

## Ageing in Place Spatial Risk Model: An evidence-based approach to tackling inequalities in ageing

### Summary

The Ageing in Place Spatial Risk Model has been developed to support evidence-informed policy development, strategic planning, and place-based decision making to address social isolation and healthy ageing across Greater Manchester. Developed as part of the Ageing in Place Pathfinder in collaboration with Manchester Metropolitan University, the model provides a consistent analytical lens through which policymakers and neighbourhood-based teams can understand how spatial, social, and demographic factors enable or constrain residents aged 50 and over to age well in their communities.

By bringing together multiple indicators linked to deprivation, health, mobility, employment, ethnic diversity, social connection, and access to assets alongside the voice and lived experience of older residents, the model helps identify where risks to ageing well are concentrated and where they overlap. This enables more targeted and preventative responses to be co-produced with residents, supporting interventions that are tailored to local community needs and address inequalities in mid and later life. The model directly informed delivery across 10 neighbourhoods, supporting partners to engage socially isolated residents, identify priority areas for action, and co-design Ageing in Place Action Plans. The approach is now being scaled within the Greater Manchester wide approach to Live Well in Later Life.

### Methodology

The Ageing in Place Spatial Risk Model was developed collaboratively by the Greater Manchester Combined Authority (GMCA) and Manchester Metropolitan University (MMU), with academic expertise and methodological input from Professor Stefan White of Manchester School of Architecture. The model draws on Census data and a wider suite of spatial datasets, including community assets, and aligned to eight WHO Age-Friendly Cities Framework domains as shown in the table below.

Data layers	WHO Domain	Indicator (aged over 50)
Older residents (50+)		
Poor Health Outcomes		Income Deprivation Affecting Older People Index  Limiting long-term illness or disability
Quality of Life risk Indicators	Outdoor Spaces and Buildings, and Social Participation	Residents living alone
	Respect and Social Inclusion, and Communication and Information	Ethnic diversity of residents
	Transport, and Civic Participation and Employment	No access to a car or van  Residents working after retirement
	Housing, and Community Support and Health	Unpaid carers

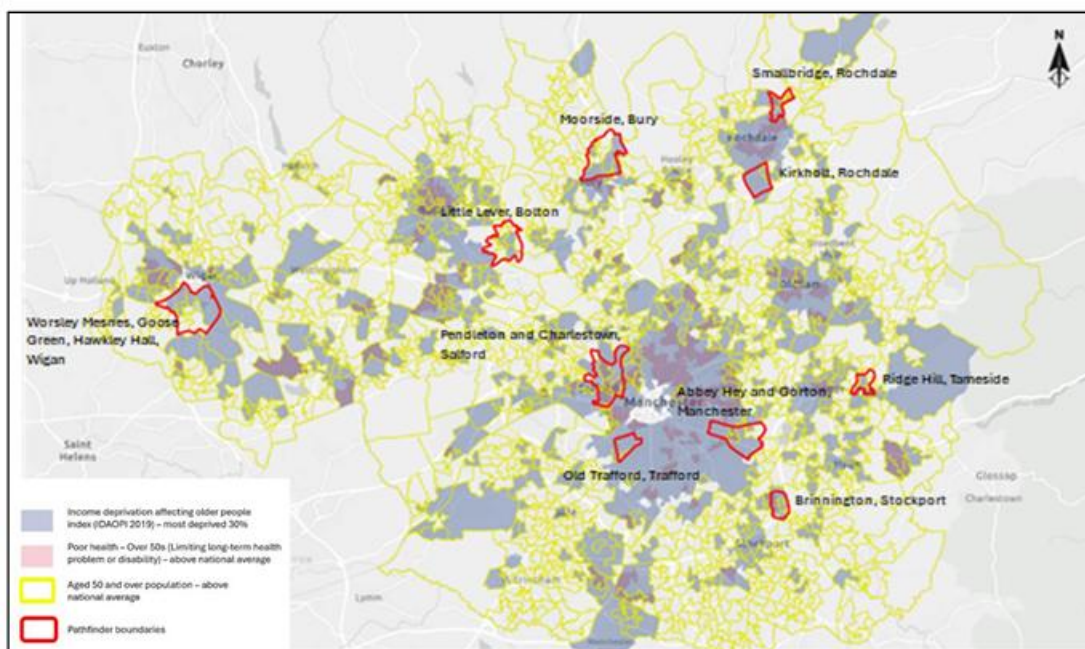
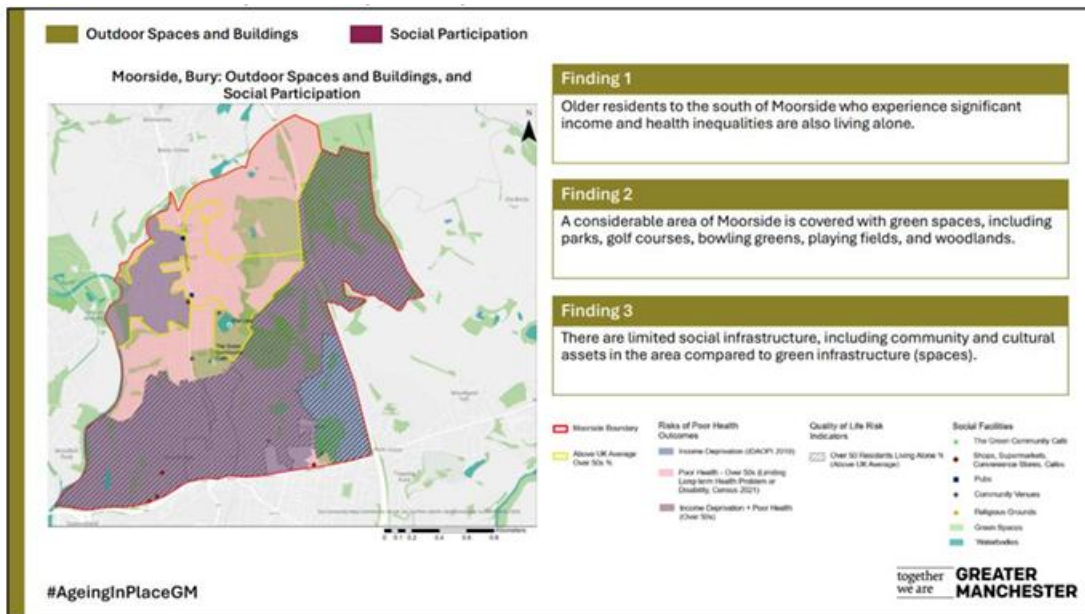
Geographical Information Systems (GIS) were used to layer, normalise and analyse indicators at LSOA level. Data thresholds combined national benchmarks with neighbourhood distributions patterns. GIS enabled thematic mapping and spatial clustering to show where risks overlap. Spatial outputs included risk, domain and asset maps. These were used to triangulate quantitative data with lived experience. The model is replicable and can be easily updated for future use, and incorporated hyper-local user testing with residents and neighbourhood-based teams to refine how visualisations informed action plans.

