CITY OF YORK COUNCIL

**Executive** **17 January 2006**

Report of the Director of Environment and Development Services

**York Central Transport Study**

## Introduction

1. This Executive report informs members of the results of the Transport Study undertaken as the first stage in the development of possible transport improvements needed for the York Central site. The study considers the physical measures required to allow access to the development and identifies the transport implications of the proposals on areas adjacent to the site and citywide. The solutions suggested in this report are indicative and will need considerable further development to address the changing circumstances which will arise during the 10 to 15 years of the projected programme.

2. The Executive report together with the transport study are scene setting documents which will be used to inform more comprehensive work in the future when precise development options are being prepared. It should be noted that the detailed transport proposals for York Central will be prepared by the developer, in consultation with the Council, as part of the master plan proposals.

## Context

### York Central Development

3. The York Central site is located in the centre of the city to the west of the York rail station. It is a brownfield site currently consisting mainly of railway uses, and comprises a site which provides the opportunity for a sustainable development adjacent to the city centre and rail station. A significant proportion of the city's forecast growth in employment and housing requirements could be accommodated at York Central, which will improve accessibility and sustainability within the city centre. On the basis of information currently available there are approximately 30 – 35 hectares of developable brownfield land with the potential to accommodate up to 3,000 dwellings and a minimum of 100,000 square metres of commercial space. The land is currently in a number of different ownerships and development is severely restricted by poor road access. The objective of the transport study is to identify options to address these access issues.

4. The study has investigated the projected transport implications of the development of the entire site. However, it should be noted that, the size of the development and the anticipated phasing of the construction, will mean that implementation of many of the transport measures would be phased over a period of 10 to 15 years.

**Study Brief -- General**

5. The brief to the Consultant for the Transport Study included the following specification for the requirements of the report. The Council required transport solutions to the site which:-

- Meet a 20% modal share limit for drivers arriving to work at the York Central site by car;
- Promote connectivity between York Central and the walled city, with particular emphasis on cycling and walking, to contain trip generation and traffic congestion;
- Promote connections between York Central, the Railway Station and the proposed transport interchange to take advantage of sustainable public transport links to the site;
- Protect the rail infrastructure for both present and future uses including station car parking, taxi facilities, drop off points and short stay parking;
- Promote connectivity between York Central and the riverside area, with links to the riverside walk into the City Centre;
- Serve the site in ways that will minimise the impact on the highway network and air quality beyond the immediate vicinity of the development;
- Reduce reliance on the car;
- Provide opportunities for dedicated public transport corridors to serve the city centre and wider city; and
- Promote connectivity to the surrounding areas by foot and cycle.

Further details of the brief for the study are included in the Background section below.

**Summary**

6. The study was undertaken by Faber Maunsell between January 2004 and November 2005. This Executive report summarises the key issues raised by the study and provides a commentary on the findings. The executive summary of the report is attached as Annex 1 with the full report available in the Members' Library.

7. The study included the building or upgrading of a number of transport and Air Quality simulation models which were than analysed to enable the preparation of the recommendations included within the report.

8. The report and the background analysis work included:

- The preparation of an updated SATURN Highway simulation model for the entire City including the developments identified in 4$^{th}$ set of changes to the Local Plan. The highway model was subsequently used extensively by the Council to prepare the Local Transport Plan and Outer Ring Road improvement strategies.

- The testing of access options using the highway simulation model to assess the effect of the development on traffic flow across the city.

- The building and validating of a Public Transport model for the City to enable the modal split values and bus priority measures to be assessed.
- The preparation of an Air Quality model for the Air Quality Management Area to establish the consequences of future developments on the City.
- The verification of the technical feasibility of the proposed access points to the site as identified in the York Central Planning Brief, including the bridges across the railway and the preparation of outline designs.
- The preparation of costing information for the construction and operation of the public transport options for appraisal purposes.

9. The following key conclusions have been reviewed against the emerging Local Transport Plan and Outer Ring Road improvement proposals. A summary of the conclusions are listed below followed by the City of York Council officers' commentary in brackets:

- Accesses proposed at Holgate Park and Queen Street only. (Considered premature at this stage to rule out a potential access at Water End owing to Public Transport benefits of this route)
- Holgate Road Link to Queen Street Access not required. (Agreed)
- Access restrictions on Leeman Road – proposed due to projected increased through traffic. (Agreed – a public transport route through the site from the residential areas affected would need to be established and alternative routes for existing users of Leeman Road identified.)
- Access restrictions on Station Rd to allow space for bus interchange. (Further work will be required to establish consequences on the wider city network and compatibility with LTP2 proposals)
- Bus interchange to east of station. (Size of site too small – additional options to be investigated)
- Demolition of existing Queen Street bridge not considered. (Reduction in long term maintenance commitments and improvements to the setting of the City walls and station suggests that this option should be considered further.)
- Bus route on existing highway from proposed A59 Park and Ride site is the most cost effective. (Agreed)
- Qualitative assessment of A59 Park and Ride site location identifies the site inside of ORR as the most favourable position if a future segregated route to York Central was progressed. (Segregated route to York Central development only is identified as not commercially viable and other considerations including access availability will affect site choice)
- Air Quality –No further Air Quality breaches across the City caused by York Central. (Assessment will need further appraisal to ensure affects of LTP2 strategies are included)

- Public Transport Modelling – Report suggests further work is undertaken to overcome patronage data limitations. (Bus surveys and additional public transport modelling work currently ongoing to inform LTP2 strategies)

- Segregated bus routes only viable if part of a city wide network. (Agreed – It is likely that segregated bus routes will be impractical to deliver through the City Centre)

- New Footbridge across River Ouse to be investigated further. (Agreed: Connects the York Central site and National Railway Museum with cycle routes and emerging cultural quarter to the north of the river)

- 20% Modal Split Target not achievable with parking provision and access restraint currently proposed. (Modal split target needs to be reviewed against the proposed parking allocations and LTP2 public transport improvement measures.)

- Railway Operational Land review by Network Rail. The results of this review, which may affect the area of land to be developed and the provision of accesses, are expected in spring 2006.

## Background

### Study Brief -- Transport Assessment Work

10. The brief for the York Central Transport Study included the requirement for a detailed transport assessment which built on early consultancy work on York Central to date. In developing the transport proposals more fully, further consideration was to be given to pedestrian, cycling and vehicular accesses into the site.

11. In summary the key requirements of this study required a more detailed assessment of the following:-
    - Check the 3 potential road accesses and engineering feasibility into the site;
    - Identify indicative links between the access points;
    - Specification of means of access by all modes;
    - Identify options for the location of a new transport interchange (including options to modify the rail station to ensure full integration with the scheme and establish a pedestrian access into the site);
    - Assess options for a major public transport link into the site and onwards to the city centre;
    - Ensure that the site is capable of being serviced;
    - Improvements to Marble Arch to integrate the access route into the site; and
    - Assess the implications of providing a through-route for vehicular traffic through the site.

### Study Brief -- Air Quality Assessment

12. York currently faces a challenge in terms of addressing air quality issues across the city. Following a comprehensive assessment of air quality across the city, the Council has declared an air quality management area (AQMA). Within the AQMA there are five areas where the annual average nitrogen dioxide objective

is being breached, and a number of other areas where it is being approached. In relation to York Central, it is essential that congestion and air quality within the AQMA is not worsened and that the development does not result in a need to extend the AQMA boundaries. In view of this a detailed assessment of the additional air pollution generated by the development will be needed, based on the Traffic Impact Assessment and the predicted increases in daily average traffic flow.

**Study Brief -- Developing a Major Public Transport Scheme for York Central**

13. The council has undertaken a series of transport studies to consider air quality management, major development sites, review of the green belt, congestion and economic development with a view to developing the second Local Transport Plan. The outcome of this work has been to identify that if the city is to continue to meet its economic and environmental objectives, a step change in the quality of public transport is essential.

14. A corridor between York Central and the Outer Ring Road has been identified and protected in the action area designation. The facility needs to be able to move large numbers of people, with potential options to be assessed including light rail, guided bus or other similar forms of transport and the study should identify options for a public transport link into the site. The scope to extend the public transport link into the city centre should also be explored and assessed.

15. The Council is also proposing to develop a new Park and Ride site on the A59 corridor, with associated bus priority measures on Boroughbridge Road towards the city centre. In examining public transport routes into York Central, options to link with the Park and Ride site and A59 corridor should be explored.

16. The study should also identify options for new public transport interchange within the site, including links with the rail station. The site is well served by rail services and the inclusion of a new transport interchange within the site will ensure that bus and Park and Ride facilities and rail services are intrinsically linked into the development. The interchange and bus stops within the site should be located at the hub of local walking routes, with routes designed to 'secure by design' standards.

**Report Programme**

17. The transport study was undertaken for the Council by Faber Maunsell who won the commission through a competitive tendering process in early 2004. The final draft of the report was received by the Council in November 2005.

**York Central Delivery Programme**

18. During the preparation of the transport study a significant shift in the proposed delivery strategy for the site was agreed by the York Central Steering Board. A developer will now be appointed earlier in the delivery programme than had previously been anticipated and will be responsible for preparing the master plan for the site. It is anticipated that a developer will be appointed in Spring 2007 with master planning to follow. The likely timescale for preparation of the master plan is a minimum of 6 months.

