Appendix F. Phase 2 – Stage 1 Assessment Matrix

Engineering Criteria	**Owner**	**Preliminary Assessment of Option :** *Purple (Route A)*		
		Quantitative Assessment	**Qualitative Assessment**	**Score**
Traffic Assessment & Route Cross-section.	Atkins	11.5km Type 1	This route is considered one of the longer options and is approximately 1.5 to 2km west of the original alignment.	2
Technical Standards (DMRB, Minimum Horizontal Radii, Maximum Vertical Gradients, Relaxations, Departures)	Atkins	Potentially no mainline departures but some potential relaxations. Possible departures/relaxations at access and junctions. 4 Horizontal radii - 2 No. 1200, 1 No. 1020 and 1 No 5000m and gradients up to 4% over 3.327km.	This scheme has a smooth alignment with potentially no mainline departures but some possible relaxations for gradients. Due to the hilly terrain there is a potential for departures/relaxations at access and junctions. Potentially 29% of the alignment is at 4% due to the hilly terrain with only 4 horizontal radii and one above 2040 and the remaining 3 requiring superelevation.	6
Principal Junctions and Interchanges, Access Control and interaction with Existing Road Network	Atkins	3 No. junctions - Alterations to the 2 at grade roundabout junctions at the Waterford and New Ross tie-ins and a grade separated junction mid-way. Proposed junction will require upgrade of existing roads to provide connectivity to existing N25 and local road network	This scheme is off-line and as a result the existing properties can be a serviced by the current road network thus limiting direct access onto the mainline. Access to the proposed N25 will be provided at either end of the scheme and via a grade separated junction mid-way. The existing N25 will be declassified and provide a high standard of regional road.	4
Structures (River, Road & Rail bridges, culverts, underpasses and other structures, clearances and headroom).	Atkins	Potentially impacts 8 Local Roads, 3 significant private access tracks, 3 significant watercourses and will require a number of underpasses/accommodation bridges.	Within the corridor the proposed scheme could potentially impact 8 Local Roads, 3 significant private access tracks, 3 significant watercourses. As this corridor crosses many property boundaries a number of underpasses/ accommodation bridges will be required to facilitate residential, commercial and agricultural operations and mitigate against severance.	4
Geology (underlying ground conditions, sensitive areas / areas of poor ground including karst, caves, peat etc.)	Atkins	Shallow bedrock along the centre and northern end.	Where **shallow bedrock** is encountered construction cost may increase if the material needs to be excavated or blasted.	6
Groundwater (aquifers, springs, wells and their vulnerability to major earthworks).	Atkins	N/A. Acccounted for in Environment Section under Route A. Refer to section Water Quality, Geology and Hydrogeology	N/A. Acccounted for in Environment Section under Route A. Refer to section Water Quality, Geology and Hydrogeology	
Earthworks (Cut and Fill volumes, comparative earthworks balance, maximum depth of cuttings and height of embankments)	Atkins	18 cut/17 fill (100km/h) 109340 Cu/m Cut 1882448 Cu/m Fill	The embankment and fill areas are not excessive or over long lengths considering the existing hilly terrain. These heights could locally increase to provide clearance to underpasses/ accommoation bridges	4
Road Safety Impact Assessment (Assessment of Route Options).	Atkins	4km straight section Radii at desirable minimum or above, gradient at 4% in places. Structures potentially required at 13 locations for local roads/ tracks/watercourses Potentially no direct accesses except for road maintenance operations.	Relatively straight alignment (4km section) could induce high speeds. Grade separated junction will be positioned within this 4km section roughly midway. The horizontal alignment uses desirable minimum radii with 1 No. 5000 radius which eliminates superelevation and the need for a roll-over, all other 3 radii will require superelevation which impacts the drainage potentially inducing flat spots and standing water. The vertical profile has significant lengths of 4% gradient and combined with the long straight alignment which can induce higher speeds and increase braking distances, especially for HGVs, Structures potentially required at 13 locations for local roads/ tracks/watercourses. There will be a requirement for underpass/overbridges to reduce potential severance. Access to properties will be maintained via the existing road network and potentially no requirement for direct assesses except for road maintenance operations.	3

Engineering Criteria	**Owner**	**Preliminary Assessment of Option :** *Purple (Route A)*		
		Quantitative Assessment	**Qualitative Assessment**	**Score**
Drainage (carriageway drainage, crossing of watercourses, specific drainage requirements through high vulnerability areas).	Atkins	A full road drainage system with attenuation and interceptors will be required with outfalls to the local watercourse network. There are potentially 3 watercourses to be crossed. Circa. 56% of the route crosses Extreme/High Groundwater vulnerability.	A fully TII compliant road drainage system will have to be provided. The crossing of all watercourse will require Section 50 approval. Approx. 56% of the scheme is vulnerable and may be impacted if in cut, mitigation measures will be required.	6
Construction (Comparative ease of construction and Traffic Management).	Atkins	Fully off-line with 8 local roads and 3 significant private accesses affected.	As the route is off-line the ease of constructability for the mainline will be good with minor traffic management required at the impacted local roads and the two roundabouts at either end of the scheme, This scheme is a significant distance to the west of the existing N25 and the construction of the connection from the proposed N25 to the existing N25 may require existing narrow secondary roads to be upgraded. These roads have low traffic volumes but it will impact existing users and adjacent property owners.	5
Comparative Service Conflicts (electricity, telecommunications, gas, broadband, cable TV, water, wastewater etc.).	Atkins	Off-line section, crosses 3 HV O/H powerlines at the southern end of the scheme, potentially minimum impact to other existing utilities such as telecom, broadband etc. and there will be a requirement for new services along the scheme and connections to existing.	This corridor impacts three high voltage power lines and potentially impacts local telecom, water and possibly broadband utilities. There will be a requirement to provide services along the proposed route with connections to the existing networks which could extend some distance given the location of the proposed corridor.	2
Comparisons on Land & Property (land take, land severance, land use, residential acquisitions, and accommodation works requirements).	Atkins	There are 63 No. properties (B1 - 0, B2 - 9, B3 - 24 B4 - 30) potentially impacted within the corridor. 45 residentail, 1 Commercial Residential, 2 Commercial, 5 agricultural, 7 agricultural/ residential, 0 Private storage, 3 unknown	This corridor impacts 63 properties, 71% are residential, 5% commercial and 19% agricultural. The majority of the properties affected are in beyond a 100m but there is a high % of residentill properties affected and may increase the likely impact by earthwork slopes, land acquisition and severance	6
				48.00

