

**APPENDIX 16.3**  
WebTAG Appraisals



### A3. WebTAG APPRAISALS

#### A3.1. Introduction

A3.1.1. This Appendix comprises the assessments for the following objectives and sub-objectives that are identified in Chapter 16 at 16.5. These are derived from the DfT's WebTAG.

Objectives	Sub-Objective
Environmental	Physical Fitness
	Journey Ambience
Safety	Security
Accessibility	Option Values
	Severance
	Access to the Transport System
Integration	Transport Interchange

**Table A16.6: WebTAG Sub-Objectives**

#### A3.2. Physical Fitness

- A3.2.1. The Government recommends a minimum level of activity for adults is to build up to 30 minutes or more of moderate activity, most days of the week. It is believed there can be improvements in fitness and well-being through cycling 30km per week. This level of activity could be integrated into everyday life, including walking and cycling, ie a 3km cycle trip to work (6km each work day return trip) would result in 30km a week.
- A3.2.2. The key objective is to identify the contribution of the Project to overall health by increasing the level of physical activity through cycling and walking. The analysis will distinguish between the numbers of journeys for pedestrians and cyclists separately for below and above 30 minutes, with and without the Project.
- A3.2.3. The overall effect of the Project upon pedestrians and cyclists has been assessed in the Severance section below. The results suggest that the most significant effect on physical fitness will be the provision and promotion of walking and cycling facilities on the SJB.
- A3.2.4. The SJB is approximately 1 mile long (1.6km). This is based upon the points where pedestrians and cyclists can access/exit the bridge. Widnes town centre is approximately 1 mile (1.6km) from the Widnes SJB access/exit point, and Runcorn high street 0.2 miles (0.3km) from the Runcorn SJB access/exit point.
- A3.2.5. It has been assumed that all walking trips across the SJB will exceed the 30 minute level of activity threshold, as this can include both the outward and return journey to work or school. Therefore a 15 minute single journey time by foot would result in an overall daily journey time of 30 minutes. Based upon an average walking speed of 5km/hr (DMRB 11.3.8) it would take approximately 19 minutes just to walk across the SJB. Therefore it is can safely be assumed that all pedestrian trips will exceed the 15 minute journey time required.
- A3.2.6. An average cycle speed of 20km/hr (DMRB 11.3.8) would suggest it would take approximately 5 minutes to cross the SJB. However based upon the distances to Runcorn High Street and Widnes town centre from the SJB it would take approximately 11 minutes to cycle between these two points. This together with the location of residential properties, from where trips are likely to be generated, has lead to the assumption that most cycle trips to work using the SJB will also at least attain the 15 minute journey time.

- A3.2.7. The above analysis is supported by the findings of the National Travel Survey that journeys to work tend to be for up to 2km (24 minutes) for pedestrians and up to 5km (up to 15 minutes) for cyclists.
- A3.2.8. Improved cycle facilities on the SJB are likely to increase the number of journeys to work or school by cycle. However it is considered unlikely that the introduction of a cycleway on the SBJ will result in longer journeys. The same principle applies to pedestrians.

### **Survey Analysis**

- A3.2.9. A pedestrian and cycle survey was completed by Trafficsense on Tuesday 4<sup>th</sup> December 2007 between 07.00 and 19.00. ATC data from Tuesday 27<sup>th</sup> November 2007 has been used for comparison as an accident on the 4<sup>th</sup> December 2007 disrupted traffic on the SJB.
- A3.2.10. The results from the pedestrian survey indicate 102 pedestrians and 172 cyclists cross the SJB between 7am and 7pm. The time period with the highest number of pedestrian movements was 10.00-11.00, this equates to 0.4% of the total number of movements on the SJB during that time period.

#### **AM Peak**

- A3.2.11. The ATC data AM peak hour is between 8.00am and 9.00am, with a total of 7045 vehicles, of which 6074 were cars. During this same time period there were a total of 2 pedestrians and 17 cyclists counted crossing the SJB, this was also the AM peak hour for cycle journeys.
- A3.2.12. It is estimated that 80% of all traffic on the SJB is strategic traffic, ie trips with one or both trip ends outside Halton Borough, with the remaining 20% local trips within the Borough. Based upon the ATC AM peak hour of 6074 cars this would suggest 1215 trips are local. Using the pedestrian and cycle data it has been estimated that for all local trips using the SJB during the AM Peak pedestrians account for 0.2% trips, cyclists for 1.4%, and motor (not public transport) vehicles for 98.4% .
- A3.2.13. Journey to Work data for Halton data were used to compare the survey data from the SJB.

<b>Method of Travel to Work</b>	<b>Percentage</b>
Car	72%
Train	1%
Bus	7%
Motorbike	1%
Bicycle	2%
Foot	10%
Works from home	6%
Other	1%
Total	100%

**Table A16.7: Halton Travel to Work Census Data 2001**

- A3.2.14. To compare the Census data with the available data for mode of travel across the SJB the percentage of travel to work trips by car, bicycle and on foot were recalculated. Based upon the Halton Travel to Work data it appears that the number of walking and cycling trips to work which use the SJB are well below the National average and the average for Halton.

<b>Method of Travel to Work</b>	<b>Census Data Percentage</b>	<b>SJB Survey Data Percentage*</b>
Car	86%	98.4 %
Bicycle	2%	1.4%
Foot	12%	0.2%
Total	100%	100%

**Table A16.8: Comparison of Travel to Work data (Census 2001) and SJB Survey Data (2007)**

\*based on AM Peak Hour 08.00-09.00

- A3.2.15. The improvement and promotion of walking and cycling facilities across the SJB will increase the number of pedestrian and cycle trips to work towards the National average.
- A3.2.16. The results of the Halton Travel to Work Census Data (2001) suggest (discounting public transport) 12% of residents in Halton Travel to Work by foot. Only 0.2% of trips across the SJB during the AM peak hour are by foot, therefore it may be assumed that improving the pedestrian facilities on the SJB may encourage up to 11.8% extra pedestrian trips. This suggests there is the potential to increase the number of pedestrians walking across the SJB during the AM peak hour to 146. These would be journeys over the 30 minute level of activity.
- A3.2.17. As for pedestrians, the difference between the survey data and the Halton Travell to Work Census data (2001) has been used to calculate the possible change in the number of cyclists. According to the Halton Travel to Work data, and discounting public transport journeys, 2% of residents cycle to work, the survey data indicates 1.4% of non-public transport trips during the AM peak are by cycle. Therefore an increase of 8 cycle trips across the SJB during the AM Peak could be expected from the improved cycle facilities on the SJB. It has been assumed these trips would also be above the 30 minute level of activity recommended.

	No of Pedestrians			No of Cyclists		
	Survey	Census	Change	Survey	Census	Change
%	0.2%	12%	11.8%	1.4%	2%	0.6%
Actual Number	2	148	146	17	25	8

**Table A16.9: estimated change in the number of pedestrians and cyclists during AM Peak hour**

PM Peak

- A3.2.18. The ATC data PM peak hour is between 16.00 and 17.00, with a total of 6968 vehicles, including 6048 cars. During this same time period there were a total of 18 pedestrians and 24 cyclists counted crossing the SJB.
- A3.2.19. Based upon 20% of the traffic being local trips within the Borough, 1210 car trips are local. It has therefore been estimated that for all local trips using the SJB during the PM Peak pedestrians account for 1.4% trips, cyclists for 2%, and motor vehicles for 96.6%.
- A3.2.20. The percentage of travel to work trips by car, bicycle and on foot were recalculated to compare the Census data with the available data for mode of travel across the SJB. Based upon the Halton Travel to Work data it appears that the number of walking trips to work which use the SJB are well below the average for Halton, however the number of cycle trips appears comparable.

Method of Travel to Work	Census Data Percentage	SJB Survey Data Percentage*
Car	86%	96.6%
Bicycle	2%	2%
Foot	12%	1.4%
Total	100%	100%

**Table A16.10: Comparison of Travel to Work data (Census 2001) and SJB Survey Data (2007)**

\*based on PM Peak Hour 16.00-17.00

A3.2.21. The Halton Travel to Work Census Data (2001) suggests 12% of residents in Halton Travel to Work by foot. Currently 1.4% of trips across the SJB during the PM peak hour are by foot, therefore it has been assumed that improving the pedestrian facilities on the SJB may encourage up to 10.6% extra pedestrian trips. This suggests there is the potential to increase the number of pedestrians walking across the SJB during the PM peak hour to 151. These would be journeys over the 30 minute level of activity.

A3.2.22. According to the Halton Travel to Work data 2% of residents cycle to work, the survey data also indicates 2% of trips during the PM peak are by cycle. Therefore potentially there is a limit to the number of additional cycle trips which could be made across the SJB during the PM Peak. However with the introduction of improved cycle facilities it could be possible for cycle journeys across the SJB to exceed the travel to work average. It has been assumed these trips would also be above the 30 minute level of activity recommended.

	No of Pedestrians			No of Cyclists		
	Survey	Census	Change	Survey	Census	Change
%	1.4%	12%	10.6%	2%	2%	0%
Actual Number	18	151	133	24	24	0

**Table A16.11: estimated change in the number of pedestrians and cyclists during PM Peak hour**

**Off-Peak/Leisure Trips**

A3.2.23. There may an increase in the number of off-peak leisure trips due to improved pedestrian and cycling facilities on the SJB providing links to off-road routes in both Runcorn and Widnes. Leisure trips are on average longer trips than travel to work/school trips. They have been considered neutral for the purpose of this exercise. Also leisure and off-peak trips will not necessarily be repeated on a regular daily basis and cannot therefore be regarded as providing consistent health benefits to individuals. Peak hour movements for pedestrians are between 10.00am and 11.00am, with 18 trips. Trips at this time of day are likely to be considered as leisure trips as opposed to travel to work/school journeys.

