Using the PCT to help identify a priority cycle network in small cities

The Propensity to Cycle Tool (www.pct.bike) works by identifying trips currently made by other modes that would be most likely to be switched to cycling, if cycling grows. Used locally, the PCT can help planners decide how to prioritise cycling investment. It does this by identifying **future** commuting hotspots and desire lines. This is important because the places in a town where we currently see more cyclists aren't necessarily the places where the greatest unmet demand or potential lies.

The PCT uses different scenarios to calculate cycling potential. The scenario used here, Government Target (equality), is a relatively short term scenario that starts by assuming that cycling doubles nationally, in line with the target for 2025. The PCT then identifies (based on distance and hilliness of trips currently made by other modes) where those extra trips might come from.

This short report uses commuter cycle potential data from the Propensity to Cycle Tool (PCT) to illustrate its possible use in small cities. Hereford has a population of just under 60,000 and is a cathedral city sixteen miles from the border with Wales. For the UK it had in 2011 already relatively high cycling levels, of 4.3%, and more existing cycle infrastructure that most UK towns and small cities (though not a network).

Figure 1 shows possible priority routes and areas (in red) that the analysis suggests could be prioritised as part of an initial core network. This includes two neighbourhoods where traffic reduction measures could be implemented, and new routes that match high potential desire lines and connect to existing routes. Note that this is only an indicative desktop exercise. Local knowledge is needed too. The Census data that the PCT uses is from 2011, so it does not cover recent housing developments, for instance. Here we are also only looking at commuting (one in five trips) so any numbers do not represent 'all potential cyclists'.

