

**THE MERSEY GATEWAY PROJECT**

**DELIVERY PHASE**

**THE MERSEY GATEWAY PROJECT**

**CHAPTER 2.0**

# THE MERSEY GATEWAY PROJECT

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## 2. THE MERSEY GATEWAY PROJECT

### 2.1 Project Background

2.1.1 The Mersey Crossing Group (now called the Mersey Gateway Group) was established in 1994 to promote a new crossing of the River after the government of the time had confirmed that construction of a new crossing should be promoted at a local rather than national level. The Mersey Crossing Group is led by the Council and at the time of the applications for the Permissions and Orders ~~comprises~~ ~~comprised~~ the following:

- a. Halton Borough Council;
- b. Merseytravel;
- c. Liverpool Chambers of Commerce and Industry;
- d. Halton Chambers of Commerce and Enterprise;
- e. English Partnerships;
- f. Knowsley Metropolitan Borough Council (MBC);
- g. Liverpool City Council;
- h. St Helens MBC;
- i. Warrington Borough Council;
- j. Sefton MBC;
- k. Wirral MBC;
- l. Cheshire County Council;
- m. The Highways Agency;
- n. Government Office for the North West;
- o. North West Regional Development Agency;
- p. Peel Holdings;
- q. SOG Ltd;
- r. Port of Weston;
- s. Mersey Maritime Group;
- t. Ineos Chlor;
- u. Liverpool John Lennon Airport;
- v. Halton and St Helens Primary Care Trust (PCT); and
- w. Jaguar Motor Company.

2.1.2 The current Mersey Gateway Group now comprises:

- a. Cheshire & Warrington LEP;
- b. Cheshire West and Chester Council;
- c. DATS Holdings Ltd;
- d. Federation of Small Businesses Merseyside, West Cheshire and Wigan;
- e. Halton Borough Council;
- f. Halton Chamber of Commerce and Enterprise;
- g. Halton Citizens Advice Bureau;
- h. Jaguar Landrover;
- i. Knowsley Metropolitan Borough Council;
- j. Liverpool Chamber of Commerce;
- k. Liverpool City Council;
- l. Liverpool LEP;
- m. Merseytravel;
- n. Northwest Regional Development Agency;
- o. Peel Holdings (Management) Ltd;
- p. Sefton Metropolitan Borough Council;
- q. St Helens Metropolitan Borough Council;

- r. Stobart Ports;
- s. The Mersey Partnership;
- t. Warrington Borough Council; and
- u. Wirral Council.

- 2.1.3 The Mersey Crossing Group ~~has~~ had access to the final reports of the Department for Transport's (DfT) Mersey Crossing Study, which had identified the 'Runcorn Gap' as the optimum river crossing area to provide additional road capacity. A number of alternatives were considered for a new crossing of the River. Details of the alternatives considered and the decisions which led to the selection of a new crossing (as opposed to other transport solutions) and the route to be taken forward are provided in Chapter 5.
- 2.1.4 Findings as to the nature of a new crossing of the River were presented to the Mersey Crossing Group on 8 April 2003, together with design information, financial costs, estimated economic benefits and other information. Based on this presentation, the Council and the Mersey Crossing Group decided unanimously to promote a new river crossing, using a route option known as Route 3A (the Project), subject to further consultation with the public and other stakeholders.
- 2.1.5 Having decided upon the route and a new fixed river crossing the Council submitted its conclusions to the DfT in July 2003. Following the submission of further information in 2004-2005 the DfT entered the Project into its programme of major transport schemes in March 2006 (Programme Entry). This enabled the Project to be developed to the stage where the applications for the Permissions and Orders could be made. ~~This confirmed funding for the delivery of the Project and allowed it to be developed to the current stage where orders and applications are being submitted to secure statutory authorisation for its construction, operation and maintenance.~~
- 2.1.6 The ~~scheme~~ Project being promoted ~~under the Further Applications~~ reflects the scope described at ~~Section 1.4 paragraph 1.3.2~~ (Chapter 1).
- 2.1.7 The Permissions and Orders secured by the Council are listed at Section 1.3 (Chapter 1).
- 2.1.8 As explained in Section 1.1 (Chapter 1), the Council is now advancing the Project including the Proposals to its delivery phase and in order to prepare the Project for procurement of the Project Company and in response to consultation with the DfT, some modifications to the Reference Design proposals have been made which are the subject of the Further Applications. The most significant of these modifications is the requirement that the tolling technology used must avoid the need for a physical barrier system for the collection of monies. Instead, open road tolling (ORT) methods are to be employed. The modified design, including all of the items described in section 2.3 below, is known as the Updated Reference Design.

## 2.2 The Consented Scheme

- 2.2.1 As noted above, the applications made in 2008 were based upon a Reference Design for which the environmental impacts were assessed and the supporting Environmental Statement (the Orders ES) prepared. The accompanying plans and drawings reflected the Reference Design and it is that design that is the subject of the Permissions and Orders which remain valid and implementable.
- 2.2.2 The Reference Design was prepared in the expectation that tolls and charges for use of the New Bridge and SJB would be collected at barrier controlled toll plazas. These were to be located in Widnes on the existing closed St Michael's Golf Course, on the slip roads at Ditton

Junction and within the Widnes Loops Junction. They were also to be located on the north approach to the SJB.

- 2.2.3 The following section of this chapter provides a general route description followed by a description of the Updated Reference Design noting the modifications to the Reference Design.

## 2.3 Route Description

- 2.3.1 The works that comprise the Project **including the Proposals** run from ~~the North West of the A562 Speke Road, west of Widnes to a junction with Junction 12 of the M56 to the South of Runcorn.~~ They also include the SJB ~~although these works are not included in the Further Applications.~~ ~~A scheme has been designed in outline to deliver the objectives of the Project, which is referred to as the "Reference Design".~~ ~~The alignment of the Reference Design.~~ **The Updated Reference Design** is described in greater detail below, ~~and the significant modifications from the consented Reference Design in each area are identified.~~

- 2.3.2 The western ~~extent~~ **tie-in** of the proposed main alignment will be located in Widnes, ~~along on the A562 Speke Road to Liverpool, immediately to the west of the slip roads to the existing Ditton Roundabout Junction (Junction of A562 and A533).~~ The alignment will then ~~head eastwards along the line of, and to the south of, Speke Road towards the Ditton Junction.~~ It will then ~~progress, via an embankment,~~ **rise on embankment to cross the remodelled Ditton Junction and continue eastwards on embankment** across land currently occupied by industrial units along Ditton Road and over the Garston to Timperley rail freight line. ~~The alignment continues eastward on embankment or elevated structures, before crossing the alignment of the existing A557 Widnes Eastern Bypass (via a multi-span viaduct),~~ **Victoria Road**, the Catalyst Trade Park and the western corner of the ThermPhos Chemical Works. A new **grade separated** junction (the "Widnes Loops Junction") will be formed with the A557 at this location. The alignment will then continue south eastward over the St Helens Canal, ~~and Widnes Warth Saltmarsh to the main crossing of,~~ the River Mersey, ~~South of the river the alignment continues to rise across the Astmoor Saltmarsh and Wigg Island, before turning south to the high point over the Manchester Ship Canal.~~ **The alignment then continues across** ~~and~~ Astmoor Industrial Estate. ~~The alignment will then to connect into the existing road network in Runcorn at the Junction of the A533 Bridgewater and Central Expressways with the A558 Daresbury Expressway (the Bridgewater Junction).~~ The route will continue south along the Central Expressway (A533) towards the junctions of the Central/Southern Expressways and the Weston Point Expressway/Weston Link (known respectively as the Lodge Lane Junction and Weston Link Junction). The alignment will finally join the M56 Motorway at Junction 12.

