Mini-Holland feasibility studies

Assessment guidance for local authorities

March 2022

Contents

1. Introduction

This note has been developed to help inform the technical content of Feasibility Studies for the Mini-Hollands project. It is based on best practice from previous Mini-Holland projects. The main aim of this document is to give a clear indication of how feasibility studies will be assessed in terms of network/design quality and cohesion. These studies will also be subject to economic appraisal, but this aspect is not covered in this document.

Active Travel England is now operating in shadow form and has access to experts in Mini-Holland development and delivery. If you require any assistance in the interpretation of this document or any other aspects of the feasibility study, then please contact them for support.

2. Network development

2.1 This section gives an overview of the process of network development around a Mini-Holland project. It is not exhaustive but the tests for the feasibility studies will be based on whether these approaches have been well managed.

2.2 Audit existing network: The first stage is to audit existing infrastructure and determine whether the level of service is adequate to attract new active travel tips. Existing cycle maps produced by highway authorities may not be reliable as they often show the least bad options rather than high quality routes so be careful about taking them at face value.

2.3 Severance: The second stage is to highlight all the currently busy roads without cycle infrastructure or formal crossings. These effectively act as barriers for cycling and will be difficult to cross for people walking. It is also useful to highlight railway lines and rivers or anything else that acts as a barrier.

2.4 Low Traffic Neighbourhoods (LTNs): In the next stage the severance barriers can be treated as perimeter boundaries for areas. This gives an approximation of potential low traffic neighbourhood areas but in some cases severance barrier roads will need to be included. Low traffic neighbourhoods are usually about 1 square kilometre. So, the severance can be used to create areas with adjoining perimeter boundaries. These are usually around a district or town centre. Note that a Mini-Holland project includes a combination of link, area, and point treatments. The LTNs are the main focus of the area-based treatments.

2.5 Gateways: At this stage it is useful to look for potential crossings points that could connect local streets in neighbourhoods with other local streets in adjoining neighbourhoods. These crossings are referred to as gateways and are the focus of the point treatments for Mini-Hollands. When placing crossings, it is worth keeping an eye on the potential for the adjoining streets to form longer local routes connecting through several neighbourhoods. Every neighbourhood should have at least two gateways and on different sides. The more potential gateways the better at this stage as some may not provide feasible to deliver. The key thing to remember is that gateways connect streets that have not been highlighted as severance. Gateways are placed on top of severance lines as a way of getting across them. It is possible to deliver an extensive high-quality network using nothing other than gateway crossings. A gateway should be easy to walk and cycle across. See section 7 for crossing details.

2.6 Porosity: At this stage it is useful to take an area planning view of the study area and note the effect of the gateways in enabling routes and connections. At the most basic level if a neighbourhood has 2 connections then colour the area green and classify it as open. If it has one, then colour it orange and classify it as being partially open and if it has no gateways then colour the area red and classify it as closed. The logic puzzle of urban street design is to find a way of opening all the neighbourhoods so that they all connect to their adjoining neighbourhood areas. This gives an elegant view as to where walking and cycling might be difficult and where funding for provision should be concentrated. Making an entire region green and open is affordable and practical just by strategically placing crossings.

2.7 Local routes: At this stage it is time to join the dots. The gateways offer the easiest way into and out of a neighbourhood so if they can be connected by streets within neighbourhoods then a basic network is created. Gateways should be connected via the shortest possible route unless there are any local conditions that make slightly longer connected routes more attractive. These conditions could be related to gradient or surface condition or the impact of parking on the street. The aim should be that everyone lives in a neighbourhood where there are easy ways of moving around by foot or by bike and so this is the very least, we should be aiming for. This is the link part of the Mini-Holland.

2.8 Strategic routes: The next stage would be to examine the severance points. Perhaps some are acting as rat runs carrying more motor traffic than intended as they offer cut throughs. In this case traffic management techniques could be applied to make them viable parts of the neighbourhood network. In the UK driving has doubled on residential streets in the past ten years with the rise of satnav, google, waze and amazon. It is therefore vital to tackle this excess of backstreet driving as these streets are the most important for walking and cycling trips. Other severance points might be major roads which need to fulfil a strategic transport function. Some of these types of roads may have people living on them or may be commercial centres. Making changes to these types of roads will therefore be difficult. If they have multiples lanes and high volumes, then they will be difficult to cross for pedestrians and if they are congested it will be difficult to make the case for space to reallocated to cycling. If you can transform some of these corridors, then the benefits are huge. These will unblock commuter trips, promote mode shift, and make a statement to all surrounding areas that active travel is a legitimate option. Once a major road has been transformed then it can open all the surrounding neighbourhoods. This is especially important if the street layout is not conducive to the local route approach. This is also the link part of the Mini-Holland.