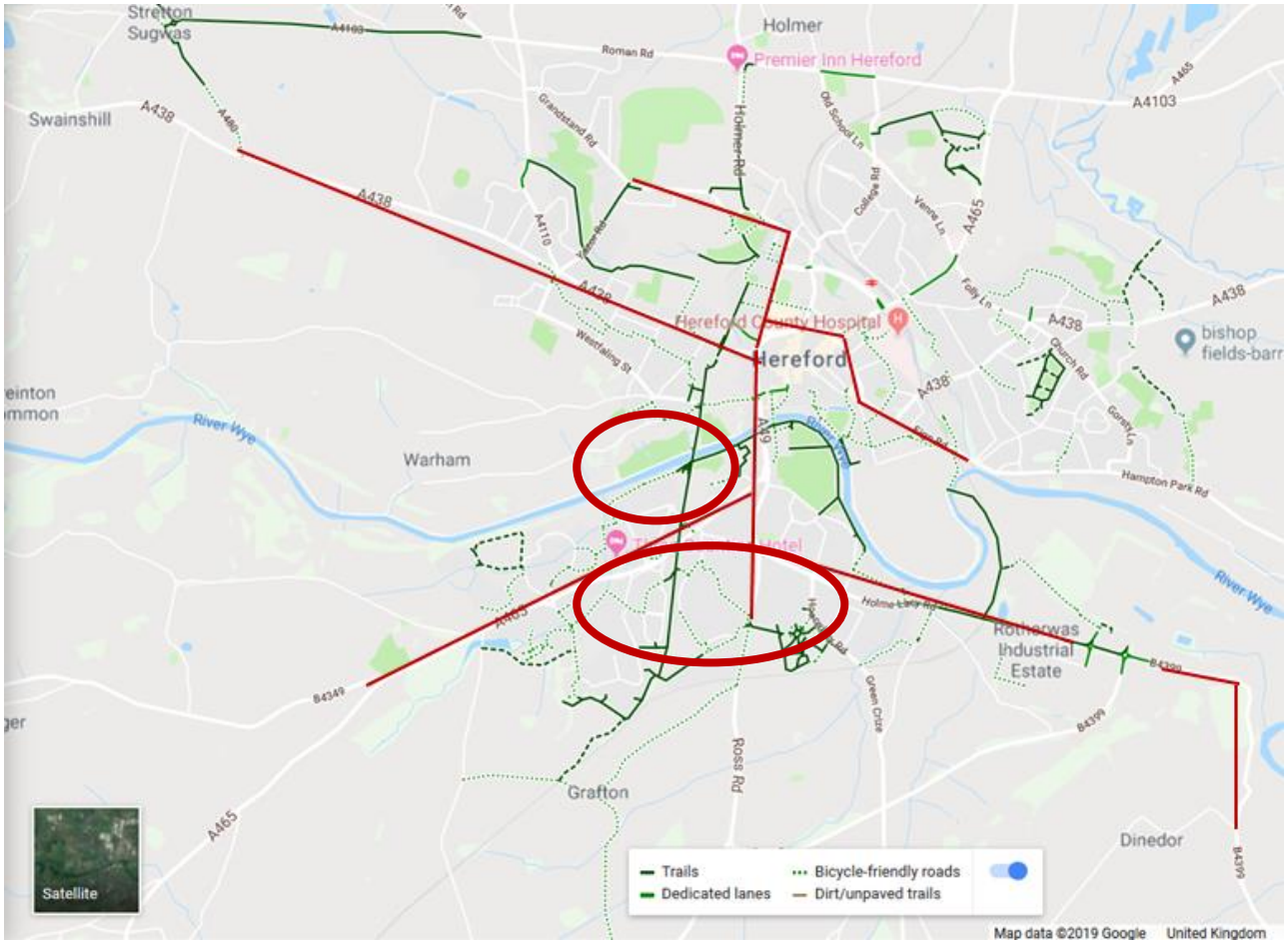

Figure 1: summary of suggested priority neighbourhood and route interventions, in red, and existing routes, in green.

Government Target: how cycle commuting changes

Across Herefordshire, cycling to work was 4.3% in the 2011 Census, rising to 7.2% under Government Target. While the average point increase is therefore 2.9%, some of the higher-cycling areas around Hereford (highlighted here) see point increases of around 6%, with cycling potential under this scenario rising to 18% in the highest-potential LSOAs (see Figure 2).

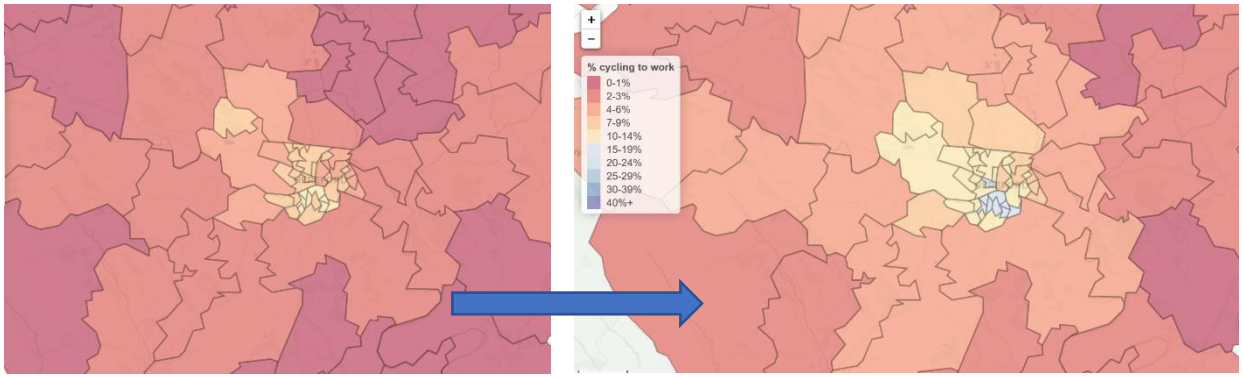

Figure 2: change in cycle commuting, Herefordshire, Census 2011 to Government Target

Areas just South of the city centre and to the West are highlighted as having high cycling to work potential (Figure 3).

