Bournemouth: area-level school and commuter cycling potential

This short case study uses the Propensity to Cycle Tool (PCT) to compare area-level school and commuter cycling potential in Bournemouth. Bournemouth is a large town with around 180,000 inhabitants, with levels of cycling above the English average. Since April 2019, it has been part of the new 'Bournemouth, Christchurch, and Poole Unitary Authority, with a population of around 395,000.

The PCT is used to map and compare the numbers and percentages of commuters and school children cycling in Bournemouth, both now (base case: 2011 data) and under two future scenarios. This helps to illustrate both the possible scope of change, and the specific neighbourhoods that might have particularly high potential for both types of cycle journey. Finally, the PCT's route network feature is used to highlight some of the specific routes that might be priorities for infrastructural interventions.

Key points:

- Bournemouth already has higher levels of cycling to work or cycling to school than the (low) English average.
- However, there is strong potential for growth, with substantial suppressed demand for cycling to school, compared to Dutch (or Cambridge) cycling propensities.
- For both commuting and school travel, central and Eastern parts of the town's area have particularly high potential; school travel potential is strong in the North-West, but for commuting less so.
- For commuting, safe cycle tracks along longer-distance routes joining up major employment centres including to Poole and Christchurch are likely to be a priority, with some main roads also key desire lines for cycling (but currently hostile).
- For school travel, creating cycle-friendly neighbourhoods (including safe cycle tracks on locally busy roads, and reducing motor traffic on residential and shopping streets) are likely to be a priority, particularly North and East of the town centre.
- The commuting and school travel networks are different but complementary, with many commuting adults also taking children to school, as well as potentially making non-commute trips within their neighbourhood (not analysed here).
- The report suggests some of the routes and neighbourhoods that might form priorities for investment in achieving Bournemouth's cycling potential.

This short case study uses the PCT to compare area-level school and commuter cycling potential in Bournemouth. Bournemouth is a large town of 183,491, with levels of cycling above the English average. For instance, 5.3% of children cycled to school in 2010/11 (the last time the national School Travel Census was conducted), while 5.2% of commuters cycled to work. (It is also unusual in having similar levels of child and adult commuter cycling).

However, there is potential for substantial increase, not surprisingly as Bournemouth is an urban area that forms part of a larger conurbation (lying between Poole and Christchurch). The Government Target (equality) scenario assumes cycling doubles nationally in line with 2025 targets, but with the extra 100% of trips distributed based on distance and hilliness (hence the doubling is not equal). Although Bournemouth is already above average, under the Government Target scenario cycling to work rises to 9.3% and cycling to school rises to 8.0%.

The more ambitious Go Dutch scenario uses Dutch cycling propensities (based on trip distance and hilliness). In other words, we are saying: if Bournemouth were a Dutch town, then based on how far people travelling and how uphill it is, what would cycling levels be? (We calculate commuting propensities separate from school travel propensities, which are also split into primary and secondary schools). Under Go Dutch, Bournemouth would see 26.6% of commuters cycling to work, and 52.3% of children cycling to school. (A similar calculation for school travel but based on propensities to cycle to school in Cambridge, results in 29.8% of children travelling to school).

Thus, Bournemouth is already doing well in the English context, but with scope to achieve much more. In the shorter term, perhaps, commuter cycling might increase more, but in the longer term, there is even more scope for increasing travel to school. The following sections visually represent the changing distribution of travel to school and travel to work both currently and under the Government Target and Go Dutch scenarios.

Finally, the report highlights how cycling is/would be distributed across the network. Bournemouth already has some cycle routes (Figure 1), which while more extensive than many towns in England, remain somewhat disconnected and do not yet form a complete network (and in many cases needs upgrading, e.g. where the infrastructure is only a painted line on the road, or are, like the undercliff, not usable year-round or day-long). The PCT route network feature helps to highlight where new routes (or filling gaps in or upgrading existing routes) might be prioritised to meet future school or commuter cycling demand.



Figure 1: existing cycle infrastructure in Bournemouth

Current patterns of cycling to work or school

Within the Bournemouth area, cycling to work propensities vary. The map shows LSOAs (Lower Layer Super Output areas) which generally have a commuting population of several hundred to a thousand people, depending on employment rates. The North-West and the West of the studied area (where Bournemouth town centre is located) have generally lower cycling propensity than the middle and Eastern areas, some of which have cycling propensities as high as 8-9% already.



Figure 2: current propensities to cycle to work



Figure 3: current numbers of people cycling to work, per LSOA

When we look at absolute numbers of cycle commuters per small area, the picture changes slightly, with commuter cyclists currently concentrated in the centre of the area.

For cycling to school, the North West sees more cycling, including at LSOAs to the edge of town. The South West of the area sees lower propensities, and low absolute numbers, which will be also related to land use characteristics of those LSOAs (more likely to be town centre retail, hotels, etc., as opposed to being largely residential). The centre of the studied area has currently the highest rates of children cycling to school with propensities as high as 9-11% in some LSOAs.



Figure 4: current propensities to cycle to school



Figure 5: current numbers of children cycling to school

Figure 5 highlights the comparison in absolute numbers. There are in general several times less children travelling to school per LSOA, than there are adult commuters living in the LSOA, hence even where percentages are similar numbers of child cyclists will be lower than numbers of adults. For the area around the town centre, each LSOA sees only a handful of the 50-100 children travelling to school from that neighbourhood using a bike. By contrast, some denser, higher-cycling LSOAs have 20 or more children cycling to school at present.

Finally, Figure 6 shows commuter and school cyclists combined.