2.9 The final stage is to plan the interventions for the creation of LTNs. These are defined as areas where motor traffic should not be allowed to pass through. Motor traffic can access them and get to every single point inside a neighbourhood, but they cannot pass through. They instead need to go around the perimeter to move through the area. This is done by various techniques but the key one is the placement of modal filters. Named as they allow certain modes to pass through whilst others are blocked. It can be looked at as a road closure for cars, but this also means that the road is now open for people walking, cycling, playing, or socialising as the fear of through motor traffic has been removed. Any motor traffic in the area is exclusively for residents or vehicles servicing residents. Area traffic management of this type is a logic puzzle. One approach would be to use the fewest number of

modal filters to stop through traffic. Another approach might be to use filters to create many quiet havens and open options such as school streets, play streets and pocket parks. The key is to not leave any routes open for through cars as motor traffic could increase on these streets having a detrimental effect on the lives of residents. It does not seem just that some streets should become quieter at the expense of others. If motor traffic is forced to use larger perimeter roads, then you also have a greater chance of treating the pollution caused by cars as there will be more space.

2.10 As motor traffic is likely to increase on the perimeter of the LTNs you may want to consider mitigation measures such as tress or bushes to detoxify the air. You may also want to do treatments at the side roads so that drivers know they are entering a cul-de-sac. Signs works well or even continuous footways which treat side roads like crossovers and give priority to pedestrians. Options are shown in section 7 for perimeter roads.

2.11 Network approaches inside an LTN should be determined as much as possible with the help of local people. They may want a new social space or café seating or a new park or some cycle parking stands. You need to remember that this neighbourhood is their home and as a guest you should respect their wishes. School streets and play streets with timed closures are important considerations as well as permanent pedestrianised areas. Bus gates which allow buses through but not cars are also worthy of consideration, but they may require some enforcement. Options are shown in section 8 for internal LTN features.

2.12 The output that Active Travel England will test for this approach should be one overview plan showing how the LTN's combine around a local centre and which severance corridors are to be transformed. An example from Waltham Forest is shown in figure 1. Also an explanatory video is available here: Low Traffic Neighbourhood (LTN) design surgery – live design and advice workshop - YouTube

Figure 1 Waltham Forest Mini-Holland overview map

3. Porosity test

3.1 Porosity analysis is covered in LTN 1/20 on pages 26 part 3.5.4 and in more detail in the London Cycling Design Standards Chapter 2, part 2.3.5 on page 18. The process involves testing the connections between your LTN areas. The perimeters of LTNs can act as severance to local walking and cycling trips and so regular crossings help overcome this severance. Figures 2 and 3 shows a porosity test on the before and potential situation with results.

Figure 2. Porosity test in Enfield before the Mini-Holland project.