**Mersey Gateway**

A3.2.24. There are no pedestrian or cycle facilities planned on the New Bridge. Cyclists will not be able to use the highway.

**Conclusion**

A3.2.25. The AM and PM peak hour changes in trips were averaged to provide a conservative estimate of the potential increase in physical fitness due to the Mersey Gateway Project. It was assumed the AM and PM peaks would be generally describing different legs of the same return journeys. The return cycle journeys were assumed to have fallen outside the peak hours and the cycle estimate was left as 8.

A3.2.26. As stated earlier off-peak trips were not included as they would be likely to be more variable and not repeated on a daily basis and therefore would not contribute to overall physical fitness.

### **A3.3. Journey Ambience**

#### ***Introduction***

A3.3.1. Travel usually takes place due to a person's desire to get to somewhere, as opposed to travelling for the sake of travelling. The quality of a journey can be affected by travellers themselves and by network providers and operators.

A3.3.2. Measures to improve journey ambience are assessed under 3 factors:

- a. Traveller Care
- b. Traveller's Views and
- c. Traveller Stress

#### Traveller Care

A3.3.3. For road users, journey ambience can be affected by whether facilities and information are provided along a route and their spacing and quality.

A3.3.4. For cyclists and pedestrians the provision and design of dedicated facilities, such as cycle lanes and crossings may affect journey quality.

A3.3.5. For public transport users, the cleanliness and general environment within the vehicle are also important journey ambience factors.

A3.3.6. For public transport users vehicle attributes that can affect journey quality can be categorised in four ways:

- a. Cleanliness – internal and external cleanliness and graffiti; the condition of the seats, tables, brightness of internal lighting;
- b. Facilities – types of seats, handles, luggage racks and storage, toilets, buffet/restaurant facilities and level of staff customer service;
- c. Information – audibility, frequency and usefulness of on-board PA announcements, the provision of general travel information and customer magazines, and the condition of advertising posters; and
- d. Environment – extent of overcrowding, ventilation, temperature, noise, overall condition and smoothness of ride.

A3.3.7. An assessment has been made about the effect of the proposed option on each of these sub-factors using a simple three point scale – better, neutral, or worse.

#### Traveller Views

A3.3.8. A transport improvement can affect the extent to which travellers can see the surrounding landscape and townscape and have an effect on the attractiveness of the general travelling environment.

A3.3.9. Views can be categorised as providing:

- a. No view – where the route is in a deep cutting, a tunnel or surrounded by environmental barriers;
- b. Restricted view – where there are frequent cuttings, tunnels or barriers;
- c. Intermittent view – where there are shallow cuttings or barriers; and
- d. Open view – where the view extends over many miles.



A3.3.10. An assessment has been made about the effect of the proposed option on travellers' views using a simple three point scale better, neutral or worse.

#### Traveller Stress

A3.3.11. Traveller stress is the adverse mental and physiological effects experienced by travellers. Three main factors influence travellers stress:

- a. **Frustration** – caused by a drivers inability to drive at a speed consistent with their own wishes relative to the standard of the road, or delays on public transport;
- b. **Fear of potential accidents** – caused by the presence of other vehicles, inadequate sight distances and the possibility of pedestrians stepping into the road. Fear is highest when speeds, flow and the HGV content is high; and
- c. **Route uncertainty** – can be influenced by the extent to which they have planned their journey and the quality of route information, whether provided to users before they begin their journey, or en route.

A3.3.12. As assessment has been made about the effect of the proposed options on each of these sub-factors using a simple three point scale – neutral, better, to worse.

#### Overall Effect Scoring

A3.3.13. The overall effect score for quality of a journey is based upon the following guidelines:

- a. The overall assessment is likely to be neutral if the assessment is neutral for all or most of the sub-factors, or improvements on some sub-factors are generally balanced by deterioration on others;
- b. If the change in effect across the sub-factors is on balance for the better the assessment is likely to be beneficial, and, conversely, it is likely to be adverse if there is an overall change for the worse.;
- c. The overall assessment is likely to be slight (beneficial or adverse) where the numbers of travellers affected is low (less than 500 a day say);
- d. The overall assessment is likely to be large (beneficial or adverse) where the numbers of travellers affected is high (more than 10,000 say); and
- e. The overall assessment is likely to be moderate (beneficial or adverse) in all other cases.

#### **Traveller Care Assessment**

A3.3.14. The following table identifies the effect the Project may have upon the various user groups:

- a. Pedestrians
- b. Cyclists
- c. Equestrians
- d. Road Users (Cars/HGVs)
- e. PT Users (Bus)

A3.3.15. Each user group was appraised according to the four categories of cleanliness, facilities, Information and Environment. These effects were then assessed based on the 3 point scale; neutral, better, worse.

## Pedestrian Traveller Care Assessment

Pedestrians		Current/2015	Proposed – with Project	Rating
	Overview	<p>Halton has two distinct types of pedestrian provision, the traditional network of footways alongside carriageways, predominantly in Widnes and in the older areas of Runcorn, and an independent network of footpaths separating pedestrians from vehicles, predominantly in the new town areas of Runcorn. The independent footpath network amounts to around 200km of segregated footpath, which over the years has suffered from a lack of maintenance.</p> <p>PRoW and Greenway networks are relatively under developed and there is a need to expand these to link all areas of the Borough.</p> <p>By 2015 a core network of key walking routes should be completed, improvements to include route creation, signing and crossings. Safe, direct and well-signed walking routes from SJB to Runcorn mainline station will be created.</p>	<p>The Project intends to ensure that all existing footpaths and PRoW are unaffected. Where it is unavoidable a new footpath link will be created to ensure pedestrians retain the current level of access to areas.</p> <p>A new dedicated footway will be introduced on the SJB, and an emergency pedestrian walkway will be provided on the New Bridge.</p>	
Cleanliness		N/A	N/A	N/A
Facilities	Dedicated Crossing Facilities	The Halton Borough Council Local Transport Plan states that “the unsatisfactory footpath provision on the SJB acts as a real barrier between the extensive footpath networks in Runcorn and Widnes”	The reduction in volume of vehicles crossing the SJB will enable the provision of a segregated walkway and cycleway. Two lanes will remain for vehicles (one in each direction).	Better
	Footpath	The existing footpath across the Silver Jubilee is separate from the main carriageway. The footpath is of substandard width, vibrates due to vehicle movements on the carriageway and is exposed.	<p>The walkway/cycleway will be 4.4m in width and will be designed and maintained to a high standard to enable walking and cycling over the SJB to be made safely.</p> <p>The footpath will be accessible for people with disabilities through the provision of measures such as dropped kerbs, tactile paving and safe crossing provisions.</p> <p>A footpath for emergency access across the New Bridge will be provided.</p>	Better
	Access to Crossing	<p><b>Runcorn:</b> Currently a footbridge linking SJB to Percival Lane. Plus at-grade access from Station Road.</p> <p><b>Widnes:</b> Access to the SJB is via at-grade access on Irwell Street</p>	<p><b>Runcorn:</b> Create crossing at at-grade access to SJB from Station Road, south of Waterloo Bridge. Provide better access to the existing footbridge, bus stop on west side of SJB and Runcorn Station.</p> <p><b>Widnes:</b> Improve at-grade access on Irwell Street to meet current standards and guidelines. Possible shared access/egress for both pedestrians and cyclists.</p>	Better

Pedestrians		Current/2015	Proposed – with Project	Rating
			<p>Improve subway which provides access to the west of the SJB, to meet current standards and guidelines.</p> <p>Pedestrian access to the New Bridge from Widnes and Runcorn will be limited.</p>	
Information	Signs/ Information	<p>Current signs are generally in poor locations and of poor quality.</p> <p>Currently no sign for link to Halton College via footbridge.</p>	<p>New signs will be positioned in key locations, and will be of a high standard providing directions to key local facilities, and providing accurate walking distances/times.</p> <p>Signpost link to Halton College via footbridge.</p> <p>Introduce information boards to provide visual maps of pedestrian routes and key locations and seating facilities to afford resting points along pedestrian routes.</p> <p>Signs will not promote walking or cycling across the New Bridge.</p>	Better
Environment	Safety	<p>The current footway across the SJB is to a poor standard, and poorly lit.</p> <p>The existing footway is clearly segregated from the main carriageway, however it vibrates from passing vehicles.</p>	<p>The new footway across the SJB will be segregated from vehicles to ensure pedestrian safety, however the area will be shared with cyclists. The route will also be well lit to create a safe environment. Less traffic will also minimise any vibrations.</p> <p>A safe route for pedestrians will be created for emergency access across the New Bridge.</p>	Better

