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The following evaluation of the York scenarios aims to give an indication of each approach's ability to limit growth in congestion, informed by regional study evidence.

Scenario 1 – Do Minimum (Reference Case) – This has no further significant investment in the transport network post LTP2 and relies on the demand for transport and the network's available capacity coming to a 'natural balance'. It is therefore unlikely to have any direct effect on reducing congestion, which will be close to the predicted 28% increase in traffic levels by 2021, due to expected development in the city generating more transport demands.

Scenario 2 – 'Smarter Choices' – The congestion relieving effects can be significant if investment in them is sufficient and sustained. The Department for Transport's (DfT) document "Smarter choices: changing the way we travel", showed that 'smarter choices' (or 'soft measures'), could have a positive impact on traffic and congestion levels. These measures, which include school travel plans, workplace travel plans, personalised travel planning, tele-working, public transport marketing, cycling facilities and car clubs, could reduce peak hour urban traffic by as much as 21 per cent, although in York the future impact of this is likely to be reduced by over half, as some 'smarter choices' measures have already been carried out. Furthermore, research by the DfT showed the impact of these could be greatly enhanced by complementary demand management policies.

Whatever improvements are made to facilities to encourage use of public transport, walking and cycling (York has now achieved 'Cycling City' designation), there is a great reluctance for motorists to consider other modes of travel unless there is an overwhelming perceived advantage in doing so (in terms of time, cost, conscience, comfort and combinations of these issues). Consequently, although 'smarter choices' have the ability to achieve a high degree of modal shift they are usually implemented as part of a package of other measures and require a continuous and significant level of (revenue) investment over a long period to achieve their full potential. If implemented solely, around a 3% reduction in congestion below that predicted in York by 2021, might be achieved.

Scenario 3 – Continuation of LTP Approach will continue to achieve some reduction in congestion, but is likely to be less successful than the first LTP (no net increase) and LTP2 (limited to 7% increase in traffic growth) as, although it is likely that a balanced package of measures will be continued, the majority of affordable measures that could be implemented, would have been. Overall it might achieve around a 5% reduction in congestion below that predicted by 2021.

Scenario 4 - Non-Motorised Transport Infrastructure Improvements will provide the most healthy lifestyle options for people to travel and continue the work that will have been done through York's Cycling City programme. It's impacts will be limited however and it may only achieve a 1% reduction in congestion below that predicted to 2021 .

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Scenario 5 - Road based Public Transport Investment (inc. Park & Ride) will provide more capacity in the bus network and improve quality, frequency and reliability of buses as well as improve the waiting environment for passengers thereby capturing passengers that may otherwise not use public transport. This might achieve a1-2% reduction in congestion below that predicted to 2021.

Scenario 6 - Investment in Rail - As recent studies have shown rail services to be under utilised, this could realise the current latent demand for rail travel, particularly commuting by rail. Investments could be directed to improving heavy rail services or to new light rail technology such as tram-train. However, this is likely to be very expensive to implement and might achieve a 5% reduction in congestion below that predicted to 2021.

Scenario 7 – Extended Conventional Demand Management - This is unlikely to have a significant impact on reducing congestion on its own and might achieve a 1% reduction in congestion below that predicted to 2021. However it may enhance the ability of other scenarios to reduce congestion.

Scenario 8 - Workplace parking charge will act as a deterrent to driving if charged directly to the motorist choosing to park at the workplace. However, the charge may be absorbed by employers and not passed on to employees. Also it will not work in isolation particularly if no other choices for travel are available. This might achieve a 5% reduction in congestion below that predicted to 2021.

Scenario 9 - Road User Charging Charge Whilst LTP2 currently considers that the use of 'Road User Charging' (RUC) within the period of the plan is not a priority at the present time (neither directly or through Workplace Parking Levies), evidence suggests that with continued economic growth the demand for travel will increase continually if it is not tackled. It is also becoming increasingly clear that Government sees RUC as one of the main options in a package of measures to address the issue of traffic congestion across the country. Information on other cities' progress in implementing Road User Charging and its capacity to attract investment is shown at Annex Af.

Whilst we have no experience in York of RUC schemes it would seem that there are two distinct types. The first of these seeks to apply sufficient charges to deter drivers from entering the city and recoup the costs of operating such a scheme. The alternative scheme seeks to do the same but applies a higher charge in order to fund other improvements to encourage the use of sustainable forms of travel.

There are a number of road pricing mechanisms including, cordon or zone charging, distance based charging, time based charging and most popularly congestion charging as used in London. The different mechanisms can use a variety of ways of collecting the charge such as toll booths, number plate recognition and electronic fee collection via smartcard or in car satellite positioning. Payment of the charge is usually by a variety of means but the favoured mechanism is via electronic means such as the internet or by direct debit.