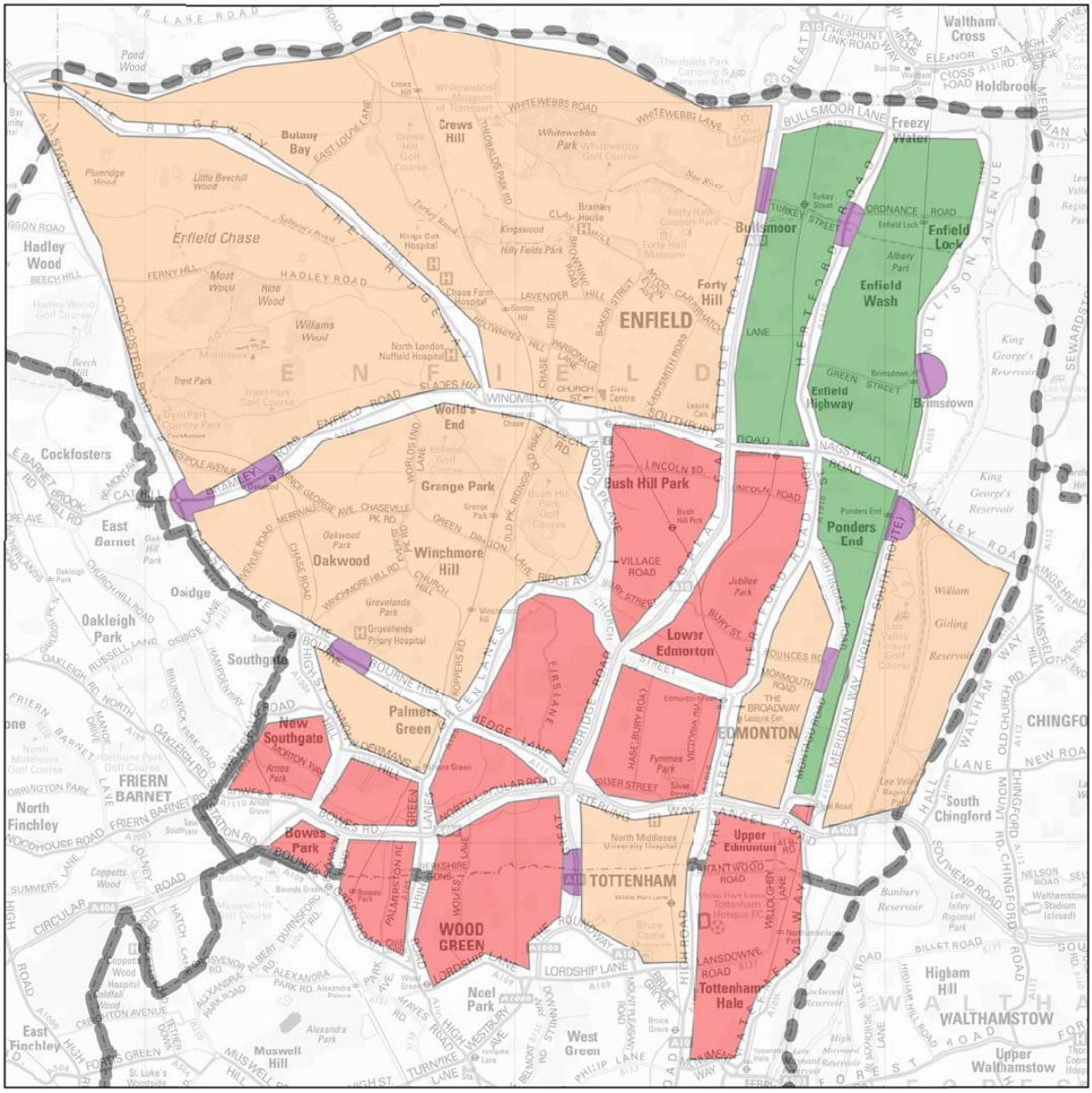

Figure 2 Porosity test in Enfield before the Mini-Holland project.

Porosity results: red = closed area, amber =partially open area, green = open, purple = gateways

Porous: 2 or more gateways per area cell = 12% of total area

Semi porous: 1 gateway per area cell = 48% of total area

Impermeable: 0 gateways per area cell = 33% of total area

Other 7% (not tested inaccessible)

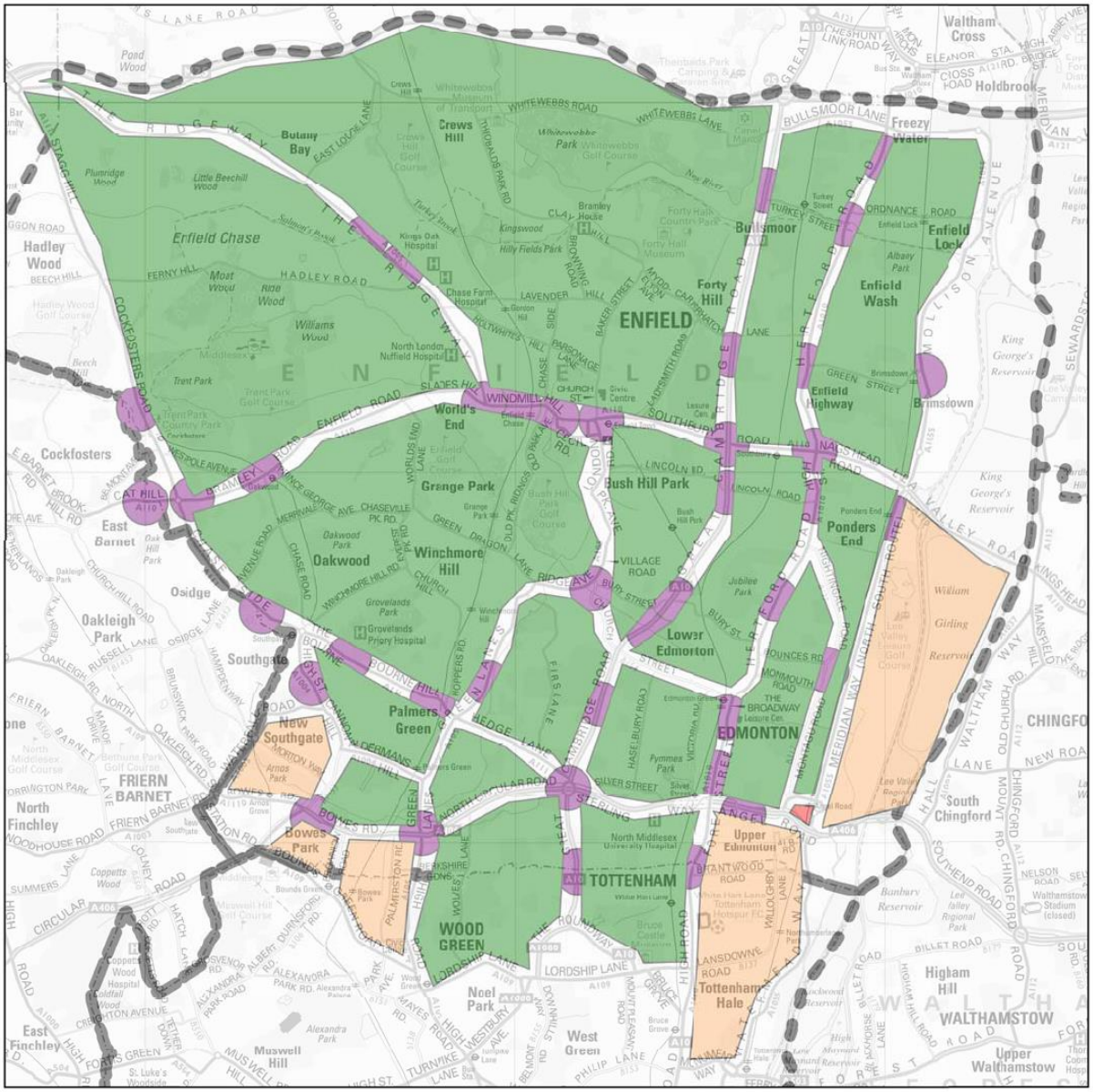

Figure 3 Porosity test in Enfield with the proposed Mini-Holland project

Porosity results: red = closed area, amber =partially open area, green = open, purple = gateways

