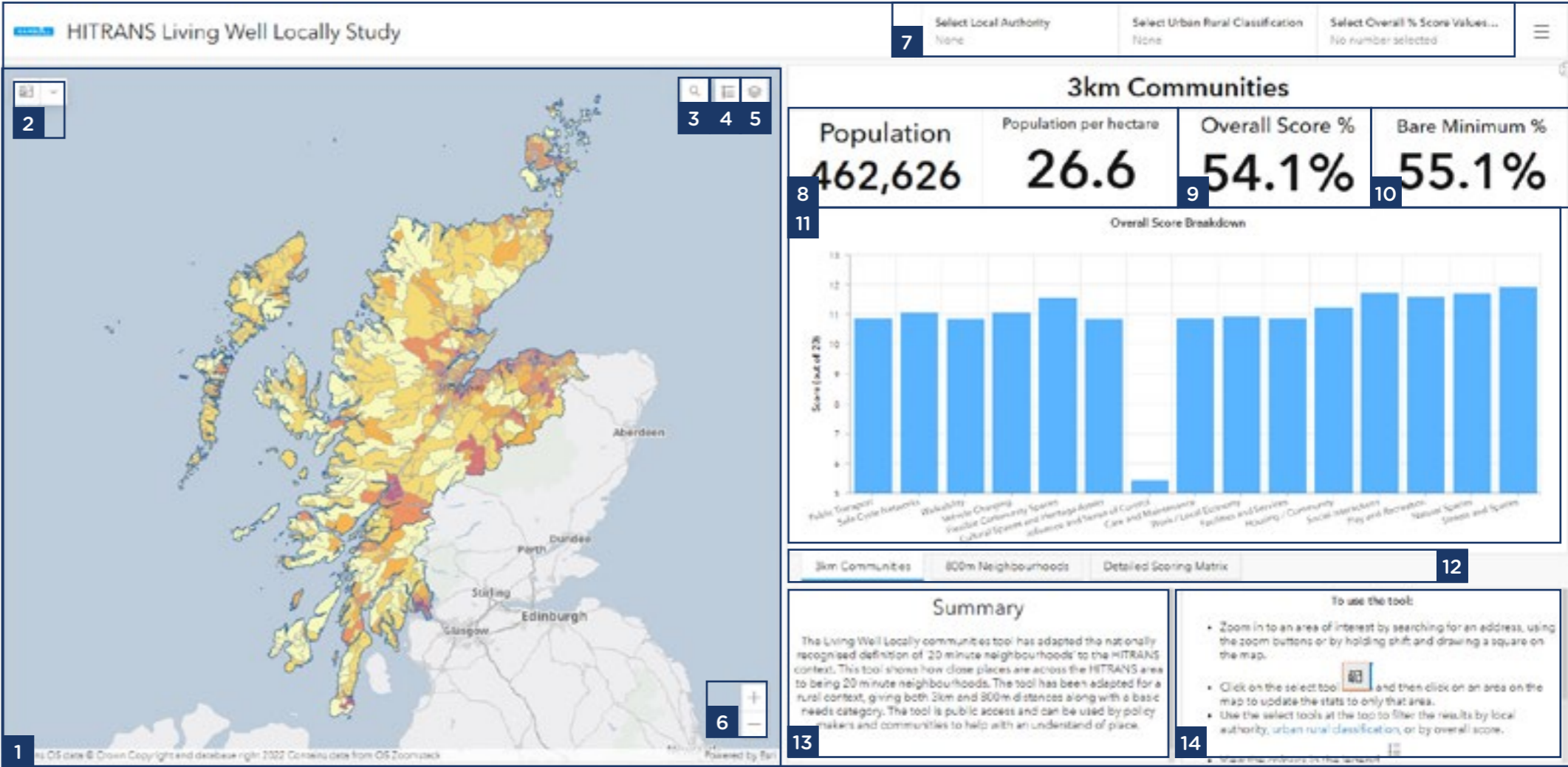
At opening the dashboard shows the total population value for all census output areas plus the average population per hectare, average overall score, and average bare minimum for all census output areas. The graph shows breakdown of scoring by category, initially showing the average score values for all census output areas.

