THE MERSEY GATEWAY PROJECT

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CHAPTER 2.0

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C O N T E N T S

2. THE MERSEY GATEWAY PROJECT

2.1 Project Background

2.1.1 The Mersey Crossing 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 comprises 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 Mersey Crossing Group has 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.

2.1.3 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.

2.1.4 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 the DfT entered the Project into its programme of major transport schemes in March 2006. 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.

2.1.5 The Project being promoted reflects the scope described at paragraph 1.3.2 (Chapter 1).

2.2 Route Description

2.2.1 The works that comprise the Project run from the North West of Widnes to a junction with the M56 to the South of Runcorn. They also include the SJB. 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 is described in greater detail below.

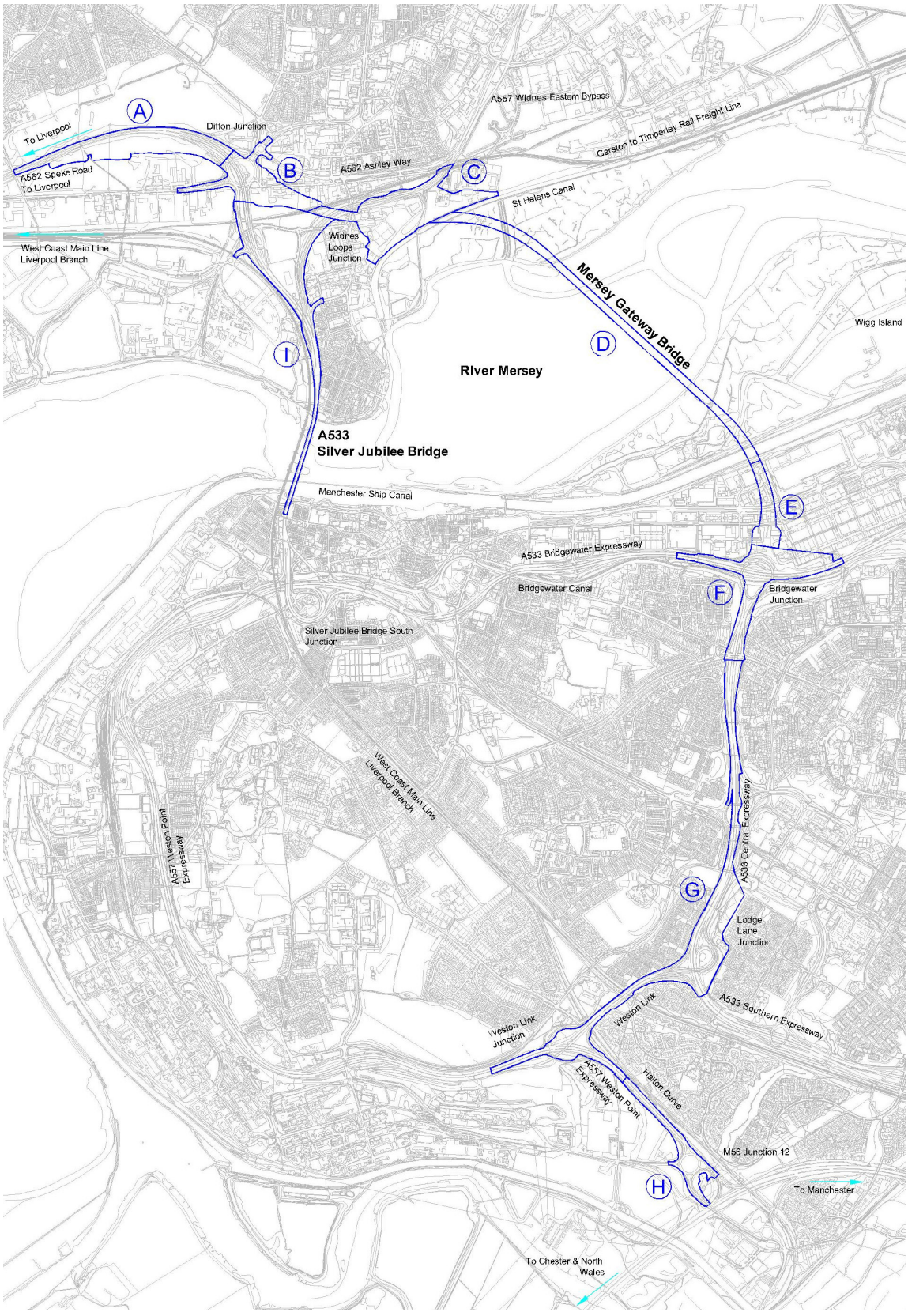
2.2.2 The western extent of the proposed main alignment will be located in Widnes, along the A562 Speke Road to Liverpool, to the west of the existing Ditton Roundabout Junction (Junction of A562 and A533). The alignment will then head eastwards along the line of, and to the south of, Speke Road towards the Ditton Junction. It will then progress, via an embankment, across land currently occupied by industrial units along Ditton Road and over the Garston to Timperley rail freight line, before crossing the alignment of the existing A557 Widnes Eastern Bypass (via a multi-span viaduct), the Catalyst Trade Park and the western corner of the ThermPhos Chemical Works. A new 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, Widnes Warth Saltmarsh, the River, Astmoor Saltmarsh and Wigg Island, before turning south over the Manchester Ship Canal and Astmoor Industrial Estate. The alignment will then 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.

2.2.3 The main application sites for the Project are shown 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 areas edged red and edged blue are known as the “Project Area”.

2.2.4 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). The construction areas include the following:

a. Area A – Main Toll Plazas;
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



2.2.5 The following section of this ES provides a summary of the highway and structural design for the Project 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

2.2.6 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.

2.2.7 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.

2.2.8 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.

2.2.9 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.

