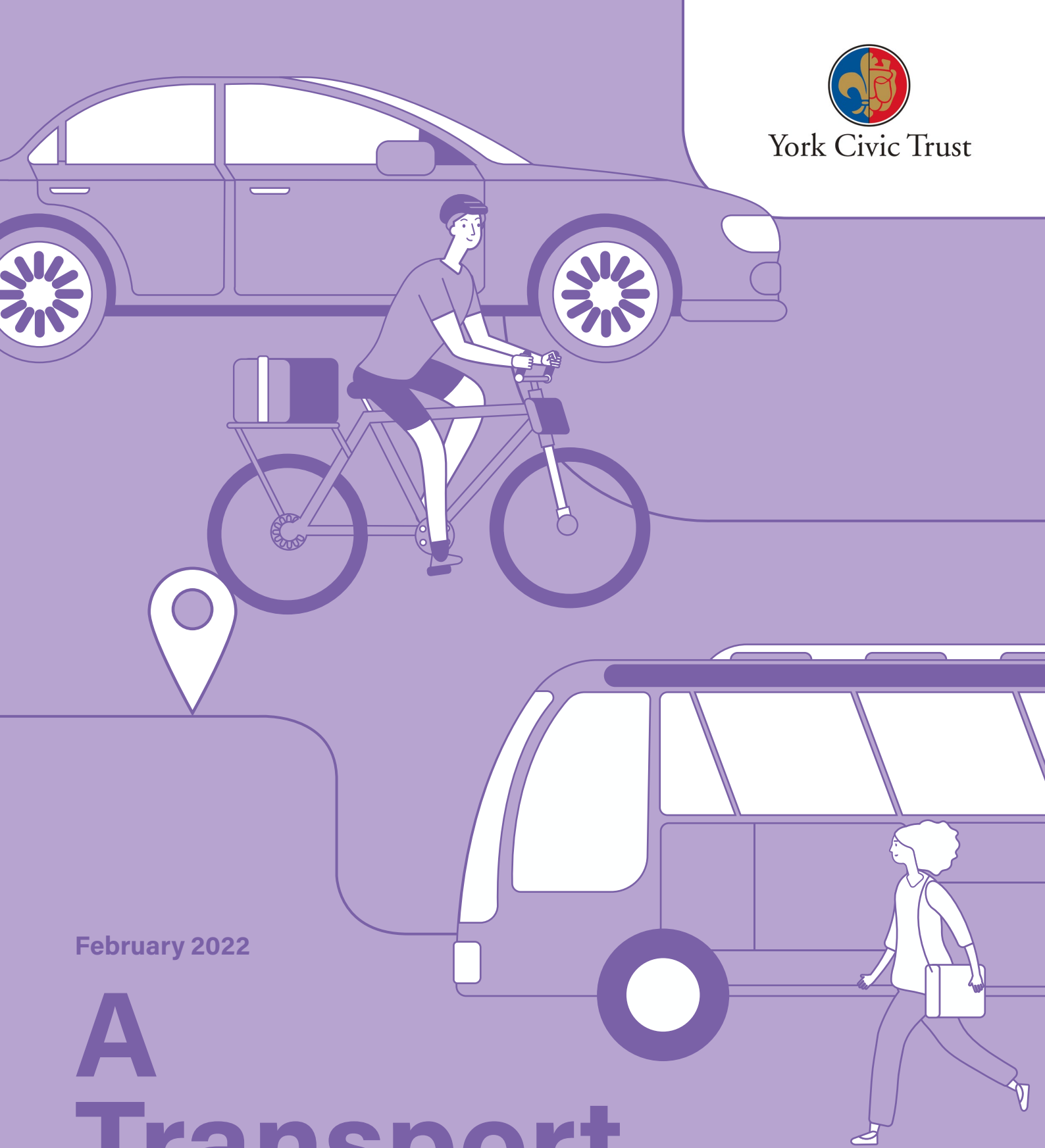
York Civic Trust



February 2022

A Transport Strategy for York

Foreword

York urgently needs a new transport strategy. It must be forward thinking, bold and ambitious to overcome today's problems and transform the city to benefit generations to come.

York Civic Trust has a long history of supporting York to protect its heritage whilst promoting a modern approach to the changing city. In 2019 we established a Transport Advisory Group, led by Tony May, Emeritus Professor of Transport Engineering at Leeds University. In January 2021 the Group was invited by the City of York Council to advise on the production of a new Local Transport Plan for the city. The Group has formulated ideas to address the immediate future and the next fifteen years. As part of its review, we have conducted a survey of residents and held several Citizen Transport Forum meetings to ensure that our ideas are in line with residents' expectations.

So, why do we need a new plan? Congestion, air pollution and safety are pressing concerns for local residents. But climate change is our, and humanity's, greatest challenge. The planet is already experiencing increased flooding, storm damage, heatwaves and fires. The use of fossil fuels for transport is a major contributory factor to York's carbon emissions. We need a strategy now to address these problems and make changes to the way people move around our city for the benefit of all. Delay will leave future generations with harder and more painful choices.

Will the change to electric cars solve the problem? No, electric cars cause as much congestion and still contribute to pollution. Congestion is damaging to air quality, costly economically and detracts from residents' and visitors' enjoyment of the city.

Is this just about the centre? No, we need to improve the public realm across the whole of York by making streets places to live rather than routes to pass through. We need to improve access from outer York and beyond. We must also continue to protect our heritage buildings, as the key driver behind the tourist industry.

Can people change how they travel? Yes. By providing alternative ways to travel the Council can help people reduce car dependency and we can all enjoy the benefits that come with lower car use. Traffic restrictions have been with us for decades and if there is one thing the pandemic has taught us it is that most people know the right thing to do when confronted by a challenge. Our strategy proposals outline the many improvements that can be made to reach the Council's policy objectives.

How can we all contribute? Any future transport strategy will affect everyone of us, our lifestyles, our travel choices and the feel of the city. We offer our strategy as a starting point for debate and a driver to assist the Council in the production of its next Local Transport Plan. We welcome comment and debate and look for brave hearts and clear heads.

Stephen Lusty
Chair, York Civic Trust

Contents

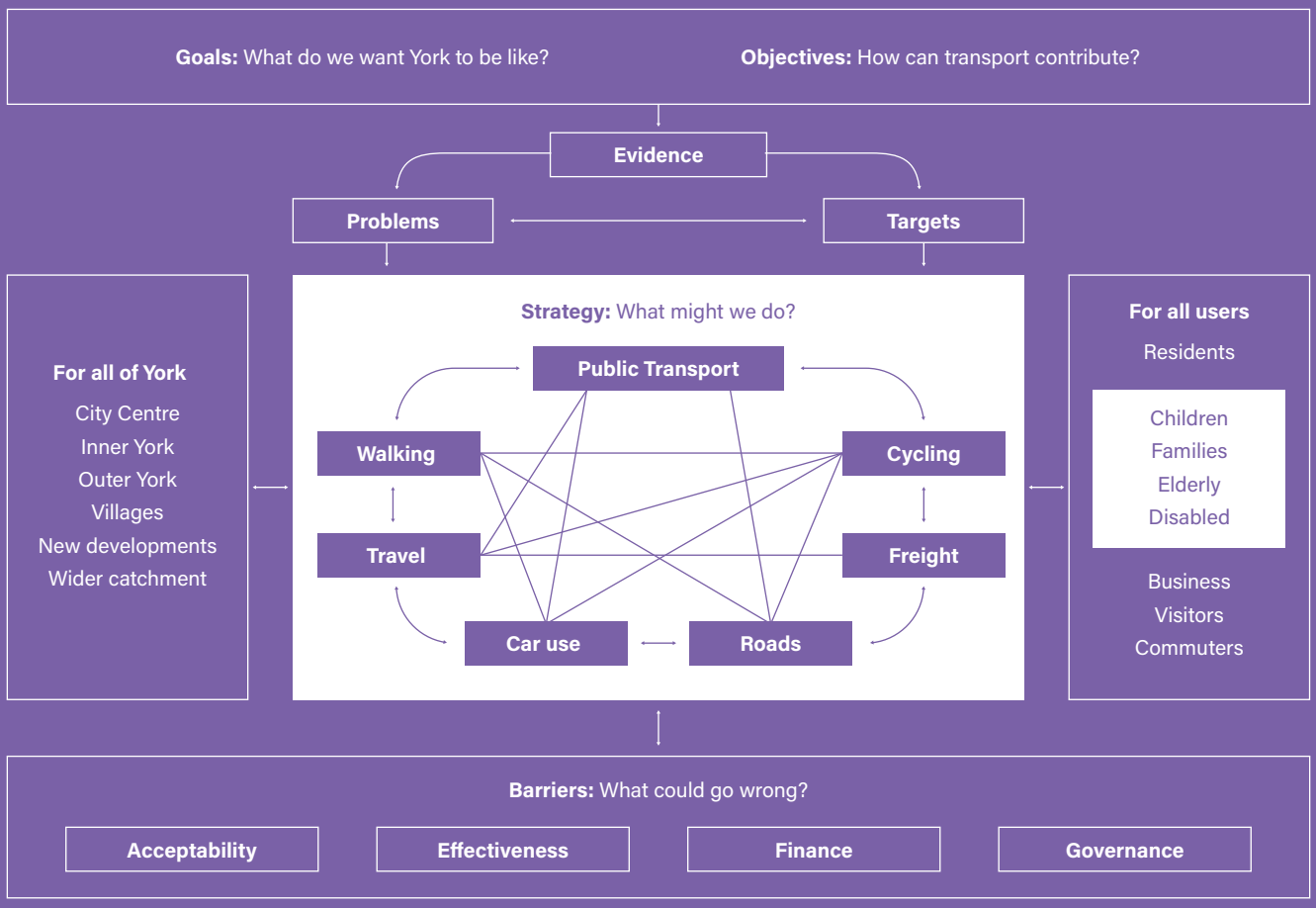
Acknowledgements

This report has been prepared by the Trust's Transport Advisory Group, under the leadership of Professor Tony May OBE, Emeritus Professor of Transport Engineering at the University of Leeds. We are grateful to all members of the Group for the considerable time which they have devoted to developing this advice, at the invitation of City of York Council, over the last year.

The Transport Advisory Group includes representatives of civil society groups which focus on specific aspects of transport, including Walk York, York Bus Forum, York Cycling Campaign, York Disability Rights Forum and York Environment Forum. All these groups have expressed support for the broad strategy advocated in this report. They all encourage a wide-ranging debate on its proposals. We are grateful for their contributions.

We also acknowledge the recommendations from the fifteen individuals who have commented on a draft of this report. We are grateful for their advice. Any errors or omissions, however, remain the responsibility of York Civic Trust.

Figure A - Our approach



Executive Summary

Developing a new Local Transport Plan for York

The City of York Council decided in January 2021 to update its Local Transport Plan to reflect changes in transport over the last decade, and to respond to the new challenges of carbon reduction and future development. It invited York Civic Trust, through its Transport Advisory Group, to assist.

This report summarises our proposals. Figure A illustrates our approach. We ask what we want York to be like in fifteen years, and what objectives might be set for transport. We review the data available and propose targets. We consider seven different aspects of transport policy and the linkages between them, addressing the needs of all parts of the city and all users. We then summarise the requirements for implementation.

What do people want York to be like?

Our Citizens' Transport Forum addressed this question. Forum members want York to be a city which benefits from improvements to its environment, celebrates its heritage, ensures that all its citizens enjoy a healthy, rewarding lifestyle and achieves the economic vitality necessary to support all of these. But how transport can contribute to this vision?

We argue that the most important objectives are to reduce carbon emissions, traffic congestion and pollution and to protect the environment. But transport must also contribute to public health, safety and security. It needs to reduce inequality in all its forms, particularly in meeting the needs of children, disabled people and low-income households. It must support the economy and liveability and protect the city's heritage and public realm.

What is known about current conditions?

Figure B shows travel trends to 2019. Vehicle flows have increased by a quarter since 2011. Bus usage has fallen since 2017 and cycling since 2014.

The need for action

The Council asked residents how serious they considered a series of problems to be. The results confirm our view that tackling carbon emissions, traffic congestion and air pollution are the most important objectives for the new Local Transport Plan.

Figure B - Traffic trends in York

A 70% reduction in carbon emissions from transport will be needed if the Council's goal of being carbon neutral by 2030 is to be met. There is limited evidence on current congestion levels, but the Council predicts that delays will increase by two thirds by 2037 if nothing is done. Nitrogen dioxide levels in the inner city have fallen by around 20% since 2015. But they are still well above the World Health Organisation's new guidelines.

70%

reduction needed in carbon emissions from transport by 2030.

What targets should be set?

Targets allow everyone to understand what might be achieved, and how travel patterns need to change. The Council's carbon target is the most critical. Evidence suggests that no more than half of the target can be achieved by switching to electric vehicles. The rest will need to come from behavioural change. We suggest that this will require a 20% reduction in travel by car. This will result in growth in other travel modes. These changes will bring about major improvements in traffic congestion, air pollution, safety, public health and liveability.

What can we learn from other cities?

We selected nine cities which share some common characteristics with York: Bath, Cambridge, Chester, Norwich, and Oxford; Delft, Dijon, Freiburg and Ghent. All have similar aspirations to York, but already have updated transport plans in place. Their plans reflect an agreed vision and a limited number of clearly stated objectives. They integrate all modes of transport, together with land use. Such plans require a longer-term perspective, a willingness to take challenging decisions and clear political and professional leadership.

What should our strategy be?

We need where possible to achieve our targets by reducing car-dependency and encouraging change. This suggests a number of approaches:

1. **Reducing the need to travel, and the distance travelled.** If people can work from home, or reach shops, schools and leisure locally, the transport impacts will be reduced.
2. **Improving and promoting active travel, both on foot and by cycle.** Doing so will increase accessibility and improve health, as well as providing an alternative to car use.
3. **Improving and promoting public transport.** Such improvements will improve accessibility, reduce isolation and help to reduce car use.
4. **Changing the way in which the road network is managed**. Traffic management can be used to encourage use of more suitable routes, support walking, cycling and buses, improve liveability and public realm, and make roads safer and less polluted. At the same time it can help retain access, particularly for disabled people.
5. **Changing freight operation.** Improving facilities will make freight more efficient, whilst smaller electric vehicles and e-cargo cycles will make it less disruptive and polluting.
6. **Modifying car use.** In part this will be achieved by the approaches above, and by promoting alternatives such as car-club membership. Any further reductions in car use would require parking controls and charges, and potentially directly charging for road use.

Figure C shows how each contributes to our objectives. Our detailed reports review the wide range of measures available for each of them.

Figure C - Impacts of strategies on objectives

Objective	**Strategy**					
	Reduce travel	Walking/cycling	Public transport	Road network	Freight	Car use
Congestion	●	•	●	●	●	●
Pollution	•	●	•	●	●	●
Carbon	●	●	•	•	●	●
Health	●	●	●	•	•	●
Safety	•	●	•	●	●	●
Economy		•	•	●	●	
Access	●	●	●			
Liveability	●	●		●	●	•
Public Realm	•	●		●	●	•

● ● • Contribution to objective (by size of impact)

What could be achieved by the end of 2023?

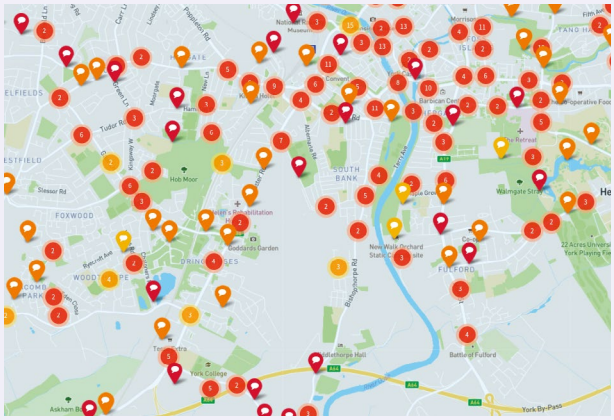
Changes to the way we travel need to start immediately. Detailed programmes of action are needed for walking, cycling, buses, managing the road network and parking, new developments, and alternative funding for transport investment.

These will require full public engagement to command support. In parallel we advocate a hearts and minds campaign to promote the benefits of change. Workplace and school travel plans, and freight delivery and servicing plans should be developed to support that campaign. An interactive map will help residents alert the Council to problems. Figure D shows an example from a York Cycling Campaign initiative in 2020.

The interactive map can be used to help prioritise local improvements for walking, cycling, public transport and traffic management. More will need to be spent on footway and cycle route maintenance. A new simplified fare structure would make buses more affordable and easier to use.

In the city centre we propose reducing traffic through experimental car-free days and bus priorities to restrict through traffic. Access must be improved for disabled people and cargo cycles.

Figure D - Responses to the Safe Streets York map. Credit: Commonplace



Elsewhere we propose, as demonstrators, that two radial roads be redesigned with continuous segregated cycle lanes, queue and speed management and bus priorities. Park and ride sites could start to act as hubs for better access for the villages.