Porous: 2 or more gateways= 74% of total area

Semi porous: 1 gateway = 18% of total area

Impermeable: 0 gateways = 1% of total area

Other 7% (not tested inaccessible)

3.2 Active Travel England will test your plans for porosity and use this to inform our assessment of your bid. It is therefore recommended to connect all your LTN area cells. You may also wish to present this analysis in your feasibility report.

4. Mesh Density Test

4.1 Mesh Density analysis is covered in LTN 1/20 on page 25 section 3.5.1. Two methods are shown: a cell based and area bound analysis. It is important that the level of service of any existing route is determined. Active Travel England can assist with the methodology for determining this or systems such as the Cycling Level of Service and the Healthy Streets Check for designers can be used. Note that local routes that connect between Gateway crossings contribute towards the density of the planned network and not just separated routes on major roads. Figure 4 shows an example mesh density analysis. Aim for 250m mesh but note that 800m is still good.

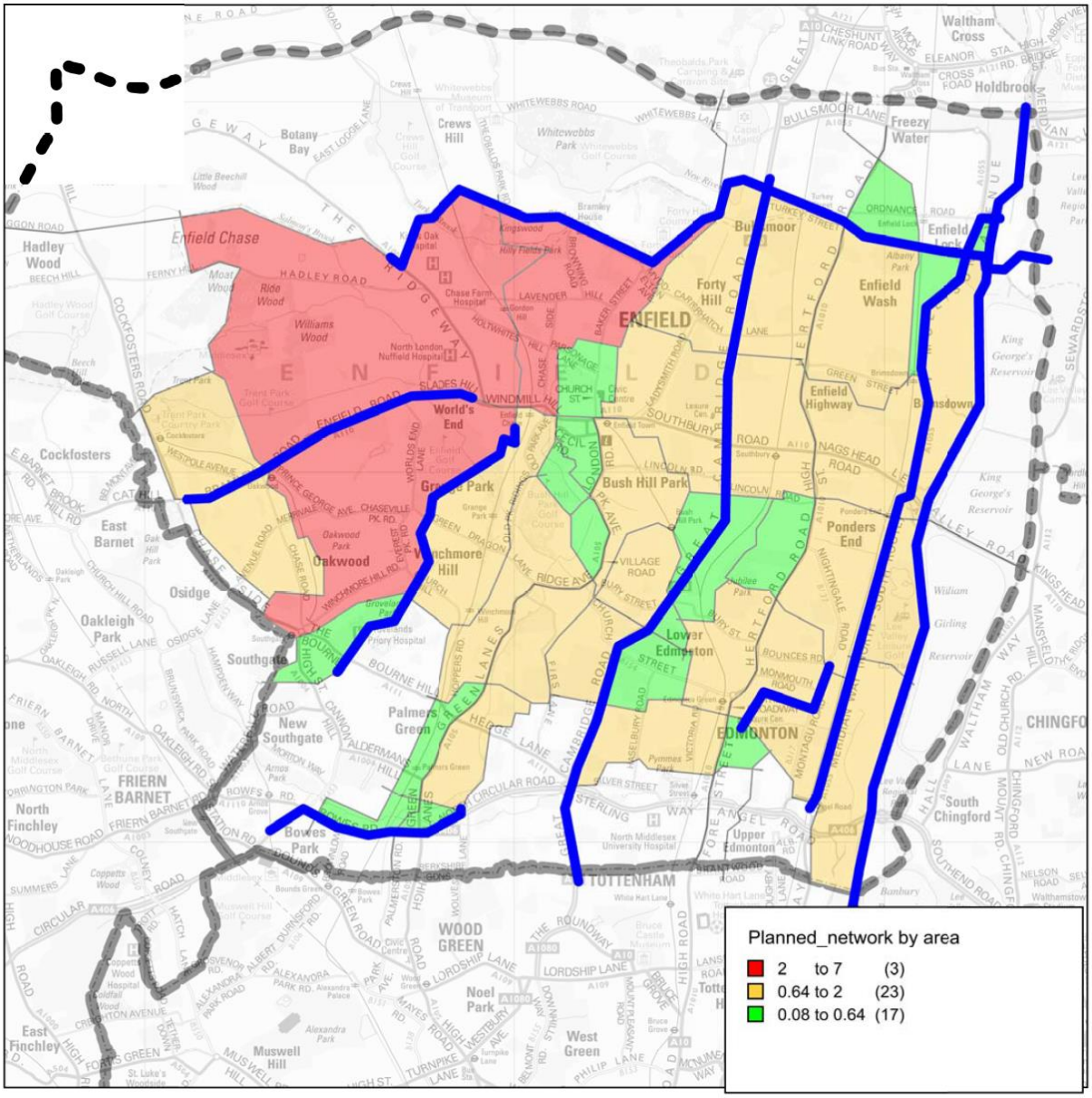

Figure 4 Mesh Density analysis using the area bound method for the proposed Enfield Mini-Holland

Blue = existing routes, bold grey lines = proposed network.

