ACTIVE TRAVEL STUDIES

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COMMENTARY

Active Travel Audits: Mitigating Tensions Between Subjectivity and Technical Precision

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Active travel needs infrastructure, and cities and towns need active travel. More active travel reduces traffic congestion, reduces vehicle emissions, and improves public health. Active travel infrastructures are critical infrastructures. But how do transport practitioners assess the quality of active travel infrastructures? Who decides which active travel infrastructures meet best practice design standards, and what are the consequences of these decisions? Taking the empirical example of the Welsh Government Active Travel Act Guidance (ATAG) (2021) active travel route audits, this paper seeks to provide a commentary (but not answers) to these questions. The paper presents three examples from the ATAG (2021) audits to illustrate how tensions can exist between subjectivity (i.e., positionality and experience) and technical precision (i.e., data), including: (1) density of network, (2) time: delay on links, and (3) effective width without conflict. Despite recognition of subjectivity within active travel audit guidance, this commentary argues that subjectivity might be a strength, and not necessarily a limitation of audit processes. Embracing subjectivity, beyond professional judgement, as part of the audit process could potentially lead to better outcomes for beneficiaries of active travel provision. It does not challenge the need for best practice design guidance but rather emphasises the need for active travel audit consensus, in addition to audit consistency. At a minimum, this paper echoes calls for a greater diversity of active travel infrastructure co-auditors. Why? Because active travel needs *equitable* infrastructure, and towns and cities need diverse active travel. Continuously improving procedural design guidance is one approach toward this globally relevant and urgent policy ambition.

Keywords: Active Travel Audits; Active Travel Design Guidance; Subjectivity; Technical Precision; Audit Consensus; Audit Consistency

Introduction: Defining Active Travel Audits

This commentary defines 'active travel design audits' as a systematic means of evaluating the quality of walking or cycling infrastructure. For example, UK active travel design manuals include audit guidance to appraise whether active travel provision meets a minimum design standard. Examples include the UK Department for Transport (2020) LTN 1/20 level of

service tool, and the Welsh Government (2021) walking and cycling route audit tools (also see Parkin, 2018). Both UK examples cited here reflect principles promoted by the Design Manual for Bicycle Traffic (CROW, 2016) in the Netherlands (see Spinney, 2020, for a critical review of design principles). Key cycling design principles include:

- Cohesion
- Directness
- Safety
- Comfort
- Attractiveness

In 2020, the UK Department of Transport (DfT) published Cycling Infrastructure Design, Local Transport Note 1/20 (LTN 1/20). In addition to detailed considerations for designing for cycle traffic, LTN 1/20 includes Appendix A (Cycling Level of Service Tool) to evaluate the relative merits and limitations of infrastructure designs. The LTN 1/20 includes guidance on a junction assessment tool (Appendix B), and recommends additional tools, including consideration to the Transport for London (TfL) Healthy Street Check for Designers (see DfT, 2020, p. 36). Using an adapted version of Appendix A within LTN 1/20, the Welsh Government Active Travel Act Guidance (ATAG) (2021), which is the focus of this commentary, is another example of design guidance which builds upon the CROW design principles. The Appendix H Walking Audit Tool has twenty factors to score, and the Cycling Audit Tool has twenty-five factors. Contrasting with LTN 1/20 (Appendix A), the ATAG (Welsh Government, 2021) Appendix H includes further guidance for scoring audit factors:

'A rule of thumb to assist with the scoring for each of the subjective factors is:

- If overwhelmingly negative (0)
- If balanced (1)
- If overwhelmingly positive (2)'

For a detailed overview to scoring and audit results of ATAG Appendix H, see Section 10.5 (Welsh Government, 2021, pp. 128–131). Rather than focus on the outcome of auditing, this commentary focuses only upon audit processes to discuss potential tensions between subjectivity and technical precision. The commentary highlights three cycling route audit factors (out of twenty-five), including (1) density of network, (2) time: delay on links, and (3) effective width without conflict as examples of tensions. This commentary focuses upon these factors as their scoring requires consideration to technical data. The paper next introduces these factors before discussing opportunities for working with subjectivity.

