

# Rapid Review 3: Active Travel in Planning Policy

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# Does emphasising active travel in planning policy result in increased active travel? A rapid review of the evidence.

#### Highlights

- Planning policy can help increase active travel, but complementary challenges of translating policy to action, including provision of funding, must be addressed for benefits to be realised.
- Comprehensive, urban-wide planning approach may mitigate the risk of localised increases being offset by greater car use in other areas.

#### Summary

We found few studies examining changes in active travel behaviour as a result of including active travel considerations within planning policy. The studies that did address active travel often did so as one aspect of broader policy interventions with multiple aims. There was evidence to suggest an important role for planning policy, with the clearest evidence relating to (a) promotion of walking, and (b) urban settings. Multiple studies reported challenges in translating planning policy into action. These challenges include provision of funding for active travel infrastructure, adaptation of policy to local context and the actual application of policy to decision-making and construction, suggesting careful policy design and attention to implementation is needed.

Much of the literature did not emphasise active travel within planning policy; instead, it examined changes to the built environment as related to active travel behaviour. Changes to planning policy are made with the intention of altering one or more features within the built environment, these changes may then influence active travel behaviour (Figure 1). Specific changes may include: specifications for footways, road crossing and cycle lane provision, cycle parking requirements, changes to vehicle parking requirements, incorporation of broader objectives like the "5D's" (Density, Diversity, Design, Destination Accessibility, Distance to Transit) among others. A significant body of literature explored the built environment's impact on physical activity and active travel behaviours (Figure 1 'B'). One study examined if changes in planning policy resulted in changes to the built environment (Figure 1 - pathway 'A'). One set of studies examined the entire pathway following broader changes to planning policy with a focus on active travel into implemented changes to the built environment and its impact on active travel behaviours (Figure 1 - pathway 'A').

Figure 1: Planning policy to modal shift pathway.







Additional research examined the integration of public health objectives into urban and transport planning, such as modelling potential health impacts of policies (without directly focusing on promoting active travel). A lack of integration between public health, spatial planning, and transport departments, along with limited measurement of policy outcomes, has been highlighted as a key barrier to improving active travel uptake.

It is difficult to isolate the impact of changes in planning policy on active travel behaviour change as evidenced by the lack of research found exploring this connection. Some reports identified the issue of self-selection, where policy-driven urban design changes may attract new residents already inclined towards active travel rather than causing behavioural shifts across the population. This rapid review highlights the need for further longitudinal research directly assessing how different ways of referencing active travel in planning policies influence active travel uptake, providing insights for effective policy design.

#### Background

Active travel, such as walking, cycling and public transport, offers significant health and environmental benefits. To increase active travel uptake, urban planners and policymakers are increasingly incorporating it into planning policies. Planning policies play a crucial role in shaping land use and infrastructure development, directly influencing the feasibility of active transportation choices.

Active travel is a vital strategy for both carbon reduction and improved public health. Research shows that increasing active travel (including public transport use) can significantly boost physical activity levels.<sup>1-4</sup> With transport as the UK's top carbon-emitting sector, the UK urgently needs to switch to low-carbon transport options including active travel.<sup>4</sup>

The World Health Organization recognizes active travel as a key component of urban transport with planning frameworks worldwide integrating active travel promotion. <sup>5</sup> In the United Kingdom (UK), the National Planning Policy Framework guides planning at the local and regional levels, setting expectations for sustainable development that includes housing, infrastructure, and the environment. <sup>6</sup>

There have been calls for more research to evaluate the effectiveness of planning policies designed to promote healthy behaviours. <sup>7,8</sup> This study considers public transport as part of active travel since access to transit infrastructure can promote greater walking and cycling, especially where distances are not easily walkable or cyclable alone. <sup>1,3</sup>

