



Chapter 22

Summary of Significant Residual Effects

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22 SUMMARY OF RESIDUAL EFFECTS

This Chapter summarises the likely significant residual effects, which may result from the Construction and Operational Phases of the BusConnects Galway: Dublin Road Scheme (hereafter referred to as the Proposed Development). Please refer to Chapter 6 to Chapter 20 of this Environmental Impact Assessment Report (EIAR) for the full impact assessments.

Residual effects are the final or intended effects which occur after the proposed mitigation measures are implemented to avoid, prevent, reduce or offset likely significant effects on the environment. They refer to the degree of change that will occur after the proposed mitigation measures have taken effect. All other (Slight, Not Significant or Imperceptible) impacts are detailed within Chapter 6 to Chapter 20 of this EIAR.

Table 22-1 presents the residual effect significance, following the implementation of mitigation as set out in Chapter 6 to Chapter 20 of the EIAR, and as summarised in Chapter 21 (Summary of Mitigation & Monitoring Measures). The significant residual effects presented are negative / adverse, unless otherwise stated as positive/ beneficial.

The terminology used in this Chapter to describe the residual effect significance reflects the assessment terminology and guidelines used within Chapter 6 to Chapter 20 of the EIAR. While the terminology in the Environmental Protection Agency's (EPA) Guidelines on the Information to be Contained in Environmental Impact Assessment Reports (EPA, 2022) is predominantly used, some chapters use discipline specific guidelines, and this terminology is presented within this summary Chapter to maintain consistency with the assessments undertaken in Chapter 6 to Chapter 20.

Table 22-1 Summary of Significant Residual Effects from the Construction and Operational Phase of the Proposed Development

Environmental Aspect / Chapter	Residual effect Description	Impact Significance (Pre-Mitigation)	Residual effect Significance (Post-Mitigation)
Chapter 6 (Traffic and Transport)	Construction Phase		
	No significant residual effects predicted as a result of the Construction Phase of the Proposed Development		
	Operational Phase		
	No significant residual effects predicted as a result of the Operational Phase of the Proposed Development		
Chapter 7 (Air Quality)	Construction Phase		
	Dust emissions	-	Not Significant, Negative, Short-term, Direct
	Road traffic impacts on local human receptors	Neutral, Short-term, Direct	Neutral, Short-term, Direct
	Road traffic impacts on local ecological receptors	Slight, Negative, Short-term, Direct	Slight, Negative, Short-term, Direct
	Operational Phase		
	Road traffic impacts on local human receptors	Neutral, Long-term, Direct	Neutral, Long-term, Direct
	Road traffic impacts on local ecological receptors	Slight, Negative, Long-term, Direct	Slight, Negative, Long-term, Direct
	Regional air quality	Neutral, Long-term, Direct	Neutral, Long-term, Direct
Chapter 8 (Climate)	Construction Phase		
	GHG emissions	-	Positive, long-term and not significant
	Operational Phase		
	GHG emissions	-	Positive, long-term and not significant
Chapter 9 (Noise & Vibration)	Construction Phase		
	Construction works	Negative, Not Significant to Moderate, and Temporary	Not significant
	Operational Phase		
	Opening Year (2028) traffic noise - Surrounding Road network	Indirect, Positive, Imperceptible to Slight, Short to Medium-Term to Negative, Slight and Short to Medium-Term	Indirect, Positive, Imperceptible to Slight, Short to Medium-Term to Negative, Slight and Short to Medium-Term

