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London Luton Airport Expansion

Planning Inspectorate Scheme Ref: TR020001

Volume 5 Environmental Statement and Related Documents
**5.02 Appendix 14.4 Detailed Landscape Impact
Assessment**

Application Document Ref: TR020001/APP/5.02

APFP Regulation: 5(2)(a)

The Planning Act 2008

**The Infrastructure Planning (Applications: Prescribed Forms and Procedure)
Regulations 2009**

**London Luton Airport Expansion Development Consent
Order 202x**

**5.02 ENVIRONMENTAL STATEMENT APPENDIX 14.4 DETAILED
LANDSCAPE IMPACT ASSESSMENT**

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1 LANDSCAPE IMPACT ASSESSMENT SUMMARY TABLE

Table 1: Landscape impact assessment summary table

Impact	Embedded/ Good Practice Mitigation	Magnitude	Receptor Sensitivity	Description of effect and significance	Additional Mitigation	Residual Effect
Construction						
Impact on the landform east of the airport	Works in accordance with the Code of Construction Practice (CoCP) provided as Appendix 4.2 of this ES [TR020001/AP P/5.02]. Management in accordance with Landscape and Biodiversity Management Plan (LBMP), an Outline LBMP is provided as Appendix 8.2 of this ES [TR020001/AP P/5.02].	Very low adverse (assessment Phase 1) rising to Medium adverse (assessment Phase 2a) then remaining at Medium adverse (assessment Phase 2b)	Value: Medium Susceptibility: High Sensitivity: Medium to high	Minor adverse (assessment Phase 1), which is not significant , rising to Moderate adverse (assessment Phases 2a & 2b), which is significant – permanent change to the existing natural landform.	None proposed	Minor adverse (assessment Phase 1), which is not significant , rising to Moderate adverse (assessment Phases 2a & 2b), which is significant

Impact	Embedded/ Good Practice Mitigation	Magnitude	Receptor Sensitivity	Description of effect and significance	Additional Mitigation	Residual Effect
	Embedded landscape mitigation measures as detailed in Section 14.8 of this ES [TR020001/AP P/5.01] and Figure 14.9 of this ES [TR020001/AP P/5.03] and the Strategic Landscape Masterplan (SLM) [TR020001/AP P/5.10] .					
Impact on the mixed ancient deciduous and plantation woodlands east of the airport	Works in accordance with CoCP. Management in accordance with LBMP. Embedded landscape mitigation measures as detailed in Section 14.8 of	Low to medium adverse (assessment Phase 1) increasing to Medium adverse (assessment Phase 2a) reducing to Low to medium adverse	Value: High Susceptibility: High Sensitivity: High	Moderate adverse (assessment Phases 1, 2a & 2b), which is significant – clearance of existing woodland vegetation and tree cover	Additional woodland planting measures as detailed in Section 14.10 of this ES [TR020001/AP P/5.01] and Figure 14.10 of this ES [TR020001/AP	Moderate adverse (assessment Phases 1 & 2a), which is significant , reducing to Minor adverse (assessment Phase 2b), which is not significant

Impact	Embedded/ Good Practice Mitigation	Magnitude	Receptor Sensitivity	Description of effect and significance	Additional Mitigation	Residual Effect
	this ES [TR020001/AP P/5.01] and Figure 14.9 of this ES [TR020001/AP P/5.03] and the SLM [TR020001/AP P/5.10].	(assessment Phase 2b)			P/5.03] and the SLM [TR020001/AP P/5.10]..	
Impact on the mature remnant hedgerows and hedgerow trees east of the airport	Works in accordance with CoCP. Management in accordance with LBMP. Embedded landscape mitigation measures as detailed in Section 14.8 of this ES [TR020001/AP P/5.01] and Figure 14.9 of this ES [TR020001/AP P/5.03] and the SLM	Low adverse (assessment Phase 1, assessment Phase 2a, and assessment Phase 2b)	Value: High Susceptibility: High Sensitivity: High	Minor adverse (assessment Phases 1, 2a & 2b), which is not significant - permanent removal of valued hedgerow cover	Additional hedgerow restoration and hedgerow tree planting measures as detailed in Section 14.10 of this ES [TR020001/AP P/5.01] and Figure 14.10 of this ES [TR020001/AP P/5.03] and the SLM [TR020001/AP P/5.10].	Minor adverse (assessment Phase 1), which is not significant , changing to Minor beneficial (assessment Phases 2a & 2b), which is not significant

Impact	Embedded/ Good Practice Mitigation	Magnitude	Receptor Sensitivity	Description of effect and significance	Additional Mitigation	Residual Effect
	[TR020001/AP P/5.10].					
Impact on the irregular – predominantly large - arable field patterns, with smaller fields on sloping ground east of the airport	Works in accordance with CoCP. Management in accordance with LBMP.	Very low adverse (assessment Phase 1) rising to Low adverse (assessment Phase 2a) then remaining at Low adverse (assessment Phase 2b)	Value: Low to medium Susceptibility: Medium Sensitivity: Medium	Minor adverse (assessment Phases 1, 2a & 2b), which is not significant	None proposed	Minor adverse (assessment Phases 1, 2a & 2b), which is not significant
Impact on the parkland of Wigmore Valley Park	Works in accordance with CoCP. Management in accordance with LBMP/ Operational Noise Management (Explanatory Note) (ONM) provided as Appendix 16.2 of this ES [TR020001/AP P/5.02].	Medium to high adverse (assessment Phase 1) reducing to Medium adverse (assessment Phase 2a) and Low to medium adverse (assessment Phase 2b)	Value: Medium Susceptibility: High Sensitivity: Medium to high	Major adverse (assessment Phase 1), which is significant , reducing to Moderate adverse (assessment Phases 2a & 2b), which is significant	None proposed	Major adverse (assessment Phase 1), which is significant , reducing to Moderate adverse (assessment Phases 2a & 2b), which is significant

Impact	Embedded/ Good Practice Mitigation	Magnitude	Receptor Sensitivity	Description of effect and significance	Additional Mitigation	Residual Effect
	Embedded landscape mitigation measures as detailed in Section 14.8 of this ES [TR020001/AP P/5.01] and Figure 14.9 of this ES [TR020001/AP P/5.03] and the SLM [TR020001/AP P/5.10] .					
Impact on the narrow winding lanes and associated hedge banks east of the airport	Works in accordance with CoCP. Management in accordance with LBMP. Embedded landscape mitigation measures as detailed in Section 14.8 of this ES [TR020001/AP P/5.01] and	Very low adverse (assessment Phase 1) changing to Very low beneficial (assessment Phase 2a) and remaining Very low beneficial (assessment Phase 2b)	Value: Medium Susceptibility: High Sensitivity: Medium to high	Negligible adverse (assessment Phase 1), which is not significant , changing to Negligible beneficial (assessment Phases 2a & 2b), which is not significant	Additional hedgerow restoration and hedgerow tree planting adjoining lanes as detailed in Section 14.10 of this ES [TR020001/AP P/5.01] and Figure 14.10 of this ES [TR020001/AP P/5.03] and the	Negligible adverse (assessment Phase 1), which is not significant , changing to Negligible beneficial (assessment Phases 2a & 2b), which is not significant

Impact	Embedded/ Good Practice Mitigation	Magnitude	Receptor Sensitivity	Description of effect and significance	Additional Mitigation	Residual Effect
	<p>Figure 14.9 of this ES [TR020001/AP P/5.03] and the SLM [TR020001/AP P/5.10].</p>				<p>SLM [TR020001/AP P/5.10].</p>	
<p>Impact on the outlying cottages and scattered farmsteads east of the airport</p>	<p>Works in accordance with CoCP.</p>	<p>No change (assessment Phase 1, assessment Phase 2a & assessment Phase 2b)</p>	<p>Value: Medium Susceptibility: Low Sensitivity: Low to medium</p>	<p>No effect (assessment Phases 1, 2a & 2b), which is not significant</p>	<p>None proposed</p>	<p>No effect (assessment Phases 1, 2a & 2b), which is not significant</p>
<p>Impact on the network of PRoW east of the airport</p>	<p>Works in accordance with CoCP. Management in accordance with LBMP. Embedded landscape mitigation measures as detailed in Section 14.8 of this ES [TR020001/AP P/5.01].</p>	<p>Low beneficial (assessment Phase 1) changing to Low to medium adverse (assessment Phase 2a) and remaining Low Medium adverse (assessment Phase 2b)</p>	<p>Value: Medium Susceptibility: High Sensitivity: Medium to high</p>	<p>Minor beneficial (assessment Phase 1), which is not significant, changing to Moderate adverse (assessment Phases 2a & 2b), which is significant – stopping up Luton footpaths FP29 and FP39 and Luton bridleways</p>	<p>Additional landscape mitigation measures as detailed in Section 14.10 of this ES [TR020001/AP P/5.01] and Figure 14.10 of this ES [TR020001/AP P/5.03] and the SLM [TR020001/AP P/5.10].</p>	<p>Moderate beneficial (assessment Phase 1), which is significant, changing to Minor adverse (assessment Phases 2a & 2b), which is not significant</p>

Impact	Embedded/ Good Practice Mitigation	Magnitude	Receptor Sensitivity	Description of effect and significance	Additional Mitigation	Residual Effect
				BW28 and BW37		
Impact on LBLCA Area 4c - Lea Valley Lower	Works in accordance with CoCP. Management in accordance with ONM.	Very low adverse (assessment Phase 1) increasing to Medium adverse (assessment Phase 2a) then reducing to Low adverse (assessment Phase 2b)	Value: Low – medium Susceptibility: Low Sensitivity: Low	Negligible adverse (assessment Phase 1), which is not significant , rising to Minor adverse (assessment Phases 2a & 2b), which is not significant	None proposed.	Negligible adverse (assessment Phase 1), which is not significant , rising to Minor adverse (assessment Phases 2a & 2b), which is not significant
Impact on LBLCA Area 13 - Wigmore Rural	Works in accordance with CoCP. Management in accordance with LBMP/ONM. Embedded landscape mitigation measures as detailed in Section 14.8 of this ES [TR020001/AP	Medium to high adverse (assessment Phases 1, 2a & 2b)	Value: Medium Susceptibility: High Sensitivity: Medium to high	Moderate adverse (assessment Phase 1), which is significant , rising to Major adverse (assessment Phases 2a & 2b), which is significant	None Proposed	Moderate adverse (assessment Phase 1), which is significant , rising to Major adverse (assessment Phases 2a & 2b), which is significant

Impact	Embedded/ Good Practice Mitigation	Magnitude	Receptor Sensitivity	Description of effect and significance	Additional Mitigation	Residual Effect
	<p>P/5.01] and Figure 14.9 of this ES [TR020001/AP P/5.03] and the SLM [TR020001/AP P/5.10].</p>					
<p>Impact on LBLCA Area 14 – Luton Airport</p>	<p>Works in accordance with CoCP. Management in accordance with LBMP/ONM. Embedded landscape mitigation measures as detailed in Section 14.8 of this ES [TR020001/AP P/5.01] and Figure 14.9 of this ES [TR020001/AP P/5.03] and the SLM</p>	<p>Low adverse (assessment Phase 1) rising to Medium adverse (assessment Phase 2a) then remaining Medium adverse (assessment Phase 2b)</p>	<p>Value: Low Susceptibility: Low to medium Sensitivity: Low</p>	<p>Minor adverse (assessment Phases 1, 2a & 2b), which is not significant</p>	<p>None proposed.</p>	<p>Minor adverse (assessment Phases 1, 2a & 2b), which is not significant</p>

Impact	Embedded/ Good Practice Mitigation	Magnitude	Receptor Sensitivity	Description of effect and significance	Additional Mitigation	Residual Effect
	[TR020001/AP P/5.10].					
Impact on LBLCA Area 16 – Luton South Industrial	Works in accordance with CoCP. Management in accordance with LBMP/ONM. Embedded landscape mitigation measures as detailed in Section 14.8 of this ES [TR020001/AP P/5.01] and Figure 14.9 of this ES [TR020001/AP P/5.03] and the SLM [TR020001/AP P/5.10].	Very low adverse (assessment Phase 1) rising to Medium adverse (assessment Phase 2a) and reducing to Low adverse (assessment Phase 2b)	Value: Low Susceptibility: Medium Sensitivity: Low to medium	Negligible adverse (assessment Phase 1), which is not significant , rising to Moderate adverse (assessment Phase 2a) which is significant , then reducing to Minor adverse (assessment Phase 2b), which is not significant	None proposed.	Negligible adverse (assessment Phase 1), which is not significant , rising to Moderate adverse (assessment Phase 2a), which is significant , then reducing to Minor adverse (assessment Phase 2b), which is not significant
Impact on LBLCA Area 22 – Stockwood Park	Works in accordance with CoCP.	Very low adverse (assessment Phase 1) rising to Low adverse	Value: High Susceptibility: High Sensitivity: High	Negligible adverse (assessment Phase 1), which is not	None proposed	Negligible adverse (assessment Phase 1), which is not

Impact	Embedded/ Good Practice Mitigation	Magnitude	Receptor Sensitivity	Description of effect and significance	Additional Mitigation	Residual Effect
	Management in accordance with ONM	(assessment Phase 2a) then remaining Low adverse (assessment Phase 2b)		significant , rising to Minor adverse (assessment Phases 2a & 2b), which is not significant – deterioration in tranquillity		significant , rising to Minor adverse (assessment Phases 2a & 2b), which is not significant
Impact on HLCA Area 200 – Peters Green Plateau (This incorporates the areas of Central Bedfordshire District Landscape Character Assessment (CBDLCA) Area 11D – Luton Airport / Chiltern Green Chalk Dipslope & LBLCA Area 15 – Dane Street & Someries Farm which occupy the same	Works in accordance with CoCP. Management in accordance with LBMP/ONM. Embedded landscape mitigation measures as detailed in Section 14.8 of this ES [TR020001/AP P/5.01] and Figure 14.9 of this ES [TR020001/AP P/5.03] and the SLM	Low adverse (assessment Phase 1) rising to Low to medium adverse (assessment Phase 2a) and again to Medium adverse (assessment Phase 2b)	Value: High Susceptibility: Medium Sensitivity: Medium to high	Minor adverse (assessment Phase 1), which is not significant , rising to Moderate adverse (assessment Phases 2a & 2b), which is significant	Additional landscape mitigation measures as detailed in Section 14.10 of this ES [TR020001/AP P/5.01] and Figure 14.10 of this ES [TR020001/AP P/5.03] and the SLM [TR020001/AP P/5.10].	Minor adverse (assessment Phase 1), which is not significant , rising to Moderate adverse (assessment Phases 2a & 2b), which is significant

Impact	Embedded/ Good Practice Mitigation	Magnitude	Receptor Sensitivity	Description of effect and significance	Additional Mitigation	Residual Effect
geographic location);	[TR020001/AP P/5.10].					
Impact on HLCA Area 201 – Kimpton and Whiteway Bottom	Works in accordance with CoCP. Management in accordance with LBMP/ONM. Embedded landscape mitigation measures as detailed in Section 14.8 of this ES [TR020001/AP P/5.01] and Figure 14.9 of this ES [TR020001/AP P/5.03] and the SLM [TR020001/AP P/5.10].	Low adverse (assessment Phase 1) rising to Medium adverse (assessment Phase 2a & assessment Phase 2b)	Value: Medium Susceptibility: Medium Sensitivity: Medium	Minor adverse (assessment Phase 1), which is not significant , increasing to Moderate adverse (assessment Phases 2a & 2b), which is significant	Additional hedgerow restoration and hedgerow tree planting measures as detailed in Section 14.10 of this ES [TR020001/AP P/5.01] and Figure 14.10 of this ES [TR020001/AP P/5.03] and the SLM [TR020001/AP P/5.10].	Minor adverse (assessment Phases 1, 2a & 2b), which is not significant
Impact on HLCA Area 202 – Breachwood Green Ridge	Works in accordance with CoCP. Management in accordance	Very low adverse (assessment Phase 1) rising to Low adverse	Value: Medium Susceptibility: Medium Sensitivity: Medium	Minor adverse (assessment Phases 1, 2a & 2b), which is not significant	Additional hedgerow restoration and hedgerow tree planting	Minor adverse (assessment Phase 1), which is not significant ,

Impact	Embedded/ Good Practice Mitigation	Magnitude	Receptor Sensitivity	Description of effect and significance	Additional Mitigation	Residual Effect
	with LBMP/ONM	(assessment Phase 2a) then remaining Low adverse (assessment Phase 2b)			measures as detailed in Section 14.10 of this ES [TR020001/AP P/5.01] and Figure 14.10 of this ES [TR020001/AP P/5.03] and the SLM [TR020001/AP P/5.10] .	changing to Minor beneficial (assessment Phases 2a & 2b), which is not significant
Impact on HLCA Area 203 – Whitwell Valley	Works in accordance with CoCP. Management in accordance with ONM.	Very low adverse (assessment Phase 1) rising to Low adverse (assessment Phase 2a) then remaining Low adverse (assessment Phase 2b)	Value: Medium Susceptibility: Medium Sensitivity: Medium	Negligible adverse (assessment Phase 1), which is not significant , rising to Minor adverse (assessment Phases 2a & 2b), which is not significant	None proposed	Negligible adverse (assessment Phase 1), which is not significant , rising to Minor adverse (assessment Phases 2a & 2b), which is not significant
Impact on HLCA Area 211 – Offley and St. Paul’s Walden	Works in accordance with CoCP.	Very low adverse (assessment Phase 1) increasing to Low adverse	Value: High Susceptibility: Medium Sensitivity: Medium to high	Minor adverse (assessment Phases 1, 2a & 2b), which is not significant	None proposed	Minor adverse (assessment Phases 1, 2a & 2b), which is not significant

Impact	Embedded/ Good Practice Mitigation	Magnitude	Receptor Sensitivity	Description of effect and significance	Additional Mitigation	Residual Effect
	Management in accordance with ONM.	(assessment Phase 2a) then remaining Low adverse (assessment Phase 2b)				
Impact on CBDLCA Area 11B – Caddington / Slip End Chalk Dipslope	Works in accordance with CoCP. Management in accordance with ONM.	Very low adverse (assessment Phase 1) rising to Low adverse (assessment Phase 2a & assessment Phase 2b)	Value: Medium Susceptibility: Medium Sensitivity: Medium	Negligible adverse (assessment Phase 1), which is not significant , rising to Minor Adverse (assessment Phases 2a & 2b), which is not significant	None proposed	Negligible adverse (assessment Phase 1), which is not significant , rising to Minor Adverse (assessment Phases 2a & 2b), which is not significant
Impact on CBDLCA Area 11C – Luton Hoo Chalk Dipslope	Works in accordance with CoCP. Management in accordance with ONM.	Very low adverse (assessment Phase 1) rising to Low adverse (assessment Phase 2a) then remaining Low adverse (assessment Phase 2b)	Value: High Susceptibility: Medium Sensitivity: Medium to high	Minor adverse (assessment Phases 1, 2a & 2b), which is not significant	None proposed	Minor adverse (assessment Phases 1, 2a & 2b), which is not significant