Engineering Criteria	**Owner**	**Preliminary Assessment of Option :** *Grey (Route B)*		
		Quantitative Assessment	**Qualitative Assessment**	**Score**
Traffic Assessment & Route Cross-section.	Atkins	10.4km Type 1	This route is considered one of the longer options and is approximately 0 .5 to 1.5km west of the original alignment.	3
Technical Standards (DMRB, Minimum Horizontal Radii, Maximum Vertical Gradients, Relaxations, Departures)	Atkins	Potentially mainline horizontal and vertical departures/relaxations for back to back curves and gradients. 7 Horizontal radii - 2 No. 720, 1500, 1020, 1 No. 2880 and vertical curves above desirable minimum with 4.23km with 4% gradient. Possible departures/relaxations at access and junctions due to hilly terrain with 7 horizontal radii and one above 2040 and the remaining 6 requiring superelevation.	This alignment is moderately smooth over the southern section and bendy over the northern section where there are 2 sections with successive curves with short lengths connecting the curves. Potentially 41% of the alignment is at 4% due to the hilly terrain and has one horizontal curve above 2040 and the remaining 6 require superelevation.	5
Principal Junctions and Interchanges, Access Control and interaction with Existing Road Network	Atkins	3 No. junctions - 1 at grade roundabout junction at the New Ross tie-in, a grade separated junction on the Waterford Bypass and a grade separated junction at Ardbeg/Groga. Upgrade of existing roads to provide connectivity to existing N25 and local road network	This alignment requires a new grade separated junction approximately 1.2km west of the current N25 roundabout. It connects to the New Ross Bypass via the newly constructed roundabout and a proposed grade separated junction mid-way to provide connectivity to the existing N25 and local road network. The alignment of this corridor is such that it may require a significant connection to the existing N25 for the proposed grade separated junction. The existing N25 will be declassified and provide a high standard of regional road.	2
Structures (River, Road & Rail bridges, culverts, underpasses and other structures, clearances and headroom).	Atkins	Potentially introduces an additional at-grade junction on the Waterford bypass and possibly impacts 12 Local Roads, 1 significant private access track, 1 significant watercourse	Within the corridor the proposed scheme could potentially impact 12 local roads, 1 significant access track and 1 significant watercourse. As this corridor crosses many property boundaries a number of underpasses/ accommodation bridges will be required to facilitate residential, commercial and agricultural operations and mitigate against severance.	2
Geology (underlying ground conditions, sensitive areas / areas of poor ground including karst, caves, peat etc.)	Atkins	500m of cut over raised bog & 550m of thin linear lacustrine deposits in the south. Localised pockets of alluvium in the north. Rock outcrops are shown in local pockets throughout the route in particular midway along the route where a hill is intersected at an elevation of 180m.	**Soft ground** is anticipated peat or lacustrine deposits have been identified in the desk study. Peat probing or DCP's should delineate the extent of the issue. Where **shallow bedrock** is encountered construction cost may increase if the material needs to be excavated or blasted.	5
Groundwater (aquifers, springs, wells and their vulnerability to major earthworks).	Atkins	N/A. Acccounted for in Environment Section under Route B. Refer to section Water Quality, Geology and Hydrogeology	N/A. Acccounted for in Environment Section under Route B. Refer to section Water Quality, Geology and Hydrogeology	
Earthworks (Cut and Fill volumes, comparative earthworks balance, maximum depth of cuttings and height of embankments)	Atkins	48m cut/31m fill (100km/h) 6217722 Cu/m Cut 3008450 Cu/m Fill	The cut and fill embankment heights are excessive and over significant lengths. These heights could locally increase to provide clearance to underpasses/accommoation bridges	1
Road Safety Impact Assessment (Assessment of Route Options).	Atkins	Alignment has 2 sections with reverse curves and a short length connecting the curves Radii at desirable minimum or above, gradient at 4% in places. Structures at 14 locations for local roads/ tracks/watercourses. Existing properties will maintain access via the existing road network and no requirement for direct assesses except for road maintenance.	The horizontal alignment uses desirable minimum radii with 1 No. 2880 radius which eliminates superelevation and the need for a roll-over, all other 6 radii will require superelevation which impacts the drainage potentially inducing flat spots and standing water. The vertical profile has significant lengths of 4% gradient which can induce higher speeds and increasing braking distances, especially for HGVs. Structures potentially required at 14 locations for local roads/ tracks/watercourses. There will be a requirement for underpass/overbridges to reduce severance. Access to properties will be maintained via the existing road network and potentially no requirement for direct assesses except for road maintenance operations. This option introduces a grade separated junction on the Waterford Bypass and could be close to Luffeny roundabout.	2

Engineering Criteria	**Owner**	**Preliminary Assessment of Option :** *Grey (Route B)*		
		Quantitative Assessment	**Qualitative Assessment**	**Score**
Drainage (carriageway drainage, crossing of watercourses, specific drainage requirements through high vulnerability areas).	Atkins	A full road drainage system with attenuation and interceptors will be required with outfalls to the local watercourse network. There is potentially 1 watercourse to be crossed. Circa. 80% of the route crosses Extreme/High Groundwater vulnerability.	A fully TII compliant road drainage system will have to be provided. The crossing of all watercourse will require Section 50 approval. Approx. 80% of the scheme is vulnerable and may be impacted if in cut, mitigation measures will be required.	5
Construction (Comparative ease of construction and Traffic Management).	Atkins	Fully off-line with 12 local roads and 1 significant private access affected	As the route is off-line the ease of constructability for the mainline will be good with minor traffic management required at the impacted local roads and the New Ross Bypass roundabout at the northern end of the scheme, significant traffic management required for the possible at grade junction on the Waterford Bypass. This scheme is a significant distance to the west of the existing N25 and the construction of the connection from the proposed N25 to the existing N25 may require existing narrow secondary roads to be upgraded. These roads have low traffic volumes but it will impact existing users and adjacent property owners.	4
Comparative Service Conflicts (electricity, telecommunications, gas, broadband, cable TV, water, wastewater etc.).	Atkins	Off-line alignment, crosses 3 HV O/H powerlines and at grade junction on the Waterford Bypass impacts and additional HV O/H cable, minimum impact to other utilities and requirement for new services and service connections. On-line section will impact existing services where present.	This corridor impacts four high voltage power lines and potentially impacts local telecom, water and possibly broadband utilities. There will be a requirement to provide services along the proposed route with connections to the existing networks which could extend a distance given the location of the proposed corridor.	1
Comparisons on Land & Property (land take, land severance, land use, residential acquisitions, and accommodation works requirements).	Atkins	There are 97 No. properties (B1 - 1, B2 - 7, B3 - 41, B4 - 48) potentially impacted within the corridor. 64 residentail, 3 Commercial Residential, 7 Commercial, 7 agricultural, 13 agricultural/ residential, 0 Private storage, 3 unknown	This corridor impacts 97 properties, 66% are residential, 10% commercial and 21% agricultural. The majority of the properties affected are in beyond a 100m but there is a high % of residentill properties affected and may increase the likely impact by earthwork slopes, land acquisition and severance	4
				34.00