Environmental Aspect / Chapter	Residual effect Description	Impact Significance (Pre-Mitigation)	Residual effect Significance (Post-Mitigation)
	Design Year (2043) traffic noise - Surrounding Road network	Indirect, Positive, Imperceptible to Slight, Long-term impact to Negative, Slight, Long -Term	Indirect, Positive, Imperceptible to Slight, Long-term impact to Negative, Slight, Long -Term
	No significant residual effects predicted as a result of the Operational Phase of the Proposed Development		
Chapter 10 (Population)	Construction Phase		
	No significant residual effects predicted as a result of the Construction Phase of the Proposed Development		
	Operational Phase		
	No significant residual effects predicted as a result of the Operational Phase of the Proposed Development		
Chapter 11 (Human Health)	Construction Phase		
	Traffic noise and annoyance	Negative, Significant, Short-Term	Negative, Non-Significant, Long-Term
	Operational Phase		
	Increases in physical activity due to improvements in walking and cycling provisions	-	Positive, Long-term, Significant to Very Significant
	Impacts on access to health services	-	Positive, Long-term, Significant to Very Significant
	Improvements in People Movement by sustainable mode	-	Positive, Long-term, Significant to Very Significant
Chapter 12 (Biodiversity)	Construction Phase		
	Designated Sites (Natura 2000 Sites, Natural Heritage Areas and Proposed Natural Heritage Areas)	Negative, Imperceptible, Temporary and in the National Context	Imperceptible
	(Mixed) Broadleaved Woodland (WD1)	Negative, Moderate, Long-term and in the National Context	Not Significant
	Oak-ash-hazel woodland (WN2)		
	Scrub (WS1)		
	Dense Bracken (HD1)		
	Hedgerows (WL1)		
	Treelines (WL2)		
	Dry Meadows and Grassy Verges (GS2) (Annex I Lowland Hay Meadows [6510])		

Environmental Aspect / Chapter	Residual effect Description	Impact Significance (Pre-Mitigation)	Residual effect Significance (Post-Mitigation)
	Stone walls and other stonework (BL1)		
	Invasive Species (Impacts on other habitat types as above)	Negative, Moderate, Short-term and in the Local Context	Not Significant
	Non-volant mammals (Habitat loss and fragmentation, disturbance and displacement)	Negative, Slight, Short-term and in the Local Context	Not Significant
	Bats (Habitat loss and fragmentation, disturbance and displacement)	Negative, Moderate, Short-term and in the Local Context	Not Significant
	Birds (Habitat loss and fragmentation, disturbance and displacement)	Negative, Slight, Short-term and in the Local Context	Not Significant
	Invertebrates and Other Fauna (Marsh Fritillary) (Habitat loss and fragmentation, disturbance and displacement)	Negative, Slight, Short-term and in the Local Context	Not Significant
	Operational Phase		
	Designated Sites (Natura 2000 Sites, Natural Heritage Areas and Proposed Natural Heritage Areas)	Negative, Imperceptible, Long-Term and in the National Context.	Imperceptible
	(Mixed) Broadleaved Woodland (WD1)	Negative, Not Significant, Long-term and in the National Context	Not Significant
	Oak-ash-hazel woodland (WN2)		
	Scrub (WS1) - Ongoing management (habitat loss)		
	Dense Bracken (HD1) - Ongoing management (habitat loss)		
	Hedgerows (WL1) - Ongoing management (habitat loss)		
	Treelines (WL2) - Ongoing management (habitat loss)		
	Dry Meadows and Grassy Verges (GS2) -Surface water pollution		
	Stone walls and other stonework (BL1)		
	Invasive Species - Impacts on other habitat types as above	Negative, Slight, Long-term and in the Local Context	Not Significant

Environmental Aspect / Chapter	Residual effect Description	Impact Significance (Pre-Mitigation)	Residual effect Significance (Post-Mitigation)
	Non-volant mammals - Disturbance and displacement	Negative, Not Significant, Long-term and in the Local Context	Not Significant
	Bats - Disturbance and displacement		
	Birds - Disturbance and displacement		
	Invertebrates and Other Fauna (Marsh Fritillary) - Disturbance and displacement		
Chapter 13 (Water)	Construction Phase		
	General works	Short-term, adverse Imperceptible	Short-term, adverse, Imperceptible
	Carriageway / footpath widening (Increased surface water runoff attenuated by SUDS)		
	Construction Compound (Oil / fuel storage, refuelling. Potential exists for accidental spills / leaks)	Slight – moderate adverse (Clarinbridge groundwater)	Short-term, adverse, Imperceptible
	Construction Compound (Other)	Short-term, adverse, Imperceptible	Short-term, adverse, Imperceptible
	General drainage works	Short-term, adverse, Imperceptible	Short-term, adverse, Imperceptible
	Connection of new drainage infrastructure (Potential for sediment and other contaminants to enter the surface waterbody during connection works.)	Short-term, adverse, Significant	Short-term, adverse, Imperceptible
	Operational Phase		
	Runoff to surface water drainage	Long term, moderate, adverse	Long term, significant beneficial
	Runoff to combined sewer	Long term, moderate, adverse	Long term, significant beneficial
	Over the edge drainage (Redirection of runoff to sealed drainage system)	Long term, significant adverse	Long term, slight - moderate beneficial.
Chapter 14 (Land, Soils, Geology and Hydrogeology)	Construction Phase		
	Effective implementation of the outlined mitigation measures will result in imperceptible residual adverse impacts on the land, soil, geology, and hydrogeology in the construction phase of the Proposed Development		
	Operational Phase		
	Effective implementation of the outlined mitigation measures will result in imperceptible residual adverse impacts on the land, soil, geology, and hydrogeology in the operational phase of the Proposed Development.		
	Construction Phase		