Green = 800x800 mesh achieved 14% of total area

Amber = 800m to 1.4km mesh = 56% of total area

Red = >1.4km by 1.4km mesh = 30% of total area

4.2 Active Travel England will test your plans for mesh density for combined walking and cycling routes and use this to inform our assessment of your report. It is therefore recommended to present this analysis in your feasibility report.

5. Permeability test

5.1 Active Travel England will run a basic test of how many clear routes run through each LTN area there are. These routes will need to connect to Gateways across perimeter routes into the next LTN area for them to contribute. This join-the-dots approach is shown in figure 5 which is an example of the approach from the GM. https://beeactive.tfgm.com/publications-and-downloads/

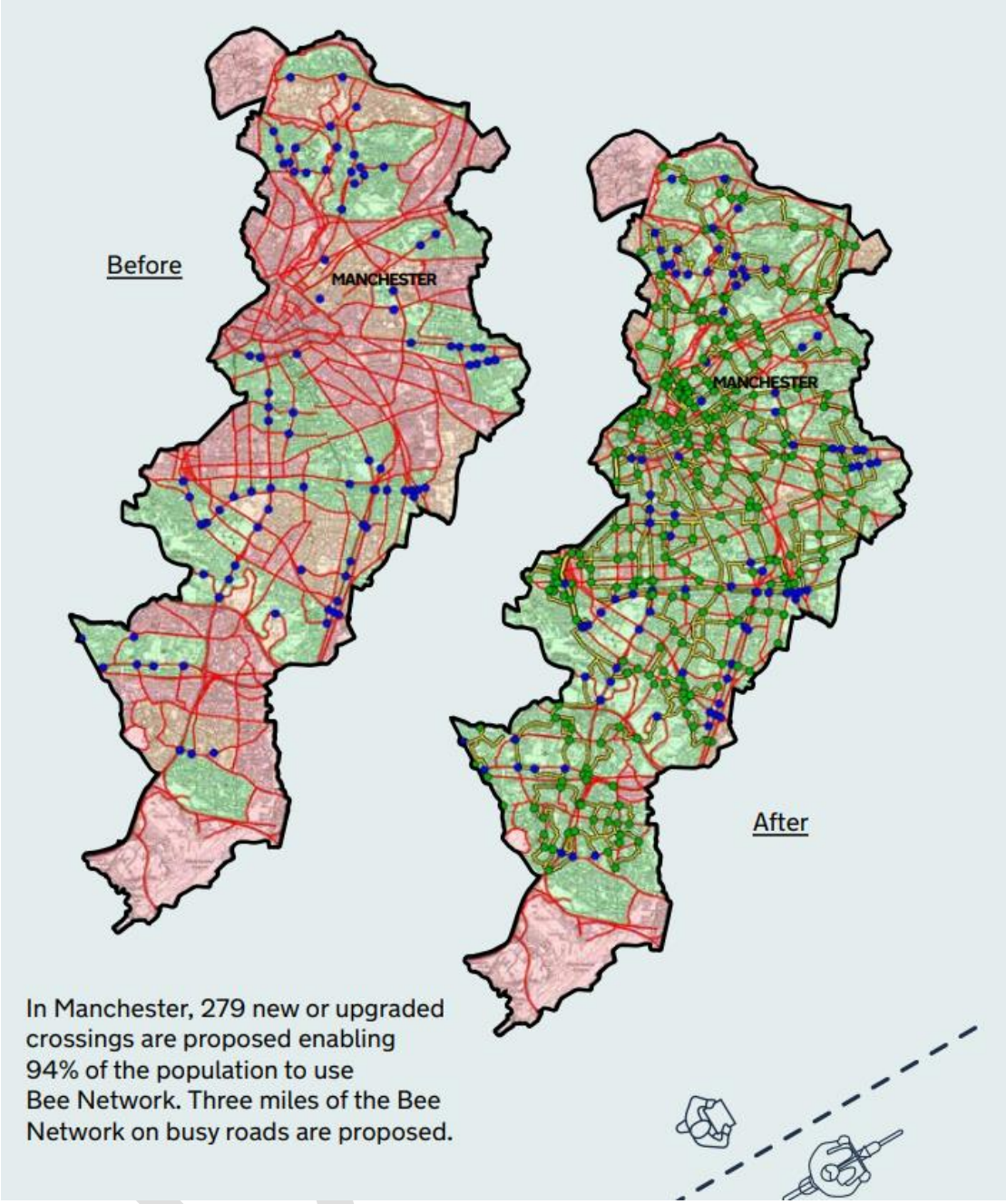

Figure 5 Bee Network with permeable network routes between Gateway crossings shown in yellow. Red lines are severance and area porosity colours are also shown. Gateway crossings are shown as blue for existing and green for planned.

