The effectiveness of building spurs into linear cycling routes

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1 Executive Summary

This paper presents the case for the effectiveness of building spurs and cycling networks, as opposed to linear cycling routes.

This approach is supported and demonstrated by several public sector guidance papers and academic studies. This effectiveness is demonstrated through increased usage, increased modal share, higher time and distance efficiency and in the reduced safety risk of cycling; compared to the provision of both non-dedicated cycle infrastructure and one-off linear cycling routes.

The case of Seville is a strong example of the importance of strategically building a cycling network and the characteristics this requires. Frog17u341.35 590.5 Tm[.)-4ildin0i

2 Introduction

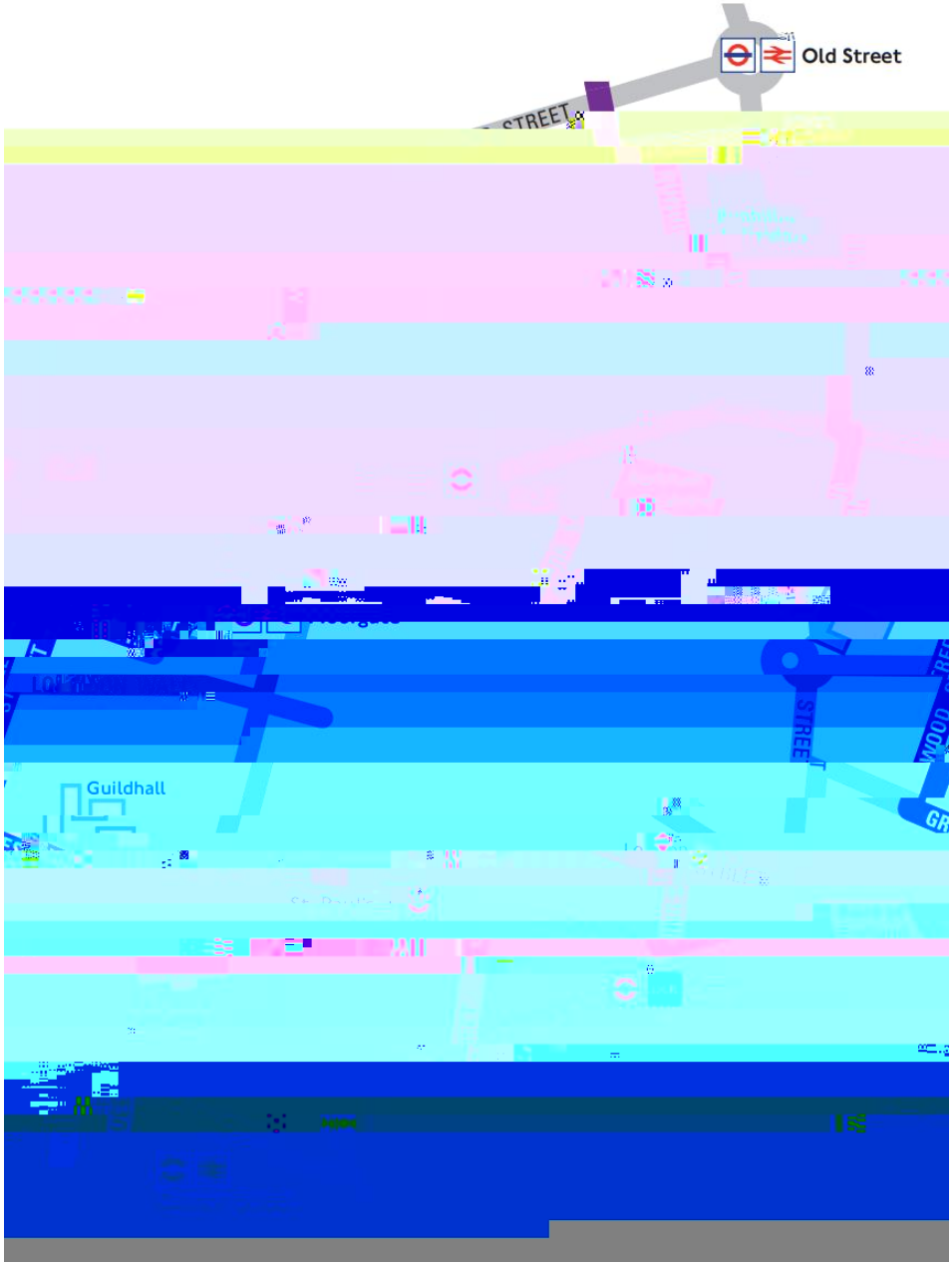
This paper presents a case for building spurs into linear cycling routes. Due to a lack of research on the effectiveness of spurs off linear routes in particular, this paper draws from evidence and case studies of cycling networks, with the assumption that the network approach can be applied to spurs.