19. Preliminary work which will lead to the appointment of a developer is being carried out by Yorkshire Forward with the major landowners on the site, Network Rail and the National Museum of Science and Industry (NMSI). Current work on site investigations and the developable area may change the scale of development previously envisaged to be accommodated on the site and may lead to a need to amend existing planning guidance to take account of the change in circumstances.

20. The delivery programme for the development is likely to extend over a period of up to two decades. The delivery of the transport infrastructure for the development will be phased to match the requirements of the site. Detailed transport infrastructure proposals, which will be prepared by the developer, in consultation with the Council, will need to identify the main elements of the ultimate solution, prior to commencement of significant development works, in order to ensure that the success of the overall scheme is not compromised.

**Local Transport Plan**

21. Throughout the period of development of the transport study the City Council was preparing the second Local Transport Plan (LTP2) which includes overall transport strategies for the City for the next 15 years.

22. Key elements of the strategy identified within the provisional plan which was submitted to the Department for Transport (DfT) in July 2005 include:

**Tackling Congestion**

- Improve the capacity of the Outer Ring Road to help divert traffic away from the city centre;
- Substantially improve cross city bus reliability via the city centre with greater priority for buses and greener vehicles;
- Increase the capacity of the park and ride system;
- New rail station at Haxby;
- Provide high speed, frequent bus services connecting park and ride sites across the city centre along the main radial corridors; and
- Smarter choices to encourage more effective use of cars.

**Improving Accessibility**

- Create interchange points between orbital public transport services and park and ride to improve accessibility across the city;
- Develop cycle and pedestrian routes that link into interchange points and serve new developments;
- Provide limited stop orbital public transport loops linked into the main radial routes into the city centre; and
- Enhanced passenger information and new ticketing to create 'seamless journeys'.

**Safer Roads**

- Speed management on key lengths of routes;
- Addressing the school run, as well as providing safer routes to schools;
- Extend safer routes to employment and health sites etc; and
- Continuing to reduce accident levels at problem 'hotspots'.

**Air Quality**

- Priority for greener vehicles in the city centre;
- Establishment of a low emission zone;
- Active promotion of sustainable travel, including car clubs and car sharing; and
- Sustainable freight strategy for the city

**Effective Asset Management**

- Maintaining roads, footways and transport infrastructure; and
- Strengthening and maintenance of bridges and other highway structures.

23. The York Central development provides an opportunity to significantly enhance the transport options in this area of the City which would have a positive benefit citywide. The transport study will need to be appraised against the final LTP2 document which is due to be submitted to the DfT at the end of March 2006.

**Outer Ring Road Study**

24. Since the commencement of the Transport Study a comprehensive review of the options for improvements to the York northern Outer Ring Road (ORR) has been undertaken and reported to members in July 2005. The ORR study made use of the traffic modelling work undertaken for York Central. The study work indicates that increases in traffic volumes anticipated up to 2021 will cause journey times to become significantly longer. A number of options were presented to members and a phased improvement programme agreed. It is planned to undertake upgrade schemes in phases with the first block addressing transport issues at Moor Lane Junction, the Hopgrove roundabout and A59 roundabout anticipated to be delivered by 2011. The proposed improvements to the Outer Ring Road will reduce journey times and allow faster access to the Park and Ride sites at the A19 and A59 which will have direct links to York Central.

**Transport Study**

25. The following sections summarises the key conclusions of the Transport Study. The full study report is available in the Members' Library. The Transport Study Executive Summary is attached as Annex 1 with a layout drawing showing the key transport proposals attached as Annex 2. The key recommendations are summarised in Annex 3 in tabular form.

26. It should be noted that the officers' of the City of York Council have a number of comments relating to the conclusions of the transport study. Each of the following sections summarises the conclusions of a section of the study and is followed by a City of York Council officer commentary.

**Traffic Modelling**

27. The consultant developed and updated the Council's SATURN highway model to include the developments identified in the 4th set of changes 4 to the Local Plan. The model was used to assess the impact of York Central on the highway network and test access options. The highways access arrangements and projected traffic volumes have been modelled with 20% car based work trips. However, it should be noted that the Public Transport model suggests that this modal split can only be achieved with significant traffic restraint measures across the City. The model indicates that the majority of am peak work trips to York Central will be from within the City. In addition the model suggests that most of the commuter trips into York Central will be from origins to the east of the River Ouse.

***CYC Commentary (Traffic Modelling)***

*28. Considerable additional modelling work has been undertaken by the Council since the York Central transport study was completed to prepare strategies for the second Local Transport Plan period (2006-2011). The York Central report highlighted that the accuracy of the public transport model was limited by the availability of base data. Bus patronage surveys have now been undertaken and used to develop the LTP2 public transport model. The results of this modelling work are expected early in 2006. A number of LTP2 strategies have been developed since the York Central study modelling work was undertaken and will influence the affect of the development on traffic congestion throughout the City. The key item is the proposal to develop a network of cross city public transport routes linking park and ride sites and intersecting at the railway station. This would make travelling to York Central from all park and ride sites easier – and reduce the need for car based commuter trips travelling across the city centre. Commuters from the east would have direct access to York Central from the park and ride sites at Monks Cross and Grimston Bar. The 20% modal split target included in the planning brief will need to be reviewed against the updated transport model to establish whether it is realistic to achieve.*

**Highway Access**

*29.* The consultant has assessed 5 main options for the highway access to York Central and assessed the affect of the different arrangements on a number of key criteria set down in the study brief.

*30.* The following five main options (with 2 sub options) were modelled

| | Option | | | | | | |
|---|---|---|---|---|---|---|---|
| | 1 | 2 | 2A | 2B | 3 | 4 | 5 |
| Access at Water End | ✓ | ✓ | ✓ | ✓ | | | |
| Access at Holgate Park | ✓ | ✓ | ✓ | ✓ | | ✓ | ✓ |
| Access at Holgate Road | ✓ | | | | | | |
| Access at Queen Street | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| Access restrictions on Leeman Road at Kingsland Terrace | | | ✓ | ✓ | ✓ | ✓ | ✓ |
| Access restrictions on Leeman Road at Marble Arch | | | | ✓ | ✓ | ✓ | ✓ |
| Access restrictions on Station Road at the Station Entrance | | | | ✓ | ✓ | ✓ | ✓ |
| Access Restrictions on Lendal Bridge | | | | | | | ✓ |

*31.* The following key indicators were used to assess the relative benefits of each option:

- Through traffic within the York Central site;
- Transient queues;
- Over-capacity queues;
- Total vehicle travel times;
- Travel distance; and
- Overall average vehicle speed.

*32.* An assessment of these indicators shows that there are minimal differences in terms of the global network parameters between the options in 2021. However, the level of traffic travelling through the site is projected to be significantly higher for options 1 and 2.

**Highway Access Key Conclusions**

33. The Consultant drew the following conclusions from the assessment of the highway access options:

- It is projected that there would be an increased number of vehicles on the highway network due to York Central. An additional 1,800 vehicle trips in 2021 morning peak hour are projected to be due to York Central alone. Note:

There is a projected increase of 8,300 vehicles (23%) between 2004 and 2021 without York Central.

- Three bridges (Water End, Holgate Park and Queen Street) were considered, however, owing to increased traffic through the site if the Water End bridge was in place, the study indicates that a two bridge solution (option 4) would be preferable i.e. bridges at Holgate Park and Queen Street only.

- The link from Holgate Rd to the Queen Street access would encourage a considerable amount of additional through traffic and is therefore not recommended.

- Access restrictions on the Inner Ring Road could be placed at Station Road to allow for a Transport Interchange to the east of Railway Station. Redistribution of traffic across the network is manageable.

- The capacity of the Outer Ring Road is projected to be inadequate at key junctions particularly the section between the A19 and A59. Nominal upgrades to the A59/A1237 roundabout have been included in the York Central transport model.

- Leeman Road: Access restrictions on the through route to be implemented.

***CYC Commentary (Highway Access)***

34. *The conclusions of the York Central transport study rely on the premise that the third access at Water End will encourage considerable additional traffic through the site which is not desirable. However it is considered that the study does not take sufficient account of the public transport benefits of an access at this location. The key advantage, if this access was constructed, would be the ability to provide a segregated public transport route for park and ride services from the A59 and A19 avoiding the residential areas on Poppleton Road and Leeman Road. To prevent any through traffic issues arising flow could be restricted to public transport, taxis, cyclists and emergency vehicles by the use of rising bollards or other restraint measures. The alignment of the proposed access route would need to be reviewed to ensure that the issues arising from the proximity of the Millennium Green were fully addressed.*

35. *The removal of the link to Holgate Road from the Queen Street Access is supported as traffic is likely to increase in the Holgate Road area, where there are already Air Quality concerns, if this link was in place.*

36. *The modelling work undertaken for the York Central transport study in respect of the access restrictions on the Inner Ring Road does not include measures that will be needed to ensure traffic does not divert through Micklegate Bar. Additional modelling work is required to ensure that the proposed access restrictions are feasible and compatible with LTP2 proposals.*

37. *The full recommendations of the Outer Ring Road study reported to the Planning and Transport EMAP in July 2005 have not been included in the York Central study as the work was being undertaken in parallel. However the conclusion in*

*the York Central study that improvement works will be required to increase the capacity of the A1237 to encourage greater use of the Rawcliffe Bar and A59 Park and Ride sites does concur with the ORR study.*

38. *The consequences of the access restrictions on Leeman Rd on travel patterns across the City needs to be investigated in greater detail but the proposal is supported in principle.*

**Junction Feasibility and Design**

39. All of the junction options identified within previous transport study work were checked for feasibility in greater detail. It should be noted that the traffic modelling suggests that the Water End access would encourage significant through traffic and is therefore not recommended by the study. All of the junction options were analysed for capacity and found to be within acceptable operational levels for this stage of appraisal.