Impact	Embedded/ Good Practice Mitigation	Magnitude	Receptor Sensitivity	Description of effect and significance	Additional Mitigation	Residual Effect
Impact on CBDLCA Area 12C – Slip End Chalk Valley	Works in accordance with CoCP. Management in accordance with ONM.	Very low adverse (assessment Phase 1) rising to Low adverse (assessment Phase 2a) then remaining Low adverse (assessment Phase 2b)	Value: Low to medium Susceptibility: Medium Sensitivity: Low to medium	Negligible adverse (assessment Phase 1), which is not significant , rising to Minor adverse (assessment Phases 2a & 2b), which is not significant	None proposed	Negligible adverse (assessment Phase 1), which is not significant , rising to Minor adverse (assessment Phases 2a & 2b), which is not significant
Impact on CBDLCA Area 12D – Lea Chalk Valley	Works in accordance with CoCP. Management in accordance with ONM.	Very low adverse (assessment Phase 1 & assessment Phase 2a) rising to Low adverse (assessment Phase 2b)	Value: Medium to high Susceptibility: Medium Sensitivity: Medium to high	Negligible adverse (assessment Phase 1 & assessment Phase 2a), which is not significant , rising to Minor adverse (assessment Phase 2b), which is not significant	None proposed	Negligible adverse (assessment Phase 1 & assessment Phase 2a), which is not significant , rising to Minor adverse (assessment Phase 2b), which is not significant
Impact on the townscape of Hitchin	Works in accordance with CoCP.	No change (assessment Phase 1) rising to Medium	Value: High Susceptibility: Medium	No effect (assessment Phase 1) rising to Moderate	None proposed	No effect (assessment Phase 1) rising to Moderate

Impact	Embedded/ Good Practice Mitigation	Magnitude	Receptor Sensitivity	Description of effect and significance	Additional Mitigation	Residual Effect
	Management in accordance with ONM.	adverse (assessment Phase 2a) then reducing to Low to medium adverse (assessment Phase 2b)	Sensitivity: Medium to high	adverse (assessment Phases 2a & 2b), which is significant		adverse (assessment Phases 2a & 2b), which is significant
Impact on the aesthetic or perceptual characteristics of the landscape within the Chilterns AONB	Works in accordance with CoCP. Management in accordance with ONM.	Very low adverse (assessment Phase 1) remaining Very low adverse (assessment Phase 2a) then rising to Low adverse (assessment Phase 2b)	Value: Very high Susceptibility: Medium Sensitivity: High	Minor adverse (assessment Phases 1 & 2a), which is not significant , rising to Moderate adverse (assessment Phase 2b), which is significant	None proposed	Minor adverse (assessment Phase 1 & 2a), which is not significant , rising to Moderate adverse (assessment Phase 2b), which is significant
Operation						
Impact on the landform east of the airport	Management in accordance with LBMP	Low to medium adverse (max. aircraft movements capacity & design year)	Value: Medium Susceptibility: High Sensitivity: Medium to high	Moderate adverse (max. aircraft movements capacity & design year), which is significant	None proposed	Moderate adverse (max. aircraft movements capacity & design year), which is significant

Impact	Embedded/ Good Practice Mitigation	Magnitude	Receptor Sensitivity	Description of effect and significance	Additional Mitigation	Residual Effect
Impact on the mixed ancient deciduous and plantation woodlands east of the airport	Management in accordance with LBMP	Low adverse (max. aircraft movements capacity) changing to Low beneficial (design year)	Value: High Susceptibility: High Sensitivity: High	Minor adverse (max. aircraft movements capacity), which is not significant , changing to Minor beneficial (design year), which is not significant – Establishment of proposed woodland planting.	Management of additional broadleaved woodland planting measures in accordance with LBMP/ONM	Minor beneficial (max. aircraft movements capacity & design year), which is not significant - increase in broadleaved woodland cover and improved woodland management
Impact on the mature remnant hedgerows and hedgerow trees east of the airport	Management in accordance with LBMP	Low beneficial (max. aircraft movements capacity & design year)	Value: High Susceptibility: High Sensitivity: High	Minor beneficial (max. aircraft movements capacity & design year), which is not significant	Management of additional hedgerows and hedgerow tree planting in accordance with LBMP/ONM	Moderate beneficial (max. aircraft movements capacity & design year), which is not significant
Impact on the irregular – predominantly large - arable field patterns, with smaller fields on sloping	Management in accordance with LBMP/ONM	Low adverse (max. aircraft movements capacity & design year)	Value: Low - medium Susceptibility: Medium Sensitivity: Medium	Minor adverse (max. aircraft movements capacity & design year), which is not significant	None proposed	Minor adverse (max. aircraft movements capacity & design year), which is not significant

Impact	Embedded/ Good Practice Mitigation	Magnitude	Receptor Sensitivity	Description of effect and significance	Additional Mitigation	Residual Effect
ground east of the airport						
Impact on the parkland of Wigmore Valley Park	Management in accordance with LBMP	Very Low beneficial (max. aircraft movements capacity) changing to Low beneficial (design year)	Value: Medium Susceptibility: High Sensitivity: Medium to high	Minor beneficial (max. aircraft movements capacity & design year), which is not significant	None proposed	Minor beneficial (max. aircraft movements capacity & design year), which is not significant
Impact on the narrow winding lanes and associated hedge banks east of the airport	N/A	Very low beneficial (max. aircraft movements capacity & design year)	Value: Medium Susceptibility: High Sensitivity: Medium to high	Negligible beneficial (max. aircraft movements capacity & design year), which is not significant	Management of additional hedgerows and hedgerow tree planting in accordance with LBMP/ONM	Negligible beneficial (max. aircraft movements capacity & design year), which is not significant
Impact on the outlying cottages and scattered farmsteads east of the airport	Management in accordance with LBMP	No change (max. aircraft movements capacity & design year)	Value: Medium Susceptibility: Low Sensitivity: Low to medium	No effect (max. aircraft movements capacity & design year)	None proposed	No effect (max. aircraft movements capacity & design year)
Impact on the network of rights of way east of the airport	Management in accordance with ONM	Low beneficial (max. aircraft movements capacity & design year)	Value: Medium Susceptibility: High Sensitivity: Medium to high	Minor beneficial (max. aircraft movements capacity & design year),	None proposed	Moderate beneficial (max. aircraft movements capacity & design year),

Impact	Embedded/ Good Practice Mitigation	Magnitude	Receptor Sensitivity	Description of effect and significance	Additional Mitigation	Residual Effect
				which is not significant		which is significant
Impact on LBLCA 4c - Lea Valley Lower	Management in accordance with LBMP/ONM	Low adverse (max. aircraft movements capacity & design year)	Value: Low to medium Susceptibility: Low Sensitivity: Low	Minor adverse (max. aircraft movements capacity & design year), which is not significant	None proposed	Minor adverse (max. aircraft movements capacity & design year), which is not significant
Impact on LBLCA 13 - Wigmore Rural	Management in accordance with LBMP/ONM	Medium adverse (max. aircraft movements capacity & design year)	Value: Medium Susceptibility: High Sensitivity: Medium to high	Moderate adverse (max. aircraft movements capacity & design year), which is significant	None proposed	Moderate adverse (max. aircraft movements capacity & design year), which is significant
Impact on LBLCA 14 – Luton Airport	Management in accordance with LBMP/ONM	Low adverse (max. aircraft movements capacity) reducing to Very low adverse (design year)	Value: Low Susceptibility: Low to medium Sensitivity: Low	Minor adverse (max. aircraft movements capacity), which is not significant , reducing to Negligible adverse (design year), which is not significant	None proposed	Minor adverse (max. aircraft movements capacity), which is not significant , reducing to Negligible adverse (design year), which is not significant

Impact	Embedded/ Good Practice Mitigation	Magnitude	Receptor Sensitivity	Description of effect and significance	Additional Mitigation	Residual Effect
Impact on LBLCA Area 16 – Luton South Industrial	Management in accordance with ONM	Low adverse (max. aircraft movements capacity & design year)	Value: Low Susceptibility: Medium Sensitivity: Low to medium	Minor adverse (max. aircraft movements capacity & design year), which is not significant	None proposed	Minor adverse (max. aircraft movements capacity & design year), which is not significant
Impact on LBLCA Area 22 – Stockwood Park	Management in accordance with LBMP/ONM	Low adverse (max. aircraft movements capacity & design year)	Value: High Susceptibility: Medium Sensitivity: Medium to high	Minor adverse (max. aircraft movements capacity & design year), which is not significant	None proposed	Minor adverse (max. aircraft movements capacity & design year), which is not significant
Impact on HLCA Area 200 – Peters Green Plateau	Management in accordance with LBMP/ONM	Medium adverse (max. aircraft movements capacity) reducing to low to medium adverse (design year)	Value: High Susceptibility: Medium Sensitivity: Medium to high	Moderate adverse (max. aircraft movements capacity & design year), which is significant	Management of additional hedgerows and hedgerow tree planting in accordance with LBMP/ONM	Moderate adverse (max. aircraft movements capacity & design year), which is significant
Impact on HLCA Area 201 – Kimpton and Whiteway Bottom	Management in accordance with LBMP/ONM	Low adverse (max. aircraft movements capacity & design year)	Value: Medium Susceptibility: Medium Sensitivity: Medium	Minor adverse (max. aircraft movements capacity & design year), which is not significant	Management of additional woodland planting, hedgerows and hedgerow tree planting in	Minor beneficial (max. aircraft movements capacity & design year), which is not significant

Impact	Embedded/ Good Practice Mitigation	Magnitude	Receptor Sensitivity	Description of effect and significance	Additional Mitigation	Residual Effect
					accordance with LBMP/ONM	
Impact on HLCA Area 202 – Breachwood Green Ridge	Management in accordance with ONM	Low adverse (max. aircraft movements capacity & design year)	Value: Medium Susceptibility: Medium Sensitivity: Medium	Minor adverse (max. aircraft movements capacity & design year), which is not significant	Management of additional hedgerows and hedgerow tree planting in accordance with LBMP	Minor beneficial (max. aircraft movements capacity & design year), which is not significant
Impact on HLCA Area 203 – Whitwell Valley	Management in accordance with ONM	Low adverse (max. aircraft movements capacity & design year)	Value: Medium Susceptibility: Medium Sensitivity: Medium	Minor adverse (max. aircraft movements capacity & design year), which is not significant	None proposed	Minor adverse (max. aircraft movements capacity & design year), which is not significant
Impact on HLCA Area 211 – Offley and St. Paul’s Walden	Management in accordance with ONM	Low adverse (max. aircraft movements capacity & design year)	Value: High Susceptibility: Medium Sensitivity: Medium to high	Minor adverse (max. aircraft movements capacity & design year), which is not significant	None proposed	Minor adverse (max. aircraft movements capacity & design year), which is not significant
Impact on CBDLCA Area 11B – Caddington / Slip End Chalk Dipslope	Management in accordance with ONM	Low adverse (max. aircraft movements capacity & design year)	Value: Medium Susceptibility: Medium Sensitivity: Medium	Minor adverse (max. aircraft movements capacity & design year),	None proposed	Minor adverse (max. aircraft movements capacity & design year),

Impact	Embedded/ Good Practice Mitigation	Magnitude	Receptor Sensitivity	Description of effect and significance	Additional Mitigation	Residual Effect
				which is not significant		which is not significant
Impact on CBDLCA Area 11C – Luton Hoo Chalk Dipslope	Management in accordance with ONM	Low adverse (max. aircraft movements capacity & design year)	Value: High Susceptibility: Medium Sensitivity: Medium – high	Minor adverse (max. aircraft movements capacity & design year), which is not significant	None proposed	Minor adverse (max. aircraft movements capacity & design year), which is not significant
Impact on CBDLCA Area 12C – Slip End Chalk Valley	Management in accordance with ONM	Very low adverse (max. aircraft movements capacity & design year)	Value: Low to medium Susceptibility: Low Sensitivity: Low – medium	Minor adverse (max. aircraft movements capacity & design year), which is not significant	None proposed	Minor adverse (max. aircraft movements capacity & design year), which is not significant
Impact on CBDLCA Area 12D – Lea Chalk Valley	Management in accordance with ONM	Low adverse (max. aircraft movements capacity & design year)	Value: Medium -high Susceptibility: Medium Sensitivity: Medium to high	Minor adverse (max. aircraft movements capacity & design year), which is not significant	None proposed	Minor adverse (max. aircraft movements capacity & design year), which is not significant
Impact on the townscape of Hitchin	Management in accordance with ONM	Low to medium adverse (max. aircraft movements capacity & design year)	Value: High Susceptibility: Medium Sensitivity: Medium to high	Moderate adverse (max. aircraft movements capacity & design year),	None proposed	Moderate adverse (max. aircraft movements capacity & design year),

Impact	Embedded/ Good Practice Mitigation	Magnitude	Receptor Sensitivity	Description of effect and significance	Additional Mitigation	Residual Effect
				which is significant		which is significant
Impact on the aesthetic or perceptual characteristics of the landscape within the Chilterns AONB		Low adverse (max. aircraft movements capacity & design year)	Value: Very high Susceptibility: Medium Sensitivity: High	Moderate adverse (max. aircraft movements capacity & design year), which is significant	None proposed	Moderate adverse (max. aircraft movements capacity & design year), which is significant

2 DETAILED LANDSCAPE IMPACT ASSESSMENT

The landform east of the airport

Sensitivity of Receptor

The landform to the east of the airport is distinctive, is mostly in good condition and is considered of value at a regional scale. The landform is not however uncommon to that found locally within the wider Chiltern area and has been truncated by the existing airfield and past landfill activities. The value of this receptor is accordingly judged to be medium.

The landform east of the airport has mostly formed naturally and would have an inability to accommodate the form of change proposed without undue consequences for the baseline situation. The susceptibility of this landscape receptor is accordingly judged to be high.

In combination of value and susceptibility, this landscape receptor is judged to be of medium to high sensitivity.

Embedded Mitigation

Works in accordance with the Code of Construction Practice (CoCP) contained in **Appendix 4.2** of this ES [TR020001/APP/5.02];

Management in accordance with Operational Noise Management (Explanatory Note) (ONM) contained in **Appendix 16.2** of this ES [TR020001/APP/5.02] and Outline Landscape and Biodiversity Management Plan (LBMP) contained in **Appendix 8.2** of this ES [TR020001/APP/5.02];

Embedded landscape mitigation measures as detailed in **Section 14.8** of this ES [TR020001/APP/5.01] and **Figure 14.9** of this ES [TR020001/APP/5.03] and the **SLM** [TR020001/APP/5.10].

Year	Magnitude of Impact	Significance of Effect
Construction assessment Phase 1 and interim aircraft movements effects (c.2025 - 2032)	The Proposed Development would introduce some localised earthworks during assessment Phase 1, associated with the delivery of new stands east of taxiway Foxtrot (Work No. 2a(01)), temporary surface car parking (Work No. 4l.01 & 4m(01)), an earth bund given as part of the enhancements to the existing Wigmore Valley Park (Work No. 5b(01)) and temporary surcharging of the existing landfill (Work No. 1b). Any change to landscape character would be confined to the immediate setting of the site. The magnitude of landscape impact on this receptor is judged to be very low adverse.	The effect on this receptor is assessed to be minor adverse , which is not significant .
Construction assessment Phase 2a and interim aircraft movements effects (c.2033 - 2036)	The Proposed Development would introduce material storage, which would be temporary, and excavation activities into the area of farmland immediately east of the airfield during assessment Phase 2a. Landfill remediation works (Work No. 1b) would also take place during this period. The Proposed Development is considered to cause some detrimental change to the naturally rolling	The Proposed Development would be at variance with the character of the landscape and would locally diminish the integrity of the rolling landform east of the airport. The effect on this

	<p>landform at this stage, but the change would be principally discernible from within the immediate setting of the site.</p> <p>The magnitude of landscape impact on this receptor is judged to be medium adverse.</p>	<p>receptor is assessed to be moderate adverse, which is significant.</p>
<p>Construction assessment Phase 2b and interim aircraft movements effects (c.2037 - 2042)</p>	<p>Some temporary landfill remediation activities (Work No. 1b) would remain ongoing during this period and would be experienced alongside further expansion to the airfield (Work No. 2c), and material storage and excavation activities in the land immediately east of the airfield. These works would cause further detrimental change to the naturally rolling landform but would be partially obscured by embedded mitigation planting delivered in assessment Phase 1, which should be maturing by this stage. The magnitude of landscape impact on this receptor is accordingly judged to remain medium adverse.</p>	<p>The effect on this receptor is assessed to remain moderate adverse, which is significant.</p>
<p>Operation effects at the year of maximum aircraft movements capacity (c. 2043)</p>	<p>Earthworks will be complete by this stage and works to permanently restore the natural landform either side of Winch Hill Road (Work No. 5c (02)) will have taken place. These changes are considered to reduce the impact of the Proposed Development on local landscape character. The magnitude of landscape impact on this receptor is judged to reduce to low to medium adverse.</p>	<p>The effect on this at the year of maximum aircraft movements capacity is assessed to remain moderate adverse, which is significant.</p>
<p>Operation effects at the design year (c. 2056)</p>	<p>The embedded mitigation planting would have reached maturity and would help to screen and soften some of the engineered slopes. Those immediately adjoining the airfield will however remain prominent. The magnitude of landscape impact on this receptor at the design year is accordingly judged to remain low to medium adverse.</p>	<p>The mitigation planting would mature to screen and soften the engineered slopes at this stage. The effect on this receptor at the design year is nonetheless assessed to remain moderate adverse, which is significant.</p>
<p>Additional Mitigation None proposed</p>		
<p>Cumulative Magnitude of Impact</p>		<p>Cumulative Significance of Effect (Total Effects)</p>
<p>The Proposed Development may occur in combination with localised level changes in the Land South and North West of Cockernhoe and East of Wigmore (Stubbocks Walk) Brick Kiln Lane Cockernhoe project. These changes are judged not to materially increase the total magnitude of impact at any of the assessment phases.</p>		<p>The cumulative developments are assessed not to increase the significance of total landscape effect at any of the assessment phases.</p>

Cumulative Significance of Effect (Additional Effects)

As no 'total effects' are considered likely, the subsequent 'additional effects' assessment has not been carried out.