Environmental Aspect / Chapter	Residual effect Description	Impact Significance (Pre-Mitigation)	Residual effect Significance (Post-Mitigation)
Chapter 15 (Archaeological, Cultural Heritage)	Indirect (negative): Removal of a portion of the green area around Milestone (RMP & RPS) feature/ encroachment into its Zone of Notification/curtilage	Slight/Moderate	Not Significant (negative temporary – monument presentation)
	Direct (negative): Complete removal of wall (former building façade - Rinmore estate building façade and entrance – location only (RPS curtilage)	Moderate	Slight (negative temporary)
	Indirect (negative): Removal of building façade with direct association to the overall estate footprint layout including former designed landscape (Renmore House (RPS))	Slight/Moderate	Not Significant (negative temporary)
	Direct (negative): Memorial to be removed and re-sited (Modern roadside memorial)	Slight/Not Significant	Imperceptible (negative temporary)
	Direct (negative): Complete removal of wall containing re-used dressed stones and ashlar pillars. The wall forms a townland boundary (CH006)	Moderate	Slight (negative temporary)
	Direct (negative): Cast-iron Victorian sewer vent pipe to be removed and re-sited (CH007)	Slight	Imperceptible (negative temporary)
	Direct (negative): Memorial to be removed and re-sited (CH008)	Slight/Not Significant	Imperceptible (negative temporary)
	Direct (negative): 19 th -century wall and wrought iron gate to be removed (CH009)	Slight	Not Significant (negative temporary)
	Direct (negative): Dressed stone within 19 th -century wall (CH010)	Slight	Not Significant (negative temporary)
	Indirect: Former quarry site GA094-018---	Slight	Not Significant (negative, permanent)
	Direct (negative): Rinmore designed landscape estate – limited design footprint within associated lands, including removal of building façade with direct association to the overall estate footprint layout including former designed landscape	Slight/Moderate	Slight (negative temporary)

Environmental Aspect / Chapter	Residual effect Description	Impact Significance (Pre-Mitigation)	Residual effect Significance (Post-Mitigation)
	Direct (negative): Merlin Park designed landscape estate – limited design footprint within associated lands	Not Significant	Imperceptible (negative temporary)
	Indirect (negative): Removal of original boundary walling and entranceway to former Glenina House NIAH 30409418	Moderate	Slight (negative temporary)
	Operational Phase		
	Direct (negative): Elements of the scheme will be brought closer to the location of Milestone (RMP & RPS) feature. This will include encroachment into its Zone of Notification/curtilage	Moderate/Significant	Not Significant (monument archaeological integrity); Moderate (positive) permanent residual effect via public amenity enhancement measures
	Indirect (negative): Renmore House – removal of associated structure/boundary and the Proposed Development intervention will be visible from this structure during operational phase	Slight/Moderate	Not Significant (negative permanent)
	Indirect (negative): Memorial to be removed and re-sited (CH005)	Slight/Not Significant	Imperceptible (negative permanent)
	Indirect (negative): Memorial to be removed and re-sited CH008	Slight/Not Significant	Imperceptible (negative permanent)
	Direct (negative): encroachment and removal of a small portion of original designed landscape of former Renmore House	Slight/Moderate	Slight (negative permanent)
	Direct (negative): encroachment and removal of a small portion of original designed landscape of former Merlin Park	Slight/Moderate	Imperceptible (negative permanent)
	Direct (negative): encroachment and removal of a small portion of original designed landscape of former Glenina House	Moderate	Slight (negative permanent)
Chapter 16 (Landscape & Visual)	Construction Phase		
	Open Space Receptors	Temporary, Moderate to Slight, Negative	Short-term, slight, negative