**Junction Feasibility and Design Key Conclusions**

40. Network Rail do not support tunnelling options for any of the access points therefore when combined with other issues including drainage, cost and the relative levels of the adjacent highways, bridge options were developed for all of the crossing locations. The span of bridges and the length of the embankments is affected by the amount of operational railway retained within the site. This is currently subject to a separate investigation which may affect the bridge layouts proposed in this study.

41. The following access locations were investigated in detail with layout drawings prepared to confirm that designs were possible within railway and highway standards:

42. **Water End Access**

- Roundabout on Water End not recommended: Forward visibility poor from A59, disruptive to UTMC control strategy on adjacent traffic signals, difficult to address pedestrian and cycling issues.
- Priority junction on Water End not recommended: Insufficient capacity.
- Traffic signal junction on Water End recommended. Operation can be linked to adjacent signals on A59 and Salisbury Terrace and pedestrian/cycling crossing can be integrated.
- Length of raised highway on embankment over Millennium Green required with 26.5m skew bridge over East Coast Main Line. Alternative approach directions would reduce the bridge skew but would be closer to operational railway lines.

**Holgate Park Access**

43. Two access options were considered at this location (Option 2 preferred)

1) Access from existing Holgate Park Road mini roundabout adjacent to Trinity Thrall rail works.

- 79m multispan bridge required to span the improved rail access to Thrall works and the retained Klondike sidings.
- It is considered that there may be an impact on road safety in the area owing to the distribution of the predominant traffic flows at the roundabout.

2) Access direct from Poppleton Rd from existing junction and crossing over the railway land west of the Holgate Park development.

- 100m long multispan bridge over the Freight Avoiding Line and Klondike sidings.
- Segregates the Holgate Park and York Central traffic and makes use of the existing junction with Poppleton Rd.

44. The study recommends that the 2nd option is progressed as this option addresses the potential safety concerns at the mini roundabout and Holgate Park and York Central traffic is segregated although the resulting bridge is longer.

**Queen Street Access**

45. There are a number of key issues to address:

- Setting of the listed Railway Station.
- A listed Water Tower and Workshop are located near to the Rail Workers' gymnasium on the proposed access route.
- Retention of access to properties near Queen Street bridge.
- Provision of suitable connections to the existing highway network will present engineering difficulties owing to gradient restrictions and relative highway and rail levels.
- Retention of Queen Street Bridge. The retention of the redundant bridge reduces the level difference between the existing Inner Ring Road and the new bridge over the ECML.
- Holgate Road link: The relative heights of the bridge over the ECML and Holgate Rd means that the approach gradients on the link would be on the limit of acceptability. Note: Traffic modelling suggests that this link would encourage significant traffic through the site and is therefore not desirable.
- Junction with Queen Street. It is proposed that the junction would be traffic signal controlled with timings co-ordinated with the Blossom Street and Leeman Road junctions.

46. Two options were presented (Option 1 preferred):

1) Principal alignment from Queen Street over ECML with possible link to Holgate Road. Note: drawings do not show embankment/retaining wall requirements.

- Bridge length 62m
- Alignment would affect the listed Water tank.
- Access to properties at end of Queen Street maintained but servicing restricted.
- Maintains most of existing station car park area.

2) Principal alignment from Holgate Road over ECML with link to Queen Street

- Bridge Length 61m
- Alignment avoids listed Water tank
- Access to properties on Queen Street maintained as existing.

***CYC Commentary (Junction Feasibility and Design)***

***Water End***

*47. The alignment of the Water End access will need to be reviewed taking into account the proximity of the proposed route to the Millennium Green.*

***Holgate Park***

*48. The option recommended by the study is adjacent to existing residential properties. The environmental impact of this proposed route would need to be investigated further before progressing as the recommended solution.*

***Queen Street***

*49. The study states that the elevated nature of Queen Street will aid the bridging of the East Coast main line however the distance between the two locations means that an extended section of elevated viaduct is required. A shorter section of approach ramp would be adequate if the route was maintained at ground level for as long as possible resulting in reduced land take and lower cost.*

*50. The option of removing Queen Street Bridge was not considered in the study. Removal of this redundant structure, however, could result in considerable maintenance savings in the long term and provide an enhanced setting for the City Walls and station. Connecting the proposed new access to the existing bridge would also present complex engineering difficulties. However although there are benefits of having a ground level access off Queen street the removal of the bridge would also entail a number of potentially difficult challenges including: Diversion of existing services, retaining an elevated section of City Walls and the replacement of a private access under the existing bridge. It is considered that the removal of the bridge should be investigated as an option in any further study work.*

*51. The deletion of the Holgate Road link is supported as it is considered likely that additional traffic will be encouraged to use Holgate Road which already has poor Air Quality. However it should be noted that an investigation into bus priorities at the city end of Holgate Road is currently being undertaken which includes the*

*possibility of revising the traffic flow and direction which would also have an impact on the desirability of a link to York Central at this location.*

52. *The effect of the proposed alignment of the road on the listed Water Tower will need to be addressed in any future development work.*

**Parking**

53. York Central is adjacent to the City Centre, the train station and a new proposed bus interchange, which taken together with the public transport route from the Ring Road, will provide sustainable links to the development site, reducing the need to travel by private car. However to ensure that these sustainable alternatives to the private car are used and the transport targets of the development site are met, parking will have to be limited and controlled.

54. Parking levels in the planning brief were set at approx. 3000 for residential use, 1920 for office use and 600 public. The 5,520 total number of parking spaces included in the brief is substantially more than the current council operated City centre long stay provision (3064).

55. However, simply setting parking levels for the York Central development, without any wider consideration for transport levels in York will not produce the desired results. The study therefore recommends that a separate parking study is undertaken not only for the York Central site, but for the City Centre and its surrounds to ensure that the planning brief includes an appropriate level of parking allocation for the development.

56. By providing fewer parking spaces with strict parking controls, the demand for access to York Central by car will be greatly reduced, however the implications for the development would need to be assessed.. The provision of high quality pedestrian, cycle and public transport infrastructure will facilitate travel, and compliment the parking restrictions.

***CYC Commentary (Parking)***

57. *It is agreed that a parking study for York Central and the city centre should be undertaken before a firm view of the level of parking provision at York Central is made. There is a concern that the levels of parking provision indicated within the current planning brief may not encourage low car use for trips to and from the site. The parking provision needs to be considered together with the proposed public transport improvements and access restrictions to the site. The implications for the development, with any revised parking allocation, would need to be assessed.*

**Linking York Central to the City Centre**

58. Whilst the York Central site will have good links with the railway station, it is poorly connected to the City Centre and areas to the east and north of the City Centre. The East Coast Main Line severs the York Central site from the City Centre. Currently, pedestrian access is only possible by Leeman Road (Marble Arch), the station or Wilton Rise.

**Marble Arch/Leeman Road**

59. Leeman Road is on the principal desire line for pedestrians wishing to access the City Centre from York Central however the existing provision is inadequate for access to the development owing to capacity, lighting and security issues.

60. The cycling and pedestrian links to the north of the river using the footway attached to the side of Scarborough (Railway) bridge is also poor (non – DDA compliant and too narrow). It is considered that a new pedestrian/cycle crossing of the river should be considered between Scarborough Bridge and Lendal Bridge, and the link from Marble Arch to the river bank improved.

61. Depending upon the location of the public transport interchange and NRM requirements it would be possible to use the main Marble Arch route for pedestrians and cyclists only. The use of the main arch, free from motor vehicles, would provide a large high capacity route to the City Centre for both pedestrians and cyclists. If either the existing route or carriageway is to be used by pedestrians/cyclists to York Central, CCTV and improved lighting could be provided to improve the quality of the route.

**York Station Footbridge**

62. The main station footbridge spans across the whole station with the recent extension through to the car park to the west. The bridge is narrow – approximately 4m wide – and may not be able to cope with additional footfall of people accessing the York Central site as well as rail users. Due to its architectural significance, scope for altering or replacing the bridge is likely to be limited. The bridge is not served by lifts or escalators. Disabled users must use a subway which does not extend to the west of the station.

63. The footbridge is also south of the main desire line for pedestrians walking between York Central and the City Centre but is well located for the recommended eastern bus interchange. This route is contained within the station and the operational implications arising from the introduction of pedestrian movement from York Central through the station to access the city centre would need to be assessed.