Mixed ancient deciduous and plantation woodlands east of the airport

Sensitivity of Receptor

Woodland is a key characteristic in the landscape to the east of the airport but is of mixed quality, containing some features, notably Winch Hill Wood (a designated Ancient Woodland) that are in good condition, would be irreplaceable and are considered to be of high importance and rarity; alongside others (e.g. a stand of coniferous plantation on Winch Hill) that are of lesser value and that would hold greater potential for substitution. Reflecting the more important woodland elements, the value of this landscape receptor is nonetheless judged to be high.

Local policies, strategies and guidelines for managing landscape change promote the conservation and enhancement of woodland along the sub-urban fringe of Luton. The receptor is consequently judged to have an inability to accommodate the form of change proposed without undue consequences for the baseline situation. The susceptibility of this landscape receptor is accordingly judged to be high.

In combination of value and susceptibility, this landscape receptor is judged to be of high sensitivity.

Embedded Mitigation

Works in accordance with CoCP provided in **Appendix 4.2** of this ES [TR020001/APP/5.02].

Management in accordance with ONMONM contained in **Appendix 16.2** of this ES [TR020001/APP/5.02] and LBMP contained in **Appendix 8.2** of this ES [TR020001/APP/5.02].

Embedded landscape mitigation measures as detailed in **Section 14.8** of this ES [TR020001/APP/5.01] and **Figure 14.9** of this ES [TR020001/APP/5.03] and the **SLM** [TR020001/APP/5.10].

Year	Magnitude of Impact	Significance of Effect
Construction assessment Phase 1 and interim aircraft movements effects (c. 2025 - 2032)	The Proposed Development would in assessment Phase 1 result in the clearance of some woodland vegetation within the existing Wigmore Valley Park to facilitate temporary surface car parking (Work Nos. 4l(01) & 4m(01)) and paths created as part of the enhancements to the existing Wigmore Valley Park (Work No. 5b(01)), a permanent change to the landscape. These changes would however be seen alongside the planting of new woodland given in enhancement to the existing Wigmore Valley Park (Work No. 5b(01)) and within the Replacement Open Space (Work No. 5b(02)) and enhancements to the existing Wigmore Valley Park (Work No.5b(01), which would be at early stage of establishment. The magnitude of landscape impact on this receptor is judged to be low to medium adverse.	The effect on this receptor is assessed to be moderate adverse , which is significant .
Construction assessment	Further woodland vegetation would be removed in this assessment Phase to	The effect on this receptor is assessed to remain

Phase 2a and interim aircraft movements effects (c.2033 - 2036)	facilitate landfill remediation (Work No. 1b) and earthworks activities east of the proposed terminal building. These changes would however be seen in combination with a maturing of embedded vegetation within the existing Wigmore Valley Park (Work No.5b(01)) and Replacement Open Space (Work No. 5b(02)). The magnitude of landscape impact on this receptor is judged to increase to medium adverse.	moderate adverse , which is significant .
Construction assessment Phase 2b and interim aircraft movements effects (c.2037 - 2042)	No further loss of woodland is anticipated, but some additional woodland areas would be planted and embedded woodland vegetation within the existing Wigmore Valley Park (Work No.5b(01)) and the Replacement Open Space (Work No. 5b(02)) would be reaching maturity by this stage. Improvements to woodland management should also start to become apparent. The magnitude of landscape impact on this receptor is judged to be low to medium adverse.	The effect on this receptor is assessed to remain moderate adverse , which is significant .
Operation effects at the year of maximum aircraft movements capacity (c. 2043)	Further woodland mitigation planting would have been delivered in the landscape restoration area (Work No. 5c(02)) by the year of maximum aircraft movements capacity. Proposed woodland within the existing Wigmore Valley Park (Work No.5b(01)) and the Replacement Open Space (Work No. 5b(02)) would also be further maturing and changes to woodland management should be evident at this time. The magnitude of landscape impact on this receptor is judged to be low adverse.	The effect on this receptor at the year of maximum aircraft movements capacity is assessed to reduce to minor adverse , which is not significant .
Operation effects at the design year (c. 2056)	Proposed woodland planting would have matured by the design year and will introduce and reinforce a positive woodland character into the area. The magnitude of landscape impact on this receptor is accordingly judged to be low beneficial.	The effect on this receptor at the design year is assessed to be minor beneficial , which is not significant .
Additional Mitigation Additional landscape mitigation measures as detailed in Section 14.10 of this ES [TR020001/APP/5.01] and Figure 14.10 of this ES [TR020001/APP/5.03] and the SLM [TR020001/APP/5.10].		
Year	Residual Magnitude of Impact	Residual Significance of Effect
Construction assessment Phase 1 and interim aircraft	The additional woodland mitigation planting proposed in land to the east of Winch Hill Road (Work No. 5e) would be at early stage of establishment at this stage. The	The additional mitigation would not mitigate the loss of woodland cover at this stage. The residual

movements effects (c. 2025 - 2032)	magnitude of landscape impact on this receptor is accordingly judged to remain low to medium adverse.	effect on this receptor is accordingly assessed to remain moderate adverse , which is significant .
Construction assessment Phase 2a and interim aircraft movements effects (c.2033 - 2036)	The additional woodland mitigation planting would have established to an extent by this assessment Phase and is considered to mitigate some of that lost at this time. The residual magnitude of landscape impact on this receptor is judged to be low to medium adverse.	The additional mitigation would still be at a relatively early stage of establishment. The residual effect on this receptor is assessed to remain moderate adverse , which is significant .
Construction assessment Phase 2b and interim aircraft movements effects (c.2037 - 2042)	The additional woodland mitigation planting would be maturing by this stage and is judged to reduce the magnitude of landscape impact on this receptor to low adverse.	Notwithstanding the high sensitivity of this receptor and low magnitude of effect, the proposals are considered to retain most valuable woodland features. The residual effect on this receptor is accordingly assessed to reduce from moderate adverse to minor adverse , which is not significant .
Operation effects at the year of maximum aircraft movements capacity (c. 2043)	The continued establishment of the additional woodland mitigation planting would increase overall woodland cover, which is judged to improve slightly local woodland coverage. The magnitude of landscape impact on this receptor is judged to change to low beneficial.	The additional woodland planting would deliver and enhancement to local woodland coverage. The residual effect on this receptor is assessed to change to minor beneficial , which is not significant .
Operation effects at the design year (c. 2056)	The additional woodland mitigation planting would have matured by the design year further strengthening the local woodland coverage. The magnitude of landscape impact on this receptor is judged to be very low beneficial.	The residual effect on this receptor is assessed to remain minor beneficial , which is not significant .
Cumulative Magnitude of Impact		Cumulative Significance of Effect (Total Effects)
The Proposed Development may occur in combination with a small degree of loss proposed to facilitate an access road in the Land South and North West of Cockernhoe and East of Wigmore (Stubbocks Walk) Brick Kiln Lane Cockernhoe project. These changes are however judged not to materially increase the total magnitude of impact at any of the assessment phases.		The cumulative developments are assessed not to increase the significance of total landscape effect at any of the assessment phases.

Cumulative Significance of Effect (Additional Effects)

As no 'total effects' are considered likely, the subsequent 'additional effects' assessment has not been carried out.

The mature remnant hedgerows and hedgerow trees east of the airport		
<p>Sensitivity of Receptor</p> <p>Hedgerows and mature hedgerow trees would historically have been a common feature across the landscape to the east of the airport, but their pattern has been locally degraded due to post-1950s boundary loss and intensive agricultural practices. The land east of the airport contains hedgerows in an advanced stage of maturity adjoining the boundary of the airfield and southeast boundary of Wigmore Valley Park and on the ridge of Winch Hill. These hedgerows are of high importance and have very limited potential for substitution. The value of this landscape receptor is accordingly judged to be high.</p> <p>Local policies, strategies and guidelines for managing landscape change promote the protection and restoration of hedgerows between woodland areas and along the lines of historic field boundaries. The receptor is consequently judged to have an inability to accommodate the form of change proposed without undue consequences for the baseline situation. The susceptibility of this landscape receptor is accordingly judged to be high.</p> <p>In combination of value and susceptibility, this landscape receptor is judged to be of high sensitivity.</p>		
<p>Embedded Mitigation</p> <p>Works in accordance with CoCP provided in Appendix 4.2 of this ES [TR020001/APP/5.02].</p> <p>Management in accordance with ONM contained in Appendix 16.2 of this ES [TR020001/APP/5.02] and LBMP contained in Appendix 8.2 of this ES [TR020001/APP/5.02].</p> <p>Embedded landscape mitigation measures as detailed in Section 14.8 of this ES [TR020001/APP/5.01] and Figure 14.9 of this ES [TR020001/APP/5.03] and the SLM [TR020001/APP/5.10].</p>		
Year	Magnitude of Impact	Significance of Effect
Construction assessment Phase 1 and interim aircraft movements effects (c. 2025 - 2032)	The Proposed Development would result in the permanent clearance of some hedgerow vegetation within the existing Wigmore Valley Park to facilitate temporary surface car parking (Work Nos. 4l(01) & 4m(01)), the construction of paths and for tree health. These changes would however be seen alongside new hedgerow planting given in enhancement to the existing Wigmore Valley Park (Work No. 5b(01)), within the Replacement Open Space (Work No. 5b(02)) and adjoining Winch Hill Road (Work No. 5c(01)), which would be at early stage of establishment. The magnitude of landscape impact on this receptor is judged to be low adverse.	The effect on this receptor is assessed to be minor adverse , which is not significant .
Construction assessment Phase 2a and interim aircraft movements	Some further permanent loss of hedgerows around the airport perimeter would occur at this assessment Phase. Embedded hedgerow planting within the existing Wigmore Valley Park (Work No.5b(01)), Replacement Open Space (Work No. 5b(02))	The effect on this receptor is assessed to remain minor adverse , which is not significant .

effects (c.2033 - 2036)	and adjoining Winch Hill Road would however have either reached or be reaching maturity at this time. The magnitude of landscape impact on this receptor is accordingly judged to remain low adverse.	
Construction assessment Phase 2b and interim aircraft movements effects (c.2037 - 2042)	Further hedgerows and hedgerow trees at the perimeter of the airfield and southeast of the existing Wigmore Valley Park would be permanently removed at this stage. Embedded hedgerow planting and hedgerow trees within the existing Wigmore Valley Park (Work No.5b(01)), Replacement Open Space (Work No. 5b(02)) and adjoining Winch Hill Road (Work No. 5c(01)) should however have matured by this stage and are judged to mitigate these losses to some extent. The magnitude of landscape impact on this receptor is judged accordingly to remain low adverse.	The effect on this receptor is assessed to remain to minor adverse , which is not significant .
Operation effects at the year of maximum aircraft movements capacity (c. 2043)	Further hedgerow and hedgerow trees would have been planted in the Landscape Restoration area (Work No. 5c(02)) by this stage. These changes are considered to result in an overall strengthening to local hedgerow cover at this time. The magnitude of landscape impact on this receptor is judged to low beneficial.	The effect on this receptor at the year of maximum aircraft movements capacity is assessed to be minor beneficial , which is not significant .
Operation effects at the design year (c. 2056)	All proposed hedgerows and hedgerow trees would be mature at this stage and would strengthen the hedgerow coverage in the area. The magnitude of landscape impact on this receptor is judged to remain low beneficial.	The effect on this receptor at the design year is assessed to be minor beneficial , which is not significant .
Additional Mitigation Additional landscape mitigation measures as detailed in Section 14.10 of this ES [TR020001/APP/5.01] and Figure 14.10 of this ES [TR020001/APP/5.03] and the SLM [TR020001/APP/5.10].		
Year	Residual Magnitude of Impact	Residual Significance of Effect
Construction assessment Phase 1 and interim aircraft movements effects (c. 2025 - 2032)	The additional hedgerow mitigation measures (Work No. 5e) would restore existing field boundaries and introduce additional hedgerow trees to the east of the airport. The mitigation planting would however be at an early stage of establishment in assessment Phase 1 and would accordingly offer limited landscape value. The magnitude of landscape impact on this receptor is accordingly judged to remain low adverse.	The additional mitigation planting is judged not to materially mitigate effects on valued hedgerow and hedgerow tree cover at this stage. The residual effect on this receptor is accordingly assessed to remain minor adverse , which is not significant .

Construction assessment Phase 2a and interim aircraft movements effects (c.2033 - 2036)	The additional hedgerow mitigation measures would be reaching maturity by this stage, partially restoring the historic pattern of enclosure. This mitigation is judged to change the magnitude of landscape impact on this receptor to very low beneficial.	The additional mitigation planting would mitigate the effects from the loss of the existing hedgerows and hedgerow trees by this assessment Phase. The residual effect on this receptor is assessed to change to minor beneficial , which is not significant .
Construction assessment Phase 2b and interim aircraft movements effects (c.2037 - 2042)	The additional hedgerow mitigation measures would strengthen local hedgerow coverage by this assessment Phase. The magnitude of landscape impact on this receptor is judged to be low beneficial.	The residual effect on this receptor is assessed to change to minor beneficial , which is not significant .
Operation effects at the year of maximum aircraft movements capacity (c. 2043)	The additional hedgerow mitigation measures would have matured by this stage, restoring existing field boundaries and further strengthening the historic landscape character. The establishment of this mitigation is judged to further increase the positive impact on hedgerow cover. The magnitude of landscape impact on this receptor is judged to be medium beneficial.	The residual effect on this receptor is assessed to change to moderate beneficial , which is significant .
Operation effects at the design year (c. 2056)	The additional hedgerow mitigation measures are judged to change the residual magnitude of landscape impact on this receptor is judged to be medium beneficial.	The residual effect on this receptor is judged to change to moderate beneficial , which is significant .
Cumulative Magnitude of Impact		Cumulative Significance of Effect (Total Effects)
The Proposed Development may occur in combination with other changes in the Land South and North West of Cockernhoe and East of Wigmore (Stubbocks Walk) Brick Kiln Lane Cockernhoe project. These changes are however judged not to materially increase the total magnitude of impact at any of the assessment phases.		The cumulative developments are assessed not to increase the significance of total landscape effect at any of the assessment phases.
Cumulative Significance of Effect (Additional Effects)		
As no 'total effects' are considered likely, the subsequent 'additional effects' assessment has not been carried out.		

The irregular – predominantly large – arable field patterns, with smaller fields on sloping ground to the east of the airport

Sensitivity of Receptor

Arable farmland is a key characteristic of the local area however the field pattern east of the airport is of varying quality with several areas locally degraded by intensive arable production. Arable farmland is common within the surroundings but would have very limited potential for substitution. The value of the arable farmland is judged to be low to medium.

Local strategies and guidelines for managing landscape change recognise arable farmland to be a key characteristic but promote its reduction through the planting of woodland along the sub-urban fringe of Luton, the creation of buffer zones between intensive arable production and areas of semi-natural habitat, and the restoration of hedgerows along the lines of historic field boundaries. The arable farmland east of the airport is judged accordingly to have some ability to accommodate the form of development proposed without undue consequences for the baseline situation. The susceptibility of this landscape receptor is accordingly judged to be medium.

In combination of value and susceptibility, this landscape receptor is judged to be of medium sensitivity.

Embedded Mitigation

Works in accordance with CoCP provided in **Appendix 4.2** of this ES [TR020001/APP/5.02].

Management in accordance with ONM contained in **Appendix 16.2** of this ES [TR020001/APP/5.02] and LBMP contained in **Appendix 8.2** of this ES [TR020001/APP/5.02].

Embedded landscape mitigation measures as detailed in **Section 14.8** of this ES [TR020001/APP/5.01] and **Figure 14.9** of this ES [TR020001/APP/5.03] and the **SLM** [TR020001/APP/5.10].

Year	Magnitude of Impact	Significance of Effect
Construction assessment Phase 1 and interim aircraft movements effects (c. 2025 - 2032)	The Proposed Development would result in localised changes to field patterns and the loss of some arable land cover to facilitate delivery of the Replacement Open Space (Work No. 5b(02)) in this assessment Phase, which would be a permanent change. The magnitude of landscape impact on this receptor is judged to be very low adverse.	The effect on this receptor is assessed to be minor adverse , which is not significant .
Construction assessment Phase 2a and interim aircraft movements effects (c.2033 - 2036)	Further changes to field patterns and a permanent loss of arable land cover would take place in this assessment Phase to facilitate development east of the airfield. The magnitude of landscape impact on this receptor is judged to be low adverse.	The effect on this receptor is assessed to remain minor adverse , which is not significant .

Construction assessment Phase 2b and interim aircraft movements effects (c.2037 - 2042)	The changes to field patterns and loss of arable land cover noted above is assumed to remain at this time. The magnitude of landscape impact on this receptor is accordingly judged to remain low adverse.	The effect on this receptor is assessed to remain minor adverse , which is not significant .
Operation effects at the year of maximum aircraft movements capacity (c. 2043)	Areas of low intensity grazed calcareous grassland forming part of the landscape restoration activities (Work No. 5c(02)) would have been delivered by this stage and are considered to partially restore the field pattern in this area. The magnitude of landscape impact on this receptor is however nonetheless judged to remain low adverse.	The effect on this receptor at the year of maximum aircraft movements capacity is assessed to remain minor adverse , which is not significant .
Operation effects at the design year (c. 2056)	The magnitude of landscape impact on this receptor is judged to remain low adverse at design year.	The effect on this at the design year is assessed to remain minor adverse , which is not significant .
Additional Mitigation None proposed		
Cumulative Magnitude of Impact		Cumulative Significance of Effect (Total Effects)
The Land South and North West of Cockernhoe and East of Wigmore (Stubbocks Walk) Brick Kiln Lane Cockernhoe project and Land West of Cockernhoe / Land East of Copthorne Cockernhoe project would result in further 'irreversible' loss to arable farmland. As this typology is common locally, this additional loss to arable farmland is however judged not to materially affect the cumulative magnitude of impact.		The cumulative developments are assessed not to increase the significance of total landscape effect at any of the assessment phases.
Cumulative Significance of Effect (Additional Effects) As no 'total effects' are considered likely, the subsequent 'additional effects' assessment has not been carried out.		