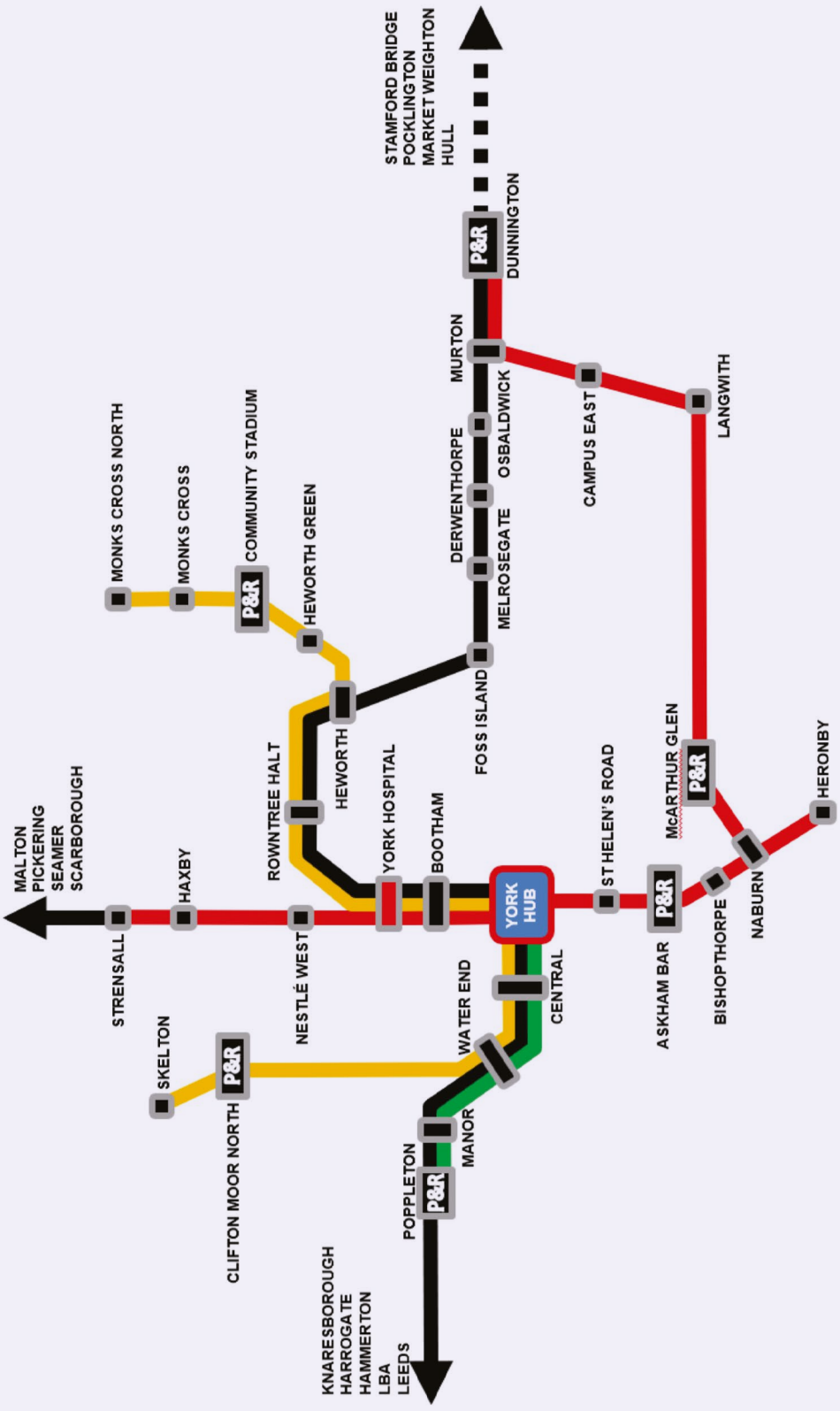
Our aspirations for the next fifteen years

By 2027 the north-eastern outer ring road will have been dualled. We should ensure that longer distance traffic uses it in preference to inner city roads. We need to improve conditions for walking, cycling and bus use. This should encourage people to transfer from cars to these alternatives. Each community will have its own dedicated communications and delivery hub, and a local centre with a range of facilities within twenty minutes' walk, to support reductions in travel. By 2037, most developments proposed in the draft Local Plan are expected to be complete. They need to be designed on the same principles (Figure E).

Figure E - The 20 minute city concept. Credit: State of Victoria

Across the city the road network will be managed to reflect the Council's hierarchy of users. Pedestrians and cyclists will experience safer and easier journeys, with better crossings of main roads and side roads. All areas will have direct bus services, using electric buses running at least every twenty minutes during the day and otherwise preferably half-hourly. All local train services will run every twenty minutes. One or more light rail or bus rapid transit lines will be in place to serve new communities and major hubs, as part of a potential wider network (Figure F). Car club provision will be expanded as an alternative to private ownership. We anticipate that finance for new investment will come from workplace parking levies or road pricing. This will in turn encourage further modal change.

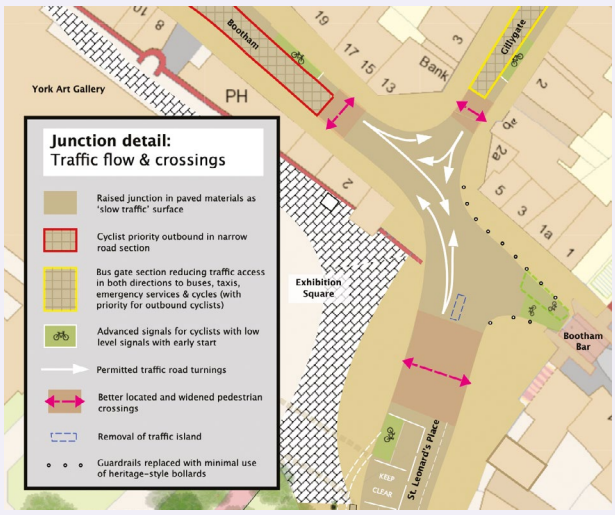
Figure F - An aspirational rapid transit network. Credit: Greg House



In the city centre the footstreets will be repaved and have more frequent seating and an accessible shuttle bus. Cyclists will have protected routes across the centre and improved parking. For freight a 3.5T weight limit will apply, with local transhipment points. All public car parking around the city centre will be priced to manage use and encourage alternatives.

Within the outer ring road all radial roads will have safe, segregated cycle routes, with queue management and bus priority. All residential roads will have a 20mph speed limit, with through traffic discouraged and more orbital walking and cycle routes provided. New bus services will serve York Hospital and outer centres. Through traffic near the city centre will be discouraged (Figure G). Freight vehicles of over 7.5T will be directed to a specified, managed road network. Electric vehicle charging points will be provided on-and off-street.

Figure G - Bootham Bar junction redesigned. Credit: York Civic Trust



All villages will have segregated cycle and bus routes to access the city centre and local centres. Demand-responsive services will link smaller communities to park and ride sites.

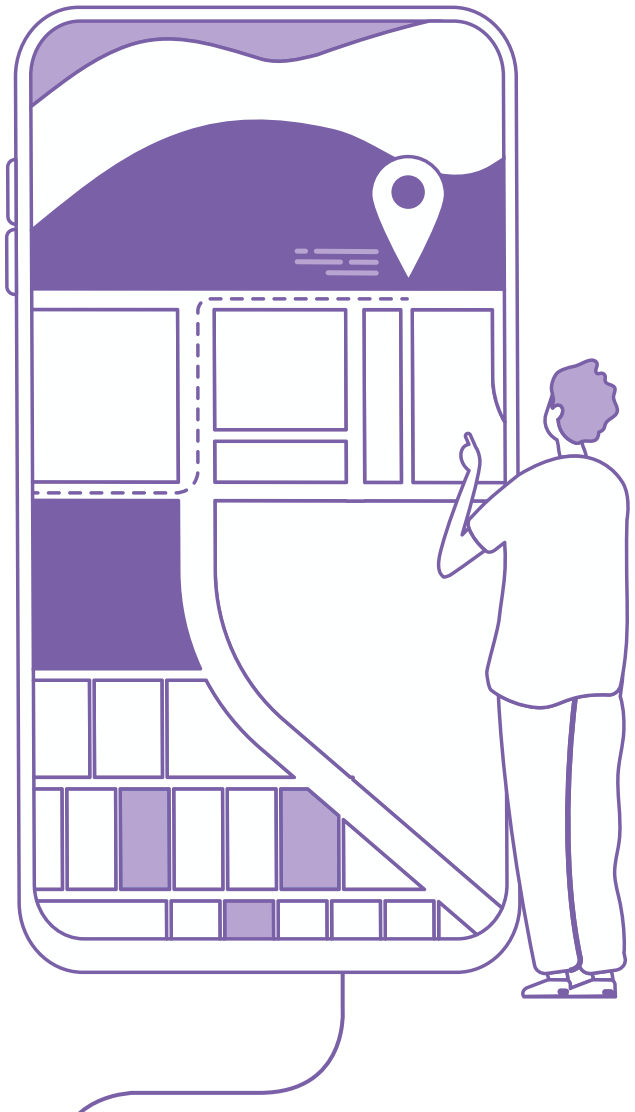
New developments must have a community centre and work and delivery hubs, a primary school and appropriate health, leisure and retail services. They will have their own dedicated public transport and cycle routes linking them to the city centre and other local facilities. They will be designed to give priority access for walking and cycling, with limited access for cars and servicing provided on the fringes.

Financing and implementing the strategy

Finance for transport is increasingly constrained. Much has to be bid for competitively. A new Local Transport Plan will help identify priority schemes and demonstrate value for money, thus strengthening the Council's bids. New sources of funding will be needed. Using parking levies and road pricing to finance attractive alternatives to car use will help make such charges more acceptable.

Transport policy is controversial. Any future transport strategy will affect transport choices for everyone. We therefore need to build consensus. We advocate a collaborative approach involving residents, business and civil society. The Council needs to be bold in pursuing its strategy if it is to achieve its carbon reduction targets and ensure that York remains an attractive and vibrant place to live, work in and visit. To this end, York must find a means of achieving political consensus and providing long term political leadership.

We are not attempting in this report to say what must be done. We are offering an approach for what might be done. We hope that, in doing so, we can initiate a debate and encourage consensus on the Council's emerging Local Transport Plan.



Section one

Why do we need a new Local Transport Plan for York?

A Local Transport Plan sets out a city's aims for its transport services over the next ten to fifteen years. Typically, they consider current and future problems and the need for improvements. They then outline the planned approach and provide greater detail on how the aims will be achieved during the initial period of the Plan.

York's current Local Transport Plan was published in 2011[1], as required by government. Since then, there has not been a requirement for updated Plans, but most cities of similar status to York have updated theirs. The reasons are clear.

Mobility options are changing rapidly: electric cars and buses, e-cycles and e-scooters have become commonplace. Bus fares and parking charges can now be paid digitally, and mobile apps have increased the flexibility of taxi services (Figure 1B). Meanwhile, a decade of austerity has resulted in the City of York Council having to make cuts, including to socially necessary bus services (see Section 10).

Patterns of travel have also changed. Online shopping had increased dramatically to 35% of all purchases by value in 2020[2], and with it home delivery. Lockdown in 2020 led to a fourfold increase in working from home[3]. At its peak, traffic levels more than halved, and many welcomed the quieter, cleaner, unpolluted, safer streets which resulted. Figure 1C shows Bootham during lockdown.

York itself is also changing. There has been major loss of office space from the city centre, and a growth in hospitality, hotels and student accommodation. Construction is now underway in York Central. The station frontage is about to be upgraded and there are advanced plans to dual the north-eastern outer ring road. York's draft Local Plan envisages a 20% increase in the city's population by 2035[4] (Figure 1A).

Overshadowing all of these changes are the problems which transport causes. York has committed to being carbon-neutral by 2030, yet it is estimated that 28% of York's carbon emissions come from transport[5].

York's draft Local Plan envisages a

20%

increase in the city's population by 2035[4].

Pollution from vehicles is now known to be a major health hazard, yet many streets in York exceed World Health Organisation guidelines[6]. Obesity and lack of exercise are a growing public health concern. Following the pandemic there is a greater realisation that society is unequal, and that we need to provide improved mobility options for all members of our community.

The need to decarbonise transport has led the government to indicate that it will require new Local Transport Plans to be produced later in 2022[7].

Figure 1A - York Local Plan map. Credit: City of York Council

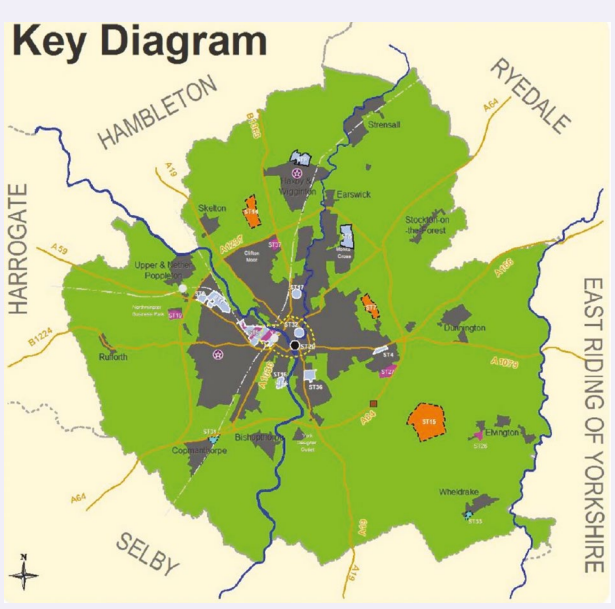
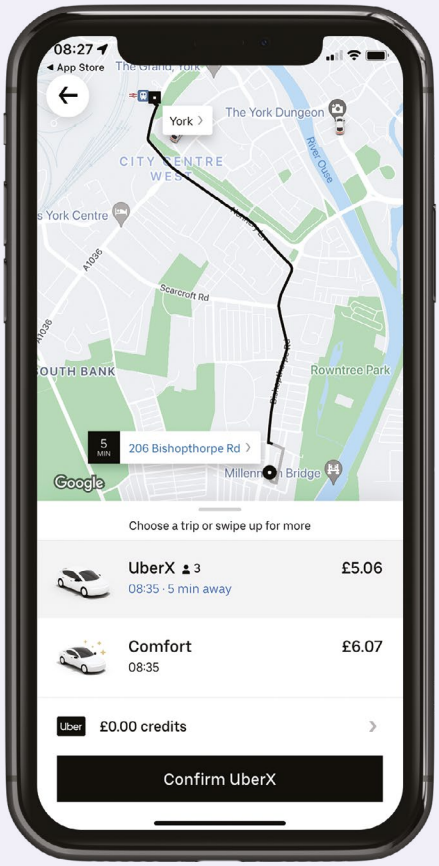


Figure 1B - Uber – Request A Ride app. Credit: dogeatcog



Developing a new Local Transport Plan

In January 2021 the City of York Council invited York Civic Trust's Transport Advisory Group to offer advice on the development and potential content of a new Local Transport Plan. The Group's members have expertise in urban planning, sustainable development, transport planning and analysis, traffic management, walking, cycling, public transport, freight, pollution, social justice and governance.

In 2019, with York Bus Forum and York Environment Forum, the Group conducted a survey of residents' needs and aspirations. Subsequently we jointly established an innovative Citizens' Transport Forum. The Forum has 100 members, drawn from all walks of life and all parts of York. It has met on four occasions (Figure 1D) to help in developing the Local Transport Plan[8]. More recently we have also helped the Council develop a Freight Forum.

The Council plans to launch a broad outline of its new Local Transport Plan for consultation in spring 2022, and we are contributing to that process by setting out our proposals in more detail, so that we can encourage as much feedback and debate as possible. We are not attempting to produce a full Local Transport Plan. Instead, we aim to highlight key issues for transport policy in York and suggest potential strategies which can be investigated further.

The Council will then be able to test these ideas and assess their financial requirements. We propose that the new Local Transport Plan should cover in detail the period to 2027, and in outline to 2037.

By 2027 the Council expects the north-eastern outer ring road upgrade to be completed. By 2037 most of the developments in the Council's draft Local Plan will be in place. The new Local Transport Plan will need to complement the Council's strategies for carbon reduction, air quality and economic recovery. It is crucial that it is consistent with and supports the finally approved Local Plan.

Our approach is illustrated in the diagram on page 4. We start by asking what we would like York to be like by 2037. This helps identify the objectives for the transport strategy (Section 2). We then look at the evidence on trends (Section 3), highlight the need for action (Section 4) and propose targets (Section 5). We suggest a broad strategic approach (Section 7) which draws in part on good practice in other cities' strategies (Section 6).

Our strategy addresses all modes of transport and does so for all areas of York and all users of transport. Sections 8 sets out our recommendations for the first two years, and Section 9 our proposals for the remainder of the Plan period. Finally, we consider how to ensure that the strategy can be financed (Section 10) and implemented (Section 11). We draw brief conclusions in Section 12.

Figure 1C - Bootham during lockdown. Credit: Martin Higginson

Figure 1D - The Citizens' Transport Forum at work. Credit: Naill McFerran

Section two

What do we want York to be like?

What are our aspirations for the future of our city? The draft Local Plan suggested that York should be "a city whose special qualities and distinctiveness are recognised worldwide"[4]. The 2019 York Narrative[9] goes little further.

We asked our Citizens' Transport Forum for their views[10]. They want York to be a city which benefits from improvements to its environment, celebrates its heritage, ensures that all its citizens enjoy a healthy, rewarding lifestyle and achieves the economic vitality necessary to support these. We offer this vision as a basis for developing a new Local Transport Plan.

The question then is what the Local Transport Plan needs to achieve if it is to contribute to that vision.

At its first meeting the Forum argued that the key objectives are:

1. to make the transport system more efficient by reducing congestion (Figure 2A);
2. to improve the city's environment by enhancing the quality of provision and making transport less polluting;
3. to contribute to tackling climate change by reducing carbon emissions.

These reflected the problems which were considered most serious in our surveys in 2019[11]. The Council's 2021 survey showed that over 80% of residents want to see each of them addressed[12] (Figure 2B).

Experience during lockdown led the second Forum meeting to highlight the increasing importance of three further needs:

4. to help promote public health, by encouraging active travel;
5. to enhance safety and personal security;
6. to support economic recovery and growth.

In parallel, the Local Transport Plan needs:

7. to support equality of access, so that no one is unable to travel; the needs of all sectors of society, including children, women, disabled people, those with limited economic resources and older people must be addressed;
8. to help make York a more liveable city; and
9. to protect its heritage and public space (Figure 2C).

We offer these nine objectives as the basis for the new Local Transport Plan.

Amongst them, the objective of reducing carbon emissions is the most pressing, given the threat of global warming and the Council's target for a carbon neutral city by 2030. Residents also see the objectives of reducing congestion and pollution as particularly important. We do not suggest any priority among the other six objectives. Indeed, the changes in travel needed for carbon reduction should contribute significantly to most other objectives.

Figure 2A - Congestion in Queen St. Credit: The York Press

Figure 2B - Our Big Conversation results 2021. Credit: The City of York Council

Our Big Conversation – Transport Strategy: Perceptions of Transport Issues in York

- More than half of York residents consider congestion to be a very serious problem in York, while almost half consider local air pollution from traffic and the impact of transport on climate change to be very serious
- More than a third of residents did not consider feeling cut off from family and friends or concerns over personal security to be serious problems

Please indicate how serious you think each of the problems listed below is in York
(1,114 responses)

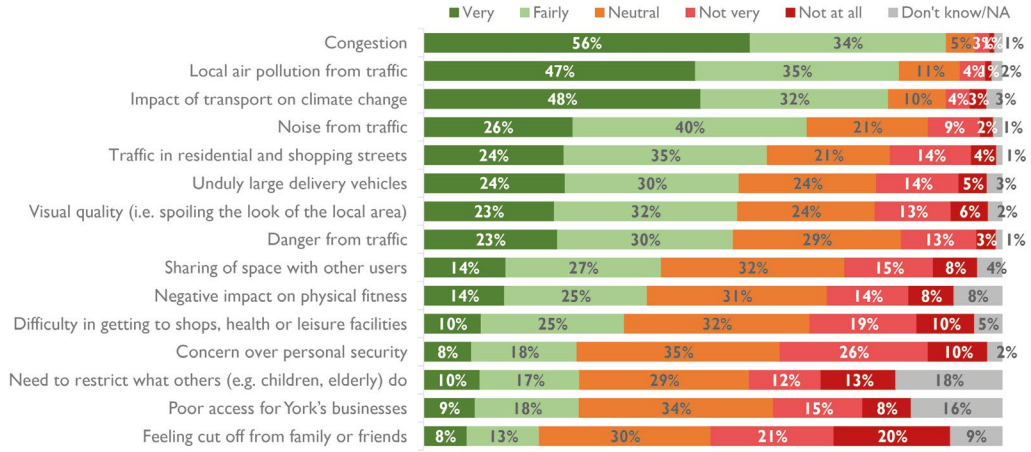


Figure 2C - Poor public realm at Bootham Bar. Credit: York Civic Trust

Section three

What do we know about the current situation and possible trends?