**Queen Street**

64. The proposed York Central highway access to the south of the station, which connects into Queen Street, would also be a key pedestrian/cyclist route. This bridge would allow pedestrians and cyclists access to the city centre via Queen Street and Micklegate or Station Rise and Lendal Bridge. This route would link cyclists with the on-road cycle lane on Station Road and hence the wider cycle network within York. However, the route lies very far south of the station and would cause people to divert from their natural desire line. The study suggests that the opening up of a route across currently privately owned land within the City Walls adjacent to the City Business Centre would allow a more direct access route to the city centre to be developed.

***CYC Commentary (Linking York Central to the City Centre)***

***Marble Arch***

65. *The existing route is on the natural pedestrian desire line and therefore provides the best option for enhancement. Owing to the restricted width available within*

*the existing 'tunnel' it would be beneficial if some or all of the carriageway could be reallocated to pedestrians and cyclists. This could be achieved by closing Leeman Rd to traffic and redirecting public transport through the York Central site and over the new Queen Street access route.*

66. *The provision of a new pedestrian/cyclist footbridge across the Ouse adjacent to Scarborough Bridge would significantly improve the attractiveness of the route and link in with the existing and proposed off road routes to the north of the river and emerging City Cultural Quarter.*

***York Station Footbridge***

67. *No Comment on conclusions. As this would be the natural desire line between the upgraded transport interchange to the east of the station and York Central it would be advisable to investigate the options for providing additional capacity in more detail.*

***Queen Street Access***

68. *Opening of the route for pedestrians across private land within the City Centre would need careful consideration and may not be possible. The benefits of removing the Queen Street bridge and the provision of an at grade crossing would also need to be considered.*

***Wilton Rise***

69. *Options for the enhancement of this existing access point should be investigated further.*

**Public Transport Modelling**

70. As part of the study commission a new mode choice model has been developed to assess the public transport access options to the York Central site. The model draws on the Council's SATURN highway model, maintaining the same network and zoning system, but has been extended to include public transport, park and ride, walking and cycling using the EMME/2 modelling suite.

71. Owing to the coarse nature of the available bus patronage data which restricts the accuracy of the model used in the York Central Transport Study it is recommended that more detailed passenger surveys are undertaken during the next stage of the development of the transport proposals for York Central.

***CYC Commentary (Public Transport Model)***

72. *Owing to concerns with the imprecise nature of the bus patronage data identified by Faber Maunsell additional modelling and survey work is being undertaken for the preparation of the Second Local Transport Plan. The results of the modelling exercise will be available early in 2006 to inform the completion of the final LTP2 document. It is likely that more accurate projections for modal splits will be available when the modelling is completed however at this stage it is thought that the fundamental issues which have been raised by the York Central Transport study will be unaffected.*

**Public Transport Options**

73. A series of assumptions were made when modelling the public transport options. The park and ride location is fixed at a nominal location in the vicinity of the A59/A1237 junction and highway access option 4 (bridges at Queen Street and Holgate Park only) has been used in all the public transport modelling scenarios. The following public transport options have been appraised:

**Do Minimum**

74. A 1,000 space Park and Ride site has been included in the vicinity of the A59/A1237 roundabout. The bus services are not diverted through York Central although a bus stop is included at Holgate Park, which is approximately a 800 metre walk link to York Central. The bus service along the A59 has been assumed to operate on a 10-minute headway with a capacity of 100 passengers per bus.

**On Street Bus Service with Bus priority**

75. This option is the same as the do minimum except that the bus service is diverted through the York Central site in a segregated route. The route taken runs on existing roads and is based on a bus based Park and Ride service with bus priorities on Boroughbridge Road.

**Segregated Bus**

76. This option is based on the Mouchel east-west mass transit route and would run parallel to the East Coast Main Line / Harrogate railway line between York Central and the A1237 near Poppleton. The route would require major enabling works to be undertaken on the Harrogate Line and potentially the ECML, which has not been appraised in detail.

**Segregated Tram**

77. This is based on the same alignment as the Segregated Bus.

78. Three further options extending bus routes across the City were also examined:

- Extension of the on-street bus service to Piccadilly;
- Extension of the segregated bus service to Piccadilly; and
- Extension of the segregated bus to the University (no specific route has been defined).

79. All options were compared against the Do-Minimum, which shows that 53% of person trips would use the car for York Central trips with 29% using the bus. All the options show a marked increase in the use of Askham Bar Park and Ride for York Central trips.

80. The On Street bus with Bus Priority option shows very little change when compared to the do-minimum. The introduction of a segregated bus service would lead to a 4.2% (4.3% to York Central) mode share. However, this has been primarily extracted from other bus services with only a minimal impact on the car mode share when compared to the Do Minimum scenario. Although the

Segregated Tram is a faster mode than the bus, the segregated tram option only has a minimal impact on the predicted mode share. This is due to the relative short length of the segregated section making significant journey time savings difficult.

81. The following conclusions can be drawn from the modelling of the public transport options.

- The study indicates that a tram or guided bus segregated route from the A59 Park & Ride to York Central is not justified owing to the large cost relative to predicted patronage.
- Predicted car mode share, with an improved public transport link in place to directly serve York Central and the city centre, is estimated to be around 45%. The aspiration to achieve a 20% modal share for car drivers can only be met with the implementation of significant traffic restraint measures across the City.
- If a guided bus system was extended to the University passenger numbers may approach the levels needed to justify the capital expenditure. The car mode share to York Central is unaffected but public transport patronage numbers are much higher.
- Congestion levels on the Northern Outer Ring Road affect the projected patronage of the A59 Park and Ride Site and encourage more trips from the Leeds direction to use Askham Bar P&R.

***CYC Commentary (Public Transport Options)***

*82. It is likely that the on street bus based service will provide the most cost effective solution to the transport needs of the A59 corridor. However the study does not consider the benefits of providing a route through the York Central site at the earliest opportunity i.e at Water End. It is considered that this option should be considered in any future study work.*

*83. The projected level of car use for the development is much higher than the level indicated in the planning brief. Additional modelling work will need to be undertaken to establish options to enable an acceptable balance to be made between the extent of the development, parking provision within the site, access restraints and the permitted level of car use for the development. It should be noted that some of the additional work is currently being undertaken as part of the LTP2 development work.*

*84. The Outer Ring Road study includes the York Central site in the traffic level projections for 2021. It is projected that improvements will be required for all of the roundabouts on the ORR to provide adequate capacity. In particular capacity improvements will be needed at the A59 and Wetherby Rd roundabouts to ensure access to the proposed A59 Park & Ride is not hindered.*

**A59 Park & Ride Site Selection**

85. In the context of the York Central Study, it has not been possible for a recommendation to be made on site selection based on the EMME/2 multi-modal transport model developed during this study. This is due to the relatively coarse nature of the model at the edges of the built-up area, which in turn is a function of the data limitations experienced when developing the model.

86. A qualitative analysis of the two principal site options (inside or outside the Outer Ring Road) from the perspective of the York Central Transport Master Plan suggests that in terms of access to York Central the P&R site inside the ORR would provide the better access opportunities as a result of its proximity to a potential future segregated link alongside the ECML.

***CYC Commentary (A59 Park & Ride Site Selection)***

87. *The location of the Park & Ride site is the subject of a separate report to the Executive. There are a number of factors which will affect the location decision including:*

- *Size and cost of upgraded roundabout*
- *Environmental Issues*
- *Bus exit and priority route opportunities*
- *Bus journey times*
- *Car access options*
- *Availability and cost of land*
- *Patronage figures for sites (with and without York Central).*
- *Results of Public Consultation*
- *Link with possible segregated route to York Central*

**Public Transport Interchange**

88. A number of alternative interchange solutions have been investigated including:

**Option 1 – East/West Interchanges**

89. An East/West split facility either side of the station whilst meeting the aspiration for a new western entrance to the station close to York Central this solution relies upon significant cross station movements on the existing footbridge which are unlikely to be supported by the station operator.

**Option 2 – Queen Street Bridge Interchange**

90. The proposed bridge over the ECML at the southern end of the station could be enhanced to provide an interchange facility with direct access to the platforms below however the cost would be substantial and the location is to the south of the pedestrian desire line to the city centre.

**Option 3 – Marble Arch Interchange.**

91. A subterranean interchange on the current site of the Marble Arch could be provided underneath the station similar to other cities around the world. This option would offer an opportunity to improve both pedestrian and cycle access to York Central, alongside public transport improvements, at the most popular pedestrian desire line that serves the city centre and York Central.

92. The cost and disruption associated with building an entirely new facility beneath live railway lines will be substantial and unlikely to be cost effective.

**Option 4 – East of Station Interchange**

93. This would entail the closure of Queen Street to general traffic in the vicinity of the current station entrance to allow the carriageway to be used as an interchange area. In order to enhance the accessibility of this eastern interchange for York Central users, improved linkages across the ECML – either through the existing station or diverted south to the new Queen Street bridge – will need to be provided. The recommended facility would provide a single interchange point for existing bus services and proposed public transport links to York Central. However the pedestrian links to York Central are relatively lengthy and the removal of traffic from this section of the Inner Ring Road will significantly affect the routing of vehicles across the City although the study modelling predicts that these will be manageable.