#### Wow factor

Triangulating spatial data, local assets, and lived experience revealed where risks clustered, highlighted opportunities, and explained why patterns existed, creating rich neighbourhood narratives. Presented effectively, this approach empowers residents, enhancing their ability to exercise control and actively participate in co-production, transforming communities from passive observers into active shapers of neighbourhoods.

#### Synopsis

The model translates complex datasets into accessible, decision-ready intelligence that directly supports public sector decision-making. It integrates spatial, social, and demographic data at neighbourhood level, enabling us to move beyond single-issue analysis towards a multi-dimensional understanding of how place shapes outcomes for older residents as shown on the example action plan maps below:



A core impact has been the model's role within the Ageing in Place Pathfinder, which worked with ten neighbourhoods across Greater Manchester. Here, spatial data was combined with asset mapping and lived experience to create a holistic understanding of place. The data highlighted where risks such as deprivation, poor health, living alone, unpaid caring, and limited transport access overlapped. At the same time, asset layers (e.g. green space, community venues, transport links, healthcare facilities) identified strengths and opportunities. This triangulation enabled local partners to design tailored, neighbourhood specific interventions that reflected both need and existing community capacity. It is now used to prioritise neighbourhoods, inform action planning, strengthen business cases, and 7 support more consistent evidence use across local authorities, GM-wide policy teams, and system partners.

The primary objective was to develop a robust and practical spatial tool to identify where multiple risks cluster and to support more targeted, preventative, and equitable investment. The

model provides spatially precise insight that allows to see how risks cluster across neighbourhoods, which may not be detectable through standard tabular data alone.

Resident engagement and co-design have been integral to the development of the model and action planning. Participatory methods including workshops, walk-and-talks, partnership boards, and resident-led mapping ensured that spatial patterns were interpreted through lived experience. This helped transform spatial risk patterns into neighbourhood narratives and ensured that action plans reflected how older people experience their communities and neighbourhoods. Ageing in Place Pathfinder, with the Ageing in Place Spatial Risk Model being a core element, engaged over 3,000 older residents, supported 140 action plan projects with 59 of these being sustained long-term and 12 being resident-led, demonstrating significant scale and tangible community impact.

Partnership working has been central to success. The model was developed collaboratively by the GMCA and MMU, combining academic expertise in ageing and spatial analysis with applied public policy and local intelligence. The underlying methodology reflects academic work led by Manchester Metropolitan University. Delivery partnerships included local councils, the housing sector, Age UK, and the VCFSE sector. Partners and residents co designed action plans using the maps produced with the model, interpreted findings, and shaped delivery, ensuring analytical rigour, usability, and community relevance.

Innovation lies in the integration of spatial data, asset mapping, and lived experience into a single, coherent framework. The model bridges the gap between academic research and operational decision-making, providing a scalable and transferable approach to understanding inequalities in ageing. It also demonstrates how data can be used not only to identify risk, but to tell the story of place, supporting more preventative, inclusive, and impactful action.

#### What should LARIA members learn from your award entry?

The Ageing in Place Spatial Risk Model shows spatial data and analysis can move beyond technical mapping to become a strategic tool for understanding place, shaping policy, and driving real-world change. An effective learning is how integrating multiple datasets into a single spatial framework reveals patterns of risk and opportunity that are invisible in tabular analysis, enabling more precise and preventative decision-making.

The work demonstrates the value of combining spatial data with asset mapping and lived experience. Triangulating quantitative and qualitative insight transforms numbers into narratives, helping decision-makers understand not just where risk is concentrated, but why it exists and how communities experience it.

#### Is there a published report or background information on your study publicly available?

Ageing in Place Action Plan for Manchester: [Manchester Ageing in Place Action Plan 2025](#)

Ageing in Place Pathfinder Year 2 Report (pages 10 and 11 describes the evidence-based approach using the Ageing in Place Spatial Risk Model): [Ageing in Place Pathfinder Year 2 Report](#)

Ageing in Place Pathfinder Final Report is being published.

Ageing in Place Spatial Risk Model is being embedded in MappingGM (platform for geospatial data and interactive maps in Greater Manchester) for wider use and this work is currently ongoing.