2.2.10 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.

2.2.11 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.

Area B – Ditton Junction to Freight Line

2.2.12 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.

2.2.13 The southbound on-slip and the northbound off-slip will also feature toll collection facilities.

2.2.14 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.

2.2.15 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.

2.2.16 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.

Area C – Freight Line to St Helens Canal

2.2.17 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.

2.2.18 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.

2.2.19 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.

2.2.20 The structures within the Widnes Loops Junction will either be portal or box structures in reinforced concrete constructed within the earthworks.

2.2.21 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.

2.2.22 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.

2.2.23 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. A corridor for the Trans-Pennine Trail cycle and footpath will be maintained throughout the works.

2.2.24 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.

Area D – Mersey Gateway Bridge

2.2.25 The New Bridge will have a total length of around 2.13km from abutment to abutment. The New Bridge will consist of approximately 550m of approach spans from the north abutment to the edge of Widnes Warth Saltmarsh, and 580m 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 three towers. The towers will be circular with a diameter of about 10m at water level, but will taper and include architectural features throughout their height.

2.2.26 Typical span lengths of the approach viaducts are 70-100m with an overall deck depth of around 6m. Both approach viaducts are twin, separate structures supported on their own independent substructure. There will be a total of 30 piers on the saltmarshes. Each pier 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.

2.2.27 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.

2.2.28 The decks of the cable-stayed spans 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.

2.2.29 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.

Area E – Astmoor Viaduct

2.2.30 The new carriageway crosses the Astmoor Industrial Estate at a height of approximately 24m 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. On completion of the works, the area below the viaduct will be available for future development.

2.2.31 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.

2.2.32 This elevated structure will vary in width up to a maximum of 60m 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.

2.2.33 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.

2.2.34 The viaduct will be 340m long and will comprise 12 spans; 20m end spans and 30m intermediate spans.

2.2.35 The deck will be supported by reinforced concrete plate piers, approximately 2m long by 5m wide, with four separate piers at each bent (line of support).

2.2.36 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.

Area F – Bridgewater Junction

2.2.37 Like the Widnes Loops Junction, 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 brought into the new roundabout. A two-level interchange is proposed with east-west movements at the lower level and the new road linking 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 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.

2.2.38 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.

2.2.39 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.

2.2.40 High abutment structures will be required at both ends of the New Bridge. The south abutment will be on the south bank of the Bridgewater Canal.

2.2.41 The two existing slip road bridges 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.

2.2.42 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.

2.2.43 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.

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

2.2.44 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.

2.2.45 The distance between existing junctions along the Central Expressway is too close to meet current merging and weaving standards. The current carriageway configuration will be modified so that the 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.

2.2.46 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.

2.2.47 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.

2.2.48 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.

Area H – M56 Junction 12

2.2.49 The existing roundabout to the north of the M56 Junction 12 will be modified to 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.

Area I – Silver Jubilee Bridge and Widnes De-linking

2.2.50 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.

2.2.51 The substandard footpath cantilevered on the eastern side of the SJB could then be closed, although its structure would be retained to support services.

2.2.52 A tolling plaza will be constructed on the existing carriageway of Queensway approximately 330m to the north of the SJB. 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 comprise just the existing slip road. The main carriageway and structures will be removed between the Queensway tollbooths and Ditton Junction.

2.2.53 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.

2.3 Construction Phase

2.3.1 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.

2.3.2 The CMR 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.

2.3.3 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.

2.3.4 As the Project will be constructed by a concessionaire 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 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 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 to demonstrate that this was the case before the alternative methodology could be adopted.

2.4 Landscaping

2.4.1 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.

2.4.2 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

2.4.3 At the Ditton Junction the opportunity to create a new and imposing 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 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.

2.4.4 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, which will open up currently very constricted views and improve visual and physical permeability between Widnes town centre and West Bank. For travellers in a southerly direction this will provide the first of a sequence of elevated views over the Estuary.

2.4.5 The Widnes Loops Junction will be a complex, multi level structure incorporating toll booths on the margins of the Estuary. Its scale and geometry will be integrated into its surroundings by dense woodland scale tree and shrub planting. The land take associated with the junction will permit the introduction of segregated 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.

2.4.6 The screen planting around Widnes Loops Junction will restrict travellers' 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.

2.4.7 Travellers crossing the New Bridge will be afforded views over the wide expanse of the Estuary by the use of transparent wind shields on the bridge parapets which would otherwise obstruct views, particularly from smaller vehicles.

2.4.8 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 have the disadvantage that the route and traffic upon it will be open to view. 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.

2.4.9 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 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.

2.4.10 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.

2.4.11 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. 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.

2.4.12 Initially there will be 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.

2.5 Tolling and Road User Charging

2.5.1 The Project will be procured as a Design Build Finance and Operate (DBFO) scheme. This means that one organisation, known as a concessionaire, will be responsible for the detailed design, maintenance, construction and operation of the scheme. It will then operate the Project for a period 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 around 25 percent of the funding required, the Project will be funded mainly through the toll revenue secured. The concessionaire 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.

2.5.2 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.

2.5.3 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 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.

2.5.4 The removal of non-local traffic from the SJB will provide an opportunity for the SJB – as reconfigured see paragraphs 2.2.50 – 2.2.53 above – to be dedicated to local transport use. The reconfigured SJB will enhance facilities for public transport, cyclists and pedestrians. If the SJB remained in use at a heightened flow delivering these objectives would not be possible. Therefore, tolling/charging for use of the SJB would 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.

2.6 Tolling Infrastructure

2.6.1 The current design assumes that the technology 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.

2.6.2 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. Tolled 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.

2.6.3 In addition to the tolling booths, administration and staff welfare facilities will be provided. 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.

2.6.4 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.