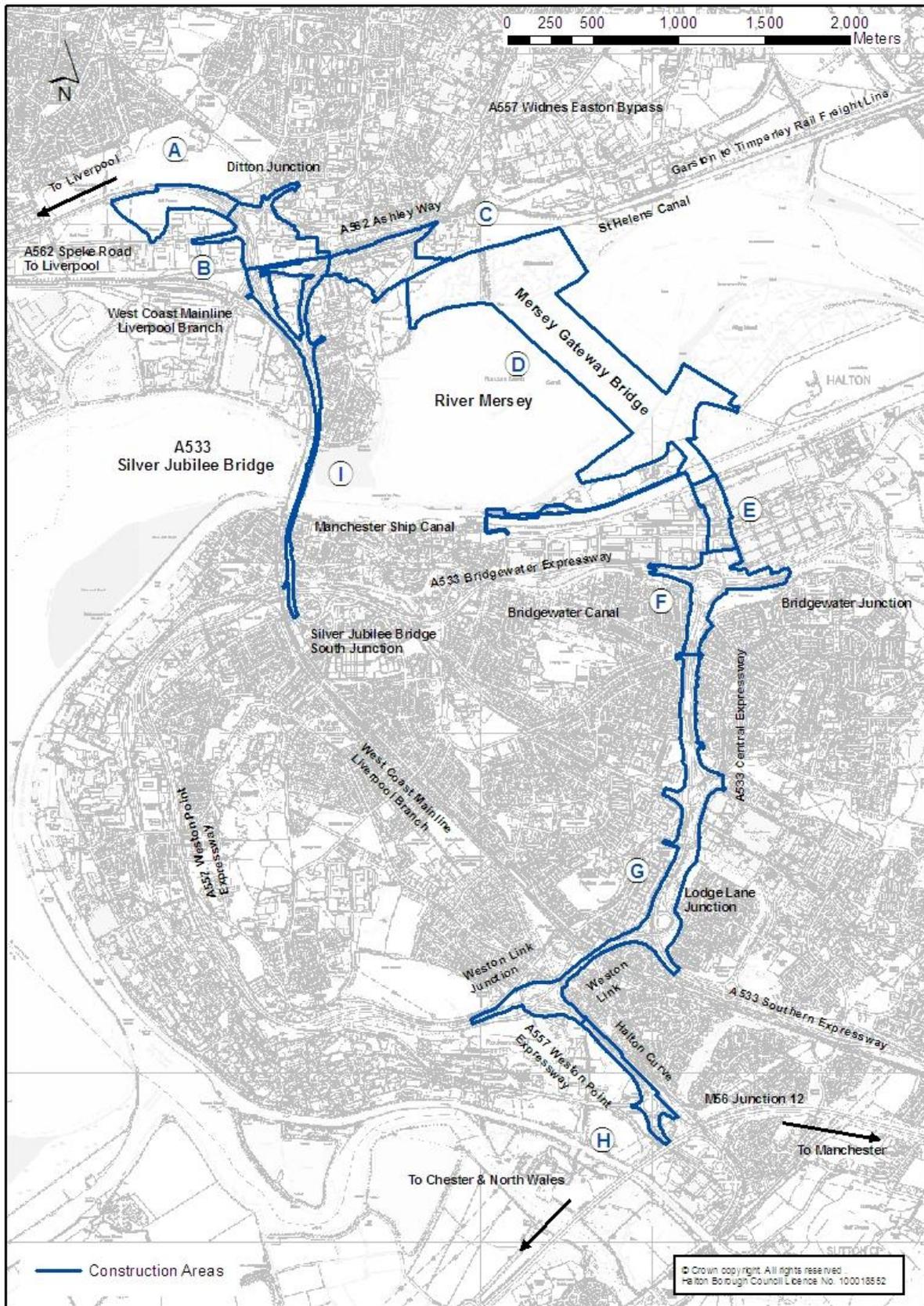
- 2.3.3 The ~~main~~ application sites for the Project **including the Proposals** are shown **edged red** at Figure 1.3. ~~The areas shown edged red will comprise works for which planning applications will be made pursuant to the Town and Country Planning Act 1990. The areas shown edged blue will be the subject of an application under the Transport and Works Act 1992. Together, the~~ **The areas edged red and edged blue** are known as the "Project Area".

- 2.3.4 For the purposes of understanding and describing the works in the ES, and carrying out the EIA, the structural, highway and construction works for the Project have been split into a number of parts (known as "Construction Areas") (A to I as shown below on Figure 2.1). These components reflect the individual construction areas described within the Construction Method Report (CMR) (contained within Appendix 2.1 of this ES **and described in section 2.4 below**). The construction areas comprise the following:

- a. Area A – ~~Main Toll Plaza~~ **Speke Road**;
- b. Area B – Ditton Junction to Freight Line;

- c. Area C – Freight Line to St Helens Canal including Widnes Loops Junction;
- d. Area D – Mersey Gateway Bridge;
- e. Area E – Astmoor Viaduct;
- f. Area F – Bridgewater Junction;
- g. Area G – Central Expressway, Lodge Lane Junction and Weston Link Junction;
- h. Area H – M56 Junction 12; and
- i. Area I – Silver Jubilee Bridge and Widnes De-linking.

**Figure 2.1 - Mersey Gateway Project Construction Areas**



- 2.3.5 The following section of this ES provides a summary of the highway and structural design for the Project [including the Proposals](#) within each of these construction areas, full details of which are provided in the Design and Access Statement. These descriptions are derived from the CMR and illustrated on the reference design drawings which are provided at Appendix 2.2.