94. The study recommends that option 3 and 4 are given further consideration as the overall package of measures for York Central is developed further, but that the more achievable Option 4 is adopted as a preferred option at this stage.

***CYC Commentary (Public Transport Interchange)***

*95. The study has assessed a number of possibilities for the provision of a public transport interchange however it is clear that none of the options provide a perfect solution. Although the Eastern interchange is the solution recommended by the study the report does not highlight the significant lack of space at this location. It would appear that there is insufficient space to fit in the numbers of bus services which will need to use the site even if the road is closed to general traffic. Alternative solutions are being investigated as part of the development of LTP2 including the proposal to provide an orbital bus service which will reduce the need for interchange facilities at one location. In addition the proposed electric minitram could be used to link key existing interchange sites in the city centre.*

**Air Quality**

*96.* The City of York Council (CYC) have, on the basis of their review and assessment work, designated a large area within the city centre as an Air Quality Management Area (AQMA) for nitrogen dioxide. This is in recognition of the fact that within this area the annual mean national air quality objective for nitrogen dioxide is unlikely to be met. The site of the proposed York Central Development lies in close proximity to the AQMA.

*97.* The study has used the AAQuIRE regional air quality dispersion modelling software to predict concentrations of nitrogen dioxide and PM10 (particles smaller than 10 microns in diameter) from road traffic and industrial sources. Concentrations were predicted for a base year (2004), and two future years (2011 and 2021). The traffic modelling for the future years assumes that the access points to York Central are via Holgate Park and Queen Street and Station Road is closed to allow the public transport interchange to be built.

**Nitrogen Dioxide**

98. It is predicted that at the receptors modelled, the impacts of the development in 2011 will range from -0.1 to +0.5 μg/m3 (less than 0.5% impact). However in 2021 12 of the 70 receptors modelled for NO2 concentrations were predicted to increase by more than 0.5 μg/m3. In the Nunnery Lane area (within the AQMA) increases of up to 2.3 μg/m3 (10%) were predicted. It should however be noted that between 2004 and 2021, NO2 concentrations at roadside locations in the same area are predicted to fall by approximately 10-13 μg/m3 (well below the EU limit value for the 2010 annual mean). These reductions are due primarily to decreasing background pollutant levels and improvements in vehicle emissions.

**PM10**

99. It is predicted that at the receptors modelled, the impacts of the development in 2011 will range from 0 to +0.1 μg/m3 (less than 0.5%). In 2021 two of the receptors modelled PM10 concentrations were predicted to increase by more than 0.5 μg/m3. The maximum increases 0.5 to 0.6 μg/m3 (less than 5% impact) were again predicted in the Nunnery Lane area. It should be noted that between 2004 and 2021, PM10 concentrations at roadside locations in the same area are predicted to fall by approximately 3 μg/m3.

100. The impacts at the receptors studied are deemed to be of low priority for the year 2011. The impacts are greater in 2021, and are deemed to be of medium priority. On this basis, with regard to PM10, air quality is of medium priority with regard to the development.

***CYC Commentary (Air Quality)***

101. *The Transport Study includes an initial assessment of the likely air quality implications arising from development on the York Central site. This initial assessment was requested for inclusion in the transport study due to the close proximity of the York Central site to the existing Air Quality Management Area (AQMA), and the influence this may have on the viability of developing and accessing the site*

102. *The results of this initial study are promising in that they suggest that the current air quality objectives could be met in most areas of the city by 2011, both with and without the York Central development in place. This is based on the assumption that two new access points would be provided to the site at Holgate Park and Queen Street, and that Leeman Road would be severed at Kingsland Terrace and Marble Arch. It also assumes the severing of Queen Street at the station. None of the other access options discussed in the report were assessed for their air quality impact.*

103. *Although the air quality objectives are predicted to be met both with and without development, it must be recognised that this expected improvement is due mainly to the influence of cleaner vehicle technology and not the development of the York Central site.*

104. *In some areas the expected rate of improvement due to the influence of cleaner vehicles would be slowed down by the introduction of the York Central development. In some locations this could result in pollutant concentrations*

*being up to 5% higher in 2011 than they would be if no development took place. By 2021 the expected difference between do-something and do-nothing becomes more pronounced, reaching up to 10.5% in some locations. It should be recognised that the impact of introducing the York Central development may be significant enough to counteract any improvements in air quality expected to be delivered by the Second Local Transport Plan and the Air Quality Action Plan.*

105. *The initial air quality assessment has confirmed that as expected air quality is likely to be a significant consideration in the planning process for the York Central site. Recommendations have been made in the Transport Study for reducing the impact of development related traffic including consideration of car free development, extensive use of car clubs and provision of high quality public transport, cycling and walking links. These must be essential components of the development proposed for the York Central site if it is to be justifiable in air quality terms. It is also recommended that requirements for developers to support ongoing air quality monitoring in the vicinity of the York Central site should be achieved through the planning process.*

106. *The air quality assessment presented in the Transport Study has been very useful in providing an initial understanding of the likely magnitude and location of air quality impacts arising from development on the York Central site. There are however questions remaining regarding the cumulative impact of development in the city and how development on the York Central site may add to this. These will need to be addressed in more detail prior to the submission of any planning applications. Opportunities should also be taken at this stage to refine the model inputs in terms of assumed vehicle types, ages and speed.*

**Option Appraisal**

107. The study presents a high level, largely qualitative appraisal of the main York Central public transport and highway options, based on the Department for Transport's New Approach to Transport Appraisal (NATA) process for appraising Major Schemes. However, it should be noted that the level of analysis in the study, is not compliant with the full Government requirements for a Major Scheme Appraisal.

108. Three main options have been considered. All include the preferred highway access strategy with bridges at Holgate Park and Queen Street only.

- Option A (Estimated Cost --£31m) – preferred highway access strategy plus: an enhanced on-street bus-based public transport route between the A59 P&R site, York Central and the City Centre; and a new bus-rail interchange on Queen Street.

- Option B (Estimated Cost --£64.5m) – preferred highway access strategy plus: an off-street segregated guided bus link between the A59 P&R site, York Central, the City Centre and the University; and a new bus-rail interchange on Queen Street.

- Option C (Estimated Cost --£110.5m) –preferred highway access strategy plus: an off-street segregated tram link between the A59 P&R site and York Central,

with service continuing on-street to the City Centre; and a new bus-rail interchange at Marble Arch.

*109.* The simplified appraisal process included in the study concludes that Option A is the best value for money at this level of analysis.

***CYC Commentary (Option Appraisal)***

*110. Whilst the study provides an assessment of the costs of the schemes to be compared the estimates are very broad relying on unit costs for the main elements (e.g. guided bus/ tram routes). However overall the level of detail appears to be appropriate for making the required strategy decisions. The provision of an additional bridge at Water End would increase the overall project cost but would not change the preferred strategy.*

**Summary and Conclusions**

*111.* The transport study recommends a package of physical measures and management initiatives that could be adopted as part of the wider planning and development of the York Central proposals. This package includes:

- two new highway accesses into York Central at Holgate Park and Queen Street;
- improvements and changes to the operation of Leeman Road and Station Road;
- new and improved cycle and pedestrian links around Marble Arch;
- a new on-street bus based public transport link that would serve the A59 corridor running between a new Park & Ride site adjacent to the Outer Ring Road, York Central, the railway station and the city centre; and
- a new transport interchange at the current station entrance on Station Road.

*112.* It is also recommended that further considerations should be given to the following issues:

- the cost and engineering feasibility of a bus-rail interchange at Marble Arch, to the north of the railway station;
- the location, cost and feasibility of a new bridge for cyclists and pedestrians across the River Ouse, between the Scarborough Railway Bridge and Lendal Bridge;
- the implementation of a segregated guided bus system between the A59 Park & Ride, the York Central and York City centre; in the context of implementing a wider network of segregated and on-street bus corridors serving major demands in the City; and
- the further development and upgrade of the public transport model, both to support any future major scheme bid for transport funding for infrastructure,

and to assess the impact of improved public transport networks in the City's major transport corridors.

