

A whole-systems approach to Climate Action, Health and Thriving Communities: Land and Space Use



Key Points:

- Climate actions can produce co-benefits as well as unintended consequences.
- Participatory systems mapping can help local authorities explore wider impacts.
- We highlight land and space use – which may be overlooked but are critical for effective climate action.

To limit climate change, we need to reduce our greenhouse gas emissions to meet legally binding targets.¹ To do this we need to get more energy from renewable sources, particularly for heating and transport where we use the most. This means shifting from gas boilers and petrol or diesel vehicles, towards cleaner alternatives which produce less pollution.

At a community and individual level, we can also make changes by insulating more homes, using cars less often, adopting plant-based diets, and recycling more waste.

However, none of these changes happen in isolation – many of them require behaviour and service changes that have both positive and negative effects.

There are clear links between climate action and some council services – such as housing and transport – but links to others may not be obvious. By moving towards a “whole systems approach”, we can find these links and help prevent policy clashes.

The WM-Net Zero study team has worked with local authority officers, using participatory systems mapping to explore the relationships between climate actions and other local policy priorities.² We have identified some areas not typically associated with climate action but very relevant for its success.

Many of the decisions about how we make transport cleaner and less polluting have implications for how land is allocated and how space is used.

Participatory Systems Mapping

Participatory Systems Mapping is a research method where people with different perspectives are brought together to create a causal diagram (map) of the connections in a “system” of interest. Systems maps support policy design and analysis by revealing key leverage points (potential targets for maximally effective intervention) and trade-offs.

Explore insights from our
Participatory Systems Mapping for delivering

[‘Thriving Net Zero Communities in the West Midlands’](#)

What does climate action mean for land and space use?

Relevant areas of statutory responsibility:

- Community safety
- Highways and roads
- Parks and recreation

Policies that encourage the uptake of electric vehicles may increase car use in general.^{3,4} Car use requires public space for roads and for parking, and “car-first” infrastructure may reduce walkability and perceived safety (reinforcing further car use).⁵

The proportion of space used for cars increases when cars are prioritised in planning decisions, leaving less space for other activities and for nature.⁵

Encouraging walking, cycling and wheeling (active travel) – as a replacement for short car trips reduces greenhouse gas emissions *and* increases physical activity levels, with major health benefits.

Road space may need to be reallocated to construct paths and cycleways.⁶ But, overall, active travel requires less space than car travel.

More people travelling by foot and bike will encourage use of green spaces, which can in turn improve public safety as there are more people around.⁷



Increasing the use of buses, trams and trains (and reducing car use) is another way to lower emissions. Public transport facilities – such as bus stops – may have to compete for space with roads and car parks. Bus services can be slower and less frequent due to traffic congestion unless segregated bus lanes are provided.⁸

Public transport facilities are often sited around existing travel hotspots, but they can also help to increase footfall in less visited areas. Investing in the creation or renewal of high-quality public spaces, where people are encouraged to spend recreational time and that are well connected by active travel and public transport connections, can help local businesses and the wider community.

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Contact

WM-Net Zero
University of Birmingham
Edgbaston
Birmingham, B15 2TT
Email: wm-netzero@contacts.bham.ac.uk

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