**Table A16.12: Pedestrian Traveller Care Assessment**

## Cyclist Traveller Care Assessment

Cyclists		Current/2015	Proposed	Rating
	Overview	<p>Halton has the basis for a good network of cycleways (18km). Around one third of the Runcorn Cycleway has been improved, cycle lanes have been installed as part of quality corridor improvements and significant lengths of Greenway have been constructed through the Borough. However, Widnes fails to meet the need for a comprehensive network through having few on-highway or segregated cycle lanes.</p> <p>By 2015 a core network of key cycling routes should be completed, improvements to include route creation, signing and crossings. New area specific cycle maps including a map focusing on cross-river journeys will be created and distributed. Safe, direct and well-signed cycling routes from SJB to Runcorn mainline station will be created.</p>	Segregated cycleway across the SJB will be provided. Access to the SJB from Widnes and Runcorn will be improved. All new cycleways will be to current standards and guidelines.	
Cleanliness		N/A	N/A	N/A
Facilities	Dedicated Crossing Facilities	<p>The Halton Borough Council Local Transport Plan states that there are "no safe facilities for cyclists" across the SJB.</p> <p>Current conditions on the SJB, with high volumes of traffic, narrow 3.05m lanes and approaches via grade-separated roundabouts create an environment in which only the most confident cyclists feel safe enough to use the bridge.</p>	The reduction in volume of vehicles crossing the SJB will enable the provision of a segregated walkway and cycleway. Two lanes will remain for vehicles (one in each direction). The walkway/cycleway will link directly into pedestrian or cycle routes on either side of the river.	Better
	Cycleway	Currently there is no cycleway across the SJB. Cyclists are requested to dismount and push bicycles across the SJB footpath.	<p>The walkway/cycleway will be 4.4m in width and will be designed and maintained to a high standard to enable walking and cycling over the SJB to be made safely.</p> <p>The SJB is a proposed future route for Regional Route 82 which would allow connection of National Cycle Network route 62 (Trans-Pennine Trail) with National Cycle Network route 5 which currently ends just south of the SJB in Runcorn.</p>	Better
	Access to Crossing	<p><b>Runcorn:</b> Station Road forms part of the NCN 5 linking Runcorn Station and Runcorn Old Town.</p> <p><b>Widnes:</b> Access to the SJB is via at-grade access on Irwell Street, or via the slip lane joining Waterloo Road which is restricted to buses and bicycles.</p>	<p><b>Runcorn:</b> Introduce possible toucan crossing at at-grade access to SJB from Station Road, south of Waterloo Bridge. May provide better access to Runcorn Station than NCN 5.</p> <p><b>Widnes:</b> Improve at-grade access on Irwell Street to meet current standards and guidelines. Possible shared access/egress for both pedestrians and cyclists.</p>	Better

Cyclists		Current/2015	Proposed	Rating
			<p>Improve subway which provides access to the west of the SJB, to meet current standards and guidelines.</p> <p>Link NCN 62 with the SJB via Waterloo Road, Upper Mersey Road, through the green space adjacent to the Catalyst Science and Discovery Centre.</p> <p>Create space for cycle lanes on both side of Waterloo Road by removing existing central hatching.</p>	
Information	Signs/ Information	Current signs are generally in poor locations and of poor quality.	<p>New signs will be positioned in key locations, and will be of a high standard providing directions to key local facilities, and providing accurate cycling distances/times.</p> <p>Improve signage on SJB showing local destinations and continuous signage to allow cyclists to join National Cycle Network 62 (NCN).</p> <p>Signpost route to Halton College via existing cycle route along Station Road, under SJB close to Egerton and Ashridge Street, Runcorn.</p> <p>Remove 'Cyclists Dismount' signs from High Street and Station Road in Runcorn.</p>	Better
Environment	Safety	<p>Currently a lack of cycle parking facilities close to the SJB and within Halton.</p> <p>Few off road, segregated cycle lanes provided in Halton. Some improvements as part of quality corridor Projects.</p>	<p>Improved cycle parking locations, and security. Better information on the location of secure cycle parking ie signs, internet, Halton cycle map to be provided.</p> <p>Implement where possible safe convenient routes which avoid high traffic volumes, high vehicle speeds and large roundabouts. Provide cycle lanes, advanced cycle stop lines and signal-bypasses for left hand turns to increase cyclist's safety and reduce delay.</p>	Better

**Table A16.13: Cyclist Traveller Care Assessment**

### ***Equestrian Traveller Care Assessment***

<b>Equestrians</b>		<b>Current/2015</b>	<b>Proposed</b>	<b>Rating</b>
	Over View	<p>There are currently a number of official and unofficial bridleways in Halton. As part of the Rights of Way Improvement Plan a formal assessment is underway to record on definitive maps those legal bridleways.</p> <p>Proposals which could be implemented by 2015 include the completion of a core network of key horse-riding routes, together with improved route creation, signing and crossings.</p>	The plans will not allow for the possibility for equestrians to use the SJB.	
Cleanliness		N/A	N/A	N/A
Facilities	Dedicated Crossing Facilities	Currently there are no facilities to access or cross the SJB on horse.	The plans will not allow for the possibility for equestrians to use the SJB.	Neutral

**Table A16.14: Equestrian Traveller Care Assessment**

### Road Users Traveller Care Assessment

Road Users		Current/2015	Proposed	Rating
	Over View	<p>Current conditions on the SJB, with high volumes of traffic, narrow 3.05m lanes.</p> <p>Proposed improvements for 2015 include the connection of Ditton Strategic Rail Freight Park to A5300 at southern end. Also junction improvements to Earle Rd/Ashley Way/Fiddlers Ferry Road junction due to Widnes Waterfront Economic Development zone, and a new boulevard route could also be included.</p>	<p>Highway width on SJB will be a single 7.3m carriageway, which will allow provision for cyclists and pedestrians to be accommodated.</p> <p>The Mersey Gateway will provide an 11m 3 lane carriageway in each direction. There will be two independent main River Crossing decks.</p>	
Cleanliness		N/A	N/A	N/A
Facilities	Dedicated Crossing Facilities	4 sub-standard carriageways across SJB. Route often congested especially during peak hours.	2 standard width carriageways across SJB. Less congestion due to the New Bridge, which will have 6 lanes. The New Bridge will enable urgent repairs to be carried out on the SJB, this will result in an improved journey across both bridges.	Better
	Carriageway	Sub-standard, narrow lanes, of poor condition.	The SJB will be resurfaced and 2 standard carriageways will be provided. The New Bridge will consist of 6 standard width carriageways.	Better
	Access to Crossing	<p>Vehicular access to the SJB is mainly from the A557 Weston Point Expressway and A533 Daresbury Expressway from Runcorn, and the A533 Speke Road/Queensway and the A557 Watkinson Way in Widnes.</p> <p>The SJB frequently operates above capacity resulting in long delays during peak hours, the sub-standard lane widths and high volume of HGVs can also make the route unappealing.</p>	<p>Traffic for the New bridge will be directed via the A562 Speke Road in Widnes and the A533 Central Expressway in Runcorn.</p> <p>Local traffic for the SJB will be directed via the A557 Weston Point Expressway In Runcorn and the A557 and A553 Queensway in Widnes.</p>	Better
Information	Signs	Current signs direct traffic across the SJB.	<p>A strategy will be put in place to ensure signs are consistent and do not cause stress or confusion for drivers.</p> <p>Through traffic will be directed across the New Bridge, with local traffic using the SJB.</p>	Better
Environment	Safety	<p>Existing SJB carriageway is sub-standard. High volume of traffic resulting in high number of shunting incidents on the SJB. Accidents which block a lane cause extensive delays.</p> <p>SJB in poor state of repair and in need of urgent maintenance.</p>	<p>Reducing flows on SJB will enable essential maintenance to take place. Carriageways will meet standards. Reduced traffic flows should assist towards reducing the number of shunts resulting from slow moving traffic.</p> <p>The New Bridge carriageway will meet required standards. Adequate lighting facilities will be provided.</p>	Better

**Table A16.15: Road Users Traveller Care Assessment**





**PT Users (Bus) Traveller Care Assessment**

PT Users (Bus)		Current/2015	Proposed	Rating
	Over View	<p>Bus services are frequently disrupted due to congestion on the SJB, unreliable services effect patronage.</p> <p>Proposals to be implemented by 2015 include major improvements to Runcorn Town Centre Bus Station and the construction of a new bus Station within Widnes Town centre. Both Bus Stations to provide improved passenger waiting facilities, travel centre, cycle parking facilities etc.</p>	Reducing the flow of traffic on the SJB should assist in improving the reliability of bus services across the SJB.	
Cleanliness		N/A	N/A	N/A
Facilities	Dedicated Facilities	The new Halton bus station has recently undergone a facelift and now provides better protection against bad weather, new information boards, extra new seating, CCTV, designated waiting area for disabled passengers and tactile paving to assist visually impaired passengers.	<p>The Project does not directly include proposals to improve existing PT facilities.</p> <p>Potential proposals by HBC which could encourage residents to use local public transport services, are further supported by the improved links across the SJB.</p>	Neutral
	Busway/Bus lanes	Limited bus lanes providing links to the SJB.	Possible extension of dedicated bus lanes linking to the SJB.	Better
	Access to Crossing	Limited bus lanes providing links to the SJB.	Possible extension of dedicated bus lanes linking to the SJB. Reduction in traffic across SJB should assist reliability of bus services.	Better
Information	Signs	New information boards have been provided at the Halton North Bus Station, information boards are also available at the Bus Station in Runcorn Town Centre. Information is also available on the Halton website, which provides details of bus routes, timetables and costs. The Council has also installed specially designed real time information units at 30 key bus stops along the route of Halton Transport's Service 14, which links Hough Green to Murdishaw in Runcorn. The system knows the exact location of all buses it then transmits this information onto special display units at bus stops that inform passengers when the next bus will arrive.	No plans within the Project however, it is hoped the real time information units are the first stage in a 'rolling programme' of public transport information improvements in Halton over the next few years.	Neutral
Environment	Safety	Buses currently operate on the existing highway across the SJB.	There will be no segregated bus lanes across the SJB however the reduction in congestion on the SJB will result in a smoother ride for passengers and will allow for other bus priorities.	Better

**Table A16.17: Public Transport Users Traveller Care Assessment**

**Summary:**

User	Attributes			
	Cleanliness	Facilities	Information	Environment
Pedestrian	N/A	Better	Better	Better
Cyclist	N/A	Better	Better	Better
Equestrian	N/A	Neutral	Neutral	Neutral
Road User	N/A	Better	Better	Better
PT User (Bus)	N/A	Neutral/Better	Neutral	Better
Total	N/A	Better	Better	Better

**Table A16.18: summary of attribute ratings for each user group**

A3.3.16. All modes will benefit in terms of Traveller Care, apart from equestrians. The facilities to cross the river will be very significantly improved for walking and cycling and the road space, relieved of 80% of traffic, will significantly improve reliability and reduce delays for all motorised traffic, including buses.