Figure 6: commuter and school cyclists combined

As well as examining current cycling, we can examine how cycling is distributed in the PCT's data-based future scenarios. For commuting, Figure 7: Government Target scenario, cycle commuters shows the Government Target scenario and Figure 8 Go Dutch.



Figure 7: Government Target scenario, cycle commuters



Figure 8: Go Dutch scenario, cycle commuters

Figure 7 and Figure 8 suggest that current propensities provide a relatively good guide in this case to inherent potential for cycling commuting, based on trip distance and hilliness (this is not always the case). However, note that in the Go Dutch scenario, all the 'low-cycling' areas have substantially higher cycling levels than any LSOA does at present. Under the Go Dutch scenario, the LSOA with the lowest cycling propensity sees 18.7% of people cycling to work, while the highest has 31.4%. Go Dutch sees the gap closing somewhat in relative terms, with particularly high relative increases among some currently lower-cycling areas (e.g. from 3.4% to 18.7%).

For schools cycling, the scale of change is particularly high under Go Dutch (Figure 9), with half of all the LSOAs seeing at least 100 children get on their bikes in the morning to ride to school. These LSOAs are concentrated in the centre and to the North-West of the studied area, unlike commuting where cycling propensities in the North-West of the area are lower.



Figure 9: Go Dutch scenario, cycling to school

Finally, Figure 10 shows the combined Go Dutch propensities across the town. Many of the LSOAs would have several hundred adults and children leaving to cycle to work or school. There is a belt in the middle of the Bournemouth area from North West to South East, where cycling potential is particularly high. These figures (where many LSOAs would see several hundred adults and children setting off by bike in the morning) should be seen in the context of the average LSOA population: 1500 people or 650 households.

Composition varies across the area, so that in the North West where adult commuting potential is somewhat lower, a relatively high proportion (even 50% or more) of those cyclists in the morning peak would be children.



Figure 10: Go Dutch scenario, commuting and cycling to school combined

The maps above highlight where school and commuter cyclists might be starting their journeys. This does not necessarily tell us where to build routes, however (although it does help identify area-based intervention locations, if for instance we are interested in where we might prioritise providing residential cycle parking, or in reducing through traffic in residential neighbourhoods where we might have relatively high numbers of children riding to school).

Thus, finally we show route networks for both commuter and child cycling, for the Go Dutch scenario. This shows numbers of child and adult cyclists on parts of the route network, under this scenario, if they follow the most direct legally cyclable route. While not necessarily where people are currently cycling (the route network may highlight hostile A roads without cycle infrastructure, for instance), it does provide an initial indication of where we might want to provide cycle infrastructure, if we want to facilitate direct cycle routes to workplaces and schools.



Figure 11: Route Network, Commuter Cycling, Go Dutch

Figure 11 highlights key desire lines for commuter cyclists under the Go Dutch scenario, including links out of Bournemouth to Poole and Christchurch.

While the town centre area does not score so highly for area-based cycling potential, the employment locations there mean that there is strong route-based cycling potential. The need for routes connecting the area East-West, including to key destinations such as the university, can be seen by comparing Figure 11 and Figure 1. Note strong potential for commuter cycling along the A338 corridor. This is an important route for motor traffic, and clearly, could also be an important route for cycling, although currently the A338 itself is a 1960s-era urban motorway and hostile to cycling, with occasional poorly joined up pieces of infrastructure alongside. Due to the high demand for cycling, and the likely reduction in car trips that might be achieved, the corridor could be considered as a priority for safe infrastructure, whether on the A338 itself and/or on direct nearby alignments, such as Holdenhurst Road.

Some existing routes are highlighted for upgrading, such as the A347 between the universities and the town. This is shown as having high potential, even without including the scope of commuting by students (not in the Census nor the School Travel Census, so cannot be included here). However, the infrastructure is disjointed and frequently substandard (e.g. narrow on-carriageway advisory cycle lanes, rather than separated tracks). The A347 also connects to local high streets in Winton and Charminster, further providing opportunities to boost local economies.



Figure 12: the A347 linking the town and the university: a link with strong potential but needing upgrading to provide safe separated space.



Figure 13: Route Network, School Cycling, Go Dutch

By contrast, Figure 13 highlights the importance of building cycle route infrastructure (which might combine separated bike tracks, and removing through motor traffic from streets where traffic volumes are a problem, but separated tracks are not possible due for instance to carriageway width), in residential areas and local high streets, to support school cycling. Many commuters drop children off at school before continuing to work, so in practice these two networks may be used by the same people. For instance, enabling children to cycle to school in Winton (one of the neighbourhoods with high cycle to school potential) would fit well with enabling routes along the A347, which has high commuter potential, and 12

would support parents employed at the university, for instance. Some schools lie on main roads, and the cycle to school network does highlight busier roads too, for instance, the map suggests that it was a good idea to prioritise Castle Lane for high quality infrastructure (it is also an important link for commuters).

Compared to commuters, children are headed to destinations (schools) that are distributed more evenly across neighbourhoods. Hence while commuters living in West Howe need routes to major employment areas in town centres (or industrial estates), children living in West Howe need safe routes within their neighbourhoods that connect to the main schools there. Currently many of these neighbourhood high streets, distributor and even residential roads have high levels of motor traffic passing through in the morning peak (Figure 14), and there is little bike infrastructure.



Figure 14: typical levels of motor traffic, North Bournemouth, 8:45am Monday (source: Google)

Creating more bike-friendly neighbourhoods may be of particular importance for child cycling, but it would also benefit adults: only one in five adult trips is a commuting trip, with many of the rest being trips to local shopping, eating, and leisure destinations (some with children, of course).