The parkland of Wigmore Valley Park		
<p>Sensitivity of Receptor</p> <p>Wigmore Valley Park is a recognised community asset within the local green infrastructure network that provides a valuable resource for informal leisure, recreation and local biodiversity. The condition and management of some features within Wigmore Valley Park could however benefit from enhancement and there are few surfaced pathways. The value of the parkland of Wigmore Valley Park is judged to be medium.</p> <p>The parkland of Wigmore Valley Park serves as a facility without which there would be a deficit of green space in the locality. The susceptibility of the parkland of Wigmore Valley Park to landscape change is judged to be high.</p> <p>In combination of value and susceptibility, this landscape receptor is judged to be of medium to high sensitivity.</p>		
<p>Embedded Mitigation</p> <p>Works in accordance with CoCP provided in Appendix 4.2 of this ES [TR020001/APP/5.02].</p> <p>Management in accordance with ONM contained in Appendix 16.2 of this ES [TR020001/APP/5.02] and LBMP contained in Appendix 8.2 of this ES [TR020001/APP/5.02].</p> <p>Embedded landscape mitigation measures as detailed in Section 14.8 of this ES [TR020001/APP/5.01] and Figure 14.9 of this ES [TR020001/APP/5.03] and the SLM [TR020001/APP/5.10].</p>		
Year	Magnitude of Impact	Significance of Effect
<p>Construction assessment Phase 1 and interim aircraft movements effects (c. 2025 - 2032)</p>	<p>The Proposed Development would replace the existing western and southern parts of Wigmore Valley Park with an area of predominantly arable land, located immediately to the southeast of the existing area of open space, to be laid out as a Replacement Open Space (Work No. 5b(02)) during this assessment Phase. It is anticipated that works to deliver the Replacement Open Space (Work No. 5b(02)), alongside works to enhance the existing Wigmore Valley Park (Work No. 5b(01)) would be evident to users of the parkland in this period and would likely necessitate some parkland areas to be temporarily cordoned off for construction and/or planting/seeding activities, or to help establish proposed vegetation. It is anticipated further that the loss of some vegetation to facilitate construction activities would be evident at this time and that other construction activities associated with the Proposed Development would be visible and audible.</p>	<p>The Proposed Development would retain Wigmore Valley Park as an area of green space but would degrade and diminish its value as an asset within the local green infrastructure network during this period. The effect on this receptor is accordingly assessed to be major adverse, which is significant.</p>

	<p>The Proposed Development is considered to impact on how people use and recreate within the parkland and, with proposed planting at an early stage in its establishment, will lead to a reduction in its biodiversity value during this period. Whilst the access into the park by Wigmore Pavilion would remain, it is acknowledged that the Replacement Open Space (Work No. 5b(02)) would be further from the Wigmore residential area that it principally serves. The magnitude of landscape impact on this receptor is judged to be medium to high adverse.</p>	
<p>Construction assessment Phase 2a and interim aircraft movements effects (c.2033 - 2036)</p>	<p>Construction activities to install street furniture and deliver surfaced paths given in enhancement to the existing Wigmore Valley Park (Work No. 5b(01)) and within the Replacement Open Space (Work No. 5b(02)) would have been completed before this stage; seeded areas should have established a strong sward; and temporary measures associated with the establishment of proposed woodland and/or hedgerow vegetation (e.g. protective fencing) should be capable of being removed at this time. Users' ability to move within the park and to connect into the wider footpath network beyond its limits will also have improved by this stage.</p> <p>Biodiversity within the proposed parkland is nonetheless considered to remain inferior at this stage and development activities associated with the Proposed Development beyond the parkland extents would be evident at this time. The magnitude of landscape impact on this receptor is judged to be medium adverse.</p>	<p>The Proposed Development is considered to have an adverse impact on the value, setting and functionality of this asset during this assessment Phase. The effect on this receptor is assessed to be moderate adverse, which is significant.</p>
<p>Construction assessment Phase 2b and interim aircraft movements effects (c.2037 - 2042)</p>	<p>Proposed vegetation within the existing Wigmore Valley Park (Work No.5b(01)) and Replacement Open Space (Work No. 5b(02)) should be reaching maturity at this stage, providing improved connectivity for biodiversity and a greater sense of enclosure. Proposed construction and operational activities beyond the parkland extents would however remain discernible and audible from some areas of the parkland at this time. The magnitude of landscape impact on this receptor is judged accordingly to be low to medium adverse.</p>	<p>The effect on this receptor is assessed to remain moderate adverse, which is significant.</p>
<p>Operation effects at the</p>	<p>Proposed construction activities would have ceased by the year of maximum aircraft</p>	<p>The effect on this receptor at the year of maximum</p>

<p>year of maximum aircraft movements capacity (c. 2043)</p>	<p>movements capacity and proposed planting within the existing Wigmore Valley Park (Work No.5b(01)) and Replacement Open Space (Work No. 5b(02)) would have established to screen much of the proposed airport development; to provide good connectivity for biodiversity; and to strengthen local landscape character. A new connection from the Replacement Open Space to Winch Hill Road would also have been restored at this stage (Work No. 5b(04)). The magnitude of landscape impact on this receptor is accordingly judged to be very low beneficial.</p>	<p>aircraft movements capacity is judged to be minor beneficial, which is not significant.</p>
<p>Operation effects at the design year (c. 2056)</p>	<p>Proposed planting within the existing Wigmore Valley Park (Work No.5b(01)) and Replacement Open Space (Work No. 5b(02)) would mature to further strengthen the connectivity and value of the biodiversity by this stage. The magnitude of landscape impact on this receptor at the design year is accordingly judged to be low beneficial.</p>	<p>The effect on this receptor at the design year is judged to remain minor beneficial, which is not significant.</p>
<p>Additional Mitigation None proposed</p>		
<p>Cumulative Magnitude of Impact</p>		<p>Cumulative Significance of Effect (Total Effects)</p>
<p>The Green Horizons Park project would deliver changes within Wigmore Valley Park which may be experienced in combination with the Proposed Development in assessment Phase 1 (including the removal of vegetation, improvements to Wigmore Pavilion, construction of new play facilities and a new skate park, construction of new surfaced paths and the re-surfacing of the car parking area). The Green Horizons Park project would also introduce additional construction activities and built form which will be visible and audible beyond the replacement open space from assessment Phase 2a.</p> <p>The combined impact of the Proposed Development and changes within Wigmore Valley Park to be brought about by the Green Horizons Park project are judged to increase the total magnitude of impact on this receptor in assessment Phase 1 to high adverse. The additional construction activities and built form is also judged to increase the total magnitude of impact on this receptor in assessment Phase 2b to medium adverse.</p>		<p>The increases to the total magnitude of impact on this receptor are assessed not to increase the significance of total landscape effect at any of the assessment phases.</p>
<p>Cumulative Significance of Effect (Additional Effects) As no 'total effects' are considered likely, the subsequent 'additional effects' assessment has not been carried out.</p>		

The narrow winding lanes and associated hedge banks east of the airport

Sensitivity of Receptor

Narrow winding lanes and associated hedge banks are not uncommon within the local area and are features of the local landscape that contribute to its rural setting. The receptor is locally valued and would have limited potential for substitution. The value of the narrow winding lanes and associated hedge banks east of the airport is judged to be medium.

The pattern of roads and lanes is truncated by the existing development at the airport and local strategies and guidelines for managing landscape change support the protection and preservation of the pattern of narrow winding lanes and associated hedge banks, sunken lanes, verges and hedges. This receptor is judged accordingly to have an inability to accommodate change without undue consequences for the baseline situation. The susceptibility of this landscape receptor is accordingly judged to be high.

In combination of value and susceptibility, this landscape receptor is judged to be of medium to high sensitivity.

Embedded Mitigation

Works in accordance with CoCP provided in **Appendix 4.2** of this ES [TR020001/APP/5.02].

Management in accordance with ONM contained in **Appendix 16.2** of this ES [TR020001/APP/5.02] and LBMP contained in **Appendix 8.2** of this ES [TR020001/APP/5.02].

Embedded landscape mitigation measures as detailed in **Section 14.8** of this ES [TR020001/APP/5.01] and **Figure 14.9** of this ES [TR020001/APP/5.03] and the **SLM** [TR020001/APP/5.10].

Year	Magnitude of Impact	Significance of Effect
Construction assessment Phase 1 and interim aircraft movements effects (c. 2025 - 2032)	The Proposed Development would result in the permanent removal of a small section of hedge bank on Winch Hill Road, to facilitate a bridleway access into the Replacement Open Space (Work No. 5b(05)) during this assessment Phase. This measure would however be seen in combination with the restoration of hedgerows on hedge banks elsewhere adjoining Darley Road and Winch Hill Road. The magnitude of landscape impact on this receptor is judged to be very low adverse.	The effect on this receptor is assessed to be negligible adverse , which is not significant .
Construction assessment Phase 2a and interim aircraft movements effects (c.2033 - 2036)	A further section of hedge bank may be temporarily removed at this stage to facilitate the Fuel Pipeline connection (Work No. 4c (02)) and drainage infrastructure (Work No. 4v). Affected areas would however be restored following construction and restored hedgerows on hedge banks should be reaching maturity in this stage and be capable of having their protective fencing removed. The magnitude of landscape	The effect on this receptor is assessed to remain negligible beneficial , which is not significant .

	impact on this receptor is accordingly judged to remain very low beneficial.	
Construction assessment Phase 2b and interim aircraft movements effects (c.2037 - 2042)	No additional changes to this receptor are anticipated in this assessment Phase. The magnitude of landscape impact on this receptor is accordingly judged to remain very low beneficial.	The effect on this receptor is assessed to remain negligible beneficial , which is not significant .
Operation effects at the year of maximum aircraft movements capacity (c. 2043)	The magnitude of landscape impact on this receptor is judged to remain very low beneficial.	The effect on this receptor at the year of maximum aircraft movements capacity is assessed to remain negligible beneficial , which is not significant .
Operation effects at the design year (c. 2056)	The magnitude of landscape impact on this receptor is judged to remain very low beneficial.	The effect on this receptor at the design year is assessed to remain negligible beneficial , which is not significant .
Additional Mitigation None proposed		
Cumulative Magnitude of Impact		Cumulative Significance of Effect (Total Effects)
The Proposed Development may occur in combination with changes resulting from the Land South and North West of Cockernhoe and East of Wigmore (Stubbocks Walk) Brick Kiln Lane Cockernhoe project and the Land West of Cockernhoe / Land East of Copthorne Cockernhoe project. These changes are however judged not to materially increase the total magnitude of impact at any of the assessment phases.		The cumulative developments are assessed not to increase the significance of total landscape effect at any of the assessment phases.
Cumulative Significance of Effect (Additional Effects) As no 'total effects' are considered likely, the subsequent 'additional effects' assessment has not been carried out.		

The outlying cottages and scattered farmsteads east of the airport		
<p>Sensitivity of Receptor</p> <p>The outlying cottages and scattered farmsteads east of the airport are features of the local landscape that contribute to its overall rural character. Most are inhabited and in moderate or good physical condition and several are listed for their heritage value. The value of the outlying cottages and scattered farmsteads east of the airport is accordingly judged to be medium.</p> <p>The outlying cottages located in the proposed development area are of limited conservation interest or rarity and hold importance only through their occupancy. The susceptibility of this landscape receptor is accordingly judged to be low.</p> <p>In combination of value and susceptibility, this landscape receptor is judged to be of low to medium sensitivity</p>		
<p>Embedded Mitigation</p> <p>Works in accordance with CoCP provided in Appendix 4.2 of this ES [TR020001/APP/5.02].</p> <p>Management in accordance with ONM contained in Appendix 16.2 of this ES [TR020001/APP/5.02] and LBMP contained in Appendix 8.2 of this ES [TR020001/APP/5.02].</p> <p>Embedded landscape mitigation measures as detailed in Section 14.8 of this ES [TR020001/APP/5.01] and Figure 14.9 of this ES [TR020001/APP/5.03] and the SLM [TR020001/APP/5.10].</p>		
Year	Magnitude of Impact	Significance of Effect
Construction assessment Phase 1 and interim aircraft movements effects (c. 2025 - 2032)	It is judged that there would be no change to this receptor.	No effect.
Construction assessment Phase 2a and interim aircraft movements effects (c.2033 - 2036)	It is judged that there would be no change to this receptor.	No effect.
Construction assessment Phase 2b and interim aircraft movements effects (c.2037 - 2042)	It is judged that there would be no change to this receptor.	No effect.
Operation effects at the year of	It is judged that there would be no change to this receptor.	No effect.

maximum aircraft movements capacity (c. 2043)		
Operation effects at the design year (c. 2056)	It is judged that there would be no change to this receptor.	No effect.
Additional Mitigation None proposed		
Cumulative Magnitude of Impact		Cumulative Significance of Effect (Total Effects)
The cumulative developments are assumed not to materially impact this receptor.		The cumulative developments are assessed not to increase the significance of total landscape effect at any of the assessment phases.
Cumulative Significance of Effect (Additional Effects) As no 'total effects' are considered likely, the subsequent 'additional effects' assessment has not been carried out.		

The network of public rights of way east of the airport		
<p>Sensitivity of Receptor</p> <p>The land to the east of the airport is well served in terms of its network of PRow but the condition, upkeep and signposting of routes is of variable quality, with some routes including blockages and very few routes surfaced to provide accessibility for people with disabilities. The connectivity of the bridleway network is also poor. The value of the network of PRow east of the airport is accordingly judged to be medium.</p> <p>Local strategies and guidelines for managing landscape change promote the maintenance and extension of the PRow network. The network of public rights of way east of the airport is judged accordingly to have an inability to accommodate the form of development proposed without undue consequences for the baseline situation. The susceptibility of this landscape receptor is accordingly judged to be high.</p> <p>In combination of value and susceptibility, this landscape receptor is judged to be of medium to high sensitivity.</p>		
<p>Embedded Mitigation</p> <p>Works in accordance with CoCP provided in Appendix 4.2 of this ES [TR020001/APP/5.02].</p> <p>Management in accordance with ONM contained in Appendix 16.2 of this ES [TR020001/APP/5.02] and LBMP contained in Appendix 8.2 of this ES [TR020001/APP/5.02].</p> <p>Embedded landscape mitigation measures as detailed in Section 14.8 of this ES [TR020001/APP/5.01].</p>		
Year	Magnitude of Impact	Significance of Effect
Construction assessment Phase 1 and interim aircraft movements effects (c. 2025 - 2032)	The Proposed Development would remove some blockages, provide improvements to surfacing and signage on footpaths KW 041 and KW 043 and deliver informal surfaced paths in the Replacement Open Space (Work Nos. 5b(02) and 5b(04)) in this assessment Phase. These changes would improve overall connectivity across the footpath network. The magnitude of landscape impact on this receptor is judged to be low beneficial.	The effect on this receptor is assessed to be minor beneficial , which is not significant .
Construction assessment Phase 2a and interim aircraft movements effects (c.2033 - 2036)	Luton footpaths FP29 and FP39 and Luton bridleways BW28 and BW37, to the south east of Wigmore Valley Park and to the east of the existing the airfield, would be stopped up in this assessment Phase to facilitate construction activities. This change would temporarily damage the functionality of the PRow network to some extent. The magnitude of landscape impact on this receptor is judged to be low to medium adverse.	The effect on this receptor is assessed to be moderate adverse , which is significant .

Construction assessment Phase 2b and interim aircraft movements effects (c.2037 - 2042)	Luton footpaths FP29 and FP39 and Luton bridleways BW28 and BW37 would remain temporarily stopped up in assessment Phase 2b. The magnitude of landscape impact on this receptor is accordingly judged to remain low to medium adverse.	The effect on this receptor is assessed to remain moderate adverse , which is significant .
Operation effects at the year of maximum aircraft movements capacity (c. 2043)	Connectivity between the start of Luton Borough FP39 on Eaton Green Road and Winch Hill Road would have been restored via the Replacement Open Space (Work Nos. 5b(05)) by the year of maximum aircraft movements capacity. This change is considered to improve the functionality of the PRow network to some extent. The magnitude of landscape impact on this receptor is accordingly judged to be low beneficial at the year of maximum aircraft movements capacity.	The effect on this receptor at the year of maximum aircraft movements capacity is assessed to be minor beneficial , which is not significant .
Operation effects at the design year (c. 2056)	The magnitude of landscape impact on this receptor is judged to remain low beneficial at the design year.	The effect on this receptor at the design year is assessed to remain minor beneficial , which is not significant .
Additional Mitigation Additional landscape mitigation measures as detailed in Section 14.10 of this ES [TR020001/APP/5.01].		
Year	Magnitude of Impact	Significance of Effect
Construction assessment Phase 1 and interim aircraft movements effects (c. 2025 - 2032)	The additional mitigation measures would deliver further improvements to the overall connectivity across the footpath network during this assessment Phase. The magnitude of landscape impact on this receptor is accordingly judged to be low to medium beneficial.	The effect on this receptor is assessed to be moderate beneficial , which is significant .
Construction assessment Phase 2a and interim aircraft movements effects (c.2033 - 2036)	The additional mitigation measures are judged to offset some of the impact from stopping up Luton footpaths FP29 and FP39 and Luton bridleways BW28 and BW37 through this assessment Phase. The magnitude of landscape impact on this receptor is judged to reduce to low adverse.	The effect on this receptor is assessed to be minor adverse , which is not significant .
Construction assessment Phase 2b and interim aircraft movements effects (c.2037 - 2042)	The additional mitigation measures are judged to offset some of the impact from stopping up Luton footpaths FP29 and FP39 and Luton bridleways BW28 and BW37 through this assessment Phase. The magnitude of landscape impact on this receptor is judged to reduce to low adverse.	The effect on this receptor is assessed to be minor adverse , which is not significant .

Operation effects at the year of maximum aircraft movements capacity (c. 2043)	The additional mitigation measures would deliver further improvements to the overall connectivity across the footpath network at this stage. The magnitude of landscape impact on this receptor is accordingly judged to be low to medium beneficial.	The effect on this receptor is assessed to be moderate beneficial , which is significant .
Operation effects at the design year (c. 2056)	The additional mitigation measures would deliver further improvements to the overall connectivity across the footpath network at this stage. The magnitude of landscape impact on this receptor is accordingly judged to be low to medium beneficial.	The effect on this receptor is assessed to be moderate beneficial , which is significant .
Cumulative Magnitude of Impact		Cumulative Significance of Effect (Total Effects)
The cumulative developments are assumed not to materially impact this receptor.		The cumulative developments are assessed not to increase the significance of total landscape effect at any of the assessment phases.
Cumulative Significance of Effect (Additional Effects)		
As no 'total effects' are considered likely, the subsequent 'additional effects' assessment has not been carried out.		