The importance of monitoring

If we are to pursue the objectives in Section 2, we need to understand the current situation. Ideally we ought also to have estimates of how things will change if nothing is done. To do this we need one or more indicators of performance for each objective. We reviewed how best to do this in 2018, when we suggested measuring two types of indicator. Outcome indicators, such as pollution levels and casualties, directly measure performance against our objectives. "Intermediate outcome" indicators, such as traffic flows and modal shares, help explain how changes in outcome indicators arise[13] (Figure 3A).

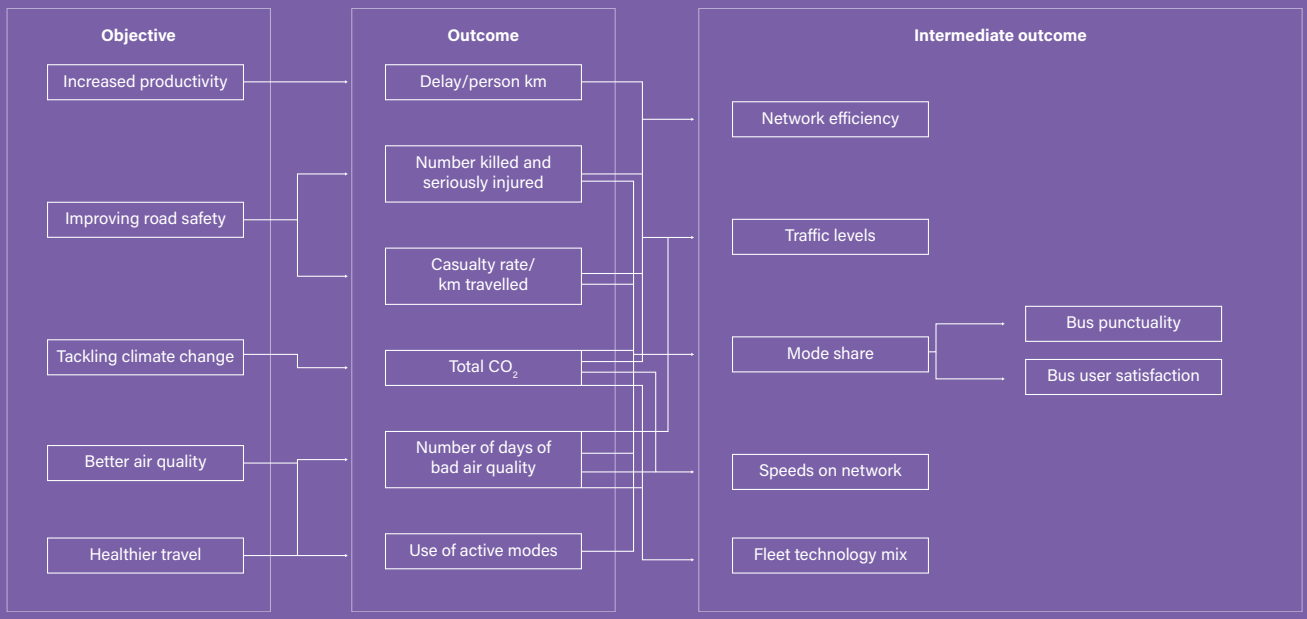
The Council specified thirty-two monitoring indicators in its 2011 Local Transport Plan (LTP3)[1]. Sixteen were outcome indicators and eight were intermediate outcome indicators. There was to have been a first review of LTP3 against these indicators in 2015, but it was never carried out. Only around half of the indicators have been measured since[14].

Outcome indicators and evidence on them

Reducing Congestion

Congestion is the problem which people consider most serious, perhaps because they experience it most directly. Yet it is difficult to specify a metric which is easy to measure and understand. The Council has access to data from satnav providers, which records average speeds during the peak periods. Average speeds had apparently changed little since 2010[15]. However, increases in speed are not necessarily beneficial. It is the uncertainty caused by congestion and the effects of queues which are the principal problem. We recommend that the Council develops indicators of unreliability and queue length, perhaps using connected vehicles or its own traffic control system. In the meantime, bus service reliability might be used as a proxy, provided that operators do not simply extend journey times to improve performance. In 2011 97% of bus services were recorded as arriving on time. By 2017 this had fallen to 85%[16].

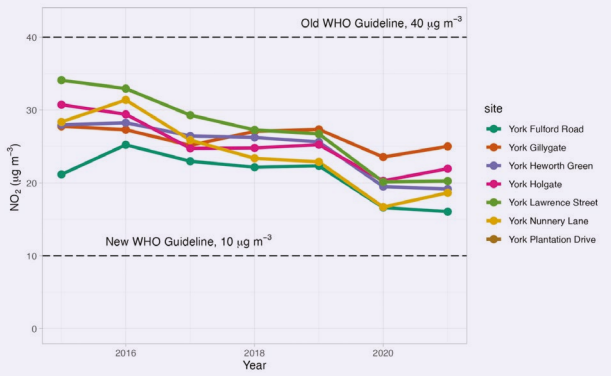
Figure 3A - Principles of monitoring. Credit: Greg Marsden



Improving the Environment and Reducing Local Pollution

The main pollutants of concern are oxides of nitrogen, particulates and traffic noise. The Council measures nitrogen dioxide and particulates at seven permanent monitoring sites. These recorded an annual average NO_2 level of 43µg/m^3 in 2011, as compared with the government's annual average objective of 40µg/m^3 and the World Health Organisation's latest guideline of 10µg/m^3. Since 2011 levels have fallen, as shown in Figure 3B[17]. Further data is available from a wider set of sites. There is no regularly collected data on noise or other local environmental impacts.

Figure 3B - NO2 trends. Credit: David Carslaw



Reducing carbon emissions

Carbon emissions cannot be measured at the roadside. Instead they have to be estimated from flows and speeds by vehicle and engine type. There is thus no reliable indicator of actual carbon emissions in York. The government does, however, provide estimates, as shown in Section 4. The Council needs to adopt or create a measure of carbon emissions from transport.

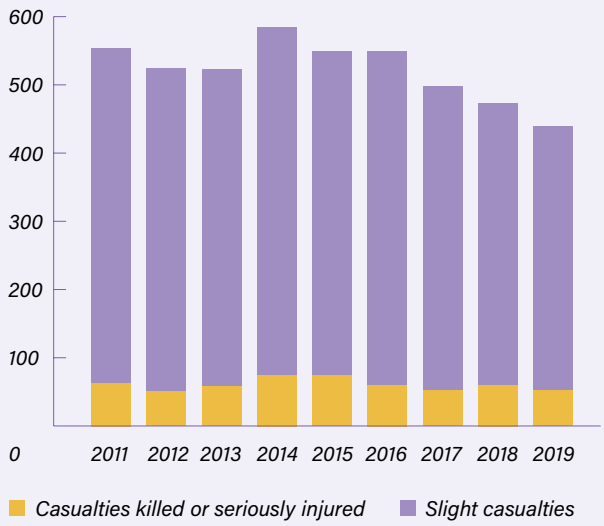
Improving public health

Transport affects health in many complex ways, and it is difficult to determine causality. However, levels of pollution (above) and casualties (below) have direct health implications. So does the level of active travel, as covered under intermediate outcome indicators below.

Improving safety and security

The police provide data on all reported casualties. However, this data under-reports cycling casualties, and does not include injuries resulting from trips and falls on footways. In 2019 there were 433 casualties on York's roads of which 52 were serious or fatal. The trend data (Figure 3C) shows a 20% fall in casualties since 2011, but with considerable fluctuation in serious or fatal casualties. Within that gradually improving picture, cyclists and pedestrians have experienced an increasing number of casualties.

Figure 3C - Traffic casualties in York. Credit: City of York Council



In 2019, cyclists accounted for 27% of serious casualties and pedestrians 25%[18]. Personal security and fear of accidents are more difficult to measure, but some attitudinal data is available. We consider this below.

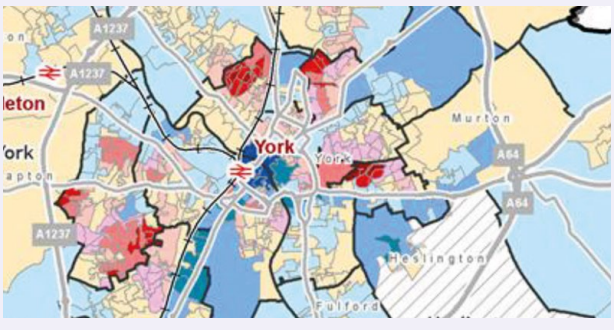
Support for the economy

The Council and government regularly monitor economic activity by sector, but it is very difficult to identify the impacts of transport on such trends. Access to specific parts of the city by different modes is probably a more important indicator of likely economic impact.

Equality of access

The most commonly used metric relates to accessibility provided by public transport. The Council has monitored this in the past, but the most recent data comes from a study in 2014[19]. This used a Transport Gap Index to identify the areas with the poorest access by bus. The map (Figure 3D) shows these in red. They lie in an arc in inner York to the west, north and east of the city centre. We have no trend data since, but there is a newly available analysis tool from Basemap[20] which we recommend that the Council uses. It is also possible to monitor access by cycle[21]. Access for people with disabilities is a further important consideration. So are the access needs of people with economic or domestic constraints. Most information on these needs comes from attitudinal data.

Figure 3D - Transport Gap Index map of York 2014. Credit: The City of York Council.



Attitudinal information

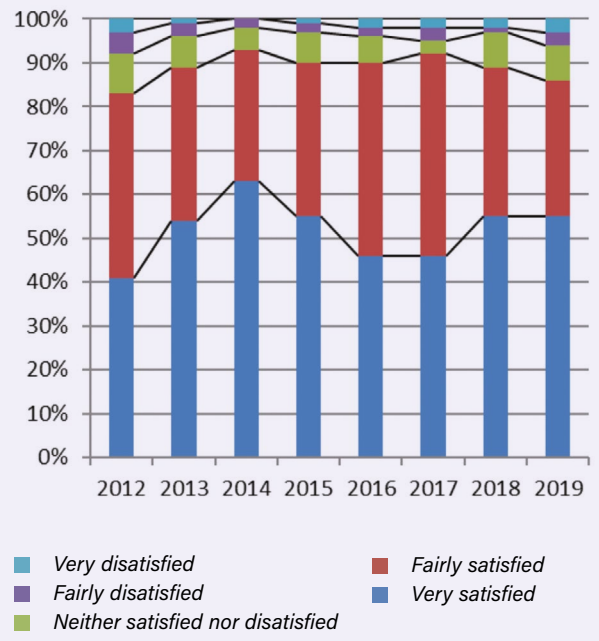
For some objectives, including safety, security, access and liveability, surveys of attitudes provide useful further information. However, few are conducted regularly or consistently, which makes it impossible to identify trends. We list some relevant ones here and would like to see the Council record more such information regularly.

The 2019 Age Friendly York study found 64% of respondents dissatisfied with pavement quality[22]. This has direct implications for safety, access, physical activity and liveability. York Disability Rights Forum's 2020 survey highlighted the problems for those with disabilities[23]. These included uneven surfaces, narrow pavements, street clutter and lack of dropped kerbs.

The active travel charity Sustrans conducts an annual Bike Life Survey[24]. In 2020 this showed that 38% of cyclists in 14 cities thought their city a good place to cycle, rising to 67% in Cambridge. York did not subscribe to the survey, and we recommend that it should do so. This again has implications for safety, access, physical activity and liveability.

York does, however, subscribe to the annual Transport Focus survey of satisfaction with bus services[16]. This shows that satisfaction with York's bus services is high. It peaked at 93% in 2014 but had fallen to 83% in 2019 (Figure 3E). This relates particularly to the objective of access.

Figure 3E - Satisfaction with bus services. Credit: City of York Council



Intermediate outcome indicators

In our 2018 report we recommended that the Council should collect basic indicators of traffic levels by mode. For person travel these would include journeys made and person-km travelled. Both would usefully be recorded by purpose, mode, time of day, area and journey length. For freight travel it would record tonne-km travelled by vehicle size, time of day and area. For traffic levels it would record flows by mode, time of day and area. Transport for London offers an excellent example of such regular monitoring[25].

Very few of these are measured in York. The only evidence on journeys by mode comes from the 2011 census. This only relates to journeys to work and is now very dated. As seen in Figure 3F[26] , 58% of journeys to work by York residents were by car. Walking was the next most common mode, at 19%. York compared well with other historic UK cities, largely as a result of its higher cycling share (12%). However, its level of car use was much higher than in comparable European cities. There is no comparable data on freight journeys.

Figure 3F - Modal shares (2011 census), May and Marsden (2018)

City	PT	Bike	Walk	Car
York	11	12	19	58
Chester	6	3	11	80
Lincoln	7	6	20	67
Freiburg	16	34	29	21

The scoping study for York's yet to be published Local Walking and Cycling Infrastructure Plan[27] used 2011 census data to identify short journeys for which car use was atypically high. These include journeys from Bishopthorpe, Copmanthorpe and Woodthorpe to the city centre, and orbital journeys between Huntington, Clifton Moor and Heworth.

The only data regularly collected by the Council relates to flows by mode. Pedestrian movements are only counted entering the city centre. Cycle flows are recorded at seventy sites around the city. Numbers boarding buses are regularly recorded. Traffic flows are recorded at sixty locations (excluding the A64). Freight movements are only recorded on crossing a cordon inside the outer ring road. Apart from bus use, most are recorded for a twelve hour day. The Department for Transport also reports trend data for vehicle-km[28].

Figure B on page 5 brings together this trend data for 2011-19. Pedestrian flows continued to increase slightly to 2019, but with a pronounced peak in 2018. Cycle flows peaked in 2014 but had fallen back almost to 2011 levels by 2019. Bus patronage rose slightly to 2016 but was 6% lower by 2019. Average traffic flows recorded by the Council rose slightly to 2016 but have levelled off since. Freight vehicle flows were largely unchanged. However, government data present a different picture, with a

27%

increase in vehicle-km between 2011 and 2019.

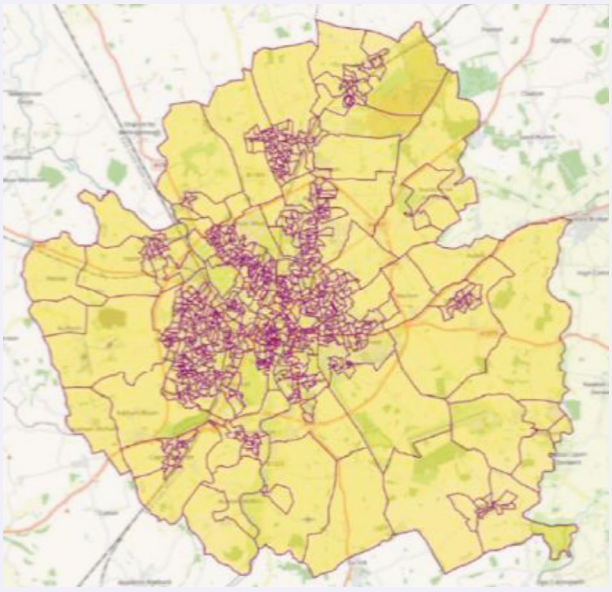
The reasons for this discrepancy are not clear, and need to be explained. Of these trends, the reduction in cycling activity is particularly marked. Coupled with the increase in cycling casualties (see above) this suggests a marked increase in cycling casualty rates.

Future trends and targets

The shortage of regularly recorded data makes it very difficult to specify a base for future transport plans. This has been further aggravated by the pandemic, which has resulted in significant and continuing changes in overall travel and in the modes used.

For example, nationally the proportion of employees working from home rose from 10% in 2019 to 41% by late 2020[3]. Over the same period online shopping increased from 20% to 35% by value[2].

Figure 3G - City of York Council's Strategic Transport Model area coverage. Credit: The City of York Council



We recommend that, until short term changes become clearer, the Council uses 2019 conditions as the base against which to project future trends and to set targets. Fortunately, the Council has a significant body of data for 2019, collected for its new strategic transport model[29]. Figure 3G indicates the area covered. We recommend using that database to provide base estimates for 2019 for key travel data. This should include numbers of journeys by purpose, mode, time of day, area and journey length.

Figure 4A - Congestion in Wigginton Road. Credit: The York Press

Section four

The need for action

The Council's surveys in June 2021 (page 12) highlighted residents' principal concerns with transport[11]. We consider them in order of seriousness as expressed by respondents.

Congestion

Ninety percent of respondents considered congestion to be a serious or fairly serious problem in York. This is not surprising. Government data show a 25% increase in traffic in York between 2011 and 2019[28]. And, like many cities, York's historic road network, its rivers, railway lines and strays all limit movement, and reduce the options when delays occur.

Congestion results in long queues of traffic on many roads in York. This causes delays for all road users (Figure 4A). It also makes journeys unpredictable, further adding to the time spent travelling. Its impacts are particularly serious for emergency vehicles, buses and essential freight.

It was estimated a decade ago that congestion in York cost

£30m

a year.

Congestion also adds to pollution and loss of amenity, as discussed below. In the extreme it may cause businesses and residents to relocate.

However, congestion is self-regulating. If travel times rise, some drivers will change their travel patterns. But this could well lead to congestion spreading to more roads and across longer time periods. In practice, congestion only starts to bite when traffic levels get close to a road's capacity.

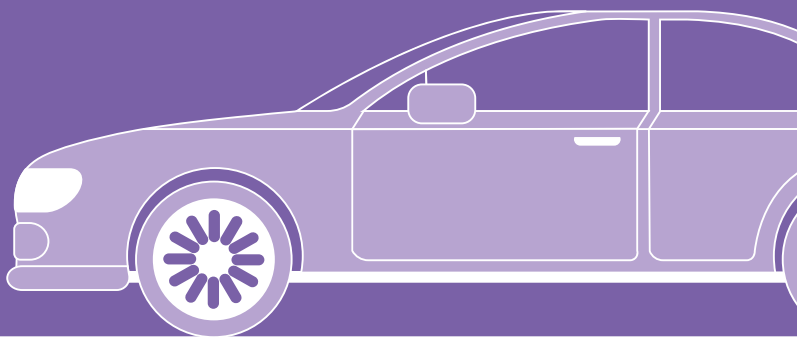
As the 2020 lockdown showed, a

15%

reduction in peak traffic is enough to remove almost all congestion.

The challenge is that drivers make their decisions based on the time that they spend travelling. They do not take into account the delay to others as a result of their joining a congested road. This makes it difficult to find solutions. Widening a road will help in the short term, but will attract more traffic, and congestion will return. Narrowing or restricting a road will lead to some drivers no longer travelling, but there will still be congestion.

The best short-term solutions are to manage the location of queues and protect priority movements, such as buses and emergency vehicles, from congestion. Traffic signals and bus lanes do this. They can help store queues where they are less disruptive and polluting, and control speeds. Reallocation of road space to priority uses may help to reduce car use, and hence congestion. Conversely, switching to electric vehicles will not reduce congestion. More controversially some cities have charged drivers to use the road, with the charge reflecting their congestion costs. If this reduces traffic by a sixth, congestion more or less disappears, as shown by data from Stockholm[30].