How to select a neighbourhood area on the opening dashboard (3km neighbourhood access)
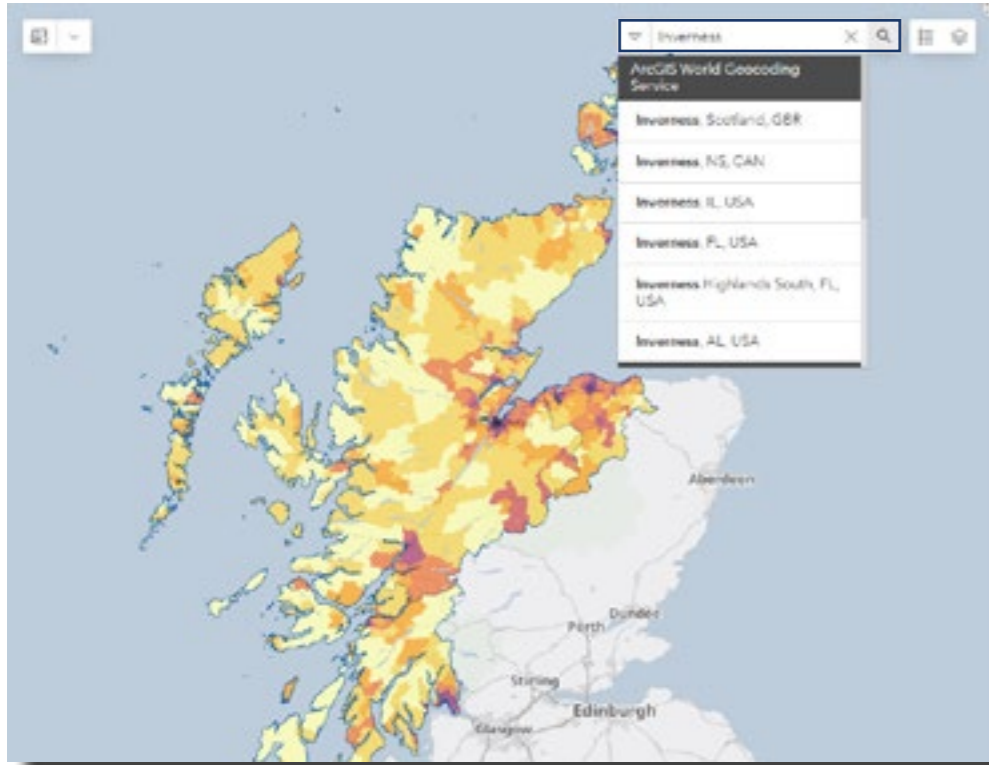
1   Use the search bar to type in a place name or postcode
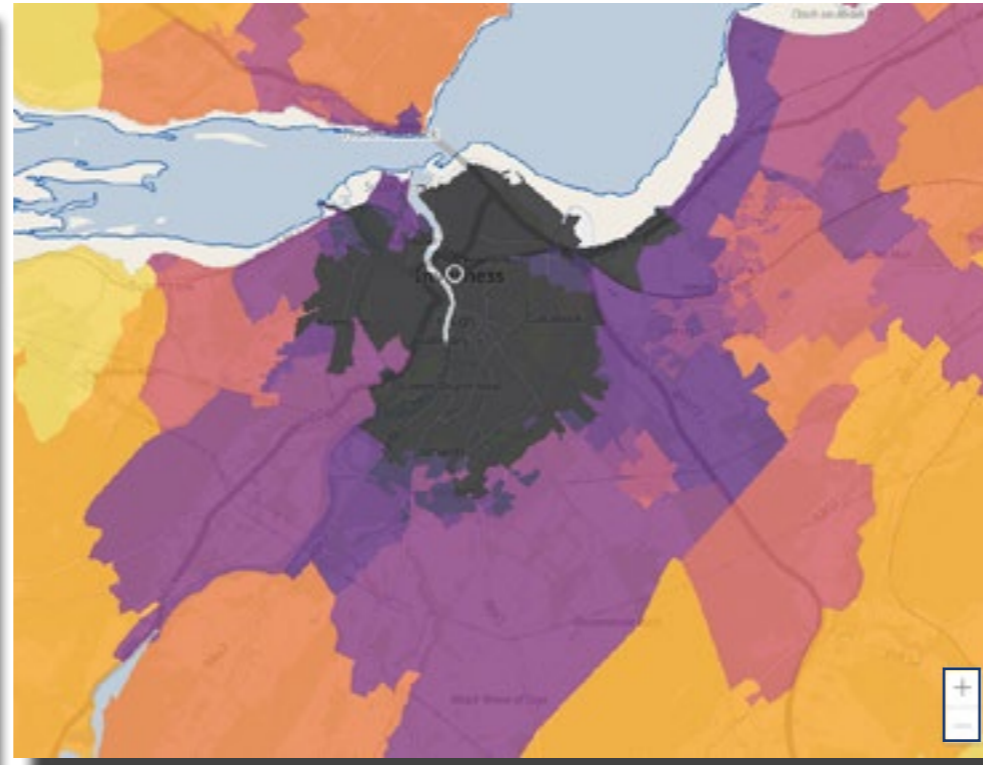
2   Use the zoom tool or mouse to find an exact neighbourhood area
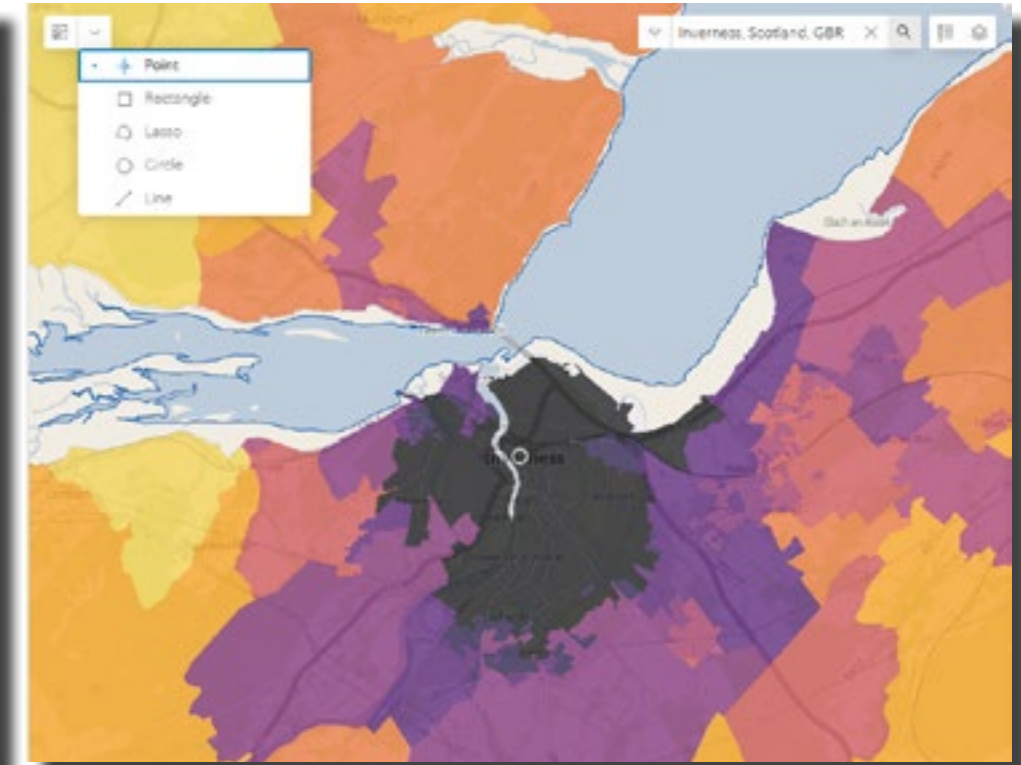
3   From the drop down menu, select the point option