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A cordon based approach was looked at in the early 1990s using the Council's early Saturn model. It looked at two alternative cordons, one just outside the inner ring road and one just outside the outer ring road. The effect of both was found to be broadly similar with positive results based on a £1 one way charge to cross a cordon. The introduction of an outer cordon has the potential to reinforce the message to motorists to use bus services or Park & Ride, once the additional expanded 'Assess York' sites come on stream. To maximise the deliverability of this solution, the Park & Ride sites would all be located within the outer ring road which raises questions about the proposed A59 Park & Ride site beyond it.

A 2006 study looked at one form of zone charging which involved the introduction of tolls on the three city bridges and the key findings were:

- Without tolling there is a significant worsening of the situation with 2021 traffic levels are nearly 25% higher than 2005 and the time spent travelling on the network increasing by some 50%.
- The introduction of £1 or a £5 toll on the three City bridges does not significantly reduce the overall number of vehicles on the network.
- A £1 toll displaces a proportion of drivers from the centre and results in a small reduction in the overall vehicle delay on the entire network.
- A £5 toll displaces a greater number of drivers but the overall effect is to increase the overall amount of time spent travelling by vehicles on the network and the net distance travelled.
- The reductions in delay savings in the City Centre are effectively cancelled out by increases in delay at outer junctions and increases in overall journey distances.

Although road user charging is most likely to capture traffic inbound to and through the city, it will not work in isolation, particularly if no other choices for travel are available. The Committee heard about the Cardiff PPP and Manchester TIF schemes which both presented models of up front major public transport improvement investment, prior to the introduction of actual RUC, which then contributed to paying off the investment. And, whilst introducing a road user charge might achieve a nominal 8% reduction in congestion below that predicted to 2021, it could be expensive to implement for a small city like York. Also the percentage figure quoted should be viewed cautiously as the impact of RUC will depend on a whole series of factors i.e. the type of charging applied, the charge levels, if varied by time of day or week and what exemptions are given e.g. disabled, freight, low income groups etc. This can be seen with the London scheme, where evidence given to the Committee showed the initial zone reduction was a massive 26%, which was then reduced by the concessions made when it was expanded to the West End of London. Nonetheless, it still has a very positive effect, with significant reductions in traffic, congestion, pollution and accidents and contributing major funds to improve public transport services (£100m of the £123m annual income), see also annex Ai.

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Scenario 10 - Highway Infrastructure Investment could relieve congestion by providing extra capacity, but might also only be a short term fix as suppressed/induced demand is released once the infrastructure is in place. Highway infrastructure investment will have some benefits for road-based public transport and may optimistically achieve around a 10% (local) reduction initially, but it could lead to an increase overall in congestion in the longer term. It is also particularly difficult to obtain Government funding under current assessment rules for the very large costs involved.

Optimal Combination Solutions For Addressing Congestion

The Committee recognised that the scenarios detailed in paragraphs 52-66 above, could be introduced individually or in combination to provide differing levels of congestion relief and that the key issue was to identify the optimal and most affordable combination of those scenarios to either widen travel choice or manage the demand for travel. An initial assessment of these combinations was carried out and these have been listed in order of increasing ability to tackle the issues – see Annex H. The two final scenarios (13 & 14) ultimately present the optimal solutions for addressing congestion either without a road user charge element (scenario 13) but with no other funding mechanism identified to deliver it, or with road user charging (scenario 14) within the TIF funding framework, but subject to being able to demonstrate it is practically and financially deliverable.

Scenario 11 Tackling Inward Commute - Aimed at capturing longer distance commuters on the way in to York and discouraging travelling by car through the city. This does little to encourage people to switch to more sustainable forms of transport for shorter journeys. Might achieve around 8-10% reduction in congestion.

Scenario 12 Easing Citywide Movement - Focussed on reducing within-city commuting trips by car by encouraging people to switch to more sustainable forms of transport for shorter journeys, but does little to capture inward commuting traffic, which forms a significant part of the overall traffic flow. Around a 7-8% reduction in congestion might be achieved.

'Optimal' Scenarios 13 & 14 - Both scenario 13 and scenario 14 have been postulated as packages of various measures beyond the scope and scale of an LTP programme that would be the most effective at tackling congestion in York in the long–term. Both scenarios comprise a similar aspiration for the development of non-motorised transport (walking and cycling) and road based public transport (buses) to encourage greater use of more sustainable forms of transport for journeys of up to five miles and investment in York's rail network (albeit at a higher level in Scenario 14) for longer distance commuting. Continued investment in a comprehensive programme of 'smarter choices' measures will maximise the ability of the above to achieve a significant modal shift away from the use of a private car. In addition to widening transport choice, both scenarios include the introduction of a strategic and coordinated programme of conventional demand management measures, such as car park pricing; highway space reallocation and more effective use of traffic signals to deter traffic from the city centre.