Engineering Criteria	**Owner**	**Preliminary Assessment of Option :** *Blue (Route D)*		
		Quantitative Assessment	**Qualitative Assessment**	**Score**
Traffic Assessment & Route Cross-section.	Atkins	10.1km Type 1	This route is considered one of the longer options and is approximately 0 .5km west of the original alignment.	4
Technical Standards (DMRB, Minimum Horizontal Radii, Maximum Vertical Gradients, Relaxations, Departures)	Atkins	Mainline horizontal departures/relaxations for back to back curves. Possible departures/relaxations at access and junctions 8 Horizontal radii - 3 No. 720, 1 No. 850, 2 No. 1020, and 1 No. 1600 and 2880 and vertical curves above desirable minimum with 1.7km with 4% gradient.	The alignment deviates horizontally along the route with 8 horizontal radii used to avoid constraints and vertical radii to minimise cut/fill due to the hilly terrain. Potentially 17% of the alignment is at 4% due to the hilly terrain and has one horizontal curve above 2040 and the remaining 7 require superelevation.	4
Principal Junctions and Interchanges, Access Control and interaction with Existing Road Network	Atkins	3 No. junctions - 2 at grade roundabout junctions at the Waterford and New Ross tie-ins and a grade separated junction mid-way. Upgrade of existing roads to provide connectivity to existing N25 and local road network.	This scheme is off-line and as a result the existing properties can be a serviced by the current road network thus limiting direct access onto the mainline. Access to the proposed N25 will be provided at either end of the scheme and via a grade separated junction mid-way. The existing N25 will be declassified and provide a high standard of regional road.	5
Structures (River, Road & Rail bridges, culverts, underpasses and other structures, clearances and headroom).	Atkins	Potentially impacts 9 Local Roads, 3 significant private access tracks, 1 significant watercourse and will require a number of underpasses/ accommodation bridges.	Within the corridor the proposed scheme could potentially impact 9 Local Roads, 3 significant private access tracks, significant watercourse. As this corridor crosses many property boundaries a number of underpasses/ accommodation bridges will be required to facilitate residential, commercial and agricultural operations and mitigate against severance.	4
Geology (underlying ground conditions, sensitive areas / areas of poor ground including karst, caves, peat etc.)	Atkins	Southern part of the route encounters: 100m of 'cut over raised peat'; 500m of lacustrine deposits. Northern end encounters pockets of Alluvium. **Rock** outcrops are shown along the central and northern sections of the proposed route.	**Soft ground** is anticipated where peat or lacustrine deposits have been identified in the desk study. Peat probing or DCP's should delineate the extent of the issue and and should be included in the Preliminary ground investiation. Where **shallow bedrock** is encoutered construction cost may increase if the material needs to be excavated or blasted.	5
Groundwater (aquifers, springs, wells and their vulnerability to major earthworks).	Atkins	N/A. Acccounted for in Environment Section under Route D. Refer to section Water Quality, Geology and Hydrogeology	N/A. Acccounted for in Environment Section under Route D. Refer to section Water Quality, Geology and Hydrogeology	
Earthworks (Cut and Fill volumes, comparative earthworks balance, maximum depth of cuttings and height of embankments)	Atkins	14m cut / 27m embankment 1539989 Cu/m Cut 976259 Cu/m Fill	The cut and fill embankment heights are high but not over excessive lengths. These heights could locally increase to provide clearance to underpasses/accommoation bridges	5
Road Safety Impact Assessment (Assessment of Route Options).	Atkins	Alignment has 2 sections with reverse curves and a short length connecting the curves Radii at desirable minimum or above, gradient at 4% in places. Structures at 13 locations for local roads/ tracks/watercourses. Existing properties will maintain access via the existing road network and no requirement for direct assesses except for road maintenance.	The horizontal alignment uses desirable minimum radii with 1 No. 2880 radius which eliminates superelevation and the need for a roll-over, all other 7 radii will require superelevation which impacts the drainage potentially inducing flat spots and standing water. The vertical profile has a couple of lengths of 4% gradient which can induce higher speeds and increasing braking distances, especially for HGVs. Structures potentially required at 13 locations for local roads/ tracks/watercourses. There will be a requirement for underpass/overbridges to reduce severance. Access to properties will be maintained via the existing road network and potentially no requirement for direct assesses except for road maintenance operations. This option introduces a grade separated junction on the Waterford Bypass and could be close to Luffeny roundabout.	2

Engineering Criteria	**Owner**	**Preliminary Assessment of Option :** *Blue (Route D)*		
		Quantitative Assessment	**Qualitative Assessment**	**Score**
Drainage (carriageway drainage, crossing of watercourses, specific drainage requirements through high vulnerability areas).	Atkins	A full road drainage system with attenuation and interceptors will be required with outfalls to the local watercourse network. There is potentially 1 watercourse to be crossed. Circa. 82% of the route crosses Extreme/High Groundwater vulnerability.		4
Construction (Comparative ease of construction and Traffic Management).	Atkins	Fully off-line with 9 local roads and 1 significant private access affected	As the route is off-line the ease of constructability for the mainline will be good with minor traffic management required at the local roads and the New Ross and Waterford Bypass roundabouts at either end of the scheme. This scheme is 0.5km west of the existing N25 with minimal impact for the construction of the connection from the proposed N25 to the existing N25 but may require existing narrow secondary roads to be upgraded. These roads have low traffic volumes but it will impact existing users and adjacent property owners.	7
Comparative Service Conflicts (electricity, telecommunications, gas, broadband, cable TV, water, wastewater etc.).	Atkins	Off-line alignment runs along the line of HV O/H powerlines for 725m and crosses 2 other OH powerlines, minimum impact to other utilities off line and requirement for new services and service connections. On-line section will impact existing services where present.	This corridor impacts three high voltage power lines and potentially impacts local telecom, water and possibly broadband utilities. There will be a requirement to provide services along the proposed route with connections to the existing networks.	2
Comparisons on Land & Property (land take, land severance, land use, residential acquisitions, and accommodation works requirements).	Atkins	There are 120 No. properties (B1 - 6, B2 - 14, B3 - 43, B4 - 57) potentially impacted within the corridor. 79 residentail, 6 Commercial Residential, 12 Commercial, 4 agricultural, 16 agricultural/ residential, 0 Private storage, 3 unknown	This corridor impacts 120 properties, 66% are residential, 15% commercial and 17% agricultural. The majority of the properties affected are in beyond a 100m but there is a high % of residentill properties affected and may increase the likely impact by earthwork slopes, land acquisition and severance	3
				45.00