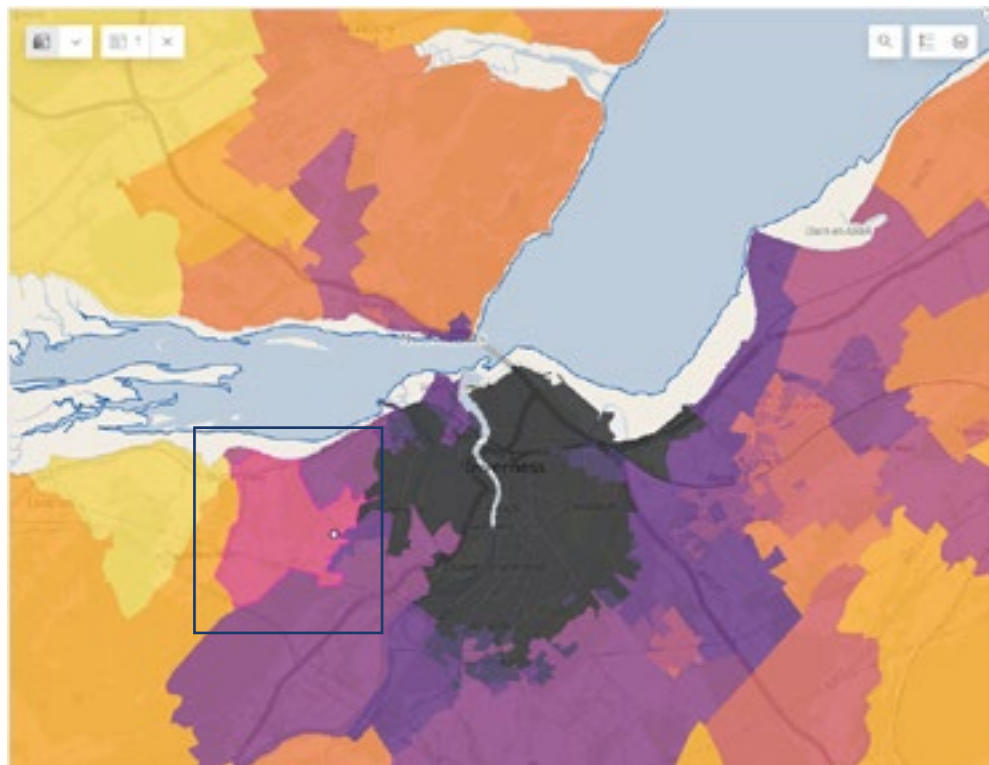
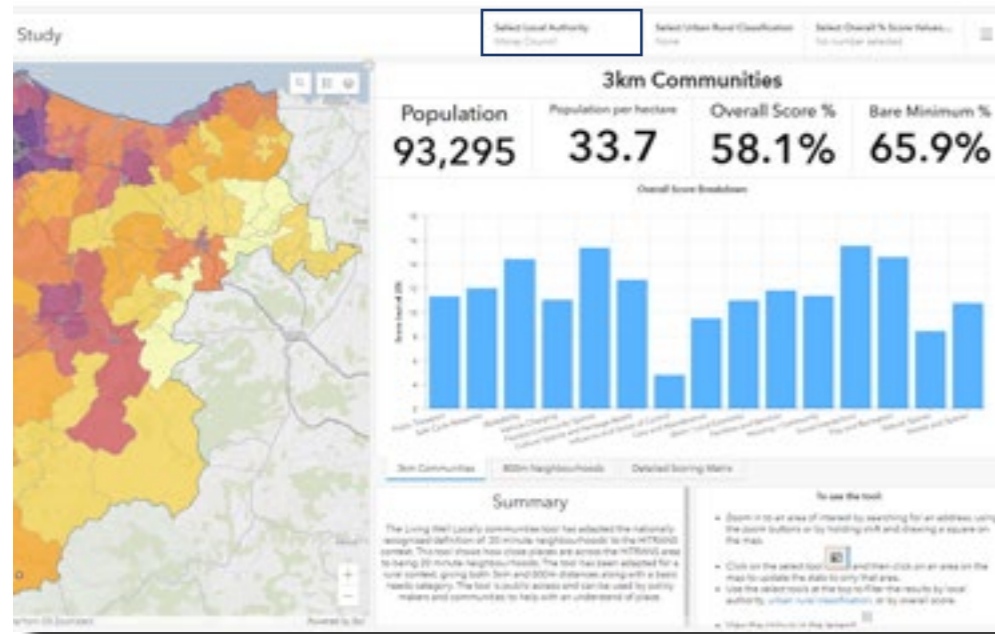**4**   Using the point cursor select a neighbourhood area (turns pink)
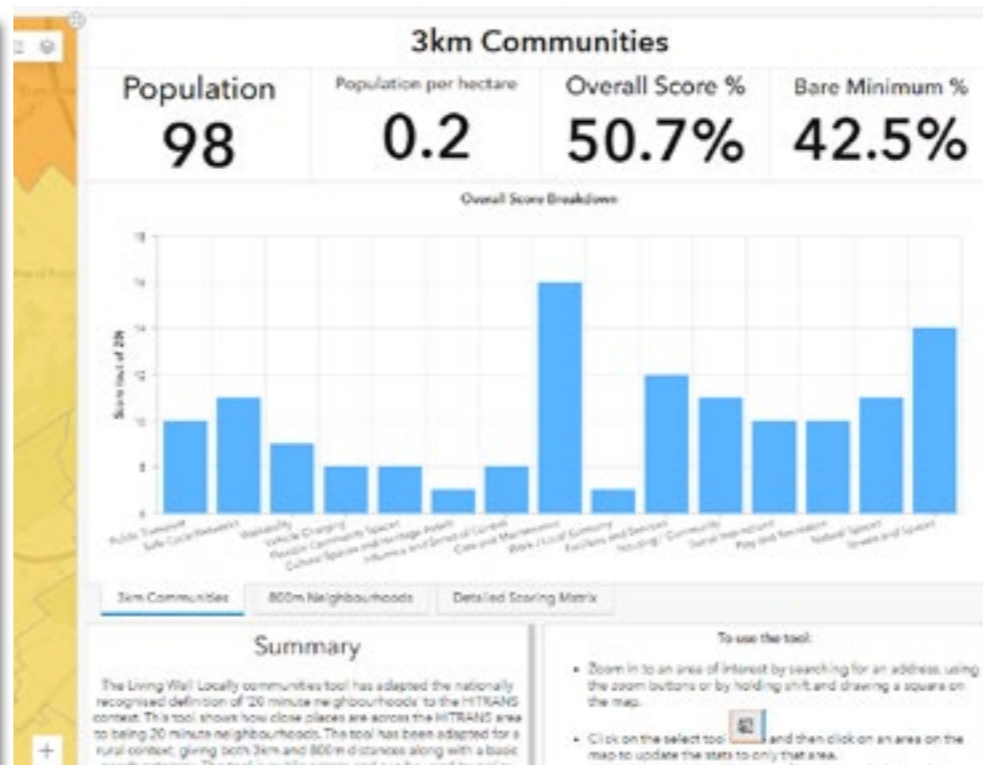
**5**   The dashboard now displays the details of the selected neighbourhood for the 3km distance
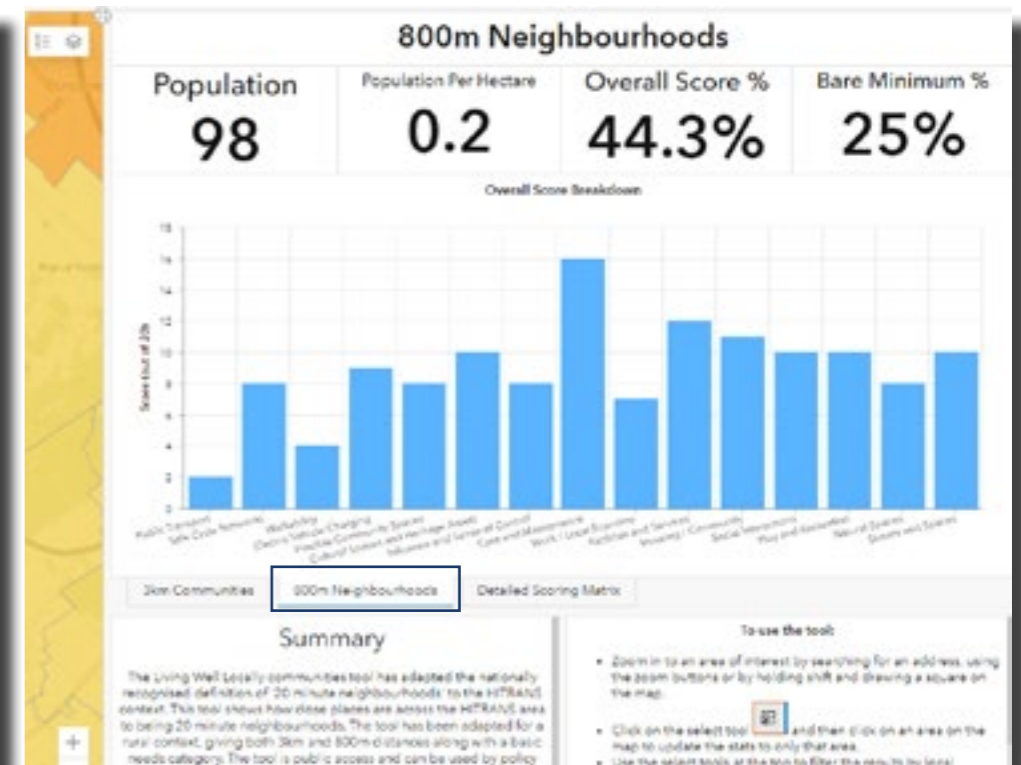
6   Select the 800m tab to view the 800m distance results

