



York Civic Trust

## **A Strategy for Managing York's Road Network April 2021**

### **1 The need for a holistic strategy**

York's current Local Transport Plan was drafted in 2011 and sets out a long-term strategy for the city's transport system for the period from 2011 to 2031, and a more detailed programme over the period to 2016. There is broad agreement that a new Local Transport Plan is needed, and that work should start soon in the context of the draft Local Plan, which is currently being examined.

We have already prepared a document with recommendations for an overall transport strategy for York, and this is one of seven reports offering proposals for individual modes and policies. Our vision is of a city which respects its environment while enhancing quality of life, social justice and economic vitality. York's new Local Transport Plan should be designed to contribute to that vision. It needs to address the city's needs over the next two decades, while identifying steps which can be taken now. For this to happen, political consensus will be essential to ensure that policies are not reversed each time the Council's political control changes.

In achieving our vision, the new Local Transport Plan should be designed to meet a number of interconnected objectives for the city. Of these, the most important are ensuring that the transport system is efficient, generates substantially less pollution and results in far lower levels of carbon emissions.

At the same time, the Plan must be designed to achieve the objectives of ensuring safety, supporting public health, increasing equality of access, increasing liveability, and protecting public space and heritage. A Plan which successfully addresses all of these will also help to strengthen the sustainability and economy of the city.

In meeting these objectives, the Plan needs to adopt a holistic, bold and visionary strategy which achieves significant changes in travel behaviour in the immediate future. The transport strategy should be designed to make effective use of the full range of potential policy measures and to combine them to ensure that the strategy is acceptable, affordable and effective. In doing so it should seek to emulate the best examples in the UK and continental Europe of integrated, sustainable transport planning.

Since population growth is likely to exacerbate York's transport problems, the key elements of the strategy will be measures to enhance public transport, walking and cycling and, at the same time, to reduce car travel, especially in congested and sensitive areas of the City, and to reduce the need to travel longer distances, particularly through the design of sustainable communities. This combination of "carrots" and "sticks" will help make the strategy both more effective and more acceptable to the public and the business community. It should be reinforced by adopting a "hearts and minds" approach, in which incentives are designed to encourage users to change their travel habits and to respect the needs of others.

To reinforce this core strategy, action is needed to improve the operation of the road network, by reallocating road space and using it more efficiently and to improve freight and delivery operations.

## **2 The focus of this report**

In this report, we consider the need for changes in the ways in which the road network is managed and modified. There are close links between it and our companion report on managing car use, but changes in road network management affect all road users, and we have thus concluded that it is better to consider them separately. Since other road users include buses, freight vehicles, cyclists and pedestrians, our strategy reports on these modes also provide input to the recommendations in this report.

York's road network includes areas with very different characteristics. The city centre has a network of largely mediaeval narrow streets ill-suited to motor traffic. Much of the inner city has streets laid out in the 19<sup>th</sup> century with widths which constrain capacity and terraced frontages sensitive to noise and pollution. This network is largely radial, with the rivers, rail lines and strays acting as barriers to orbital movement, and the few orbital secondary distributors often being residential roads. The central and radial road network is extensively signalised with most signals and CCTV cameras linked to the Council's traffic control centre. Further out the radial roads are wider, and the residential areas between them are more frequently cul-de-sacs. The outer ring road and some of these outer radials are the only local roads in the network purpose-built for higher traffic speeds and volumes. It is important that any strategy for managing this network addresses all areas and reflects different modal priorities.

It is also important to stress that the users of this network will each have a range of experiences. The inner-city car owner seeking a parking space may well also be a cyclist and bus user, will wish to drive on other parts of the network, and will also be a pedestrian. His or her expectations will be determined by these activities and may often be in conflict. Since the road network has a limited physical and environmental capacity, we will need to decide on how far we should intervene to make the network more efficient (and how we define efficiency) how to allocate the resulting road space among competing users, and which demands for road use should be limited.

The principal tools for managing use of the road network are information and behavioural signals; physical changes; regulatory controls; and pricing. Information principally involves direction signing and in-vehicle route guidance, both of which can encourage drivers to use appropriate routes. Behavioural and "nudge" measures such as personal travel plans can

also influence use. Physical measures include the closure of streets to all vehicles and changes in layout which affect a road's actual or perceived capacity. They also include the provision of new or upgraded roads. Regulatory measures can apply both to on-street parking and to moving traffic, with the latter covering allocation of road space to different users, junction controls, permitted directions of travel and speed limits. Traffic signals offer a form of regulatory control which can be used within an Urban Traffic Management Control system for network-wide management. Current pricing measures cover charging for on-street parking and the Council's off street city centre car parks, along with the Council's pricing policies for its Park and Ride and social bus network services. These also have some indirect influence on private parking and bus operators' pricing policies. Road pricing offers a potential means of directly managing the overall use of all or parts of the road network.

The remaining sections of this report consider in turn:

3. how managing the road network contributes to our objectives in Section 1
4. current trends in network operation and the problems to be addressed
5. the targets which we propose for doing so
6. the measures which might be used
7. the ways in which we propose that they should be applied
8. our recommendations for different areas of York
9. our recommendations for different groups of users
10. the barriers to implementing these measures, and ways in which they might be overcome
11. the implications for each of our other six modal strategies.