***CYC Commentary (Summary and Conclusions)***

113. *Whilst the report presents a number of conclusions which are considered to address the transport impact of the development there are other areas which will need further attention during any further transport assessment for the site.*

- *Two bridge access option: There are concerns that the deletion of the Water End access point will prevent the public transport benefits of this route being realised. Further modelling is required which includes the proposed LTP2 public transport strategy.*

- *Closure of Leeman Rd: The closure would allow the Railway Museum to operate on a single site and allow Marble Arch to become the main cycling and pedestrian access. An alternative route for public transport from the Leeman Rd area through the site to the new access bridge of Queen Street needs to be established. Consideration also needs to be given to alternative access arrangements for existing users of Leeman Rd.*

- *Access restrictions on the Inner Ring Road at Station Road. Whilst the study states that the changes to traffic flows are manageable it is considered that further work is required to ensure that traffic is not diverted through unsuitable areas and the arrangements are compatible with future LTP2 proposals.*

- *Transport Interchange to east of Railway Station. It is considered that there is insufficient space for the proposed single interchange to the East of the station. Further work is required to establish methods to link the existing interchange points in the City Centre.*

- *New on street based bus route from new A59 P&R site: It is considered that the proposal to provide bus priorities along Boroughbridge Rd will result in the most cost effective solution for the anticipated demand from this direction.*

- *A59 P&R Site location: An assessment of the possible locations for the Park and Ride site is the subject of a separate report to the Executive. The location is dependent on a number of other key issues in addition to the possible future segregated route to York Central.*

114. *The study also advises that a number of other areas warrant further consideration:*

- *Bus Interchange at Marble Arch: It is considered unlikely that this proposal is worth further development due to the anticipated cost and disruption to rail services during construction.*

- *New Footbridge over River Ouse at Scarborough Bridge: It is considered that this proposal to improve access to the cycle network to the north of the river warrants further attention.*

- *Segregated guided bus routes: Further work would be required to establish the viability of any proposal to extend the routes through the city centre and beyond to the University. It is unlikely that it will be possible to establish segregated routes for the proposal at key locations within the city centre.*

- *Development of the Public Transport Model: The model is currently being updated to assist in the development of the LTP2 strategies. The model will be used to check the access and public transport arrangements proposed in the York Central study.*

115. *There are also a number of additional issues which also require further development.*

- *Parking Provision and Modal Split Target: The study suggests that the proposed 20% car based modal split target is not achievable. This target needs to be reviewed to ensure that the parking allocations are compatible with the public transport provision and whether bus priority measures included within LTP2 will assist in the reduction in the number of car based trips.*

- *Operational Land Requirement: Network Rail are currently re-assessing the extent of the operational land requirement which may affect the area available for development and the location of the access bridges. The transport study will need to be reviewed against the results of the operational land study.*

**Financial Implications**

116. Additional modelling work will need to be undertaken to confirm the conclusions of study and ensure that they are compatible with the proposed LTP2 strategy. This work will form the initial phase of the design for the bus priority measures proposed in the adjacent areas and could be funded from the LTP2 settlement. It is also anticipated that further work will be undertaken by the developer to establish the transport requirements for the site.

**Conclusion**

117. The study concludes that the development can be accommodated without excessive disruption to the existing highway network at the 20% car based modal split levels proposed in the planning brief. However, the public transport modelling undertaken indicates that without improvements to the public transport provision, additional traffic restraint measures and reduced development parking provision the planning brief mode split is not achievable. At the projected higher car mode proportion which would operate if these restraint measures were not introduced the network would become much more congested leading to significant delays and possible air quality issues. Additional work is required to establish an appropriate balance between the parking provision within the development, priority measures for public transport in the area and the size of the development achievable.

## Recommendation

118. That members :

a) Note the content of the York Central Transport Study and the City of York Council Officer commentary included in this report.

b) Authorise further assessment work to review the modal split and parking allocation within the planning brief.

c) Agree to the review of the proposed access arrangements and public transport provision against the strategies included within LTP2.

**Annexes**

Annex 1 – Faber Maunsell York Central Transport Masterplan Study: Executive Summary
Annex 2 – Transport Access Layout Plan
Annex 3 – Summary of Key Conclusions and Commentary

| | |
|---|---|
| **Legal** | N/a |
| **Financial** | N/a |
| **Human Resources** | N/a |
| **Crime and Disorder** | N/a |
| **Sustainability** | N/a |
| **Equalities** | N/a |
| **Other** | N/a |

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**Background Papers**

York Central Transport Masterplan Study (November 2005) in the Members' Library

# Faber Maunsell
# York Central
# Transport Masterplan Study

## Executive Summary

This is a Transport Master Plan for the York Central development site, located in the City of York. This Master Plan considers the nature of development at York Central, the transport implications of development and recommends a series of interventions that will provide a standard of transport infrastructure and services commensurate with the needs of the development site, the city centre and the wider City. It is not a detailed Transportation Assessment necessary to support a full planning application for individual development proposals on the site.

York Central is a development proposal of regional significance. It presents a unique opportunity to provide high quality residential, commercial and tourist facilities in the heart of the historic City of York, supported by excellent transport links across a range of travel modes. Once completed, York Central will change the face of York, bringing new business and commercial opportunities to the city, expanding the city centre, drawing the centre of gravity of activity westwards towards the railway station and helping to reduce the emphasis in the city on out of town office developments.

The development site is a teardrop shape, located on former railway lands to the west of the railway station and enclosed by the East Coast Main Line (ECML) to the north and east and the station Freight Avoiding Line (FAL) to the south and west. It currently has on its northern flank a number of small residential areas, some light industrial units and the National Railway Museum complex, all of which are accessed from Leeman Road, the only public highway that passes through the site at present. The majority of the site comprises large areas of operational and disused railway sidings associated with York's role as a major railway centre, as well as the railway station itself to the east.

Although encircled by railway lines and being immediately adjacent to York's railway station, the site nevertheless presents significant transport challenges that this Master Plan must tackle. Road and public transport links into the site are poor and will require a major upgrade to meet the demands of new development. Cycling and walking links, both internally and to external areas, will also need to be upgraded. The way in which proposals at York Central relate to the transport needs of the rest of the City Centre will also be vital, with particular emphasis on public transport interchange, car parking supply and car park pricing.

The York Central planning brief sets out the development framework and key planning, economic development, environmental, highways and transport objectives for the site. These are:

- A comprehensive development for the entire site, not piecemeal development;
- High quality development that incorporates high standards in the design of buildings and the spaces between them;
- A quality of development whose design and architecture will make people want to visit it in its own right;
- The creation of a modern mixed use office core that comprises well designed buildings and provides for the City's growing economy;
- Grouping of office buildings around attractive, distinctive and well-landscaped public spaces, designed for people;
- At street level providing uses such as restaurants, bars, shops, leisure and cultural facilities, needed to animate the public realm and enliven the central business district;
- The provision of high quality hotels to promote and support the valuable business and tourism sectors;
- Inter-mixing residential uses within and surrounding the commercial core;
- Making the railway station a focal point for the scheme and also a focal point for transport interchange;

- Placing the NRM within a setting that will help it to fully develop its potential to act as an emblem for the City and a catalyst for the development of a new iconic cultural attraction;
- Creating a sustainable transport development designed around people not cars; and
- Ensuring the site is well connected, city wide, by all forms of transport.

The overarching transport requirements for York Central include:

- Meeting a 20% modal share limit for drivers arriving to work at the York Central site by car;
- Promoting connectivity between York Central and the walled city, with particular emphasis on cycling and walking, to help limit trip generation and traffic congestion;
- Promoting connections between York Central, the railway station and a new transport interchange to maximise the advantage of public transport connections to the site;
- Protecting the rail infrastructure for both present and future uses including station car parking, taxi facilities, drop-off points and short stay parking;
- Promoting connectivity between York Central and the River Ouse, with links to the riverside walk into the City Centre;
- Serving the site in ways that will minimise the impact on the highway network and air quality beyond the immediate vicinity of the development;
- Reducing reliance on the car;
- Providing opportunities for dedicated public transport corridors to serve the city centre and wider city; and
- Promoting connectivity to the surrounding areas by foot and cycle.

It is these objectives that have set the scene for the consultancy work undertaken by Faber Maunsell to develop this Master Plan. The study objectives are to:

- Advise on how the highway network needs to be modified to cater for the traffic generated by the development;
- Advise on the development of a major public transport scheme to access the York Central site; and
- Advise on the scope for developing a public transport interchange which links with the rail station.

The work that has been undertaken has followed a logical process to deliver these objectives. Our work has been structured to:

- Identify the travel demands that will arise as York Central is fully developed;
- Understand where people travel to and from to get to York Central, and what routes they will take;
- Understand how the choice of travel mode can be influenced by future transport investment;
- ensure that any transport investment has a strong business case that is capable of attracting funding; and
- Determine the optimal transport investment strategy for York Central that not only covers road and public transport access into the site, but also pays regard to the wider transport impacts that will arise across the city, including the congested A1237 Outer Ring Road.

**The Development at York Central**

Precise proposals for development at York Central will ultimately be influenced by an assessment of current railway operational needs. Nevertheless a significant developable land area is envisaged that is of such a scale that it will have an impact at a city-wide, sub-regional and regional level. For the production of this Master Plan it has been assumed that there will be a mix of development that represents a "maximum case" in terms of floor areas, residential units and consequential generation of additional transport demand.

Work for this Transport Masterplan has assumed that the York Central development comprises of:

- Commercial development for office-based uses amounting to 173,000 square metres gross floor area (GFA) by 2021. This could accommodate 9,600 employees when complete;
- Residential development comprising 3,000 units. This could house 7,000 residents;

- Associated ancillary retail and leisure uses that will support the commercial and residential aspects of the mixed use development; and
- Expansion of the current National Railway Museum operation.

It is clear that the development is of a scale that will generate significant new transport demands within the City. Whilst many of these demands will be of short distance and generated within the York Central development itself, there will be other transport demands that will require improvements to be made to the highway, public transport, cycling and walking infrastructure connecting York Central to the wider city networks.

**Highway Access Proposals**

A traffic model has been developed over recent years by the City of York Council, which uses the SATURN assignment software suite developed by the University of Leeds. Improvements to the traffic model have been made during the course of this study, in order that it can provide an accurate representation of road-based journey volumes, routes and travel times across the City, within the area enclosed by the Outer Ring Road and York Bypass.