How to compare different neighbourhoods using the dashboard

7 There are options at the top of the screen to limit the data being presented, for example to only show the results for a specific HITRANS Council. This gives options to show the average score for that local authority area. Above is the average score for Moray Council for the 3km neighbourhood scores
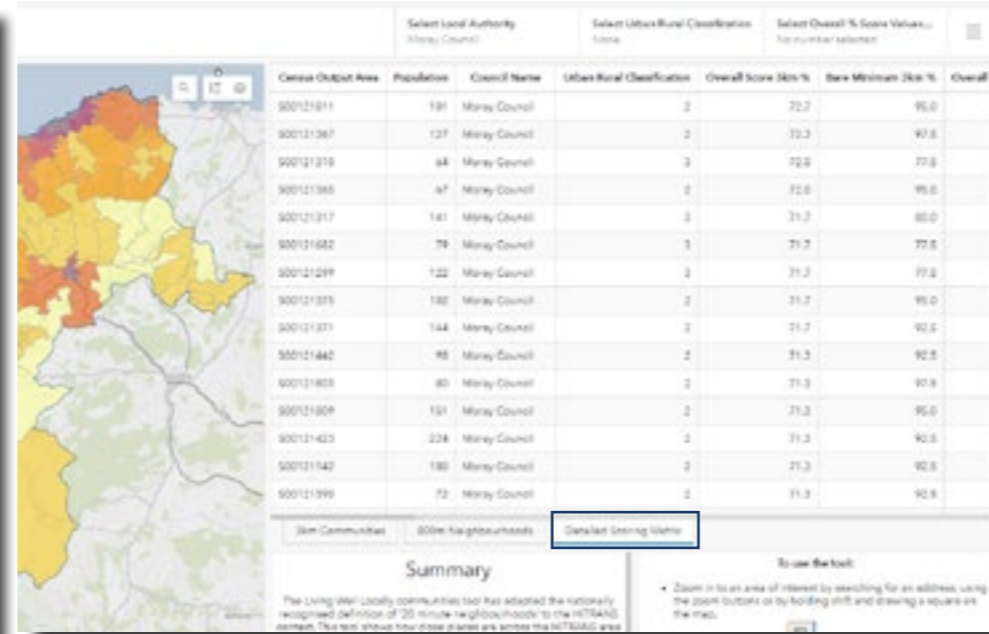
8 Select the 'Detailed Scoring Matrix' tab to see the table of scores. This shows the scores per census output area, ordered by highest average score % value.
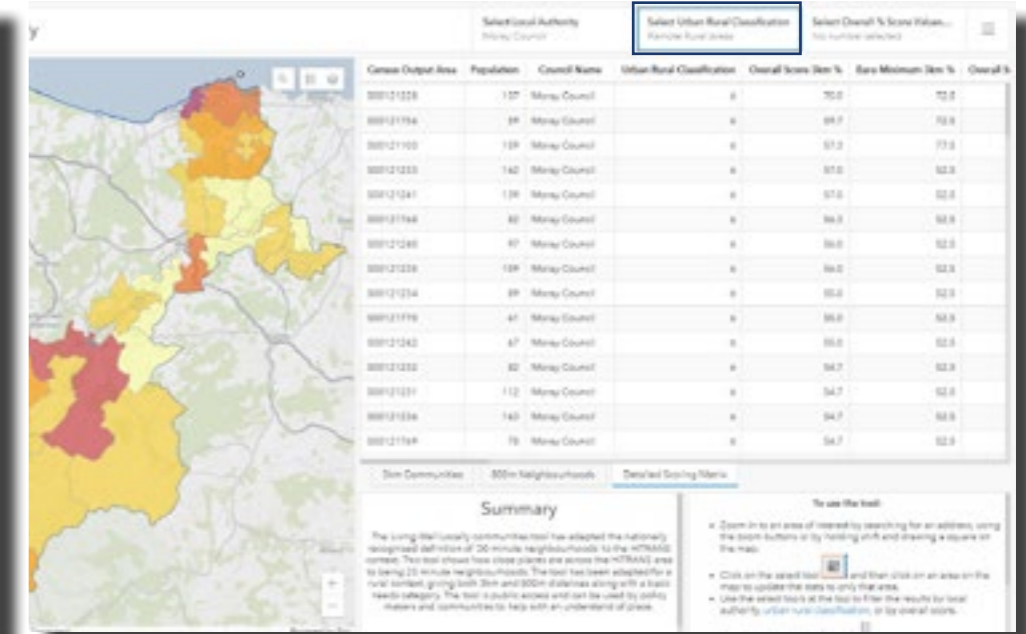
9 Selecting the urban rural classification also allows the census output areas to be selected based on which urban rural classification they fall into (again updating the output area ranking graph and the detailed scoring matrix).
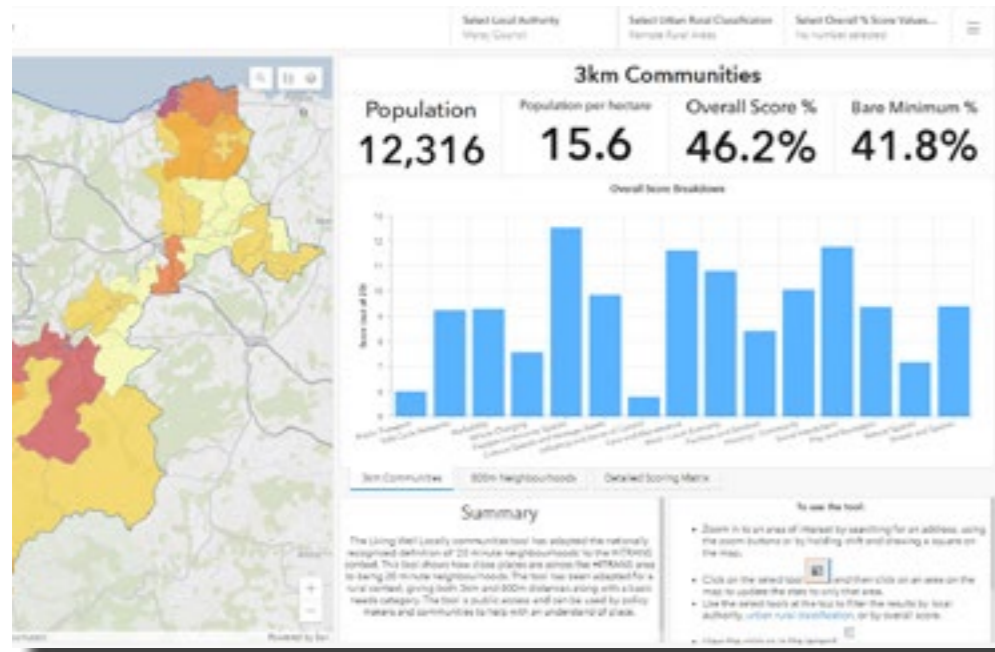
10 On the dashboard the statistics for 3km and 800m communities update on this new selection
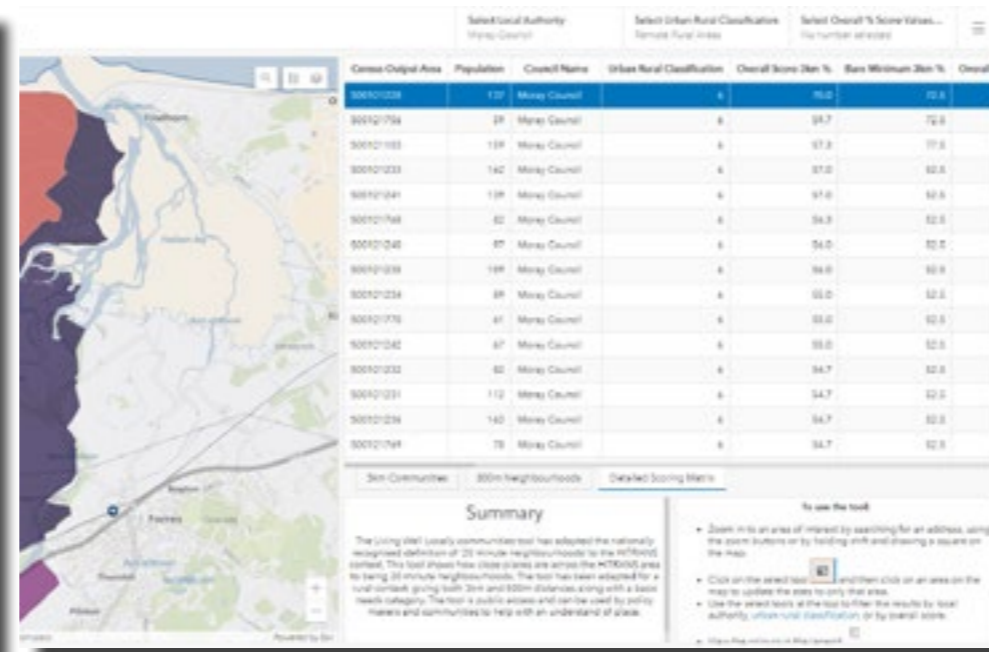
11 If any of the values in the detailed scoring matrix are of interest then you can click on one to show it on the map. This will also update the dashboard.
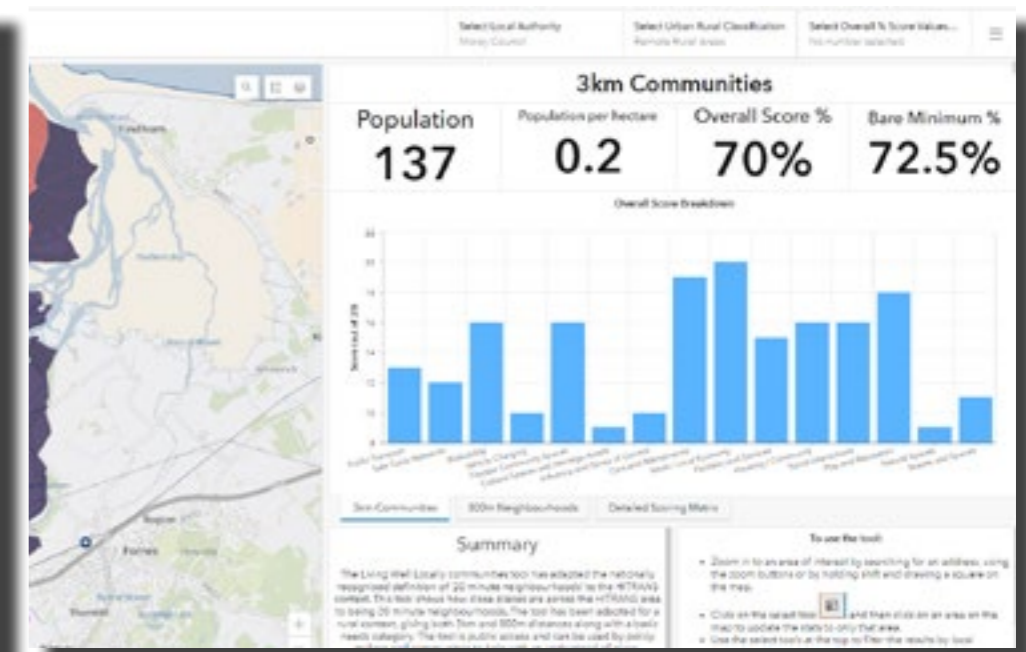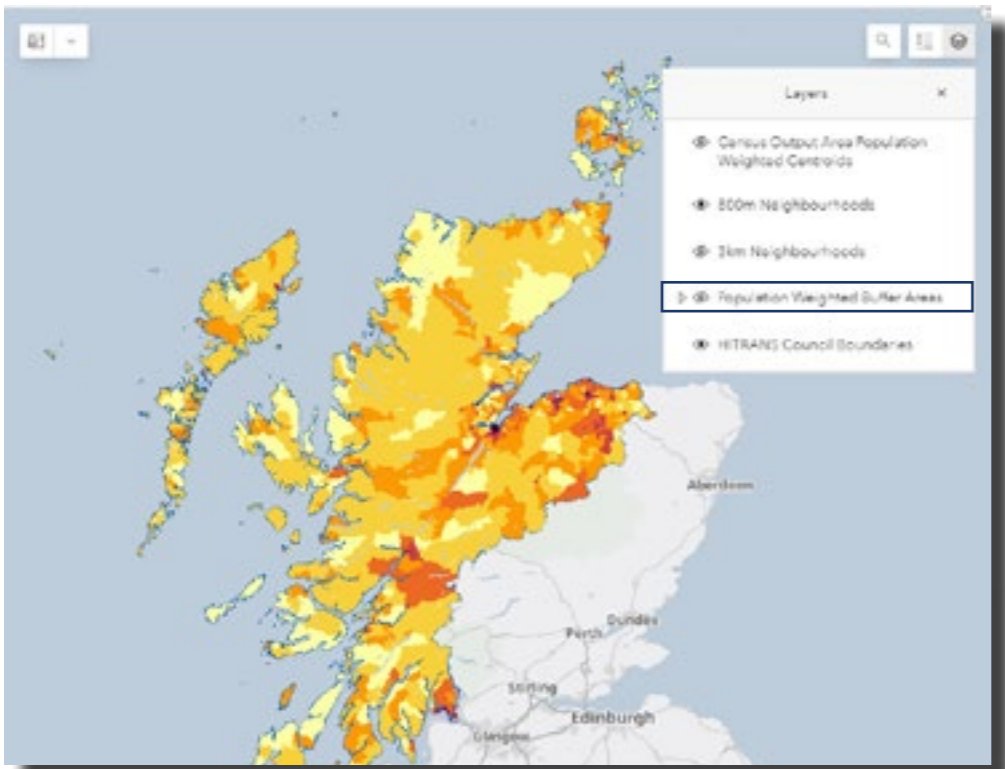