Firstly, several terms are defined, key to understanding the

3 Definitions

Network

A series of different forms of connected cycling infrastructure, which can include



Route map of Transport for London's Quietway 11 (Transport for London, 2017)

4 Coherence

One of the key principles that should be taken into account when designing a cycle route is coherence. This is strongly supported by several guidance papers and reports produced by the EU, Department for Transport, Transport for London (TfL) and Sustrans, as well as academic research (cited in this document). These papers outline the importance of linking all ‘significant trip generators and attractors - schools and colleges, retail areas, primary healthcare and hospitals […] – with residential areas’. This includes maximising links to

5 Mesh Density

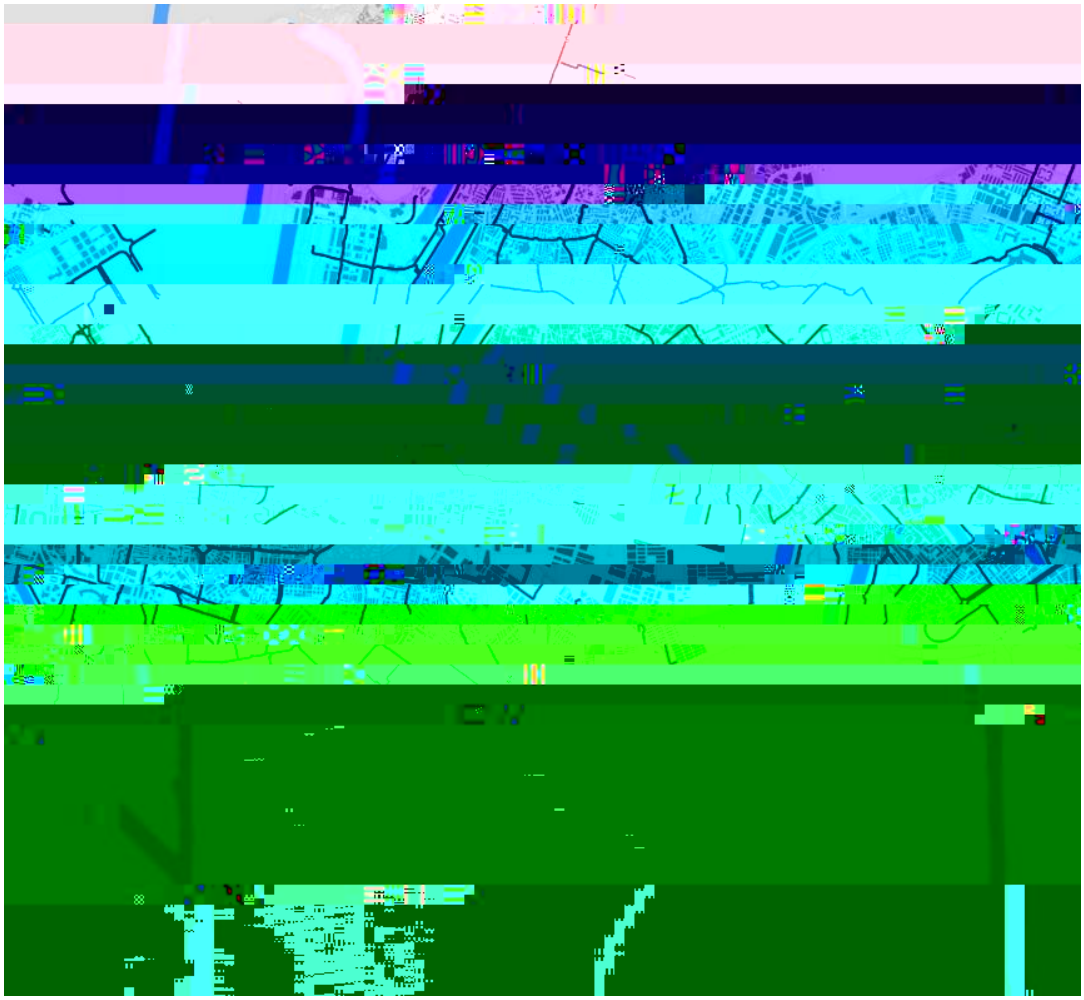
6 The case for spurs and networks

The following section outlines the advantages of building route spurs and networks and the rationale behind these. Whilst there is a lack of research demonstrating the effectiveness of spurs in particular, evidence demonstrating the outcomes of cycle networks exists. This can be applied to building an understanding of the effectiveness and required characteristics of route spurs.

6.1 Usage

7 Case study: Seville

Seville, Spain, provides an interesting and convincing case study for the effectiveness of networks, as opposed to stand-alone linear routes. From 2006 to 2011 Seville's municipal government rapidly expanded the city's provision of cycle tracks from 19km, to a network of 164km bi-directional segregated cycle tracks and shared paths. Seville experienced a jump in modal share from negligible values to 6% of all trips.



Map of Seville's cycle network in 2010 (Marqués et al., 2015)

Segregated bi-directional cycle lanes in Seville (London Cycling Campaign)

The new and expanded cycle network was the result of The Urban City Masterplan, which included a segregated bike network as part of the new city mobility system. The design of the network was first proposed through a 'theoretical network' which connected major trip attractors (e.g. intermodal centres) and relational spaces (e.g. squares, high streets). Next, taking into account on-street space constraints, the theoretical network was adjusted by optimising routes to trip attractors. The network was then proposed with 200 trip attractors located within 300m of the cycle network.