5.2 It would be useful to consider systematic approaches such as the space syntax approach developed by University College London https://www.spacesyntax.online/overview-2/.

5.3 Contraflow cycle lanes are a useful design intervention for increasing permeability options through an LTN area. LTN 1/20 covers this approach on page 64.

6. 'Rat-run' test

6.1 Active Travel England will test for potential rat-runs inside your proposed LTNs. Rat-runs for the UK are shown here: LTNs and modal filters map (lowtrafficneighbourhoods.org) password: ltnsarenotnew. We will test that these have been resolved and that no new ones have been created. Figure 6 shows rat runs highlighted by the cyclestreets map. Local knowledge may also be used to determine rat-runs. It should be noted that not all through routes are used in a negative manner and so where through routes are left an explanation and mitigation may help address concerns. Some perimeter treatments shown in section 7 may be suitable for unresolved rat-runs through LTNs.

Figure 6 A potential rat run information source provided by cyclestreets showing main road (potential LTN perimeters), rat-runs in red, traffic calmed through routes in brown, LTN (Streets with no through movement for motor traffic) in blue and existing modal filters as black dots

7. Perimeter treatments

7.1 LTNs can lead to an increase in traffic volumes on perimeter roads and so feasibility studies should address this. Perimeter roads may also be subject to transformation and road space reallocation with the introduction of protected cycle routes and widened footways. Standard perimeter treatments could include air pollution mitigation through planting, speed reduction, formalised parking, bus priority and traffic calming. Cycle treatments could include (LTN 1/20 page shown in brackets):

- Cycle track at carriageway level (Figure 6.3 page 52)
- Cycle track at intermediate level (Figure 6.3 page 52)
- Cycle track at footway level (Figure 6.3 page 52)
- Stepped cycle track (6.2.24 page 56)
- Light segregation (6.3 page 60)
- Walking focussed improvements could include continuous footways, side road zebras, side road entry treatments, parklets, benches, shade and shelter.

7.2 Crossings are a key perimeter treatment given their role as gateway features enabling easy movement between LTNs for people walking and cycling. Figure 7 shows the crossing selection tool used by Transport for Greater Manchester on the Bee Network. This tool shows many methods that avoid the use of shared use and this approach will be used as part of the Active Travel England assessment. Appendix A has many standard details for crossing that avoid shared use and Appendix B shows the selection tool and gives links to streetviews of the crossings for reference. Greater Manchester Interim Active Travel Design Guide (ctfassets.net)