Engineering Criteria	**Owner**	**Preliminary Assessment of Option :** *Brown (Route F)*		
		Quantitative Assessment	**Qualitative Assessment**	**Score**
Traffic Assessment & Route Cross-section.	Atkins	10.0km Type 1	This route is considered one of the longer options and is approximately 0 .5 and 1km west of the original alignment.	4
Technical Standards (DMRB, Minimum Horizontal Radii, Maximum Vertical Gradients, Relaxations, Departures)	Atkins	Mainline horizontal departures/relaxations for back to back curves. Possible departures/ relaxations at access and junctions. 7 Horizontal radii - 2 No. 720, 1 No. 820, 1500, 1800 , 2 No. 2880 and vertical curves above desirable minimum with maximum 3.7% gradient over 1.7km	The alignment has 7 radii to avoid constraints but is relatively straight with a 720m radius at either end and large radii in the centre and desirable minimum vertical radii to minimise cut/fill due to the hilly terrain. The alignment is maximum 3.7% due to the hilly terrain and has two horizontal curves above 2040 and the remaining 5 require superelevation.	4
Principal Junctions and Interchanges, Access Control and interaction with Existing Road Network	Atkins	3 No. junctions - 2 at grade roundabout junctions at the Waterford and New Ross tie-ins and a grade separated junction at Groga/Ballyrahan. Upgrade of existing roads to provide connectivity to existing N25 and local road network	This scheme is off-line and as a result the existing properties can be a serviced by the current road network thus limiting direct access onto the mainline. Access to the proposed N25 will be provided at either end of the scheme and via a grade separated junction mid-way. The existing N25 will be declassified and provide a high standard of regional road.	5
Structures (River, Road & Rail bridges, culverts, underpasses and other structures, clearances and headroom).	Atkins	Impacts 7 Local Roads, 2 significant private access tracks, 1 significant watercourse	Within the corridor the proposed scheme could potentially impact 7 Local Roads, 2 significant private access tracks, 1 significant watercourse. As this corridor crosses many property boundaries a number of underpasses/ accommodation bridges will be required to facilitate residential, commercial and agricultural operations and mitigate against severance.	5
Geology (underlying ground conditions, sensitive areas / areas of poor ground including karst, caves, peat etc.)	Atkins	Southern end of the route is underlain by ~800m of a linear lacustrine deposit. Localised pockets of alluvium intersect the route at 3 locations ~20m to 600m length. Small localised rock outcrops are shown scattered along the proposed route.	Soft ground is anticipated where alluvium or lacustrine deposits have been identified in the desk study. Peat probing or DCP's should delineate the extent of the issue and should be included in the Preliminary ground investiation. Where shallow bedrock is encoutered construction cost may increase if the material needs to be excavated or blasted. Key area of issue may be where route encouters hill in the northern section.	6
Groundwater (aquifers, springs, wells and their vulnerability to major earthworks).	Atkins	N/A. Acccounted for in Environment Section under Route F. Refer to section Water Quality, Geology and Hydrogeology	N/A. Acccounted for in Environment Section under Route F. Refer to section Water Quality, Geology and Hydrogeology	
Earthworks (Cut and Fill volumes, comparative earthworks balance, maximum depth of cuttings and height of embankments)	Atkins	39m cut / 24m fill (120km/h) 43 cut / 24 fill (100km/h) 3934884 Cu/m Cut 726468 Cu/m Fill	Over the southern half of the scheme the cut and fill embankment heights are excessive and over a significant length. These heights could locally increase to provide clearance to underpasses/accommoation bridges	2
Road Safety Impact Assessment (Assessment of Route Options).	Atkins	Alignment has 1 section with a reverse curve and 1 section with successive curves and both have short lengths connecting the curves. Structures at 10 locations for local roads/ tracks/watercourses. Existing properties will maintain access via the existing road network and no requirement for direct assesses except for road maintenance.	The horizontal alignment uses desirable minimum radii with 2 No. 2880 radius which eliminates superelevation and the need for a roll-over, all other 5 radii will require superelevation which impacts the drainage potentially inducing flat spots and standing water. The vertical profile has gradients less than 4% which could help to control speeds and not impact braking distances, especially for HGVs. Structures potentially required at 10 locations for local roads/ tracks/watercourses. There will be a requirement for underpass/overbridges to reduce severance. Access to properties will be maintained via the existing road network and potentially no requirement for direct assesses except for road maintenance operations.	5

Engineering Criteria	**Owner**	**Preliminary Assessment of Option :** *Brown (Route F)*		
		Quantitative Assessment	**Qualitative Assessment**	**Score**
Drainage (carriageway drainage, crossing of watercourses, specific drainage requirements through high vulnerability areas).	Atkins	A full road drainage system with attenuation and interceptors will be required with outfalls to the local watercourse network. There is potentially 1 watercourse to be crossed. Circa. 92% of the route crosses Extreme/High Groundwater vulnerability.		3
Construction (Comparative ease of construction and Traffic Management).	Atkins	Fully off-line with 7 local roads and 1 significant private access affected	As the route is off-line the ease of constructability for the mainline will be good with minor traffic management required at the local roads and the New Ross and Waterford Bypass roundabouts at either end of the scheme. This scheme is 0.5 to 1km west of the existing N25 with minimal impact for the construction of the connection from the proposed N25 to the existing N25 but may require existing narrow secondary roads to be upgraded. These roads have low traffic volumes but it will impact existing users and adjacent property owners.	6
Comparative Service Conflicts (electricity, telecommunications, gas, broadband, cable TV, water, wastewater etc.).	Atkins	Off-line alignment crosses 3 HV O/H powerlines, minimum impact to other utilities off line and requirement for new services and service connections. On-line section will impact existing services where present.	This corridor impacts three high voltage power lines and potentially impacts local telecom, water and possibly broadband utilities. There will be a requirement to provide services along the proposed route with connections to the existing networks which could extend a distance given the location of the proposed corridor.	2
Comparisons on Land & Property (land take, land severance, land use, residential acquisitions, and accommodation works requirements).	Atkins	There are 120 No. properties (B1 - 6, B2 - 14, B3 - 41, B4 - 59) potentially impacted within the corridor. 81 residentail, 5 Commercial Residential, 7 Commercial, 8 agricultural, 15 agricultural./residential, 1 Private storage, 3 unknown	This corridor impacts 120 properties, 68% are residential, 10% commercial and 19% agricultural. The majority of the properties affected are in beyond a 100m but there is a high % of residentill properties affected and may increase the likely impact by earthwork slopes, land acquisition and severance	3
				45.00