The proposal included specifications on cycle infrastructure typology. This mostly consisted of bi-directional segregated cycle tracks, built over previous parking lanes, either at the same level as the pavement or separated with bollards if at the same level as the road (Marques et al., 2015).

Some of the most notable and significant research into the effectiveness and impacts of Seville's new cycle network has been carried out by Marqués, Hernández-Herrador, Calvo-Salazar and others in 2015 and 2017. This demonstrated a large reduction in risk from before to after the network was built (2000 vs 2013). This saw a reduction in the number of recorded traffic collisions involving cyclists by a) kilometres of cycle track and b) numbers of cycle trips undertaken. From 2000 to 2013, the number of bicycle incidents per million trips decreased from 17.7 to 7.7 (56% reduction) and the number of cyclists killed or seriously injured (KSI) per million trips decreased from 1.31 to 0.36 per million trips (72% reduction).

The research concluded by discussing the importance of creating 'a complete network of bikeways covering the whole city instead of just continue making isolated bikeways' (Marqués and Hernández-Herrador, 2017). Together with the significant increase in cycling modal share and reduced risks to cyclists, Seville makes a strong case for the effectiveness of cycle networks. From this, we can learn lessons on the approach and characteristics which might be useful when considering the necessity, effectiveness and impacts of building spurs into linear routes.

9 References

Adriancm, cited in London Cycling Campaign, unknown date, available at: https://lcc.org.uk/pages/seville-goes-dutch

Ayuntamiento de Sevilla (2005). Bases y estrategias para la integraci_on de la bicicleta en la movilidad urbana de Sevilla. Gerencia de Urbanismo, Ayuntamiento de Sevilla (in Spanish).

Ayuntamiento de Sevilla. (2006). Plan general de Ordenaci_on Urbana (Plan de Sevilla),

London Assembly Transport Committee, March 2018, ‘London’s cycling infrastructure’, available from: https://www.london.gov.uk/sites/default/files/londons_cycling_infrastructure.pdf

Marqués et al., 2015. How infrastructure can promote cycling in cities: Lessons from Seville. Research in Transportation Economics, 53(C), pp.31–44.

Marqués & Hernández-Herrador, 2017. On the effect of networks of cycle-tracks on

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