### **3 The contribution to our objectives of managing the road network**

The road network is essential in providing access for the full range of activities which take place in the city, and hence in supporting its economy and quality of life. But the way in which the road network is used can contribute to congestion and delays, carbon emissions, pollution and danger, as well as reducing the opportunities for active travel and disrupting the operation of public transport. All of these relate to individual streets' role in providing for movement, but streets are also places where activities occur, including shopping, social contact and leisure as well as parking. An undue focus on movement can detract from these place-related activities and make streets less pleasant and less safe as places to live, socialise and play. In all of these ways, the operation of the road network can have adverse impacts on equality of access, road safety, public health, liveability, heritage and the urban economy. As a recent report from the International Transport Forum<sup>1</sup> says: "Cities need more efficient, less damaging and fairer use of scarce [road] space". Reallocating road space, it argues, will "reduce damage to the environment, make street space more attractive and improve road safety for non-motorists".

Thus, while a well-designed road network can contribute to our objectives of improving **access** and the **economy**, targeted management of the road network can achieve benefits in terms of improved **efficiency**, reductions in **air pollution** and **carbon emissions**, **public health**, **road safety**, **liveability**, **public realm**, and **heritage**.

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<sup>1</sup> International Transport Forum (2021), *Reversing car dependency*, Paris, OECD

## **4 Current trends and problems**

### **4.1 Traffic flows**

The Council records area-wide 12 hour traffic volumes per quarter, using 60 widely distributed counting locations. In 2011/12 the average across the four quarters was 0.52m vehicles. In 2018/19 this was little changed at 0.54m. It also records vehicles approaching the Inner Ring Road between 0700 and 1000. In 2011/12 there were 18,527 vehicles. By 2018/19 this had fallen 12% to 16,007.

### **4.2 Congestion**

LTP3 specified a simplistic indicator of the time taken to travel one mile in the morning peak, but even this has not been measured in recent years. The Council therefore has no indicator of trends in congestion. Since, as we identified in our 2019 surveys<sup>2</sup>, this is the problem of most serious concern to residents and commuters, it is a significant omission. One major implication of current levels of congestion is that it results in the Council being reluctant to take action to achieve improvements in the way in which the road network is used. This has been illustrated clearly in the recent consultation on options for the Bootham Bar junction.

### **4.3 Bus reliability**

LTP3 specified two national indicators: the percentage of buses on services of under six per hour running on time, and the average excess waiting time for more frequent buses. The first of these stood at 97% in 2011/12, but had fallen to 85% by 2017/18; no more recent data is available. The second stood at 0.80min in 2011/12, and was little changed at 0.83min when the most recent data was collected in 2016/7.

### **4.4 Air pollution**

While oxides of nitrogen (NO<sub>x</sub>) and particulates PM<sub>2.5</sub>) are both health hazards generated by traffic, only oxides of nitrogen are a target for the city's Air Quality Management Area. They are measured in terms of µg/m<sup>3</sup> of nitrogen dioxide (NO<sub>2</sub>) at 36 diffusion tube sites in the city centre AQMA. In 2011, the annual average was 43µg/m<sup>3</sup>, as compared with the government's annual average objective of 40µg/m<sup>3</sup>. By 2017 the average had fallen to 30µg/m<sup>3</sup> and it remained at that level to 2019, but still with exceedances at Rougier St, Blossom St and Gillygate.

### **4.5 Casualties**

In 2011 there were 547 casualties on York's roads, of which 58 were serious or fatal. By 2019 that figure had fallen by 20% to 433, although there were still 52 serious or fatal casualties.

### **4.6 Recent trends**

The lockdown in the spring of 2020 demonstrated vividly the impacts of a substantial reduction in traffic flows: the virtual absence of congestion, a 40% reduction in NO<sub>x</sub> concentrations, less traffic noise, reduced severance for pedestrians and cyclists, and potentially greater safety if drivers could be discouraged from speeding. However, that situation was inherently unstable, and reflects levels of restriction on mobility which could

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<sup>2</sup> York Civic Trust (2019), *York Transport Consultation: key findings report*

not be sustained. We need to achieve a position between the pre-lockdown conditions, with high levels of congestion, pollution and severance, and the improvements achieved during the lockdown, while at the same time providing for desired levels of accessibility. If we can identify that optimal intermediate set of travel patterns, our strategy can then be designed to achieve and sustain them.

#### 4.7 Immediate prospects

It is at present unclear what will happen once the coronavirus is fully under control. It is probable that a heightened level of home working will continue, with resulting reduction in commuting by all modes. Retail and leisure activities may take some time to recover, and some will never do so. There is also likely to be some permanent shift of retail from shops to on-line. And users may be reluctant to return to public transport. Whatever happens, we can expect the innate attractiveness of the private car as an agent of personal autonomy and private space to continue and need to reflect that in the policies which we develop.

### **5 Proposed targets for managing the road network**

We propose five targets; one related to carbon emissions, one for other vehicle emissions, one for casualties and two related to efficient management of the network. The carbon target relates to carbon emissions from vehicles on the network, and contributes to achieving the Council's zero carbon strategy. It is designed to be compatible with the carbon targets in our report on Managing Car Use. The vehicle emissions target relates to air quality and public health. The casualties target reflects the Council's road safety policies. The two congestion targets relate to queues which affect all traffic, and to reliability as it affects bus services. We have used target dates of 2027, which is five years after the start of the new Local Transport Plan, and by which time the outer ring road should have been upgraded, and 2037, by which time the planned development in the draft Local Plan should be complete. Our proposed targets are justified below.