**Traveller Views**

Route Alignment

A3.3.17. From its connection with the A562 Speke Road, north of the River Mersey the route of the Mersey Gateway Project (THE PROJECT) would pass through South Widnes in a south easterly direction to sweep south and span the St Helens Canal, Upper Mersey Estuary and Manchester Ship Canal on a curving alignment to the east of the Runcorn Gap and SJB (SJB) before linking into the junction of the Daresbury, Bridgewater and Central Expressways by means of a reconfigured Bridgewater Junction. From this point the route would occupy the existing corridor of the Central Expressway to join the M56 at Junction 12.

A3.3.18. The section of route between Speke Road and the Bridgewater Junction would be new construction but the section which occupies the Central Expressway Corridor and the link to the M56 would modify the existing highway network and its junctions at Lodge Lane and Western Link. Junction 12 of the M56 would also be modified.

A3.3.19. From its tie in with Speke Road to the modified Bridgewater Junction the route would be 5 km of new construction, 2.13 km of which would be the length of the Mersey Gateway Bridge between its abutments.

A3.3.20. A 1 km cable stayed section of the New Bridge would span the tidal River Mersey supported from three towers.

A3.3.21. The section of route occupying existing highway corridors between the Bridgewater Junction and Junction 12 of the M56 would be 3.5 km long giving a total length of route between the Speke Road tie in and the M56 of 8.5 km.

A3.3.22. Once the Mersey Gateway Project was constructed and open to traffic the existing route across the SJB (SJB) would be modified to reduce the carriageway to two lanes and improve conditions for cyclists and pedestrians.

A3.3.23. Traffic arrangements on the approach roads would be modified to effect the change to a 'local bridge' and associated road junctions would be appropriately reconfigured.

Landscape Context and Route Description

A3.3.24. Widnes is situated on the north bank of the River Mersey. It is a low lying town which occupies a broad tract of gently sloping ground which falls towards the river.

- A3.3.25. Other than occasional outcrops of the underlying red sandstone there are no distinctive landscape features and the town, which is characterised by its expansion in the Victorian era as centre of the Chemical works, has expanded from a core of high density terraced housing surrounding a compact town centre to absorb many of the surrounding villages into its urban fabric.
- A3.3.26. To the south of the town a spur of land projecting into the river contains the area of West Bank which, together with a spur projecting northwards from Runcorn forms a narrowing of the Mersey to create the Runcorn Gap – a natural constriction which became a focus for a ferry crossing and subsequently the first point upstream in the Mersey Estuary at which it was possible to construct a bridge crossing.
- A3.3.27. For almost the entire length of the study corridor the estuary is fringed by a mix of large and small scale industrial development, residential development and, latterly, edge of town commercial and retail expansion.
- A3.3.28. Between the industrial developments and shoreline is the local Liverpool and Warrington railway line which is adjacent to and parallel with the St Helens Canal. Although no longer used for navigation, the canal is an important recreational resource and the towpath, which is on the southern side of the canal and adjacent to the estuary, accommodates the Trans Pennine Trail, a long distance coast to coast route for walkers, horse riders and cyclists, between Southport and Hornsea a distance of some 215 miles.
- A3.3.29. The A557 Widnes Eastern bypass and the Garston – Timperley Freight line form a distinctive landscape feature and a transportation corridor which is both visually dominant and a physical barrier, especially where it leads to the SJB approaches. Other than this transportation corridors do not form substantive visually significant landscape features.
- A3.3.30. North of the estuary the route would initially pass through a disused golf course within which would be set the broader expanse of the toll plaza which would contain toll booths envisaged to of a similar design and specification to those on the M6 toll road.
- A3.3.31. The scale and visual effect of the toll plaza would be substantially screened by the densely planted mature trees which delineate the boundary of the golf course. Within this area it is proposed to enhance the existing green space by the introduction of wildflower grasslands. This would have the advantage of imposing amenity whilst minimising disturbance to underlying residual industrial contamination which in places is near to the surface.
- A3.3.32. At the Ditton Junction the opportunity to create a new and imposing 'gateway' to Widnes has been realised. A new grade separated junction would incorporate safe pedestrian routes, largely segregated from traffic in an ornamental landscape setting designed to provide year round seasonal interest and colour. Through traffic would pass over the junction and travel along an elevated section of highway bounded by slip road, which also contain toll booths. The whole of this section would 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 would also benefit adjacent areas by providing a swathe of greenery which screens traffic and reduces the effect of lighting.

- A3.3.33. The route would then pass over the Garston – Timperley Freight Line and Victoria Road. Here the existing elevated link to the SJB would be demolished, and the route would be on a viaduct which would 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 would provide the first of a sequence of elevated views over the estuary.
- A3.3.34. The Widnes Loops Junction would be a complex multi level structure incorporating toll booths on the margins of the estuary. Its scale and geometry would be integrated into its surroundings by dense woodland scale tree and shrub planting. The land take associated with the junction would permit the introduction of segregated pedestrian / cycle routes through the landscaped areas which would replace the existing sub standard and somewhat intermediary footpaths to provide links between the town centre and the estuary.
- A3.3.35. The screen planting around Widnes Loops Junction would restrict travellers views to formal vistas of the estuary when travelling south. Upon crossing the St Helens Canal Bridge the views would immediately open out to reveal the expanse of the estuary.
- A3.3.36. The quality of the landscape north of the estuary has been assessed as **Low**. Despite the route being on embankment for much of its length the travellers views have been assessed as **Restricted / Intermittent** due to screen planting providing frequent barriers. Notwithstanding this the effect on traveller's views has been assessed as **Better** due to the improvements to the immediate surroundings delivered by the landscape Project and the framing of forward vistas and intermittent views across the estuary and Widnes town centre.
- A3.3.37. The estuary and its saltmarshes are designated as an Area of Special Landscape Value and there are two open spaces of particular significance, both on the margins of the estuary. Spike Island on the northern shore adjacent to West Bank and Wigg Island adjacent to the south shore are designated as Important Landscape Features due to their value as public open space and for their nature conservation interest and industrial heritage significance.
- A3.3.38. The most prominent feature of the estuary landscape is the Fiddlers Ferry Power Station. Located on the northern bank at the eastern extremity of the borough, the power station is a well known landmark throughout the area and is readily visible from the Pennines, some thirty miles to the east.
- A3.3.39. Whilst the power station is the most prominent feature of the estuary, the most significant is the SJB which in juxtaposition with the adjacent railway bridge forms the present Mersey crossing at Runcorn Gap.

- A3.3.40. The elegant SJB, though not as prominent as the power station, can (depending on weather conditions) also be viewed from as far away as the Pennines and has become an iconic symbol of the north west region on a par with the Jodrell Bank radio telescope. Visible from all surrounding directions in the study area the SJB is the principal focal point for the surrounding urban areas of Runcorn and Widnes and in turn it affords spectacular views of the upstream estuary to the east.
- A3.3.41. Travellers crossing the New Bridge would 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.
- A3.3.42. The approaches to the structure which spans the tidal River Mersey comprise viaducts which would 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) but would also have the disadvantage that the route and traffic upon it would be open to view.
- A3.3.43. The effect of this was a consideration in determining the skewed alignment for the estuary crossing (a more direct alignment would have had greater effect and be less sympathetic in the estuary landscape). Visually there would also be less conflict between the New Bridge and the SJB each of which would retain the integrity of its immediate setting and be viewed independently from most of the conspicuous local viewpoints.
- A3.3.44. When viewed from the surrounding areas the towers and deck of the tidal crossing section of the New Bridge would be viewed in the context of changing tidal and weather conditions which vary enormously offering a changing appreciation of the bridge and varying its visual effect. Between the hours of dusk and midnight the form of the bridge would be highlighted by architectural lighting.