Engineering Criteria	**Owner**	**Preliminary Assessment of Option :** *Dark Blue (Route G)*		
		Quantitative Assessment	**Qualitative Assessment**	**Score**
Traffic Assessment & Route Cross-section.	Atkins	9.7km Type 1	This route is similar in nature and length to the existing N25 and approximately 0.5 to 1km west of the existing alignment	5
Technical Standards (DMRB, Minimum Horizontal Radii, Maximum Vertical Gradients, Relaxations, Departures)	Atkins	Possible relaxations/departures in horizontal radius on approach to New Ross roundabout with 1 successive curve and 3 No. back to back curves (mainline matching existing to avoid SAC). Possible departures/relaxations at access and junctions. 9 Horizontal radii - 600, 720, 900, 1020, 1200, 1250, 1500, 1800, 2200, and vertical curves above desirable minimum.	The alignment has 9 horizontal radii with 4 sections of back to back curves and 1 section with successive curves and short lengths connecting to avoid constraints and matches the existing alignment on line from Kilmakevoge up to the New Ross roundabout. Vertical radii are desirable minimum or above and gradients are between 0.5 and 3.5%. The alignment is maximum 3.5% due to the hilly terrain and has one horizontal curve above 2040 and the remaining 8 require superelevation.	3
Principal Junctions and Interchanges, Access Control and interaction with Existing Road Network	Atkins	4 No. junctions - 2 at grade roundabout junctions at the Waterford and New Ross tie-ins, a grade separated junction at Groga/Ballyrahan and a left/in left/out junction where the off-line meets the on-line section of the existing N25. Upgrade of existing roads to provide connectivity to existing N25 and local road network.	This scheme is mainly off-line and as a result the existing properties can be a serviced by the current road network thus limiting direct access onto the mainline. The on-line section will require potentially an extra junction where the proposed route connects to the existing N25 alignment. Access to the proposed N25 will be provided at either end of the scheme and via a grade separated junction mid-way. The existing N25 will be declassified and provide a high standard of regional road.	3
Structures (River, Road & Rail bridges, culverts, underpasses and other structures, clearances and headroom).	Atkins	Impacts 8 Local Roads, 1 significant private access tracks, 0 significant watercourse	Within the corridor the proposed scheme could potentially impact 8 Local Roads and 1 significant private access tracks. As this corridor crosses many property boundaries a number of underpasses/ accommodation bridges will be required to facilitate residential, commercial and agricultural operations and mitigate against severance.	4
Geology (underlying ground conditions, sensitive areas / areas of poor ground including karst, caves, peat etc.)	Atkins	Southern end of the route is underlain by ~800m of a linear lacustrine deposit. Southern end encounters ~800m rock outcrop. Significant rock exposure encountered midway along sloping ground / hillside which fully intersects the route at two locations for a combined distance of ~800m. Significant rock exposure ~2.2km along the northern end on sloping ground.	Soft ground is anticipated where lacustrine deposit has been identified in the desk study. Section of alluvium which the route intersects could be greater than identified due to overall size of this deposit. Three significant rock exposures are identified along the route, two along sloping ground. Depending on vertical alignmnet this route could be costly if large amount of rock is present in the cut sections. However if no major cut along this section bedrock could prove useful founding material.	2
Groundwater (aquifers, springs, wells and their vulnerability to major earthworks).	Atkins	N/A. Acccounted for in Environment Section under Route G. Refer to section Water Quality, Geology and Hydrogeology	N/A. Acccounted for in Environment Section under Route G. Refer to section Water Quality, Geology and Hydrogeology	
Earthworks (Cut and Fill volumes, comparative earthworks balance, maximum depth of cuttings and height of embankments)	Atkins	12m cut / 22m embankment 718737 Cu/m Cut 934141 Cu/m Fill	The embankment and fill areas are not excessive or over long lengths considering the existing hilly terrain. These heights could locally increase to provide clearance to underpasses/ accommoation bridges	5
Road Safety Impact Assessment (Assessment of Route Options).	Atkins	Alignment has 1 section with a reverse curve and 1 section with successive curves on the approach to the NR rubout (matching existing N25 to avoid SAC) and both have short lengths connecting the curves. Structures at 9 locations for local roads/ tracks/watercourses. Existing properties will maintain access via the existing road network and no requirement for direct assesses except for road maintenance.	The horizontal alignment uses desirable minimum radii which will require superelevation and roll overs which impacts the drainage potentially inducing flat spots and standing water. The vertical profile has gradients less than 4% which could help to control speeds and not impact braking distances, especially for HGVs. Structures potentially required at 10 locations for local roads/ tracks/watercourses. There will be a requirement for underpass/overbridges to reduce severance. Access to properties will be maintained via the existing road network and potentially no requirement for direct assesses except for road maintenance operations.	4