### **Area A - ~~Main Toll Plaza~~ [Speke Road](#)**

#### *Description*

- ~~2.3.6 The Main Toll Plaza provides the location of where tolls may be collected for crossing the New Bridge. As the Project must provide for barrier tolling technology it is necessary to provide an area sufficiently large for vehicles to slow, wait and pass through barriers without having a detrimental effect on traffic flows. The location of the toll plaza was determined through studies as explained in Chapter 5. Toll plazas are situated on one side of the Mersey only because this minimises land take, allows concentration of necessary resources and means that this type of work can be restricted in the extent and location of any of its effects. The toll plaza will require approximately four hectares of land to accommodate the northbound and southbound tollbooths and will be at or just above existing ground level. No major earthworks are envisaged because the land at this location is already relatively flat. Where the Toll Plaza is above ground then fill will be imported. Tolling structures will be required, which are likely to comprise canopies providing sufficient headroom over tollbooths and their equipment for normal traffic use.~~
- ~~2.3.7 Extended link roads to the north and south of the Main Toll Plaza carriageway that bypass the tollbooths will be provided to allow access from Speke Road to Ditton Junction for vehicles not wishing to use the New Bridge. The northern edge of the north link road will coincide with the northern edge of the existing southbound carriageway of Speke Road.~~
- ~~2.3.8 Because of the historic industrial activity on this site, this area is known to contain residual contamination within superficial (near surface) made ground deposits. The Main Toll Plaza area itself is at, or about, existing ground level and will be formed on a relatively thin layer (approximately 1m average thickness) of imported fill material supported on the superficial deposits which may very well be subject to ground improvement techniques to control settlement.~~
- ~~2.3.9 Excavations will be avoided wherever possible to minimise the need to dispose of arisings that may be contaminated. Drainage and other trench arisings will be incorporated into other areas of fill if possible but will otherwise require to be taken to a licensed tip.~~
- ~~2.3.10 Stewards Brook and a public footpath pass beneath the existing Speke Road to the west of the proposed tolling areas. This brook is contained within a culvert which will need to be extended in length to the south to accommodate the increased width of the carriageway at that location. The public footpath will be diverted around St Michaels Road.~~
- ~~2.3.11 Balancing ponds may be formed to the south of the new carriageway on either side of Stewards Brook to control the drainage water outfall flow rate into the brook. Other drainage attenuation options may also be adopted.~~
- [2.3.12 Area A comprises the tie-in to the A562 Speke Road to the west of Ditton Junction. Previously Area A included the main toll plaza, but now it encompasses a much reduced area. Construction in Area A will be closely integrated with that in Area B.](#)
- [2.3.13 For eastbound traffic the scheme would tie-in at the location of the existing off-slip for the Ditton Junction and would retain the existing alignment and levels of the northern edge of the slip road,](#)

by providing a length of low retaining wall (up to 2m in height) between the slip road and remodelled main line embankment approaching Ditton Junction.

- 2.3.14 The modified alignment of the main line approaching Ditton would allow the existing structures to remain operational for longer during construction, which will help to mitigate delay and disruption.
- 2.3.15 For westbound traffic a new slip road would be constructed slightly south of the existing slip road alignment, to tie-in slightly west of the existing slip road. The southern main line verge would be widened to accommodate current visibility standards. The westbound slip road would be constructed to minimise impact on residual contamination within superficial (near surface) made ground deposits and will be formed on a relatively thin layer (approximately 1m average thickness) of fill material supported on the superficial deposits which would need to be subject to ground improvement techniques to control settlement.
- 2.3.16 Excavations will be avoided wherever possible to minimise the need to dispose of arisings that may be contaminated. Drainage and other trench arisings will be incorporated into other areas of fill if possible but will otherwise require to be taken to a licensed disposal facility.
- 2.3.17 Attenuation ponds may be formed to the south of the new carriageway to control the rate at which drainage water from the Project to the west of Ditton is discharged into existing watercourses or pipes. The attenuation ponds have been assessed in the ES but other drainage attenuation options may also be adopted.

#### *Summary of Modifications to the Reference Design*

- 2.3.18 The need for works in Area A is greatly reduced by the proposal to employ Open Road Tolling (ORT), removing the need for toll plazas. The Updated Reference Design would therefore be able to tie-in closer to Ditton Junction, requiring substantially less pavement construction, and removal of the infrastructure associated with the toll plazas. The reduced area of pavement also benefits the amount of attenuation required. Without toll plazas it has been possible to redefine the scheme boundary to lie east of Stewards Brook. Work to extend culverts / underpasses in this area would also no longer be required.

### **Area B – Ditton Junction to Freight Line**

#### *Description*

- 2.3.19 Area B comprises Ditton Junction including the junction at Ashley Way, and the main line, slip roads and remodelled Queensway as far as the Garston to Timperley Rail Freight Line.
- ~~2.3.20 Ditton Junction will be changed from a roundabout to a signal-controlled junction. The new carriageway will increase in level on an embankment as it approaches the new grade separated junction and will be taken over the new ground level link, between Ditton Road and Moor Lane South, on a new, two span bridge.~~
- ~~2.3.21 The southbound on-slip and the northbound off-slip will also feature toll collection facilities.~~
- ~~2.3.22 An embankment of up to 9m high will be formed. This crosses land currently occupied by industrial buildings and a scrap metal yard and it is assumed that these areas will require treatment (owing to contamination) prior to construction of the embankment.~~

- 2.3.23 The new main line carriageway will be carried on embankment as it approaches the new grade separated junction and will be taken over Ditton Road (which will be realigned through the centre of the existing roundabout) on a new two span bridge. A series of linked signal-controlled junctions will be provided along Ditton Road and at the existing junction with A562 Ashley Way. Designated footways and cycle ways will also be accommodated.
- 2.3.24 The main embankment will continue to the east, crossing land currently occupied by industrial buildings and a scrap metal yard to gain sufficient height for a crossing of the Freight Line with the Ditton Junction east facing slip roads rising alongside.
- 2.3.25 Because of the historic industrial activity on this site, this area contains residual contamination within the superficial (near surface) made ground deposits. Excavations will be avoided wherever possible to minimise the need to dispose of contaminated arisings. Drainage and other trench arisings will be incorporated into other areas of fill if possible but will otherwise require to be taken to a licensed tip. The same will be true of the modifications to the highway links and alignment associated with the amendments to the local road system to tie into the new junction arrangement.
- 2.3.26 Ditton Road is a long established corridor for services and many of these will need to be diverted to accommodate the revised highway alignment. These will include diversions of electricity, gas, water, sewage and telecommunications mains. The Scottish Power Manweb electricity substation adjacent to the Anglo Blackwell compound on Ditton Road will require relocation. *Diversion of the Mersey Valley Sludge Pipeline will also be undertaken.*

#### *Summary of Modifications to the Reference Design*

- 2.3.27 The principle of the junction design at Ditton is not changed in the Updated Reference Design. However, a number of adjustments have been possible. The removal of toll plazas (requiring relatively flat alignments) would allow the merge and diverge layouts east of the junction to be positioned further west. In conjunction with the adoption of urban standards, this would reduce the footprint of these junctions and especially the extent of highway to be supported on elevated structures. In addition the alignment has been moved to the north, allowing more of Ditton Bridge to be constructed before the existing link to SJB has to be removed.