Example One: Density of Network

The design principle of the density of network indicator states (Welsh Government, 2021: Appendix H):

> *Cycle networks should provide a mesh (or grid) of routes across the town or city. The density of the network is the distance between the routes which make up the grid pattern. The ultimate aim should be a network with a mesh width of 250m.*

For additional guidance, the ATAG (Welsh Government, 2021, p. 458) states: 'Establish using desktop study before or after the audit takes place (confirming accurate whilst on

site).' The task required to score the Density of Network factor thus requires a mesh density analysis to calculate network coverage between routes (see Welsh Government, 2021, p. 121). As such, the density of network requires spatial measurement and consideration to other existing routes or planned future routes. As a factor on the cohesion of a cycling network, it however does not fully consider the subjective user experience and perceptions of cycling provision or address how network density affords active travel. For example, a desktop mapping exercise study may demonstrate a network density mesh width <250m, (i.e., an overwhelmingly positive score of two), yet the same route may not afford cycling for a diversity of users. For confident and experienced cyclists, existing (or proposed) cycling infrastructure provision may contribute to a dense cycling network, whilst (potentially) not supporting cycling opportunities for inexperienced and less confident cyclists. As such, audits cannot easily capture cycling affordances within density of network audit scores.

Example Two: Time, Delay on Links

The time, delay on links factor (Welsh Government 2021: Appendix H) states: 'The length of delay caused by not being able to bypass slow moving traffic.'

For additional guidance, the ATAG (Welsh Government, 2021, p. 458) adds: 'To confirm whilst on audit. Consider ability to pass queued traffic, for example.'

For a score of two (overwhelmingly positive), 'cyclists can always choose their own speed' (Welsh Government, 2021: Appendix H). Whilst guidance considers cycling experiences to score the time, delay on links indicator, the focus is upon professional judgment to evaluate cycling choice and speeds. The ATAG (Welsh Government, 2021: p. 458) recommends that assessors undertake audits as a cyclist, however, an auditor's positionality and cycling experience may influence the scoring of this indicator. The understanding of choice and of cycling speeds will also depend upon individual competencies and cycling technologies used. Assumptions of who cycles is important here. Auditors cannot easily capture these assumptions within time, delay on links audit scores.

Example Three: Effective Width Without Conflict

For the effective width without conflict factor, the ATAG (Welsh Government, 2021: Appendix H) states: 'Consider the route, and type of provision, against the minimum desirable values. May need to assess flows to ensure widths provided are sufficient for the route's context.'

If applicable to the route, the effective width without conflict requires a percentage score of desirable widths based on traffic volume. As such, to score this indicator, the guidance recommends that auditors review traffic volume data to ascertain desirable widths. Whilst this factor sits within considerations of 'comfort,' it does not easily capture (along with other factors) perceptions of cycling safety, which is a significant factor in whether people choose to cycle. (For a recent critical review of perceived cycling and e-cycling safety, see Marincek, 2023). As such, auditors cannot easily capture perceptions of safety within effective width without conflict audit scores.

Discussion: working with subjectivity

The three examples presented within this commentary paper illustrate how subjectivity exists within the ATAG (2021) active travel route audit process. And for all three examples, auditors score by data available to existing conditions or proposed designs (i.e., the physical built environment). ATAG (2021) audit scoring is not, at present, driven by different perspectives or experiences of using existing/proposed active travel infrastructure beyond immediate

professional auditing teams. This is a limitation of active travel audits, yet it is also the opportunity for supporting more inclusive designs and active travel provision.

Although guidance such as the ATAG (Welsh Government, 2021, pp. 454 – 460) acknowledges subjectivity as inevitable, this commentary argues that subjectivity might be a strength, and not necessarily a limitation, of audit processes. Embracing subjectivity, beyond professional judgement, as part of the audit process could potentially lead to better outcomes for beneficiaries of active travel provision. For example, as discussed above, the audit factors require a subjective score from overwhelmingly good (two) to overwhelmingly negative (zero) but scoring options do not accommodate temporary scores which equal: 'Additional data/ opinion required', even where technical data may provide a steer on how to score factors. For example, similar to Annear et al.'s (2024, p. 12) observation using related approaches, such as the Microscale Analysis of Pedestrian Streetscapes (MAPS-mini), active travel audits can capture descriptive data, but these insights may not easily feature in quantitative scores. Equally, Annear et al. (2024) note how inclusion of (potential) active travellers as co-auditors improve audit processes. Accepting this participatory recommendation, this paper suggests that systematic audit processes could place an emphasis upon meaningfully reaching audit consensus, in addition to audit scoring consistency.