LBLCA Area 4c – Lea Valley Lower

Sensitivity of Receptor

LBLCA Area 4c – Lea Valley Lower occupies a low-lying area to the south of Luton, which follows the River Lea and borders the mainline railway to its east and the A505 New Airport Way to its south. This LCA has several areas that are under redevelopment, has a coarse-grain street pattern and its existing built form comprises principally offices, industrial and warehouse type buildings.

The LCA is of limited scenic quality but is noted to have some important views toward Victorian water towers to its north and west and a section of the river running along its eastern side, which although heavily modified is considered quite attractive and accessible. An area of privately-owned recreation ground and land adjoining community and education facilities at the southern end of this LCA is also designated as an ALLV. The value of the Lea Valley lower LCA is accordingly judged to be low to medium.

The guidelines for managing landscape change in this LCA recognise that pressure for development is high but place principal importance on protecting open (and improving access to) its southern part, and on reconnecting the river with its floodplain. As the Proposed Development would not impact these areas to be protected and would introduce development into areas that have previously experienced developmental change, the susceptibility of the Lower Lea Valley LCA to the type of change proposed is judged to be low.

In combination of value and susceptibility, this landscape receptor is judged to be of low sensitivity.

Embedded Mitigation

Works in accordance with CoCP provided in **Appendix 4.2** of this ES

[TR020001/APP/5.02].

Management in accordance with ONM contained in **Appendix 16.2** of this ES

[TR020001/APP/5.02].

Year	Magnitude of Impact	Significance of Effect
Construction assessment Phase 1 and interim aircraft movements effects (c. 2025 - 2032)	The Proposed Development introduce off-site highway works (Work Nos. 6e(i), 6e(a) and 6e(b)) which would require the localised clearance of some adjoining grassed and shrub areas in this assessment Phase. The scale of change in the landscape is however judged to be small, as several areas of the LCA are already undergoing change, the elements to be lost are of limited importance and the form of development is already present. The geographical area over which the landscape impact would be felt is at the level of the immediate setting of the site. The magnitude of landscape impact is judged to be very low adverse.	The effect on this receptor is assessed to be negligible adverse , which is not significant .
Construction assessment Phase 2a and interim aircraft movements	The Proposed Development would introduce further highway works (Work No. 6e(i) and works to deliver new Car Parks P1 and P2 (Work Nos. 4g and 4h) into this LCA in this assessment Phase. Works associated with	The effect on this receptor is assessed to be minor adverse , which is not significant .

effects (c.2033 - 2036)	Car Parks P1 and P2 would include the localised removal of Category C trees and scrub vegetation and, in the case of Car Park P1 (Work No. 4g), the gradual erection of new built form. The works to construct the multi-storey car park are anticipated to require the movement of large construction vehicles and the use of cranes. The magnitude of landscape impact on this receptor is judged to increase to low to medium adverse.	
Construction assessment Phase 2b and interim aircraft movements effects (c.2037 - 2042)	Construction activities would have ceased within this LCA before assessment Phase 2b and the highway changes would have assimilated into the townscape. The introduced Car Park P1 (Work No. 4g) would however detract from the local townscape to some extent and an increase in aircraft movements would further deteriorate tranquillity in this area during this assessment Phase. The magnitude of landscape impact on this receptor is judged to be low adverse.	The effect on this receptor is assessed to remain minor adverse , which is not significant .
Operation effects at the year of maximum aircraft movements capacity (c. 2043)	The magnitude of landscape impact on this receptor is judged to remain low adverse.	The effect on this receptor at the year of maximum aircraft movements capacity is assessed to remain minor adverse , which is not significant .
Operation effects at the design year (c. 2056)	The magnitude of landscape impact on this receptor is judged to remain low adverse.	The effect on this receptor at the design year is assessed to remain minor adverse , which is not significant .
Additional Mitigation None proposed		
Cumulative Magnitude of Impact		Cumulative Significance of Effect (Total Effects)
The Proposed Development may be experienced in combination with works to be delivered as part of the East of Luton Study at Windmill Road/ Kimpton Road and A505 Gipsy Lane/ Parkway Road and may occur in combination with development at the Power Court project. The works to be delivered as part of the East of Luton Study within this LCA are contained within the highway boundary and are judged not to materially increase the total magnitude of landscape impact at any of the assessment phases. The Power Court development is located to the far north of the LCA and may be perceived in combination with Work No. 6e(i), but would not be perceived in combination Car Park P1 (Work No. 4g) and is judged similarly not to materially		The cumulative developments are assessed not to increase the significance of total visual effect at any of the assessment phases.

increase the total magnitude of landscape impact at any of the assessment phases.		
<p>Cumulative Significance of Effect (Additional Effects) As no 'total effects' are considered likely, the subsequent 'additional effects' assessment has not been carried out.</p>		
<p>LBLCA Area 13 – Wigmore Rural</p>		
<p>Sensitivity of Receptor</p> <p>LBLCA Area 13 – Wigmore Rural includes the existing area of accessible greenspace land at Wigmore Valley Park and contains areas of amenity and meadow grassland, scrub vegetation, hedgerows and woodland. It borders the airport to its west and south, the Wigmore residential area to its north and an area of open grassland to its east. The LCA occupies an area of formerly agricultural farmland that was landfilled across its western part in the mid-20th Century and that was restored to parkland in the 1970s. The LCA is judged to be in good condition and includes areas of recreational value or conservation interest that are designated as District Park, County Wildlife Site and ALLV. The LCA also includes on its northern boundary the Grade II listed property of Wigmore Hall and a WWII pillbox and its eastern boundary an 'important' mature hedgerow. Tranquillity in this LCA is generally low but there are periods of high tranquillity when not interrupted by aircraft noise. The value of the Wigmore Rural LCA is judged to be medium.</p> <p>The guidelines for managing landscape change in this LCA recognise the importance of this area and make clear its sensitivity to development, because of its landform and proximity to the rural edge. The susceptibility of the Wigmore Rural LCA to the type of change proposed is accordingly judged to be High.</p> <p>In combination of value and susceptibility, this landscape receptor is judged to be of medium to high sensitivity.</p>		
<p>Embedded Mitigation Works in accordance with CoCP provided in Appendix 4.2 of this ES [TR020001/APP/5.02]. Management in accordance with ONM contained in Appendix 16.2 of this ES [TR020001/APP/5.02] and LBMP contained in Appendix 8.2 of this ES [TR020001/APP/5.02]. Embedded landscape mitigation measures as detailed in Section 14.8 of this ES [TR020001/APP/5.01] and Figure 14.9 of this ES [TR020001/APP/5.03] and the SLM [TR020001/APP/5.10].</p>		
Year	Magnitude of Impact	Significance of Effect
Construction assessment Phase 1 and interim aircraft movements effects (c. 2025 - 2032)	The Proposed Development would introduce some additional planting and improvements to recreational value and land management within the eastern part of this LCA associated with the enhancements to the existing Wigmore Valley Park (Work No. 5b(01)) during this assessment Phase. These changes would however be seen in combination with the permanent clearance of a substantial area of vegetation that is valued for its conservation and the introduction of construction activities, earthworks (Work No.1b) and car parking	The effect on this receptor is assessed to be moderate adverse , which is significant .

	(Work Nos.4l(01) and 4m(01)) that would be uncharacteristic and conspicuous. The magnitude of landscape impact on this receptor is judged to be medium to high adverse.	
Construction assessment Phase 2a and interim aircraft movements effects (c.2033 - 2036)	Proposed planting delivered as part of the enhancements to the existing Wigmore Valley Park (Work No. 5b(01)) would have matured to some extent within the eastern part of this LCA by this assessment Phase. Temporary landfill remediation activities (Work No. 1b) and construction activities, and the permanent introduction of new built form - notably the new terminal building (Work No. 3b(01)) - would however result in further damage to the overall existing character of this LCA. The magnitude of landscape impact on this receptor is accordingly judged to remain medium to high adverse.	The effect on this receptor is assessed to be major adverse , which is significant .
Construction assessment Phase 2b and interim aircraft movements effects (c.2037 - 2042)	Proposed planting delivered as part of the enhancements to the existing Wigmore Valley Park (Work No. 5b(01)) would have further matured within the eastern part of this LCA by this assessment Phase. Further landfill remediation activities (Work No. 1b), construction activities and built form - notably the Terminal 2 Extension (Work No. 3b(02) and Hotel (Work No. 4b)) - would however further damage the overall character of this LCA. The magnitude of landscape impact on this receptor is accordingly judged to remain medium to high adverse.	The effect on this receptor is assessed to remain major adverse , which is significant .
Operation effects at the year of maximum aircraft movements capacity (c. 2043)	Construction activities would have ceased by the year of maximum aircraft movements capacity and introduced built form would be experienced in combination with public realm planting and other mitigation planting delivered within development plots and on the approach to the new terminal (Work No. 5a). The magnitude of landscape impact on this receptor is judged to reduce to medium adverse.	The effect on this receptor at the year of maximum aircraft movements capacity is assessed to be moderate adverse , which is significant .
Operation effects at the design year (c. 2056)	The magnitude of landscape impact on this receptor is judged to remain medium adverse.	The effect on this receptor at the design year is assessed to remain moderate adverse , which is significant .
Additional Mitigation None proposed		
Cumulative Magnitude of Impact		Cumulative Significance of Effect (Total Effects)

<p>The Green Horizons Park project would deliver changes within Wigmore Valley Park which may be experienced in combination with the Proposed Development in assessment Phase 1 and would introduce additional construction activities and built form which would be visible and audible within this LCA in assessment Phases 2a and 2b. These changes are however judged not to materially increase the total magnitude of landscape impact at any of the assessment phases.</p>	<p>The cumulative developments are assessed not to increase the significance of total landscape effect at any of the assessment phases.</p>
<p>Cumulative Significance of Effect (Additional Effects) As no 'total effects' are considered likely, the subsequent 'additional effects' assessment has not been carried out.</p>	

LBLCA Area 14 – Luton Airport

Sensitivity of Receptor

LBLCA Area 14 – Luton Airport sits atop an area of very flat and wide open ‘dipslope’ plateau to the south east of Luton. The LCA would historically have been in arable use but was adapted to a grass-airfield in the 1930s and gradually increased its aviation related elements through the latter part of the 20th Century and early part of the 21st Century; the LCA now encompassing a surfaced runway and apron, a terminal building, a control tower, aviation hangars, road infrastructure, car parks, offices and industrial units. Due to the prominent position that the LCA occupies in its surroundings it commands open views to its east, west and south.

The landscape areas within this LCA are generally in good condition but, associated with use, are largely sterile and featureless. The quality of the built form is generally poor and this, combined with the nature of its aviation use, means the LCA contains numerous visual detractors, such as brightly coloured airport hangars, a prominent airport control tower, security fencing and planes on the runway. Tranquillity in this LCA is also frequently interrupted by aircraft movements, and ongoing changes associated with the Luton DART and Project Curium. The value of the Luton Airport LCA is judged to be low.

The guidelines for managing landscape change in this LCA advise the very open and flat southern part of this LCA to be extremely sensitive to change but make clear, given the nature and use of this area as an airfield, that this would be extremely unlikely. These guidelines making clear also that development in its northern part would be much less sensitive. The susceptibility of the Luton Airport LCA to the type of change proposed is accordingly judged to be low to medium. In combination of value and susceptibility, this landscape receptor is judged to be of low sensitivity.

Embedded Mitigation

Works in accordance with CoCP provided in **Appendix 4.2** of this ES [TR020001/APP/5.02].

Management in accordance with ONM contained in **Appendix 16.2** of this ES [TR020001/APP/5.02] and LBMP contained in **Appendix 8.2** of this ES [TR020001/APP/5.02].

Embedded landscape mitigation measures as detailed in **Section 14.8** of this ES [TR020001/APP/5.01] and **Figure 14.9** of this ES [TR020001/APP/5.03] and the **SLM** [TR020001/APP/5.10].

Year	Magnitude of Impact	Significance of Effect
Construction assessment Phase 1 and interim aircraft movements effects (c. 2025 - 2032)	The Proposed Development would introduce some earthworks and construction activities associated with improvements to the existing terminal (Work No. 3a) and delivering new stands within the airfield (Work No. 4k(01)) into this LCA in assessment Phase 1. Construction activities would be a temporary effect, however the built form constructed would be permanent. The elements that would be affected as a result of this development are however of limited value and the form of development to be introduced would be similar to that present already within the LCA. The magnitude of	The effect on this receptor is assessed to be minor adverse , which is not significant .

	landscape impact on this receptor is accordingly judged to be low adverse.	
Construction assessment Phase 2a and interim aircraft movements effects (c.2033 - 2036)	The Proposed Development would introduce temporary landfill remediation activities (Work No. 1b), further earthworks, highway works, construction activities and built form; notably the new terminal building (Work No. 3b(01)), the extension to the aviation platform (Work No. 2b), the Airport Access Road (AAR) (Work No. 6a(01)), and the extension to the Luton DART (Work No. 3g). These measures will impact a larger geographical area than would be affected in assessment Phase 1 and are considered to impact a greater number of features of landscape value. The magnitude of landscape impact on this receptor is accordingly judged to increase to medium adverse.	The effect on this receptor is assessed to remain minor adverse , which is not significant .
Construction assessment Phase 2b and interim aircraft movements effects (c.2037 - 2042)	The Proposed Development would introduce further earthworks, temporary construction activities and built form into the east and south of this LCA; notably the new terminal extension (Work No. 3b.02), ERUB relocation (Work No.2g), fire training ground (Work No. 2d), 4* hotel (Work No. 4a) and Short Stay MSCP (Work No. 4r) and would also introduce additional hangars to the north of the LCA (Work No. 4b). These changes would impact over a relatively large geographical area. The magnitude of landscape impact on this receptor is judged to remain medium adverse.	The effect on this receptor is assessed to remain minor adverse , which is not significant .
Operation effects at the year of maximum aircraft movements capacity (c. 2043)	Construction activities should have been ceased by the year of maximum aircraft movements capacity and activities within this LCA should reflect more similarly the baseline condition. The loss of some valued landscape features may be discernible but would be seen in context with proposed public realm landscaping (Work No.5a), which should be at an early stage of growth by this stage. The magnitude of landscape impact on this receptor is judged to reduce to low adverse.	The effect on this receptor at the year of maximum aircraft movements capacity is assessed to remain minor adverse , which is not significant .
Operation effects at the design year (c. 2056)	Proposed public realm landscaping (Work No. 5a) would have matured by this stage and is anticipated to offset losses to valued features and assimilate some of the proposed buildings into their surroundings. The magnitude of landscape impact on this receptor is accordingly judged to reduce to very low adverse.	The effect on this receptor at the design year is assessed to be negligible adverse , which is not significant .

<p>Additional Mitigation None proposed</p>	
<p>Cumulative Magnitude of Impact</p>	<p>Cumulative Significance of Effect (Total Effects)</p>
<p>The Proposed Development may occur in combination with the Courtyard by Marriott project and the Green Horizons Park project. These developments are judged not to materially increase the total magnitude of impact at any of the assessment phases.</p>	<p>The cumulative developments are assessed not to increase the significance of total landscape effect at any of the assessment phases.</p>
<p>Cumulative Significance of Effect (Additional Effects) As no 'total effects' are considered likely, the subsequent 'additional effects' assessment has not been carried out.</p>	

LBLCA Area 16 – Luton South Industrial

Sensitivity of Receptor

LBLCA Area 16 – Luton South Industrial is located to the west of the airport, is bisected by Vauxhall Way and borders the mainline railway to its west and the A505 New Airport Way to its south. This LCA was historically highly industrialised, associated with the Vauxhall plant, and this is reflected in its heavily modified appearance, coarse-grain street pattern and presence of large industrial buildings and areas of car parking. This is an area under redevelopment however, most notably to its west at Napier Park but also to its south associated with the Luton DART and the emerging townscape in this LCA is of greater value and support a wider mix of uses, including retail, residential and office development. The LCA also includes land recognised for its conservation value and designated as a District Wildlife Site on a man-made escarpment to its east. The proximity of the airport and the presence of major road corridors and the mainline railway mean tranquillity is generally low. The value of the Luton South Industrial LCA is judged to be low.

The guidelines for managing landscape change in this LCA recognise this area to have been blighted by previous development but place importance on protecting the green corridor at Dairyborn Escarpment and adjoining Vauxhall Way, part of which fall within the DCO application boundary. The susceptibility of the Luton South Industrial LCA to the type of change proposed is accordingly judged to be medium.

In combination of value and susceptibility, this landscape receptor is judged to be of low to medium sensitivity.

Embedded Mitigation

Works in accordance with CoCP provided in **Appendix 4.2** of this ES [TR020001/APP/5.02].

Management in accordance with ONM contained in **Appendix 16.2** of this ES [TR020001/APP/5.02] and LBMP contained in **Appendix 8.2** of this ES [TR020001/APP/5.02].

Embedded landscape mitigation measures as detailed in **Section 14.8** of this ES [TR020001/APP/5.01] and **Figure 14.9** of this ES [TR020001/APP/5.03] and the **SLM** [TR020001/APP/5.10].

Year	Magnitude of Impact	Significance of Effect
Construction assessment Phase 1 and interim aircraft movements effects (c. 2025 - 2032)	The Proposed Development would introduce some Off-site Highway Improvements (Work No. 6e(r)) into the northernmost edge of this LCA during this assessment Phase. Some increase to aircraft movements may also be perceptible. The magnitude of landscape impact on this receptor is judged to be very low adverse.	The effect on this receptor is assessed to be negligible adverse , which is not significant .
Construction assessment Phase 2a and interim aircraft movements effects (c.2033 - 2036)	The Proposed Development would permanently clear existing scrub and grassland vegetation on Dairyborn Escarpment, to the east of this LCA, and undertake temporary cut and fill activities upon this slope to facilitate the AAR (Work No. 6a(02)). Operations associated with the AAR and its mitigation (Work No. 5a) will also be discernible from other parts of this LCA during this period. The Proposed	The effect on this receptor is assessed to be moderate adverse , which is significant .