### **Area C – Freight Line to St Helens Canal**

#### *Description*

- 2.3.28 This area comprises the works between the Freight Line and St Helens canal, and also includes links to the A577 Widnes Eastern Bypass that connects with Junction 7 of the M62 to the north.
- ~~2.3.29 The following new structures and earthworks will be required in this section of the works:~~
- ~~a. The Freight Line Bridge – a single span bridge over the Garston to Timperley Rail Freight Line.~~
  - ~~b. Victoria Road Viaduct – a high level, multi span viaduct connecting the Freight Line Bridge to the edge of the Widnes Loops Junction including the crossing of Victoria Road.~~
  - ~~c. Two bridges over the new Widnes Loops Junction carriageways.~~
  - ~~d. Embankments carrying the new carriageway at high level.~~
  - ~~e. A bridge to carry the Widnes Loops Junction southbound on slip over itself.~~
  - ~~f. Toll plazas connecting the Mersey Gateway to the Widnes Eastern Bypass.~~

- ~~g. The St Helens Canal Bridge – the high level bridge crossing the potential development corridor to the north of the St Helens Canal and the crossing of the St Helens Canal itself, which would then land on the north abutment of the Mersey Gateway Bridge.~~
- ~~2.3.30 This area forms the link between the New Bridge and the existing A557 Widnes Eastern Bypass that connects with Junction 7 of the M62 to the north. It will be formed primarily by substantial earthworks formed probably from excavated arisings from the redundant Widnes Eastern Bypass, supplemented by imported fill.~~
- ~~2.3.31 The new road between the Freight Line and the Widnes Loops Junction will be carried on a multi-span reinforced concrete structure. Finishes will be to a high quality specification and the area landscaped upon completion of the works.~~
- ~~2.3.32 The structures within the Widnes Loops Junction will either be portal or box structures in reinforced concrete constructed within the earthworks.~~
- ~~2.3.33 It is also expected that works may be needed in this area to contain or treat the contamination present in the soils under the footprint of the new earthworks.~~
- ~~2.3.34 The new carriageway will be taken over the St Helens Canal on a new, reinforced concrete structure, integral with the north abutment of the New Bridge. It will be formed at a height sufficient to permit a further structure to be constructed under it to carry a future light rapid transit system (or similar) at a level to match the possible running surface within the New Bridge and still preserve the required headroom of 5m for craft that may at some future time use the canal.~~
- 2.3.35 The main line would remain elevated between the Freight Line and St Helens Canal, and a roundabout would be constructed at ground level at its intersection with the Widnes Eastern Bypass to form a grade separated junction giving access to and from Mersey Gateway to the south (but no access to the west) from the A577 Widnes Eastern Bypass.
- 2.3.36 The elevated section would be formed by an economic combination of earthworks and structures. It is anticipated that materials from the redundant sections of Widnes Eastern Bypass would be utilised in the new embankments in this area to reduce the amount of imported material.
- 2.3.37 In the Updated Reference Design the Freight Line Bridge comprises a single-span bridge over the Garston to Timperley Freight Line Railway constructed square to the railway.
- 2.3.38 The elevated main line would also need to cross Victoria Road, and the two sides of the roundabout at the new Widnes Loops Junction<sup>1</sup>. This can be achieved in a number of ways such as a viaduct in combination with embankment or earth retaining structures or by individual structures. The optimum solution will need to consider all relevant issues including geotechnical considerations, contamination and traffic diversions during construction.
- 2.3.39 For the elevated section of carriageway between the Freight Line Bridge and the new Widnes Loops Junction there are three basic options which are described below and which have been assessed. These Options are shown in Appendix 2.2 on Drawings B4027E/PL/B/300, B4027E/PL/B/310 and B4027E/PL/B/320:

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1 The name 'Widnes Loops Junction' used in the reference design is retained.

Option 1: An embankment from the Freight Line Bridge to the edge of Victoria Road, which would then be crossed by a two span bridge, landing on a large abutment structure separating the Victoria Road Bridge from the adjacent Widnes Loops Junction.

Option 2: A retained earth structure (such as reinforced earth walls or reinforced concrete walls) from the Freight Line Bridge to the edge of Victoria Road which would then be crossed by a two span bridge, landing on a large abutment structure separating the Victoria Road Bridge from the adjacent Widnes Loops Junction.

Option 3: An embankment from the Freight Line Bridge to the edge of Victoria Road, which would then be crossed by a multi span viaduct which would also cross the west side of the roundabout at Widnes Loops Junction.

- 2.3.40 Options 1 and 2 require a large abutment between Victoria Road Bridge and Widnes Loops West Bridge. This structure will form the end supports for each structure. It is anticipated that this will be a cellular reinforced concrete structure with piled foundations.
- 2.3.41 The structures carrying the main carriageway over the Widnes Loops Junction could be formed either as two span bridges, with full height abutments on the outer side of the roundabouts and sloped batters leading to bankseats on the inside as shown on Drawing No B4027E/PL/B/400 in Appendix 2.2, or as single span bridges with full height abutments at either end of the deck as shown on Drawing No B4027E/PL/B/410 in Appendix 2.2.
- 2.3.42 The St Helens Canal Bridge will provide a high level bridge crossing of the Greenway link on the north side of the St Helens Canal, the crossing of the St Helens Canal itself and the crossing of the national cycle route and major services on the south side. Two options have been assessed. The first option as shown on Drawing No B4027E/PL/B/700 is that the south abutment of the St Helens Canal Bridge could also serve as the north abutment to the New Bridge. In this case there would need to be a permanent reduction in the width of the St Helens Canal on its north bank to a minimum of 10m to allow the construction of piers to support the bridge deck. Option 2 as shown on Drawing No B4027E/PL/B/710 is that the north approach of the New Bridge could be continued across St Helens Canal. A minimum air draft of 5m will be provided for craft that may at some future time use the canal.
- 2.3.43 During construction of the New Bridge, it is expected that the St Helens Canal area will form the main reception/transition area for the main bridge units that will form the decks. As such, it is assumed that it will be necessary temporarily to infill the canal (maintaining its drainage water transfer function) to provide a working area. On completion, the canal will be reinstated with some minor changes to the alignment depending on the option that is adopted. A corridor for the Trans-Pennine Trail cycle and footpath will be maintained throughout the period of construction works.
- 2.3.44 Upon completion of the Project a landscaping scheme will link the new earthworks with the leisure facilities offered by Spike Island, the St Helens Canal and the Trans-Pennine Trail.

## Summary of Modifications to the Reference Design

- 2.3.45 The omission of the toll plazas in this area has permitted a more conventional and compact arrangement at the Widnes Loops Junction. Previously the loops arrangement was needed to accommodate the extended length required for the toll plazas and gradient up to the New Bridge. The Updated Reference Design ties-in at the pedestrian underpass on the Widnes Eastern Bypass, and removes the need to acquire land from the northern boundary of the Thermphos chemical works. The layout of the structures has been revised to suit the new alignment. In particular the lowering of the main line carriageway following the reconfiguration of the Widnes Loops Junction has led to the modification of the design between the Freight Line Bridge and the Widnes Loops Junction and the inclusion of a number of Options as explained above.
- 2.3.46 In the Updated Reference Design an alternative Option has been included for the St Helens Canal Bridge (see Drawing B4027E/PL/B/710 in Appendix 2.2) where the Widnes Approach Viaduct for the New Bridge is extended across the St Helens Canal and the New Bridge North Abutment moved to the location of the St Helens Canal Bridge North Abutment. For this option to be viable, the form of the approach viaduct deck would need to be altered such that it can be easily widened locally to accommodate the increase in width at the top of the slip roads to cater for the merge/diverge arrangements. The deck would be supported on piers similar to those on the salt marshes which would in turn be supported by piled foundations.