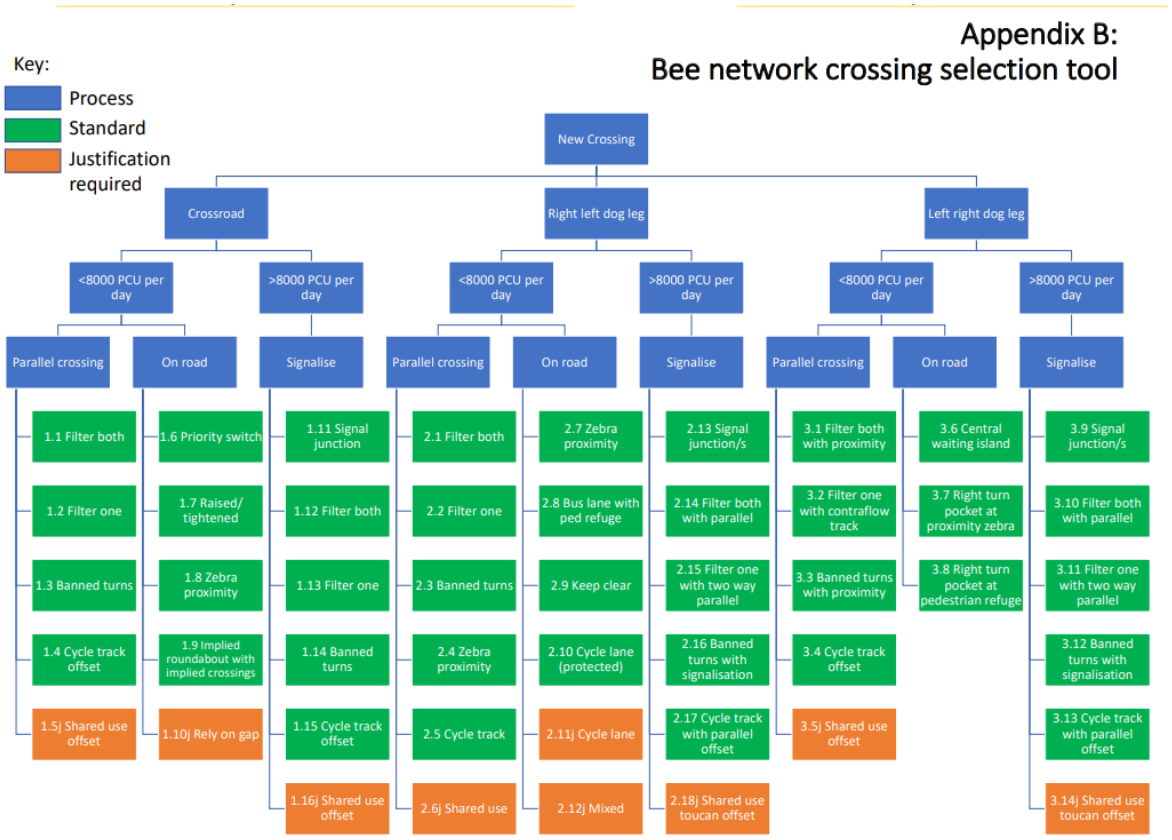

Figure 7 Crossing selection tool showing methods to avoid shared use

7.3 Junctions on perimeter roads may need substantial changes to make them suitable for people of all ages and abilities to walk and ride. The feasibility study will be assessed based on the right level of protection being suggested for junctions within the Mini-Holland Area. The following approaches could be considered (LTN 1/20 page shown in brackets):

- Signal Controlled Cycle Facility (page 103)
- Cycle Bypass (page 113)
- Dedicated Cycle Phase (page 113)
- Circulating Cycle Stage (page 114)
- Hold The Left (page 114)
- Two Stage Turn (page 115)
- Cycle Gate (page 117)
- Early Release (page 118)

7.4 Active Travel England will test your plans to see whether the most appropriate perimeter treatment has been chosen including junction and crossing designs. Design quality will be scrutinised to ensure compliance with Inclusive Mobility, Manual for Streets and LTN 1/20.

8. Internal treatments

8.1 Internal treatments for LTN's should wherever possible be developed with residents. See section 10 for suggested approaches. The following approaches could be considered:

- Play Street with regular timed closure
- Modal filter with permanent motor traffic restriction
- School street with regular timed closure
- Banned turning movements to reduce motor traffic volumes
- Bus gates
- Greening
- Pocket parks
- New social space
- Community gardens
- Wayfinding
- Landscaping

8.2 Further details on these options can be found in lcc021-low-traffic-neighbourhoods-detail-v9.pdf (livingstreets.org.uk)

8.3 Figure 8 shows how these internal and perimeter elements can be arranged to deliver an LTN.

Figure 8 Example combination of internal and perimeter treatments from Waltham Forest

8.4 Active Travel England will test your plans to see whether the most appropriate internal have been chosen. Design quality will be scrutinised to ensure compliance with Inclusive Mobility, Manual for Streets and LTN 1/20.

9. Placemaking

9.1 Mini-Hollands are first and foremost about making better places to live. Active Travel England are currently developing tools aimed at assessing the quality of placemaking interventions but key things that will be considered in the assessment of your plans are:

PERSONAL SAFETY

- Impact of highway design on behaviour
- Impact of surroundings on natural surveillance
- Ground floor activity from buildings
- Fear of Crime
- Standard of lighting

LEGIBILITY

- Spatial street syntax arrangement and its impact on activity
- Public transport integration

STREET CHARACTER

- Cultural significance
- Importance to society
- Visual interest
- Quality and distinction
- Materials matched to surroundings
- Shade & Shelter
- Green infrastructure or sustainable materials incorporated into design
- Does form follow function
- Minimise street clutter
- Enforcement
- Efforts to curb poor motor vehicle behaviour
- Impact of on street loading

MIX OF USES

- Social Safety

- Isolation
- Proximity to social space
- Diversity
- Conditions for pleasant interaction
- Street engagement for children

ENVIRONMENTAL

- Carbon value of construction
- Noise pollution
- Noise level from footway
- Climate resilience to extreme weather events
- Sustainability of habitat for wildlife
- Exposure to PM10 & NOX concentration
- Proximity to PM10 & NOX concentration
- Street trees
- Microclimate
- Sunlight penetration
- Wind chill effect from street structure.
- Planting at footway level

9.2 The ten healthy street indicators are worth considering Guide to the Healthy Streets Indicators (tfl.gov.uk) as well as Chapter 5 of the Manual for Streets Manual for the Streets (publishing.service.gov.uk)

9.3 Figure 9 shows Punters sense of place model as reproduced in the Welsh Governments Placemaking Guide PlacemakingGuideDigitalENG.pdf (dcfw.org). This is an excellent test for any potential intervention.