12 The tools at the top of the page can also be updated to limit the values shown, for example to show only the highest or lowest scores.

How to show different outputs
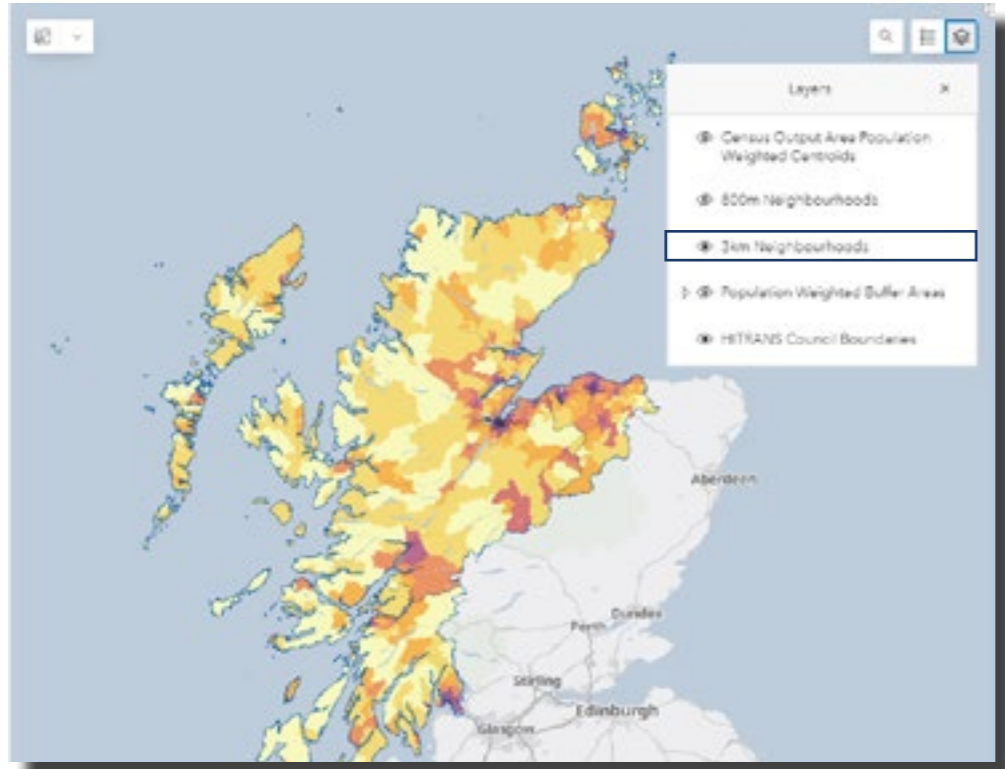
1   Select the drop down layers to show the map options

**2**   Turn the layers on and off by clicking the eye symbol

The different map layers that can be displayed

**A**   Opening dashboard: 3km neighbourhoods full definition

The dashboard charts and results are linked to the '3km Overall Score %' layer, however other data layers that make up the tool can also be displayed. These will not update the dashboard.