Pollution

In the Council's surveys, 82% of respondents considered air pollution from traffic serious or fairly serious.

For noise pollution the figure was 66%.

Air pollution is a major cause of premature death and disease and is the single largest environmental health risk in Europe[31]. It causes premature deaths and long-term ill-health. The Centre for Cities found that air pollution played a role in one in twenty-four deaths in York[32]. Older people, children and those with pre-existing health conditions are particularly vulnerable. There is a strong link with deprivation, with poorer people being more likely to live next to busy roads or industrial areas[31].

Nitrogen dioxide (NO_2) is a local pollutant, and has been the principal focus in York. But there is also growing concern over small particulates (PM_{10} and $PM_{2.5}$) which are distributed over a wider area. Road transport emissions are a dominant source of air pollution (Figure 4A). NO_2 is emitted in vehicle exhausts, while particulates also arise from brakes and tyres.

As shown in Section 3, concentrations of NO_2 at continuous monitoring sites at York have been steadily declining. However, additional insight into the spatial variation in NO_2 concentrations is provided by NO_2 diffusion tubes. These show that on Gillygate concentrations in 2020 were still at the current government air quality limit of 40 µg/m^3 despite the effects of the pandemic[33].

The impact that road vehicles have on air pollution is influenced by traffic volume, congestion and the local physical environment. In particular, pollutants are less well dispersed in narrow roads with high frontages.

The World Health Organisation (WHO) recently updated its guidelines for air pollution[6].

It significantly reduced the limits for NO_2 from 40 to 10 µg/m^3 and $PM_{2.5}$ from 10 to 5 µg/m^3. These new guidelines reflect the increased evidence that air pollution results in significant adverse health impacts even at low concentrations.

Noise also has adverse health impacts, both on mental health and for those with heart conditions. These impacts are less well understood, and there are no similar thresholds for noise levels from traffic. Individual vehicles are subject to noise standards, but these are often flouted and rarely enforced.

For both air pollution and noise, the most effective solutions are to reduce traffic flows and congestion levels. Improving the vehicle fleet is also important. York already has a Clean Air Zone for buses which requires those entering more than five times per day to meet the latest vehicle standards. But electric vehicles still produce particulates from brakes and tyres.

Carbon emissions

In the Council's surveys, 80% of respondents considered the impact of transport on climate change serious or fairly serious.

The impacts of carbon dioxide emissions on climate are now well-documented[34]. These led the UK Government to commit to reaching Net Zero emissions by 2050[35]. Subsequently the City of York Council declared a climate emergency with a commitment to York being a Net Zero city by 2030[36]. Its definition of Net Zero includes Scope 1 and 2 emissions (those that result from within the city) but excludes Scope 3 emissions (for example from goods entering the city, journeys outside York, manufacturing new vehicles or building new infrastructure).

The Department for Business, Energy and Industrial Strategy estimates carbon emissions from different sources, as shown for transport in York[37].

Since 2011 carbon emissions from transport in York have risen by 8%,

all of which has occurred on minor roads, where emissions have increased by 28% (Figure 4B). Around two-thirds of emissions are from cars and nearly a third from light and heavy goods vehicles (Figure 4C). Very little is emitted by buses or trains[38].

The key national policy for decarbonising transport is to promote electrification of the car fleet. However, this is challenging in areas which do not have off-street parking.

Moreover, electric vehicles are currently still charged by a grid whose energy is only 50% renewable, and there are doubts over the capacity of that grid to serve a growing fleet of electric vehicles.

Importantly, electrification is not going to occur fast enough either for the national target or for York's more aggressive target. While petrol and diesel sales will stop in 2030, around half of all miles will still be driven by fossil fuel powered vehicles in the mid-2030s.

The only policy packages which get close to the national commitments include a combination of electrification, mode shift and demand reduction. Studies for Leeds City Region[38] and Transport for the North[39] both indicate that around half the carbon reduction will have to come from behavioural change. This suggests a significant focus on reducing the need to travel and promoting walking, cycling and public transport. Electric cycles and e-scooters may have an important role here. Such an approach will also reduce congestion, while a focus solely on electric vehicles will not.

Figure 4B - Carbon emissions in York (in $MTCO_2e$) Credit:BEIS

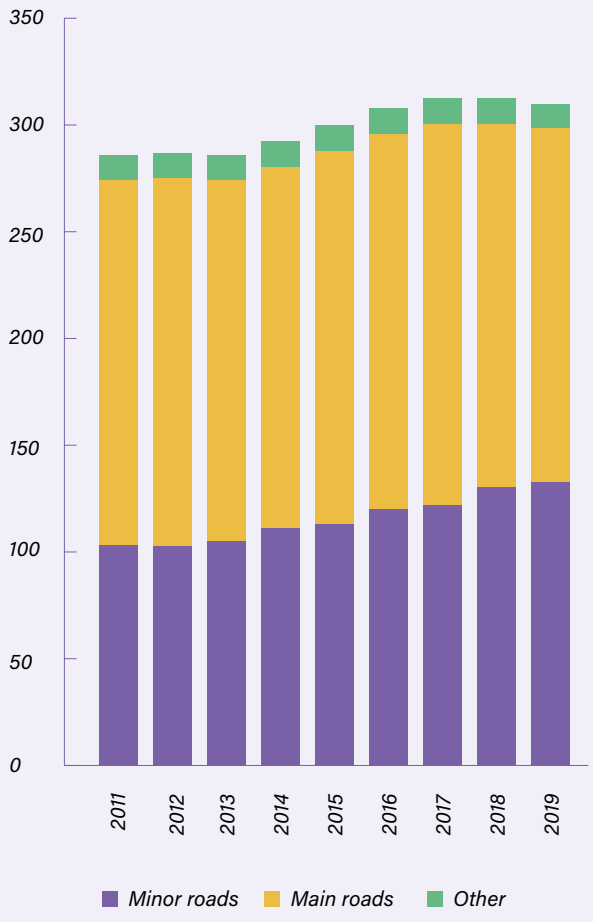
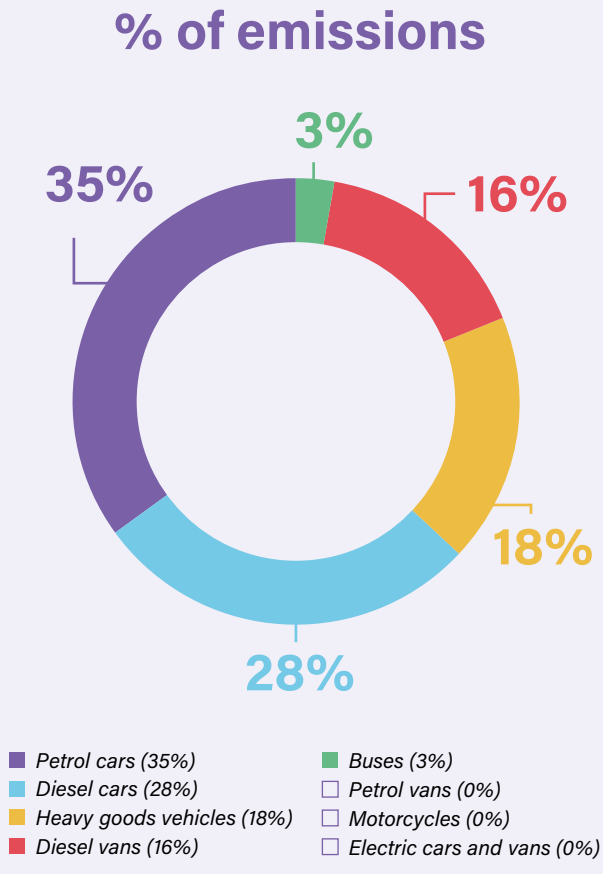


Figure 4C - Carbon emissions by vehicle type Credit: WYCA



Amenity

In the Council's surveys, 59% considered traffic in residential streets serious or fairly serious.

For visual quality and unduly large delivery vehicles the figures were 55% and 54%.

These concerns relate to our objectives of liveability and protection of public space and heritage. They affect York both as a place to live in and as one to visit. It is the tension between streets for movement and streets as places which lies behind these survey results[40]. York's streets need to be assessed as places in which to live, socialise and enjoy the surroundings. These concepts are difficult to measure, so we have no information on how attitudes have changed over time. But Transport for London's Healthy Streets Scorecard[41] (Figure 4D) uses ten criteria to assess the quality of a street as a place to be.

Figure 4D - Healthy Streets indicators. Credit: Transport for London

Some relate to our other objectives, but some directly reflect amenity. These include feeling relaxed and welcome, having things to do, shade and shelter, and places to stop and rest.

Figure 4E - The Groves Low Traffic Neighbourhood. Credit: Martin Higginson

Amenity also relates to conditions in which children can develop, including using streets and public areas for play. Providing improved access to areas such as the Knavesmire, Askham Bog and Strensall Common will further broaden the amenities available.

There are many ways in which amenity can be enhanced. Removing non-essential traffic and parking from residential and shopping streets is key. The footstreets do this in part. Concepts like home zones, school streets, low traffic neighbourhoods and residents' parking zones also contribute. The recent move towards traffic restricted streets has shown that, when properly managed and explained, they can allow people to lead healthier, less stressful lifestyles, as in the Groves (Figure 4E). Once traffic has been removed, steps can be taken to provide shade, shelter and seating. But retention of access for disabled people is essential. More needs to be done to improve accessibility for all to key buildings, services and streets.

More generally, we can enhance liveability, promote health and mental well-being and protect public space and heritage by improving opportunities for walking and cycling. These and enhanced bus services will also improve access to a wider range of amenities.

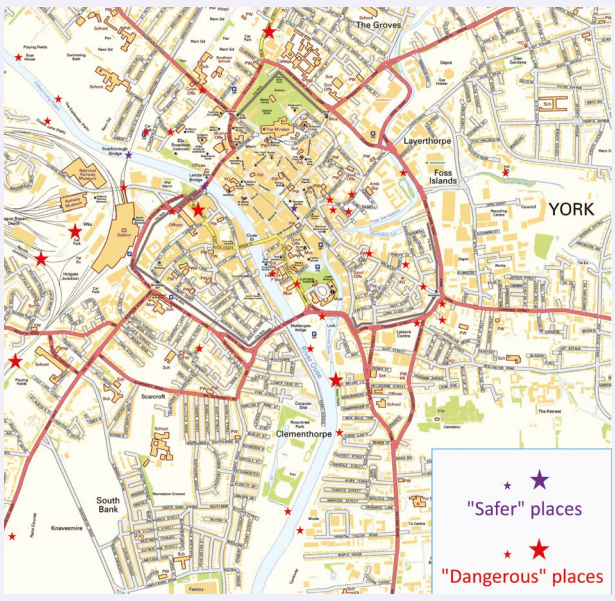
Safety, security and wellbeing

In the Council's surveys, 53% of respondents considered danger from traffic serious or fairly serious. Thirty-six percent felt that the adverse effect on their physical fitness was serious. Personal security was mentioned less often, with 27% concerned about the need to restrict what others do, and 26% concerned for their own security.

The case for tackling the ongoing toll of over 400 road casualties per annum[18] and slips, trips and falls on York's pavements needs no further justification. In particular, the rising number of cycling casualties needs to be addressed. This requires a safety-focused approach to the design of the road network, the regulations imposed, and the control of speeds. Full application of the principles of the new Highway Code will help[42].

However, concerns over personal and physical safety also act as a barrier to both walking and cycling, particularly for women. This may explain why, in York, men make 50% more journeys on cycles than do women. Such concerns relate in part to the risk of being injured, but also to the threat of attack. Figure 4F shows locations judged unsafe for walking in York Civic Trust's recent Safety by Design initiative. If parents are not confident that their children can safely cycle, most will not allow them to cycle to school or for recreation. If the cycling habit is not formed at an early age, it is unlikely to be picked up in later life.

Figure 4F - Locations in York judged unsafe. Credit: York Civic Trust



This has health implications.

Physical inactivity is responsible for 1 in 6 UK deaths and costs the UK £7.4bn annually[43].

Active travel supports public health. Regular active travel reduces all-cause mortality by 31%, and twenty minutes' exercise a day reduces the risk of depression by 31%. Those who walk and cycle have a 41% lower risk of dying from cancer and cardiovascular disease compared to those using non-active transport[44].

Figure 4G - Design for Active Travel. Credit: Department for Transport (2020)

Increasing active travel requires improved design and management of our streets. Safe routes and crossing points for walkers and cyclists, redesign of junctions and better maintenance will all help (Figure 4G). Better lighting and signing and more security cameras may make streets appear safer. But increasing foot and cycle traffic is the best deterrent for anti-social behaviour and crime. Much depends on the behaviour of all road users, including cyclists. This in turn requires an emphasis on training, regulations such as speed limits, and enforcement.

Access

In the Council's surveys, problems of access were less prominent but still significant. Over one third (35%) of respondents considered difficulty getting to shops and health and leisure facilities serious or fairly serious. Twenty-one percent were concerned about feeling cut off from family and friends.

Access can be improved by better transport options. But it can also be enhanced by bringing activities closer to people. In practice much of current planning policy does the opposite. Relocation of hospitals or stadia to out of town sites adds unnecessarily to travel and reduces accessibility. The concept of a twenty-minute city offers a more sustainable approach[45] (see Figure E on page 7). It provides facilities, such as jobs, schools, shops, healthcare and leisure within communities and close to people's homes. People can then walk or cycle to them. Public transport can then expand the activities which can be reached in twenty minutes.

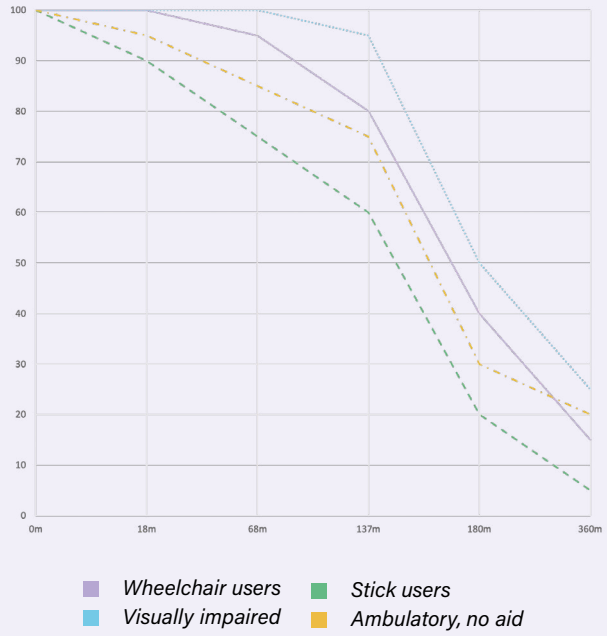
Those with cars available will have access to a wider range of activities. In Yorkshire, 78% of households have a car[46]. But ensuring that everyone has access to the full range of educational, economic and social needs is fundamental to supporting quality of life. Currently a significant proportion of people have access limitations.

Perhaps the largest category is disabled people who have limits on their ability to get around. They represent over a fifth of the population[47]. But types of disability very widely, and some of them are hidden. For example, a quarter of people with hidden disabilities such as cardiopulmonary disease cannot walk for over 100m without resting[48] (see Figure 4H). We need to ensure that we provide for all types of disability, and do not act to limit the access available to people with disabilities.

A second group of people with access limitations are those with age-related, economic or domestic constraints. Children and those too young to drive are dependent on public transport and active travel. Young people may find it difficult to find accessible jobs. Low-income households may experience insecurity in both housing and employment. It can be difficult to match employment and caring responsibilities with transport timetables, or to afford bus fares. But many in these circumstances do not respond to surveys. It is important that their needs are understood so that public transport and active travel can be designed to meet their needs.

Finally at a local level, difficulties crossing busy roads can limit access. As a result, shops on the "wrong" side of the road may suffer. More direct and safer crossings will help, as will lower traffic levels.

Figure 4H - Percentage able to move distance shown without resting. Credit: IHT 1991



Economic activity

Over a quarter,

27%

of residents were concerned about access for businesses to employees, supplies and markets.

An efficient transport infrastructure is essential to the smooth operation of business. Raw materials have to be delivered, employees have to get to work, and finished products and services have to be distributed. Customers need to access shops and services. People need to access opportunities for learning and training.

Figure 4I Acomb shops. Credit: The York Press

York's economy has recently suffered from the adverse impacts of the pandemic. Retail and hospitality have been particularly affected. There has been a substantial increase in home working and hybrid working. This has increased dependence on broadband connectivity, which needs to be enhanced. Conversely there has been a decrease in commuting and face-to-face business meetings, which appears likely to be sustained.

The pandemic has accelerated some trends that were already apparent. Over recent years the city centre has lost business and retail to locations which are more accessible by private vehicle, while hospitality has increased. Online retail and home delivery has grown, with implications for the effective planning of freight transport. Many of these impacts are expected to be long-lasting.

A particular feature of York's economy is the importance of the hospitality sector and the domestic and international visitor market. This has been affected by the pandemic, and a full recovery is likely to take some time. An effective transport system must meet the needs of visitors (as well as residents) whilst not adversely impacting on the historic environment. There is ample evidence that enhancing active travel and public realm will support the economy[49] (Figure 4J).

Restoring and enhancing the economic vitality of York will be fundamental. The transport strategy therefore needs to support the Council's emerging strategy for economic recovery. It can do so by providing easy, uncongested access to business. But it also needs to enhance the environment in which business takes place. This in turn requires a focus on reducing the need to travel, removing extraneous traffic, reducing pollution and improving the public realm.

Uncertainties over future business patterns suggest the need for a cautious, but flexible approach to transport provision. They will require an imaginative approach to the planning of new developments and settlements. But they also demand the strengthening of existing local centres and facilities, as in Acomb (Figure 4I), so that they can support working from home.

Figure 4J - Low traffic shopping in London. Credit: London Living Streets

Section five

What targets should we set?

Targets represent a concrete form of commitment in a Local Transport Plan. They allow everyone to understand the extent to which objectives (as in Section 2) might be achieved, and by when. They also provide transparency and guidance on how travel patterns need to change[50].

Targets need to be **SMART: Specific, Measurable, Achievable, Relevant and Time-bound**[51]. It is not always possible when starting to develop a strategy to know what is achievable. It may therefore be necessary to revisit the targets having assessed what the strategy can deliver. But it makes sense to start the process with ambitious targets which, if met, would help achieve our vision for York.

Based on the current trends (Section 3) and the need for action (Section 4) we propose a series of targets (Figure 5A). As suggested in Section 1, the targets are for 2027 and 2037. By 2027 the north-eastern outer ring road upgrade should be complete. By 2037 the developments in the Local Plan should be complete.

Our first set of targets relates to our nine objectives in Section 2 and our suggested outcome indicators in Section 3. We have not as yet proposed targets for public health, the economy, liveability or public space and heritage, all of which are rather harder to quantify.

We already have one target set for us by the Council. It has committed to York being zero carbon by 2030. Analysis for Leeds City Region (which includes York) indicates that this requires us to reduce carbon emissions from transport by 70% by that date[38]. Figure 5a shows this value superimposed on the Council's carbon pathways. It suggests that carbon from transport will need to fall by 60% by 2027 and 90% by 2037[5].