The traffic model has been used to determine and assess the optimal combination of potential new highway options into the York Central site. The three options that have been considered are at Water End to the North West, at Holgate Park to the South and at Queen Street to the East. All three require the provision of new bridges over existing operational railway lines.

At Holgate Park any bridge will also need to span several sidings adjacent to the FAL, which are to be retained. At Queen Street the bridge will cross the southern throat of the railway station platform approaches, and it is likely to be an "iconic" bridge with a design that is in sympathy with the listed buildings that will surround it. We have also considered the role of the existing highway access into York Central, at Leeman Road.

We recognise that in the future the traffic network in York is likely to be more congested than current levels. In this context the addition of new highway capacity in the York Central site could provide an attractive route for traffic that is simply passing through on its way to the City Centre and other destinations, rather than traffic that has either an origin or destination in the York Central. The presence of this through traffic is contrary to the Council's policy to manage demand for car traffic, and is also likely to have an adverse effect on accessibility within the York Central site, which in turn may decrease the attractiveness and viability of York Central development.

Our analysis of highway access options has therefore centred on ensuring good access to the York Central site for road traffic from key directions of approach, whilst as far as possible eliminating the potential for the new access routes to provide rat-runs across the York Central site for through traffic entering and leaving the city centre. We have also sought to ensure that good public transport access into the York Central site is provided, both for existing bus services and any new services that the development may generate.

The table below shows the level of through traffic attracted to the York Central highway network under various combinations of the three main access points.

| Highway Access Scenario | Through Traffic (AM peak hour, 2021) |
|---|---|
| Water End Access ✓<br>Holgate Park Access ✓<br>Queen Street ✓<br>Restrictions on Leeman Road ×<br>Restrictions on Station Road × | 1,100 |
| Water End Access ✓<br>Holgate Park Access ✓<br>Queen Street ✓<br>Restrictions on Leeman Road ✓<br>Restrictions on Station Road × | 1,100 |
| Water End Access ✓<br>Holgate Park Access ✓<br>Queen Street ✓<br>Restrictions on Leeman Road ✓<br>Restrictions on Station Road ✓ | 600 |
| Water End Access ×<br>Holgate Park Access ×<br>Queen Street ✓<br>Restrictions on Leeman Road ✓<br>Restrictions on Station Road ✓ | 400 |
| Water End Access ×<br>Holgate Park Access ✓<br>Queen Street ✓<br>Restrictions on Leeman Road ✓<br>Restrictions on Station Road ✓ | 300 |

Source: York Central Transport Masterplan Report, Section 3, Table 10

The conclusion of this work is that the optimal combination of highway accesses is to provide bridges into the site from Holgate Park and Queen Street, but not from Water End, and to restrict through traffic on Leeman Road. Such a package of highway measures will also result in the need to restrict through private vehicle traffic on Station Road across the face of the station entrance. This restriction is recommended in order to reduce through traffic in York Central, alleviate traffic problems in this key area of the city and to allow a new transport interchange to be built adjacent to the current station entrance. Good public transport access in York Central is provided, from the A59 corridor via Holgate Park and from the A19 corridor via Leeman Road. Our work demonstrates that the rest of the highway network in the city can cope with the traffic diversions that will arise as a result of this restriction, recognising the fact that traffic congestion and accessibility by car in the city are set to worsen even if the York Central proposals do not proceed.

The particular requirements of cyclists and pedestrians have also been considered as part of our review of highway access options. Cycling and walking access will be provided at the two new highway entrances at Holgate Park and Queen Street. Further cycle and pedestrian access will be available at either end of Leeman Road, where traffic restrictions on the road will provide an opportunity to improve the environment for those on-foot or on a bicycle. The provision of an improved link between the eastern end of Leeman Road (Marble Arch area, in the vicinity of the Post Office sorting depot) and the banks of the River Ouse is also recommended, together with the provision of a new pedestrian and cycle bridge across the Ouse between Scarborough Railway and Lendal Bridges to improve access into York Central from north of the River. The existing pedestrian access into York Central at Wilton Rise to the South East of the site should also be upgraded for cycle access.

**Public Transport Proposals**

A wide range of public transport options has been examined in the development of this Master Plan, with consideration being given to the types of public transport service provided, the method of vehicle traction and the routes to be taken. The principal component of all options has been to provide a high quality public transport link between a new Park & Ride site near the A59/A1237 junction (to serve the A59 Boroughbridge Road corridor as well as the Outer Ring Road), the York Central site, York Railway Station and York City Centre.

Initial analysis has seen three principal options emerge:

- an on-street bus-priority link along the A59 corridor that enters York Central at Holgate Park and continues past the station to the City Centre;
- a segregated guided bus option that skirts the eastern end of the York-Knaresborough branch line before passing on the western flank of the ECML and FAL, then entering the York Central Site at Holgate Park via the new highway bridge. Buses would then continue through York Central on the highway to the station and City Centre.
- a segregated tram option that follows the same alignment as the guided bus.

A public transport and mode choice model for York has been developed using the EMME/2 proprietary software suite. The model has been based on limited readily available input data but is nevertheless appropriate for testing and comparing broad public transport options in the A59/ECML corridors. The findings of the modelling, and a subsequent review of operational considerations, scheme costings and revenue forecasting, revealed that:

- the most appropriate location for a new Park & Ride site to serve the A59 corridor and York Central would be within the Outer Ring Road to the north of the A59 corridor. This would provide the greatest flexibility in terms of being able to serve the Park & Ride site via a segregated public transport route alongside the ECML and York-Knaresborough branch in the future.
- the capital and operating cost of the tram option are very high (£55 million capital costs, net loss on operating costs per annum) and outweigh its potential benefits making it unfeasible in the context of the York Central development and future travel demands in the City;
- the guided bus option does not provide significant extra benefits in terms of public transport modal share when compared to the on-street bus option and is more expensive (overall bus modal share to York Central is 30.6% with guided bus option, 28.8% with on-street bus priority option);
- the guided bus option would perform better if it were part of a wider network of guided buses and more intensive bus priority measures across major transport corridors in the City (38% bus mode share to City centre with service terminating in City, 41% with service extended to University); and
- the mode choice model suggests that the lowest car mode share that could be achieved at York Central is 40% which, whilst very low in both absolute and relative terms, is substantially above the 20% aspiration set out by the York Central Steering Board.

On the basis of this work it is recommended that the on-street bus option is adopted for the York Central Transport Master Plan, with priority measures implemented in the A59 corridor wherever possible, as set out in previous work commissioned by the Council.

**Public Transport Interchange**

The provision of a single public transport interchange that brings together at one place access for the York Central site, the railway station and the City centre has also been considered. Four options have been reviewed, which are adjacent to the railway station to the north, west, south or east of the current train shed. A qualitative analysis against study objectives suggests that two options show promise. Firstly, to the east of the station on Station Road, exploiting the through traffic restriction at this location as recommended as part of the highway proposals. Secondly, to the north of the station at Marble Arch, providing a subterranean bus interchange beneath the railway tracks within a reconstructed Marble Arch, with direct links provided to the station platforms above.

Both options provide good opportunities for interchange and integration between buses, railways, York Central and the city centre. Marble Arch would provide a superior interchange location and interchange facilities, but would be costly and disruptive to build. Station Road

would provide good – but not necessarily optimal – interchange and would be far less costly. It would also introduce new passenger flows through York railway station for access to York Central which would require a review of how pedestrian movements are accommodated within the station confines.

In summary, the Station Road interchange is recommended as the preferred and most readily deliverable option at this time, but further work on the feasibility of an interchange at Marble Arch should be undertaken to determine whether this potentially superior operational option is feasible in engineering terms and is affordable.

**Recommendations**

This transport master plan recommends a package of physical measures and management initiatives that could be adopted as part of the wider planning and development of the York Central proposals. This package includes:

- two new highway accesses into York Central at Holgate Park and Queen Street;
- improvements and changes to the operation of Leeman Road and Station Road;
- new and improved cycle and pedestrian links around Marble Arch;
- a new on-street bus based public transport link that would serve the A59 corridor running between a new Park & Ride site adjacent to the Outer Ring Road, York Central, the railway station and the city centre; and
- a new transport interchange at the current station entrance on Station Road.

It is also recommended that further considerations should be given to the following issues:

- the cost and engineering feasibility of a bus-rail interchange at Marble Arch, to the north of the railway station;
- the location, cost and feasibility of a new bridge for cyclists and pedestrians across the River Ouse, between the Scarborough Railway Bridge and Lendal Bridge;
- the implementation of a segregated guided bus system between the A59 Park & Ride, the York Central and York City centre; in the context of implementing a wider network of segregated and on-street bus corridors serving major demands in the City; and
- the further development and upgrade of the public transport model, both to support any future major scheme bid for transport funding for infrastructure, and to assess the impact of improved public transport networks in the City's major transport corridors.