Engineering Criteria	**Owner**	**Preliminary Assessment of Option :** *Dark Blue (Route G)*		
		Quantitative Assessment	**Qualitative Assessment**	**Score**
Drainage (carriageway drainage, crossing of watercourses, specific drainage requirements through high vulnerability areas).	Atkins	A full road drainage system with attenuation and interceptors will be required with outfalls to the local watercourse network. There is potentially 1 watercourse to be crossed. Circa. 97% of the route crosses Extreme/High Groundwater vulnerability.		2
Construction (Comparative ease of construction and Traffic Management).	Atkins	Approx. 70% off-line and 30% on-line with 8 local roads and 1 significant private access affected	As the route is off-line the ease of constructability for the mainline will be good with minor traffic management required at the local roads and the New Ross and Waterford Bypass roundabouts at either end of the scheme. This scheme is 0.5 to 1km west of the existing N25 with minimal impact for the construction of the connection from the proposed N25 to the existing N25 but may require existing narrow secondary roads to be upgraded. These roads have low traffic volumes but it will impact existing users and adjacent property owners.	5
Comparative Service Conflicts (electricity, telecommunications, gas, broadband, cable TV, water, wastewater etc.).	Atkins	Off line alignment crosses 3 HV O/H powerlines, minimum impact to other utilities off line and requirement for new services and service connections. On-line section will impact existing services where present.	This corridor impacts three high voltage power lines and potentially impacts local telecom, water and possibly broadband utilities. There will be a requirement to provide services along the proposed route with relatively short connections to the existing networks given the location of the proposed corridor.	2
Comparisons on Land & Property (land take, land severance, land use, residential acquisitions, and accommodation works requirements).	Atkins	There are 146 No. properties (B1 - 4, B2 - 20, B3 - 85, B4 - 37) potentially impacted within the corridor. 96 residentail, 9 Commercial Residential, 13 Commercial, 7 agricultural, 13 agricultural./residential, 3 Private storage, 5 unknown	This corridor impacts 146 properties, 67% are residential, 15% commercial and 14% agricultural. The majority of the properties affected are in beyond a 100m but there is a high % of residentill properties affected and may increase the likely impact by earthwork slopes, land acquisition and severance	2
				37.00

Engineering Criteria	**Owner**	**Preliminary Assessment of Option :** *Magenta (Route H)*		
		Quantitative Assessment	**Qualitative Assessment**	**Score**
Traffic Assessment & Route Cross-section.	Atkins	9.3km Type 1	This route is predominantly on-line with short lengths off-line to improve the existing alignment	6
Technical Standards (DMRB, Minimum Horizontal Radii, Maximum Vertical Gradients, Relaxations, Departures)	Atkins	Possible 1 relaxation/departure in horizontal radius on approach to New Ross roundabout (mainline matching existing to avoid SAC). Possible departures/relaxations at access and junctions. 8 Horizontal radii - 1 No. 600, 850, 1500, 2 No. 1200 and 3 No. 1020, and vertical curves above desirable minimum with 0.5km with 4% gradient.	The alignment has 8 horizontal radii with 3 sections of back to back curves and 2 sections with successive curves and short lengths connecting to avoid constraints and match the existing alignment over 65% of the route. Vertical radii are desirable minimum or above and gradients are between 0.5 and 4.0%. Potentially 5% of the alignment is at 4% due to the hilly terrain and all 8 require superelevation.	4
Principal Junctions and Interchanges, Access Control and interaction with Existing Road Network	Atkins	2 at grade roundabout junctions at the Waterford and New Ross tie-ins and 10 existing junctions along the route that would require significant additional link road/grade separated to reduce the number of access points. Upgrade of existing roads to provide connectivity to existing N25 and local road network	This route is predominantly on-line and achieves a reasonable alignment but the number of link roads/grade separated junctions will be significant in order to remove the direc accesses and junction currently providing all traffic movements north/south.	1
Structures (River, Road & Rail bridges, culverts, underpasses and other structures, clearances and headroom).	Atkins	Impacts 12 Local Roads, 1 significant private access tracks, 0 significant watercourse	Within the corridor the proposed scheme could potentially impact 12 Local Roads and 1 significant private access track. As this corridor is along the existing N25 alignment it will impact many properties and a number of underpasses/accommodation bridges/grade separated junctions will be required to facilitate existing residential, commercial and agricultural operations and mitigate against severance.	1
Geology (underlying ground conditions, sensitive areas / areas of poor ground including karst, caves, peat etc.)	Atkins	There is a pocket of alluvium in the north, and ~3km of a linear deposit of alluvium along the central section of the route. The route regularly encounters localised bedrock outcrops 50m, 250m to 500m in length. There is a significant rock exposure ~2km along the northern end on sloping ground.	Soft ground may be encountered where alluvium has been identified in the desk study. The size of the deposit (lateral and vertical extents) would need to be delineated during the prelimiary ground investigation by means of DCP's and CP boreholes. Bedrock regularly outcrops along the route and there is a significant rock outcrop within the northern section of the route which could lead to significant cost during construction if it is within a cutting. However if no major cut along this section bedrock could prove useful founding material.	2
Groundwater (aquifers, springs, wells and their vulnerability to major earthworks).	Atkins	N/A. Acccounted for in Environment Section under Route H. Refer to section Water Quality, Geology and Hydrogeology	N/A. Acccounted for in Environment Section under Route H. Refer to section Water Quality, Geology and Hydrogeology	
Earthworks (Cut and Fill volumes, comparative earthworks balance, maximum depth of cuttings and height of embankments)	Atkins	9m cut / 12m embankment 721211 Cu/m Cut 779130 Cu/m Fill	The embankment and fill areas are not excessive or over long lengths considering the existing hilly terrain but will be closer to residential, commercial and agricultural properties. These heights could locally increase to provide clearance to underpasses/ accommoation bridges.	7
Road Safety Impact Assessment (Assessment of Route Options).	Atkins	Alignment has 3 sections with reverse curves and 2 sections with successive curves and all have short lengths connecting the curves (maintenance option and matching existing 25). Structures at 13 locations for local roads/ tracks/watercourses	The horizontal alignment uses desirable minimum radii which will require superelevation and roll overs which impacts the drainage potentially inducing flat spots and standing water. The vertical profile has gradients of 4% or less which induce high speeds impact braking distances, especially for HGVs. Structures potentially required at 13 locations for local roads/ tracks/watercourses. There will be a requirement for underpass/overbridges to reduce severance and minimise direc accesses and junctions. With this option the existing N25 cannot be utilised for existing short distance journeys increasing the number of cars and movements compared to the the off-line options and may not reduce the collision rate as much as the other options. The construction of this option will be predominantly on-line and will require significant traffic management which has an inherent risk for both the user and construction workers.	2