This display shows the accessibility and quality of the categories of the 20 minute neighbourhood within 3km of the centre of population of the output area.
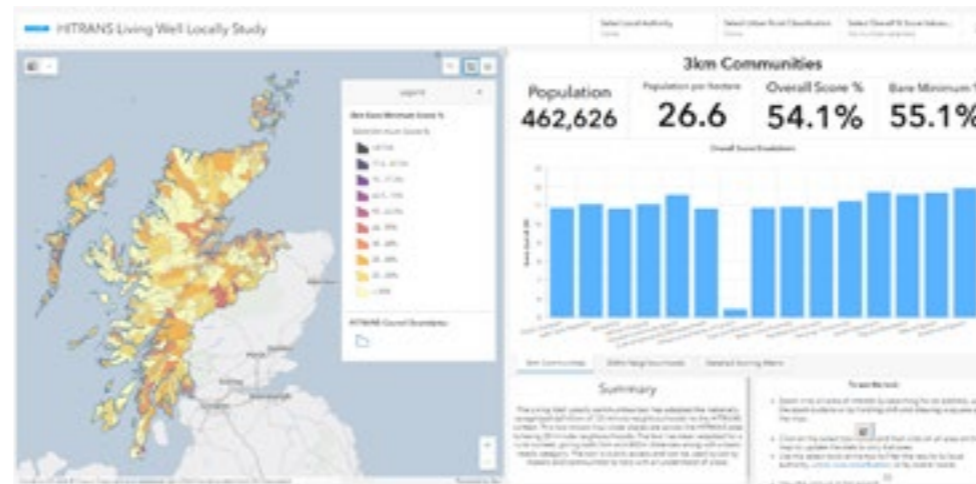
B   3km neighbourhoods minimum services

This display shows the accessibility of minimum services required for a 20 minute neighbourhood within 3km of the centre of population of the output area based on case study research in the HITRANS area.
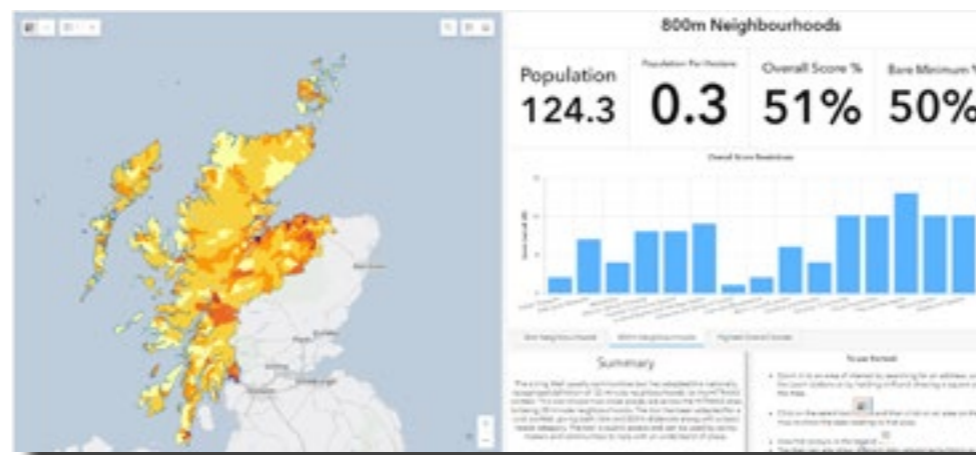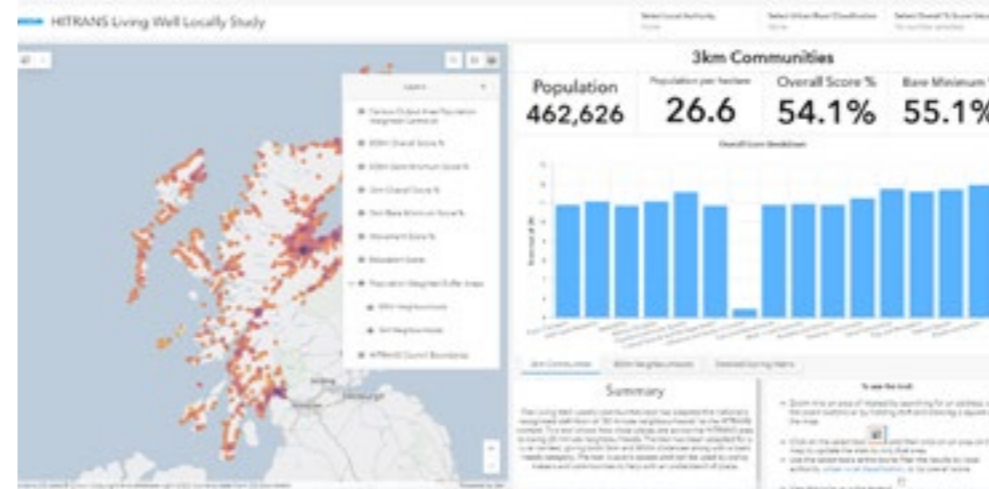

C   800m neighbourhoods full definition
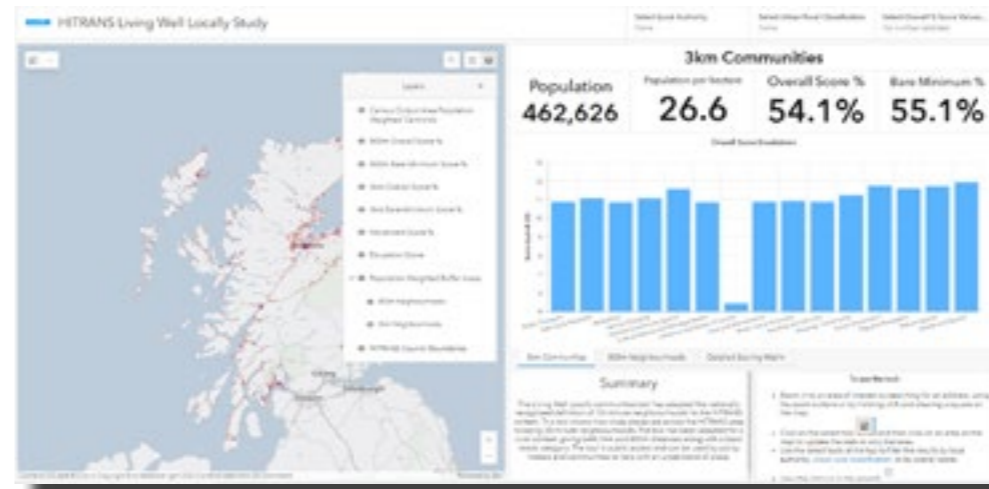
This display shows the accessibility and quality of the categories of the 20 minute neighbourhood within 800m of the centre of population of the output area.
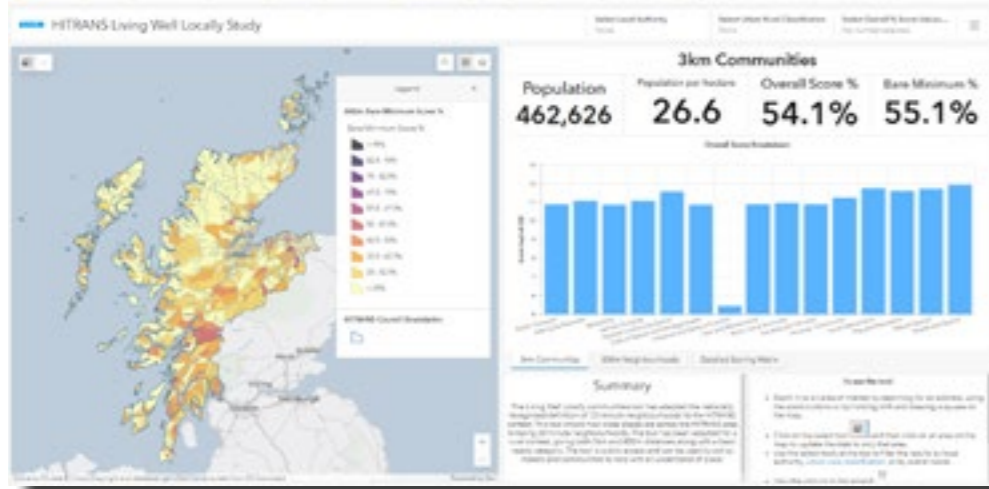
D   800m neighbourhoods minimum services

This display shows the accessibility of minimum services required for a 20 minute neighbourhood within 800m of the centre of the population of the output area based on case study research in the HITRANS area.