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| Two bridge access option: | Access bridges proposed at Holgate Park and Queen Street only. Water End access would encourage increased traffic through York Central site. | There are concerns that the deletion of the Water End access point will prevent the public transport benefits of this route being realised. Further traffic modelling is required which includes the LTP2 public transport strategy. It is considered premature to rule out this access route before the additional public transport modelling is completed. The alignment of the proposed Water End access needs to be reviewed taking account the proximity to the Millennium Green. The environmental impact of the recommended Holgate Park access route needs to be reviewed. |
| Holgate Road Link to Queen Street Access | Link to Holgate Rd not required – considerable additional through traffic. | Link to Holgate Rd would encourage additional traffic along Holgate Rd which is already in the Air Quality Management Area. |
| Demolition of existing Queen Street Bridge. | Not considered | Removal of the redundant structure would reduce the long term maintenance commitment and improve the setting of the City walls and the Station. Consideration should be given to the demolition of the bridge however it should be noted that there are a number of technical and ownership issues to address before it could be removed. |
| Access Restrictions on Leeman Rd: | Restricting vehicular access would allow the Railway Museum to operate on a single | An alternative route for public transport from the Leeman Rd area through the site to the |

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| | site and enable Marble Arch to become the main cycling and pedestrian access to York Central. | new access bridge off Queen Street needs to be established. Review of alternative access arrangements for existing users to be undertaken |
| Access Restrictions on the Inner Ring Road at Station Road. | Access restrictions on the inner ring road at Station Road to all vehicles except public transport. Bus service punctuality would improve and a mode shift away from the private car would be encouraged. The road space could be used to enhance the bus interchange facilities | Whilst the study states that the changes to traffic flows are manageable it is considered that further work is required to ensure that traffic is not diverted through unsuitable areas and the arrangements are compatible with future LTP2 proposals. |
| Transport Interchange to east of Railway Station. | Four locations on East and West sides of station, Marble Arch and on proposed access bridge over railway at Queen Street were considered. The Eastern option has been recommended as it will provide the best single location to interchange between the existing bus routes, the station and York Central. | It is considered that there is insufficient space for the proposed single interchange to the East of the station. Further work is required to establish methods to link the existing interchange points in the City Centre. Walking routes to York Central will need to be enhanced and access across the station platforms will need to be considered. Note: No public thoroughfare permitted over existing station footbridge. |
| On-street based bus route from new A59 P&R site: | Segregated off-street and bus priorities on the existing network were considered. The anticipated patronage does not justify the cost of the segregated off road route along the rail corridor if the proposal was limited to York Central only. | It is considered that the proposal to provide bus priorities along Boroughbridge Rd will result in the most cost effective solution for the anticipated demand from this direction. |
| A59 P&R Site location: | Site 1 inside the ring road would be easier | An assessment of the possible locations for |

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| | to link with the possible future segregated route along the rail corridor to York Central | the Park and Ride site is the subject of a separate report to the Executive. The location is dependent on a number of other issues in addition to the possible future segregated route to York Central. |
| Bus Interchange at Marble Arch | This option would provide an opportunity to transform the Marble Arch area and would include a landmark multimodal interchange. Significant cost and disruption issues would need to be addressed. Option to be considered in more detail in any future study. | It is considered that this proposal is unlikely to be cost effective but further investigation should be undertaken as the site is perfectly located for an inter-modal interchange point. |
| New Footbridge over Ouse at Scarborough Bridge: | Further investigation into the possibility of providing a new bridge with improved links to cycle and pedestrian routes to the north of the River Ouse is recommended. | It is considered that this proposal to improve access to the cycle network to the north of the river should be developed further. The bridge would help to link the emerging Cultural Quarter initiative with the National Railway Museum. |
| Segregated guided bus routes: | Segregated guided bus routes would only be financially viable if the York Central proposals are combined with similar public transport enhancements in other busy corridors in the City | Further work would be required to establish the viability of any proposal to extend the routes through the city centre and beyond to the University. However, It is likely to be difficult to establish segregated routes at key locations within the city centre. |
| Tram based mass transit route | Not considered commercially viable | Agreed |
| Development of the Public Transport Model:. | Additional survey work should be undertaken to enable the public transport model to be upgraded. | The model is currently being updated to assist in the development of the LTP2 strategies. The model will be used to check |

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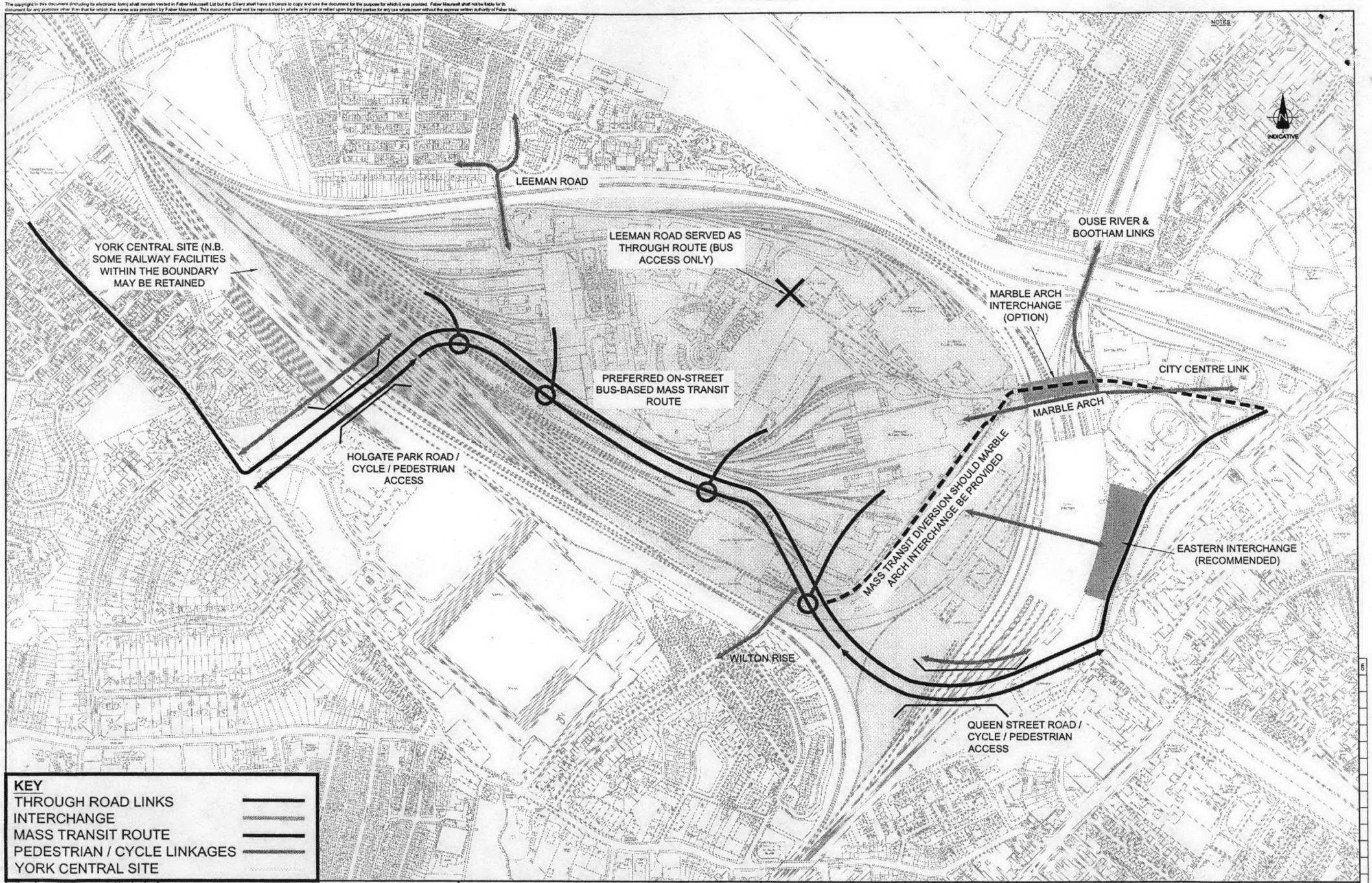
| | | the access and public transport arrangements proposed in the York Central study |
| Parking Provision and Modal Split Target: | Traffic model assumes 20% car based trips but public transport model determines that this is not achievable with the current bus priority measures and parking provision allocated to the site | The study suggests that the proposed 20% car based modal split target is not achievable. This target needs to be reviewed to ensure that the parking allocations are compatible with the public transport provision and whether bus priority measures included within LTP2 will assist in the reduction in the number of car based trips. |
| Operational Land Requirement: | The review of the operational land requirement was commissioned after the Transport Study was substantially completed. | Network Rail are currently re-assessing the extent of the operational land requirement which may affect the area available for development and the location of the access bridges. The transport study will need to be reviewed against the results of the operational land study. |
| Air Quality | The report suggests that current air quality objectives will be met in most areas of the City by 2011. Pollutant concentrations will be higher with the development in place in 2021compared to the do nothing scenario but lower than the target objectives. | Additional air quality modelling is required to ensure the full impact of York Central and the cumulative impact of the other proposed developments in the City is correctly assessed. |

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Client: CITY OF YORK COUNCIL

Project: YORK CENTRAL TRANSPORT MASTERPLAN

Title: TRANSPORT ACCESS PLAN

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