

# N3 Virginia Bypass

## Option Selection Report Volume 4: Stage 1 Assessment Appendices



May 2023

# Document Control Sheet

<b>Client:</b>	Cavan County Council
<b>Project Title:</b>	N3 Virginia Bypass
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Table of Contents <i>(incl. Y/N)</i>	List of Tables <i>(incl. Y/N)</i>	List of Figures <i>(incl. Y/N)</i>	Pages of Text <i>(No.)</i>	Appendices <i>(No.)</i>

Document Revision				Document Verification			
Issue Date <i>(DD/MM/YY)</i>	Revision Code	Suitability Code	Author <i>(Initials)</i>	Checker <i>(Initials)</i>	Reviewer <i>As Per PMP (Initials)</i>	Approver <i>As Per PMP (Initials)</i>	Peer Review <i>(Initials or N/A)</i>
Add hyperlink to Verification Email on PIM Register for each issue							
27/10/2021	P01	S3	Various	Various	TC		
19/07/2022	C01	A2	AS / EZ	EZ	TC	TC	
11/05/2023	C02	A2	EZ	TC	TC	TC	

# Overarching Structure of Option Selection Report

Volume Ref. No. & Title	Contents
Volume 0 – Executive Summary	
Volume 1 – Main Report	
Volume 2 – Drawings	Part A – Corridor Drawings Part B – Constraints and Environmental Drawings
Volume 3 – Constraints Study Report	Main Report
<b>Volume 4 – Stage 1 Assessment Appendices</b>	Part A – Not Used <b>Part B – Assessment Scoring Matrix</b>
Volume 5 – Stage 2 Environmental Appraisal Report	Main Report & Associated Appendices
Volume 6 – Engineering Appendices	Part A – Assessment of Alternatives Part B – Traffic Modelling Report Part C – Not Used Part D – Not Used Part E – RSA Stage F Part 1 Report Part F – RSA Stage F Part 2 Report Part G – Road Safety Impact Assessment Part H – Geotechnical SOI & PSSR
Volume 7 – Project Appraisal Balance Sheet (PABS)	PABS