Engineering Criteria	**Owner**	**Preliminary Assessment of Option :** *Magenta (Route H)*		
		Quantitative Assessment	**Qualitative Assessment**	**Score**
Drainage (carriageway drainage, crossing of watercourses, specific drainage requirements through high vulnerability areas).	Atkins	A full road drainage system with attenuation and interceptors will be required with outfalls to the local watercourse network. There is potentially 1 watercourse to be crossed. Circa. 96% of the route crosses Extreme/High Groundwater vulnerability.		2
Construction (Comparative ease of construction and Traffic Management).	Atkins	Approx. 35% off-line and 65% on-line with 12 local roads and 1 significant private access affected	As the route is on-line the ease of constructability for the mainline will be difficult with major traffic management required for the mainline, at the local roads and the New Ross and Waterford Bypass roundabouts at either end of the scheme. This scheme is on line and will significantly impact the adjacent residential, commercial and agricultural properties.	1
Comparative Service Conflicts (electricity, telecommunications, gas, broadband, cable TV, water, wastewater etc.).	Atkins	Alignment crosses 3 HV O/H powerlines and is predominantly on-line and will impact existing services where present.	This corridor impacts linear high voltage power lines and local telecom lines and possibly impacts existing water and possibly broadband utilities. There will be a requirement to provide additional services along the proposed route with short connects to the existing networks given the location of the proposed corridor.	1
Comparisons on Land & Property (land take, land severance, land use, residential acquisitions, and accommodation works requirements).	Atkins	There are 182 No. properties (B1 - 24, B2 - 36, B3 - 86, B4 - 36) potentially impacted within the corridor. 134 residentail, 8 Commercial Residential, 14 Commercial,6 agricultural, 12 agricultural/ residential, 3 Private storage, 5 unknown	This corridor impacts 182 properties, 74% are residential, 12% commercial and 10% agricultural. The majority of the properties affected are in beyond a 100m but there is a high % of residentill properties affected and may increase the likely impact by earthwork slopes, land acquisition and severance	1
				28.00

Engineering Criteria	**Owner**	**Preliminary Assessment of Option :** *Red (Route I)*		**Date:**
		Quantitative Assessment		**Score**
Traffic Assessment & Route Cross-section.	Atkins	8.9km Type 1	This route is considered one of the shorter options and is approximately 0 .5 and 2.5km east of the original alignment.	7
Technical Standards (DMRB, Minimum Horizontal Radii, Maximum Vertical Gradients, Relaxations, Departures)	Atkins	Possible 2 No. relaxation/departure in horizontal radius on approach to both roundabout NR matching existing to avoid SAC and south avoiding property). Possible departures/relaxations at access and junctions. 9 Horizontal radii - 1 No. 1020, 1200, 2880, 3500 and 5 No. 720 and vertical curves above desirable minimum with 1.75km with 4% gradient.	The alignment has 9 horizontal radii and five sections with successive curves and short lengths connecting to avoid constraints Vertical radii are desirable minimum or above and gradients are between 0.5 and 4.0%. Potentially 20% of the alignment is at 4% due to the hilly terrain and two horizontal curves are above 2040 and the remaining 7 require superelevation.	4
Principal Junctions and Interchanges, Access Control and interaction with Existing Road Network	Atkins	4 No. junctions - 2 at grade roundabout junctions at the Waterford and New Ross tie-ins, a grade separated junction at Rochestown and a left/in left/out junction where the off-line meets the on-line section of the existing N25. Upgrade of existing roads to provide connectivity to existing N25 and local road network.	This scheme is mainly off-line and as a result the existing properties can be a serviced by the current road network thus limiting direct access onto the mainline. The on-line section will require potentially an extra junction where the proposed route connects to the existing N25 alignment. Access to the proposed N25 will be provided at either end of the scheme and via a grade separated junction mid-way. The existing N25 will be declassified and provide a high standard of regional road.	3
Structures (River, Road & Rail bridges, culverts, underpasses and other structures, clearances and headroom).	Atkins	Impacts 10 Local Roads, twice over the greenway/old railway, 3 significant private access tracks, 3 significant watercourse	Within the corridor the proposed scheme could potentially impact 10 Local Roads, 3 significant private access tracks, 3 significant watercourses and twice across the proposed greenway. As this corridor crosses many property boundaries a number of underpasses/ accommodation bridges will be required to facilitate residential, commercial and agricultural operations and mitigate against severance.	3
Geology (underlying ground conditions, sensitive areas / areas of poor ground including karst, caves, peat etc.)	Atkins	Soft ground may be encountered where three localised deposits of alluvium are located in the north, central and south. The southern end encounters ~250m length of lacustrine deposits. The route regularly encounters localised bedrock outcrops 100m, 300m to 400m in length.	Soft ground could be an issue where a large lacustrian deposit (~250m length) is located along the southern end of the route. Localised deposits of alluvium may also pose an issue and will need to be delineated during a preliminary ground investigation by means of DCP's and CP boreholes. Bedrock regularly outcrops along the route and could increase the cost during construction the the route is within a cutting. However these outcrops are spaced along the route and may not indicate continuous shallow bedrock. Undulating topography could result in extensive cut and fill along the route leading to further cost.	2
Groundwater (aquifers, springs, wells and their vulnerability to major earthworks).	Atkins	N/A. Acccounted for in Environment Section under Route I. Refer to section Water Quality, Geology and Hydrogeology	N/A. Acccounted for in Environment Section under Route I. Refer to section Water Quality, Geology and Hydrogeology	
Earthworks (Cut and Fill volumes, comparative earthworks balance, maximum depth of cuttings and height of embankments)	Atkins	26m cut / 24m embankment 2857287 Cu/m Cut 2346397 Cu/m Fill	The embankment and fill areas are moderate and over significant lengths. These heights could locally increase to provide clearance to underpasses/ accommoation bridges	3
Road Safety Impact Assessment (Assessment of Route Options).	Atkins	Alignment has 5 sections with reverse curves and all have short lengths connecting the curves. Structures at 18 locations for local roads/ tracks/watercourses	The horizontal alignment uses desirable minimum radii which will require superelevation and roll overs which impacts the drainage potentially inducing flat spots and standing water. The vertical profile has gradients between 0.5 and 4% which may induce high speeds and impact braking distances, especially for HGVs. Structures potentially required at 18 locations for local roads/ tracks/watercourses. There will be a requirement for underpass/overbridges to reduce severance. Access to properties will be maintained via the existing road network and potentially no requirement for direct assesses except for road maintenance operations.	3