- A3.3.45. The spur of land on which the old town of Runcorn is situated projects into the River Mersey which flows to the north and then to the west of the town. In contrast to Widnes, the landscape is distinctive with the north facing slopes of the margins of the Mersey rising steeply to form a local ridge which runs parallel to the estuary and culminates in natural outcrops of red sandstone the most prominent of which is occupied by Halton Castle.
- A3.3.46. The land use to the south of the estuary contains the same basic structure as that to the north but due to its topography, with the underlying upper mottled sandstone creating a steeply sloping north facing ridge, the landscape exhibits completely different characteristics throughout the slopes where there are both intermittent and panoramic views.
- A3.3.47. As with Widnes the older parts of Runcorn are characterised by high density predominantly terraced housing areas clustered around a compact town centre which expanded to absorb adjacent villages. However, it is the new town, built to the east of the existing town in the 1960's and 1970's which now defines much of Runcorn's character with its clusters of purpose built high density residential districts
- A3.3.48. Notwithstanding the generally high density housing and areas of associated development there are significant areas of open green space, in particular heath land on Runcorn Hill and the extensive Town Park created as part of the new town.
- A3.3.49. The Manchester Ship Canal forms a continuous linear feature immediately adjacent to the estuary and is backed by an industrial fringe albeit of smaller scale and generally more recent origin than that to the north. The industrial fringe gives way to mixed, but principally residential, development on the north facing slopes which culminate in the vantage point of Halton Castle, visible from much of the area on the northern bank.
- A3.3.50. The quality of the landscape of the Upper Mersey Estuary has been assessed as **High to Moderate**. The travellers' views have been assessed as **Open** and, due to the fact that expansive views can be obtained through transparent wind shields on the bridge the overall effect on travellers views is assessed as **Better**.
- A3.3.51. 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 would emphasise Halton Castle as a focal point for travellers and the modified junction would also be well sited in the surrounding landform. This would 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.
- A3.3.52. Between the estuary margins and the junction the route would cut a swathe through the existing Astmoor industrial estate on a viaduct and it is envisaged that subsequent redevelopment would reoccupy much of the area under the viaduct. The existing recreational footpath routes along the Bridgewater Canal and throughout the surrounding area would be retained and enhanced within the highway corridor.
- A3.3.53. Throughout the section of route between the Bridgewater Junction and the M56 the modifications to the existing highway would be contained within the existing highway corridor.
- A3.3.54. Whilst this would largely contain the visual effect of the modified route and the existing tree cover around Junction 12 of the M56 would be supplemented to further integrate the proposed amendments.
- A3.3.55. Initially there would be a loss of mature tree and shrub cover throughout the Central Expressway corridor to accommodate the modified highway alignment but subsequent

replanting would become increasingly effective and eventually re-establish much of the amenity value and screening capability of the existing tree and shrub cover.

- A3.3.56. In the interim period a degree of visual alteration would be provided by the acoustic barriers envisaged for the whole of this section of the route.
- A3.3.57. Throughout this section the landscape has been assessed as **Moderate** quality and, due to the containment of the existing highway corridor, travellers views have been assessed as **Restricted / Intermittent**.

**A3.3.58.** Within this section the effect on travellers views has been assessed as **Neutral**

#### ***Traveller Stress Assessment***

- A3.3.59. This refers to factors influencing the level of stress include road layout and geometry, surface riding characteristics, junction frequency, and speed and flow per lane. These factors can induce in drivers the feelings of discomfort, annoyance, frustration or fear culminating in physical and emotional tension that detracts from the value and safety of a journey.
- A3.3.60. Drivers stress can be categorised into three main components: frustration, fear of potential accidents, and uncertainty relating to the route being followed.
- A3.3.61. The level of traveller stress for each user group is identified using a three point descriptive scale – better, neutral or worse.

#### Frustration

- A3.3.62. Frustration is caused by a driver's inability to drive at a speed consistent with their own wishes in relation to the general standard of the road. Other influences for all users include delays on public transport, road layout and geometry, the condition of the road network and the ability to make good progress along a route.
- a. Road Users (Car and HGV) Drivers are expected to avoid feelings of frustration due to consistent speeds, at the national speed limit, expected along strategic and local traffic routes. The dual carriageway along the majority of strategic and local routes will assist in the ability of drivers to overtake slow moving traffic, and therefore reduce the likelihood of frustration. Score: **better**
  - b. Pedestrians Improve signing strategy for pedestrian routes, plus dedicated footpaths should assist in reducing frustration faced by pedestrians. Score: **better**
  - c. Cyclists Dedicated cycleway across the SJB, together with improved cycle links into Runcorn and Widnes as well as enhancing signage of cycle routes should reduce the level of frustration for cyclists. Score: **better**
  - d. Equestrians Possibility of bridleway on the SJB, linked to express bridleway. Score: **better**
  - e. PT Users (Bus) Access to public transport should be improved through better interchange facilities, and more reliable and smoother journeys due to less congestion on the SJB, therefore PT Users levels of frustration should be reduced. Score: **better**

A3.3.63. Overall the level of **traveller's frustration** is considered as **better**.

#### Fear of Potential Accidents

- A3.3.64. Fear of accidents is more likely to be associated with road users, however the effect on the other users have also been assessed. The main factors leading to fear are the presence of



other vehicles, inadequate sight distances and the likelihood of pedestrians stepping into the road. Other factors include inadequate lighting, narrow roads, road works and poorly maintained road surfaces.

A3.3.65. Road Users (Car and HGV) Driver stress for car and HGV drivers is calculated on design standards and the flow/speeds with and without the Project. The Project will ensure that all current design standards are met, unless in exceptional circumstances where the level of design will not be any worse than the current standard. Therefore, sight distances, lighting, road width, and road surfaces will be to a high standard and will therefore not create a fear of potential accidents. Pedestrian areas will be segregated from the highway along the Project routes, thereby removing any fear from pedestrians stepping into the road. Score: **better**

A3.3.66. The assessment is of 2030 which is the worst year in the first fifteen after opening. The drivers stress for river crossing trips for the 'Do- Minimum' option is compared to the 'Do-Something'. Data on traffic speeds and flows, and their inter-relationship are the principle source for assessing driver stress.

#### Flow/Speed Analysis

A3.3.67. Scale values of low, moderate or high stress are assigned depending on the average peak hourly flow per lane, in flow units/1 hour, the average journey speed km/hr and the type of road ie motorway, dual-carriageway or single-carriage (DMRB 11.3.9 for further details).

A3.3.68. Local and Strategic routes have been identified:

- a. Local Route – Do-Minimum and Do-Something: from SJB South Junction which provides access to local routes within Runcorn, across the SJB to Ditton Junction which provides access to local routes within Widnes;
- b. Strategic Route – Do-Minimum: from M56 Junction 12 to the A562 Speke Road/A5300 Knowsley Expressway, via the A557 Weston Point Expressway onto the SJB; and
- c. Strategic Route – Do-Something route from the M56 Junction 12 to the A562 Speke Road/A5300 Knowsley Expressway, via the A533 Central Expressway, and across the Mersey Gateway Bridge.

A3.3.69. All traffic based on the Do-Minimum scenario will be routed across the SJB. The Do-Something scenario means strategic traffic will be directed across the New Bridge, with local traffic being routed across the SJB. In the 2030 Do-Minimum scenario the local route has **High** levels of stress throughout the whole route. The Strategic Route has **High** levels of stress throughout the route, except when travelling south bound between SJB South Junction to the Rocksavage Junction on A557 Weston Point Expressway where stress levels are **low** to **moderate**.

A3.3.70. In the 2030 Do-Something scenario local route has **Moderate** levels of stress long the whole route between the SJB South Junction across the SJB to Ditton Junction. The Strategic Route has **High** levels of stress along the route, particularly between Weston Link Junction and Lodge Lane Junction, and a small section through Bridgewater Junction.

**A3.3.71.** In summary, assessing the stress levels indicate that implementing the Project will reduce stress levels on local routes, and have limited effect on strategic route stress levels. It should also be noted that under the Do-Something scenario the highway on the Mersey Gateway Bridge and SJB will be to design standard which should assist in improving the quality of the journey when compared to the existing sub standard highway across the SJB. Score: **neutral**

- a. Pedestrians A designated walkway across the SJB should ensure that pedestrians remain safe from any passing vehicle. Score: **better**

- b. Cyclists Similarly, a segregated cycleway across the SJB should reduce the fear of an accident with a motor vehicle. Improved cycle links at the access/exit point to the SJB should also assist in improving safety concerns. Score: **better**
- c. Equestrians Facilities for equestrians will not be provided within the scope of the Project, therefore fear of an accident should remain the same. Score: **neutral**
- d. PT Users (Bus) Improved highway design standards across the SJB, together with a significant reduction in the volume of traffic, especially HGVs should assist in reducing the level of fear of an accident for PT Users. Score: **better**
- e. The level of **fear of potential accidents** overall is therefore considered to be **better**.

#### Route Uncertainty

A3.3.72. Signing that is inadequate for an individual's purpose can cause route uncertainty. Good design and layout of signs can go a long way towards eliminating this cause of stress from new road schemes.

- a. Road Users (Car and HGV) A signing strategy will be implemented, designed in accordance with the Department's current standards. Local traffic will be directed across the SJB, with strategic traffic being routed across the New Bridge. Score: **better**
- b. Pedestrians The promotion of improved walking facilities across the SJB, and links into Runcorn and Widnes, together with the proposed signs should assist in reducing route uncertainty for pedestrians. Score: **better**
- c. Cyclists As with pedestrians the promotion of a dedicated cycleway across the SJB, supported by cycle links into Runcorn and Widnes, together with improved signage to cycle routes should assist in reducing route uncertainty for cyclists. Score: **better**
- d. Equestrians No plans within the Project to change access to bridleways therefore route uncertainty should remain the same. Score: **neutral**
- e. PT Users (Bus) The Project does not include plans to promote bus timetable information, however buses should become more reliable as a result of fewer vehicles using the SJB. Score: **neutral**

A3.3.73. Therefore overall assessment of the level of **route uncertainty** is considered **better**.