### Area D – Mersey Gateway Bridge

#### Description

- 2.3.47 Area D comprises the Mersey Gateway Bridge and its approaches north and south of the river over the salt marshes.
- 2.3.48 The New Bridge will have a total length of ~~around 2km~~ ~~around 2.13km~~ from abutment to abutment. The New Bridge will consist of ~~approximately over 550m~~ ~~500m~~ of approach spans from the north abutment to the edge of Widnes Warth Saltmarsh, and ~~580m~~ ~~over 500m~~ from the edge of Astmoor Saltmarsh, over part of Wigg Island, over the Manchester Ship Canal and onto the south abutment within the Astmoor Industrial Estate. The New Bridge over the Estuary itself will consist of 1,000m of cable-stayed bridge consisting of up to four spans supported by ~~no more than~~ three towers. The ~~lower portion of the~~ towers will be circular ~~or a regular polygon of at least eight sides~~ with a diameter of about 10m at water level, ~~but~~ ~~The design will therefore remain the same as the Reference Design at water level.~~ The upper portion will taper and include architectural features throughout their height.
- 2.3.49 Typical span lengths of the approach viaducts are 70-100m ~~(with a minimum of 60m)~~ with an overall deck depth of ~~up to around 6m.~~ ~~Both a~~ Approach viaducts ~~could be~~ ~~are~~ twin, separate structures supported on their own independent substructure. There will be a total of ~~no more than 35~~ ~~30~~ piers on the saltmarshes. Each pier ~~is likely to~~ ~~will~~ be of reinforced concrete of about 2m by 5m and the height would vary between 12m (north) and 23m (south) to suit the vertical profile of the deck.
- 2.3.50 The ~~three~~ towers of the cable-stayed spans are assumed to be concrete below deck level and steel above. The overall height of the towers will be around 120 -140m above the River level ~~with a maximum level at the top of the tower of 150m AOD.~~
- 2.3.51 The decks of the cable-stayed spans ~~are assumed to be~~ ~~will be~~ twin parallel decks, similar in form to the approach viaducts, connected at positions of cable stay attachment. ~~The cable~~

stays are arranged in pairs in a harp (i.e. parallel) configuration.

- 2.3.52 The foundations are piled throughout the length of the New Bridge. The depth to rock is greater at the north side of the Estuary. Therefore, foundations for piers will get progressively shallower as they near the Manchester Ship Canal.

#### *Summary of Modifications to the Reference Design*

- 2.3.53 There are no significant changes in Area D within the Updated Reference Design. There is some adjustment of the alignment of the Widnes approach as a result of amendments to the Widnes Loops Junction. However, the Updated Reference Design is generally less prescriptive in relation to the form of structure to allow bidders greater scope to find the most economical solution.
- 2.3.54 The north and south abutments for the New Bridge are anticipated to be of a similar form of construction. They are assumed to comprise reinforced concrete cellular structures on piled foundations. The north abutment is anticipated to be staggered to allow the deck structure to finish square to the span. The abutment is anticipated to be located on the south side of the St Helens Canal, clear of the existing high pressure gas main that runs adjacent to the canal tow path. Alternatively, if the option to continue the approach viaduct across the canal is chosen (see paragraph 2.3.46) then it will be situated on the north side of the canal, clear of the Public Rights of Way. The south abutment is anticipated to be situated on the south side of the Manchester Ship Canal and will also form the north abutment of Astmoor Viaduct.

#### **Area E – Astmoor Viaduct**

##### *Description*

- 2.3.55 Area E comprises Astmoor Viaduct at high level and associated slip roads connecting to Bridgewater junction.
- 2.3.56 The new carriageway crosses the Astmoor Industrial Estate at a height of ~~approximately 24m~~ **in the order of 25m** above existing ground level. The area will need to be cleared of existing light industrial buildings. The deck of the new viaduct is likely to be constructed *in situ* on a temporary scaffold falsework **but alternative construction methods are possible**. On completion of the works, the area below the viaduct will be available for future development.
- 2.3.57 The area between the south abutment of the New Bridge and Bridgewater Junction will comprise a high-level, multi-span viaduct called Astmoor Viaduct. This will cross the existing industrial park at considerable height, linking the high level crossing of the Manchester Ship Canal with the new crossing of Bridgewater Junction.
- 2.3.58 This elevated structure will vary in width up to a maximum of ~~60m~~ **50m** before the southbound slip road splits off onto a separate alignment. The structure splits again at the point where the northbound on-slip road merges with the main line. The main line of the New Bridge will remain at high level while the two slip roads will reduce in level to the south to allow the slip roads to tie in with the roundabout at Bridgewater Junction.
- 2.3.59 The northern end of Astmoor Viaduct will land on the southern side of the south abutment of the New Bridge. The south abutment of the Astmoor Viaduct will be approximately 85m wide and will be at three levels. The abutment wall will retain the end of the embankment up to Bridgewater Junction.

- 2.3.60 The viaduct will be approximately 340m long with varying span lengths to suit the locations of highway and service corridors beneath ~~and will comprise 12 spans; 20m end spans and 30m intermediate spans.~~
- 2.3.61 The deck ~~will~~ is assumed in the Updated Reference Design to be supported by reinforced concrete plate piers, approximately 2m long by 5m wide, with four separate piers at each bent (line of support).
- 2.3.62 Piled foundations have been assumed. However, bedrock is at shallow depth beneath this viaduct and it may be possible to use spread foundations bearing directly on the bedrock in places.

#### *Summary of Modifications to the Reference Design*

- 2.3.63 There are no major changes in Area E within the Updated Reference Design. Consideration has been given to accommodating a cross-over between northbound and southbound carriageway where the slip roads join the main line, to facilitate maintenance and incident management. This has introduced changes to the vertical alignments, and horizontal alignments of the slips in order to keep the length of the slip roads as short as possible.

#### **Area F – Bridgewater Junction**

##### *Description*

- 2.3.64 Area F comprises Bridgewater Junction, Bridgewater Viaduct, modifications to the Bridgewater and Daresbury Expressways and Central Expressway south to Halton Brow.
- 2.3.65 ~~Like the Widnes Loops Junction, the~~ The Bridgewater Junction is a complex of structures and slip roads that provide grade separation and access to and from the Central Expressway (running north to south) and the Daresbury/Bridgewater Expressways (running east to west). The existing route through Daresbury/Bridgewater Expressway will be closed and **infilled to bring it up to the level of** ~~brought into~~ the new roundabout. A two-level interchange is proposed with east-west movements at the lower level and the new road linking **the New Bridge** to the Central Expressway at the higher level. The lower level will contain the gyratory system, linking slip road movements. The upper level structure is **likely assumed** to be a five-span steel and concrete viaduct. Similar construction materials will be used for the construction of the new slip road bridges over the Bridgewater Canal. The existing bridges over the Bridgewater Canal will be removed. ~~However, the existing bridges over the Daresbury/Bridgewater Expressway will be retained, although they will no longer span a live carriageway. The construction can be phased to coincide with routine winter closures of the canal. Retaining walls are also proposed so that adjacent slip roads at different levels to the main carriageway can be kept tight within the junction without the need for an embankment therefore limiting land take.~~
- 2.3.66 Traffic management of the existing traffic flows during the construction phase will affect construction methods and materials. A major feature of the works in this area will be the requirement for demolition of the existing structures. Otherwise, the works are essentially self-contained and can therefore be undertaken independently from the other work areas.
- 2.3.67 **To carry the main line across the junction a new viaduct will be required. Support piers will need to be located to allow traffic flows through the junction to be maintained during construction. The Updated Reference Design shows a** ~~The~~ five-span high level viaduct ~~will be~~ about 150m long and 27m wide. The substructure will be of piled foundations and reinforced concrete piers. The superstructure will be of prefabricated steel or prestressed concrete beams

to allow erection to fit in with the phased traffic management regime that will be required to maintain traffic flows during the works.