In practice, if we can achieve these targets, which will require substantial behavioural change, we should also see dramatic improvements in congestion, pollution and safety. We need in parallel to address the requirements for improving access. We have provisionally suggested targets for all of these objectives, as shown in Figure 5B.

As we indicate in Section 3, it is difficult to specify an easily measurable, understandable, indicator for congestion. We recommend that the Council develops ones which reflect variability in journey times and queue lengths. In the meantime we focus on variability for bus users. We propose targets for the percentage of bus services which run on time within current schedules. This indicator has fallen recently, but could realistically be close to 100% if congestion can be tackled. It will be important to ensure that it is not achieved by simply extending bus running times.

For pollution, we focus on Nitrogen Dioxide and small particulates ($PM_{2.5}$), as measured by the Council's monitoring sites. Since two thirds of NO_2 comes from transport, it should be possible to achieve significant reductions by improving vehicles and reducing vehicle flows and congestion. Particulates are more challenging, since only a small proportion comes from local traffic.

Figure 5A - Our carbon targets. Credit: The City of York Council

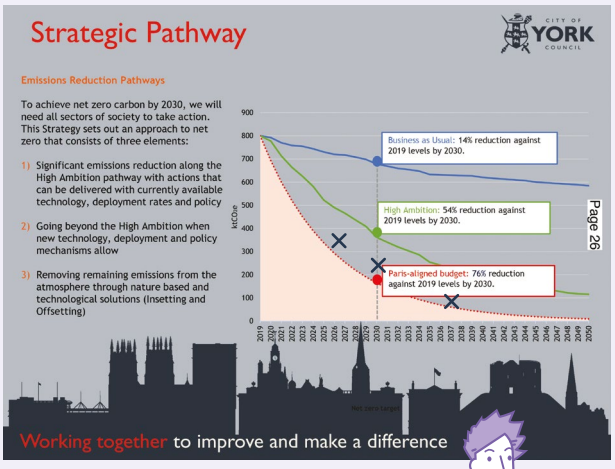


Figure 5B - Outcome targets for 2027 and 2037. Credit: York Civic Trust

** as measured for similar cities to York*

Objective	Indicator	Base	2027	2037
Carbon	Emissions	2019	-60%	-90%
Congestion	Bus services on time	2017 = 87%	95%	98%
Pollution	NO_2 emissions	2019	-25%	-50%
	$PM_{2.5}$ emissions	2019	-10%	-20%
Safety	Casualties	2019	-20%	-40%
	Active travel casualties	2019	-30%	-60%
	% thinking York safe to cycle	2020 = 38%*	50%	75%
Access	% within twenty minutes of key activities	(to specify)	80%	95%
	% with under-provision of public transport	2014 = 17%	10%	5%
	% dissatisfied with pavement quality	2019 = 64%	20%	10%

Figure 5C - Modal targets for 2027 and 2037. Credit: York Civic Trust

** zero or ultra-low vehicles in the fleet in York*

Objective	Indicator	Base	2027	2037
Vehicle type	% ULEV* cars	2020 = 2%	25%	90%
	% ULEV* freight	2020 < 1%	15%	50%
Travel	Person-km	2019	-10%	-20%
	Car-km	2019	-20%	-35%
	Car mode share	2011 = 57%	49%	45%
	Bus ridership	2019	+30%	+50%
	Walking	2019	+25%	+40%
	Cycling	2019	+80%	+110%

For safety we propose target reductions in overall casualties which continue recent trends. However, we need to reverse the trend for active travel casualties to rise. We have suggested challenging targets for doing so. Perceptions of safety are also important. We propose targets for the percentage who consider York a safe place to cycle. Ideally, we would assess this for walking also.

We offer three targets for access: the proportion of residents within twenty minutes of key facilities on foot, by cycle or public transport, the proportion living in areas with poor public transport provision, and the percentage of people dissatisfied with pavement quality. We do not have a current value for the first of these, and recommend that it be assessed using Basemap's TRACC analysis software[20].

We have also proposed monitoring the cycling rates among women and different age groups, with the intention that they are equivalent to those for middle-aged men.

Achieving this should also increase the mode share for cycling.

Of these, all the evidence indicates that the carbon reduction targets will be the most challenging[52]. By 2030 no more than half is expected to result from a switch to electric vehicles.
We have suggested targets for the proportions of cars in the fleet which would be zero or ultra-low emission, based on recent analysis[53]. We have estimated related figures for freight.

The rest will need to come from changes in behaviour. We have carried out a fuller analysis[54] based on work by West Yorkshire Combined Authority[38] and Transport for the North[39]. By 2027 the amount of travel (in person-km) will need to fall by around 10%. For those journeys which are made, car use will need to fall by around 20%. This will come from transfer to walking, cycling and public transport. Further changes will be needed by 2037. We have shown our estimates in Figure 5C.

Section six

What can we learn from other cities?

We can learn useful lessons by examining good transport planning practices that have been adopted elsewhere. Such lessons must be tailored to meet the specific challenges and requirements of York.

We selected nine cities from England and continental Europe which share some common characteristics with York in terms of size, geography, economy and history. They were Bath, Cambridge, Chester, Norwich and Oxford; Delft, Dijon, Freiburg and Ghent. We used available documentation but recommend that the Council organises study visits or online workshops at a later date.

Our case studies showed a wide variety of political, organisational and financial arrangements.

Unsurprisingly, those cities that have full control over land-use planning and transport matters tend to have the most focused and integrated approaches. All have a recently prepared Local Transport Plan or equivalent. We reviewed the main strategic thrusts, priorities and policy measures.

Effective approaches to planning

Successful transport planning is only possible where there is a vision agreed among politicians and the public, and a limited number of clearly stated objectives. It needs strong public and business engagement. It requires a longer-term perspective, and a willingness to take challenging decisions. Above all, it needs clear political and professional leadership, as exemplified by recent experience in introducing Ghent's Circulation Plan (Figure 6A).

All our case-study cities are planning to accommodate growth whilst protecting their historic and cultural assets. They all aspire to sustainable new development, encourage economic vitality and inclusivity, and enhance the well-being of all citizens. They all focus on tackling climate change, reducing air pollution, managing congestion, improving equality of access and promoting health through active transport.

Transport and land-use planning must be closely integrated. In Europe, it is normal practice to plan investments in transport infrastructure as part of the master planning of new developments. Relatively compact and higher density development is seen as supporting effective public transport and active travel (see Figure 6B).

There needs to be close integration between the different modes of transport. A clear hierarchy of users should prioritise walking and cycling, the needs of disabled people, and public transport. Use of private vehicles should focus on providing for disabled people, essential longer journeys, and journeys where heavy goods are being carried. The most effective transport plans are those where a single agency has responsibility for all modes. The best transport plans predict and monitor the impact of their proposals on each of their key objectives.

Figure 6A - Ghent Traffic Circulation Plan. Credit: City of Ghent

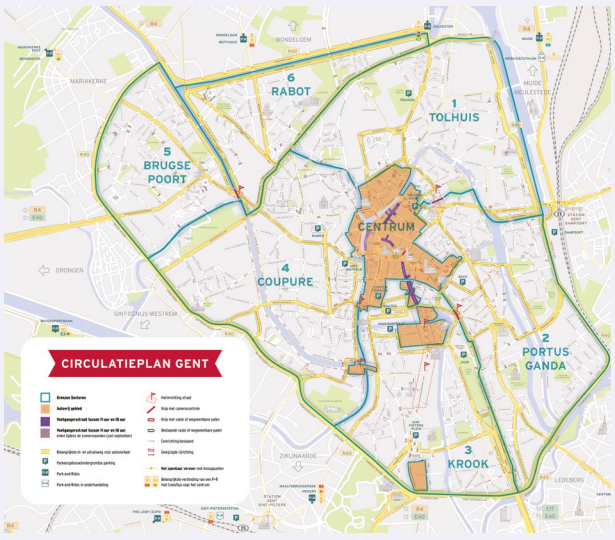


Figure 6B - Compact development in Heidelberg Bahnstadt. Credit: York Civic Trust

Figure 6C - Merton Street, Oxford. Credit: Wikimedia Commons

Figure 6D - Integrated subsidised tram network Freiburg. Credit: Harry Schiffer (www.eltis.org)

Specific policy measures

The weakest transport plans are those which fail to recognise the competing and conflicting needs of different users. They become just a wish-list of projects, with insufficient consideration of the funding or the skills needed to bring the plan to fruition. Nonetheless, all the case-study plans have examples of policy measures of relevance to York.

Walking is recognised as the principal mode of travel, especially for shorter journeys. The aim is to develop a comprehensive network, and to make strategic investments to overcome blackspots. All the cities have developed pedestrian zones. In the best examples walking always has priority, followed by cyclists and disabled people. There are a number of experiments with electric mini vehicles.

All the cities are seeking to promote cycling. They stress the need for a comprehensive cycle network, which is safe and perceived to be safe, is segregated, and has strategic investments in key crossing points.

Most of the case studies stress the importance of liveable streets or low traffic zones in which the needs of pedestrians and cyclists are given clear priority (Figure 6C). These use signage, barriers and chicanes, as well as street furniture and landscaping, to control vehicle access.

Most of the European examples have a well-developed, subsidised tram network (Figure 6D). These are closely integrated with other forms of transport. The English examples focus on high quality, high-capacity bus routes.

All the English examples have operational park and ride schemes. York's system stands comparison with the best of these, though there are lessons, such as the need for extended hours of operation, more intensive use of sites and better access arrangements.

The English examples also focus on the provision of bus priority measures and the introduction of bus corridors to improve speed and reliability. Some case-study cities have interesting innovations in combined, multimodal and discounted fares.

All the cities seek to reduce congestion and the use of private vehicles through measures such as traffic management on radial routes, the introduction of cells to eliminate through traffic, the re-allocation of road space to active travel modes, lower speed limits and controls on parking.

Section seven

What should our strategy be?

The targets in Section 5 are challenging, and at their heart is the need to reduce car-dependency. This can be promoted by improving the alternatives to current patterns of travel and by encouraging modal change. If those prove inadequate, stronger measures will be needed. This suggests a sequence of approaches.

1. Reducing the need to travel, and the distance travelled. If people can work from home, or reach shops, schools and leisure locally, the transport impacts will be reduced.
2. Improving and promoting active travel, both on foot and by cycle. Doing so will increase accessibility and improve health, as well as providing an alternative to car use.
3. Improving and promoting public transport. Changes to bus, taxi and train services will improve accessibility, decrease isolation and help to reduce car use.
4. Changing the way in which the road network is provided and managed. Traffic management can be used to encourage use of more suitable routes, support walking, cycling and buses, improve liveability and public realm, and make roads safer and less polluted. It should also retain access, particularly for disabled people.
5. Changing freight operation. Providing better facilities will make freight movement more efficient. Reducing vehicle sizes and switching to electric vehicles and cargo cycles will make it less disruptive and polluting.
6. Modifying car use. We need both to reduce car use (see Section 5) and to change the types of vehicles used. In part reductions can be achieved by encouraging people to travel less (1 above) or to use more sustainable alternatives (2, 3 above). In part they will come from changes in the road network (4 above). But if further reductions are needed, the principal tools will have to be parking controls and charges and, potentially, directly charging for car use. In parallel, we need to support a switch to electric vehicles, smaller vehicles and more shared use. As part of this we should consider the role of the motorcycle.

Figure 7A indicates how each of these six approaches can contribute to our objectives. Some of these impacts are direct; for example, improving walking and cycling promotes public health. Others are indirect; fer example, improving walking and cycling increases their attractiveness relative to car use, which in turn can reduce congestion.

In practice, there are important interactions between all of these six approaches, as shown in our diagram in Section 1. For example, improvements to public transport will help reduce car use, which will reduce the need to take direct action, such as raising the cost of car parking. It will also help reduce congestion, which will make the impact of reallocating road space less severe. We therefore need to plan all six elements of the strategy together.

Figure 7A - Impacts of strategies on objectives

Objective	**Strategy**					
	Reduce travel	Walking/cycling	Public transport	Road network	Freight	Car use
Congestion	●	•	●	●	●	●
Pollution	•	●	•	●	●	●
Carbon	●	●	•	•	●	●
Health	●	●	●	•	•	●
Safety	•	●	•	●	●	●
Economy		•	•	●	●	
Access	●	●	●			
Liveability	●	●		●	●	•
Public Realm	•	●		●	●	•

◯ ○ ○ Contribution to objective (by size of impact)

Figure 7B - Promoting a car free day. Credit: Surrey CC

What measures can we use?

There is a wide range of ways in which we can influence the ways in which people travel, and their experience in doing so. We have reviewed them in some detail in our strategy reports on reducing travel, walking, cycling, public transport, managing the road network, managing freight and managing car use[55]. We list them below while noting that some will be less expensive and faster to implement, while others will require more time and larger budgets. Further information and evidence are in our strategy reports[55].

Urban design

The way we design our cities and new developments directly influences travel. Denser, larger developments make it easier to support public transport. Layouts which provide space for social interaction enhance liveability, support walking and cycling and strengthen the economy. Mixed developments including the services that people need will facilitate shorter journeys. All of these should be central to the Local Plan.

Information and encouragement

Real-time information helps people adjust to changing conditions and choose the best option for travel. Promotional campaigns, such as car-free days (Figure 7B), and travel plans alert them to alternatives and encourage experimentation.

Infrastructure

New roads, cycle paths, public transport routes and bridges improve access but may stimulate new travel patterns (Figure 7C).

New technology

Electric buses and cars, e-bikes and e-scooters, connected vehicles and mobile phone apps for booking and payment are all examples of technology which scarcely existed a decade ago, and are opening up new travel opportunities and solutions. Autonomous vehicles may further change the nature of urban travel.

Management

This is the widest ranging category. It includes signal control, traffic management, parking controls, bus services and frequencies and controls on freight movements. Many require enforcement or self-enforcement to be effective.

Pricing

Bus fares and parking charges are well-known examples of pricing. They help pay for the service and also influence demand and mode choice. Other examples are workplace parking levies, charged clean air zones and road pricing, which have been used elsewhere to generate income to pay for other elements of the transport strategy.

Figure 7C - Millennium Bridge. Credit: York Civic Trust

Section eight

What should York aim to achieve by the end of 2023?

As we have seen, the Council's carbon target is very challenging. In order to meet it, changes to the way we travel need to start immediately. With this in mind, we identify below a set of actions which could be taken now. Some involve developing a detailed programme of action over the life of the Local Transport Plan. Some involve improving the information flow between users, providers and the Council. Others are actions on the ground which may be experimental, but which should demonstrate what can be achieved. Work on all of them could start now while the Council is finalising its Local Transport Plan.

Developing detailed plans of action

Walking ranks highest in the Council's hierarchy of users. Yet there is no strategic plan which identifies where the needs for action are greatest. We recommend that the Council develops a strategic walking network. The network should ensure that all significant origins and destinations are served by high quality direct walking links and avoid diverting pedestrians from their direct route (Figure 8A). The Council could assess quality of provision using the Pedestrian Environment Review System (PERS)[56].

For cycling there is a cycle routes map and a priority list of actions. But most cycle routes lack continuity (Figure 8B) or effective segregation. There is ample evidence that inconsistent provision and sections which appear unsafe deter would-be cyclists[57]. The priority list needs to be wholly revised to focus on continuity, segregation and safety. It should give priority to locations which are judged unsafe, and to gaps in the network. An action plan is also needed for increasing cycle parking provision, including space for a full range of types of cycle, and improving its security.

For buses there is a well-established network of services. But evidence indicates that some areas and journeys are poorly served. Many more now have a poor or non-existent service in the evenings and on Sundays. The Council will need to carry out the assessments promised in its Bus Service Improvement Plan[16]. We suggest that it reassesses bus routes and frequencies based on the accessibility that they provide. Basemap's TRACC software provides an excellent basis for doing so[20]. In parallel, an audit of bus stops could ensure that they are accessible, safe and provide appropriate information. The assessment of the locations where buses are most seriously delayed could usefully be updated[19].

For the road network, planning has focused on vehicular movement. But roads are also places where people live, shop and socialise[40] (Figure 8C). We recommend that the Council reviews its road network to ensure that each road has the appropriate balance between movement and place. Roads with the highest traffic flows could be reviewed using London's Healthy Streets assessment tool[41].

For car use, the Council will need to update its recent strategic review of Council car parks[58] to include all public car parks and to provide fuller data on usage. We also recommend that it commences a review of additional funding streams, including workplace parking levies and road pricing, which will need to involve comprehensive public engagement.

For new developments the Council will need to develop a Supplementary Planning Document to its Local Plan to address sustainable design and transport. We recommend that developments are based on the twenty-minute city concept. They should be designed to give priority access for walking and cycling, with limited access for cars, other than for disabled drivers, and parking provided on the fringes. They should include a delivery hub, to avoid commercial vehicles needing to service every dwelling[45].

Figure 8A - The barrier to pedestrians. Credit: Tony May

Figure 8B - Discontinuous cycle lane. Credit: Nathan Horner

Figure 8C - Bishopthorpe Road – the conflict between movement and place

Providing better information

The Citizens' Transport Forum has stressed the importance of winning hearts and minds in order to change travel behaviour[9]. We recommend that the Council immediately launches a campaign to stress the benefits of travelling less and using sustainable modes more.

To reinforce this campaign, we recommend reintroducing the targeted behavioural plans which the Council ran until 2014.

Evidence suggests that Personal, School and Workplace Travel Plans can reduce car use by up to

10% [59]

Changing travel to school can be particularly effective. However, Travel Plans need to be sustained. The Council could work with businesses and schools to compare Travel Plans and promote best practice.

At the same time, the public can help the Council by using interactive maps to identify locations where they find travelling difficult. York Cycling Campaign's Safe Streets York initiative, from May to September 2020, attracted 764 comments to its Commonplace map (Figure D on page 7). The map offered an invaluable resource for users to highlight concerns[60], which were widely distributed around the city. We strongly recommend the Council to adopt it for pedestrians, bus users and car drivers as well.

Taking immediate action

Early action on the ground needs to:

- accord with the Council's own hierarchy of users[1]
- be highly visible
- have an immediate impact
- reflect the public's desire to reduce carbon
- emissions, congestion and pollution
- be clearly affordable and
- demonstrate the benefits of sustainable transport

We list our proposals for the next two years below.

Improving Walking and Cycling

We encourage the Council's Active Travel Manager to give equal emphasis to walking and cycling and to reflect the requirements of the new Highway Code[42]. Measures to support active travel have been shown to be particularly cost-effective and quick to implement. Action should be taken on the most serious problem locations for pedestrians and cyclists identified in the interactive map. The footway and cycle route maintenance budget should be increased. The most serious identified maintenance problems should be tackled. Signing should be improved. Direct single stage crossings should be provided at some of the nine Inner Ring Road junctions where they are still needed (Figure 8E). In doing so, delays to pedestrians should be able to be reduced significantly. Experience indicates that this need not add to congestion[61]. The first two continuous segregated cycle routes should be implemented on radial roads. These need to be constructed to the latest government standards[62] as demonstrators of good practice.