	Development would separately introduce junction improvements at the corner of Kimpton Road and Vauxhall Way (Work No. 6e(c)) and car parking at the Trailer Car Park (Work No. 4h). The magnitude of landscape impact on this receptor is judged to be medium adverse.	
Construction assessment Phase 2b and interim aircraft movements effects (c.2037 - 2042)	Construction activities would have ceased within this LCA by assessment Phase 2b and the changes from Work Nos. 4h and 6e(c) would largely be assimilated into the townscape. The residual loss of vegetation associated with the construction of the AAR (Work No. 6a(02)) will however remain evident within the northeast part of this LCA during this assessment Phase. The magnitude of landscape impact on this receptor is judged to be low adverse.	The effect on this receptor is assessed to be minor adverse , which is not significant .
Operation effects at the year of maximum aircraft movements capacity (c. 2043)	Introduced grassland and scrub vegetation adjoining the AAR (Work No. 5a) should partly colonise Dairyborn Escarpment by this stage. The road infrastructure is however considered to have a residual impact on local townscape character. The magnitude of landscape impact on this receptor is judged to remain low adverse.	The effect on this receptor at the year of maximum aircraft movements capacity is assessed to remain minor adverse , which is not significant .
Operation effects at the design year (c. 2056)	The magnitude of landscape impact on this receptor is judged to remain low adverse.	The effect on this at the design year is assessed to remain minor adverse , which is not significant .
Additional Mitigation None proposed		
Cumulative Magnitude of Impact		Cumulative Significance of Effect (Total Effects)
The Proposed Development may occur in combination with the Bartlett Square project; and proposed works to be delivered as part of the East of Luton Study at the A505 Vauxhall Way/ Eaton Green Road, Kimpton Road/ Vauxhall Way and Vauxhall Way Widening. It is judged that these cumulative developments would increase the total magnitude of landscape impact on this receptor in assessment Phase 1 to medium adverse.		The cumulative developments are assessed to increase the significance of total landscape effect in assessment Phase 1 to moderate adverse , which is significant .
Cumulative Significance of Effect (Additional Effects) As the Proposed Development would introduce very few construction activities within this LCA during this assessment Phase it is assessed that there would be no additional effects		

LBLCA Area 22 – Stockwood Park		
<p>Sensitivity of Receptor</p> <p>LBLCA Area 22 - Stockwood Park is located approximately 2km to the west of the airport and comprises an 18th Century historic parkland that includes areas of open amenity grassland, walled gardens, sports pitches, allotments and tree avenues. The LCA is in good physical condition and retains many of its ‘designed landscape’ elements. It is also well managed and includes areas of recreational value or conservation interest that are designated as District Park, County Wildlife Site, District Wildlife Site and AGLV. Tranquillity in this LCA is moderate due to the influence of busy roads at its perimeter and the intermittent punctuation from overflying aircraft. The value of this receptor is judged to be high.</p> <p>The guidelines for managing landscape change in this LCA recognise the importance of this area and make clear its sensitivity to development and to further punctuating its relative calm by aircraft noise. The susceptibility of the Stockwood Park LCA to the type of change proposed is accordingly judged to be high.</p> <p>In combination of value and susceptibility, this landscape receptor is judged to be of high sensitivity.</p>		
<p>Embedded Mitigation</p> <p>Works in accordance with CoCP provided in Appendix 4.2 of this ES [TR020001/APP/5.02].</p> <p>Management in accordance with ONM contained in Appendix 16.2 of this ES [TR020001/APP/5.02] and LBMP contained in Appendix 8.2 of this ES [TR020001/APP/5.02].</p>		
Year	Magnitude of Impact	Significance of Effect
Construction assessment Phase 1 and interim aircraft movements effects (c. 2025 - 2032)	The Proposed Development would facilitate a gradual increase to aircraft movements, associated with the increase from 18mppa. to 21.5mppa., particularly over the southern part of this LCA in this assessment Phase. The change will be barely noticeable but is considered to further deteriorate the tranquillity of this LCA to some extent. The magnitude of landscape impact on this receptor is judged to be very low adverse.	The effect on this receptor is assessed to be negligible adverse , which is not significant .
Construction assessment Phase 2a and interim aircraft movements effects (c.2033 - 2036)	The magnitude of landscape impact on this receptor is judged to remain very low adverse.	The effect on this receptor is assessed to remain negligible adverse , which is not significant .
Construction assessment Phase 2b and interim aircraft movements effects	aircraft movements would again increase steadily over this LCA during this assessment Phase, associated with the increase from 21.5mppa. to 32mppa. This change would further deteriorate the tranquillity of this LCA. The magnitude of landscape impact on this receptor is	The effect on this receptor is assessed to remain minor adverse , which is not significant .

(c.2037 - 2042)	accordingly judged to increase to low adverse.	
Operation effects at the year of maximum aircraft movements capacity (c. 2043)	The aircraft movements associated with the airport's operation at year of maximum capacity would continue to deteriorate the tranquillity of this LCA at this stage. The magnitude of landscape impact on this receptor is accordingly judged to remain low adverse.	The effect on this receptor at the year of maximum aircraft movements capacity is assessed to remain minor adverse , which is not significant .
Operation effects at the design year (c. 2056)	aircraft movements and flight noise would reduce slightly by the design year. The magnitude of landscape impact on this receptor is nonetheless judged to remain low adverse.	The effect on this receptor at the design year is assessed to remain minor adverse , which is not significant .
Additional Mitigation None proposed		
Cumulative Magnitude of Impact		Cumulative Significance of Effect (Total Effects)
The cumulative developments would not materially impact this receptor.		The cumulative developments are assessed not to increase the significance of total landscape effect at any of the assessment phases.
Cumulative Significance of Effect (Additional Effects) As no 'total effects' are considered likely, the subsequent 'additional effects' assessment has not been carried out.		

HLCA Area 200 – Peters Green Plateau

Sensitivity of Receptor

The HLCA Area 200 – Peters Green Plateau LCA contains also LCAs that it overlaps in adjoining authorities, including CBDLCA Area 11D – Luton Airport / Chiltern Green Chalk Dipslope; LBLCA Area 15 – Dane Street & Someries Farm and the relevant parts of LBLCA Area 16 – Wigmore Rural.

HLCA Area 200 – Peters Green Plateau LCA comprises a gently rolling ‘dipslope’ plateau with steep sided incised valleys to its east, west and south that extends from the boundary of Luton Airport in the north to Kimpton valley in the south. The LCA is predominantly in arable use but contains several large to medium deciduous and mixed woodland plantations - including a few ancient semi-natural woodlands - and smaller pockets of grazing around settlements. The LCA includes several features of conservation value, most notably Someries Castle, and settlement is characterised by dispersed farms and villages connected by winding sunken lanes. The LCA is truncated to its north by the airport and noise, movement, buildings and lighting from the airport are notable detractors in the north of this LCA to what would otherwise be a relatively peaceful, attractive and intact landscape that is in good physical condition. The value of this receptor is judged to be high.

The guidelines for managing landscape change in this LCA recognise its openness and promote its conservation and strengthening; through (amongst other means) the safeguarding and creating of hedged field boundaries, the preserving of narrow winding lanes, the promotion of woodland management to encourage woodland flora and considering opportunities for further woodland planting near its boundary with the airport. The part of this LCA that would be physically impacted by development is however largely isolated from the rest of the LCA due to previous airport developments and has, in part, been safeguarded through local policy for airport related uses. The part of this LCA likely to be affected by perceptual aspects is also recognised as already being affected by similar detractors to an extent. The susceptibility of the Peters Green Plateau LCA to the type of change proposed is accordingly judged to be medium.

In combination of value and susceptibility, this landscape receptor is judged to be of medium to high sensitivity.

Embedded Mitigation

Works in accordance with CoCP provided in **Appendix 4.2** of this ES

[TR020001/APP/5.02].

Management in accordance with ONM contained in **Appendix 16.2** of this ES

[TR020001/APP/5.02] and LBMP contained in **Appendix 8.2** of this ES

[TR020001/APP/5.02].

Embedded landscape mitigation measures as detailed in **Section 14.8** of this ES

[TR020001/APP/5.01] and **Figure 14.9** of this ES **[TR020001/APP/5.03]** and the **SLM**

[TR020001/APP/5.10].

Year	Magnitude of Impact	Significance of Effect
Construction assessment Phase 1 and interim aircraft movements effects	The erection of the SMR (Work No. 2a(02)) to the south of the runway and construction activities and planting proposed as part of the Replacement Open Space (Work No. 5b(02)), would permanently impact the northernmost part of this LCA in this assessment Phase. Some changes to	The effect on this receptor is assessed to be minor adverse , which is not significant .

(c. 2025 - 2032)	landscape management and land use may also be apparent. Construction activities in adjoining LCAs and an increase to aircraft movements may also be perceptible. The magnitude of landscape impact is judged to be low adverse.	
Construction assessment Phase 2a and interim aircraft movements effects (c.2033 - 2036)	The Proposed Development would introduce earthworks, construction activities, surface car parking and built form into the northernmost part of this LCA in during this assessment Phase. Construction activities would be a temporary effect, however the built form constructed would be permanent. These changes would impact locally the incised valley side of the Peter's Green plateau, result in the loss of some mature hedgerow vegetation to the east of the airfield and lead to a reduction in arable land cover in this part of the LCA. Luton footpaths FP29 and FP39 and Luton bridleways BW28 and BW37, which follow the boundary of the existing airfield would also be stopped up; and construction activities in adjoining LCAs may also be perceptible. The magnitude of landscape impact on this receptor is judged to be low to medium adverse.	The effect on this receptor is assessed to increase to moderate adverse , which is significant .
Construction assessment Phase 2b and interim aircraft movements effects (c.2037 - 2042)	The Proposed Development would introduce further earthworks, additional surface car parking and additional built form into the northernmost part of this LCA during this assessment Phase, notably the extension to aviation platform and replacement of the fire training ground (Work No. 2d). Further vegetation would also be removed to the east of the airfield in this assessment Phase and impacts on PRoW are expected to remain. It is anticipated however that woodland planting within the Replacement Open Space (Work No. 5b(02)) would be approaching maturity by this stage and that improvements to landscape management will offset tree losses to some extent. The magnitude of landscape impact on this receptor is judged to be medium adverse.	The effect on this receptor is assessed to remain moderate adverse , which is significant .
Operation effects at the year of maximum aircraft movements capacity (c. 2043)	Construction activities would have ceased within this LCA; some areas impacted by development will have been restored; areas of woodland planting will have matured and improvements to landscape management should be evident by the year of maximum aircraft movements capacity. Impacts on landform, land use and, to a lesser extent, vegetation cover would however remain at this time and would be experienced	The effect on this receptor at the year of maximum aircraft movements capacity is assessed to remain moderate adverse , which is significant .

	alongside an increased frequency of aircraft movements. The magnitude of landscape impact on this receptor is accordingly judged to remain medium adverse.	
Operation effects at the design year (c. 2056)	Proposed woodland and hedgerow planting within the Replacement Open Space (Work No. 5b(02)) will have matured to mitigate any losses to vegetation within this LCA by design year and aircraft movements and flight noise are also anticipated to have reduced slightly. Impacts on landform and land use would however remain evident. The magnitude of landscape impact on this receptor is judged to be low to medium adverse.	The effect on this receptor at the design year is assessed to remain moderate adverse , which is significant .
<p>Additional Mitigation Additional landscape mitigation measures as detailed in Section 14.10 of this ES [TR020001/APP/5.01] and Figure 14.10 of this ES [TR020001/APP/5.03] and the SLM [TR020001/APP/5.10].</p> <p>The additional mitigation would reduce visibility and strengthen landscape structure in the area immediately to the south of the airport but is assessed not to materially mitigate the impact of the Proposed Development on this LCA.</p>		
Cumulative Magnitude of Impact		Cumulative Significance of Effect (Total Effects)
The cumulative developments would not materially impact this receptor.		The cumulative developments are judged not likely to increase the significance of total landscape effect at any of the assessment phases.
<p>Cumulative Significance of Effect (Additional Effects) As no 'total effects' are considered likely, the subsequent 'additional effects' assessment has not been carried out.</p>		

HLCA Area 201 – Kimpton and Whiteway Bottom

Sensitivity of Receptor

HLCA Area 201 – Kimpton and Whiteway Bottom LCA comprises two steeply sided intersecting valleys – Whiteway valley and Kimpton valley - that confluence near Kimpton village; Whiteway valley extending south east from the eastern edge of Luton. The predominant land use in the LCA today is arable farming, but the area would have historically included a mixture of small-scale and prairie fields that would have been enclosed by hedgerows and woodland. A high proportion of the boundaries and woodland blocks, particularly in the north of the LCA, have been removed since the 1950s to enable more intensive arable production and this has resulted in the LCA having in general a large-scale field pattern and it being considered in poor landscape condition. The LCA includes several features of conservation value, most notably around Kimpton village, and its settlement pattern is characterised by outlying cottages, dispersed farmsteads and villages connected by valley bottom primary routes and small winding lanes. The LCA abuts the airport in the north of this LCA where noise, movement, buildings and lighting are notable detractors but is otherwise notable for its tranquillity and largely undeveloped characteristics. The value of this receptor is judged to be medium.

The guidelines for managing landscape change in this LCA promote its improvement and restoration; through (amongst other means) the restoration of hedgerows along historic field boundaries, the preserving of narrow winding lanes and associated hedge banks, the maintaining and extending of PRow and the protecting of tranquillity. The portion of this LCA that would be physically impacted by development is however at its northernmost edge, and the areas likely to be affected by perceptual aspects are already compromised by similar detractors to an extent. The susceptibility of the Kimpton and Whiteway Bottom LCA to the type of change proposed is accordingly judged to be medium.

In combination of value and susceptibility, this landscape receptor is judged to be of medium sensitivity.

Embedded Mitigation

Works in accordance with CoCP provided in **Appendix 4.2** of this ES [TR020001/APP/5.02].

Management in accordance with ONM contained in **Appendix 16.2** of this ES [TR020001/APP/5.02] and LBMP contained in **Appendix 8.2** of this ES [TR020001/APP/5.02].

Embedded landscape mitigation measures as detailed in **Section 14.8** of this ES [TR020001/APP/5.01] and **Figure 14.9** of this ES [TR020001/APP/5.03] and the **SLM** [TR020001/APP/5.10].

Year	Magnitude of Impact	Significance of Effect
Construction assessment Phase 1 and interim aircraft movements effects (c. 2025 - 2032)	Construction activities and planting proposed as part of the Replacement Open Space (Work No. 5b(02)) would impact the northernmost part of this LCA in this assessment Phase. The Proposed Development would also facilitate a gradual increase to aircraft movements; and some changes to landscape management and land use. The magnitude of landscape impact on this receptor is judged to be low adverse.	The effect on this receptor is assessed to be minor adverse , which is not significant .
Construction assessment	Mitigation hedgerow planting delivered within the Replacement Open Space (Work No.	The effect on this receptor is assessed to increase to

Phase 2a and interim aircraft movements effects (c.2033 - 2036)	5b(02)) and adjoining Winch Hill Road (Work No. 5c(01)) would have matured or be reaching maturity ahead of this assessment Phase. The Proposed Development would however introduce excavation, temporary material storage and construction activities into land within the northernmost part of this LCA in this assessment Phase, associated with the delivery of the Water Treatment Plant (Work No. 4d), Fuel Storage Facility (Work No. 4c(01)) and Infiltration Tanks (Work No. 4v) amongst other measures. The magnitude of landscape impact on this receptor is judged to be medium adverse.	moderate adverse , which is significant .
Construction assessment Phase 2b and interim aircraft movements effects (c.2037 - 2042)	Mitigation woodland and hedgerow planting within the Replacement Open Space (Work No. 5b(02)) and adjoining Winch Hill Road (Work No. 5c(01)) would have established ahead of this assessment Phase. Earthworks, material storage, and construction activities would however be ongoing and would have a temporary detrimental impact on this part of the LCA. An impact on tranquillity because of an increase to aircraft movements may also be perceptible in this assessment Phase. The magnitude of landscape impact on this receptor is judged to remain medium adverse.	The effect on this receptor is assessed to remain moderate adverse , which is significant .
Operation effects at the year of maximum aircraft movements capacity (c. 2043)	Construction operations would have ceased and woodland and hedgerow planting within the Replacement Open Space (Work No. 5b(02)) and adjoining Winch Hill Road would have established by this stage. Landscape restoration activities (Work No. 5c(02)) would also have been completed by this stage. The magnitude of landscape impact on this receptor is judged to reduce to low adverse.	The effect on this receptor at the year of maximum aircraft movements capacity is assessed to reduce to minor adverse , which is not significant .
Operation effects at the design year (c. 2056)	The magnitude of landscape impact on this receptor is judged to remain low adverse.	The effect on this receptor at the design year is assessed to remain minor adverse , which is not significant .
Additional Mitigation Additional landscape mitigation measures as detailed in Section 14.10 of this ES [TR020001/APP/5.01] and Figure 14.10 of this ES [TR020001/APP/5.03] and the SLM [TR020001/APP/5.10].		
Year	Residual Magnitude of Impact	Residual Significance of Effect
Construction assessment Phase 1 and interim aircraft	Additional mitigation planting would be at an early stage of establishment in this assessment Phase and construction works to deliver improvements to bridleway KW	The residual significance of effect on this receptor is assessed to remain

movements effects (c. 2025 - 2032)	052 and hedge banks adjoining Darley Road and Winch Hill Road would be relatively short in duration and are considered to be in character with this LCA. The magnitude of landscape impact on this receptor is accordingly judged to remain low adverse.	minor adverse, which is not significant.
Construction assessment Phase 2a and interim aircraft movements effects (c.2033 - 2036)	Additional mitigation measures would be largely established by this assessment Phase and are judged to offset impacts on landscape character within this LCA to some extent. The magnitude of landscape impact on this receptor is judged to reduce to low to medium adverse.	The residual effect on this receptor is assessed to reduce to minor adverse, which is not significant.
Construction assessment Phase 2b and interim aircraft movements effects (c.2037 - 2042)	Additional mitigation planting would be reaching maturity by this assessment Phase and is judged to further offset impacts within this LCA. The magnitude of landscape impact on this receptor is accordingly judged to be low adverse.	The residual effect on this receptor is assessed to reduce to minor adverse, which is not significant.
Operation effects at the year of maximum aircraft movements capacity (c. 2043)	Notwithstanding the aircraft movements at this stage of development. The additional mitigation planting and proposed improvements to public access and land management are considered to improve landscape character at the year of maximum aircraft movements capacity. The magnitude of landscape impact on this receptor is accordingly judged to be low beneficial.	The residual effect on this receptor is assessed to be minor beneficial, which is not significant.
Operation effects at the design year (c. 2056)	The magnitude of landscape impact on this receptor is judged to be low beneficial.	The residual effect on this receptor is judged to be minor beneficial, which is not significant.
Cumulative Magnitude of Impact		Cumulative Significance of Effect (Total Effects)
The cumulative developments would not materially impact this receptor.		There are no changes anticipated to the cumulative significance of total landscape effects
Cumulative Significance of Effect (Additional Effects)		
As no 'total effects' are considered likely, the subsequent 'additional effects' assessment has not been carried out.		