### A3.4. The Security Sub-Objective (TAG Unit 3.4.2)

A3.4.1. Security should be assessed for the following:

- a. Road users (including pedestrians and cyclists);
- b. Freight; and
- c. Public Transport Users.

A3.4.2. The Project aims to improve sustainable transport however it is not intended to directly provide public transport infrastructure such as bus or rail stations, or bus stops. The security indicators for public transport focus mainly on public transport infrastructure which is not included in the Project. The effect on public transport passengers has therefore been assumed to be the same as for all other road users, and therefore this appraisal focuses on all road users, as a whole.

A3.4.3. The assessment is shown below, based on the security indicators as recommended by TAG. These are related to the 3 locations which have been identified for roads:

- a. On the road itself;
- b. In service areas, car parks, etc; and
- c. At signals or junctions.

A3.4.4. The numbers of users affected are based on crossing traffic in terms of general traffic, pedestrians and cyclists.

Security Indicator	Without Mersey Gateway	With Mersey Gateway
Formal surveillance	Webcams cover approaches to SJB for traffic management purposes; Not permanently monitored/ recorded so not deemed CCTV.	CCTV to be installed on Mersey Gateway. Possibility for existing SJB cameras to be upgraded.
Informal surveillance	Substandard footpaths may hinder pedestrian movement and are segregated from main carriageway giving a lack of natural surveillance.	Segregated cycleway also shared with pedestrians on SJB gives more natural surveillance for pedestrians and cyclists.
Landscaping	No areas concealed on SJB due to landscaping – clear sight-lines.	No concealed areas on SJB or Mersey Gateway areas due to landscaping – clear sight-lines.
Lighting and Visibility	Visibility may be impeded due to large volumes of slow moving traffic on, entering and exiting SJB.	Visibility may improve due to reduction in congestion on SJB giving more space on, entering and exiting the bridge. Improved lighting to footway/cycleway.
Emergency Call Facilities	Emergency phones removed due to vandalism/closure of lay-bys.  No hard shoulder/lay-bys for emergency access or vehicle recovery – broken down vehicles would have to remain in carriageway being unsafe and blocking movement of traffic.  Congestion also hinders movement of emergency vehicles.	Emergency phones to be installed on Mersey Gateway.  Hard shoulder for emergency vehicle access and vehicle recovery on SJB and Mersey Gateway.  More space on SJB carriageway for emergency access/vehicle recovery.  Reduced congestion on SJB enables easier movement of emergency vehicles.
Pedestrian and Cycle Facilities	Currently no cycleway on SJB: cyclists encouraged to dismount and push bicycles on poorly lit footpath.  Perceived personal safety risks using subways and access points to SJB for pedestrians and cyclists.  Footway poorly lit.  Perceived personal safety risks	Wide footpath/cycleway on SJB to be provided segregated from carriageway and well lit.  Emergency pedestrian facilities to be incorporated onto Mersey Gateway.  Improvements to subways and access points to SJB to meet current standards/guidelines.  Designation of proposed Regional Route 82 along with perception of security and safety for cyclists.

**Table A16.19: Security Sub-objective Road User Assessment**

### A3.5. The Option Values Sub-Objective (TAG Unit 3.6.1)

- A3.5.1. This sub-objective seeks to estimate the value of the provision of a new option for travel for people who are unlikely to be regular users of the new facility but who would value the increased choice introduced by the Project.
- A3.5.2. Traffic, including public transport, currently use the SJB and the Project's intention is to reduce congestion and improve reliability but not introduce a completely new option. However, the introduction of a new cycle/pedestrian path on the SJB may be considered a new facility. Cyclists have no dedicated path at present on the SJB and pedestrian provision is poor.
- A3.5.3. The provision of a dedicated cycle lane/footpath may provide a more realistic opportunity/option to walk and cycle across SJB.
- A3.5.4. Local people residing within 2km of the centre of the SJB are considered to be within appropriate walking distance to the bridge and are therefore more likely to deem walking across the bridge as a realistic option. Local residents within 5km of the SJB centre point are also within appropriate cycling distance to access the SJB.
- A3.5.5. Although walking or cycling across the SJB may not be the primary modal choice for some of Halton's residents, the opportunity would be available to do so. The following table presents the number of residents who would therefore be affected by the SJB footway and cycleway improvements, giving a realistic option in crossing the bridge.
- A3.5.6. The figures have been derived based on the proportion of Wards present within the 2km and 5km isochrones, giving an approximate estimate of the number of residents residing within these distances. 2001 Census 'Travel to Work' data for Halton was then interrogated to give the actual number of residents who would be likely to view walking or cycling as a realistic modal option.

Modal Option	% Appropriate Travel to Work	No of Population
Population within 2km Walking Distance of SJB	10%	1500
Population within 4km Cycling Distance of SJB	2%	450
Total Population		1950

**Table A16.20: Assessment of Population Affected by Improved Cycle/Pedestrian Facilities**

A3.6.

### **A3.7. The Severance Sub-Objective (TAG Unit 3.6.2)**

- A3.7.1. Community severance is defined as the separation of residents from facilities and services they use within their community caused by new or improved roads, or by changes in traffic flows. The potential impact of severance upon pedestrians, cyclists and equestrians have been assessed separately as travelling distances may vary, and the availability of crossing facilities may also vary.
- A3.7.2. Based upon the DMRB 11.3.8 Pedestrians, Cyclists, Equestrians and Community Effects changes between the 2015 'Do-Minimum' and the 'Do-Something' 24hr AADT traffic flows of at least a 30% increase or decrease have been identified.
- A3.7.3. A walking catchment area of 2 km, and a cycling catchment area of 5km has been assumed where necessary to estimate the number of people possibly effected by severance. The impact on equestrians has only been assessed on Bridleways as there are no facilities to leave horses within any of the key facilities identified below.
- A3.7.4. Key community facilities with Halton have been identified, including:
- a. GP Surgeries
  - b. Hospitals
  - c. Care Homes
  - d. Schools
  - e. Shops, town centres, secondary shopping areas
  - f. Churches
  - g. Parks, Play Areas, Sports Centres
  - h. Bus Stations
  - i. Train Stations
  - j. Libraries
- A3.7.5. The effect on pedestrians on the following within Halton has also been considered:
- a. Greenways
  - b. Bridleways
  - c. Cycleways
  - d. PRoW
- A3.7.6. Post Offices have not been assessed due to a lack of information about the location of post offices in Halton in 2015 and 2030. It has been assumed that the high streets and secondary shopping centres will provide post office facilities whether these are independent post offices, or post offices based within other local shops.
- A3.7.7. In accordance with TAG Unit 3.6.2 severance has been classified as:
- a. **None** – Little or no hindrance to pedestrian movement;
  - b. **Slight** – All people wishing to make pedestrian movements will be able to do so, but there will probably be some hindrance to movement;
  - c. **Moderate** – some people, particularly children and old people, are likely to be dissuaded from making journeys on foot. For others, pedestrian journeys will be longer or less attractive; and
  - d. **Severe** – people are likely to be deterred from making pedestrian journeys to an extent sufficient to induce a reorganisation of their activities. In some cases, this could lead to a change in the location of centres of activity or to a permanent loss of access

to certain facilities for a particular community. Those who do make journeys on foot will experience considerable hindrance.

A3.7.8. Based upon the classification above the following table has been used to assess the potential impact of the Project on severance.

Do Minimum Severance Scoring	Do-Something Severance Scoring			
	None	Slight	Moderate	Severe
None	None	Slight Negative	Moderate Negative	Large Negative
Slight	Slight Positive	None	Slight Negative	Moderate Negative
Moderate	Moderate Positive	Slight Positive	None	Slight Negative
Severe	Large Positive	Moderate Positive	Slight Positive	None

**Table A16.21: Assessment of Change in Severance**

A3.7.9. An overall assessment is made based upon the following guidelines.

- The overall assessment is likely to be **neutral** if increases in severance are broadly balanced by relief of severance;
- The overall assessment is likely to be **slight** where changes in severance is slight or the total numbers of people affected across all levels of severance is low (less than 200 per day);
- The overall assessment is likely to be **large** where change in severance is large, and affects a moderate or high number of people or the total numbers of people affected across all levels of severance is high (greater than 1000); and
- The overall assessment is likely to be **moderate** in all other cases.

A3.7.10. The difference between the level of severance for the 2015 Do-Minimum case and the Do-Something case was compared to estimate the change in severance. The 30% or more change in traffic flow identified a number of routes affected within the Halton area.