<b>Target</b>	<b>Baseline</b>	<b>Survey</b>
<b>Reduce carbon emissions from traffic:</b> 35% reduction by 2027; 70% by 2037	2019 level) <b>[which will need to be estimated]</b>	<b>[Methodology to be determined]</b>
<b>Reduce NO<sub>2</sub> emissions from traffic:</b> 25% reduction by 2027; 50% by 2037; no sites exceeding legal threshold	Average across 36 diffusion tubes in city centre AQMA in 2019: 30µg/m <sup>3</sup> ; three exceedances	Recorded by the Council's network of 36 city centre AQMA diffusion tubes
<b>Reduce all casualties on the road network:</b> 20% reduction by 2027, 40% by 2037	2019: 433 casualties, of which 52 were serious or fatal	Stats 19 data as provided to the Council

<p><b>Reduce queues on the road network:</b> number of junctions with recurring queues reduced by 80% by 2027; 90% by 2037</p>	<p>We estimate that there are around 50 junctions currently affected on and within the outer ring road</p>	<p>This will depend on the definition of the new indicator</p>
<p><b>Improve bus service reliability:</b> 95% of buses running on time by 2027; 100% by 2037</p>	<p>2017/18: 85%, for buses on services with fewer than six per hour</p>	<p>We propose using the same indicator for all bus services</p>

### 5.1 Carbon emissions

The Council has committed to York being carbon neutral by 2030. West Yorkshire Combined Authority has set a similar goal for 2038. Its Emission Reduction Pathways report<sup>3</sup> proposes a 40% reduction in emissions from all transport by 2030, and a 70% reduction by 2038. We have applied these figures to road transport in York, and interpolated to give a reduction of 35% for 2027. The basis for measuring, or estimating, carbon emissions from road transport still needs to be specified but, given the emphasis on carbon reduction, it is essential that one is developed. We recommend early action to do so.

### 5.2 Other emissions

The Council's air quality strategy focuses on oxides of nitrogen and particulates. While particulates come from a range of sources, road transport is the largest single source of oxides of nitrogen, and York has no exceedances for particulates. We have therefore focused on nitrogen dioxide (NO<sub>2</sub>). The Council has already established a bus-based Clean Air Zone, and we recommend in our report on Managing Car Use that it be extended to cover cars, vans and commercial vehicles. The government's policy of banning the sale of new internal combustion engine cars from 2030, and the gradual replacement of commercial vehicles with modern lower emission ones will also contribute. The 80% reduction in road traffic in spring 2020 resulted in a 40% reduction in NO<sub>2</sub>, and we judge that it should be feasible to reduce the level in the most polluted areas by 25% by 2027 and 50% by 2037 below 2019 levels. Linked to this, we propose that no locations should exceed the government targets. Since the Council already has 36 city centre AQMA roadside diffusion tubes, it is appropriate to continue calculating the annual average for them.

### 5.3 Casualties

The police record all notified road accidents involving casualties and provide the data to the Council. The Council records numbers killed and seriously injured as national indicator NI 47, and slight casualties as local indicator LI 13c. Until 2010 the government imposed a series of challenging casualty reduction targets, which were typically more than met by local authorities. From 2010 onwards these targets were withdrawn in England, and casualty numbers levelled off, while they continued to fall in Scotland and Wales. The 2019 figure for all casualties in York was 433, of which 52 were serious or fatal. Given the lack of focus

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<sup>3</sup> Element Energy (2020), *West Yorkshire Carbon Emissions Reduction Pathways*, West Yorkshire Combined Authority

on casualty reduction in recent years, it should be possible to achieve further reductions. We propose targets of a 20% reduction in all casualties from 2019 levels by 2027 and 40% by 2037.

#### 5.4 Network efficiency

Congestion and (un)reliability are the most common indicators of inefficiency in the road network, but are both difficult to define. The only indicator for congestion proposed in LTP3 was LI 12: the time to travel one mile in the morning peak. This was based on data collected by the Department for Transport, which has since been discontinued, and was in any case open to misinterpretation. Given the Council's, and the public's emphasis in the need to reduce congestion, it is important that the Council develops an effective and readily measurable indicator for congestion. We suggest that the existence of recurring queues at locations which are regularly monitored by the Council would be a more appropriate indicator, and one which the public would readily recognise. In technical terms a recurring queue at a signalised junction can be defined as one where the arm of a junction is oversaturated, and thus the queue does not dissipate by the end of the green signal, and where the queuing is not the result of extraneous circumstances, such as road works or accidents. For roundabouts, such as on the outer ring road, a recurring queue might be considered as one in excess of ten vehicles on any approach for the hour in question. We recommend that the Council records such information on a regular basis (and ideally retrospectively for 2019) so that a baseline figure and suitable targets can be specified. In the absence of such information we estimate that some 50 junctions have recurring queues. With the upgrading of the outer ring road by 2027, it should be feasible to achieve a significant reduction in congestion, as long as action is taken to ensure that traffic from York's road network is transferred to the upgraded route. We therefore propose a target that the number of affected junctions be reduced by 80% (to around 10) by 2027, with a further reduction to no more than 10% (or around 5 junctions) by 2037.