Environmental Aspect / Chapter	Residual effect Description	Impact Significance (Pre-Mitigation)	Residual effect Significance (Post-Mitigation)
	For most of the other receptors, residual effects during construction will be temporary, slight, negative to imperceptible . Construction impacts will be highest where receptors are closest to the proposed route, or where receptors look directly out over the road. However, these impacts will be typical of road works and road maintenance and will not be significant.		
	Operational Phase		
	Most residual effects once the proposed development is operational will be imperceptible and will improve over time as the proposed tree planting along the route matures.		
Chapter 17 (Waste)	Construction Phase		
	No significant residual effects predicted as a result of the Construction Phase of the Proposed Development		
	Operational Phase		
Chapter 18 (Material Asset)	No significant residual effects predicted as a result of the Operational Phase of the Proposed Development		
	Construction Phase		
	Major Infrastructure and Utilities		
	Electricity Demand	Negative, Not Significant, Short-Term	Negative, Not Significant, Short-Term
	Electricity Interruption	Negative, Moderate, Temporary	Negative, Moderate, Temporary
	Water Demand	Negative, Not Significant, Short-Term	Negative, Not Significant, Short-Term
	Water Interruption	Negative, Moderate, Temporary	Negative, Moderate, Temporary
	Wastewater Demand	Negative, Not Significant, Short-Term	Negative, Not Significant, Short-Term
	Wastewater Interruption	No significant impact	No significant impact
	Gas Demand	No significant impact	No significant impact
	Gas Interruption	Negative, Moderate, Temporary	Negative, Moderate, Temporary
	Telecommunications Demand	Negative, Not Significant, Short-Term	Negative, Not Significant, Short-Term
	Telecommunications Interruption	Negative, Moderate, Temporary	Negative, Moderate, Temporary
	Imported Material		
	Use of Imported Material	Negative, Slight, Long-Term	Negative, Slight, Long-Term
	Operational Phase		
	Major Infrastructure and Utilities		

Environmental Aspect / Chapter	Residual effect Description	Impact Significance (Pre-Mitigation)	Residual effect Significance (Post-Mitigation)
	Major Infrastructure	No significant impact	No significant impact
	Electricity	Negative, Not Significant, Long-Term	Negative, Not Significant, Long-Term
	Water Usage	No significant impact	No significant impact
	Wastewater	No significant impact	No significant impact
	Surface Water Runoff	No significant impact	No significant impact
	Gas	No significant impact	No significant impact
	Telecommunications	Negative, Imperceptible, Long-Term	Negative, Imperceptible, Long-Term
	Imported Material		
	Use of Imported Material	Neutral, Long-Term	Neutral, Long-Term
Chapter 19 (Major Risk Accidents & Disasters)	Construction Phase		
	No significant residual effects predicted as a result of the Construction Phase of the Proposed Development		
	Operational Phase		
	No significant residual effects predicted as a result of the Operational Phase of the Proposed Development		
Chapter 20 (Cumulative impacts)	Construction Phase		
	The results of the traffic modelling showed that with the N6 Galway City Ring Road scheme in place at the same time as the Proposed Development, there would result to a reduction in traffic within the city, and thus would have a slight impact on the effect of the Dublin Road Development as a result by lessening the impact of the Dublin Road Development.		
	Operational Phase		
	<p>The Population assessment identified three other projects, BusConnects Galway Cross-City Link, Ballybane Road and Castlepark Road Cycle Network and Dublin Road Lawn Cemetery, when considered in combination with the Proposed Development, were deemed to have potential for Positive Significant cumulative effects during the Operational Phase.</p> <p>The Human Health assessment identified nine other projects, in combination with the Proposed Development, that were deemed to have potential for Positive Significant cumulative effects during the Operational Phase.</p>		