A3.7.11. The links identified include:

	30% Increase in Flows	30% Decrease in Flows
		SJB
<b>Runcorn</b>	Delph Lane	Busway (Murdishaw to Preston Brook)
	Astmoor Road/Slip Roads to Daresbury Expressway	High Street Astmoor Road
	Halton Link Road/Northway/East Lane/Hallwood Link Road	Moughland Lane /Greenway Road/Balfour Street/ Hollway
	Central Expressway	Norman Road/Ivy Street
	MG Bridge	Latham Avenue
	Rocksavage Expressway	Keckwick Lane
	Runcorn Spur Slip Roads	Runcorn Spur Road
		SJB
		Daresbury Expressway Weston Point Expressway
<b>Widnes</b>	Widnes Road	Speke Road
	Speke Road Slip Road onto Ditton Road	
	Ditton Junction	

**Table A16.22: Links within Halton identified as having at least a +/-30% change in traffic flows (2015) due to the Mersey Gateway Bridge**

- A3.7.12. There are only two links outside Halton Borough which show an increase of 30% or more change in traffic. These are located on a couple of slip roads on M6 Junction 21a and are not considered to be a concern for pedestrians or cyclists.
- A3.7.13. Similarly just one link outside Halton Borough has been identified as having at least a 30% decrease in traffic flow. This slip lane off the A557 onto Wilmere Lane is not considered to be a relevant route for pedestrians or cyclists and was not assessed further.
- A3.7.14. Within Halton, the majority of routes identified with a +/-30% change in traffic flows are on the Expressways in Runcorn which link the M56 to the SJB, and potentially the Mersey Gateway Bridge. These Expressways, also including Speke Road and Ditton Junction in Widnes, are not promoted as routes for pedestrians, cyclists, or equestrians due to the lack of dedicated facilities. There are a number of footbridges which currently provide pedestrian links across the Expressways and which are to be retained or upgraded within the Mersey Gateway Project. In view of this the changes in flows on the Expressways are not considered relevant to walking, cycling or equestrian trips, apart from specific issues related to the new infrastructure.

***Increase in Traffic Flows (30%)***

**Halton Link Road / Northway/ East Lane/Hallwood Link Road, Runcorn**

- A3.7.15. Changes in traffic flows along this route have the potential to affect both pedestrian and cycle journeys, therefore both users have been assessed. Separate assessments are required as travelling distances and the availability of crossing facilities may vary.
- a. Pedestrians This route shows an increase of at least 30% in traffic flows which could therefore potentially result in discouraging walking trips. Pedestrians, however, currently use footbridges to cross these roads and will continue to use them with the Mersey Gateway Project. The level of severance will therefore be unchanged; and
  - b. Cyclists An off-road cycleway is proposed parallel to Halton Link Road and Northway, through the park. It is also proposed that this route would cross the Central Expressway into Halton Brook via the existing footbridge. The present footbridge however is not considered wide enough to accommodate cyclists and pedestrians and the height of the parapets would also need to be increased.
- A3.7.16. This link is not currently in place; however it is important that any change in traffic flows resulting from the Project is not to the detriment of proposed cycleways or footways.
- A3.7.17. Possible mitigation measures to ensure cyclists can safely access this route are discussed in Section 16.10.

Scenario	Level of Severance
Do-Minimum	None
Do-Something	None
<b>Overall Assessment</b>	<b>None</b>

**Table A16.23: Overall Assessment of Level of Severance**

## Delph Lane, Runcorn

A3.7.18. This route is identified as a cycleway and bridleway, therefore the impact on changes in traffic flows has been assessed separately for pedestrians, cyclists and equestrians.

- c. *Pedestrians* This route has an increase of 30% plus in traffic flow, however flows on this link in the 2015 do something scenario are still relatively small at 1437 pcus within a 24 hour period. DMRB guidance suggests this standard of road has capacity for 1362 pcu per hour, therefore pedestrian movements will not be significantly affected. There is no pavement along this route, and lighting facilities are inadequate. Two schools have been identified which have Delph Lane within their 2km walking catchment area.

Daresbury CP School  
Moore Primary School

Daresbury CP School is predominantly accessed via car due to it's location near to a busy and potentially dangerous junction on the A56, which discourages pupils from walking or cycling to the school. Delph Lane does not form a barrier between Moore Primary School and any residential area.

- d. *Cyclists* Delph Lane is also used as an on road cycleway. Although the model indicates a 30% plus increase in traffic flows, due to the flows being light this is not considered high enough to discourage cyclist from using this route.
- e. *Equestrians* Delph Lane is also identified as a bridleway. The relatively low traffic flows predicted on this link it are not considered high enough to discourage existing users of the bridleway.

Scenario	Level of Severance
Do-Minimum	None
Do-Something	None
<b>Overall Assessment</b>	<b>None</b>

**Table A16.24: Overall Assessment of Level of Severance**

## Astmoor Road/Slip Roads to Daresbury Expressway, Runcorn

A3.7.19. Sections of this route show a 30% plus increase in traffic flows, however an adjoining section of Astmoor Road also shows a 30% decrease in traffic flows. Astmoor Road serves an industrial area between the busway and Manchester ship canal. It does not form part of a network linking into schools and community facilities. It is not therefore deemed to impact on severance.

Scenario	Level of Severance
Do Minimum	None
Do-Something	None
<b>Overall Assessment</b>	<b>None</b>

**Table A16.25: Overall Assessment of Level of Severance**



### **Runcorn Spur Road slips, Runcorn**

A3.7.20. The slip roads from Runcorn Spur Road to Heath Road show an increase of at least 30% in traffic flows. These links do not have pedestrian facilities, and are not considered suitable for pedestrian trips, therefore it is considered unlikely that an increase in traffic flows along these links will affect pedestrian movements.

<b>Scenario</b>	<b>Level of Severance</b>
Do Minimum	None
Do-Something	None
<b>Overall Assessment</b>	<b>None</b>

**Table A16.26: Overall Assessment of Level of Severance**

### **Widnes Road, Widnes**

A3.7.21. A small section of this road, 286 meters, shows an increase of plus 30% traffic flows. Due to its isolation within the network it is not considered that an increase in traffic in such a small section would discourage those who currently walk along the route.

<b>Scenario</b>	<b>Level of Severance</b>
Do Minimum	None
Do-Something	None
<b>Overall Assessment</b>	<b>None</b>

**Table A16.27: Overall Assessment of Level of Severance**

### **On-Slip from Ditton Road onto Speke Road, Widnes**

A3.7.22. This slip road provides a link between Ditton Road and Speke Road (A562). The model indicates an increase of over 30% in traffic flows on a route not suitable for pedestrians ideal for cyclists and not deemed to be a severance.

<b>Scenario</b>	<b>Level of Severance</b>
Do Minimum	None
Do-Something	None
<b>Overall Assessment</b>	<b>None</b>

**Table A16.28: Overall Assessment of Level of Severance**

### ***Decrease in Traffic Flows (30%)***

### **Silver Jubilee Bridge**

A3.7.23. The SJB has 4 lanes, 2 in each direction, and a speed limit of 40mph. high traffic flows on the SJB frequently result in delays during the AM and PM peaks in the base year. Assessment of flows in the 2015 Do-Minimum scenario suggests traffic flows will continue to increase, however in the 2015 Do-Something scenario flows will decrease significantly by over 30%.

- A3.7.24. Access for pedestrians is currently via a narrow segregated footway, which is of substandard width, vibrates due to vehicle movements on the carriageway and is exposed. There is no provision for cyclists who are required to dismount and push their bikes across the footway. Under the 2015 Do-Something scenario dedicated walking and cycling facilities across the SJB will be provided which will encourage walking and cycling trips.
- A3.7.25. An assessment of the number of additional walking and cycling trips has been completed in the Physical Fitness Sub-objective (Appendix 16.2).

Scenario	Level of Severance
Do Minimum	Moderate
Do-Something	None
<b>Overall Assessment</b>	<b>Moderate Positive</b>

**Table A16.29: Overall Assessment of Level of Severance**

### **High Street, Runcorn**

- A3.7.26. The High Street in Runcorn has a low speed limit of 30mph, a zebra crossing facility and a pedestrian phase at the signals on High Street/Church Street crossroad, which all assist pedestrians with crossing High Street. Traffic flows for the 2006 Base year are modelled as 2919 vehicles within a 24hr period, and flows are expected to fall to 1742 per 24 hr period. Although a reduction in traffic flow is seen as a slight benefit, it is not considered significant due to the low level of severance currently face by users.

Scenario	Level of Severance
Do Minimum	None
Do-Something	None
<b>Overall Assessment</b>	<b>None</b>

**Table A16.30: Overall Assessment of Level of Severance**

### **Latham Avenue, Runcorn**

- A3.7.27. A reduction in traffic flows along this link could encourage pupils to walk to:

- a. The Brow CP School
- b. The Grange Infant School
- c. The Grange Junior School
- d. Grange Comprehensive School

- A3.7.28. These four schools are located within close proximity to Latham Avenue, and could therefore benefit from a reduction in traffic flows. However, the 2015 do minimum results suggest that there is little or no hindrance to pedestrian movements, and therefore the overall assessment score remains **none**.

Scenario	Level of Severance
Do Minimum	None
Do-Something	None
<b>Overall Assessment</b>	<b>None</b>

**Table A16.31: Overall Assessment of Level of Severance**

### **Astmoor Road, Runcorn**

A3.7.29. 30% less traffic is shown on a section of Astmoor Road. Due to this being a largely industrial area it is not felt that a reduction in traffic through the implementation of the Project would lead to an increase in walking trips to community facilities.

<b>Scenario</b>	<b>Level of Severance</b>
Do Minimum	None
Do-Something	None
<b>Overall Assessment</b>	<b>None</b>

**Table A16.32: Overall Assessment of Level of Severance**

### **Moughland Lane, Greenway Road/Balfour Street/Holloway, Runcorn**

A3.7.30. These linking roads are located in close proximity to Runcorn Train Station. The 2015 do minimum results suggest that there is little or no hindrance to pedestrian movements, and therefore the overall assessment score remains **none**.