E   Access to transport

This display shows the access to public transport, cycling and walking infrastructure within 3km.

F   Access to schools

This display shows the accessibility to schools within 3km.

G   Population centres 3km

This layer can be turned on to see where the population weighted centres used for the 3km study are located.

H   Population centres 800m

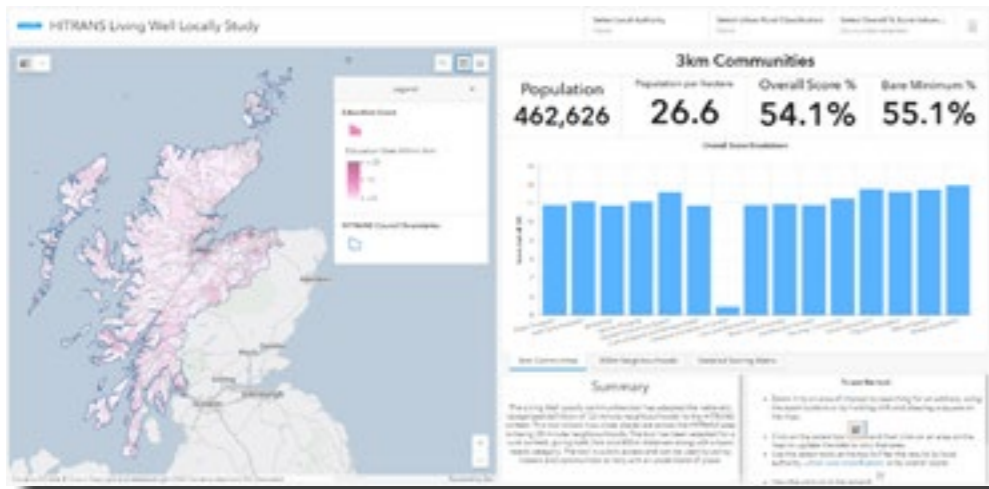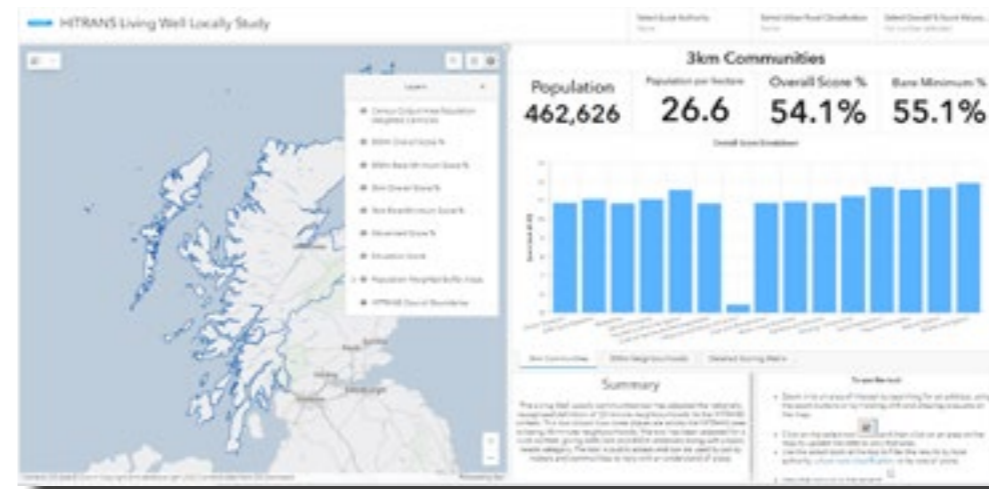This layer can be turned on to see where the population weighted centres used for the 800m study are located.

I   HITRANS Council boundaries

This layer can be turned on to show the boundaries of the different council areas with in the study boundary.

Key Findings

Key findings from the baseline analysis.

The tool itself has many layers to it, so it is encouraged for users to explore the tool and draw their own conclusions. However, this page displays some key findings observed across the HITRANS region.

In general, the overall score percentages (both 800m and 3km) are lower than the "20 Minute Neighbourhoods in a Scottish Context" study's results. The highest score in 800m is 86% and in 3km is 81%, whereas 99% was a score of the previous study. This suggests that

although there are places in the HITRANS area that are functioning as 20 minute neighbourhoods, many places lack all of the aspects needed to fulfil the full definition.