- 2.3.68 High abutment structures will be required at both ends of the **new viaduct** ~~New Bridge~~. The south abutment will be on the south bank of the Bridgewater Canal.
- 2.3.69 The two existing ~~slip road~~ bridges **over the Bridgewater Canal** will need to be replaced with two new ~~slip roads~~ bridges on the new alignment of the slip road off the new roundabout. These will be single span bridges with prefabricated steel or prestressed concrete beams used to form the decks over the canal.
- ~~2.3.70 The existing highway alignment will be re-configured to incorporate the New Bridge and to change the priority of the existing expressways. The free flow link between the Bridgewater and Daresbury Expressways will be removed and replaced by linking into the new roundabout that will be formed at the centre of the junction.~~
- 2.3.71 The embankments between this junction and the Central Expressway will be modified for the alignment of the New Bridge and the re-aligned slip roads. This tie-in between the new carriageway and the existing Central Expressway will be at Halton Brow.

#### *Summary of Modifications to the Reference Design*

- 2.3.72 There are no major layout changes in Area F within the Updated Reference Design. However the reinstatement of the slip road to/from Halton Lea has reduced the volume of traffic on the roundabout, leading to potential reductions in queues and delays at peak times at this junction.

#### **Area G – Central Expressway, Lodge Lane Junction and Weston Link Junction**

##### *Description*

- 2.3.73 Area G comprises Central expressway, Weston Link through to the junction with Weston Point Expressway and includes the junctions at Halton Brow, Halton Lea, Lodge Lane and Weston Point.
- 2.3.74 Improvements will be required to the alignment of the Central Expressway to bring it up to current geometric standards and to manage its interface with the New Bridge. These should not involve significant earthworks and will be undertaken generally within the existing highway boundary. **All merge and diverge arrangements will be provided to urban standards.**
- 2.3.75 The distance between existing junctions along the Central Expressway is **currently** too close to meet current merging and weaving standards. The current carriageway configuration will be modified so that the **direct connections from Halton Brow to Central Expressway are removed. This will be achieved by providing local distributor roads connecting Halton Brow to Bridgewater Junction (north) and Halton Lea (south). The links to Bridgewater fall within Area F described above, and will be accommodated on the existing slip roads and junction layout at Halton Brow. Concrete safety barriers will be detailed to prevent direct access to Central Expressway.** ~~alignment passes through this corridor with connections only at Bridgewater Junction and Lodge Lane Junction. This will be achieved by converting the existing hard shoulders into distributor lanes with no direct connection to the New Bridge at Halton Brow and Halton Lea Junctions. The existing hard shoulders will need to be strengthened to carry full highway loading and road markings and barriers will be added to prevent merging movements.~~

- 2.3.76 The links between Halton Brow and Halton Lea will be similarly accommodated on the existing slips roads and junction arrangements, with widening to accommodate a separating concrete barrier to prevent direct access to Central Expressway. To maintain a relatively narrow central reserve between the two main-line carriageways and minimise the overall highway widths - a concrete safety barrier (CSB) will be installed in the central reserve.
- 2.3.77 The northern slips to/from Halton Lea will be retained, with auxiliary lane junction details. To provide a safe arrangement for conflicting southbound diverging traffic and local southbound traffic from Halton Brow, a signalised junction will be provided. Priority will be given to diverging traffic from Central Expressway to avoid any risk of queuing traffic reaching the Central Expressway.
- 2.3.78 The existing alignment will be retained through Halton Lea Junction and the busway bridge south of Halton Lea. Minor improvements are anticipated to the southbound entry and circulating carriageway at Halton Lea. There will be no direct access from the Central Expressway to Halton Lea for northbound traffic, but traffic will be signed along parallel link roads with no significant increase in distance travelled.
- ~~2.3.79 An existing footbridge will be replaced. To the south of the Halton Lea Junction, the existing busway bridge will be replaced with a new bridge on an altered alignment.~~
- ~~2.3.80 Lodge Lane Junction will be modified to change the priority of traffic flow from the Southern Expressway to the Weston Link. The junction will be modified to make provision for dual two lanes of through traffic from the Central Expressway to the Weston Link with single lane slip roads for traffic movements to and from the Southern Expressway. These works will comprise the construction of a new single span bridge, along with modifications to the earthworks and highway alignment. The priority at Lodge Lane Junction will be modified to accommodate the major traffic flows and provide dual two lanes of through traffic between the Central Expressway and Weston Link. Other links will be accommodated by single lane slip roads and links, except that there will be no direct link from Weston Link to the Southern Expressway, and traffic will be signed through Halton Lea junction. These works will comprise modifications to the earthworks and highway alignments and construction of a new footbridge to replace Lodge Lane North Footbridge which will need to be demolished to accommodate the new alignment. It is proposed that this footbridge will be erected prior to the demolition of the existing bridge in order to maintain pedestrian access across the Central Expressway at all times.~~
- 2.3.81 ~~Weston Link Junction will be modified to change the priority of traffic flow from the northbound to the southbound section of the Weston Point Expressway. These works will use most of the existing junction layout; however, a new slip road will be constructed on the north side of the existing Weston Link Slip Road to allow traffic to slip onto the New Bridge from the northern section of the Weston Point Expressway. The priority at Weston Link Junction will be modified to accommodate the major traffic flows and provide two lanes of through traffic between Weston Link and the southbound section of the Weston Point Expressway. These works will retain most of the existing junction layout; however, a new slip road will be constructed for southbound traffic from Weston Point Expressway to Weston Link, to provide a conventional nearside merge arrangement. The existing bridleway will be diverted over a new bridge across the new slip road.~~

### *Summary of Modifications to the Reference Design*

- 2.3.82 The major modification in area G within the Updated Reference Design allows the existing Busway bridge to be retained, saving demolition costs, new construction and major service diversions. This change is facilitated by the adoption of urban standards, which has resulted in amended alignments for links through Lodge Lane junction.
- 2.3.83 The Updated Reference Design is not modified from the Reference Design south of the west coast main railway line crossing.

