

APPENDIX 21.13

Effect	Receptor and importance	Nature of Effect	Significance	Mitigation & Enhancement Measures	Residual Significance	Cumulative Effect	Significance (and Nature) of Cumulative Effect	Explanation
Construction Phase								
Change in population structure: Increased pressure to community facilities and services (e.g. health centres, hospitals, leisure facilities).	Individuals and families within communities and LSOAs surrounding the Project – High Importance	Temporary Moderate magnitude Short term Indirect	Moderate Negative	Raise awareness amongst local residents of facilities and services which are likely to experience increased pressures during the construction period Appropriately targeted provision of financial contributions where necessary to relieve specific pressure points within the Borough	Low Negative Significance	Increased pressure to community facilities and services (e.g. health centres, hospitals, leisure facilities).	Low negative (Temporary, Short term Indirect)	This effect could also result from an influx of temporary workers associated with other proposed developments, such as developments 1, 2, 3, 5, and 10-127, 128, 130, 131, 132, 133. The Riverside area may be particularly vulnerable as four of the developments and the Project are located in the ward. The magnitude of this effect would depend on the timing of construction for these projects but, with the mitigation proposed, is likely to remain a local low negative effect to defined vulnerable groups and therefore a

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Change in population structure: Increased feeling of insecurity amongst residents (associated with an influx of workers to the area)	Individuals and families within communities and LSOAs surrounding the Project – High Importance	Temporary Moderate magnitude Short term Indirect	Moderate Negative	Provision of Community liaison officer to ensure relations between construction workers and residents are upheld Provision of contact name/ number to local residents/ police to contact further to any incidents/ fear of incidents	Low Negative Significance	Increased feeling of insecurity amongst residents (associated with an influx of workers to the area)	Low negative (Temporary, Short term Indirect)	low negative cumulative effect. This effect could also result from an influx of temporary workers associated with other proposed developments within Halton, such as developments 127, 128, 130, 131, 132, 133 1-2, 3, 4, 5, 6 and 10. The magnitude of this effect would depend on the timing of construction for these projects but, with the mitigation proposed, is likely to remain a local low negative effect to defined vulnerable groups and therefore a low negative cumulative effect.
Change in population structure: Economic benefits through increased expenditure within Halton	Individuals and families within Halton – High Importance	Temporary Low magnitude Short term Indirect	Low Positive	No enhancement measures required	Low Positive Significance	Economic benefits through increased expenditure within Halton (e.g. through local shops, leisure centres,	Low Positive (Temporary, Short term Indirect)	This effect could also result from an influx of temporary workers associated with other proposed developments within Halton, such as developments 127, 128, 130, 131, 132, 133 1-2,

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(e.g. through local shops, leisure centres, private renting sector)						private renting sector)		3, 4, 5, 6 and 10. This cumulative effect will occur even if construction periods do not coincide as although the increased expenditure would be at a lower level it would last a longer period of time.
Change in employment opportunities: Increase in job opportunities available to local residents	Appropriately skilled/qualified individuals seeking employment within Halton – High Importance	Temporary High magnitude Short term Direct	High Positive	Provision of relevant training programmes within Halton prior to construction to ensure a greater skills pool within the area from which to resource.	High Positive Significance	Change in Employment Opportunities: Increase in job opportunities available to local residents	High Positive (Temporary, Medium term, Direct).	This effect could also result from an influx of temporary workers associated with other proposed developments within Halton, such as developments 127, 128, 130, 131, 132, 133 1, 2, 3, 4, 5, 6 and 10. All proposed developments within Halton involve construction and therefore have a potential to provide jobs for appropriately skilled/qualified individuals. If the developments coincide this will provide more jobs simultaneously, if they do not coincide