#### Key findings

Few studies explicitly assess the impact of emphasising active travel in planning policy on active travel outcomes	Two studies explored the impact of including an emphasis on active travel as part of broader planning policy on rates of active travel. These studies assessed planning policies with that included active travel goals as part of wider initiatives. <sup>9-11</sup> A 2006 systematic review analysed policies promoting physical activity, but not active travel specifically. <sup>12</sup> Other research examined the built environment or planning policies' impact on health, without a focus on the link between policy and active travel behaviour.
Broader planning policies, when implemented, can lead to changes in active travel.	The RESIDE project in Australia <sup>9, 10</sup> provides evidence that "Liveable Neighbourhoods" planning policies can increase walking for transport when they are implemented. There was limited, though positive, evidence regarding cycling for transport. Three focus areas of the policy (community design, pedestrian-friendly networks, and lot layout) proved effective in improving active travel behaviours. The RESIDE study's specific emphasis on new, middle-class developments highlights the importance of context and limits the generalising of these findings to broader populations and settings. However, the identified design features align with existing research on active travel behaviours. <sup>13-15</sup>
Concurrent changes that shape urban planning may have wider, or conflicting, effects.	Kärmeniemi <sup>11</sup> 2022 mixed methods study in Finland revealed a more complex picture. Even with planning policies promoting active travel, density, and diverse urban forms, a decrease in overall active travel mode share was observed between 1998 and 2016 across the study area. Increased car reliance in outer urban areas drove this decline, while the inner-city experienced growth in walking rates. Higher density, mixed-use and accessible urban areas were correlated with increased walking and cycling. This suggests that while planning policies promoting active travel are important, their success may depend on complementary measures that actively address car dependence.

Emphasising active travel in planning policies can lead to increased active travel infrastructure, as evidenced by one study following the translation of planning policies into bike infrastructure.<sup>16</sup> The effectiveness of the planning policy hinges on implementation, funding, context, infrastructure, and community engagement. The RESIDE study highlights these challenges, as none of the assessed neighbourhoods fully met policy design requirements, revealing what they termed "leaky pipe" as the Figure 3) between policy and on-the-ground delivery.<sup>10, 17</sup> Case studies from the Netherlands underscore these issues; despite achieving overall success in promoting active travel, implementation of the 1988 ABC spatial planning policy was flawed. 18, 19

Translation of policy ambition into action is not automatic; critical factors include implementation, funding, and community engagement.

Figure 3: The 'leaky pipe' of the policy pipeline process for the Liveable Neighbourhoods Community Design policy in Perth, Western Australia.<sup>17</sup>



The built environment affects physical activity and active travel.

Urban design's "5D" approach to planning may help promote active travel, without explicitly emphasising active travel.

Planning policies influence the built environment through transport-specific infrastructure planning and broader land-use decisions. Localised infrastructure improvements, such as segregated cycleways and footpaths, promote walking and cycling while enhancing safety.<sup>21-27</sup> Urban design elements like density, landuse mix, street connectivity and walkability have been shown to play a role in increasing active travel.<sup>8, 13, 14, 18, 26, 28</sup>

The "5D" approach to spatial planning (density, diversity, design, destination accessibility, distance to transit) <sup>i</sup>offers potential for promoting active travel, even without an explicit emphasis on active travel.<sup>13, 29-32</sup> Research suggests thresholds for these design elements can significantly contribute to increased walking for transport <sup>25, 33</sup>, highlighting the impact of broader planning on active travel goals.

<sup>&</sup>lt;sup>1</sup> Density: Concentration of people and development, Diversity: land use mix, Design: street connectivity, Destination Accessibility: regional accessibility, Distance to Transit: Proximity to public transport stops/stations.