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It is envisaged that the implementation of scenario 13 may possibly achieve a modal shift in the range of around 7% - 12% in the city centre, though no means of funding this scenario have been identified.

Where scenarios 13 and 14 differ, is in the much higher level of investment in highway infrastructure and rail (e.g. for the introduction of a tram-train network) in scenario 14 in conjunction with the application of road user charging (RUC) within the TIF framework, to fund the whole package. RUC could be applied either directly, or by the introduction of a workplace parking levy or in combination (with exceptions to avoid double charging) and could be used to raise capital funding (through TIF or otherwise) and/or as a revenue stream to increase subsidy to public transport.

It is envisaged that the implementation of scenario 14 may possibly achieve a modal shift in the range of around 15% - 20% in the city centre, subject to the significant uncertainty at this stage of how much RUC can actually deliver.

Even though both scenarios might achieve significant modal shift, it may not be possible to completely stem the rise in congestion in the city if the city develops as anticipated. However, they are considered to be the most radical solutions over and above a ‘typical LTP package’ for minimising the impacts of congestion in the future and go the furthest towards achieving that ambition and with a potential funding mechanism (scenario 14).

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Scenario No.	Title	Brief Description	Mechanism & output	Implications	Responsible organisation(s)
1	Do Minimum	No further investment in the transport system other than already committed schemes. (i.e. end of LTP2)	Reliant on 'natural balance' to occur. As the demand on the road network increases the 'peak spreading' will occur increasing travel times for private and public transport to an unacceptable level.	Unacceptable increases in travel time would inhibit economic growth.	CoYC
2	'Smarter Choices'	Marketing, publicity and personal travel planning to make people more aware of transport options available	Seeks to make people use what we have in a better way, but doesn't increase the capacity of the transport network	Low cost (£25,000 - £250,000 per year overall revenue). Unlikely to have any quick-wins, but has achieved significant modal shift, over time where used. Full benefits may not be realised without other investment to improve capacity in the network. Unlikely to achieve sufficient congestion relief to prevent economic growth being inhibited.	CoYC
3	Continuation of LTP Approach	Continue policies and investment levels currently in Local Transport Plan 2006-2011	Package of measures to meet shared priorities	Some successes, but limited for achieving much more at similar levels of investment, so unlikely to achieve sufficient congestion relief to prevent economic growth being inhibited.	CoYC (through LTP settlement) DfT (for LTP settlement awarded)
4	Non-Motorised Transport Infrastructure Improvements	High level of investment for walking/cycling, including new river crossings but minimal investment elsewhere	Completion of strategic cycle network and links (including secure storage) plus improved pedestrian environment to facilitate more 'healthy travel'. Supplement infrastructure with education and training.	Unblocking of barriers to increased cycling / walking within the city, but unlikely to alleviate longer distance commuter / through traffic, so unlikely to achieve sufficient congestion relief to prevent economic growth being inhibited.	CoYC Sustrans Cycling England Regional Transport Board Other funding agencies

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5	Road based Public Transport Investment (inc. Park & Ride)	High level of investment for improved public transport services (buses) and infrastructure, but minimal investment elsewhere	Improved infrastructure, including interchange facilities further P & R sites and better bus stop facilities by CoYC, together with service improvements, including integrated ticketing, by bus operators through use of voluntary/statutory quality partnerships and / or statutory quality contracts. Potential for guided bus route(s).	Significant step-change required to make PT more attractive for increasing patronage, but reticence by operators may hamper aspirations. Also reliant on increased and continual revenue support for non-commercial services. Could provide significant level of congestion relief	CoYC (infrastructure and quality contracts) Bus operators (services through partnership(s) and/or contracts) Leeds City Region (for connections to other towns/cities)
6	Investment in Rail	investment in rail services and infrastructure	Coordinated approach to developing all forms of rail based public transport, including introduction of more heavy rail or tram/train services particularly if links to LBIA improved.	Reliant on outcome of trials and procedures for completing rail projects. Could remove more longer distance commuting traffic than 5	CoYC (infrastructure and quality contracts) Network Rail Train operating companies Leeds City Region Regional Transport Board
7	Conventional Demand Management	Implementing various demand management measures to make city (centre) less desirable to access by private car.	Mixture of more radical parking policies, access restrictions and reallocation of road space to more sustainable forms of transport, together with technological development such as TCMS to ease traffic movements.	Big ‘stick’ and some ‘carrot’ (opportunities for improving more sustainable modes on reallocated roadspace). Can not use in isolation so unlikely, in itself, to achieve sufficient congestion relief to prevent economic growth being inhibited, unless more sustainable mode improvements introduced.	CoYC