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								there would be a lower peak of job numbers but an increased number of jobs would be available over a longer period and may then be available to those whose skills were increased through the Project mitigation.
Change in employment opportunities: Effects to employees of businesses affected through Project CPOs.	Employees who travel to Halton for employment and also those who live locally and work in Halton – High Importance	Permanent High Magnitude Long term Direct	High Negative	Provision of Mersey Gateway Relocation Strategy providing advice and support to affected businesses.	Low Negative	None	-	From the information available none of the proposed developments are known to include CPOs therefore there is no potential for cumulative effects.
Change in perception or actual health and safety issues for Halton individuals: Health implications through disruption in	Travelling Public (Car and Bus users) High Importance	Temporary Low Magnitude Short term Indirect	Low Negative	No additional mitigation to be provided further to that detailed within Chapter 16: Transport.	Low Negative	Change in Perception of, or actual, health: Health implications through disruption in access to health facilities and increased traveller stress	Low negative (Temporary, Short term, Indirect).	This effect could also result from other proposed developments, such as developments 127, 128, 130, 131, 132, 133 4-2, 3, 5, and 10. The magnitude of this effect would depend on the timing of construction for these projects but is

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access to health facilities and increased traveller stress								likely to remain a local low negative effect to defined vulnerable groups and therefore a low negative cumulative effect.
Change in perception of actual health and safety issues for Halton individuals: Change in exercise uptake through disruptions to footpaths and cycleways	Travelling Public (Pedestrians and Cyclists) High Importance	Temporary Low Magnitude Short term Indirect	Low Negative	No Mitigation to be provided	Low Negative	Change in Perception of, or actual, health: Health implications through disruption in access to health facilities and increased traveller stress	Moderate negative (Temporary, Short term, Indirect).	Other proposed developments, including developments 2 and 3 such as development 132 likely to involve disruption to footpaths and cycleways. The magnitude of this effect would depend on the timing of construction for these projects but may increase to a moderate effect on defined vulnerable groups due to multiple disruptions to the same PRoWs and therefore a moderate negative cumulative effect.
Change in perception of actual health safety and	Individuals and families within communities and LSOAs	Temporary Low Magnitude Short term	Low Negative	No additional mitigation recommended further to that detailed within	Low Negative Significance	Change in Perception of, or actual, health: Creation of Project related	Low Negative (Temporary, Short term, Direct)	If construction of other developments (such as 131, 132 and 133 2 and 3 occurred simultaneously close to

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issues for Halton individuals: Creation of Project related Wastes (Dust)	surrounding the Project High Importance	Direct		Chapter 15: Waste and Resources, and Chapter 19: Local Air Quality.		Wastes (Dust) to Individuals and families within communities and LSOAs near to proposed developments or the Project		the Construction Areas there is a potential that the same receptors could be affected by multiple sources of dust. This cumulative effect is likely to remain a low magnitude effect.
	Employees working within or adjacent to the Project High Importance	Temporary Low Magnitude Short term Direct	Low Negative	No additional mitigation recommended further to that detailed within Chapter 19: Local Air Quality	Low Negative Significance	Change in Perception of, or actual, health: Creation of Project related Wastes (Dust) affecting employees working within or adjacent to proposed developments or the Project	Low Negative (Temporary, Short term, Direct)	
Change in perception or actual health and safety issues for Halton individuals: Changes in Air	All social receptors within 200m of Construction Areas A – I High Importance	Temporary Low Magnitude Short term Direct	Low Negative	No additional mitigation recommended further to that detailed within Chapter 19: Local Air Quality	Low Negative	Change in Perception of, or actual, health: Changes in Air quality resulting from construction traffic emissions	Low Negative (Temporary, Short term, Direct)	The air quality assessment for construction effects other included proposed developments although it could not take account of additional queuing

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quality resulting from construction traffic emissions (NO ₂ and PM ₁₀)						(NO ₂ and PM ₁₀)		caused by slow moving construction traffic on the road network. As such it is cumulative in that it allows for traffic from other developments. If construction coincided then additional construction traffic emissions could cause cumulative effects.
Change in perception or actual health and safety issues for Halton individuals: Changes in Air Quality resulting from road traffic emissions (NO ₂ and PM ₁₀)	All social receptors within 200m of Construction Areas A – I High Importance	Temporary Low Magnitude Short term Direct	Moderate Negative	No additional mitigation recommended further to that detailed within Chapter 19: Local Air Quality	Moderate Negative	Change in perception of, or actual, health: Changes in Air Quality resulting from road traffic emissions (NO ₂ and PM ₁₀)	Moderate Negative (Temporary, Short term, Direct)	The air quality assessment for construction effects included other proposed developments although it could not take account of additional queuing caused by slow moving construction traffic on the road network. As such it is cumulative in that it allows for traffic from other developments.
Change in perception or actual health and safety	Individuals and families within communities	Temporary Short term Direct	Low-Moderate negative	No additional mitigation recommended further to that	Low-Moderate negative	Change in perception or actual health and safety	Moderate negative (Temporary, Short term,	Developments 1, 2 and 3 – 127, 128, 130, 131 and 132 lie within 200m of a Construction Area.

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issues for Halton individuals: Changes in Noise & Vibration	and LSOAs surrounding the Mersey Gateway Project High Importance	Moderate magnitude		detailed within Chapter 19: Local Air Quality		issues for Halton individuals: Changes in Noise & Vibration on Individuals and families within communities and LSOAs surrounding the Mersey Gateway Project	Direct)	If construction works from any of these three proposed developments coincided with the construction phase of the Project there could be a cumulative effect. This would arise as the same receptors could be subjected to increased noise levels from both the Project and another proposed development simultaneously. This is considered a temporary negative effect of moderate significance.
Change access in to	Individuals and families within Construction Area G, Wigg Island and Woodside Primary School High Importance Employees who travel to	Temporary Short term Direct Moderate magnitude	High negative	No additional mitigation recommended further to that detailed within Chapter 19: Local Air Quality	High negative	None	-	There are no other developments within 200m Construction Area G, therefore there can be no potential for cumulative effects.
Change access in to	Employees who travel to	Temporary Moderate	Moderate Negative	Prior awareness of	Low Negative Significance	Change access in to	Low negative (Temporary,	There is only likely to be a cumulative effect

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facilities and social networks: Effects existing employers/ employees within Halton resulting from disruption from Project construction activities	Halton for employment and also those who live locally and work in Halton – High Importance	Magnitude Short term Indirect		construction route including all roads which will be closed/ disrupted to local consumers and businesses to ensure that day to day operations are not disrupted. Prior awareness and adequate signage to local consumers and businesses of diversions and alternative routes. Provision of signage to advertise businesses which remain		facilities and social networks: Effects existing employers/ employees within Halton resulting from disruption from Project construction activities	Short Term, Direct)	on these employers/employees if the same business are likely to be affected by other proposed developments. There are only four five developments which are in the immediate vicinity of the Construction Areas, these are developments 127, 128, 130, 131 and 132 1, 2, 3 and 10 . Therefore there is a potential for negative cumulative effects if construction works coincide.

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				open in close proximity to construction activities.				
Change in access to facilities and social networks: Change in access to Further Education establishments and special schools	Travelling Public – Car users High Importance	Temporary Moderate Magnitude Short term Indirect	Moderate Negative	Prior awareness of road closures and disruptions. Provision of adequate signage detailing diversionary routes.	Low Negative Significance	Change in access to Further Education establishments and special schools	Low Negative (Temporary, Short term Indirect)	Developments 131 and 132 1, 2, 3, 6, and 10 , have the potential to interfere with access to Further Educational establishments and special schools through direct interference with the road network or through increased traffic as a result of slow moving construction vehicles. The magnitude of this effect would depend on the timing of construction for these projects, but effects are likely to remain local and be small in comparison to the Project.
Change in access to facilities and social networks: Navigational	Users of the River within Halton – High Importance	Temporary Low Magnitude Short term Direct	Low Negative	No mitigation measures recommended further to these in	Low Negative Significance	Partial obstruction to navigation by some users of the River	Low Negative (Temporary, Short term Direct)	The construction of the proposed Part of Liverpool – Post Panamax terminal development

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Effects to users of the River				detailed Chapter 18: Navigation				(development 26), by the River, is likely to coincide with that of the New Bridge. The number of users effected would be limited as the same user would only be affected by both developments if they navigated all the way up the river from the port, approximately 32 km. The negative residual effects of low significance caused by the New Bridge could, therefore, in combination with development number 26, result in cumulative negative effects of low significance on some users of the River. This potential effect has been removed because the Panamax terminal is no longer shown on the list of current developments.
Change in	Travelling	Temporary	Moderate	Prior	Low Negative	Change	Low Negative	This effect could also

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access to facilities and social networks: Change in daily movements	Public – Car Users High Importance	Moderate Magnitude Short term Indirect	Negative	awareness of road closures and disruptions. Provision of adequate signage detailing diversionary routes.	Significance	access to facilities and social networks: Change in daily movements by Car Users	(Temporary, Short term Indirect)	result from other proposed developments, such as developments 127, 128, 130, 131 and 132 1, 2, 3, 5, and 10. The magnitude of this effect would depend on the timing of construction for these projects but, with the mitigation proposed, is likely to remain a local low negative effect to defined vulnerable groups and therefore a low negative cumulative effect.
	Travelling Public – pedestrians and cyclists High Importance	Temporary Moderate Magnitude Short term Indirect	Moderate Negative	Provision of alternative/diversionary footpath and cycleway routes. Provision of adequate signage detailing any diversionary footpaths. Provision of	Low Negative Significance	Change in access to facilities and social networks: Change in daily movements by pedestrians and cyclists	Moderate negative (Temporary, Short term, Indirect)	Other proposed developments, including developments 2 and 3 132 and 133 are likely to involve disruption to footpaths and cycleways. The magnitude of this effect would depend on the timing of construction for these projects but may increase to a moderate effect on

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				adequate safety measures alongside pavements.				defined vulnerable groups due to multiple disruptions to the same PPOs and therefore a moderate negative cumulative effect.
Change in access to facilities and social networks: Change in recreational shooting opportunities in Astmoor	Astmoor Shooting Club Low Importance	Temporary Low Magnitude Short term Indirect	Low Negative	No mitigation measures recommended	Low Negative	None	-	There are no other proposed developments likely to have an effect in the Astmoor shooting club therefore there are no cumulative effects.
Change in availability of amenity and recreational land: Loss of Commercial/ Industrial Land/ Property	Employees who travel to Halton for employment and also those who live locally and work in Halton High Importance	Permanent High Magnitude Long term Direct	High Negative	Provision of Mersey Gateway Relocation Strategy	Low Negative	None	-	Developments 2 and 3 132 and 133 would be located on Commercial/Industrial Land. However as these developments are commercial and industrial themselves, there is considered to be no cumulative effect.
	Individuals and families within Halton High Importance	Permanent High Magnitude Long term Indirect	High Negative	Provision of Mersey Gateway Regeneration Strategy	Low Negative			
Change in	Individuals	Permanent	Moderate	Provision of	Moderate	None	-	There are no proposed

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availability and amenity recreational land: Loss of Greenspace	and families within communities and LSOAs surrounding the Project Moderate Importance	Moderate Magnitude Long term Direct	Negative	Mersey Gateway Regeneration Strategy	Negative			developments that will impose on land designated as Greenspace
	Individuals and families within the rest of Halton – Moderate Importance	Permanent Low Magnitude Long term Direct	Low Negative	Provision of Mersey Gateway Regeneration Strategy	Low Negative			
Operational Phase								
Change to population structure: Regeneration attracting individuals/families to remain/immigrate to Halton	Individuals and families within Halton High Importance	Permanent High Magnitude Long term Indirect	High Positive	No mitigation measures provided as part of this Project	High Positive	Regeneration attracting individuals/families remain/immigrate to Halton	High positive (Permanent, Long term, Indirect)	All of the proposed developments within Halton could be considered part of the regeneration of Halton. Two developments are regeneration projects (2 and 3). The other proposed developments comprise distribution warehousing and business parks (1, 4, 5, 6, 10). The combined effect of these developments is likely to improve the

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Change to population structure: Increased pressure to community facilities and services (e.g. health centres, hospitals, leisure facilities).	Individuals and families within Halton High Importance	Permanent Moderate Magnitude Long term Indirect	Moderate Negative	No mitigation measures provided as part of this Project	High Negative Significance	Increased pressure to community facilities and services (e.g. health centres, hospitals, leisure facilities).	High negative (Permanent, Long term, Indirect)	perception of Halton. Increased populations in Halton is likely to result from other proposed developments, such as developments 127, 128, 130, 131 and 132 1, 2, 3, 5, and 10. The additional pressure to community facilities, many of which, such as health centres, do not have planned expansion could be problematic resulting a reduction of service. Considering that health is such an important issue in Halton this is considered to be a cumulative effect of potentially high negative significance to vulnerable groups.
Change to employment opportunities: Creation of jobs directly through operation of the	Appropriately skilled/qualified individuals seeking employment	Permanent High Magnitude Long term Direct	Moderate Positive	No enhancement measures required	Moderate Positive Significance	Creation of new jobs for individuals within Halton	Moderate positive (Permanent, Long term, Direct and Indirect)	All of the other proposed developments will create jobs, at least some of which will be available to Halton residents. In addition an

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Project	within Halton High Importance							increased population by attracted regeneration may create further job opportunities. This is a positive cumulative effect but is considered to remain as moderate significance.
Change to employment opportunities: Change in travel patterns and job catchment areas due to tolling	Employees – who travel to work in Halton by private vehicle High Importance	Permanent High Magnitude Long term Direct	High Negative	Provision of Sustainable Transport Strategy	High Negative	None	-	There are no other proposed developments within the Study area which include proposals for tolling. Therefore there is no direct potential for cumulative effects. Regeneration within the Borough may however attract individuals across the River to areas of employment and recreation. Due to high levels of income deprivation noted within the Borough some individuals may be socially excluded from these areas due to the cost of reaching these areas. However, it is

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								also likely that regeneration may provide essential jobs for individuals in Halton, increasing their expendable income and reducing tolling barriers across the River.
Change in perception or actual health and safety issues for Halton individuals	Individuals and families within Riverside and Mersey High Importance	Permanent Moderate Magnitude Long term Indirect	High Positive	Integration of pedestrian and cycling facilities with Halton's Sustainable Transport Network through the Sustainable Transport Strategy Increase awareness of new and improved routes with adequate signage and publicity.	High Positive Significance	Improvement of pedestrian and cycling facilities with potential for health benefits within Riverside and Mersey.	High Positive (Permanent, Long term, Direct)	Development 3, Widnes Waterfront development may result in an improved uses of PRoW as it runs through the site and this is a commercial and recreational regeneration project. The Pennine Way may also be affected by developments 2 and 4 131 and 132 a residential regeneration project and a business park. There is therefore potential for further improvements to PRoW in the area with associated health benefits.
	Individuals and families within the rest of Halton Moderate Importance	Permanent Low Magnitude Long term Indirect	Moderate Positive		Moderate Positive Significance	Improvement of pedestrian and cycling facilities with potential for health benefits within the rest of Halton.	Moderate Positive (Permanent, Long term, Direct)	There are a number of receptors within 200 m
Change in perception or	Users of the SJB and	Permanent Moderate	High Positive	No enhancement	High Positive Significance	Change in perception or	High Positive (Permanent,	

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actual health and safety issues for Halton individuals Changes in Air Quality – emissions of NO ₂	Greenway Road High Importance	Magnitude Long term Indirect		measures required		actual health and safety issues for Halton individuals Changes in Air Quality – emissions of NO ₂ to Users of the SJB and Greenway Road	Long term, Indirect)	of these areas. However significance of cumulative effect is unchanged from the residual significance as proposed development traffic has been included in the modelled road network
Change in perception or actual health and safety issues for Halton individuals Changes in Air Quality – emissions of NO ₂	Individuals and families within the rest of Halton High Importance	Permanent Moderate Magnitude Long term Indirect	Moderate Positive	No enhancement measures required	Moderate Positive Significance	Change in perception or actual health and safety issues for Halton individuals Changes in Air Quality – emissions of NO ₂ to Individuals and families within the rest of Halton	Moderate Positive (Permanent, Long term, Indirect)	
Change in perception or actual health and safety issues for Halton individuals	Individuals and families within the North West Moderate Importance	Permanent Moderate Magnitude Long term Indirect	Low Positive	No enhancement measures required	Low Positive Significance	Change in perception or actual health and safety issues for Halton individuals Changes in Air	Low Positive (Permanent, Long term, Indirect)	

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Changes in Air Quality – emissions of NO ₂ , PM ₁₀ and CO ₂						Quality of emissions of NO ₂ , PM ₁₀ and CO ₂ to Individuals and families within the North West		
Change in perception or actual health and safety issues for Halton individuals Changes in Noise and Vibration	Individuals at Weston Point and West Bank School High importance	Permanent High Magnitude Long term Indirect	High positive	No enhancement measures required	High Positive Significance	Change in perception or actual health and safety issues for Halton individuals Changes in Noise and Vibration to Individuals at Weston Point and West Bank School	High positive (Permanent, Long term, Indirect)	The noise assessment, which the Socio Economics Chapter is based on, included other proposed developments in its assessment of operational effects. Therefore the residual effects are in fact cumulative effects. For further details see Chapter 17: Noise and Vibration.
	Individuals and families residing in close proximity to the SJB High importance	Permanent High Magnitude Long term Indirect	Moderate positive	No enhancement measures required	High Positive Significance	Change in perception or actual health and safety issues for Halton individuals Changes in Noise and Vibration to Individuals and	High positive (Permanent, Long term, Indirect)	

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						families residing in close proximity to the SUB		
	Individuals and families residing in close proximity to construction areas F, G and H High Importance	Permanent High Magnitude Long term Indirect	Low negative	No additional mitigation recommended further to that detailed in Chapter 17: Noise and Vibration.	Low Negative Significance	Change in perception or actual health and safety issues for Halton individuals Changes in Noise and Vibration to Individuals and families residing in close proximity to construction areas F, G and H	Low negative (Permanent, Long term, Indirect)	
Change in access to facilities and social networks: Provision of improved access routes	Travelling Public – Car Users – High Importance Pedestrians and cyclists undertaking cross-River trips-within Halton	Permanent Moderate magnitude Long term Direct Permanent Moderate magnitude Long-term Direct	High Positive High Positive	No enhancement measures required No enhancement measures required	High Positive Significance High Positive Significance	None Change in access to facilities and social networks: Improved access routes	- High positive (Permanent, Long term, Indirect)	No other proposed developments include improvements of major access routes therefore there is no potential for cumulative effects. The new waterfront recreational development (number 3) which includes a major PRoW, combined with improved cross

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	High importance					for pedestrians and cyclists		River journeys using the SJB may result in more pedestrian and cycle trips than either project in isolation. Therefore there is considered to be a high positive effect.
Change in access to facilities and social networks: Disruption and closure of footpaths and cycleways	Pedestrians and cyclists within Halton undertaking non cross River trips High Importance	Permanent Low magnitude Long term Direct	Low Negative	No mitigation measures recommended further to those detailed within the Transport Chapter 16.	Low Negative Significance	Change in access to facilities and social networks: Disruption and closure of footpaths and cycleways	Low Negative (Temporary, Short term Direct)	Some of the proposed developments do include existing PRoW however it is not possible to say whether all of these will be kept, enhanced or whether some will be closed. The Pennine Way will remain in developments 2 and 3 development 132 as it is a key feature. If a worse case scenario were taken and some were closed this would be considered a low negative significance cumulative effect.
Change to daily movements through implementation	Travelling Public – Car Users High	Temporary High Magnitude Long term	High Negative	Provision of Sustainable Transport Strategy	High Negative	None	-	There are no other proposed developments within the Study area which include proposals

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of tolling	Importance	Direct						for tolling. Therefore there is no direct potential for cumulative effects. Regeneration within the Borough may however attract individuals across the River to areas of employment and recreation. Due to high levels of income deprivation noted within the Borough some individuals may be socially excluded from these areas due to the cost of reaching these areas. However, it is also likely that regeneration may provide essential jobs for individuals in Halton, increasing their expendable income and reducing tolling barriers across the River. The Sustainable Transport Strategy, which is currently being prepared for the Borough, will provide a

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								cumulative effect in that measures offered by the strategy will provide alternative means of crossing the River, reducing the reliance on private vehicles and therefore providing an feasible transport option which does not involve payment of tolls.

Table 21.13. Cumulative effects relating to Socio-Economics arising from the Project