#### 5.5 Bus reliability

The Council uses two national indicators of bus reliability: one for services with fewer than six buses per hour, which covers all but the park and ride services in York, and the other more frequent ones. We propose using the same indicator, of the percentage of buses on time, for all services, since it is easy to comprehend. This stood, for less frequent buses, at 85% in 2017/18, and there appears to be no more recent data. Our proposals for congestion targets above suggest that it should be feasible to increase this, across all services, to 95% by 2027 and 100% by 2037.

### **6 The range of policy measures**

Across the network as a whole, decisions are needed as to which roads are appropriately used for through traffic, and which should be protected in the interests of residents, the environment and active travel. The types of measure available for supporting such actions include:

#### 6.1 Information provision and behavioural stimuli

- Real time information and direction signs
- In-vehicle guidance
- Personal, company and school travel plans (covered in our companion report on Managing Car Use)

- Incentivisation programmes (also covered in our companion report on Managing Car Use)
- 6.2 Physical changes
- Additions to the road network
  - Changes in actual or perceived capacity
  - Removal of road space
  - Maintenance
- 6.3 Regulatory changes
- Application of the hierarchy
  - Management of parking and loading
  - Management of moving traffic in general
  - Speed limits
  - Reallocation of road space
  - Traffic cells
  - Home zones and school zones
  - Traffic signal control and queue management
  - Selective restriction of specified vehicle types
- 6.4 Pricing
- Parking charges (covered in our companion report on Managing Car Use)
  - Road pricing.

## **7 The ways in which each measure might be used**

### **7.1 Information and behavioural stimuli**

**7.1.1 Real time information and direction signs** Whatever the level of overall traffic on the network, it will be important to encourage patterns of use which do not adversely affect local communities. Such patterns include factors such as the routes taken, speeds, queuing, idling and parking locations chosen. To some extent, these can be influenced by encouragement. Signs and markings can encourage appropriate routes. Real time information to road users is particularly powerful. The Council has been committed to developing a sophisticated information system for several decades, although we are not convinced that it is used to the full in encouraging appropriate use of the road network.

**7.1.2 In-vehicle guidance** Many drivers now rely on satellite navigation to find appropriate routes, and some systems offer alternative routes to avoid congestion and incidents. Such systems rarely respect local priorities for protecting minor roads from through traffic, and often fail to acknowledge traffic management changes. The Council should endeavour to keep the operators of such systems informed of changes in the use of the road network, and provide additional signs alerting drivers not to follow outdated satnav guidance. Some systems use GLOSA (Green Light Optimum Speed Advisory) in which drivers are informed of the speed to travel so that they do not have to stop at the next traffic signal. Others use intelligent speed adaptation, which can be used to limit the vehicle to the prevailing speed limit. We recommend that the Council encourages drivers to use both of these, with traffic signals themselves timed to encourage adherence to speed limits.

## 7.2 Changes in road capacity

7.2.1 Additions to road capacity Increases in physical road capacity in built-up areas are usually extremely difficult and expensive, except in major brownfield redevelopments. Outside built-up areas schemes are more feasible, but still very costly and environmentally intrusive, and almost entirely dependent on meeting Government priorities and funding streams. In York such investment is limited to the Outer Ring Road and A64 upgrades. We support these investments provided that they are primarily used to divert traffic from the city's road network. In addition, new link roads will be required for some of the major outer city development sites in the Local Plan. They should be designed to give primacy to public transport and active travel modes.

7.2.2 Changes to actual or perceived capacity Measures to reallocate road space, as considered below, will reduce the actual capacity of a road to carry vehicles, and lead to some diversion and suppression of traffic. Where appropriate road and junction widths can be reduced, thus directly reducing capacity. Street design, paving and planting can influence speeds and discourage through traffic. We recommend that all of these be used as appropriate on roads on which through traffic is to be discouraged.

7.2.3 Removal of road space In the extreme, roads can simply be permanently closed to traffic. In practice this will rarely be possible, given the need to maintain access for servicing and emergencies. It will be preferable to use regulatory measures, as outlined below, which restrict access during designated hours, much as happens currently with the footstreets.

7.2.4 Maintenance While much of this report considers alternative uses of the road network, maintaining the network is also essential in terms of impacts on safety and environmental damage. Cyclists and pedestrians are particularly vulnerable to poor surface quality, and their needs should be given priority. As well as maintaining the quality of roadways and pavements, a regular programme of maintenance of road markings and signs is essential.

## 7.3 Regulatory changes

7.3.1 Application of the hierarchy The Council has for some time promoted a hierarchy of road users, in which pedestrians are to be given the greatest priority, followed by disabled users, cyclists, buses and their passengers, commercial vehicles, car drivers on non-work journeys, and car commuters. We welcome this hierarchy but note, as observed by the Citizens' Transport Forum, that it rarely seems to be applied in practice. We accept that there will be locations, such as the outer radials and ring road, where there will be few users in the first categories, but they still need to be provided for. Closer to the city centre it is essential that the Council does honour its hierarchy in its decisions on road space allocation, traffic signals and crossings.

7.3.2 Management of parking and loading Parking regulations cover on-street parking restrictions; on-street loading and servicing restrictions; pavement parking; and off-street parking restrictions. With the exception of pavement parking in locations where there are no parking restrictions, these are all subject to civil enforcement by the Council, and we assume that the Council will continue to employ sufficient staff to achieve

acceptable compliance levels and will cover the cost of doing so from the combination of charges and fines levied. We assume that the Council will continue to restrict parking in locations where it is hazardous or causes congestion. There is also a growing need to ban parking and loading or unloading on marked cycle lanes; where space is needed, the road layout should be redesigned to provide loading bays and parking spaces separated from cycle lanes by buffer strips.