Figure 8D - Direct single stage crossings are safer and easier. Credit: Tony May.

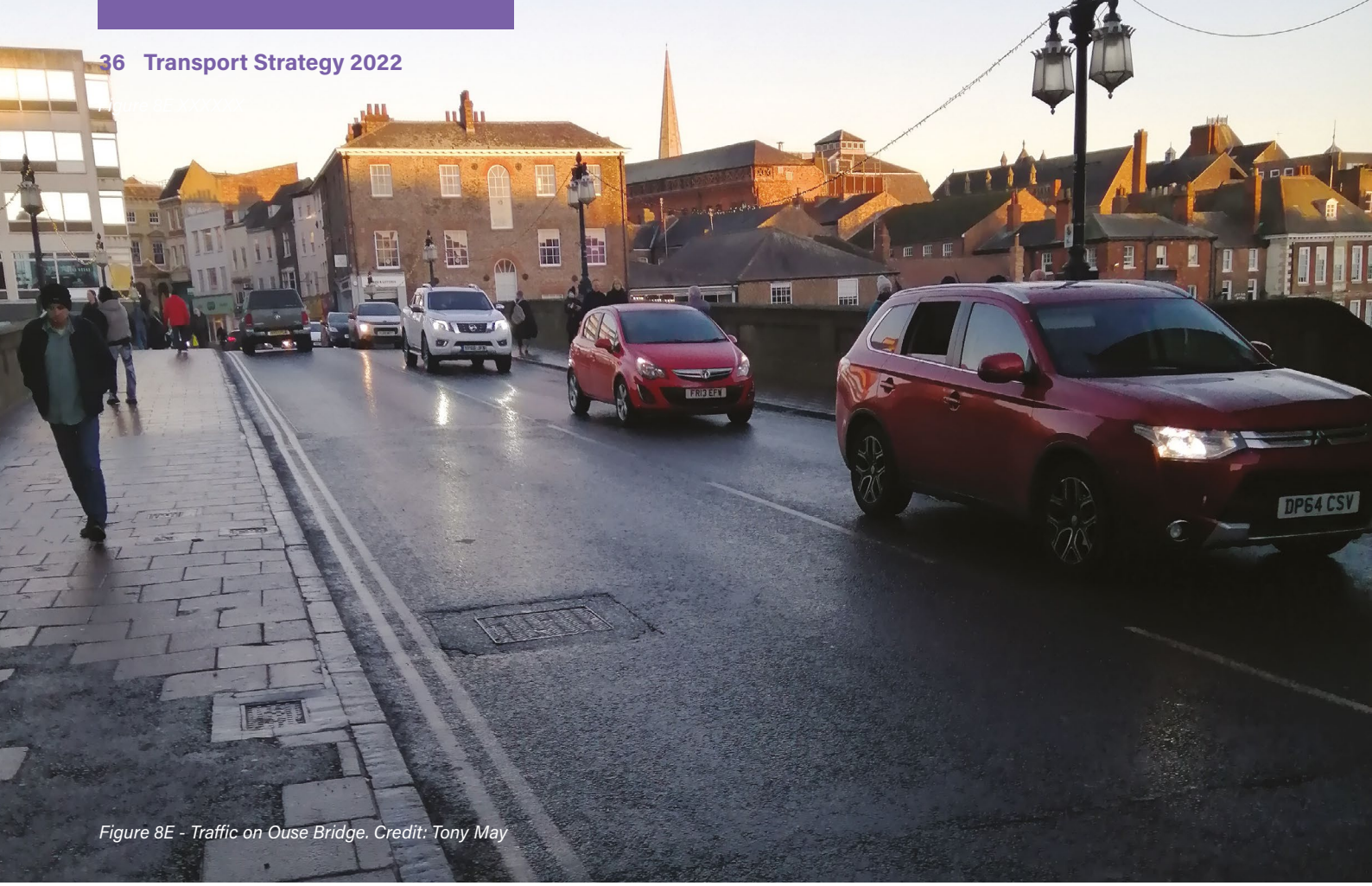


Figure 8E - Traffic on Ouse Bridge. Credit: Tony May

Improving Public Transport

The proposals in the Council's Bus Service Improvement Plan[16] are welcome. The further studies in it should be completed and early-stage measures implemented. The interactive map should be used to identify and resolve the most serious problems with bus stops and services. There should be a comprehensive marketing plan to attract people back to buses. When the station front improvement is complete, we would like to see all city centre services serve the station, and the bus and visitor information point reopened. We propose that park and ride sites are opened for longer hours, and more widely promoted. We hope that a unified, simplified, more affordable fare structure can be introduced, with a single app permitting use of all services. We assume that electrification of the full bus fleet will continue.

Managing the Road Network

We would like to see better use made of the Council's Urban Traffic Management Control system. This should build on the Council's Smart Travel Evolution Programme[63] to support sustainable transport. We propose that queue and speed management is implemented throughout the length of two radial routes using traffic signal control. The aim should be to discourage traffic travelling through York. This in turn should reduce queues on the approaches to the Inner Ring Road. At the same time, greater priority should be given to buses, taxis and cyclists using those routes.

Immediate action is needed to improve disabled access to the footstreets. To deliver the Council's commitment to removing through traffic from the city centre[64], we propose four measures. The existing access restrictions on Piccadilly and Pavement should be effectively enforced. Ouse Bridge and George Hudson Street eastbound should be restricted to buses, taxis and cyclists only (Figure 8E). These in turn will give priority to "place" over movement, and reduce pollution. In York Central, we propose that the Leeman Road Tunnel is restricted to buses and taxis. This will stop the new development and Museum Square becoming a through route, and overcome the predicted delays to buses[65].

Managing Freight

We hope that the Council and industry will jointly appoint a Freight and Logistics Manager. Work could then start on developing Delivery and Servicing Plans. The review of transhipment sites for the city centre[66] should be completed and suitable sites commissioned. We would like to see the Clean Air Zone extended to cover freight vehicles. At the same time there should be a review of loading bays to improve capacity and manage usage. Cargo cycles (Figure 8F) should be permitted in the footstreets and encouraged elsewhere in the city, and hand porterage supported.

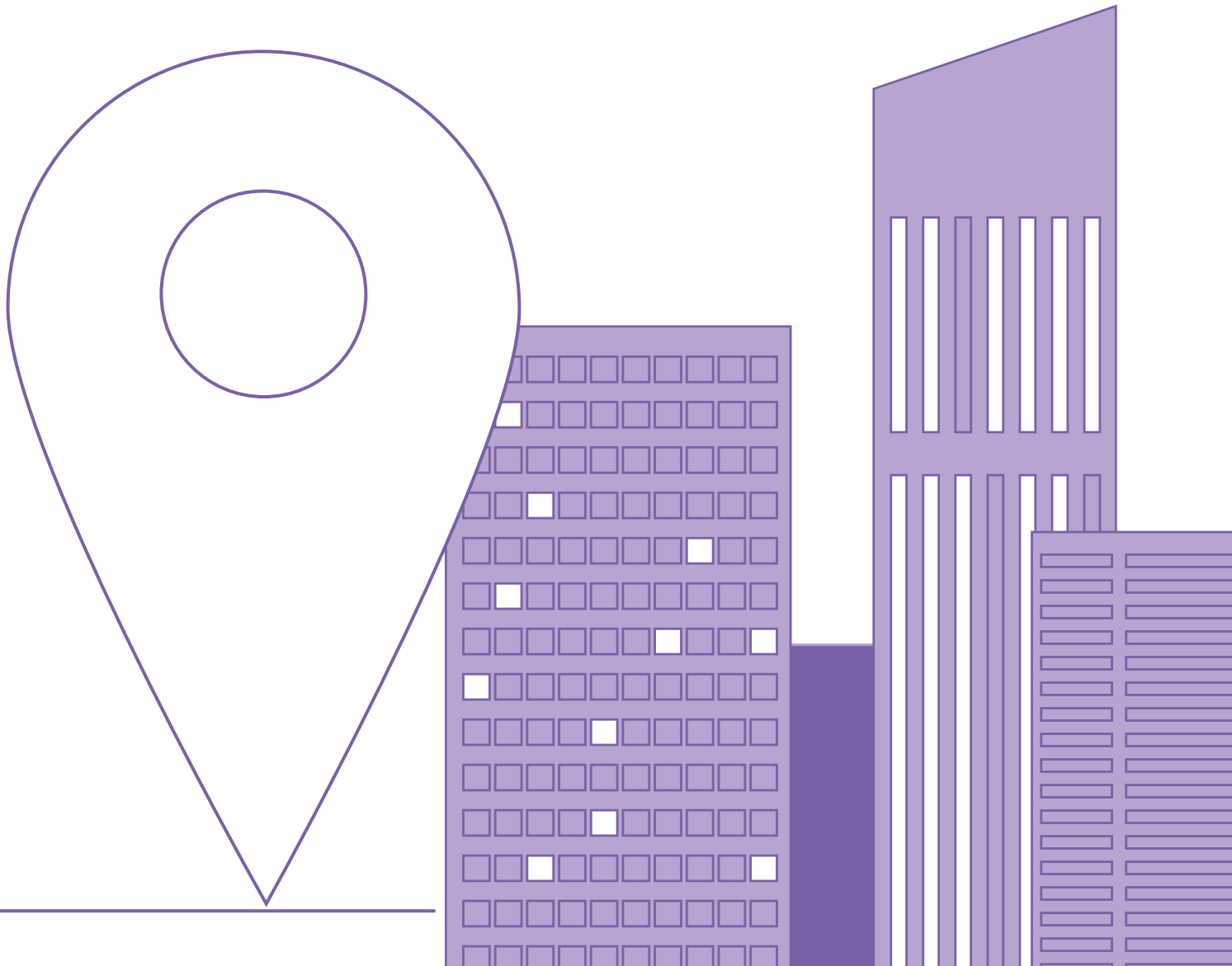
Managing Car Use

Many of the measures above should help to reduce car use, while respecting the need to retain access for disabled drivers. In addition, we recommend the introduction of experimental car-free days within the inner ring road (with exemptions for blue badge holders), with free buses. The review of all public parking in the city centre, proposed above, should determine the capacity needed and the appropriate charging structure. We recommend that the provision of car clubs is also reviewed, to identify opportunities to provide an alternative to car ownership.

A coordinated set of measures

As with the longer term strategy, these measures should be seen as an integrated package, in which the Council coordinates its work with that of others. The physical and regulatory proposals are illustrated further on page 45.

Figure 8F - A cargo bike in the city centre. Credit: IndieGo



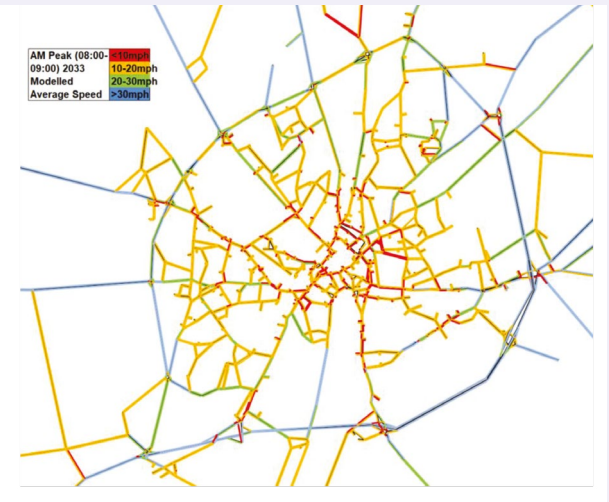
Section nine

Our proposals for the remainder of the Plan period

By around 2027 we can expect the Outer Ring Road to have been dualled between the A19 and the A1036. Capacity will still be limited by the use of roundabouts, but there will be space for more traffic. When the Poppleton Bar roundabout was upgraded in 2015, traffic through it increased by 20% in two years, but there was no reduction in traffic within the urban area[67]. If nothing else is done, the improved Outer Ring Road will simply attract more traffic, but the urban area will still suffer similar traffic and congestion levels. Only if positive action is taken will cross-city and longer distance traffic divert to the Outer Ring Road.

By 2037, most of the development envisaged in the Local Plan will be complete, and York's population will have grown by 20%. The Council estimates that travel times on York's road network will have risen by a third, and delays by two thirds, if nothing further is done[15] (Figure 9A).

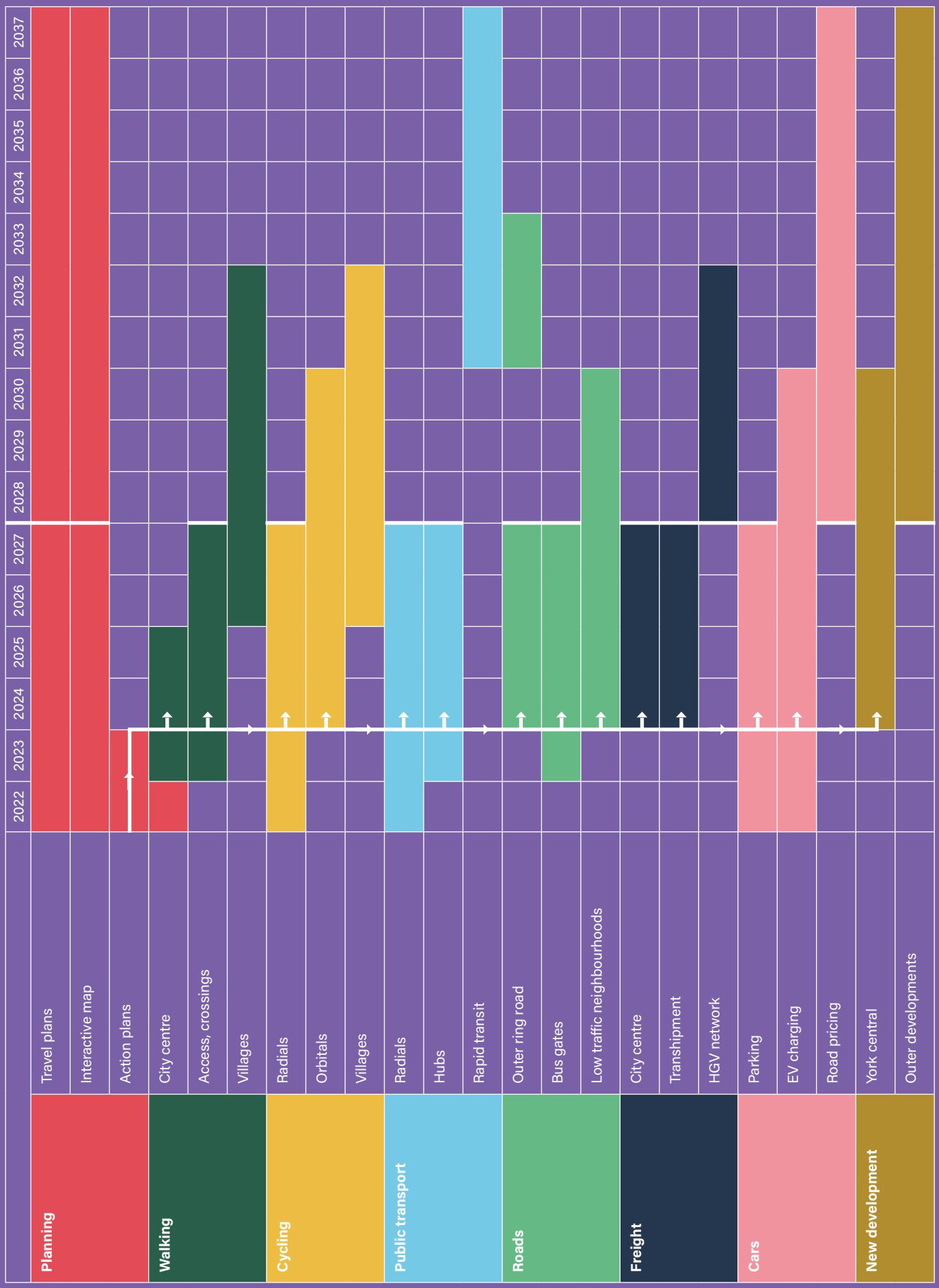
Figure 9A - Traffic speeds in York - 2035. Credit: The City of York Council



It is essential that this is avoided, and that action continues to achieve our targets for reducing carbon emissions, congestion and pollution.

The transport strategy will need to address the situation in both of these horizon years. But it must also be implemented sequentially in a way which achieves the targets which we have proposed in Section 5. As we indicate in Section 7, this requires a holistic approach, involving six mutually supportive programmes of action. It is difficult to be specific about the pace of implementation, since future demands are uncertain, and new transport options may well emerge. We therefore strongly recommend that the Local Transport Plan is reviewed in 2027, in parallel with an update of the Local Plan, to provide greater detail for the following decade. We illustrate a possible sequence for implementation in Figure 9B. We show our physical and regulatory proposals diagrammatically on page 45. The sequence of implementation shown there is purely illustrative, and would be determined by the more detailed plans advocated in Section 8.

Figure 9B - A possible implementation sequence. Credit: York Civic Trust



Reducing the need to travel

The campaign to promote carbon reduction and the programme of Travel Plans (Section 8) should be expanded and intensified. We would like to see all residential areas, schools and larger employers targeted at least once in the first five-year period. The impacts of the programme need to be monitored and rolled forward for two further five-year cycles.

We propose a review of all residential communities, to ensure that each has a dedicated communication and delivery hub with lockers (Figure 9C). These would enable residents to work and study locally, and reduce the costs and disruption of missed online deliveries. Each community should ideally have a local centre within twenty minutes' walk, with a good range of local retail, service, social and leisure facilities. This would support residents who are working or studying from home, and reduce journey lengths. In many cases these centres already exist, and the focus should be on procuring and supporting as full a range of services as possible. Where they do not exist, the Council should aim to identify suitable locations, include and protect the sites in the updated Local Plan, and facilitate development.

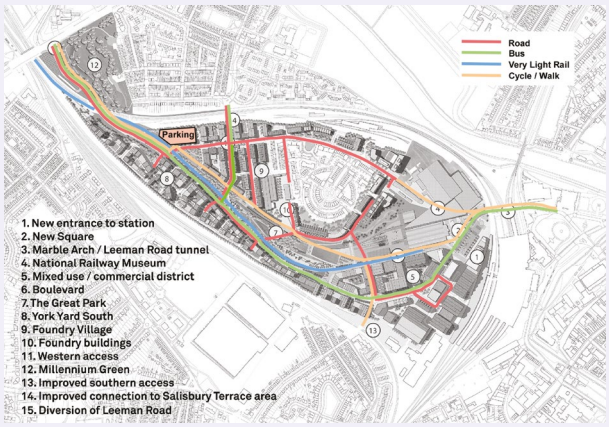
Figure 9C - A delivery hub. Credit: John Stevens

We hope that all major new developments will be designed according to our proposed Supplementary Planning Document (Section 8). We envisage each new community being located so that the city centre can be reached within twenty minutes by a dedicated public transport service. It should also be possible to reach suburban centres such as the University of York, retail centres, secondary schools and strategic sports facilities on foot, by cycle or by bus within twenty minutes. Each development should have a community centre and work hub, small scale employment, a primary school and appropriate health, leisure and retail services.