HLCA Area 202 – Breachwood Green Ridge

Sensitivity of Receptor

HLCA Area 202 – Breachwood Green Ridge LCA comprises a gently rolling plateau ridge that extends from the north east of Luton to the north of Kimpton. The predominant land use in the LCA today is arable farming, but the area would have historically included a mixture of irregular and prairie fields interspersed by woodland and enclosed by hedgerows. A high proportion of the boundaries have been removed since the 1950s to enable more intensive arable production and, whilst several patches of ancient woodland remain, this has resulted in the LCA having in general a large-scale field pattern and it being considered in poor landscape condition. The LCA includes several features of conservation value, and its settlement pattern is sparse, characterised by small villages and farms connected by criss-crossing winding lanes. Noise, movement, buildings and lighting from the airport and Luton are notable detractors in this LCA, particularly near the urban fringe. The value of this receptor is judged to be medium.

The guidelines for managing landscape change in this LCA promote its improvement and restoration; through (amongst other means) the restoration of hedgerows along historic field boundaries, the preserving of narrow winding lanes and associated hedge banks, the maintaining and extending of PRoW and the planting of woodland along the sub-urban fringe of Luton. The Proposed Development would not physically impact this LCA but would introduce changes that may impact the aesthetic or perceptual characteristics of this LCA. These changes would however, in most instances, be experienced in locations already compromised to an extent by similar detractors. The susceptibility of the Breachwood Green LCA to the type of change proposed is accordingly judged to be medium.

In combination of value and susceptibility, this landscape receptor is judged to be of medium sensitivity.

Embedded Mitigation

Works in accordance with CoCP provided in **Appendix 4.2** of this ES

[TR020001/APP/5.02].

Management in accordance with ONM contained in **Appendix 16.2** of this ES

[TR020001/APP/5.02].

Year	Magnitude of Impact	Significance of Effect
Construction assessment Phase 1 and interim aircraft movements effects (c. 2025 - 2032)	The Proposed Development would facilitate a gradual increase to aircraft movements over this LCA in this assessment Phase, associated with the increase from 18mppa. to 21.5mppa. The change is considered to deteriorate the tranquillity of this LCA to some extent. The magnitude of landscape impact on this receptor is judged to be very low adverse.	The effect on this receptor is assessed to be minor adverse , which is not significant .
Construction assessment Phase 2a and interim aircraft movements effects (c.2033 - 2036)	Construction activities would be visible and audible from locations within this LCA during this assessment Phase. These changes are expected to further damage the tranquillity and perceptual characteristics of this LCA to some extent. The magnitude of landscape impact on this receptor is judged to be low adverse.	The effect on this receptor is assessed to remain minor adverse , which is not significant .

Construction assessment Phase 2b and interim aircraft movements effects (c.2037 - 2042)	Further construction activities, alongside an increase in aircraft movements, associated with the increase from 21.5mppa. to 32mppa, would be visible and audible from this LCA during this assessment Phase. This change is considered to further deteriorate tranquillity and perceptual characteristics to some extent. The magnitude of landscape impact on this receptor is nonetheless judged to remain low adverse.	The effect on this receptor is assessed to remain minor adverse , which is not significant .
Operation effects at the year of maximum aircraft movements capacity (c. 2043)	Construction activities would have ceased by this stage, but aircraft movements associated with the airport's operation would remain. The magnitude of landscape impact on this receptor is judged to remain low adverse.	The effect on this receptor at the year of maximum aircraft movements capacity is assessed to be minor adverse , which is not significant .
Operation effects at the design year (c. 2056)	The magnitude of landscape impact on this receptor is judged to remain low adverse.	The effect on this receptor at the design year is judged to remain minor adverse , which is not significant .
Additional Mitigation Additional landscape mitigation measures as detailed in Section 14.10 of this ES [TR020001/APP/5.01] and Figure 14.10 of this ES [TR020001/APP/5.03] and the SLM [TR020001/APP/5.10].		
Year	Residual Magnitude of Impact	Residual Significance of Effect
Construction assessment Phase 1 and interim aircraft movements effects (c. 2025 - 2032)	The additional mitigation measures restore existing field boundaries and introduce additional hedgerow trees and improved user access along bridleway BW 37. Mitigation planting would however be at an early stage of establishment and would be seen in combination with the very slight deterioration to the aesthetic and perceptual aspects noted above. The magnitude of landscape impact on this receptor is accordingly judged to remain very low adverse.	The residual effect on this receptor is assessed to remain minor adverse , which is not significant .
Construction assessment Phase 2a and interim aircraft movements effects (c.2033 - 2036)	Additional mitigation measures would have largely established by assessment Phase 2a. These changes are judged to strengthen local character, partially offsetting impacts on the aesthetic characteristics of this LCA and perceptual changes to tranquillity. The magnitude of landscape impact on this receptor is accordingly judged to be very low beneficial.	The residual effect on this receptor is assessed to be minor beneficial , which is not significant .
Construction assessment Phase 2b and interim aircraft	Additional mitigation planting would be largely mature by this assessment Phase. These changes are again considered to strengthen local character and offset impacts	The residual effect on this receptor is assessed to be minor beneficial , which is not significant .

movements effects (c.2037 - 2042)	on tranquillity. The magnitude of landscape impact on this receptor is judged to be very low beneficial.	
Operation effects at the year of maximum aircraft movements capacity (c. 2043)	Trees planted as additional mitigation would be mature by the year of maximum aircraft movements capacity and are judged to offset impacts and strengthen local character at this stage. The magnitude of landscape impact on this receptor is judged to be low beneficial.	The residual effect on this receptor is assessed to be minor beneficial , which is not significant .
Operation effects at the design year (c. 2056)	The magnitude of landscape impact on this receptor is judged to be low beneficial.	The residual effect on this receptor is assessed to be minor beneficial , which is not significant .
Cumulative Magnitude of Impact		Cumulative Significance of Effect (Total Effects)
The Proposed Development may occur in combination with changes resulting from the Land South and North West of Cockernhoe and East of Wigmore (Stubbocks Walk) Brick Kiln Lane Cockernhoe project and the Land West of Cockernhoe / Land East of Copthorne Cockernhoe project. It is judged that these cumulative developments would increase the total magnitude of landscape impact at all assessment Phases to Low to medium adverse.		These cumulative developments are assessed to increase the total visual effect at all assessment Phases to moderate adverse , which is significant .
Cumulative Significance of Effect (Additional Effects)		
These cumulative developments are judged not to increase the sensitivity of this LCA to the type of development proposed or to change the magnitude of impact that would result from the Proposed Development. It is therefore assessed that there would be no additional effects.		

HLCA Area 203 – Whitwell Valley

Sensitivity of Receptor

HLCA Area 203 – Whitwell Valley LCA comprises two steeply sided valley arms that form a confluence north of Whitwell and extend south east along the source of the River Mimram. The predominant land use in the LCA is arable farming, but the area would have historically included a mixture of irregular and prairie fields that would have been enclosed by hedgerows and woodland. A high proportion of the boundary hedgerows have been removed since the 1950s to enable more intensive arable production and this has resulted in the LCA having in general a large-scale field pattern and it being considered in poor landscape condition. The LCA includes several features of conservation value and its settlement pattern is characterised by outlying cottages, villages and farmsteads connected by valley bottom primary routes and small winding lanes. Noise, movement and sky glow from the airport and Luton are notable detractors in some parts of this LCA. The value of this receptor is judged to be medium.

The guidelines for managing landscape change in this LCA promote its improvement and restoration. The Proposed Development would not physically impact this LCA but would introduce changes that may impact the perceptual characteristics of this LCA. These changes would however be experienced in locations already compromised to an extent by similar detractors. The susceptibility of the Whitwell Valley LCA to the type of change proposed is accordingly judged to be medium.

In combination of value and susceptibility, this landscape receptor is judged to be of medium sensitivity.

Embedded Mitigation

Works in accordance with CoCP provided in **Appendix 4.2** of this ES [TR020001/APP/5.02].

Management in accordance with ONM contained in **Appendix 16.2** of this ES [TR020001/APP/5.02].

Year	Magnitude of Impact	Significance of Effect
Construction assessment Phase 1 and interim aircraft movements effects (c. 2025 - 2032)	The Proposed Development would facilitate a gradual increase to aircraft movements over this LCA in this assessment Phase associated with the increase from 18mppa. to 21.5mppa. This change may deteriorate the tranquillity of this LCA to some extent. The magnitude of landscape impact on this receptor is judged to be very low adverse.	The effect on this receptor is assessed to be negligible adverse , which is not significant .
Construction assessment Phase 2a and interim aircraft movements effects (c.2033 - 2036)	The magnitude of landscape impact on this receptor is accordingly judged to remain very low adverse.	The effect is assessed to remain negligible adverse , which is not significant .
Construction assessment Phase 2b and interim aircraft movements	aircraft movements would increase steadily over this LCA in this Assessment Phase, associated with the increase from 21.5mppa. to 32mppa, and is considered to deteriorate the tranquillity of this LCA to some extent.	The effect on this receptor is assessed to be minor adverse , which is not significant .

effects (c.2037 - 2042)	The magnitude of landscape impact on this receptor is accordingly judged to increase to low adverse.	
Operation effects at the year of maximum aircraft movements capacity (c. 2043)	The aircraft movements associated with the airport's operation at the year of maximum aircraft movements capacity are considered to deteriorate the tranquillity of this LCA to some extent. The magnitude of landscape impact on this receptor is judged to remain low adverse.	The effect on this receptor at the year of maximum aircraft movements capacity is assessed to remain minor adverse , which is not significant .
Operation effects at the design year (c. 2056)	aircraft movements would reduce slightly by the design year. The magnitude of landscape impact on this receptor is nonetheless judged to remain low adverse.	The effect on this receptor at the design year is assessed to remain minor adverse , which is not significant .
Additional Mitigation None proposed		
Cumulative Magnitude of Impact		Cumulative Significance of Effect (Total Effects)
The cumulative developments would not materially impact this receptor.		There are no changes anticipated to the cumulative significance of total landscape effects.
Cumulative Significance of Effect (Additional Effects) As no 'total effects' are considered likely, the subsequent 'additional effects' assessment has not been carried out.		

HLCA Area 211 – Offley and St. Paul’s Walden

Sensitivity of Receptor

HLCA Area 211 – Offley and St. Paul’s Walden LCA comprises a gently rolling narrow upland plateau that extends from Little Offley in the north to Crouch Green. The predominant land use in the LCA is arable farming but it also contains parcels of grazing land adjacent to settlements. The LCA retains some of its historic pattern of irregular enclosed and prairie fields and contains several areas of ancient semi-natural woodlands. Many of the boundaries have however been removed since the 1950s to enable more intensive arable production and this has resulted in most parts of the LCA having a large-scale field pattern and it being considered only of moderate landscape condition. The LCA includes several features of conservation value and its settlement pattern is composed of estates and villages connected by a network of old winding and often sunken lanes. Noise and movement from aircraft movements are notable in a few parts of this LCA. The value of this receptor is judged to be high.

The guidelines for managing landscape change in this LCA promote its improvement and conservation. The Proposed Development would not physically impact this LCA but would introduce changes that may impact the perceptual characteristics of this LCA. These changes would however, in most instances, be experienced in locations already compromised to an extent by similar detractors. The susceptibility of the Offley and St. Paul’s Walden LCA to the type of change proposed is accordingly judged to be medium.

In combination of value and susceptibility, this landscape receptor is judged to be of medium to high sensitivity.

Embedded Mitigation

Works in accordance with CoCP provided in **Appendix 4.2** of this ES
[TR020001/APP/5.02].

Management in accordance with ONM contained in **Appendix 16.2** of this ES
[TR020001/APP/5.02].

Year	Magnitude of Impact	Significance of Effect
Construction assessment Phase 1 and interim aircraft movements effects (c. 2025 - 2032)	The Proposed Development would facilitate a gradual increase to aircraft movements over this LCA in this assessment Phase, associated with the increase from 18mppa. to 21.5mppa. This change may deteriorate the tranquillity of this LCA to some extent. The magnitude of landscape impact on this receptor is judged to be very low adverse.	The effect on this receptor is assessed to be minor adverse , which is not significant .
Construction assessment Phase 2a and interim aircraft movements effects (c.2033 - 2036)	The magnitude of landscape impact on this receptor is accordingly judged to remain very low adverse.	The effect is assessed to be minor adverse , which is not significant .
Construction assessment Phase 2b and interim aircraft movements	aircraft movements would increase steadily over this LCA in this assessment Phase, associated with the increase from 21.5mppa. to 32mppa, and is considered to further deteriorate the tranquillity of this LCA to	The effect on this receptor is assessed to remain minor adverse , which is not significant .

effects (c.2037 - 2042)	some extent. The magnitude of landscape impact on this receptor is accordingly judged to increase to low adverse.	
Operation effects at the year of maximum aircraft movements capacity (c. 2043)	The aircraft movements associated with the airport's operation at the year of maximum aircraft movements capacity are considered to deteriorate the tranquillity of this LCA to some extent. The magnitude of landscape impact on this receptor is judged to remain low adverse.	The effect on this receptor at the year of maximum aircraft movements capacity is assessed to remain minor adverse , which is not significant .
Operation effects at the design year (c. 2056)	aircraft movements would reduce slightly by the design year. The magnitude of landscape impact on this receptor is nonetheless judged to remain low adverse.	The effect on this receptor at the design year is assessed to remain minor adverse , which is not significant .
Additional Mitigation None proposed		
Cumulative Magnitude of Impact		Cumulative Significance of Effect (Total Effects)
The cumulative developments would not materially impact this receptor.		There are no changes anticipated to the cumulative significance of total landscape effects
Cumulative Significance of Effect (Additional Effects) As no 'total effects' are considered likely, the subsequent 'additional effects' assessment has not been carried out.		

CBDLCA Area 11B – Caddington / Slip End Chalk Dipslope

Sensitivity of Receptor

CBDLCA Area 11B – Caddington / Slip End Chalk Dipslope comprises a gently undulating broad ‘dipslope’ plateau with steep sided incised valleys that extends from Dunstable in the north to the administrative boundary with NHDC in the south and the M1 motorway to the east. The LCA is predominantly in arable use but contains several stands of deciduous and mixed woodland - including a few ancient semi-natural woodlands – particularly in its north. The LCA includes two substantial settlements at Caddington and Slip End alongside smaller hamlets and linear developments adjoining busy roads. The LCA also includes several features of historic conservation value and is partially designated as an AONB. Pylons running across the plateau, overflying aircraft and lighting and traffic noise are notable detractors. The value of this receptor is judged to be medium.

The guidelines for managing landscape change in this LCA promote the renewal of landscape elements that have been lost and/or degraded to reinstate and strengthen character. The Proposed Development would not physically impact this LCA but would introduce changes that may impact the perceptual characteristics of this LCA. These changes would however, in most instances, be experienced in locations already compromised to an extent by similar detractors. The susceptibility of the Caddington /Slip End Dipslope LCA to the type of change proposed is accordingly judged to be medium.

In combination of value and susceptibility, this landscape receptor is judged to be of medium sensitivity.

Embedded Mitigation

Works in accordance with CoCP provided in **Appendix 4.2** of this ES [TR020001/APP/5.02].

Management in accordance with ONM contained in **Appendix 16.2** of this ES [TR020001/APP/5.02].

Year	Magnitude of Impact	Significance of Effect
Construction assessment Phase 1 and interim aircraft movements effects (c. 2025 - 2032)	The Proposed Development would facilitate a gradual increase to aircraft movements over this LCA in this assessment Phase, associated with the increase from 18mppa. to 21.5mppa. This change may deteriorate the tranquillity of this LCA to some extent. The magnitude of landscape impact on this receptor is judged to be very low adverse.	The effect on this receptor is assessed to be negligible adverse , which is not significant .
Construction assessment Phase 2a and interim aircraft movements effects (c.2033 - 2036)	The magnitude of landscape impact on this receptor is judged to remain very low adverse.	The effect is assessed to remain negligible adverse , which is not significant .
Construction assessment Phase 2b and interim aircraft movements effects	aircraft movements would increase steadily over this LCA in this assessment Phase, associated with the increase from 21.5mppa. to 32mppa, and is considered to deteriorate the tranquillity of this LCA to some extent. The magnitude of landscape impact on this	The effect on this receptor is assessed to be minor adverse , which is not significant .

(c.2037 - 2042)	receptor is judged to increase to low adverse.	
Operation effects at the year of maximum aircraft movements capacity (c. 2043)	aircraft movements associated with the airport's operation in the year of maximum aircraft movements capacity would deteriorate the tranquillity of this LCA to some extent. The magnitude of landscape impact on this receptor is judged to remain low adverse.	The effect on this receptor at the year of maximum aircraft movements capacity is assessed to remain minor adverse , which is not significant .
Operation effects at the design year (c. 2056)	aircraft movements would reduce slightly by the design year. The magnitude of landscape impact on this receptor is judged to remain low adverse.	The effect on this receptor at the design year is assessed to remain minor adverse , which is not significant .
Additional Mitigation None proposed		
Cumulative Magnitude of Impact		Cumulative Significance of Effect (Total Effects)
The cumulative developments would not materially impact this receptor.		There are no changes anticipated to the cumulative significance of total landscape effects
Cumulative Significance of Effect (Additional Effects) As no 'total effects' are considered likely, the subsequent 'additional effects' assessment has not been carried out.		