7.3.3 Management of moving vehicles Moving vehicle regulations cover speed limits; restrictions on idling; access restrictions on footstreets and at bus gates; use of bus lanes; compliance with yellow box restrictions and turn bans; and stopping at zebra crossings and traffic signals. With some limited exceptions for civil camera enforcement, these can only be enforced by the police, who are notoriously reluctant to devote resources to doing so in urban areas. Powers to enable all these to be treated as civil offences were included in the 2004 Traffic Management Act but have yet to be fully adopted by DfT. A review is currently underway, and we would support the Council in any attempt to encourage their adoption. In the meantime, it would be helpful for the Council to extend its civil camera enforcement of the Coppergate bus lanes to the existing regulations in Piccadilly and Pavement/Stonebow. We recommend a review, with North Yorkshire Police, other agencies and volunteer groups, of the potential for selectively increasing enforcement activity.

7.3.4 Speed limits In a city as compact as York, there is little to be gained by driving at 30mph. Even if it were possible to maintain that speed between the outer and inner ring roads a driver would only save around a minute. Yet traffic moving at 30mph is more intimidating to, and more dangerous for both cyclists and pedestrians. A House of Commons report<sup>4</sup> states that, if hit by a car at 20mph, 90% of pedestrians would survive, at a speed of 30mph only 50% would do so. It also sets out clearly the other wide-ranging benefits of lower speeds in built up areas. The Council previously had a policy of extending 20mph zones in all residential areas. We recommend that this is reintroduced, and that, in addition, it is applied to the current inner ring road and its immediate approaches.

7.3.5 Reallocation of road space Almost all of York's road space is currently available for all traffic. There are a limited number of advisory cycle lanes, and a very few sections of bus priority. Road space can also be allocated by time, particularly at traffic signals. Once again, the large majority of time at signals is allocated to general traffic, with time for pedestrians to cross provided where it does not disrupt traffic flow, and only a few examples of advanced time for cyclists and buses. The recent report from the International Transport Forum<sup>5</sup> notes that, by comparison with the space required for a pedestrian, a passenger in a full bus occupies half the space, a cyclist twice the space, and a car user five times the space. There is thus a strong case for reallocation where road space is limited. If a change is to be achieved from car use to sustainable modes, and cyclists and pedestrians are to be afforded

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<sup>4</sup> House of Commons (2001), *Ninth report of the Select Committee on Transport, Local Government and the Regions*

<sup>5</sup> International Transport Forum (2021), *Reversing car dependency*, Paris, OECD

greater safety and protection from intimidation, it is essential that the Council initiates a major programme of road space reallocation. As the International Transport Forum report makes clear, road space reallocation “does not add to congestion. On the contrary, reduced road capacity can lead to “disappearing traffic”. Car drivers adapt to changed conditions in many ways, often too complex for computer models to predict.” We recommend that the programme commences with a review of the current use of the inner ring road and its immediate approaches.

7.3.6 Traffic cells Traffic cells are a device which divides a city centre into separate areas, each of which can be reached from a circulating road, but where access between the areas is limited to buses, cyclists and pedestrians. Pioneered in Gothenburg in the 1970s, such schemes are now widespread in continental Europe, and have proved to be effective in removing through traffic and thus greatly improving the environment and the retail economy, while maintaining and in many cases enhancing access. It has an obvious application to the city centre, in support of the Council’s strategy of removing non-essential car traffic (for which we offer a definition in our companion report on Managing Car Use).

7.3.7 Home zones and school zones Home zones and play streets provide space largely free of traffic for residents to socialise and children to play. Through traffic is typically banned, and access traffic permanently limited, typically with a 10mph speed limit. They are of particular value for dense inner city areas which lack communal areas, though alternatives need to be provided for residents’ parking, and servicing needs to be permitted at designated hours. We envisage them also being designed into the new communities to be provided in York Central and outer York. School zones impose similar restrictions, but only operate at the start and end of the school day. WE recommend that they are considered as an option for all primary schools in York.

7.3.8 Traffic signal control and queue management Traffic control using traffic signals can moderate flow into congested areas, relocating queues and giving priority to buses, and allowing safe crossing points for pedestrian movements. Appropriate timing of traffic signals can reduce the attractiveness of less suitable routes, manage the flow of traffic through controlled parts of the network, and time successive signals to reinforce speed limits and to match cyclists’ speeds. Effective urban traffic control can apply such measures consistently across a network. York has had an advanced urban traffic management control system for some time, with individual sets of signals being upgraded in the TSAR renewal programme, and further functionality being provided through the STEP programme. The completion of these upgrades will result in an urban traffic control system which is capable of achieving a wide variety of network-wide targets. The selection of these targets will be important. To help with this selection we suggest that there should be wide-ranging discussions with a spectrum of stakeholders. The on-street performance of the control system should then be evaluated annually against these targets. We recommend that the Council undertakes a fundamental review of how it can best use this new opportunity. We propose a strategy based on relocating queuing traffic away from the city centre and inner radials, with bus gates on radial bus routes, so that near free flow traffic

conditions pertain further into and through the heart of the city. This should deliver reliable journey times particularly for buses, less pollution from queuing, and reduced car dominance in the streetscape. It should be further used to free up space for cyclist priorities and increased pedestrian crossing times.