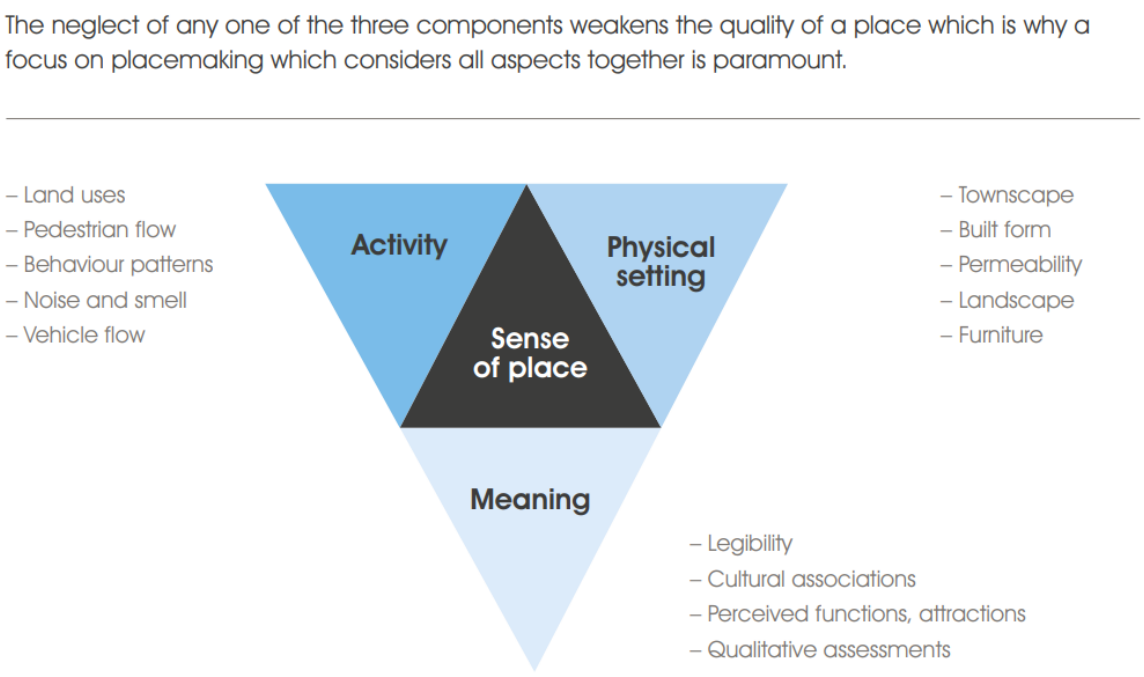

Figure 9 Punter' Sense of Place Model

10. Engagement practice

10.1 Best practice for engagement around LTNs is shown here: People_Future_Streets.pdf (lcc.uk). It includes advice on stakeholder mapping, communication strategies and levels of engagement including charettes and co-design workshops. Figure 10 shows an LTN crib-sheet produced by advocates to help explain benefits in the clearest manner. For Low Traffic Neighbourhood evidence look at Low Traffic Neighbourhoods: what is the evidence from the mini-Holland interventions? – Rachel Aldred

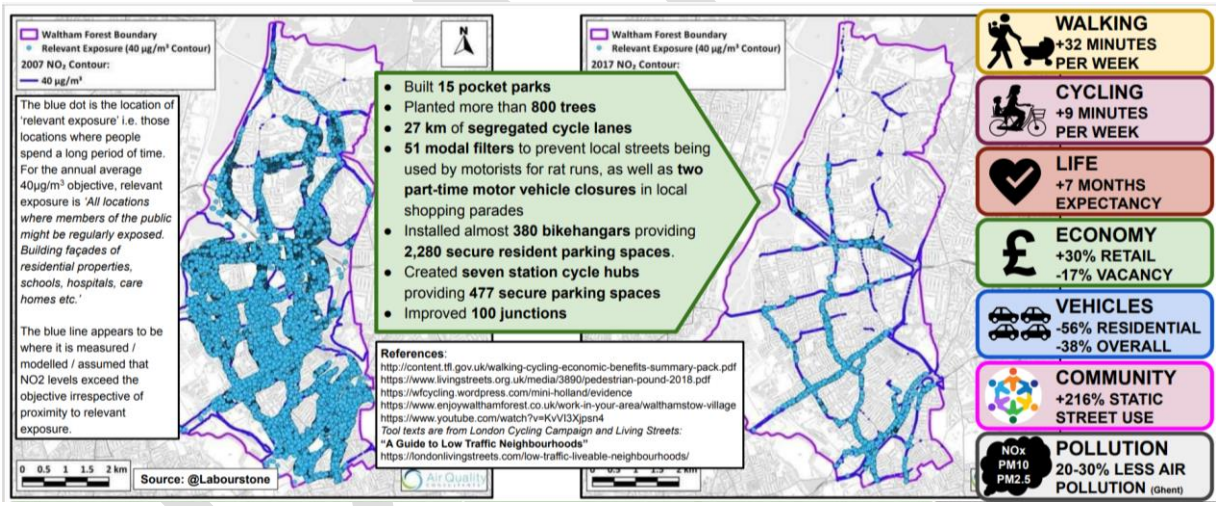

Figure 10 LTN "crib sheet" produced by advocates but based on LA evidence

10.2 Active Travel England will test your plans for an effective engagement and communication strategy that incorporates best practice in collaborative design.

11. Scoring

11.1 This document only talks about how the network/design quality of submissions will be assessed to inform the structure and content of feasibility studies. It is not exhaustive and different methods as well as innovative and creative solutions are encouraged. Figure 11 shows maximum scores for each category towards the final assessment. It is hoped that by being transparent about the assessment criterion that Local Authorities will aim for the highest standard.

Criterion	Max score
Network development	10
Porosity	10
Mesh Density	10
Permeability	10
Rat-run resolution	10
Perimeter treatment design	15
Internal treatments design	15
Placemaking	10
Engagement practice	10
Total	100

Figure 11 Quality scoring criteria for plans

Table of figures: