

10. Transport

Introduction

- 10.1 This Chapter reports the outcome of the assessment of likely significant environmental effects arising from the Proposed Scheme in relation to Transport.
- 10.2 The Chapter describes the consultation that has been undertaken during the EIA, the scope of the assessment and assessment methodology, and a summary of the baseline information that has informed the assessment.
- 10.3 A number of effects have been avoided in advance of the assessment and where relevant these are clearly stated. The assessment reports on the likely significant environmental effects, the further mitigation measures required to prevent, reduce or offset any significant adverse effects, or further enhance beneficial effects. The conclusions are provided both in terms of the residual effects and whether these are considered significant.
- 10.4 This Chapter, and its associated figures, is intended to be read as part of the wider ES with particular reference to the introductory chapters of this ES (**Chapters 1 – 5**).
- 10.5 In addition, this Chapter should be read in conjunction with **Chapter 13 – Cumulative Effects Assessment**.

Legislative Framework and Guidance

- 10.6 The following legislation has informed the assessment of effects within this Chapter:
- The Town and Country Planning (Environmental Impact Assessment) Regulations 2017ⁱ
- 10.7 The following guidance has informed the assessment of effects within this Chapter:
- The Institute for Environmental Assessment (IEA) (1993). IEA guidance note 'Guidelines for the Environmental Assessment of Road Traffic'ⁱⁱ

Summary of Consultation

- 10.8 **Table 10.1** provides an overview of the consultation that has been undertaken to inform the Proposed Scheme and EIA, including the consideration of likely significant effects and the methodology for assessment.

Table 10.1: Summary of Consultation

Body / Organisation	Contact	Date and Form of Consultation	Summary
Liverpool City Council Highways	Highways Development Officers	Meetings held on 29 th January 2020 and 5 th February 2020	Discussion on proposals for Anfield Road and the assessment of impacts from the scheme.

Scope of the Assessment

- 10.9 An EIA Scoping Report was submitted to LCC in January 2020, as presented as **Appendix 2.1**. This section provides confirmation on the scope of the assessment presented within this Chapter following submission of the EIA Scoping Report and receipt of the EIA Scoping Opinion (**Appendix 2.2**).

Effects which are Not Significant

- 10.10 The following not significant effects were identified as part of the EIA Scoping Report and are not considered further in this Chapter. The effects and evidence to support this are represented and updated as below.
- 10.11 Each significant effect considers, match days, event days and operation as usual (OAU), i.e. non-match and non-event days.

Driver severance and journey delay associated with increased demand on the highway network on account of the Proposed Scheme

Match and event days, construction phase

- 10.12 During the construction phase, the additional capacity at the Stadium will not yet be available and therefore there will be no additional traffic movements associated with the Proposed Scheme for match and event days during this phase. On match and event days, construction would pause, therefore there would be no construction traffic movements on these days.

Match and event days, operation phase

- 10.13 A Transport Strategy exists to support fan travel, manage demand on the highway and public transport network, and to mitigate effects associated with an increased demand for travel due to the increased capacity. This has been in existence since the Main Stand expansion and regularly updated over the years. To date, it has been effective at supporting a mode shift from private car to sustainable travel options including public transport and walking with a reduction of 23.3% on weekdays and 15.3% on weekends of car use from 2013 to 2019.
- 10.14 The separate Transport Assessment considers the impact of the transport strategy in mitigating the impact of additional capacity at the Stadium on all modes, and refines the strategy so that effects are not significant. The Strategy is suggesting that for both taxi and car, the proposed increase in supporters would not mean a significant increase in vehicles to the area, with other modes being promoted and made more accessible to be attractive alternatives (to cars) for travel on match days.
- 10.15 The existing Transport Strategy has been updated through the above referenced Transport Assessment process and will be implemented as a tertiary mitigation measure to address the increase in capacity and minimise the effect of driver delay and severance (during the operational phase) by promoting and supporting the use of sustainable transport options over increased use of private car. No additional parking is proposed at the Site and the presence of the Football Match Residents Parking Zone (FMRPZ) limits parking in the immediate area. This means that there are limited opportunities for vehicle flows to increase in the area or surrounding vicinity as a result of the Proposed Scheme.

OAU construction and operation phase

- 10.16 The Anfield Road car park will be closed and staff who currently park there advised to instead park in Stanley Park Car Park. There are 125 spaces in Anfield Road Car Park, and on average, observations by LFC indicate that the car park is typically up to 75% full on OAU days (i.e. c.94 spaces are utilised). Vehicles must access Stanley Park Car Park from Priory Road. The addition of these vehicles onto Priory Road is not considered significant as:
- They would not all be arriving together, dissipating the impact. Priory Road is not a residential road and has signal controls at either end to manage traffic joining onto other routes.
 - The number of vehicles is also relatively low (with there being c.1-2 vehicles per minute within an hour).
 - The route usually accommodates significant use of the car park on match and event days which can often coincide with traditional PM peak periods (for example for weekday evening matches).
- 10.17 The LFC Staff Travel Plan has been updated to manage staff movements to and from the Site, which will assist with further minimising private car movements by staff on OAU days.
- 10.18 It is not expected that for OAU once the Proposed Scheme is operational, there will be an increase in demand which leads to significant increased traffic flows, as OAU uses of the Proposed Scheme are minimal. Existing other OAU activities at the Site will continue but are not expected to change as a result of the Proposed Scheme.
- 10.19 The realignment of Anfield Road has been designed as such to encourage slower speeds and more careful driving. Whilst this may lead to some journey delay, this would not be considered significant due to the route being passable (as opposed to needing to use a diversion). Additionally, whilst the new alignment will be subject to a lower speed limit, the difference in distance between the existing and new alignment is relatively short in length (less than 100m) meaning there will be no significant increase in journey time.

OAU construction phase only

- 10.20 Additional demand on the highway network will be generated as a result of the construction activities.
- 10.21 It is anticipated that during the construction phase, construction traffic movements will be controlled through the implementation of a Construction Traffic Management Plan (CTMP) (as a tertiary mitigation measure), which will be conditioned as part of the planning application.
- 10.22 This CTMP will set out the following which will help to minimising the impact of construction traffic on the highway network by managing the routes, times and use of the highway network by construction traffic:
- Construction traffic routing and access – an identified route for all construction plant vehicles travelling to and from site, which will focus movements onto the strategic road network, minimising the effect upon local residential streets. The proposed route will require vehicles to approach the Site from Anfield Road (east), and make use of Priory Road and Utting Avenue.

- Construction worker travel and access – all construction worker travel will be to/from Stanley Park Car Park, directly from Priory Road. Construction workers will be encouraged to travel by public transport, walk, cycle or car share to reduce the level of private car use and associated effect upon the highway network and parking facilities.
- Times of movement – construction traffic movements should be timed to occur outside of peaks to minimise effect upon existing traffic flows.

10.23 The modest levels of construction traffic, coupled with the management of construction movements through the CTMP, will mean the effect on driver severance and journey delay is not significant. Construction will cease on match and event days, and therefore have no impact upon traffic flows on these days.

Summary

10.24 Considering the points above, driver severance and journey delay associated with increased traffic flows is unlikely to be considered significant due to the implementation of the proposed tertiary mitigation measures. The exception to this is with regards to the temporary closure of Anfield Road during construction causing vehicles to divert onto surrounding routes. This does not affect match and event days during the construction phase as the road is temporarily close on these days already. The use of diversion routes has the potential to lead to driver severance and journey delay. The significance of this effect will therefore be considered further for OAU for the construction phase.

Increased traffic flows effecting highway safety associated with increased traffic on the highway network due to increased capacity at the stadium

10.25 This impact is associated with increases in traffic on the highway network impacting upon road safety and contributing to an increase in accidents. It should be noted that the Proposed Scheme is not expected to generate a significant change in the composition of traffic in the surrounding area.

Construction scenario

- 10.26 Implementation of the CTMP will manage the movements of construction traffic on the highway network, minimising their impact in relation to accidents and safety during the construction phase. As a result of this management and the relatively low number of expected movements, the impact in relation to accidents and safety is not considered to be significant.
- 10.27 During the construction phase, the additional capacity at the Stadium will not yet be available and therefore no additional traffic movements associated with the proposed scheme for match and event days during this phase.
- 10.28 As noted above, increased use of Stanley Park Car Park by staff will be managed through the staff travel plan and is a relatively small number of movements, in comparison to full occupation of the car park.
- 10.29 The use of diversion routes by traffic avoiding the temporary closure of Anfield Road may lead to an increase in traffic flows along these routes which impact upon highway safety. This will be considered further in the assessment.

Operation scenario

- 10.30 For match and event days during the operation phase, the Transport Strategy will continue to promote public transport and sustainable travel options. With no additional provision of car parking at the Site, and the presence of the FMRPZ, it is not expected that the Proposed Scheme will contribute to additional traffic movements on match and event days which are considered significant. In addition to this, more efficient use of the exiting car parking provisions will help to mitigate any impact associated with accident and safety from increased vehicle movements.
- 10.31 For OAU, the number of new trips associated directly with the proposed scheme will be negligible. The corresponding impact in relation to accidents and safety is therefore not considered significant.

Summary

- 10.32 Accidents and safety associated with increases in traffic from increased demand at the Site is unlikely to be considered significant and will not be considered further for any scenario. Changes to flows associated with the use of diversion routes during the construction phase will however be considered further.

Public transport severance and delay associated with increased traffic flows

All scenarios, construction phase

- 10.33 Any increase in flows associated with construction traffic will be managed through the CTMP as discussed in the previous section, therefore minimising any effect upon public transport services. Construction traffic movements are not expected to effect access to public transport facilities or cause delay to services.

Match and event days, operation phase

- 10.34 On match and event days, as part of the Transport Strategy, to mitigate against increased demand on the highway network due to travelling supporters, as well as the road closures, scheduled bus services are diverted from the local area to minimise effect on journey times. This will continue to apply during the construction and operation phase for match and event days, with no additional delay or severance anticipated.
- 10.35 Therefore, public transport severance and journey delay associated with increased flows on match and event days (both construction and operation) is unlikely to be considered significant and will not be considered further.

OAU, operation phase

- 10.36 There is not intended to be a significant increase in demand associated with the OAU scenario, with the increased capacity at the Stadium not in use. This will mean no impact upon existing public transport services.
- 10.37 Therefore, public transport severance and journey delay associated with OAU (operation phase) is unlikely to be considered significant and will not be considered further.

Pedestrian severance and delay associated with increased demand on the traffic network increasing vehicles flows

All scenarios, construction phase

- 10.38 During the construction phase, pedestrian and cyclist connectivity on OAU days will not be possible along Anfield Road. An alternative, direct route will be via Dahlia walk within Stanley Park which runs parallel to the section of Anfield Road to be temporarily closed to enable construction of the Proposed Scheme. Dahlia walk will provide a safe, surfaced and lit alternative route for pedestrians and cyclists whilst construction is in progress. The increase in distance and journey time associated with using this route vs Anfield Road is minimal (c. 20m increase in distance) and therefore, with this alternative route in place (primary mitigation), impact associated with pedestrian (and cyclist) severance during construction is not considered significant.
- 10.39 On match and event days during construction, connectivity will be restored, with pedestrian and cyclist movement possible along Anfield Road, in front of the Anfield Road Stand, and therefore there will be no impact.
- 10.40 During the construction phase, the additional capacity at the Stadium will not yet be available and therefore there will be no additional traffic movements causing delay or severance associated with the Proposed Scheme for any of the scenarios during this phase.

Match and event days, operation phase

- 10.41 On match and event days during operation, the area around the stadium gets busy with pedestrians in the lead up to the start of matches or events, as well as after they conclude. Walton Breck Road and Anfield Road are closed to vehicles to provide additional pedestrian space. There are multiple routes away from the Stadium, enabling efficient dissipation of crowds. For matches and events in the operation phase, the proposed increase in capacity is unlikely to lead to pedestrian severance and delay being considered significant.
- 10.42 As discussed above, the Transport Strategy will be implemented as a tertiary mitigation measure to minimise increases in traffic flows which could lead to pedestrian severance, with any increases in flows not considered significant enough to impact upon pedestrians.

OAU, operation phase

- 10.43 There is not intended to be a significant increase in demand associated with the OAU scenario, with the increased capacity at the Stadium not in use on these days, and therefore no associated pedestrian severance or delay.

Summary

- 10.44 Therefore, for the reasons outlined above, pedestrian severance and journey delay associated with increased demand is unlikely to be considered significant and will not be considered further for any scenario.

Pedestrian amenity associated with the design of the Proposed Scheme

- 10.45 Pedestrian amenity is associated with the relative pleasantness of a journey, and is considered to be affected by traffic flow, traffic composition and the positioning of pedestrian footways in relation to any separation from traffic on the highway. The guidance suggests a tentative threshold for judging the significance of changes in pedestrian amenity of where traffic flow (or its lorry/HGV component) is halved or doubled.

Construction phase

- 10.46 As noted above for pedestrian delay and severance, an alternative route via Dahlia walk will be required to be used on OAU days during construction. This temporary, alternative route is through Stanley Park and is surfaced and lit. It provides a tranquil and direct route, and is not adjacent to a live carriageway, however this is a temporary diversion and is also currently already available as a route for pedestrians and cyclists to use. The effect of the diversion on pedestrian amenity is therefore not considered significant.
- 10.47 For match and event days during construction, the route will be re-instated along Anfield Road around the curtilage of the new Anfield Road Stand, and it is expected that the amenity of this route will be comparable to that which exists in the baseline scenario for match and event and therefore any impact is considered not significant.

Operation phase

- 10.48 During the operation phase, there will be improved public realm outside of the Anfield Road Stand, however the principles of the route will remain the same (i.e. pedestrian route adjacent to a highway) meaning changes are not significant. Significant changes in traffic flow along Anfield Road (i.e. halved or doubled) are not expected given the nature of the Proposed Scheme, with use of Anfield Road expected to remain as per existing, with the exception of traffic no longer accessing Anfield Road car park.
- 10.49 Therefore, for the reasons outlined above, pedestrian amenity associated with changes to public realm on Anfield Road is unlikely to be considered significant and will not be considered further for any scenario.

Hazardous and dangerous loads required for the construction or operation of the proposed scheme effecting other highway users

- 10.50 This impact is associated with the movement of hazardous or dangerous loads on the highway network directly associated with the proposed scheme and the effect this could have upon other highway users.
- 10.51 As part of the construction phase, no hazardous or dangerous loads are expected to be required. Any Abnormal Indivisible Loads (AILs) will follow guidance set out in the CTMP, and likely to be limited to travel on the highway network outside of peak times, using prescribed routes, and being accompanied by an escort. The number of these trips is expected to be low. The low number of potential movements of AILs coupled with the proposed mitigation via the CTMP means this impact is not considered significant. Therefore, the effect of hazardous and dangerous loads on other road users are unlikely to be considered significant and will not be considered further for the construction phase.
- 10.52 During the operation phase, there is no requirement for hazardous or dangerous loads. Therefore, the effect of hazardous and dangerous loads on other road users are unlikely to be considered significant and will not be considered further for the operation phase.

Likely Significant Effects

- 10.53 The following effects are considered elsewhere in the ES:
- **Chapter 11: Noise and Vibration** considers effects associated with road traffic noise.
- 10.54 The following effects (**Table 10.2**) are considered significant and are reported within this Chapter:

Table 10.2: Likely Significant Effects

Likely Significant Effect	Applicable Phase
Driver severance and journey delay associated with the temporary closure of part of Anfield Road	Construction (Non-match and Non-event days only)
Temporary closure of part of Anfield Road leading to increased flows on alternative/diversion routes affecting highway safety and accidents	Construction (Non-match and Non-event days only)

Extent of the Study Area

- 10.55 Based on the likely significant effects, the extent of the study area covers highway links on two alternative, logical diversion routes which avoid the closed section of Anfield Road.
- 10.56 Whilst the temporary closure of Anfield Road is in place during the construction phase (between the junction of Gilman Street and Skerries Road), vehicles will be required to use alternative routes. Logical alternative routes have been identified to act as diversion routes and these form the study area. The extent of the study area is shown in **Figure 10.1**. The diversion routes are shown in **Figure 10.2** and outlined in **Table 10.3**.

Table 10.3: Diversion Routes

Current route	Alternative Diversion Route	Route name
Anfield Road EB	Walton Lane, Priory Road, Arkles Lane	Strategic Clockwise (CW)
Anfield Road EB	Anfield Road eastbound to the closure point, Alroy Road, Gilman Street (<i>or potentially other residential streets providing parallel connections</i>), Walton Breck Road, Wylfa Street, Anfield Road	Local Anti-Clockwise (ACW)
Anfield Road WB	Arkles Lane, Priory Road, Walton Lane	Strategic ACW
Anfield Road WB	Anfield Road westbound to the closure point, Arkles Road, Walton Breck Road (<i>from here multiple routes exist to get through to Anfield Road</i>)	Local CW

- 10.57 **Table 10.3** sets out two key diversion route (strategic and local, with each operating in both directions, CW or ACW) which form the study area. Therefore the study area includes the following highway links:

- Anfield Road from Walton Lane to Arkles Lane;
- Walton Breck Road between Gilman Street and Wylfa Road;

- Walton Lane between Anfield Road and Priory Road;
- Priory Road between Walton Lane and Utting Avenue/Arkles Lane;
- Arkles Lane between Priory Road and Anfield Road;
- Wylfa Road (one way northbound); and
- Arkles Road (one way southbound).

10.58 Local residential streets to the west of the Site which provide connectivity with Walton Breck Road (for example Gilman Street, Alroy Road and Pulford Street, Burnand Street, Blessington Road and Sleepers Hill) are not included in the assessment as they provide route choice for vehicles originating from this local area to join onto the local diversion route, dissipating the traffic and diluting any impact, to a point where effects would not be significant.

Background Studies to Inform the ES

10.59 The following background studies have informed this Chapter:

- Turning count traffic surveys completed on 30th January 2020.
- Turning Counts undertaken on Thursday 27th January 2020 at the junctions of Anfield Road/Walton Lane; Walton Breck Road/Wylfa Road/Oakfield Road; Walton Breck Road/Arkles Road and Priory Road/Arkles Lane/Utting Avenue to understand base flows along the links in the study area. This data set supersedes earlier traffic flow surveys undertaken in November and December 2019.
- Site observations on match and non-match days undertaken across November 2019 to February 2020.
- Road Traffic Collision (RTC) data report, provided by LCC.
- Transport Assessment.
- Match Day Transport Strategy.

10.60 Whilst the Transport Assessment and Match Day Transport Strategy have both informed the scope of the EIA and this ES Chapter, sufficient information has been included within this chapter and appendices (including the EIA Scoping Report, **Appendix 2.1**) to inform the assessment of likely effects.

Assessment Methodology

10.61 For driver severance and journey delay, guidance from IEA suggests that the significance of change to traffic flows is based on percentage change. For accidents and safety, the assessment is based upon analysis of existing accident cluster sites and how changes in flow could affect these.

10.62 As such, the following steps have been applied to calculate the change in flow on diversion routes:

- (i) Identification of key diversion routes, based on the most direct and logical routes possible for vehicles (as noted in **Table 10.3**).
- (ii) Determination of base traffic flows for the study area (along the links which form the study area) from the traffic survey completed on 30th January 2020 (i.e. the baseline flows).
- (iii) Calculation of current flows on Anfield Road based on traffic survey data collected on 30th January 2020. This provides an indication of the number of trips which will be required to divert (i.e. the diversion flows).
- (iv) Uplifting the baseline flows to allow for background growth and increases in traffic associated with potential developments in the local area and general economic and social growth, to calculate future flows.
- (v) Overlaying of the diversion flows over the future flows for each link in the study area to determine percentage change. This would be split 40% to be routed via Walton Lane, Priory Road, Arkles Lane (or vice versa) and 60% to be routed via Walton Breck Road and Wylfa Road (northbound) or Arkles Road (southbound). This represents a realistic worst case assessment than the previously stated 100% to be tested along each diversion route (Scoping Report, **Appendix 2.1**) as this is not considered realistic, with traffic naturally dissipating on the network across all routes available.
- (vi) Identification of locations of accident clusters (defined as points with 5 or more incidents within the last 5 years) in the study area.
- (vii) Confirmation of magnitude of change based on IEA guidance for driver severance and delay and based on professional judgement for accidents and safety.
- (viii) Confirmation of sensitivity for each receptor (see methodology outlined below on how this has been determined).
- (ix) Application of the matrix to determine overall significance of effect.

Reporting of the Environmental Effect and Significance Criteria

- 10.63 The assessment of likely significant environmental effects as a result of the Proposed Scheme has taken into account the construction of the Proposed Scheme. As set out earlier in this ES Chapter, operational phase effect are not considered to be significant.
- 10.64 The duration of the effect has been assessed as either 'short-term', 'medium-term' or 'long-term'. Short-term is considered to be up to 1 year, medium-term is considered to be between 1 and 10 years and long-term is considered to be greater than 10 years. This assessment is focussed on effects from the construction phase only, which is defined as medium-term.

Determining Sensitivity of Receptor

- 10.65 The sensitivity of affected receptors has been considered on a scale of **high, medium, low or negligible**. The sensitivity applied to receptors has been calculated based on professional

judgement, considering their ability to adapt their behaviour to respond to changes to the baseline. A justification of the sensitivity applied to each receptor is provided in **Table 10.7**.

Determining the Magnitude of Change

- 10.66 The magnitude of change has been considered as the change experienced from the baseline conditions at the sensitive receptor and has been considered on a scale of **large, medium, small** or **negligible**. For the effects being assessed, the magnitude of change is linked to the change in traffic flow volumes. For driver severance and journey delay, guidance from IEAⁱⁱ suggests that the significance of changes in traffic flows should be based on percentage change, with a 30% change being considered light (minor), 60% change being considered moderate and a 90% change being considered substantial (major) – in the context of our assessment these would be translated as small, medium and large respectively. A change of less than 30% would be classed as negligible.
- 10.67 The determination of the magnitude of change for accidents and safety will be based on professional judgement, considering factors such as weather and driver error as contributing factors to accident cluster points.

Determining the Level of Effect

- 10.68 The level of effect attributed to each effect has been assessed based on the magnitude of change due to the Proposed Scheme and then sensitivity of the affected receptor, as well as a number of other factors that are outlined in more detail in **Chapter 2 – Approach to EIA**. The level of effect has been based on professional judgement and **Table 2.2** has been a tool which has assisted with this process.
- 10.69 Whilst **Table 2.2** provides ranges, the level of effect is confirmed as a single level and not a range, informed by professional judgement. For each effect, it has been concluded whether the effect is '*beneficial*' or '*adverse*'. A statement is also made as to whether the level of effect is '**Significant**' or '**Not Significant**', again based on professional judgement.
- 10.70 The following terms have been used to define the significance of the effects identified and these can be 'beneficial' or 'adverse':
- **Major effect:** where the Proposed Scheme is likely to cause a considerable change from the baseline conditions and the receptor has limited adaptability, tolerance or recoverability or is of the highest sensitivity. This effect is considered to be 'Significant';
 - **Moderate effect:** where the Proposed Scheme is likely to cause either a considerable change from the baseline conditions at a receptor which has a degree of adaptability, tolerance or recoverability or a less than considerable change at a receptor that has limited adaptability, tolerance or recoverability. This effect is considered more likely to be 'Significant' but will be subject to professional judgement;
 - **Minor effect:** where the Proposed Scheme is likely to cause a small, but noticeable change from the baseline conditions on a receptor which has limited adaptability, tolerance or recoverability or is of the highest sensitivity; or where the Proposed Scheme is likely to cause a considerable change from the baseline conditions at a receptor which can adapt, is tolerant of the change or/and can recover from the

change. This effect is considered less likely to be 'Significant' but will be subject to professional judgement; and

- **Negligible:** where the Proposed Scheme is unlikely to cause a noticeable change at a receptor, despite its level of sensitivity or there is a considerable change at a receptor which is not considered sensitive to a change. This effect is 'Not Significant'.

Baseline Conditions

Traffic flows

- 10.71 The surveyed flows along the links within the study area provide the baseline condition for this assessment. Survey information collected on 30th January 2020 has been used to determine baseline flows in the study area, with this information shown in **Table 10.4** in PCUs (passenger car units). This data shows that flows are generally steady during the day, peaking in the AM and PM during the typical commuter periods (here seen as 8-9am and 4-5pm). The level of flows shown are generally typical of local distributor roads and residential streets.

Table 10.4: Baseline traffic flows on study area links (in PCUs)

Road	Direction*	07:00-08:00	08:00-09:00	09:00-10:00	10:00-11:00	11:00-12:00	12:00-13:00	13:00-14:00	14:00-15:00	15:00-16:00	16:00-17:00	17:00-18:00	18:00-19:00
Anfield Road	EB	181	264	252	227	264	250	234	273	382	375	341	240
Anfield Road	WB	174	271	204	182	224	206	215	251	285	252	252	207
Walton Lane	NB	913	908	703	636	731	723	732	881	954	1024	960	737
Priory Road	EB	229	327	275	281	291	252	349	297	327	415	397	275
Arkles Lane	SB	460	734	354	325	280	338	295	316	340	315	313	280
Arkles Lane	NB	204	347	282	235	294	327	290	344	594	630	685	370
Priory Road	WB	319	459	291	237	258	241	276	257	337	311	290	232
Walton Lane	SB	1218	1269	1047	797	777	823	695	796	911	1090	1005	793
Walton Breck Road	EB	186	308	298	239	276	326	280	329	464	585	634	359
Wylfa Road	NB	152	253	243	182	205	253	196	247	350	439	473	262
Walton Breck Road	WB	312	336	232	192	194	223	185	227	209	197	184	207
Arkles Road	SB	323	469	251	244	215	251	220	264	249	217	222	219

* eastbound (EB), westbound (WB), southbound (SB), northbound (NB)

Accident data

10.72 Details of Personal Injury Collisions (PICs) within the study area covering the most recent five year period (2014-2019) have been provided by Liverpool City Council. This information is shown in **Figure 10.3**.

10.73 This data has been analysed to identify any cluster locations (defined as locations with more than 5 PICs recorded within the last 5 years). The following 2 clusters have been identified to form the baseline scenario for accidents and safety.

- (i) Junction of Spellow Lane / Walton Lane – 8 slight and 1 serious incident
- (ii) Junction of Walton Breck Road / Oakfield Road – 5 slight incidents

Table 10.5: PIC cluster locations

Cluster no.	Collision ref.	Year	Severity	Location	Contributing factors
1	5	2015	Slight	Goodison Road Spellow Lane	Driver error
1	6	2015	Slight	Walton Lane	Dog in road
1	9	2015	Slight	Goodison Road	Pedestrian in road
1	14	2016	Slight	Langham Street Walton Lane	Driver error
1	30	2016	Slight	County Road Spellow Lane	Driver error
1	34	2017	Slight	Walton Lane	Collision with cycle (cyclist failed to look)
1	36	2017	Serious	Walton Lane Spellow Lane	Pedestrian in road
1	40	2017	Slight	Goodison Road Spellow Lane	Pedestrian in road
1	43	2018	Slight	Langham Street Walton Lane	Driver error
2	3	2015	Slight	Walton Breck Road Oakfield Road	Driver error
2	12	2015	Slight	Walton Breck Road Oakfield Road	Collision with parked cars
2	27	2016	Slight	Walton Breck Road Oakfield Road	Collision with cycle (cycle not lit)
2	50	2018	Slight	Walton Breck Road Oakfield Road	Under the influence of drugs
2	51	2018	Slight	Walton Breck Road Oakfield Road	Driver error

Future Baseline

10.74 Baseline flows are expected to increase annually to account for regional growth. From the 2020 baseline to the peak construction year (2023) an uplift factor of 4.00%¹, calculated using the DfT's National Trip End Model (NTEM) model which forecasts traffic growth for an

¹ 1.0400 for AM peak and 1.0378 for the PM Peak The higher of these two has been applied across the assessment day.

area will be applied. This shows a small year on year increase of traffic on the network in the absence of the Proposed Scheme.

- 10.75 This uplift has been applied to the baseline flows, and **Table 10.6** shows the future flows with this uplift applied.

Table 10.6: Future flows (in PCUs)

Road	Direction	07:00-08:00	08:00-09:00	09:00-10:00	10:00-11:00	11:00-12:00	12:00-13:00	13:00-14:00	14:00-15:00	15:00-16:00	16:00-17:00	17:00-18:00	18:00-19:00
Anfield Road (Diversion Flows)	EB	188	275	262	236	275	260	243	284	397	390	355	250
Anfield Road (Diversion Flows)	WB	181	282	212	189	233	214	224	261	296	262	262	215
Walton Lane	NB	950	944	731	661	760	752	761	916	992	1065	998	766
Priory Road	EB	238	340	286	292	303	262	363	309	340	432	413	286
Arkles Lane	SB	478	763	368	338	291	352	307	329	354	328	326	291
Arkles Lane	NB	212	361	293	244	306	340	302	358	618	655	712	385
Priory Road	WB	332	477	303	246	268	251	287	267	350	323	302	241
Walton Lane	SB	1267	1320	1089	829	808	856	723	828	947	1134	1045	825
Walton Breck Road	EB	193	320	310	249	287	339	291	342	483	608	659	373
Wylfa Road	NB	158	263	253	189	213	263	204	257	364	457	492	272
Walton Breck Road	WB	324	349	241	200	202	232	192	236	217	205	191	215
Arkles Road	SB	336	488	261	254	224	261	229	275	259	226	231	228

Accidents and safety

- 10.76 There is no change to the baseline for the PIC analysis, as it is not possible to predict where new clusters may develop. Given the baseline is based upon the most recent data available and the peak year of assessment is not too far in the future (within 2-3 years), this is considered acceptable.

Physical changes to baseline

- 10.77 It is understood that Liverpool City Council are implementing upgrades to junctions across the wider Liverpool area, with these improving safety, as well as increasing capacity on the network to accommodate any increases in flows. The locations relevant to the study area include:
- Walton Lane / Priory Road signalised junction
 - Priory Road / Utting Avenue / Arkles Lane signalised junction
- 10.78 Our assessment does not review network form or capacity, however these upgrades would seek to ensure the junctions are designed to a standard that is considered safe, particularly in the context of anticipated increased flows in the area over the coming years. This would mean they would continue to perform well and thus not present a worsening of the baseline.

Sensitive Receptors

- 10.79 **Table 10.7** sets out the sensitive receptors that have been identified and assessed within the ES and their relative sensitivity classification.

Table 10.7: Sensitive receptors

Receptor	Sensitivity	Justification
Drivers and passengers (all motorised vehicle types)	Low	Motorised vehicles have a greater ability to adapt their behaviour (route choice) to respond to changes in baseline
Pedestrians and cyclists (for delay and severance)	Medium	Pedestrians are limited in their ability to adapt their behaviour (e.g. take an alternative route) without this causing notable delay or severance.
Pedestrians and cyclists (for accidents and safety)	High	Pedestrians and cyclists are limited in their ability to adapt their behaviour to increased traffic flows, particularly if crossings, cycle paths and footways may not be suitable or available. They are also more vulnerable than vehicles to accident and injury.

Primary and Tertiary Mitigation

Construction Phase

- 10.80 The following primary and tertiary mitigation which has been evaluated as part of the construction phase assessment are outlined below.

- 10.81 The Construction Traffic Management Plan will ensure that traffic associated with the construction of the Site is managed in a way that minimises its impact upon the highway network. This will likely include avoiding peak times of travel, ensuring vehicles are able to enter directly into site and not cause an obstruction on the highway, and details on any traffic management felt necessary to ensure safe movement of construction vehicles. This will also specify the route vehicles should take to and from the site, and detail roads which should not be used.

Assessment of Effects, Secondary Mitigation and Residual Effects

Construction Phase

Driver severance and journey delay associated with the temporary closure of part of Anfield Road

- 10.82 As noted earlier, baseline and future flows have been calculated for the study area, as well as the number of construction vehicles movements and the vehicle movements to be displaced from Anfield Road and their expected diversion route.
- 10.83 An additional allowance (uplift) has been made to the future flows to account for the presence of construction traffic associated with the Proposed Scheme being present in the study area. Based on information from the Main Stand expansions, the construction traffic for the expansion of the Anfield Road Stand is predicted to average 22 one way (so 44 return) movements per day. Over the 10 hours of construction, this would equate to 2 one way (or 4 two way) trips per hour. This typically represents an average of 0.10% of baseline flows across the study area. As such, to ensure a robust assessment, the NTEM figure of 4.00% has been rounded and a 4.10% uplift has been used to determine future baseline flows for our assessment across the whole study area. This has provided a 'future with construction' scenario for assessment which are shown in **Table 10.8**.

Table 10.8: Future with construction flows (in PCUs)

Road	Direction	07:00-08:00	08:00-09:00	09:00-10:00	10:00-11:00	11:00-12:00	12:00-13:00	13:00-14:00	14:00-15:00	15:00-16:00	16:00-17:00	17:00-18:00	18:00-19:00
Anfield Road (Diversion Flows)	EB	188	275	262	236	275	260	244	284	398	390	355	250
Anfield Road (Diversion Flows)	WB	181	282	212	189	233	214	224	261	297	262	262	215
Walton Lane	NB	950	945	732	662	761	753	762	917	993	1066	999	767
Priory Road	EB	238	340	286	293	303	262	363	309	340	432	413	286
Arkles Lane	SB	479	764	369	338	291	352	307	329	354	328	326	291
Arkles Lane	NB	212	361	294	245	306	340	302	358	618	656	713	385
Priory Road	WB	332	478	303	247	269	251	287	268	351	324	302	242
Walton Lane	SB	1268	1321	1090	830	809	857	723	829	948	1135	1046	826
Walton Breck Road	EB	194	321	310	249	287	339	291	342	483	609	660	374
Wylfa Road	NB	158	263	253	189	213	263	204	257	364	457	492	273
Walton Breck Road	WB	325	350	242	200	202	232	193	236	218	205	192	215
Arkles Road	SB	336	488	261	254	224	261	229	275	259	226	231	228

10.84 The displaced flows from Anfield Road have been added onto the future with construction flows to calculate a % change in flow. This exercise has been undertaken for the following test:

- 40% of the Anfield Road flows divert along the Strategic Diversion Route (via Priory Road)
- 60% of the Anfield Road flows divert along the Local Diversion Route (via Walton Breck Road)

10.85 The results from this assessment are shown in **Tables 10.9** and **10.10**.

Table 10.9: Future flows with diversion in place –40% strategic /60% local diversion assessment (PCU flow)

Diversion route	Road	Direction	07:00-08:00	08:00-09:00	09:00-10:00	10:00-11:00	11:00-12:00	12:00-13:00	13:00-14:00	14:00-15:00	15:00-16:00	16:00-17:00	17:00-18:00	18:00-19:00
Existing	Anfield Road (Diversion Flows)	EB	0	0	0	0	0	0	0	0	0	0	0	0
	Anfield Road (Diversion Flows)	WB	0	0	0	0	0	0	0	0	0	0	0	0
Strategic Via Priory CW	Walton Lane	NB	1030	1059	840	760	874	860	863	1035	1157	1227	1146	870
	Priory Road	EB	315	452	393	389	414	368	463	424	501	590	557	388
	Arkles Lane	SB	556	877	475	435	403	458	406	444	515	486	470	393
Strategic Via Priory ACW	Arkles Lane	NB	286	476	380	322	401	428	393	464	740	764	821	473
	Priory Road	WB	406	593	389	324	363	338	378	373	471	430	408	329
	Walton Lane	SB	1346	1439	1179	909	906	946	816	937	1071	1244	1156	915
Local Via WBR ACW	Walton Breck Road	EB	308	487	469	392	454	497	439	515	724	846	876	526
	Wylfa Road	NB	272	430	412	333	380	421	352	429	605	694	708	424
Local Via WBR CW	Walton Breck Road	WB	435	521	370	315	343	362	328	395	397	364	350	346
	Arkles Road	SB	447	660	390	369	365	391	365	433	439	385	390	359

Table 10.10: Future flows with diversion in place – 40% Strategic /60% Local diversion assessment (% change)

Diversion route	Road	Direction	07:00-08:00	08:00-09:00	09:00-10:00	10:00-11:00	11:00-12:00	12:00-13:00	13:00-14:00	14:00-15:00	15:00-16:00	16:00-17:00	17:00-18:00	18:00-19:00
Strategic Via Priory CW	Walton Lane	NB	7.9%	11.6%	14.3%	14.3%	14.4%	13.8%	12.8%	12.4%	16.0%	14.6%	14.2%	13.0%
	Priory Road	EB	31.6%	32.3%	36.7%	32.3%	36.3%	39.7%	26.8%	36.8%	46.7%	36.1%	34.4%	34.9%
	Arkles Lane	SB	15.7%	14.4%	28.5%	27.9%	37.7%	29.6%	31.7%	34.6%	44.9%	47.6%	43.6%	34.3%
Strategic Via Priory ACW	Arkles Lane	NB	34.1%	31.2%	28.9%	31.0%	30.5%	25.2%	29.7%	29.2%	19.2%	16.0%	14.7%	22.4%
	Priory Road	WB	21.8%	23.6%	28.0%	30.7%	34.7%	34.2%	31.2%	39.1%	33.8%	32.4%	34.8%	35.7%
	Walton Lane	SB	5.7%	8.5%	7.8%	9.1%	11.5%	10.0%	12.4%	12.6%	12.5%	9.2%	10.0%	10.4%
Local Via WBR ACW	Walton Breck Road	EB	58.4%	51.4%	50.7%	57.0%	57.4%	46.0%	50.1%	49.8%	49.4%	38.5%	32.3%	40.1%
	Wylfa Road	NB	71.4%	62.6%	62.2%	74.8%	77.3%	59.3%	71.6%	66.3%	65.5%	51.3%	43.3%	55.0%
Local Via WBR CW	Walton Breck Road	WB	33.5%	48.4%	52.8%	56.9%	69.3%	55.4%	69.7%	66.3%	81.8%	76.8%	82.2%	60.0%
	Arkles Road	SB	32.3%	34.7%	48.8%	44.8%	62.5%	49.2%	58.6%	57.0%	68.7%	69.7%	68.1%	56.7%

- 10.86 It can be seen that when the diversion flows are applied, i.e. 40% of the future Anfield Road flows are diverted to use the strategic route and 60% to use the local route, the percentage change in terms of magnitude of the effect is classed as generally minor (more than 30% but less than 60% change), with the exception of Wylfa Road, Arkles Road and Walton Breck Road which experience periods where the percentage change is over 60% but less than 90% (therefore a magnitude classification of moderate). None of the links experience a major change of more than 90%.
- 10.87 The sensitivity of drivers and passengers (as identified in the Section above) is considered to be low. The magnitude of change is considered to be medium. Therefore, there is likely to be an indirect, temporary, medium-term, adverse effect which is considered to be minor.
- 10.88 The sensitivity of pedestrians (as identified in the Section above) is considered to be medium. The magnitude of change is considered to be small. Therefore, there is likely to be an indirect, temporary, medium-term, adverse effect which is considered to be minor.