### **Area H – M56 Junction 12**

#### *Description*

- 2.3.84 The works to the roundabout to the north of the M56 Junction 12 are not included in the Further Applications. They are authorised by the Permissions and Orders and will be constructed under those powers but must be assessed as part of the Project as a whole so are included in this Further Applications ES. The description in the following paragraph relates to the Reference Design and has been amended for the purposes of clarity only.
- 2.3.85 The existing (partially signalised) roundabout to the north of the M56 Junction 12 will be modified to provide full signalisation. The existing circulatory carriageway will accommodate turning movements and for eastbound access to the M56 Junction 12 whilst a direct link through the centre of the roundabout will be provided for traffic between Weston Point Expressway and the link under M56. ~~include a signal controlled link directly across the centre of the existing roundabout for the main line of the new highway, leaving the outer roundabout segments for local turning traffic and for eastbound access to the M56 Junction 12.~~ The works will comprise carriageway realignment and the installation of new traffic signals. A new retaining wall will be required to support the carriageway realignment on the south side of the roundabout.

### *Summary of Modifications to the Reference Design*

- 2.3.86 No modifications.

### **Area I – Silver Jubilee Bridge and Widnes De-linking**

#### *Description*

- 2.3.87 The works to the SJB to the south of its north abutment are not included in the Further Applications. They are authorised by the Permissions and Orders and will be constructed under those powers but must be assessed as part of the Project as a whole so are included in this Further Applications ES.
- 2.3.88 The opening of the Project will result in a significant reduction in traffic flow on the SJB. This will allow the downgrading of the carriageway on the existing bridge from two lanes in each direction to a single lane in each direction. This in turn will release space on the deck of the bridge to re-introduce footpaths and to provide a dedicated cycle path. These works will require the re-configuration of the deck layout and will involve kerbing, re-surfacing and the provision of new road markings.
- 2.3.89 The substandard footpath cantilevered on the eastern side of the SJB could then be closed, although its structure would be retained to support services.

- 2.3.90 ~~A tolling plaza will be constructed on the existing carriageway of Queensway approximately 330m to the north of the SJB. ORT equipment will be installed at a suitable location on the approach (or approaches) to the SJB.~~
- 2.3.91 The embankment and viaduct linking to the Widnes Eastern Bypass will be removed by excavation and the use of concrete breakers. The link to Ditton Junction will be downgraded to a single carriageway following the line of the existing northbound carriageway and slip road to Ditton Junction. A new signal controlled junction will be provided for access to the Mersey Multi-Modal Gateway site. ~~comprise just the existing slip road. The main carriageway and structures will be removed between the Queensway tollbooths and Ditton Junction.~~
- 2.3.92 ~~The main link between the SJB and Ditton Junction (after passing through the tolling plaza) will be along the existing northbound slip road. This would be a two-lane single carriageway. A new signal controlled junction will be needed to replace the one-way off and on slips. The remainder of the existing dual carriageway to Liverpool will be closed to traffic and demolished.~~

#### *Summary of Modifications to the Reference Design*

- 2.3.93 Other than the removal of the tolling plazas, the Updated Reference Design is unchanged from the Reference Design in Area I.

## **2.4 Construction Phase**

- 2.4.1 It is anticipated that construction methods required for all elements of the Project are likely to have environmental implications. As such, the construction phase for the Project was a key consideration in the EIA.
- 2.4.2 The CMR ([Appendix 2.1](#)) provides a more detailed description of the construction methodology, which is likely to be employed to build the Project including the following detail:
- a. Description of the works;
  - b. Site access arrangements;
  - c. Site clearance and demolition requirements;
  - d. Detailed construction methods;
  - e. Construction vehicle movements; and
  - f. Programme, phasing and traffic management.
- 2.4.3 As such the CMR forms a basis for the assumptions within this ES. It informs short-term and temporary construction related effects as well as some aspects of the final built form and its effects.
- 2.4.4 As the Project will be constructed by a ~~concessionaire~~ **Project Company** who is yet to be appointed it is not possible to predict the techniques and technologies to be adopted with absolute certainty. This is important because the EIA process still requires assumptions to be made as to the manner of construction of the Project. These assumptions are used to predict environmental effects, especially during the construction phase. In order to ensure that the effects actually experienced during the Project are the same as, or more benign than, those predicted, legal requirements are imposed upon the manner of carrying out the Project. However, to provide flexibility for the ~~concessionaire~~ **Project Company** it is undesirable to specify the techniques to be employed unless absolutely necessary. Accordingly, the CMR is used to predict limits on outputs that may be imposed. Then, if ~~a concessionaire~~ **the Project Company** does not need the assessed methodology, an alternative methodology will be acceptable provided that it is environmentally equal to or better than the outputs of the

assessed methodology. It would be incumbent upon the ~~concessionaire~~ **Project Company** to demonstrate that this was the case before the alternative methodology could be adopted.

## 2.5 Landscaping

2.5.1 Landscaping will be required to integrate the Project into the existing landscape/townscape. The landscaping scheme will ensure that existing features of the townscape and riverside environments are enhanced and important features and sight lines are preserved. This section provides a description of the landscaping that will be provided as part of the Project.

~~2.5.2 The toll plaza will be located to the north of the Estuary, and will contain toll booths envisaged to be of a similar design and specification to those on the M6 toll road (see Plate 2.1). The scale and visual effect of the toll plaza will be substantially screened by the densely planted mature trees which delineate the boundary of St Michael's golf course. Within this area it is proposed to enhance the existing green space by the introduction of wildflower grasslands. This will have the advantage of enhancing amenity whilst minimising disturbance to any underlying residual industrial contamination, which in places may be near to the surface.~~

### Plate 2.1 - Tolling Example

2.5.3 At ~~the~~ Ditton Junction the opportunity to create a new ~~and imposing~~ **gateway** entrance to Widnes would be realised. A new grade separated junction will incorporate safe pedestrian routes, ~~largely segregated from traffic in an ornamental landscape setting designed to provide year round seasonal interest and colour.~~ Through **and** traffic will pass over the junction and travel along an elevated section of highway bounded by slip roads ~~which also contain toll booths~~. The whole of this section will be visually contained within ~~dense~~ woodland planting designed to screen views of the surrounding, largely degraded landscape whilst permitting selected views towards the Estuary and Widnes town centre. The screen planting will also benefit adjacent areas by providing a swathe of greenery which screens traffic and reduces the effect of lighting.

2.5.4 The route will then pass over the Garston to Timperley Freight Line and Victoria Road. Here the existing elevated link to the SJB will be demolished, and the route will be carried ~~on a viaduct~~ **at high level**, which will open up currently very constricted views and improve visual and physical permeability between Widnes town centre and West Bank. For ~~travellers~~ **road users travelling** in a southerly direction this will provide the first of a sequence of elevated views ~~over~~ **towards** the Estuary.

2.5.5 The Widnes Loops Junction will be ~~of a complex, multi-level structure incorporating toll booths on the margins of the Estuary.~~ Its scale and geometry ~~that will be integrated~~ **integrate it** into its surroundings, **assisted** by dense woodland scale tree and shrub planting. The land take associated with the junction will permit the ~~introduction~~ **improvement of segregated shared use** pedestrian / cycle routes through the landscaped areas, ~~which will replace the existing sub-standard footpaths~~ to provide links between the town centre and the Estuary.