3km Neighbourhoods

800m Neighbourhoods
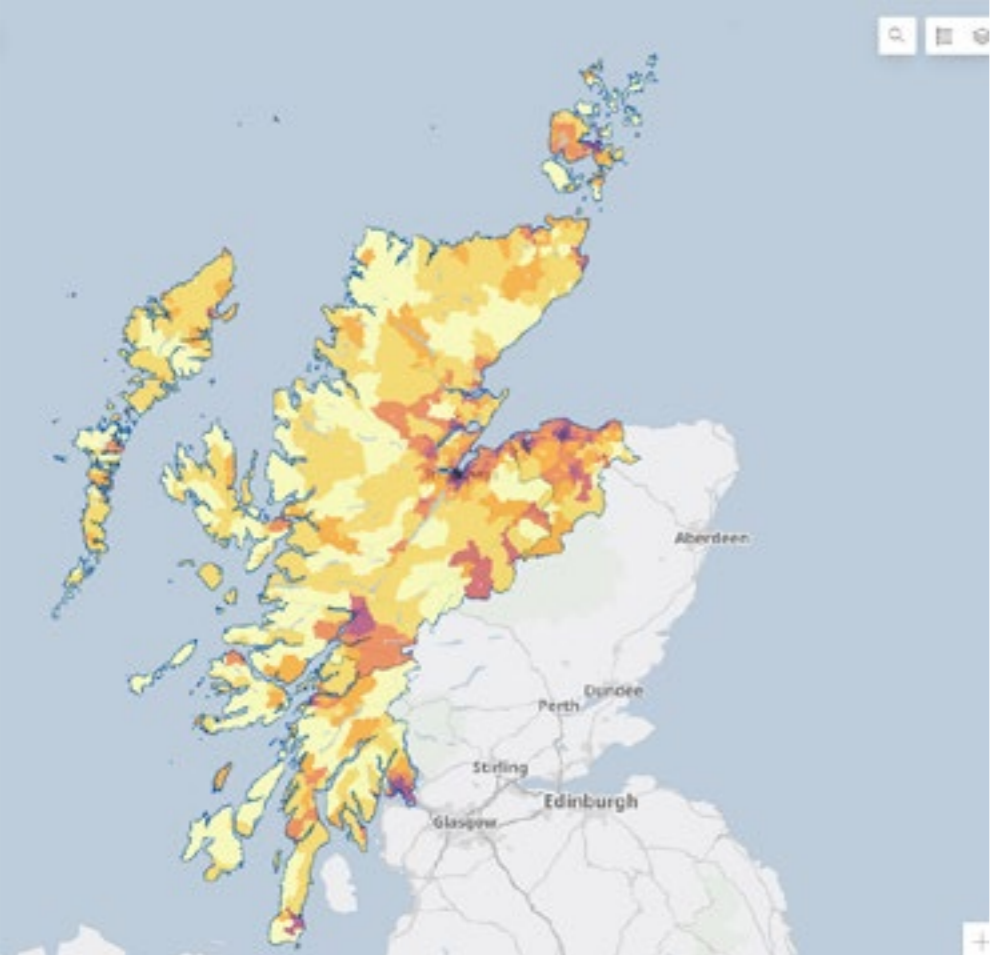
Population Weighted Buffer Areas
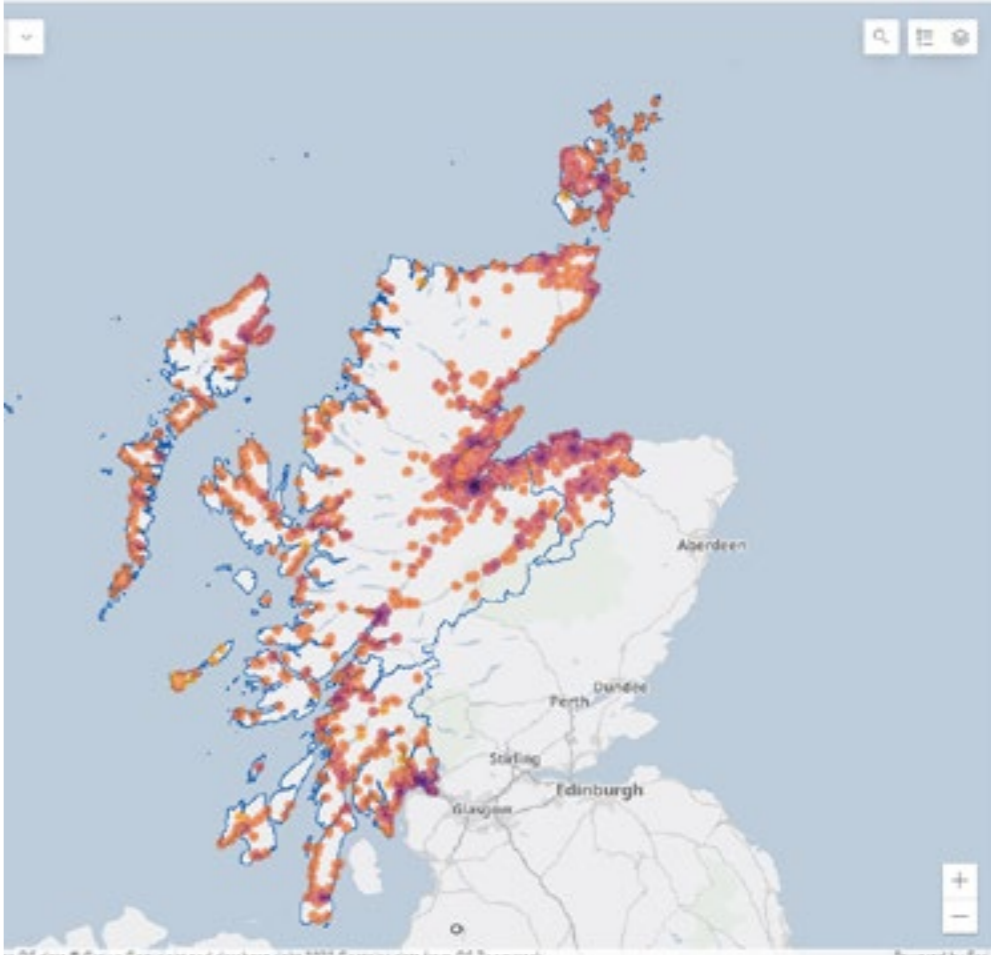
Highest scoring areas

The top overall scores percentages of 800m (86-80%) are in urban areas (for example Inverness and Forres). The top overall scores percentages of 4km (81-80%) are in Inverness only. On the bare minimum score percentage (800m and 3km), the highest scores (90-100%) are the town centres. The highest score in 800m is 100%, whereas in a 3km radius it is 98%. This is due to urban areas having a range of services close together and all of the services required under the bare minimum definition.
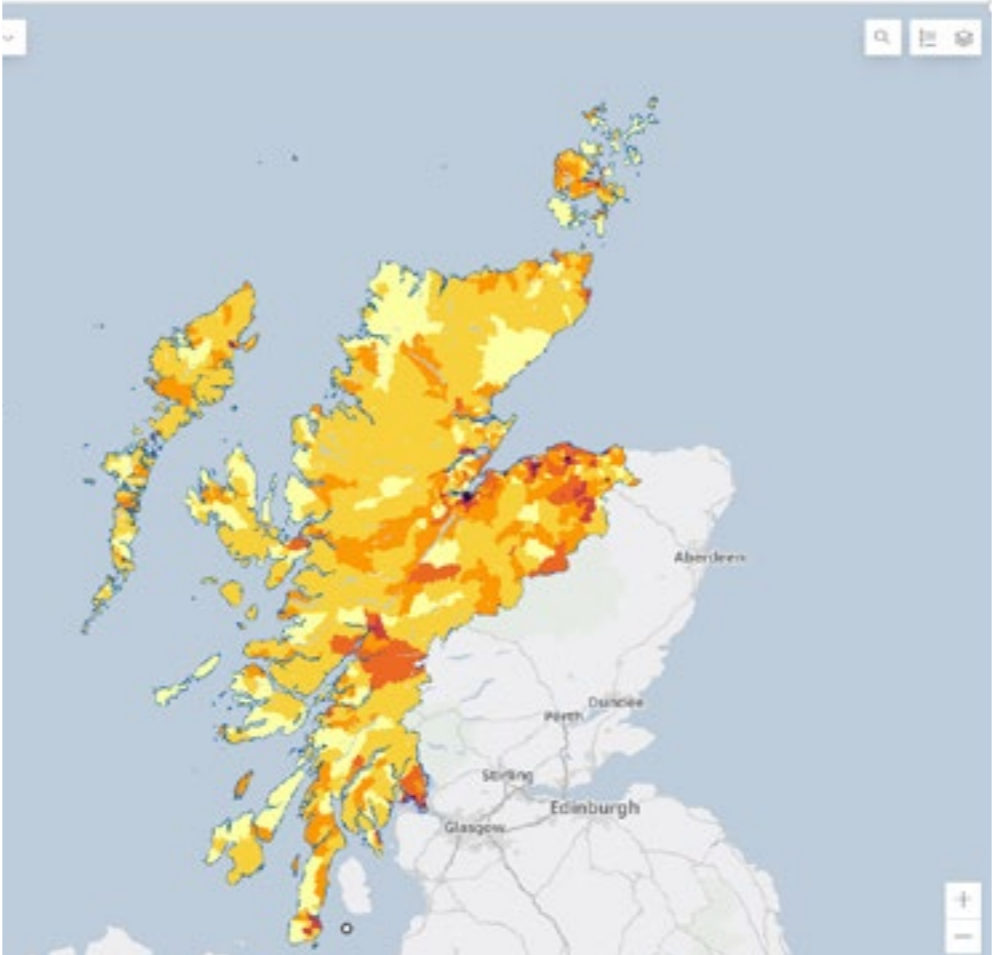
Lowest scoring areas

The lowest scores in an 800m radius (27%-35%) are mostly in coastal areas (for example, Cillicuden and Culbokie). The lowest scores in a 3km radius (28%–36%) are also in coastal areas but mostly in the Highlands. This can be explained by the distance between rural settlements and less access to facilities and services, among all other variables taken into consideration in the calculation of the score.

Movement and access to schools

According to the movement score percentages (800m and 3km), accessibility and access to facilities are higher in a smaller radius, especially in the town centre. The opposite would be the case. In rural areas, a higher radius of mobility allows better access to facilities and services. More schools are more accessible by cycling (43 schools in a 3km radius) than walking (14 schools in 800m).