Secondary Mitigation or Enhancement

- 10.89 No secondary mitigation is proposed for the following reasons:
- Anfield Road has been closed for extensive periods of time previously and diverted traffic was able to be accommodated on the highway network.
 - The assessment has shown that delay and severance will be minor and therefore, for a temporary effect, mitigation in the form of upgrades to junctions is not suitable or considered appropriate.

Residual Effect

- 10.90 The sensitivity of drivers and passengers (as identified in the Section above) is considered to be low. The magnitude of change is considered to be small. Therefore, there is likely to be an indirect, temporary, medium-term, adverse effect which is considered to be minor.
- 10.91 The sensitivity of pedestrians (as identified in the Section above) is considered to be medium. The magnitude of change is considered to be small. Therefore, there is likely to be an indirect, temporary, medium-term, adverse effect which is considered to be minor.
- 10.92 This effect is considered to be Not Significant.

Temporary closure of part of Anfield Road leading to increased flows on alternative/diversion routes affecting highway safety and accidents

- 10.93 2 cluster sites have been identified for assessment. These are located as follows:
- (i) Junction of Spellows Lane / Walton Lane – 6 slight and 1 serious incident
 - (ii) Junction of Walton Breck Road / Oakfield Road – 5 slight incidents
- 10.94 Whilst there are other accidents recorded in the study area, these do not meet the criteria of being a cluster (5 or more incidents in the last 5 years) to consider further for assessment. At both of these locations, there are controlled pedestrian crossing points to assist pedestrians in crossing the road safely.

- 10.95 A review of the contributing factors for these junctions show that driver error and the presence of other non-vehicular road users (cyclist and pedestrians) as well as being under the influence of drugs were the main causes of accidents. The design and capacity of the highway at these locations was not considered to be a contributing factor, indicating that if traffic was to increase through these locations, it would not necessarily have a direct impact upon safety.
- 10.96 The sensitivity of drivers and passengers (as identified in the Section above) is considered to be low. The magnitude of change is considered to be small. Therefore, there is likely to be an indirect, temporary, medium-term, adverse effect which is considered to be minor.
- 10.97 The sensitivity of pedestrians (as identified in the Section above) is considered to be high. The magnitude of change is considered to be small. Therefore, there is likely to be an indirect, temporary, medium-term, adverse effect which is considered to be minor.

Secondary Mitigation or Enhancement

- 10.98 No mitigation is proposed to address these effects due to the following:
- The main contributing factors for the accidents were not due to the alignment of operation of the highway but instead due to driver error or external influences.
 - There is not considered to be a safety issues from a highway design perspective that could be remediated by physical mitigation within the study area.

Residual Effect

- 10.99 The sensitivity of drivers and passengers (as identified in the Section above) is considered to be low. The magnitude of change, following secondary mitigation, is considered to be small. Therefore, there is likely to be an indirect, temporary, medium-term, adverse residual effect which is considered to be minor.
- 10.100 The sensitivity of pedestrians (as identified in the Section above) is considered to be high. The magnitude of change is considered to be small. Therefore, there is likely to be an indirect, temporary, medium-term, adverse effect which is considered to be minor.
- 10.101 This effect is considered to be Not Significant.

Operational Phase

- 10.102 No operational phase effects are being considered in this chapter because, as detailed earlier in this chapter and confirmed through the EIA Scoping Report (**Appendix 2.1**) and Opinion (**Appendix 2.2**), they are not considered to be significant.

Limitation and Assumptions

- 10.103 To ensure transparency within the EIA process, the following limitations and assumptions have been identified.
- Survey data to determine baseline flows was limited to snapshots of time, and therefore may not fully represent changes across a year. This however is a standard approach for establishing baseline flows, and three survey periods have been used to inform the development of the baseline.

- No account has been made for vehicles currently travelling along Anfield Road to access Anfield Road car park, with these movements all required to divert to Stanley Park Car Park, which is accessed from Priory Road. Not all of these movements would have traversed the entire length of the closure and therefore may approach Priory Road from routes outside of the study area, not impacting other links within the study area itself [for example travelling from Utting Avenue, the new route would not require travel on Arkles Lane]. These movements would therefore not lead to other or additional significant effects above those reported in this chapter.

Summary

10.104 This chapter has considered the temporary closure of Anfield Road during the construction phase effecting driver severance, journey delay and safety on alternative routes due to increased traffic flows on these routes as they accommodate diversion traffic from Anfield Road. The assessment considered these effects on drivers and passengers, as well as pedestrians and cyclists. In all instances, the effects were not considered significant, with no secondary mitigation proposed.

10.105 **Table 10.11** provides a summary of the effects, receptors, residual effects and a conclusion as to whether the effect is significant or not significant.

Table 10.11: Summary of assessment findings

Effect	Receptor	Residual Effect	Is the Effect Significant
Construction Phase			
Driver severance and journey delay associated with the temporary closure of part of Anfield Road	Drivers and passengers	Minor, Adverse	No
Driver severance and journey delay associated with the temporary closure of part of Anfield Road	Pedestrians and cyclists	Minor, Adverse	No
Temporary closure of part of Anfield Road leading to increased flows on alternative/diversion routes affecting highway safety and accidents	Drivers and passengers	Minor, Adverse	No
Temporary closure of part of Anfield Road leading to increased flows on alternative/diversion routes affecting highway safety and accidents	Pedestrians and cyclists	Minor, Adverse	No
Operational Phase			
None	N/A	N/A	N/A

References

ⁱ SI 2017/No. 571, as amended by SI 2018/No. 695

ⁱⁱ The Institute for Environmental Assessment (IEMA) (1993). IEMA guidance note 'Guidelines for the Environmental Assessment of Road Traffic'