2.5.6 The screen planting around Widnes Loops Junction will restrict ~~travellers'~~ **road users'** views to formal vistas of the Estuary when travelling south. Upon crossing the St Helens Canal Bridge the views will immediately open out to reveal the expanse of the Estuary.

2.5.7 **Road users** ~~Travellers~~ crossing the New Bridge will be afforded views over the wide expanse of the Estuary. **These views will be maintained** by the use of ~~transparent~~ wind shields **that do not unduly block the views of road users from the New Bridge** on the bridge parapets ~~which would otherwise obstruct views, particularly from smaller vehicles.~~ **where these are required.** ~~The~~

alignment is such that drivers travelling on the approaches of the New Bridge will see a full view of the cable-stayed spans.

- 2.5.8 The approaches to the structure that spans the tidal River comprise viaducts, which will have the advantages of minimising physical effect on the saltmarshes and permitting through views from the recreation areas and recreation routes (Spike Island, Trans Pennine Trail and Wigg Island). ~~This will also~~ They also have the disadvantage that the route and traffic upon it using the viaduct will be open to view from the salt marshes and surrounding areas. This effect was a consideration in determining the skewed alignment for the New Bridge - a more direct alignment would have had greater effect and be less sympathetic in the Estuary landscape. Visually, there will also be less conflict between the New Bridge and the SJB each of which will retain the integrity of its immediate setting and be viewed independently from most of the conspicuous local viewpoints.
- 2.5.9 The existing Bridgewater Junction is well sited in a natural depression in the north facing slopes on the margins of the Estuary, the route approaches this junction in an alignment which will emphasise Halton Castle as a focal point for ~~travellers~~ road users and the modified junction will also be well sited in the surrounding landform. This will provide the basis for further visual containment by supplementing the existing tree cover, which provides effective screening, to integrate the scale of the junction into its surroundings and mitigate visual effect from adjacent areas.
- 2.5.10 Between the Estuary margins and the junction the route will pass through the existing Astmoor Industrial Estate on a viaduct and it is envisaged that subsequent redevelopment will reoccupy much of the area under the viaduct. The existing, recreational footpath routes along the Bridgewater Canal and throughout the surrounding area will be retained, ~~and enhanced within the highway corridor.~~
- 2.5.11 Throughout the section of route between the Bridgewater Junction and the M56 the modifications to the existing highway will be contained within the existing highway ~~corridor~~ boundary. Whilst this will largely contain the visual effect of the modified route, the existing tree cover around Junction 12 of the M56 will be supplemented to further integrate the proposed amendments.
- 2.5.12 Initially there will be ~~some~~ a loss of mature tree and shrub cover throughout the Central Expressway corridor to accommodate the modified highway alignment but subsequent replanting will become increasingly effective and eventually re-establish much of the amenity value and screening capability of the existing tree and shrub cover. In the interim period a degree of visual alteration will be provided by the acoustic barriers envisaged for the whole of this section of the route.

## 2.6 Tolling and Road User Charging

- 2.6.1 ~~The Project will be procured as a Design Build Finance and Operate (DBFO) scheme. This means that one organisation, known as a concessionaire~~ The Council will procure a Project Company, who will be responsible for the detailed design, maintenance, construction and operation of the scheme. ~~The Project Company~~ will then operate the Project for a specified period. ~~It is currently anticipated that the contract period will be 30 years including the design and construction stages. until it has recovered its expenses and made a suitable return on its investment. For schemes of this nature the concession contract period is typically 30 to 40 years.~~ Although the DfT is contributing a proportion around 25 percent of the funding required, the Project will be funded mainly through the toll revenue secured. The ~~concessionaire~~ Project Company will obtain financial loans from banks or other lending institutions, secured by the

~~expected toll revenues received over the concession contract period. This will allow the concessionaire to construct, operate and maintain the scheme for a defined concession contract period. The funding from central government, currently proposed in the form of PFI Credits, will act as a subsidy towards the revenue required to support the private finance arrangement. This will assist in keeping toll charges to the minimum required to fund the project. The concessionaire will repay the finance that they have raised to construct the scheme over the period of the concession contract.~~

- 2.6.2 The finance for the Project is therefore reliant on revenue recovered from users of the Project through tolling and/or road user charging. To sustain revenue and to also ensure that the Project will ease local congestion it is proposed that tolls/charges will be levied for use of both the New Bridge and the SJB.
- 2.6.3 The tolling/charging regimes will also provide a mechanism to manage demand, so that free flow traffic conditions are maintained on the New Bridge and SJB. ~~Influencing~~ **Such influencing of** future traffic demand through toll and road user charging is intended to achieve service reliability and standards and to deliver the environmental benefits throughout the foreseeable future.
- 2.6.4 The removal of non-local traffic from the SJB will provide an opportunity for the SJB— as reconfigured (see paragraphs ~~2.3.88 to 2.3.91~~ **2.2.50—2.2.53** above) to be dedicated to local transport use. The reconfigured SJB will ~~have enhance~~ **enhanced** facilities for public transport, cyclists and pedestrians. ~~If the SJB remained in use at a heightened flow delivering these objectives would not be possible. Without tolling, traffic diversion from the SJB to the new crossing would be reduced and the benefits would not be realised.~~ Therefore, tolling/charging for use of the SJB ~~would~~ **is required to** protect these local transport priorities against future congestion on the local road network connecting to the SJB. This is particularly important because the New Bridge will not contain facilities for cyclists and pedestrians.

## **2.7 Tolling Infrastructure**

- 2.7.1 The current design assumes that the **ORT** technology **will be** used to collect toll / charge payments from drivers ~~is similar to that currently used on the Mersey Tunnels and elsewhere on the UK road network i.e. a combination of manned toll booths and unmanned tag systems located at appropriately positioned “toll plazas” as shown on Plate 2.1 on both the New Bridge and the SJB. This requires the installation of vehicle recognition equipment and a system for electronic charging. Pre-payment arrangements will be required including cash-based methods. It will be necessary for the operator to pursue users who have not pre-paid, or paid within a specified period, and seek full recovery. The necessary legal framework enabling such recovery will be required in advance of the Project opening to traffic.~~
- 2.7.2 ~~For the New Bridge toll plazas will comprise 8 tolling lanes on each carriageway. The width of each toll plaza will be about 40m. Tolling booths will also be provided on the slip roads from Ditton Junction and on the link with the A557. The main toll plazas will be located to the north west of the current Ditton Roundabout at or close to existing ground level. Tolloed slip roads will also be provided from the New Bridge onto Ditton Junction for local traffic, on the A557 Widnes Eastern Bypass that connects with Junction 7 of the M62 to the north and on the Queensway approach to the SJB.~~
- 2.7.3 ~~In addition to the tolling booths, a~~ **Administration and staff welfare** facilities will be provided **required. These can be remote from the Mersey Gateway itself but could remain within Halton.** ~~It is likely that these will be located adjacent to the main tolling facilities to the west of Ditton Junction. Welfare facilities will also be provided at the tolling area for the A557.~~

2.7.4 ~~The SJB will be tolled from booths constructed on the existing infrastructure. Welfare facilities will be provided in the vicinity for the toll operator staff.~~