There is currently a debate on the minimum population and density capable of supporting these requirements. But many sites proposed in the Local Plan appear to be too small to support the range of facilities and employment needed for sustainability. It would be preferable to adopt an approach which combines infill development and fewer, larger new development areas. This should be reflected in the next update of the Local Plan.

Development in York Central should also be consistent with the Supplementary Planning Document. However, its central location allows it to be largely car-free. It should be designed to give priority to active travel, with a bus service in the residential area every ten minutes. It should have limited car parking. With the exception of provision for disabled people, parking and delivery points should be on the fringes, with streets designed for people (Figure 9D).

Figure 9D - York Central Street Plan. Credit: YOCO



Improving Walking and Cycling

The Council's strategic walking and cycling networks and priorities, together with responses to the interactive map (Section 8) will determine the programme of work. All actions should reflect the Council's hierarchy of road users[1] and government guidelines[43,62].

We recommend that the Council reviews its criteria for signalled and zebra crossings, so that more are provided; far-side signals would help increase clarity for pedestrians (Figure 9E). We suggest that all guardrails and barriers are removed unless they are essential for safety. Signing should be improved. Opportunities should be taken to widen footways to at least 1.8m. The Council should also use the anticipated powers to ban pavement parking.

Figure 9E - Most of these pedestrians cannot see the signal. Credit: Tony May

Within the city centre, footstreets should be progressively repaved to provide a continuous surface or additional dropped kerbs. We would like to see seats provided at 50m spacing, and better access negotiated to toilets. Designated north-south and east-west cycle routes through the city centre, clearly separated from pedestrians, should assist access for cyclists. Cycle parking should be expanded based on the action plan (Section 8). We would hope that the new riverside walkway between Ouse Bridge and the Guildhall will be completed later in this period, together with a new bridge to North Street (Figure 9F). Direct crossings for pedestrians and cyclists should be provided at all junctions on the Inner Ring Road, but with central refuges on wider approaches.

We propose that all radial routes should have continuous segregated cycle lanes, with appropriate facilities for right turning cyclists. Pedestrians and cyclists will have priority to cross side roads under the new Highway Code[42]. This could be reinforced by providing raised table crossings. We would like to see footstreets in more local shopping centres, with similar access for cyclists and disabled users to those proposed for the city centre.

More direct segregated cycle routes could be provided to areas such as Woodthorpe, Clifton Without and Huntington, all of which generate short distance car journeys which could readily be transferred to cycling (see Section 3). A greater focus will be needed on orbital cycle routes, to support more dispersed journey patterns. All barriers should be removed from off-road routes.

All villages should have direct segregated cycle routes to the city centre and to centres in outer York. E-cycles and e-scooters will be more widely available and will extend the range for active travel. The cycle network will need to be reviewed to ensure that they can be accommodated effectively, and their use regulated where needed.

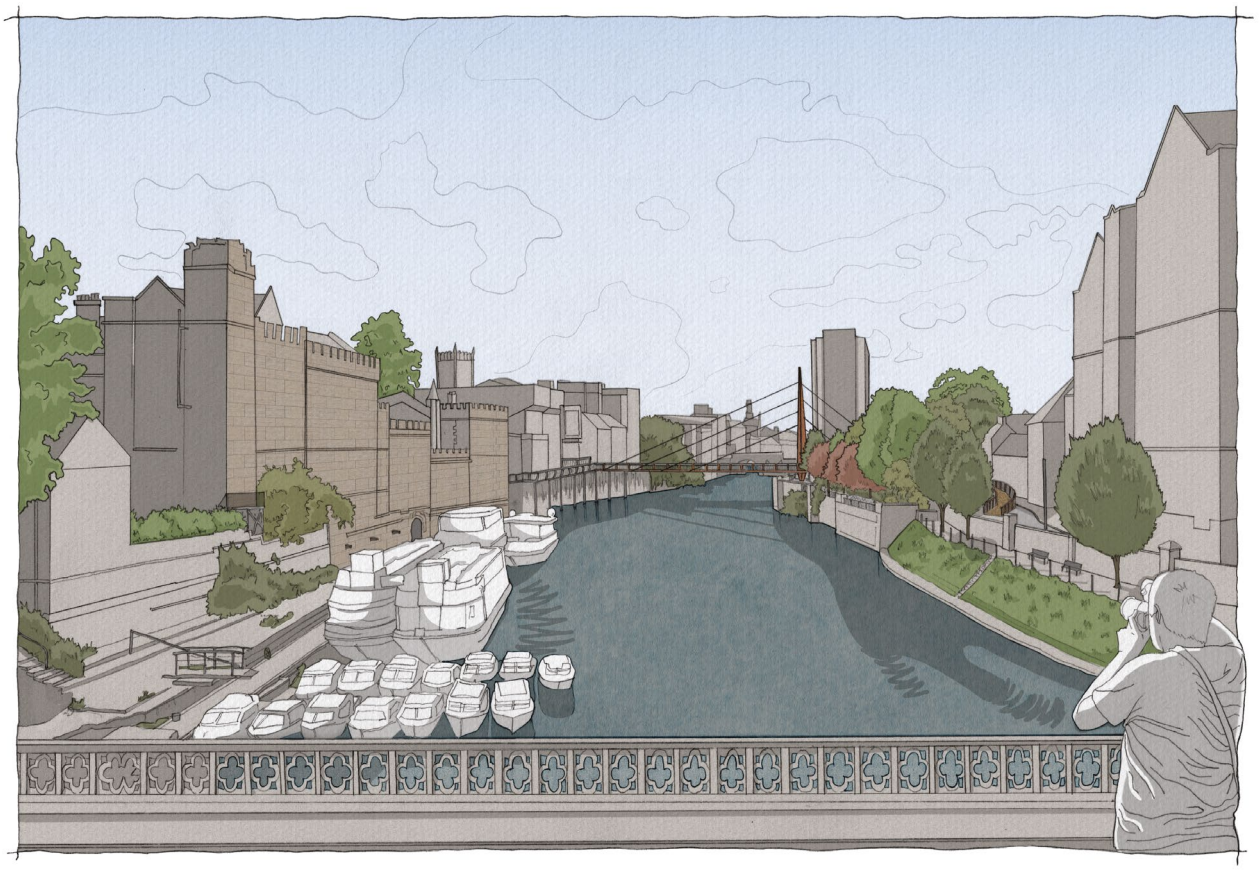


Figure 9F - 'Illustrative View from Lendal Bridge of a potential pedestrian and cycle bridge linking Coney Street and North Street Gardens.' Credit: BDP (www.bdp.com)

Improving Public Transport

The Council's review of bus accessibility and the responses to the interactive map (Section 8) will identify priorities for improving bus services, stops and shelters. The programme for redesigning the bus network should ensure that there are no significant residential areas with inadequate access. Bus services should, we suggest, run at least every twenty minutes during the day and ideally half-hourly on evenings and Sundays, with the last bus timed to support the evening economy.

A small accessible electric shuttle bus could be introduced through the footstreets between the station and car parks, offering an alternative means of transport, particularly for disabled users. New bus services could be provided to York Hospital and outer York centres. Additional orbital services could link park and ride sites to the larger villages, to major destinations in outer York and to York Hospital. Smaller villages could be served by demand-responsive micro-transit services[68] (Figure 9G).

There is strong evidence that rail, light rail and fast limited stop bus services (often referred to as bus rapid transit) have the potential to attract many more motorists than do conventional bus services. We expect Haxby Station to have been built, and possibly one at Strensall later in the plan period. We would like to see services on the Malton and Harrogate lines further increased, ideally to every twenty minutes. We recommend in addition an assessment of light rail and bus rapid transit to support the new developments in and close to outer York.

Figure 9G - A Demand responsive bus. Credit: Greg Marsden

Figure 9H - Very Light Rail Prototype, Coventry. Credit: Coventry Live

The Very Light Rail vehicle now being tested in Coventry (Figure 9H) may offer an appropriate technology. We show in Figure F on page 8 how such a service, combined with local rail lines, might over time be developed to serve new developments such as those proposed at Clifton Moor, Hammerton, Heronby, Langwith and Monk's Cross as well as the major inner and outer York destinations. This congestion-free network is clearly aspirational, but a start could potentially be made to fund one or two routes.

Figure 9I - Vehicle restricted shopping centre with cycle access - Norwich. Credit: DfT (2020)

Managing the Road Network

The road network needs to be reconfigured and controlled to ensure that cross-city and longer distance traffic uses the Outer Ring Road, by making through movements less attractive. The review of the role of the road network (Section 8) will determine how and where this is best done. It is possible that the Council will secure funding for dualling the rest of the Outer Ring Road later in the plan period. Remaining longer distance traffic should be diverted from inner city roads to take advantage of any such improvements.

Our proposals in Section 8 will already have removed through traffic from the city centre. This will result in a circulation plan similar to that in Ghent[69], but over a smaller area. Any further action would require a reassessment of the role of the Inner Ring Road.
We have proposed as a start limiting Gillygate to buses, taxis and emergency vehicles. We would like to see a 20mph limit on the inner ring road and all roads within it, reflecting their reduced role for movement.

We suggest that all the main radial routes into the city centre should be managed to hold traffic where queues are less disruptive and to free buses from congestion. The Council's real-time traffic management and communication facility should be extended to the full road network. These, possibly combined with road pricing (see below), should help ensure that all traffic which can do uses the Outer Ring Road.

Many secondary roads in the city are predominantly residential and were never designed for the volume of traffic that now uses them. Traffic levels and road design are intimidatory to cyclists and present barriers to pedestrians. We suggest that further Low Traffic Neighbourhoods are introduced to limit through traffic. Local centres on busy secondary roads should be redesigned with wider pavements, priority access for cycles and disabled people, altered road character, restrictions on through traffic and 20mph limits (Figure 9I).

Managing Freight

The proposed Freight and Logistics Manager (Section 8) could encourage all major businesses to develop a Delivery and Servicing Plan or a Logistics Company Plan. All such Plans should include support for conversion to low or zero emission vehicles. The Council could support these with an information and incentivisation programme based on the four Rs: Reduce, Re-time, Re-route and Revise mode[70].

We suggest that the Council and industry might jointly develop an agreed network which vehicles of over 7.5T would be expected to use, except for local access (Figure 9J). This network should link all key destinations to the Outer Ring Road but need not be fully connected within the urban area. Use of the network would be supported by signing, maintenance, and traffic signal control to give priority to freight movements.

Within the city centre we propose a 3.5T weight limit, supported by e-cargo bikes and one or more transhipment centres on the periphery. One possibility would be to develop a parcels transhipment centre at York Station. An audit should be made to enhance current loading bays in all district centres and business parks.

Any local and district centres which introduce access restrictions should adhere to the same time limits on loading bans as in the city centre. The effectiveness of the current Murton night-time lorry park should be assessed, and the possibility considered of a second lorry park to the west of the city.

Our target is for 50% of all deliveries to be by zero emission vehicles by 2037. This will require continued support for charging facilities for electric vehicles, support for e-cargo cycles for smaller loads, and a possible hydrogen fuel cell charging station for larger vehicles.

Figure 9J - Oversized lorry in Lord Mayor's Walk. Credit: Chris Polack

Managing Car Use

The campaign to promote carbon reduction and the programme of Travel Plans will help to reduce car use. So will the improvements proposed above for walking, cycling and buses. We also recommend targeted expansion of York's car clubs to areas with high car ownership or extensive on-street parking. An associated campaign could encourage residents to join car clubs rather than owning their own cars.

But if the Council's carbon reduction targets are to be achieved, a

20%

reduction in car use will be needed.

Any shortfall in this target will need to be met initially by further controls on parking. We propose that the charge for two hours' city centre parking should be set to encourage a family to travel in by bus and to reduce car use. The charge for five hours' parking should be retained at four times the two-hour charge. Surplus parking space should then be removed. Private operators of car parks, including those on Foss Islands Road, could be encouraged to adopt the same approach. We would like to see residents' parking zones extended, subject to residents' consent, to all areas in the city suffering extraneous parking.

But if the Council's carbon reduction targets are to be achieved, a 20% reduction in car use will be needed. Any shortfall in this target will need to be met initially by further controls on parking. We propose that the charge for two hours' city centre parking should be set to encourage a family to travel in by bus and to reduce car use. The charge for five hours' parking should be retained at four times the two-hour charge. Surplus parking space should then be removed. Private operators of car parks, including those on Foss Islands Road, could be encouraged to adopt the same approach. We would like to see residents' parking zones extended, subject to residents' consent, to all areas in the city suffering extraneous parking.

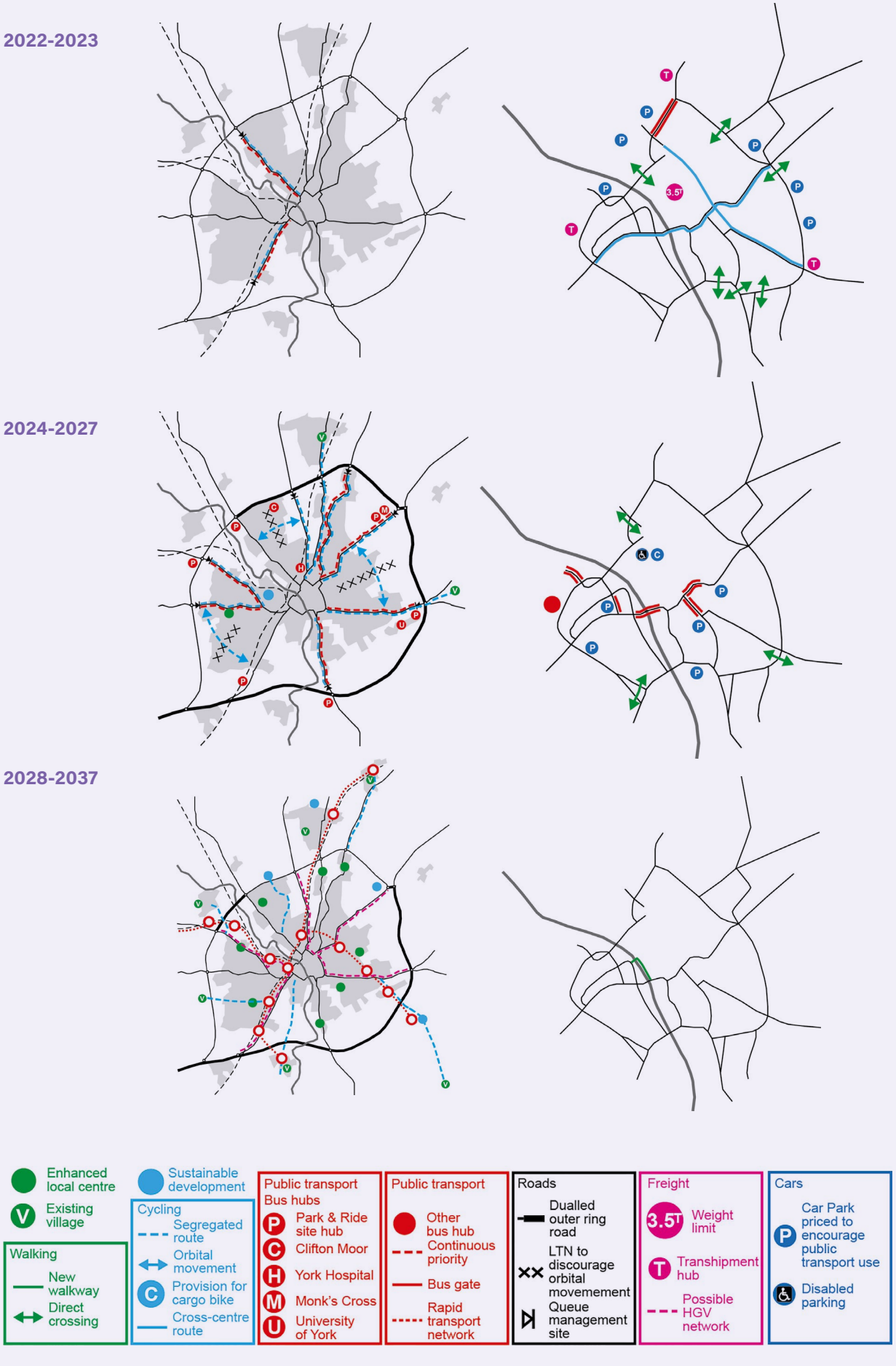
Major centres in outer York, such as Clifton Moor and Monk's Cross, are heavily focused on car use. We recommend a study to examine the potential of a workplace parking levy to finance alternatives and moderate car use. Parking charges alone may well not prove sufficient to meet the Council's carbon targets. The National Infrastructure Commission is already consulting on options for a national road pricing scheme[71]. We recommend in Section 8 that the Council initiates a study of local road pricing during 2023, consults widely on the options and related packages of measures, and completes the study within the following two years.

The Council should be ready to implement such alternative funding schemes by 2030. The revenues generated should be dedicated to financing the range of improvements to public transport and active travel proposed above. These will offer alternatives to car use and hence help offset the inequities which pricing could otherwise cause. Nottingham's use of workplace parking levies to finance light rail lines illustrates how this might be done[72].

The proportion of connected and autonomous vehicles will be rising and should support real-time advice and guidance. We expect the Council to take advantage of these technologies to optimise vehicle routing and congestion minimisation, though serious consideration must be given to the impact of autonomous driving. In parallel, the Council will be encouraging a switch to electric vehicles. These will not reduce congestion, and will still cause some pollution, but they will make a contribution to carbon reduction. We have made recommendations for a Council review of its programme for off-street electric vehicle charging to ensure that it provides sufficient, accessible, capacity[73]. It will be appropriate to invest in on-street charging facilities (Figure 9K) in suitable locations wherever charging is not possible off-street.

Figure 9K -Lamp post charging point. Credit: Ubitricity/Shell

Figure 9L - Potential application of physical and regulatory measures in the city and city centre by time period. [Note: these diagrams and the suggested sequence of implementation are purely illustrative.] Credit: Phil Bixby



Section ten

Financing the Strategy

Finance will be crucial to delivering the proposed transport strategy, and we recognise that it is constrained. It will be important to cost the programmes we propose, and to quantify the new funding streams required. However, we are not in a position to cost these proposals ourselves, and look to the Council for estimates.