**7.3.9 Selective control of specific vehicle types** It may be appropriate to limit the movement of certain types of vehicle, depending particularly on their size, weight or level of emissions. York's Clean Air Zone already imposes such controls on buses, and there are bans on coaches in much of the city centre and on heavy lorries for structural reasons. There is a case for extending such controls to reduce the problems of pollution, visual intrusion, intimidation and pavement damage. In our reports on Managing Car Use and Freight we advocate the extension of the Clean Air Zone to include cars and commercial vehicles which do not meet the emission standards to which new vehicles are produced. We also advocate banning vehicles over 7.5 tonnes from the city centre, the inner ring road and its immediate approaches, on the basis that such vehicles are out of scale with the area's narrow streets and cause damage to the fabric of medieval buildings, and limiting access to the footstreet network to those under 3.5 tonnes to reduce pavement damage and intimidation of pedestrians.

## **7.4 Pricing**

**7.4.1 Road pricing** We discuss road pricing more fully in our companion report on Managing Car Use. Road Pricing is able to induce and sustain a significant reduction in traffic levels, and to generate significant revenue which can be used to finance alternatives and hence provide improved and more reliable transport for those who do not have cars available. There is concern over the equity impacts, and it is important to use the revenues to provide alternatives for those who would be adversely affected, as well as to provide limited exemptions for those who have no alternative but to drive. Road pricing is controversial, and it will be important to demonstrate that the chosen scheme maximises the benefits while reducing the adverse consequences for those unable to pay to use their cars. However, a recent 2020 IPSOS MORI poll<sup>6</sup> showed 62% of the population (and 60% of motorists) in favour of urban road pricing, 25% strongly. The recent International Transport Forum report<sup>7</sup> comments that "Road pricing is an effective tool to manage congestion and use road capacity more efficiently. Flexible charges that vary by time and location can set prices to match drivers' marginal cost of using roads and thereby change their behaviour."

## **8 The proposed policy measures by area**

**8.1 Network-wide applications** Across the network as a whole, decisions are needed as to which roads are appropriately used for through traffic, and which should be protected in the interests of residents, the environment and active travel. The recently published National Model Design Code<sup>8</sup> reiterates the need to specify the road network in terms of

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<sup>6</sup> Ipsos MORI survey, November 2020

<sup>7</sup> International Transport Forum (2021), *Reversing car dependency*, Paris, OECD

<sup>8</sup> Ministry of Housing, Communities and Local Government (2021), *National Model Design Code*

primary, secondary and local roads. We recommend that the Council redefines its network on that basis, with a default assumption that roads should be assigned to lowest appropriate category, thus emphasising the focus on roads as places to be rather than routes through which to move.<sup>9</sup> One approach to doing so would be to apply the Healthy Streets indicators as developed by Transport for London.<sup>10</sup>

Measures which provide information and stimulate behavioural change will be key to the hearts and minds approach which we advocate. We recommend that the Council continues to promote the following throughout the road network:

- Signing and street design to discourage use of less suitable routes by general traffic and to provide quiet more attractive cycling and pedestrian routes.
- The application of 20mph speed limits as the default, in all residential areas.
- Urban traffic management control to collect real time information and use this to moderate flows, manage queues, address disruptions, and protect buses and cyclists from congestion.
- Use of digital and other communications with road users, public transport operators and emergency services, to provide real time information on the state of traffic on the road network, sources of disruption and alternative routes, parking availability and alternatives to car-based travel in the city, building on the development of connected vehicles.

We have also, in our companion report on Managing Car Use, proposed that the Council initiate a study of options for the application of road pricing, and a process of public engagement, so that a preferred scheme can be implemented more rapidly assuming, as seems likely, that further car use reduction is required. Any study needs to consider the basis on which charges should be levied, the locations and times of day when they are operational, the vehicle types to which they apply, any provision for exemptions and rebates, and the resulting impacts on the environment, the economy and equity. European guidance to which we have contributed offers a model for such a study.<sup>11</sup>

The city centre Proposals for the city centre were included in an earlier report by the City Centre Sub-Group, but these predated the Council's decision, in December 2019, to invite the Executive Member for Transport to develop proposals to remove non-essential car traffic in the city centre. We have been invited to advise on how such a policy might operate. The most obvious approach is a combination of traffic cells to remove through traffic, which is by definition non-essential, and an increase in parking charges. To implement traffic cells, we recommend new bus gates in George Hudson Street and on Ouse Bridge to sever the through route via Rougier St and Tower St, and Effective enforcement of the existing bus gate on Piccadilly and Pavement/ Stonebow, thus severing the through route via Piccadilly and Stonebow.

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<sup>9</sup> Jones P et al (2008), *Link and place: a guide to street planning and design*

<sup>10</sup> Transport for London (2017), *Healthy streets for London*, London, TfL

<sup>11</sup> May A D et al 2010, *Road user charging and its transport policy implications – findings from the CURACAO project*, Proc Transport Research Arena, Brussels

We also suggest closing High Petergate, Stonegate and the Shambles to all vehicles, with servicing on foot and by cargo bike, and some changes to the direction of foot streets to discourage through movement outside foot street hours.