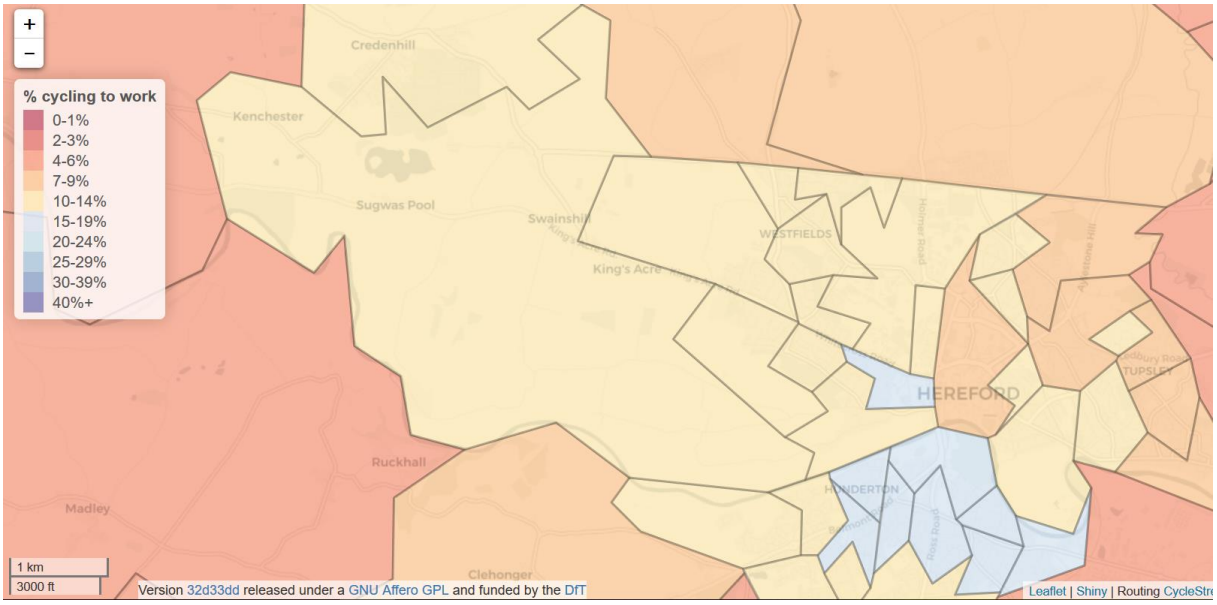

Figure 3: Government Target (equality) cycling to work, Hereford

Areas suggested for neighbourhood-level improvements

Figure 4 below highlights (i) levels of deprivation: particularly high in the area just South of the river, and (ii) superimposes suggested areas for neighbourhood-level interventions, which would seek to reduce and slow motor traffic and create better conditions for walking and cycling (including, potentially, residential cycle parking). One to the West is relatively small while to the South the area circled is larger and effectively would consist of 4-6 neighbourhood areas (just some might be selected at this stage).

Levels of intervention required would vary depending on the area; for instance, some parts of the Southern area highlighted would already have low levels of motor traffic and access to off-road routes due to natural barriers (the river which runs just north of the Southern neighbourhood). By contrast the area highlighted separately to the West is grid-pattern with many neighbourhood streets potentially serving as cut-throughs for non-locals driving between A-roads.

Cycling permeability is generally poorer than pedestrian permeability, with many walking cut-throughs/point closures to motor traffic inaccessible for cyclists in both areas.