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8	Workplace parking charge	Workplace parking levy	Workplace parking charging to deter commuting to city centre workplaces by car. Revenue raised by levy used to fund other improvements.	Big 'stick' but no 'carrot'. Even if seen as a deterrent it may be perceived by motorists to be an 'acceptable penalty'. Cannot use in isolation so unlikely, in itself, to achieve sufficient congestion relief to prevent economic growth limitations. Possible implications on employment locations and re-locations Need to improve other modes before introducing. Commuter orientated charge (into and within the city). Could encourage greater take-up of workplace travel plans. Exemptions. Relatively quick to implement.	CoYC Employers (depending on no. of staff at workplace) Leeds City Region Regional Transport Board
9	Road User Charging	Area / Cordon based road user charge	Area / Cordon charging zone to discourage through-city travel by private vehicles. Revenue raised by charge used to fund other improvements.	Big 'stick' but no 'carrot'. Even if seen as a deterrent it may be perceived by motorists to be an 'acceptable penalty'. Cannot use in isolation so unlikely, in itself, to achieve sufficient congestion relief to prevent economic growth limitations. Possible implications on employment locations and re-locations Need to improve other modes before introducing. Could discourage cross city movements Encourages more use of Park & Ride services Will require extensive monitoring and enforcement apparatus and procedures. Exemptions. Could have long lead-in period.	CoYC DfT (for allocating TIF funding) Leeds City Region Regional Transport Board

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10	Highway Infrastructure	Implementation of major highway projects such as Access York Phase II (incorporating ORR dualling) and freight consolidation centre	Major highway investment, favouring predominantly private motorised transport, but with some benefits for road based public transport.	Provides extra traffic capacity on routes around the city, thus making them more favourable than through city routes for cross-city movements. Bus priority on key radials will improve journey reliability. Consolidation centre will facilitate more efficient freight deliveries to the city centre. Significant removal of longer-distance commuting / through traffic in city centre, hence reduces congestion, but does not achieve much transference to more sustainable modes for shorter journeys.	CoYC DfT for awarding Major Scheme Bids Leeds City Region Regional Transport Board
Combination Scenarios					
11	Tackling Inward Commute	Combination of Scenarios 2, 5, 6, 8, 9 & 10	Heavy investment in Park & Ride and other road/rail public transport, together with workplace parking levy and/or road user charge and Access York Phase II	Provides extra traffic capacity on routes around the city, thus making them more favourable than through city routes for cross-city movements. Bus priority on key radials will improve journey reliability. Consolidation centre will facilitate more efficient freight deliveries to the city centre. Significant removal of longer-distance commuting / through traffic in city centre and some car borne 'within' city commuter trips, hence reduces congestion, but does not achieve much transference to more sustainable modes for shorter journeys.	CoYC DfT Bus operators Network Rail Train operating companies Leeds City Region Regional Transport Board Employers
12	Easing citywide movement	Combination of Scenarios 2, 4, 5, 7, 8 & 9	Heavy investment in Park & Ride and other road based public transport, together with city centre demand management / traffic management measures, workplace parking levy and/or road user charging and Access York Phase II.	As 11 but more focussed on providing more sustainable and healthy options for shorter distance travel	CoYC DfT Bus operators Network Rail Train operating companies Leeds City Region Regional Transport Board Employers

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13	Optimal Combination with Charging	Combination of Scenarios 2, 4, 5, 6, 7, 8 or 9 & 10	Broad spread of improvement and extensive demand management measures.	Optimal combination of 11 & 12 to achieve maximum congestion relief. Most likely scenario to attract TIF funding for the significant investment required. Charging element could influence economic growth (this needs examining).	CoYC DfT Bus operators Network Rail Train operating companies Leeds City Region Regional Transport Board Employers
14	Optimal Combination without Charging	Combination of Scenarios 2, 4, 5, 6, & 7	Broad spread of improvement measures with some demand management.	Optimal combination of elements in scenarios 1-9 but without any form of charging road users (other than through general parking prices) for the congestion they may cause. Will need to source funding streams other than TIF for the substantial investment required as unlikely to be eligible for TIF funding, and may not be deliverable otherwise. Unlikely to be a significant disincentive to use of private transport within the city.	CoYC DfT Bus operators Network Rail Train operating companies Leeds City Region Regional Transport Board Employers

Notes

1 **Each subsequent scenario increases in cost/complexity/deliverability to preceding scenario(s).**
2 **Each scenario and measure therein should be assessed for user affordability.**