# Part A – Not Used

## Part B – Assessment Scoring Matrix



Option Reference	Parameters			Option 1 Red East	Option 2 Purple East	Option 3 Cyan East	Option 4 Blue East	Option 5 Light Green East	Option 6 Magenta West	Option 7 Orange West	Option 8 Blue West	Option 9 Red West	Option 10 Yellow West	Link 1 East - Option 01-01	Link 2 East - Option 02-04	Link 3 East - Option 03-03	Link 4 East - Option 04-04	Link 5 East - Option 04-03	Link 6 East - Option 04-04	Link 7 East - Option 04-03	Link 8 West - Option 08-09	Link 9 West - Option 08-09	Link 10 West - Option 08-06	Link 11 West - Option 08-08	Link 12 West - Option 07-09	Link 13 West - Option 09-09	Link 14 East - Option 04-01	Link 15 East - Option 03-03	Link 16 West - Option 07-06	Link 17 West - Option 08-06	Link 18 East - Option 03-05	Link 19 East - Option 03-01					
	GREEN	AMBER	RED																																		
<b>ARCHAEOLOGY, ARCHITECTURAL &amp; CULTURAL HERITAGE</b>																																					
Archaeology, Architectural and Cultural Heritage - total impacts directly within alignment footprint (incl. 20% of archaeological sites & designed landscapes)				2	0	0	2	1	0	0	0	0	1	1	2	1	2	0	0	2	0	2	0	0	0	1	1	2	0	0	0	0	0				
Archaeology, Architectural and Cultural Heritage - total impacts within 300m design corridor (incl. 20% of archaeological sites & designed landscapes)				8	10	5	4	10	11	6	8	12	8	9	8	7	6	8	4	7	20	15	7	10	7	11	7	5	6	6	1	2					
<b>AGRICULTURE</b>																																					
Agriculture (Length of option within Agricultural Land)				14.46	15.18	14.64	15.59	18.56	17.29	19.77	20.77	22.34	15.07	14.94	15.51	14.98	15.25	15.81	17.33	15.07	22.86	20.25	19.03	20.48	20.34	22.47	16.24	13.72	17.88	18.19	13.89	14.99					
Agriculture (Length of option within improved grassland/arable land)				12.90	10.18	10.59	12.12	12.68	15.76	17.39	19.55	20.05	12.59	12.74	12.23	10.96	11.18	12.87	13.95	11.96	21.28	18.42	17.99	19.78	17.91	20.33	13.72	9.86	17.00	17.25	9.22	10.97					
Agriculture - farmhouse properties - direct hits				0	0	1	0	2	1.00	1	0	2	2	0	0	0	0	0	0	2	2	0	0	1	2	0	0	0	0	0	1	1					
Agriculture - farmyard buildings - direct hits				2	5	4	4	3	1.00	3	2	1	2	5	5	2	6	4	3	1	2	2	2	2	2	1	3	2	1	3	3						
Agriculture - key agricultural constraints on option (No.)				1	3	3	4	4	6.00	2	6	5	4	1	3	4	4	6	4	5	3	4	6	5	3	5	4	3	6	8	2	3					
Agriculture - Length of option on key agricultural constraints				0.45	1.25	1.04	1.42	0.65	2.65	0.52	1.94	1.45	1.54	0.45	0.94	1.04	1.07	2.09	1.42	2.04	1.30	1.45	1.95	1.94	1.07	1.45	1.50	1.00	2.21	2.59	0.70	1.43					
<b>COMMUNITIES</b>																																					
Residential / Private Properties including farmhouses - direct hits	<1	1-3	>3	1	4	2	2	3	2	3	2	3	3	1	2	1	0	3	2	2	3	0	0	2	2	3	2	0	0	0	1	3					
Residential Gardens	<1	1-3	>3	4	4	1	0	1	2	1	3	2	3	3	1	0	1	0	1	2	3	0	0	3	2	2	0	0	1	1	0	0					
Communities Severed																																					
Community impacts within 300m (schools, sports grounds, & churches etc)	<1	-	>1	2	0	2	0	0	0	0	1	1	4	2	0	2	0	2	0	2	0	1	0	0	2	1	0	0	1	1	0	0					
<b>Environment</b>																																					
Green				3	2	4	5	5	3	4	4	4	1	3	4	4	7	3	5	2	4	2	5	6	2	4	4	4	9	5	5	8	7				
Orange				3	6	5	3	3	4	5	4	3	5	2	5	4	2	4	5	5	4	1	3	3	6	3	3	0	2	2	2	3					
Red				5	3	2	3	3	4	2	3	4	5	6	2	3	2	4	1	4	3	8	3	2	3	4	4	4	2	4	4	1	1				
Average score				1.818	1.909	2.182	2.182	2.182	1.909	2.182	2.091	2.000	1.636	1.727	2.182	2.091	2.455	1.909	2.364	1.818	2.091	1.455	2.182	2.364	1.909	2.000	2.000	2.636	2.091	2.091	2.636	2.545					
<b>Economy</b>																																					
Estimated Total Scheme Cost (£m)																																					
Green							1		1				1				1		1									1			1						
Orange				1	1	1									1		1						1				1	1	1		1						
Red								1		1	1		1								1	1				1											
Average score				2.000	2.000	2.000	3.000	1.000	3.000	1.000	1.000	3.000	1.000	3.000	2.000	3.000	2.000	3.000	1.000	1.000	1.000	2.000	1.000	1.000	1.000	1.000	1.000	2.000	3.000	2.000	2.000	3.000	3.000				
Average Scores were calculated based on the number of Green, Orange and Red. The average scores are not directly utilised in choosing options, but give an indication of the overall performance of each option for consideration during comparison and shortlisting. The significance of individual impacts is also a consideration in identifying options to be shortlisted.																																					
<b>Total Average Score</b>				6.000	6.364	6.727	7.727	5.455	7.273	5.182	5.091	5.182	6.909	4.909	7.636	6.364	7.909	6.273	7.727	7.273	5.091	4.545	6.455	5.455	5.091	5.182	6.364	8.182	6.364	6.273	8.182	8.091					
<b>Option Elimination</b>						Alignment geometry, impacts on Bruse Hill, Marmod Hill (deep cuttings +18m and high embankments +15m), property impacts		Length, archaeology (direct hit on historic demeane), agriculture, property impacts, cost	Impact on SAC, NHA, Air Quality, Landscape & Visual, Agriculture	Length, side road crossings, earthworks, impacts on SAC, Air Quality, property impacts, cost	Length, side road crossings & length, earthworks, cost	Length, side road crossings & length, earthworks, cost	Side road crossings & length, alignment geometry, air quality, impact on NHA, Landscape & Visual, agriculture, property impacts, community impacts		Compared with Option 01. Eliminated due to option length, link road length, alignment geometry, earthworks, ecology, length through soft ground, agriculture, property impacts and cost.	Compared with Option 04. Eliminated due to road crossings, side road lengths, alignment geometry, noise PIR, ecology, archaeology, property impacts and cost. Impact of option on Bruse Hill also a factor.	Compared with Option 03. Eliminated due to side road crossings, link road & side road length, agriculture and cost.	Compared with Link 15. Eliminated due to mainline length, small watercourse crossings, agriculture, property impacts and cost. Excessive earthworks in vicinity of Marmod Hill also a factor.	Compared with Option 04 Blue. Eliminated due to side road crossings, side road length, small watercourse crossings, alignment geometry, air quality, noise PIR, agriculture, property impacts and cost. Excessive earthworks at Usaberry also a factor.	Compared with Option 04 Blue. Eliminated due to mainline length, side road crossings, side road length, earthworks, alignment geometry, noise PIR, landscape & visual and cost. Excessive earthworks at Usaberry also a factor.	Compared with Option 04. Eliminated due to side road crossings & length, small watercourse crossings, alignment geometry, air quality, noise PIR, ecology, archaeology, property impacts and cost.	Length, Road Crossings, Earthworks, Air Quality, Noise, Ecology, Landscape & Visual, Archaeology, Agriculture, Property Impacts, Cost	Length, Road Crossings, Earthworks, Air Quality, Noise, Ecology, Landscape & Visual, Archaeology, Agriculture, Property Impacts, Cost	Length, earthworks, air quality, ecology (Impact on Lough Ramor NHA), landscape & visual, agriculture, cost	Length, side road crossings & length, earthworks, air quality, agriculture, cost	Length, side road crossings, earthworks, air quality, community impacts, cost	Length, side road crossings & length, earthworks, air quality, agriculture, property impacts, community impacts, cost		Compared with Option 04 Blue. Eliminated due to link road lengths, strategic services crossings, alignment geometry, noise PIR, landscape & visual, agricultural impacts and cost. Impact of 3 river crossings north of Virginia also a factor.					Compared with Link 16. Eliminated due to mainline length, link road length, earthworks, alignment geometry, noise PIR, ecology, landscape & visual, agricultural impacts and cost.			Compared with Link 18. Eliminated due to option length, link road lengths, strategic service crossings, watercourse crossings, alignment geometry, noise PIR, ecology, landscape & visual, agricultural impacts and cost.
<b>Options Retained for Stage 2 Options Assessment</b>						<b>Shortlisted to Stage 2</b>																							<b>Shortlisted to Stage 2</b>	<b>Shortlisted to Stage 2</b>							