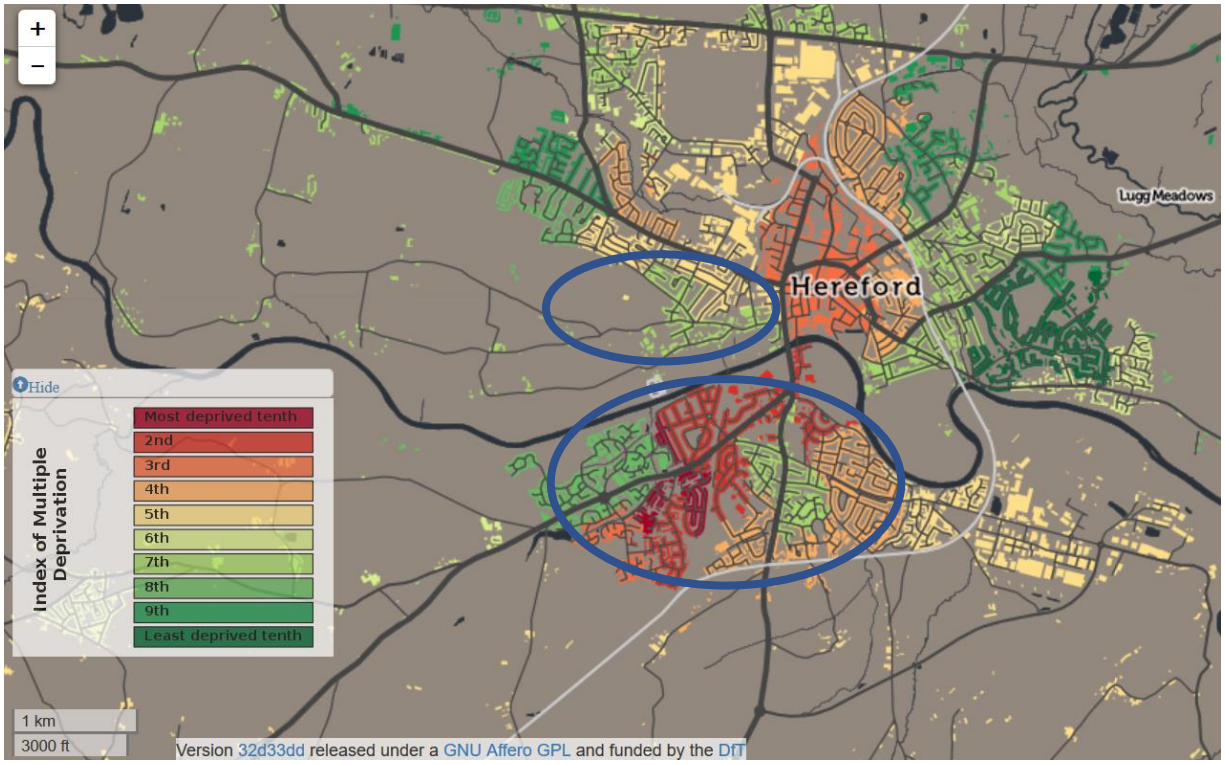

Figure 4: Levels of deprivation and suggested neighbourhood intervention areas, Hereford

Suggested routes on major roads

Figure 5 below shows commuter cyclists on the route network under the Government Target (equality) scenario. Routes to the West and South are highlighted, as are routes through the centre. Workplaces include those in the city centre, and industrial estates to the North and South of the centre. Under this scenario these high-potential routes might have 200-2000 commuter cyclists at the AM peak, plus non-commuter cycling (commuting is just under 20% of trips, so if other trip potential increased in line with commuting along these roads, one might be looking at more like 1000-10000 cyclists on key routes daily).

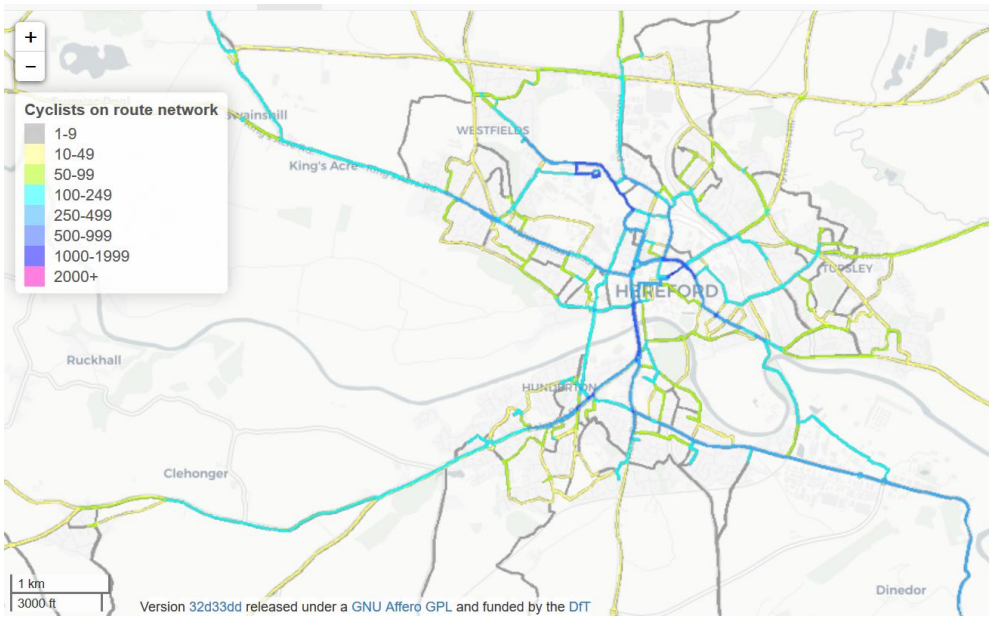

Figure 5: Route-level commuter cycling potential

Finally, Figure 6 illustrates approximately 20-25 km of routes on major roads that might help maximise commuter cycling potential. Figure 6 routes are superimposed on Google data on cycling routes, with the solid green line being separated cycle tracks. Note that quality of these routes may not be uniformly high (some are narrow shared footways lacking junction priority) and may require improvement. The red lines would combine with existing separated infrastructure to make a more coherent network, prioritising where the highest commuting potential lies (e.g. not attempting to connect out to the disconnected infrastructure in the North-East first, as lower potential implies it would not be an initial priority).