Researchers (including Xie & Spinney, 2018; Spinney, 2020; Annear et al., 2024; van der Vlugt et al., 2024) note how perceptions serve as barriers to participation in walking or cycling. (Also see related work on epistemic and procedural considerations within emerging mobility justice literatures, including Behrendt & Sheller, 2023, and Nikolaeva, 2024). As such, co-auditor perspectives could influence and improve the auditing process, and, if necessary, support or challenge technocratic data-driven audit scores. Auditors may consider method innovation of integrating perceptions, including recent academic examples by Annear et al. (2024) and van der Vlugt et al. (2024). However, individual method innovation is unlikely to lead to consistency, unless official design guidance endorses participatory auditing that affords meaningful consideration to design consensus. Perspectives of active travel provision matter, and this commentary suggests there is a significant opportunity for audit processes to embrace subjectivity, beyond technical precision and professional judgement. Indeed, auditors cannot remove subjectivity from the audit process. However, auditors can potentially mitigate this by embracing diverse mobility needs and experiences as part of audit scoring. The commentary therefore calls for further research on subjectivity within active travel audits.

Implications for future research and policy

This commentary does not provide a comprehensive analysis of active travel design audits but rather highlights three empirical examples (out of a possible 25 factors) where tensions could exist between subjectivity and technical precision. Equally, this paper focuses only on one procedural element from UK design guidance. The paper does not detail where audit processes sit in relation to specific consultation and engagement exercises, funding streams, or other policy processes. As such, this commentary paper calls for further research on subjectivity within active travel auditing across different research and policy contexts. The commentary aims to support continuous improvement of procedural guidance for supporting walking, wheeling, and cycling, alongside private and public transport.

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References
Annear, M., Fristedt, S. & **Laddawong, T.** (2024) 'Walkability in Japan's aging neighbourhoods: A comparative audit analysis of pedestrian journeys in urban Tokyo.', *Journal of Transport & Health,* 35, pp. 1-15. Available at: https://doi.org/10.1016/j.jth.2024.101755

Behrendt, F. & **Sheller, M.** (2023) 'Mobility data justice.', *Mobilities,* 19 (1), pp. 151-169. Available at: https://doi.org/10.1080/17450101.2023.2200148

Department of Transport. (2020) *Cycling Infrastructure Design: Local Transport Note 1/20.* [Online] Available at: https://www.gov.uk/government/publications/cycle-infrastructure-design-ltn-120

Marincek, D. (2023) 'Comparing E-Bike Users' Perceptions of Safety: The Case of Lausanne, Switzerland.', *Active Travel Studies: An Interdisciplinary Journal,* 3 (1), pp. 1-22. Available at: https://doi.org/10.16997/ats.1170

Nikolaeva, A. (2024) 'The politics of non-knowing, smart technology and just mobility transitions: A case study and research agenda.', *Environment and Planning F: Philosophy, Theory, Models, Methods and Practice,* 00 (0), pp. 1-24. Available at: https://doi.org/10.1177/26349825241228591

Parkin, J. (2018) *Designing for Cycle Traffic: International Principles and Practice.* London: ICE Publishing. Available at: https://doi.org/10.1680/dfct.63495

Spinney, J. (2020) *Understanding urban cycling: exploring the relationship between mobility, sustainability, and capital.* London: Routledge. Available at: https://doi.org/10.4324/9781351007122

van der Vlugt, A.-L., Gerten, C. & **Scheiner, J.** (2024) 'Integrating Perceptions, Physical Features and the Quality of the Walking Route into an Existing Accessibility Tool: The Perceived Environment Walking Index (PEWI).', *Active Travel Studies: An Interdisciplinary Journal,* 4 (1), pp. 1-33. Available at: https://doi.org/10.16997/ats.1391

Welsh Government (2021) *Active Travel Act Guidance.* [Online] Available at: https://www.gov.wales/active-travel-act-guidance

Xie, L. & **Spinney, J.** (2018) '"I won't cycle on a route like this; I don't think I fully understood what isolation meant": A critical evaluation of the safety principles in Cycling Level of Service (CLoS) tools from a gender perspective.' *Travel Behaviour and Society,* (13) pp. 197-213. Available at: https://doi.org/10.1016/j.tbs.2018.07.002

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