Some changes have been introduced experimentally by the Council in response to the government's programme for road space reallocation, including closing the circulation loops via St Helen's Square and King's Square, and making Coppergate one way from Piccadilly. We support these, subject to addressing the needs of access for disabled drivers, which we discuss further in our companion report on Improving Walking.

The introduction of a transshipment scheme linked to the use of clean engine delivery vehicles and cargo bikes should also be considered, as outlined in our separate report on Freight.

### 8.3 Roads around the historic centre

The 2011 LTP proposed a review of the role of the inner ring road, which has not yet been conducted. We recommend that this review now be conducted urgently, with the aims of discouraging its use by traffic passing through inner York, improving conditions for cyclists moving along the route, and greatly reducing the severance caused to pedestrians and cyclists crossing the route. We are pleased to note that our recommendation that time at key junctions be reallocated to pedestrians has been accepted by the Council as part of its short-term plans for road space reallocation. We recommend that the term "Inner Ring Road" be dropped, with the route restyled as an Inner Distributor, and the potential for breaking the ring considered. We recommend that a 20mph speed limit be adopted throughout the route and on all roads within it, befitting their use as local roads.

At individual junctions, we recommend:

- redesigning the Bootham Bar junction, as currently proposed, to reduce its capacity and allow pedestrians to cross in a single stage, and cyclists to have protected passage through the junction
- ensuring that pedestrians can cross all arms of the junctions at Monk Bar, Layerthorpe and Walmgate Bar in a single stage
- removing the gyratory at Fishergate and providing a protected cycle route to Fishergate Bar
- opening up the junctions of Tower St with Piccadilly and Skeldergate Bridge to all movements, and allowing pedestrians to cross each arm directly in a single stage
- removing the gyratory at Nunnery Lane, and
- providing more time for pedestrians at Micklegate Bar.

Gillygate presents some of the worst problems for pedestrians and cyclists in York. Pavements are narrow, cycle lanes virtually non-existent, and levels of pollution acute. Social distancing is almost impossible, even before shops and restaurants reopen. We recommend that the Council consider limiting motorised traffic during specified hours to buses, with taxi exemptions equivalent to those on Coppergate, and a central single lane section with alternate working.

8.4 Inner and outer radials We recommend that CYC should adopt a comprehensive queue management policy on all inbound radials, to limit the flow of traffic into the city centre, discourage through traffic in inner York, and give greater priority to buses and cyclists. While the specific measures will depend on the geometry of the radial road in question, it will generally be preferable to introduce gating immediately downstream of park and ride sites, so that the benefits of using the bus and “park and pedal” are immediately apparent, and to reinforce these controls by further measures closer to the city centre. It will be important in parallel to take steps to avoid diversion to alternative radial routes via unsuitable routes through residential areas. This may lead in due course to the adoption of a ring of queue management sites around the inner city. We have developed these concepts further in a more detailed paper.

8.5 Secondary distributors Many secondary distributor roads in the City are heavily residential and were never designed for the volume of traffic that now uses them. The intensity of traffic and road design are intimidatory to cyclists and present barriers to pedestrians crossing them, working against the use of active travel modes locally. Whilst the Council has introduced various measures, the basic problem remains. A number of secondary distributor roads are used as alternatives to the Outer Ring Road, and action should be taken in conjunction with the upgrading of the Northern and Western Outer Ring Road to impose selective closures and restrictions and a blanket 20mph on all these roads.

8.6 Local centres A number of local centres are located on busy distributor roads and radials. Some were subject to proactive travel measures in the 1990s, such as Acomb Front Street and Tang Hall Lane, but more should be done to widen pavements, alter road character and restrict through traffic. Despite the failure of the emergency one-way traffic restriction through the Bishopthorpe Road shops, a better designed scheme is clearly required and could form an exemplar scheme for other areas to follow.

8.7 Residential streets In some cases closures are still needed to discourage rat running through residential streets. The experimental Groves scheme, included in the Council’s short term response measures, is an important first contribution. We recommend that the Council reviews the network, identifies other residential streets which are used inappropriately by through traffic, and develops a programme of Low Traffic Neighbourhoods to close them to through traffic.

8.8 The outer ring road We now know from the Access York study that the upgrading of the A59 roundabout in 2015 resulted in a 20% increase in 24h traffic entering the junction, and a 15% increase in 24h traffic travelling inbound on the A59 from the roundabout between 2011 and 2017. We understand that the measures to upgrade further roundabouts and to dual the northern section will start in late 2022 for completion in 2025. It will be important to ensure that these outer ring road upgrades do not similarly attract additional car traffic flows. Simultaneous or near simultaneous reductions in road capacity for private vehicles within York, of the kinds proposed above, offer one way of helping to ensure that outer ring road upgrades are efficiently utilised and do not increase total traffic flows into York. Subject to that, the planned upgrade offers a major opportunity to reduce

traffic flows within the city, by encouraging the use of the outer ring road instead of the inner ring road. To be most attractive to traffic and most effective at reducing traffic in York the upgraded outer ring road should have little or no congestion. We recommend that the Council develops a traffic management regime designed to ensure that the outer ring road is congestion-free for most of the day.

## **9 The implications for each user type**

Priorities for use of the road network should be determined by the Council's hierarchy. This implies that, with the exception of disabled and vulnerable users and freight, priorities are determined by the mode being used rather than by socio-demographic characteristics. For car users, priority should be given to access over through movement. The needs of disabled and vulnerable users need to be taken into consideration in all scheme designs. This will in the main involve exemptions from access controls and the provision of dedicated and accessible parking places. Freight and servicing vehicles need to be appropriate to the roads in question, with larger and more polluting vehicles banned from environmentally sensitive areas, and activities limited to times when they are least disruptive. Subject to that, freight and servicing vehicles should be shielded from congestion and, where appropriate, given priority over cars.