The routes would mean there would be three river crossings for cyclists, separate from motor traffic and connecting to new and existing cycle infrastructure: the existing off-road route to the West, the A49 (with new infrastructure), and to the East, new infrastructure along Edge Road would join up with another off-road bridge and Greenway link South of the river (and hence to other new routes). While not a complete network (the North-East is unserved still) it provides the basic core of a network in the areas of highest cycling potential.

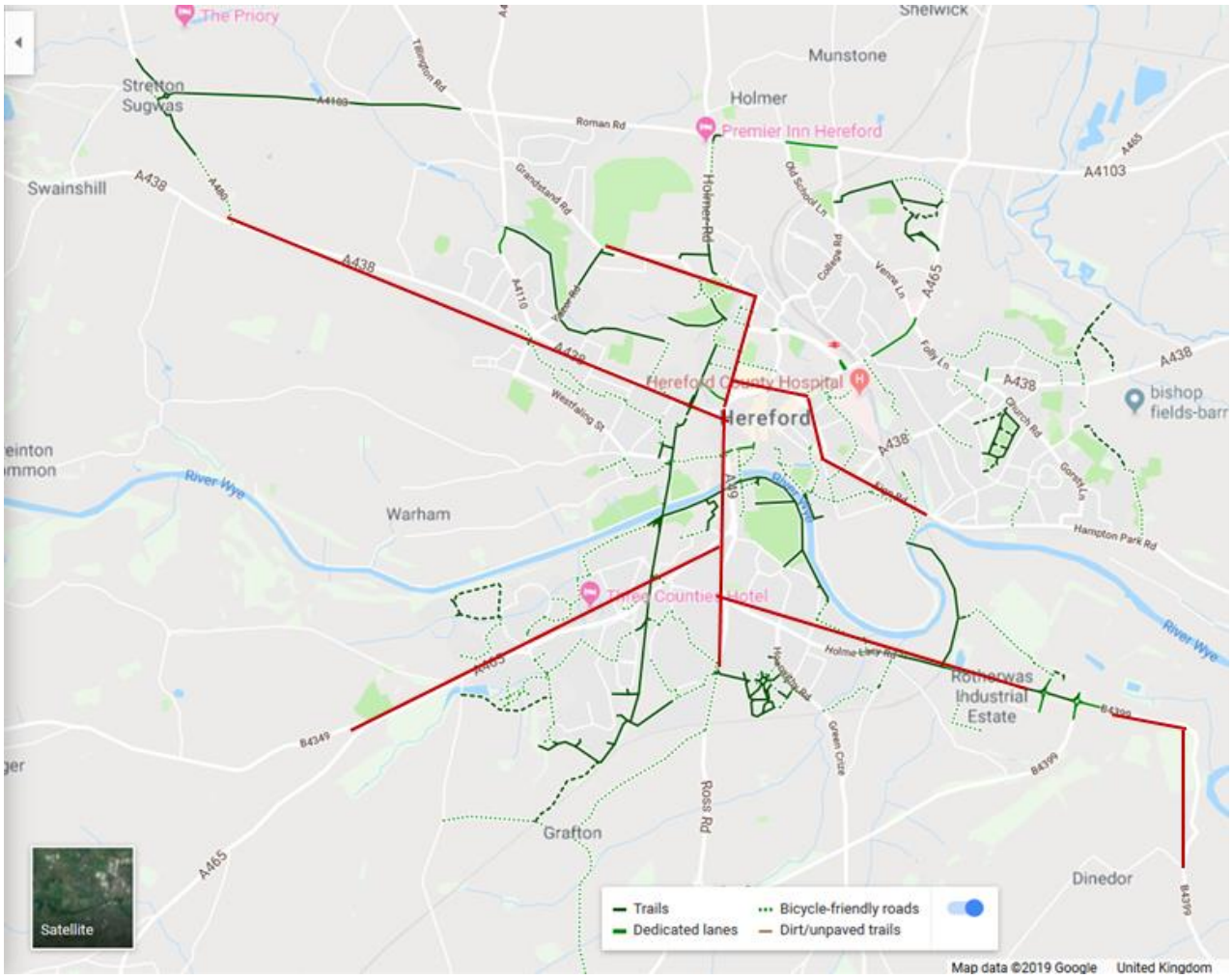

Figure 6: Routes suggested by the Government Target (equality) scenario, in red, alongside existing routes (in green)