CBDLCA Area 11C – Luton Hoo Chalk Dipslope

Sensitivity of Receptor

CBDLCA Area 11C – Luton Hoo Chalk Dipslope comprises a gently undulating ‘dipslope’ plateau that extends from the south west of Luton in the north in a south easterly direction to the administrative boundary with NHDC in the south. The LCA includes the Grade I Mansion of Luton Hoo and is dominated by the Grade II* historic parkland and estate land that surrounds it. The LCA contains large extents of improved and semi-improved neutral grassland, parkland trees and woodland blocks and has a strong visual relationship with the adjacent Lea valley and the undeveloped horizons to its far side. The LCA is in good condition but is impacted by a few visual and audible detractors beyond its boundaries, including the A1018 New Airport Way, the M1 motorway, overflying aircraft and built development in Luton and to the west of the airport. The value of this receptor is judged to be high.

The guidelines for managing landscape change in this LCA promote the enhancement of landscape by strengthening the landscape pattern and conserving key features such as the parkland, woodland blocks and views to undeveloped horizons. The Proposed Development would not physically impact this LCA but would introduce changes that may impact the perceptual characteristics of this LCA. These changes would however, in most instances, be experienced in locations already compromised to an extent by similar detractors. The susceptibility of the Luton Hoo Chalk Dipslope LCA to the type of change proposed is accordingly judged to be medium.

In combination of value and susceptibility, this landscape receptor is judged to be of medium to high sensitivity.

Embedded Mitigation

Works in accordance with CoCP provided in **Appendix 4.2** of this ES
[TR020001/APP/5.02].

Management in accordance with ONM contained in **Appendix 16.2** of this ES
[TR020001/APP/5.02].

Year	Magnitude of Impact	Significance of Effect
Construction assessment Phase 1 and interim aircraft movements effects (c. 2025 - 2032)	The Proposed Development would facilitate a gradual increase to aircraft movements north of this LCA in this assessment Phase, associated with the increase from 18mppa. to 21.5mppa. This change may deteriorate the tranquillity of this LCA to some extent. The magnitude of landscape impact on this receptor is judged to be very low adverse.	The effect on this receptor is assessed to be minor adverse , which is not significant .
Construction assessment Phase 2a and interim aircraft movements effects (c.2033 - 2036)	The magnitude of landscape impact on this receptor is judged to remain very low adverse.	The effect is assessed to remain minor adverse , which is not significant .
Construction assessment Phase 2b and interim aircraft	aircraft movements would increase further in this assessment Phase, associated with the increase from 21.5mppa. to 32mppa, and is considered to deteriorate the tranquillity of	The effect on this receptor is assessed to remain minor adverse , which is not significant .

movements effects (c.2037 - 2042)	this LCA to some extent. The magnitude of landscape impact on this receptor is judged to increase to low adverse.	
Operation effects at the year of maximum aircraft movements capacity (c. 2043)	The magnitude of landscape impact on this receptor by the year of maximum aircraft movements capacity is judged to remain low adverse.	The effect on this receptor at the year of maximum aircraft movements capacity is assessed to remain minor adverse , which is not significant .
Operation effects at the design year (c. 2056)	The magnitude of landscape impact on this receptor by the design year is judged to remain low adverse.	The effect on this receptor at the design year is assessed to remain minor adverse , which is not significant .
Additional Mitigation None proposed		
Cumulative Magnitude of Impact		Cumulative Significance of Effect (Total Effects)
The cumulative developments would not materially impact this receptor.		There are no changes anticipated to the cumulative significance of total landscape effects
Cumulative Significance of Effect (Additional Effects) As no 'total effects' are considered likely, the subsequent 'additional effects' assessment has not been carried out.		

CBDLCA Area 12C – Slip End Chalk Valley /HLCA 127

Sensitivity of Receptor

CBDLCA Area 12C – Slip End Chalk Valley/HLCA 127 comprises a dry chalk valley extending from the west of Luton in its north to the north of Harpenden in its south. The LCA includes part of the historic parkland at Luton Hoo and is largely unsettled but has a strong urban fringe character because of the influence of the adjacent towns. The major road corridors that cut through this LCA - including the M1 motorway, the A1081 London Road / Luton Road – have a strong audible as well as visual presence. The value of this receptor is accordingly judged to be low to medium.

The guidelines for managing landscape change in this LCA promote the enhancement and renewal of the landscape by recreating lost features, improving the condition and quality of existing positive elements, and introducing new landscape elements where areas of agricultural land have fallen into decline. The Proposed Development would introduce changes that may impact the perceptual characteristics of this LCA and that would affect junction 10 of the M1 and arable land to its west. Perceptual changes would however, in most instances, be experienced in locations already compromised to an extent by similar detractors. The susceptibility of the Slip End Chalk Valley LCA to the type of change proposed is accordingly judged to be medium.

In combination of value and susceptibility, this landscape receptor is judged to be of medium sensitivity.

Embedded Mitigation

Works in accordance with CoCP provided in **Appendix 4.2** of this ES [TR020001/APP/5.02].

Management in accordance with ONM contained in **Appendix 16.2** of this ES [TR020001/APP/5.02].

Year	Magnitude of Impact	Significance of Effect
Construction assessment Phase 1 and interim aircraft movements effects (c. 2025 - 2032)	The Proposed Development would facilitate a gradual increase in aircraft movements and would introduce some Off-site Highway Improvements (Work No. 6e(n)) into this LCA during this assessment Phase. The Off-site Highway Improvements are anticipated to directly impact some existing trees and require an arable field immediately to the west of the M1 junction be temporarily stripped to facilitate a construction compound. The affected arable field would be restored to its original condition once this highway work has been completed. It is considered that the Proposed Development would cause a short-term, localised, and reversible impact on the landscape of this LCA and may further deteriorate tranquillity to some extent. The magnitude of landscape impact on this receptor is judged to be low adverse.	The effect on this receptor is assessed to be minor adverse , which is not significant .
Construction assessment Phase 2a and	The Proposed Development would introduce further Off-site Highway Improvements (Work No. 6e(o)) into this LCA during this	The effect on this receptor is assessed to be minor

interim aircraft movements effects (c.2033 - 2036)	assessment Phase, which may directly impact some further trees and that would again require the arable field immediately to the west of the M1 junction to be temporarily stripped to facilitate a construction compound. It is again considered that the Proposed Development would cause a short-term, localised, and reversible impact on the landscape of this LCA during this assessment Phase. The magnitude of landscape impact on this receptor is accordingly judged to remain low adverse.	adverse, which is not significant.
Construction assessment Phase 2b and interim aircraft movements effects (c.2037 - 2042)	The Proposed Development would introduce yet further Off-site Highway Improvements (Work No. 6e(p)) into this LCA during this assessment Phase, again impacting the arable field immediately to the west of the M1 junction; and would again facilitate a gradual increase in aircraft movements flying over this LCA. The affected arable field would however again be restored to its original condition once the highway work has been completed. It is again considered that the Proposed Development would cause a short-term, localised, and reversible impact on the landscape of this LCA during this assessment Phase. The magnitude of landscape impact on this receptor is accordingly judged to remain low adverse.	The effect on this receptor is assessed to be minor adverse , which is not significant .
Operation effects at the year of maximum aircraft movements capacity (c. 2043)	The arable field immediately to the west of the M1 junction would have been restored to its original condition by this stage and although the increase in aircraft movements may be visible from within this LCA this change is considered not to materially deteriorate tranquillity or noticeably damage the existing character at this stage. The magnitude of landscape impact on this receptor is accordingly judged to reduce to very low adverse.	The effect on this receptor at the year of maximum aircraft movements capacity is assessed to remain minor adverse , which is not significant .
Operation effects at the design year (c. 2056)	The magnitude of landscape impact on this receptor at the design year is judged to remain very low adverse.	The effect on this receptor at the design year is assessed to remain minor adverse , which is not significant .
Additional Mitigation None proposed		

Cumulative Magnitude of Impact	Cumulative Significance of Effect (Total Effects)
<p>The works to be delivered as part of the East of Luton Study at New Airport Way/ M1 Junction 10 would directly impact this LCA in assessment Phase 2b. These works are however assumed to be contained within the highway boundary and not to materially further impact this receptor.</p>	<p>The cumulative developments are assessed not to result in additional landscape effects on this receptor. It is accordingly determined that no additional mitigation is required.</p>
<p>Cumulative Significance of Effect (Additional Effects) As no 'total effects' are considered likely, the subsequent 'additional effects' assessment has not been carried out.</p>	

CBDLCA Area 12D – Lea Chalk Valley

Sensitivity of Receptor

CBDLCA Area 12D – Lea Chalk Valley comprises a gently sloped wide valley that follows the upper course of the River Lea. It adjoins the airport along its northern boundary and extends to the administrative boundary with NHDC in its south. The north west of the LCA is dominated by the Grade II* historic parkland of Luton Hoo and the south west and eastern valley sides by arable farmland. The LCA contains large extents of improved and semi-improved neutral grassland, parkland trees and woodland blocks. The LCA is in good condition but contains some detracting features, including the Thames Water Sewage Works and the Midlands Mainline railway, and is deteriorated further in some locations by views to the urban edge of Luton and the airport. The value of this receptor is judged to be medium to high.

The guidelines for managing landscape change in this LCA promote the enhancement of this valley, improving the condition and quality of the existing positive elements of the valley system, and retaining ‘peaceful’ areas in the landscape (particularly within the grounds of Luton Hoo). The Proposed Development would not physically impact this LCA but would introduce changes that may impact the perceptual characteristics of this LCA. These changes would however, in most instances, be experienced in locations already compromised to an extent by similar detractors. The susceptibility of the Lea Chalk Valley LCA to the type of change proposed is accordingly judged to be medium.

In combination of value and susceptibility, this landscape receptor is judged to be of medium to high sensitivity.

Embedded Mitigation

Works in accordance with CoCP provided in **Appendix 4.2** of this ES
[TR020001/APP/5.02].

Management in accordance with ONM contained in **Appendix 16.2** of this ES
[TR020001/APP/5.02].

Year	Magnitude of Impact	Significance of Effect
Construction assessment Phase 1 and interim aircraft movements effects (c. 2025 - 2032)	The Proposed Development would facilitate a gradual increase to aircraft movements north of this LCA in this assessment Phase, associated with the increase from 18mppa. to 21.5mppa. The change may deteriorate tranquillity to some extent. The magnitude of landscape impact on this receptor is judged to be very low adverse.	The effect on this receptor is assessed to be negligible adverse , which is not significant .
Construction assessment Phase 2a and interim aircraft movements effects (c.2033 - 2036)	The magnitude of landscape impact on this receptor is judged to remain very low adverse.	The effect on this receptor is assessed to remain negligible adverse , which is not significant .

Construction assessment Phase 2b and interim aircraft movements effects (c.2037 - 2042)	aircraft movements would increase in this assessment Phase, associated with the increase from 21.5mppa. to 32mppa, and is considered to deteriorate the tranquillity of this LCA to some extent. The magnitude of landscape impact on this receptor is nonetheless judged to remain low adverse.	The effect on this receptor is assessed to rise to minor adverse , which is not significant .
Operation effects at the year of maximum aircraft movements capacity (c. 2043)	The magnitude of landscape impact on this receptor at year of maximum aircraft movements capacity is judged to remain low adverse.	The effect on this receptor at the year of maximum aircraft movements capacity is assessed to remain minor adverse , which is not significant .
Operation effects at the design year (c. 2056)	The magnitude of landscape impact on this receptor by the design year is judged to remain low adverse.	The effect on this receptor at the design year is assessed to remain minor adverse , which is not significant .
Additional Mitigation None proposed		
Cumulative Magnitude of Impact		Cumulative Significance of Effect (Total Effects)
The cumulative developments would not materially impact this receptor.		The cumulative developments are judged not likely to increase the significance of total landscape effects in any of the assessment phases.
Cumulative Significance of Effect (Additional Effects) As no 'total effects' are considered likely, the subsequent 'additional effects' assessment has not been carried out.		

Townscape of Hitchin		
<p>Sensitivity of Receptor</p> <p>Hitchin is a market town approximately 8.5km to the northeast of the airport. The centre of Hitchin follows the mediaeval street pattern and historic fabric of its past and is protected by a Conservation Area (Hitchin Conservation Area) that extends within the DCO application boundary at the junction of Upper Tilehouse Street and Park Way, and that borders the DCO application boundary north of the ‘Three Moorhens’ roundabout. The townscape within 250m of the DCO application boundary comprises principally residential streets and road corridors but is typically well vegetated with several mature trees. The value of the townscape of Hitchin is judged to be high.</p> <p>Policies and guidelines for managing change in Hitchin support the retention of existing vegetation and protection of the townscape within the Conservation Area. Works to be conducted within Hitchin would however comprise highway improvements and be contained to land within the highway limits. The susceptibility of the townscape of Hitchin to the type of change proposed is accordingly judged to be medium.</p> <p>In combination of value and susceptibility, this landscape receptor is judged to be of medium to high sensitivity.</p>		
<p>Embedded Mitigation</p> <p>Works in accordance with CoCP provided in Appendix 4.2 of this ES [TR020001/APP/5.02].</p> <p>Management in accordance with ONM contained in Appendix 16.2 of this ES [TR020001/APP/5.02].</p>		
Year	Magnitude of Impact	Significance of Effect
Construction assessment Phase 1 and interim aircraft movements effects (c. 2025 - 2032)	No change is proposed to this receptor during this assessment Phase.	No effect.
Construction assessment Phase 2a and interim aircraft movements effects (c.2033 - 2036)	Off-site Highway Improvements (Work Nos. 6e(k), 6e(l) and 6e(m) would introduce temporary construction activities and result in the permanent loss of some mature trees, some of which are afforded protection due to the Conservation Area status. The magnitude of change is judged to be medium adverse.	The effect on this receptor is assessed to be moderate adverse , which is significant .
Construction assessment Phase 2b and interim aircraft movements effects (c.2037 - 2042)	Construction activities would have ceased within Hitchin before assessment Phase 2b and the highway changes would have assimilated into the townscape. The residual loss of valued tree cover would however remain evident. The magnitude of change is accordingly judged to be Low to medium adverse.	The effect on this receptor is assessed to be moderate adverse , which is significant .

Operation effects at the year of maximum aircraft movements capacity (c. 2043)	The magnitude of landscape impact on this receptor is judged to remain low to medium adverse.	The effect on this receptor at the year of maximum aircraft movements capacity is assessed to be moderate adverse , which is significant .
Operation effects at the design year (c. 2056)	The magnitude of landscape impact on this receptor is judged to remain low to medium adverse.	The effect on this receptor at the design year is assessed to be moderate adverse , which is significant .
Additional Mitigation None Proposed		
Cumulative Magnitude of Impact		Cumulative Significance of Effect (Total Effects)
The cumulative developments would not materially impact this receptor.		The cumulative developments are judged not to increase the significance of total landscape effect at any of the assessment phases.
Cumulative Significance of Effect (Additional Effects) As no 'total effects' are considered likely, the subsequent 'additional effects' assessment has not been carried out.		

The aesthetic or perceptual characteristics of the landscape within the Chilterns AONB

Sensitivity of Receptor

The Chilterns AONB lies approximately 5km to the north and west of the airport. It is a designated area of landscape recognised for its scenic value, chalk streams, woodlands, commons, historic environment, built heritage, conservation interest, agriculture and accessibility. Scenic quality, recreation value and tranquillity are amongst the special qualities that can be experienced in areas of the AONB. The value of this receptor is judged to be very high.

Policies and guidelines for managing change in the Chilterns AONB recognise that airport expansion could result in more aircraft over-flying the AONB and identify that this could harm the AONBs landscape, nature, air quality, tranquillity, and visitor experience. The Proposed Development would not physically impact land within the AONB but would introduce changes that may impact the perceptual and aesthetic characteristics of the landscape within the Chiltern AONB. These changes would however, in most instances, be experienced in locations already compromised to an extent by similar detractors. The susceptibility of the aesthetic or perceptual characteristics of the landscape within the Chilterns AONB to the type of change proposed is accordingly judged to be medium.

In combination of value and susceptibility, this landscape receptor is judged to be of high sensitivity.

Embedded Mitigation

Works in accordance with CoCP provided in **Appendix 4.2** of this ES [TR020001/APP/5.02]. Management in accordance with ONM contained in **Appendix 16.2** of this ES [TR020001/APP/5.02].

Year	Magnitude of Impact	Significance of Effect
Construction assessment Phase 1 and interim aircraft movements effects (c. 2025 - 2032)	The Proposed Development would facilitate a gradual increase to aircraft movements over the AONB in this assessment Phase associated with the increase from 18mppa. to 21.5mppa. This would result in a very slight deterioration to the aesthetic and perceptual characteristics of the AONB. The magnitude of landscape impact on this receptor is judged to be very low adverse.	The effect on this receptor is assessed to be minor adverse , which is not significant .
Construction assessment Phase 2a and interim aircraft movements effects (c.2033 - 2036)	The aircraft movements over the AONB would remain as in assessment Phase 1. The magnitude of landscape impact on this receptor is judged to remain very low adverse.	The effect on this receptor is assessed to remain minor adverse , which is not significant .
Construction assessment Phase 2b and interim aircraft movements effects (c.2037 - 2042)	aircraft movements would again increase steadily over the AONB in assessment Phase 2b, associated with the increase from 21.5mppa to 32mppa. This change would result in a noticeable deterioration to the aesthetic and perceptual characteristics of the AONB at this time. The magnitude of landscape impact on this receptor is judged to be low adverse.	The effect on this receptor is assessed to be moderate adverse , which is significant .

Operation effects at the year of maximum aircraft movements capacity (c. 2043)	The magnitude of landscape impact on this receptor is nonetheless judged to remain low adverse.	The effect on this receptor at the year of maximum aircraft movements capacity is assessed to be moderate adverse , which is significant .
Operation effects at the design year (c. 2056)	Aircraft movements and flight noise are assumed to reduce to some extent by design year, associated with an increase to the size of aircraft anticipated. The magnitude of landscape impact on this receptor is nonetheless judged to remain low adverse.	The effect on this receptor at the design year is assessed to be moderate adverse , which is significant .
Additional Mitigation None proposed		
Cumulative Magnitude of Impact		Cumulative Significance of Effect (Total Effects)
NSIP and TCPA applications for Heathrow, Gatwick and Stansted are outside the Cumulative LVIA scope. It is therefore judged that there would be no change in the total magnitude of impact.		The cumulative developments are assessed not to increase the significance of total landscape effects in any of the assessment phases.
Cumulative Significance of Effect (Additional Effects) As no 'total effects' are considered likely, the subsequent 'additional effects' assessment has not been carried out.		