## **10 The barriers to be overcome**

**10.1 Political acceptability** Changes in road use which are achieved through a hearts and minds approach should by definition be acceptable to those who change, and welcomed more widely. However, measures which reallocate or restrict road space can be unpopular, and politicians may be reluctant to implement them. It is thus essential that the need for them is made clear, by stressing the objectives which they are designed to achieve. In designing them, the equity impacts need to be identified and addressed, preferably by providing alternatives for other road users. Major new road schemes will also attract opposition, and politicians need to satisfy themselves that they do contribute cost-effectively to the overall strategy, rather than simply accepting them because the funding is available.

**10.2 Public acceptability** Public acceptability is influenced, as discussed above, by the types of measure adopted and the way that they are designed and justified. However, recent public opinion research for the government<sup>12</sup> shows that 78% nationally support reducing urban traffic levels. 83% reducing congestion (83%), and 66% shifting road space to other modes, and the Council needs to build on these changes in public opinion. In doing so, it will be particularly important to consult on the objectives for re-purposing the road network and on the options available. Once specific schemes are at the design stage, they need to be justified in terms of the overall strategy, rather than as isolated interventions, and designed in such a way that those adversely affected have acceptable alternatives available.

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<sup>12</sup> Kantar (2020), *Public opinion survey on traffic and road use*, Department for Transport

**10.3 Governance** With the exception of schemes on the national road network, all the measures considered in this report are within the purview of the Council, and there should thus be no governance-related barriers. This may however change if the structure of local government is amended. It will thus be important to agree on the policies to be adopted before such changes occur.

**10.4 Finance** Major schemes like the Outer Ring Road are financed from capital, and largely by central government. However, they also demand significant capital expenditure by the Council, and will typically have much lower benefit/cost ratios than interventions which reallocate or manage road space. In a financially constrained future, care is needed to ensure that such schemes are not adopted in preference to measures which are more cost-effective. Most of the other measures considered in this report are relatively inexpensive to implement, and can potentially be funded from a mix of capital and revenue funding. The Council needs to specify and support a revenue budget sufficient to enable this programme of network operations and maintenance to be funded, which we recognise is a challenge given the impact of the pandemic on the Council's budgets after ten years of austerity. Pricing mechanisms for parking and road use, as considered above and in our companion report on Managing Car Use, offer an important source of additional funding.

**10.5 Enforcement** Enforcement is critical both for parked and for moving vehicle offences, as outlined in Sections 7.3.2 and 7.3.3. As noted there, we recommend that the Council takes advantage of the planned new powers to make pavement parking and moving traffic violations civil offences, and to staff a civil enforcement team large enough to encourage high levels of compliance. We also recommend a review, with North Yorkshire Police, other agencies and volunteer groups, of other means of increasing enforcement activity.

## **11 The implications for other modal strategies**

**11.1 Reducing travel** The strategy for reducing travel is designed in the main to reduce car use and journey lengths, and should thus reduce the pressure on the road network.

**11.2 Managing car use** The strategy for managing car use is also designed to reduce car use and will once again reduce pressure on the road network. However, it will also be influenced by the acceptability of alternatives to the car. It is thus important that road space reallocation and management to support buses, cyclists and pedestrians is effective particularly in the locations where car use is currently high.

**11.3 Public transport** Buses provide the majority of public transport services in York and are essential in providing access for many without a car available. Through their ability to attract passengers from car use, they also help relieve the pressure on the road network.

Road space reallocation and management to support buses and increase their reliability is thus essential to the overall strategy, as is appropriate location of bus stops.

11.4 Cycling Cycling similarly offers an essential form of access, as well as providing an alternative to car use. However, willingness to cycle is critically affected by perceptions of danger and intimidation on the road network, and by lack of continuity and connectivity in the networks provided. It is thus essential that the strategy for managing the road network addresses these concerns, and gives priority to developing and maintaining a connected safe cycle network.

11.5 Walking Walking offers a further form of universal access over shorter distances, and is the most frequently used mode in York. The Council identifies it as highest in its hierarchy of users. Yet pedestrians are all too often treated as the poor relation in managing the road network. Pavements are often too narrow, uneven and disrupted by parked vehicles. Crossings are often not on desire lines, resulting in additional time spent walking, and unprotected. Where pedestrians are protected at signalised crossings, they typically have a small time allocated in which to cross, frequently have to cross in two stages, and are afforded too little space in which to wait. The Council needs to refocus its road network management strategy to give pedestrians priority along and across roads, by offering routes which follow desire lines, crossings which offer protection and signal timings which reduce delay to them. The needs of disabled pedestrians should be prioritised in all such designs.

11.6 Improving freight Lorries and vans support the city's economy and help meet the needs of residents. They are thus rightly given priority over cars in the Council's hierarchy. However, commercial vehicles can often contribute disruption and intrusion by loading in congested locations, operating at sensitive times, and using vehicles which are too large or too polluting. The freight strategy needs to address these issues, but the road network management strategy has an important role in facilitating commercial vehicle movements. They thus need to be developed in ways which complement each other.