Health impacts should be incorporated and measured in planning policies.	Health Impact Assessments (HIA) are a valuable tool for incorporating health into policymaking. <sup>28, 32</sup> Research highlights how incorporating health objectives into transport and planning policy can result in effective policy outcomes, such as increasing physical activity. <sup>12, 34</sup>
Integration of transport, land and health planning is vital in achieving an increase in active travel.	The importance of integrating transport, land planning, and health considerations into urban design is highlighted within the literature. Lowe <sup>7</sup> highlights how city planning policies are often not integrated between departments and lack measurable success indicators. A lack of integration can lead to significant drawbacks. For instance, Santos <sup>18</sup> notes that having separate transport and city planning agencies can result in poorly designed roads that create barriers for active travel, despite walkable or cyclable distances. Poor coordination may lead to incomplete or disconnected walking, cycling, and public transport networks. <sup>8</sup> Effective local urban design promoting active travel relies on integrated, city-wide policies that support accessible employment, education, services, and quality public transport. <sup>29</sup>
Self-selection is an important factor for studies examining the effect of urban design on active travel to consider.	Several reports highlight the challenge of self-selection bias when examining the link between planning policy, urban design, and active travel. <sup>12, 18, 35</sup> People who prioritise walking and cycling may choose neighbourhoods that accommodate those preferences. This pre-existing bias can make it difficult to isolate the true effect of the built environment on active travel behaviour. However, self-selection may not always negate the findings, as evidenced by the RESIDE study. This study found that the link between the built environment variable and walking remained significant even after adjusting for potential self-selection. <sup>9</sup>
The findings of this review are constrained by the limited quality of available evidence.	The quality of evidence found during this review was limited. Robust evaluation of planning policies is difficult, as shown by the generally low quality of the studies and as Shaw <sup>36</sup> notes regarding transport policies. The low evidence quality is due in part to a reliance on cross-sectional study designs. <sup>12, 22, 25</sup> However, there is a positive trend to infer causality, with an increase in longitudinal studies & natural experiments offering stronger insights. <sup>9-11</sup> Most identified reviews were not systematic and had methodological limitations.

#### Areas for further research

As called for by Lowe <sup>7</sup> further research is needed to determine how effectively city planning policies are being designed and implemented in practice. While studies have assessed built environments, there is limited evidence on how well policies emphasising active travel translate into meaningful action and increased active travel. Research is required to understand how active travel is best incorporated into policy, its direct impact once included, and its most effective positioning within policy documents. Addressing implementation challenges also requires further research; despite calls advocating for active travel in planning policy, its practical translation into the built environment remains under-explored. Additionally, the equity implications of an emphasis of active travel planning policy are an area that should be considered when more research is conducted on this topic. The overall evidence quality in this area continues to be a concern, and there remains a need for more well-conducted studies with designs supporting casual associations.

#### **Methods**

This review utilised AI literature search tools (Elicit AI <sup>37</sup> and Consensus AI <sup>38</sup>) to accelerate the search process. The research question (with two variations) was input into each tool, yielding 69 papers from Elicit and 50 papers from Consensus. Rayyan review software<sup>39</sup> streamlined duplicate removal (47 identified). To avoid missing relevant papers, a Google Scholar search and citation searching with Scite AI<sup>40</sup> was conducted, adding 15 more potentially relevant papers. 130 papers were screened for relevance at the title and abstract stage, with 37 assessed at full text. Relevant information was extracted from papers manually with Elicit AI support. Evidence synthesis was done manually with the aid of Gemini AI<sup>41</sup>. Gemini AI was used to assist with the write up of summaries and to proofread and refine written text. Quality assessment of the three most relevant studies <sup>9-11</sup> employed the Mixed Methods Appraisal Tool (MMAT) 2018 tool <sup>42</sup> and Health Evidence Tool <sup>43</sup>. For the remaining literature referenced, quality was considered (including study design) but not formally assessed. A more detailed methodology can be found in <u>Appendix C</u>.

# Limitations

Due to the rapid nature of the search, some relevant papers may have been missed, although the review attempted to be as comprehensive as possible. Additionally, the algorithm used by the AI search tools is unknown, meaning that the search may not be reproducible for other users.

This is not a review of studies looking at the effect of the built environment and active travel and no specific search regarding the built environment was completed. The summary of this association uses studies found within the current search or referenced in included papers.

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