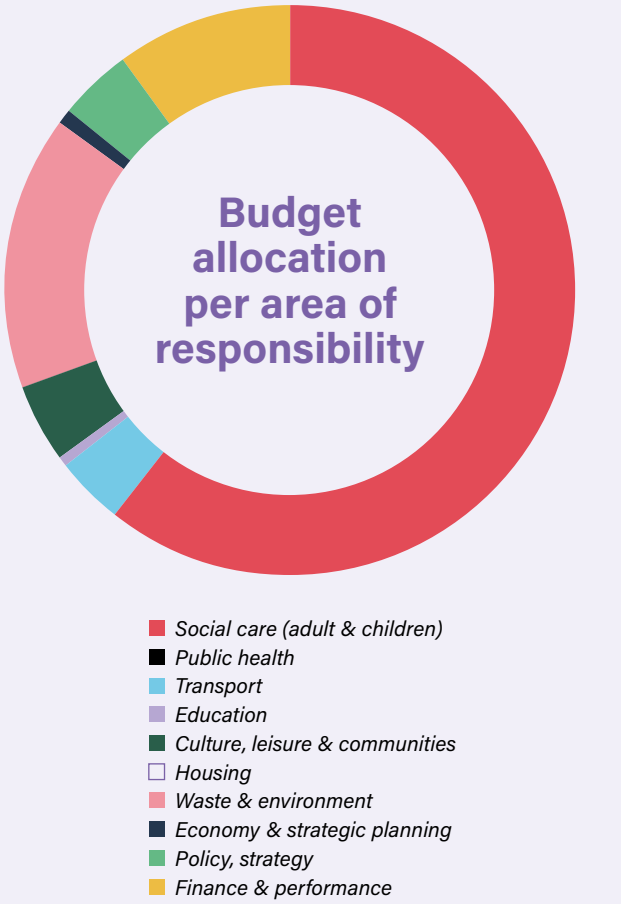
Unlike many other local government services, transport makes significant calls on both revenue funding and capital expenditure. Revenue funding supports activities such as behaviour change campaigns, safety training, subsidised bus services, concessionary fares and small-scale maintenance. Capital covers major repairs, lighting and signal renewals, and construction of new footways, cycle paths and roads. As the main local car park operator in the city centre, York enjoys a much larger transport income stream than most local authorities. Legislation requires the surplus parking income to be earmarked for transport expenditure, and we hope that priority will be given to supporting sustainable travel.

Central government has significantly cut revenue funding for all local authorities over the past decade. To illustrate this, in 2011, City of York Council received £56m from the Revenue Support Grant (RSG). In 2021, it only received £0.5m in RSG. York's revenue funding demands therefore fall primarily on the Council Taxpayer.

A secondary source, which is due to increase, is the Council's share of the nationally determined Business Rate. In parallel, the demands for children's and adults' social care have risen. The impact of Government cuts on York's transport expenditure over the last decade has been extreme (Figure 10A).

The Local Government Association estimates that Councils in England will face a funding gap of more than £5 billion by 2024 to maintain services at current levels[74]. It also notes that this figure could double, given the economic and societal uncertainty caused by the pandemic. Social care already represents over 60% of the Council's revenue expenditure. An ageing population and an increasing social care bill will further increase pressure on the Council's budget. Thus, revenue funding for transport will be further squeezed.

Figure 10A - CYC budget 2021-22. Credit: City of York Council



Capital funding is met by a mix of Council borrowing, Government allocations, Local Enterprise Partnership grants and planning gain from developments. Some Government allocations only give additional permission to borrow. Most external funding is scheme-specific and accords with the priorities of the funding bodies, not Local Transport Plans. However, the planned devolution for York and North Yorkshire should attract larger and more stable capital funding from Government. It will be important to identify the priorities for assigning such funds to transport projects.

Government funding is often provided through competitive bidding processes with very short timeframes, requiring scarce officer time. It typically focuses on a specific type of solution, such as cycle routes, electric buses or new stations. This can undermine strategic approaches to delivering Local Transport Plans. Rushed bids can lead to ill thought-out schemes, abortive expenditure, and adverse public reaction. Experience with the 2020 Emergency Active Travel Fund bids demonstrates the risks.

Councils can be winners if they have an agreed set of funding priorities for each transport mode and can demonstrate how these contribute to an overall Plan. In these ways they can successfully anticipate Government bidding opportunities and respond swiftly and with confidence. We hope that the proposals in our strategy, and the resulting Local Transport Plan, will provide the basis for future successful bids.

Infrastructure for new development has traditionally been funded through planning agreements. These are being replaced by Community Infrastructure Levies. Experience with the Council's use of planning agreements has been mixed. Several developers have failed to deliver promised bus services or support for active travel. Conditions on parking have not always been enforced. A new approach will be needed to make more effective use of Community Infrastructure Levies in association with the new Local Plan. Funding the necessary staff resources must be a priority.

Parking revenues are an important income stream for the Council. Our proposals for using parking charges to influence car use should result in increased revenue, even if the number of spaces falls. However, workplace parking levies and road pricing offer much more significant opportunities to generate additional funding. Our proposed studies of both (Section 9) should assess the scale of possible revenue generation, the potential to finance the full Local Transport Plan, and the economic and social impact.

In due course it may be possible to capture land value gain from new development more effectively, as in our European case studies. Urbanism Environment Design outlined an innovative approach in their 2014 submission "Uxcester Garden City", modelled on York and which won the Wolfson Economic Prize[75] (Figure 10B). This would offer a more effective funding approach than current arrangements for planning gain. But it requires Government to deliver the legislative framework.

The key message is that the Council needs to have an agreed set of priorities for funding for all modes.

These need to be shown to be cost-effective contributors to the overall Local Transport Plan. The Council must then be creative in maximising funding from both existing and new sources.

Figure 10B - Uxcester Garden City. Credit: URBED

Section eleven

Implementing the Strategy

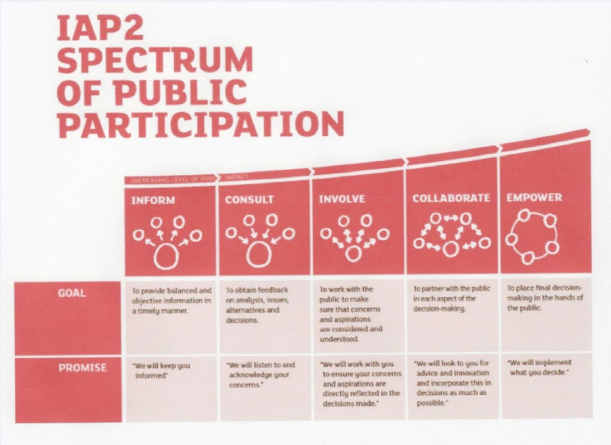
Involving the community

Most transport projects generate criticism. Opposition will be at its most acute immediately before a scheme is implemented. If this is not handled responsively, key elements of the strategy will be abandoned, and benefits lost.

The answer is to involve the whole community from the outset. This should include residents, businesses and civil society. European guidance[50] recommends seeking input on identifying problems, agreeing on objectives, suggesting solutions, selecting preferred approaches to implementation and assessing the results. Cities which have adopted this approach, like Dresden and Ghent, find that the resulting strategy is more effective, makes the city more attractive and liveable, and attracts less opposition[76].

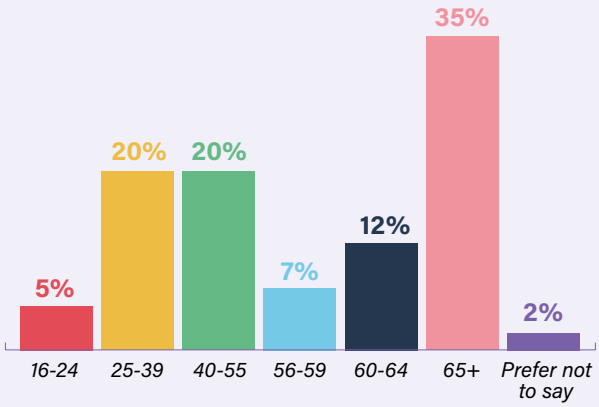
The International Association for Public Participation proposes five levels of engagement[77] (Figure 11A): inform, consult, involve, collaborate and empower. The Council's "Our Big Conversation" is a consultation exercise in which people are invited to respond to pre-specified questions[11].

Figure 11A - The five levels of engagement. Credit: IAPP



The Council received under 2000 responses to its June 2021 surveys, and a third were from those aged sixty-five or over (Figure 11B). There were concerns that some questions were leading, and that sensitive issues like parking charges and other charging mechanisms were omitted. Of particular concern, such consultations do not support a dialogue in which the needs of others are explored. As a result, the priorities may well reflect individuals' experiences rather than society's needs.

Figure 11B - Age distribution in Council survey. Credit: The City of York Council



Our preferred approach is a collaborative one, which involves a group of citizens meeting together to discuss what is needed, learn about options and seek consensus on solutions. Examples include the Cambridgeshire Citizens' Assembly[78]. We designed our Citizens' Transport Forum on this basis (see Figure 1D). We received 450 expressions of interest in participating and selected 100 members. They represent different age groups, from different parts of York and with different travel needs. The Forum has now met on four occasions. It has discussed the problems which York faces. It has proposed a vision for the city and objectives for the transport system. It has considered alternative solutions and reached a consensus on the way forward. The Forum's findings are all reflected in this report. Forum members see this as far more productive than antagonistic exchanges. The Council should extend this consensus-building approach to engage the wider population and the media.

Once the strategy has been developed, York might experiment with the final level: empowerment. The concept of co-creation involves the public in carrying out the detailed design of schemes. This has already been applied for designing low traffic neighbourhoods. It should appeal to the creativity of York's citizens.

Political and professional commitment

An international study in 1979 reviewed twelve successful interventions in urban transport[79]. Examples included the first traffic cell scheme in Gothenburg and the first road pricing scheme in Singapore. It concluded that success was explained by two factors. Each city had a political champion willing to provide leadership. It also had a committed senior professional who was able to deliver the chosen project. Without these two attributes, cities are less likely to succeed.

A 2002 report[80] concluded: "Fear of political repercussions often leads...authorities to commit only to those parts of the policy package...that pose little political risk." "Commitment to the whole package of policies... is what will ultimately bring about...sustainable urban travel." UK examples of the achievements from political champions and committed professionals working together include congestion charging in London, the tram network in Nottingham and the Beeline cycle network in Manchester (Figure 11C).

Figure 11C - Chorlton Cycleway – Barlow Wilbrahim Junction Visualisation. Credit: Courtesy of Transport for Greater Manchester

The European Local Transport Information Service website[81] contains over 200 case studies and demonstrates how politicians and professionals can jointly deliver good practice. Examples include Ghent's traffic circulation plan and Freiburg's sustainable communities (Figure 11D).

One key message is the importance of continuity and consistency. Copenhagen's land use and transport plan was first formulated in the 1970s. It has been maintained since then and provides the structure within which the transport network has developed[82].

When the 1988 Traffic and Parking Plan[83] was adopted and the footstreets introduced, York was seen as one of Europe's leading cities in urban transport. It still has a national reputation for its park and ride service. But it has lost its leading position, despite being a unitary authority with direct control over both planning and transport. It is notable that, while competing historic cities such as Bath, Cambridge, Chester, Norwich and Oxford already have updated Local Transport Plans, York does not.

It is easy to see why this has happened. York is politically marginal, and there is little consensus between political parties. There are now no transport professionals in the most senior managerial positions. It has become too easy to say why action cannot be taken, rather than to commit to what is needed. As a result, implementation is often delayed. If the bold actions needed are to be delivered, York must find a means of achieving political consensus, and ensuring that it has the right people to deliver it.

Figure 11D -Freiburg – Vauban Tram System. Credit: Harry Schiffer (www.eltis.org)

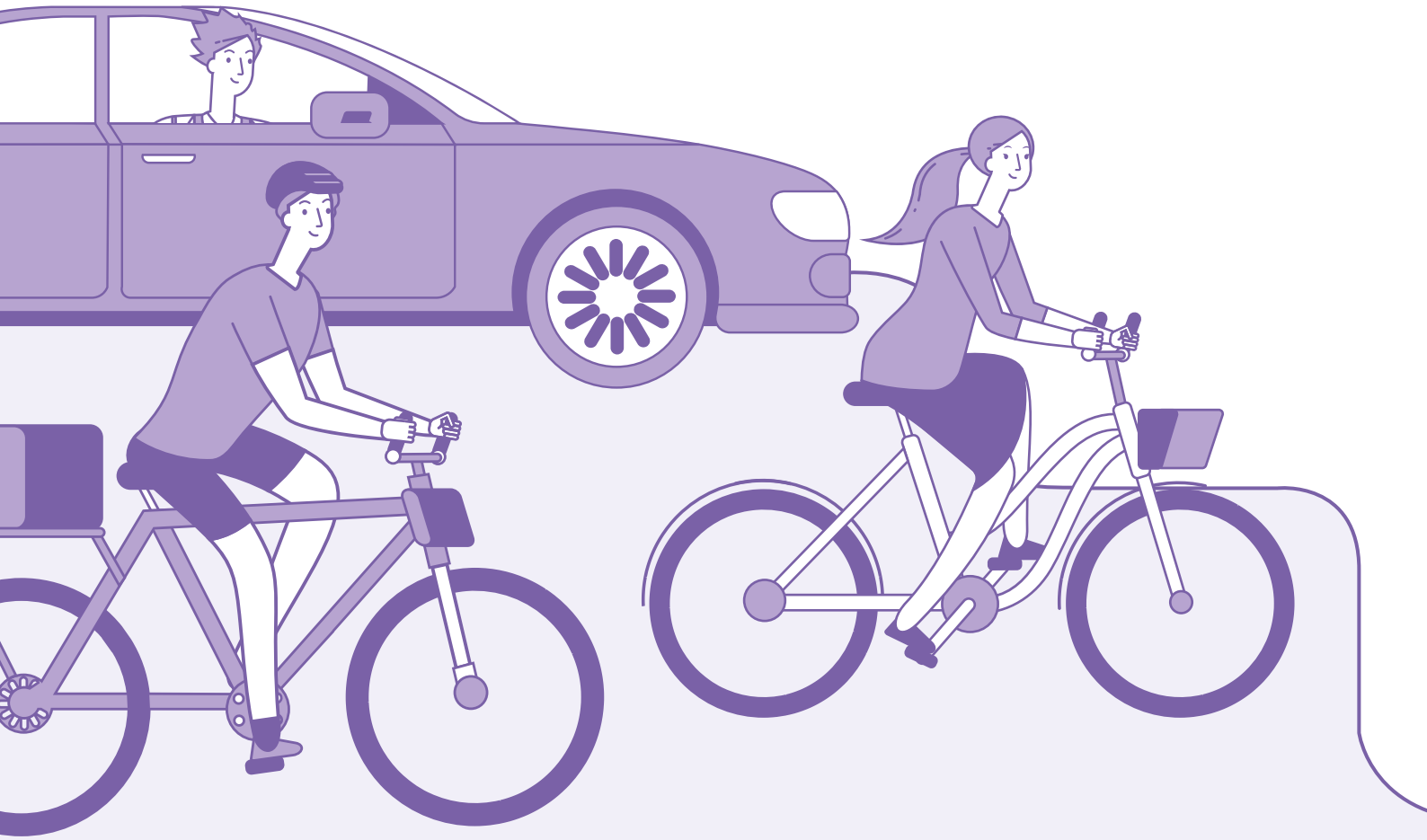
Staffing and resources

The Council's transport staff has been almost halved since the last Local Transport Plan in 2011. It now has only one or two with experience in producing Local Transport Plans. Most skills in bus service management lie with the operators, where managerial staff levels are also constrained and focused on commercial objectives. The Council has no expertise in freight and logistics. Transport tends to be seen as a narrow technical function rather than being integral to people's lives. A wider range of skills is needed.

It was against this background that we offered to help. We have three members with direct experience in developing Local Transport Plans. We offer expertise in bus and rail operation, freight, in planning for pedestrians and cyclists and in meeting the needs of disabled people. Through the Freight Forum, we can draw on the expertise of industry. But we cannot write the Council's Local Transport Plan. We hope that a collaborative approach will help the Council make the best use of the experience which we offer.

It sometimes appears that too many projects are underway at any time. Some have not been well implemented (Figure 11E). A smaller list of priority schemes for delivery might result in effective schemes being implemented more rapidly, with less time being spent on explaining why things cannot be done. There is also a case for more training in the latest professional practice.

Figure 11E Poor implementation in Bishopthorpe Road. Credit Martin Higginson



In practice the Council is heavily dependent on consultants. But it needs to be an intelligent client if it is to get the best from them. An alternative approach might be to pool staff with other local authorities (Figure 11F). West Yorkshire Combined Authority has a large team tackling very similar problems to York's. The proposed Mayoral Combined Authority for York and North Yorkshire could lead to the pooling of expertise. An elected mayor should also offer political leadership. But in many parts of North Yorkshire the needs are very different from those in York.

More staff will be needed for traffic enforcement. The police are currently responsible for most moving vehicle offences and pavement parking (Figure 11G). But police priorities lie elsewhere. In the near future the Council will be able to take enforcement action itself and retain revenue from fines. We would like to see that revenue used to finance an effective team of enforcement staff so that traffic regulations are respected, and safe and efficient operation of the transport network achieved.

Figure 11F New local government structures in Yorkshire. Credit: York Civic Trust.

Figure 11G Pavement parking in Monkgate. Credit: Roger Pierce

Conclusion

York suffers from serious problems of traffic congestion and pollution. While improved vehicle standards will reduce pollution, congestion is predicted to get worse. The target of being carbon neutral by 2030 requires a 70% reduction in carbon emissions from transport. Only around half will come from a switch to electric vehicles, and these will not reduce congestion.

We need therefore to change the ways in which we travel. We need to reduce the distance that we travel by a tenth and car use by a fifth by 2030. Much of this can be achieved without restricting activities.

If we do things locally, we will travel less, and walk and cycle more. If we make walking, cycling and public transport easier, faster, safer and more affordable, more people will choose not to drive. And all of these will help achieve our other objectives of improved public health and safety, enhanced access, greater liveability, a strengthened economy and better public realm.

But some changes will be needed in the ways in which we drive. We should move longer distance traffic to the upgraded outer ring road and reduce the size of lorries on inner city streets. We should apply the Council's own hierarchy of users consistently to the road network. If these between them do not deliver the required carbon reduction, or sufficient funding is not available for improving the alternatives, we will need to charge more for parking or road use.

Any future transport strategy will affect every one of us. It will influence our lifestyles, our working patterns, our travel choices and the feel of the city.

If we can get the balance right, it should be possible to offer uncongested travel for the journeys which would be hard to make without a car. And we can help ensure that York "benefits from improvements to its environment, celebrates its heritage, ensures that all its citizens enjoy a healthy, rewarding lifestyle and achieves the economic vitality necessary to support all of these" to quote our vision for York.

But we need to act now if we are to achieve our carbon targets. For too long, York has put off the difficult decisions.

We need to stop finding reasons for inaction. We are not attempting in this report to say what must be done. Instead, we offer a coherent approach and a set of suggestions for what might be done. We hope that, in doing so, we can initiate discussion and encourage consensus on the Council's emerging Local Transport Plan.

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The Trust is open to everyone who wishes to enhance and protect York's architectural and cultural heritage, to champion good design and to create a future for York as leading and internationally renowned city.

Our vision is 'promoting heritage, shaping tomorrow'. Our Mission is to:

- Protect and contemporise York's unique heritage;
- Champion our environment and its sustainability;
- Encourage the city's economic development in line with its character;
- Engage with all sectors of the community.

To find out more about the Civic Trust please contact us at **info@yorkcivictrust.co.uk**.

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