<b>Scenario</b>	<b>Level of Severance</b>
Do Minimum	None
Do-Something	None
<b>Overall Assessment</b>	<b>None</b>

**Table A16.33: Overall Assessment of Level of Severance**

### **Norman Road/Ivy Street, Runcorn**

A3.7.31. A reduction in traffic flows along this route may encourage visitors to walk to Simonsfield Residential Home, or to the two play areas, located nearby. However the 2015 do minimum data suggests there is little or no hindrance to the movement of pedestrians, therefore the overall level of severance is calculated to be **none**.

<b>Scenario</b>	<b>Level of Severance</b>
Do Minimum	None
Do-Something	None
<b>Overall Assessment</b>	<b>None</b>

**Table A16.34: Overall Assessment of Level of Severance**

### **Runcorn Spur Road, Runcorn**

A3.7.32. This small section linking to the Daresbury Expressway shows an over 30% reduction in traffic flow. However pedestrians are unlikely to be affected by changes in traffic flows as this is not considered a route suitable for pedestrians.

<b>Scenario</b>	<b>Level of Severance</b>
Do Minimum	None
Do-Something	None
<b>Overall Assessment</b>	<b>None</b>

**Table A16.35: Overall Assessment of Level of Severance**

### Keckwick Lane, Runcorn

A3.7.33. A small section of this road is identified as having an over 30% decrease in traffic flow. This could be used as a pedestrian route between Keckwick and Daresbury Science Park, however the 2015 do minimum data suggested there is little or no hindrance to the movement of pedestrians, therefore the overall level of severance is calculated to be **none**.

Scenario	Level of Severance
Do Minimum	None
Do-Something	None
<b>Overall Assessment</b>	<b>None</b>

**Table A16.36: Overall Assessment of Level of Severance**

### *Impact of the Project Infrastructure on Bridleways, Footpaths and Cycleways*

A3.7.34. The impact on the infrastructure of the redesigned junctions for the Mersey Gateway Project on bridleways, footpaths and cycleways has been assessed below.

### Halton Lea Junction

A3.7.35. This junction is off the Central Expressway, to the north of Lodge Lane Junction. The NCN5 crosses the Central Expressway by bridge, and then drops to an at grade undesignated crossing on the Expressway slip road. This is a key crossing point in the cycleway route; therefore it is important that appropriate mitigation measures are in place should there be any increase in traffic on this off-slip link. No significant flow changes are predicted on the slip road but this will need careful monitoring.

Scenario	Level of Severance
Do Minimum	None
Do-Something	None
<b>Overall Assessment</b>	<b>None</b>

**Table A16.37: Overall Assessment of Level of Severance**

### Speke Road Toll Plaza

A3.7.36. The Old Lane pedestrian footpath links Ditton Road and the Lower House residential area across the municipal golf course. Both the golf course and the footpath are currently closed due to contaminated land. The PRow extends under the A562 using a subway and this will be extended if required.

Scenario	Level of Severance
Do Minimum	None
Do-Something	None
<b>Overall Assessment</b>	<b>None</b>

**Table A16.38: Overall Assessment of Level of Severance**

### Widnes Loops Junction

- A3.7.37. The existing Public Rights of Way (PRoW) between Croft Street and The Trans-Pennine Trail (TPT) and National Cycle Network 62 (NCN 62), and the PRoW between Ashley Way and the TPT and NCN 62 will be unable to remain due to the design of the proposed Widnes Loops Junction. This is considered a significant route which has been identified by HBC to be upgraded to a cycleway.
- A3.7.38. A proposed alternative route linking Ashley Way to the TPT/NCN 62 will run to the east of the revised junction, replacing the lost PRoW. A second new link will be created from Croft Street to the west of the junction, linking into Victoria Street which has been identified for regeneration, diverting to the south of the junction to link with the TPT/NCN62. This route is shown in Figure 16.30 (Appendix 16.1) 'PRoW Diversions Widnes Loops' and aims to replace the closed PRoW, therefore resulting in no loss of access.

Scenario	Level of Severance
Do Minimum	None
Do-Something	None
<b>Overall Assessment</b>	<b>None</b>

**Table A16.39: Overall Assessment of Level of Severance**

### Bridgewater Junction

- A3.7.39. The cycleway across the junction (along the Bridgewater canal) will be retained although there may be possible disruption during construction.

Scenario	Level of Severance
Do Minimum	None
Do-Something	None
<b>Overall Assessment</b>	<b>None</b>

**Table A16.40: Overall Assessment of Level of Severance**

### Lodge Lane Junction

- A2.6.1 This cycleway near Hallwood Park will be retained following a very slight diversion near the junction between the Central Expressway and the Southern Expressway.

Scenario	Level of Severance
Do Minimum	None
Do-Something	None
<b>Overall Assessment</b>	<b>None</b>

**Table A16.41: Overall Assessment of Level of Severance**

### Weston Link Expressway Junction

- A3.7.40. The bridleway which runs to the north of this junction will be retained with a possible small diversion.

Scenario	Level of Severance
Do Minimum	None
Do-Something	None
<b>Overall Assessment</b>	<b>None</b>

**Table A16.42: Overall Assessment of Level of Severance**

**M56 Junction12 (North) Junction**

A3.7.41. The bridleway which runs close to this junction near Clifton will be maintained following a small diversion.

Scenario	Level of Severance
Do Minimum	None
Do-Something	None
<b>Overall Assessment</b>	<b>None</b>

**Table A16.43: Overall Assessment of Level of Severance**

**Summary**

A3.7.42. It is believed that any impact from the infrastructure of the Project will be mitigated to ensure that all existing links are maintained, or where necessary rerouted with minimum disruption to those users. Mitigation measures are discussed further in Section 16.10.

**A3.8. The Access to the Transport System Sub-Objective (TAG Unit 3.6.3)**

A3.8.1. Access to the transport system is measured in terms of proportions of households with access to a car or within 250m walking distance of a day time hourly public transport service. The 'access to the transport system' indicator brings together the car and public transport criteria to identify those who have either car or public transport access as a proportion of the total population. The indicator should be calculated for both the Do-Minimum and Do-Something cases with the changes from large beneficial to large adverse.

A3.8.2. For those without a car, access to the public transport system is of crucial importance. In order to appraise this issue, 2001 Census Data has been interrogated to estimate car ownership across Halton, thus giving the approximate percentage of residents who are likely to utilise public transport.

Households	Percentage
With Car	71%
Without car	29%

**Table A16.44: Household Car Ownership in Halton**

A3.8.3. The Census Data reveals that the majority (71%) of households in Halton have access to a car leaving 29% without.

A3.8.4. Halton's Accessibility Model reveals that about 70% of Halton's population live within 250m of a bus stop with at least an hourly service. However up to 90% of the population are within 400m of a bus stop with at least an hourly service.

- A3.8.5. Although 400m is above the 250m threshold identified in TAG Unit 3.6.3, bus stops are still located within a 5 minute journey on foot (based on an average walking speed of 5km/h), thus still giving realistic and easy access to public transport.
- A3.8.6. Runcorn wards generally have a high level of public transport accessibility due to the fact that the town was designed around new town planning principles, which features the dedicated Runcorn Busway (Figure 16.15, Appendix 16.1).
- A3.8.7. Windmill Hill ward to the eastern border of Runcorn is the most deprived ward in the Borough. Over 48% of households within Windmill Hill ward do not have access to a car/motor vehicle, but are within 400m of a frequent bus service operated on the Runcorn Bus Way.
- A3.8.8. Part of the Mersey Gateway Project involves the development of a Sustainable Transport Strategy. This strategy will define transport policies and interventions to improve travel choice for cross-river trips, it will also link with regeneration proposals. It is anticipated that interventions will include improved bus services, incorporating additional routes and improved frequencies.

### **Summary**

- A3.8.9. Access to the transport system will be improved with a beneficial effect on service frequency and reliability at this stage it has been assessed as '**moderate beneficial**'.

### A3.9. The Transport Interchange Sub-Objective (TAG unit 3.7.1)

A3.9.1. This sub-objective has two elements – freight and public transport interchange. The Mersey Gateway Project is judged to have no effect on freight interchange and limited effect on public transport interchange. As both Runcorn mainline rail station and Runcorn bus station are in the vicinity of the SJB (1.2 km and 800m respectively) these have been assessed according to the public transport interchange criteria and are the basis of the assessment below. Only the information, physical linkages and connection time indicators are deemed appropriate to the Project.

A3.9.2. The rating is based on a simple 3 point qualitative scale of poor/moderate/high. Passenger numbers significance is based on low (< 500 a day), moderate (500 - 10,000 a day) or high (> 10,000 a day).

A3.9.3. The following table focuses on the relevant passenger interchange indicators outlined in TAG Unit 3.7.1, giving a brief assessment with and without the Mersey Gateway:

Passenger Interchange Indicator	Without Mersey Gateway	With Mersey Gateway
Waiting environment	Neutral	Neutral
Level of facilities	Neutral	Neutral
Level of information	Lack of information for cyclists	Signage improved for cyclists due to designation of Regional Route 82.
Visible staff presence	Neutral	Neutral
Physical linkage for next stage of journey	Car/bus linkages may be hindered due to congestion in vicinity of SJB	Cars/bus linkages likely to improve due to reduced congestion in vicinity of SJB
Connection time and risk of missing connection	Connections involving cars/bus may be hindered due to congestion in vicinity of SJB	Connections involving cars/bus likely improve due to reduced congestion in vicinity of SJB

**Table A16.45: Public Transport Interchange Assessment**