Engineering Criteria	**Owner**	**Preliminary Assessment of Option :** *Red (Route I)* **Quantitative Assessment**		**Date:** **Score**
Drainage (carriageway drainage, crossing of watercourses, specific drainage requirements through high vulnerability areas).	Atkins	A full road drainage system with attenuation and interceptors will be required with outfalls to the local watercourse network. There is potentially 1 watercourse to be crossed. Circa. 74% of the route crosses Extreme/High Groundwater vulnerability.		6
Construction (Comparative ease of construction and Traffic Management).	Atkins	Fully off-line with 10 local roads, twice over the greenway/old railway line and 3 significant private access affected	As the route is off-line the ease of constructability for the mainline will be good with minor traffic management required at the local roads and the New Ross and Waterford Bypass roundabouts at either end of the scheme. This scheme is a significant distance to the east of the existing N25 and the construction of the connection from the proposed N25 to the existing N25 may require existing narrow secondary roads to be upgraded. These roads have low traffic volumes but it will impact existing users and adjacent property owners.	5
Comparative Service Conflicts (electricity, telecommunications, gas, broadband, cable TV, water, wastewater etc.).	Atkins	Off line alignment crosses 2 HV O/H powerlines, minimum impact to other utilities off line and requirement for new services and service connections. On-line section will impact existing services where present.	This corridor impacts two high voltage power lines and potentially impacts local telecom, transmission gas main, water and possibly broadband utilities. There will be a requirement to provide services along the proposed route with connections to the existing networks which could extend a distance given the location of the proposed corridor.	1
Comparisons on Land & Property (land take, land severance, land use, residential acquisitions, and accommodation works requirements).	Atkins	There are 84 No. properties (B1 - 4, B2 - 23, B3 - 30, B4 - 27) potentially impacted within the corridor. 57 residentail, 1 Commercial Residential, 2 Commercial, 6 agricultural, 12 agricultural/ residential, 0 Private storage, 6 unknown	This corridor impacts 84 properties, 68% are residential, 4% commercial and 21% agricultural. The majority of the properties affected are in beyond a 100m but there is a high % of residentill properties affected and may increase the likely impact by earthwork slopes, land acquisition and severance	6
				43.00

Engineering Criteria	**Owner**	**Preliminary Assessment of Option :** *Cyan (Route J)*		
		Quantitative Assessment	**Qualitative Assessment**	**Score**
Traffic Assessment & Route Cross-section.	Atkins	9.6km Type 1	This route is considered one of the shorter options and is approximately 0 .5 and 2.5km east of the original alignment.	5
Technical Standards (DMRB, Minimum Horizontal Radii, Maximum Vertical Gradients, Relaxations, Departures)	Atkins	Possible 1 relaxation/departure in horizontal radius on approach to New Ross roundabout (mainline matching existing to avoid SAC). Possible departures/relaxations at access and junctions. 8 Horizontal radii - 1 No. 610, 1200, 1500, 3500 and 2 No. 720, 900 and vertical curves above desirable minimum with 3.22km with 4% gradient.	The alignment has 8 horizontal radii and four sections with back to back curves and 1 section with successive curves and short lengths connecting to avoid constraints Vertical radii are desirable minimum or above and gradients are between 0.5 and 4.0%. Potentially 34% of the alignment is at 4% due to the hilly terrain and one horizontal curve is above 2040 and the remaining 7 require superelevation.	3
Principal Junctions and Interchanges, Access Control and interaction with Existing Road Network	Atkins	4 No. junctions - 2 at grade roundabout junctions at the Waterford and New Ross tie-ins, a grade separated junction at Ballyhobuck and a left/in left/out junction where the off-line meets the on-line section of the existing N25. Upgrade of existing roads to provide connectivity to existing N25 and local road network.	This scheme is mainly off-line and as a result the existing properties can be a serviced by the current road network thus limiting direct access onto the mainline. The on-line section will potentially require an extra junction where the proposed route connects to the existing N25 alignment. Access to the proposed N25 will be provided at either end of the scheme and via a grade separated junction mid-way. The existing N25 will be declassified and provide a high standard of regional road.	3
Structures (River, Road & Rail bridges, culverts, underpasses and other structures, clearances and headroom).	Atkins	Impacts 9 Local Roads, twice over the greenway/old railway, 4 significant private access tracks, 2 significant watercourse	Within the corridor the proposed scheme could potentially impact 9 Local Roads, 4 significant private access tracks, 2 significant watercourses and twice across the proposed greenway. As this corridor crosses many property boundaries a number of underpasses/ accommodation bridges will be required to facilitate residential, commercial and agricultural operations and mitigate against severance.	3
Geology (underlying ground conditions, sensitive areas / areas of poor ground including karst, caves, peat etc.)	Atkins	Soft ground may be encountered where three localised deposits of alluvium are located in the north, centre and south. The southern end encounters ~300m length of lacustrine deposits. The route encounters occasional localised bedrock outcrops 100m, 300m to 400m in length.	Soft ground could be an issue where a large lacustrian deposit (~300m length) is located along the southern end of the route. Localised deposits of alluvium within the northern, central and southern areas of the route may also pose an issue and will need to be delineated during a preliminary ground investigation by means of DCP's and CP boreholes. The route encounters occasional localised bedrock outcrops 100m, 300m to 400m in length. Undulating topography could result in extensive cut and fill along the route leading to further cost.	3
Groundwater (aquifers, springs, wells and their vulnerability to major earthworks).	Atkins	N/A. Acccounted for in Environment Section under Route J. Refer to section Water Quality, Geology and Hydrogeology	N/A. Acccounted for in Environment Section under Route J. Refer to section Water Quality, Geology and Hydrogeology	
Earthworks (Cut and Fill volumes, comparative earthworks balance, maximum depth of cuttings and height of embankments)	Atkins	28m cut / 23m embankment 3589302 Cu/m Cut 1984653 Cu/m Fill	The embankment and fill areas are high and over significant lengths. These heights could locally increase to provide clearance to underpasses/ accommoation bridges	2
Road Safety Impact Assessment (Assessment of Route Options).	Atkins	Alignment has 4 sections with a reverse curve and 1 section with a successive curve and all have short lengths connecting the curves. Structures at 17 locations for local roads/ tracks/watercourses	The horizontal alignment uses desirable minimum radii which will require superelevation and roll overs which impacts the drainage potentially inducing flat spots and standing water. The vertical profile has gradients between 0.5 and 4% which may induce high speeds and impact braking distances, especially for HGVs. Structures potentially required at 17 locations for local roads/ tracks/watercourses. There will be a requirement for underpass/overbridges to reduce severance. Access to properties will be maintained via the existing road network and potentially no requirement for direct assesses except for road maintenance operations.	3

Engineering Criteria	**Owner**	**Preliminary Assessment of Option :** *Cyan (Route J)*		
		Quantitative Assessment	**Qualitative Assessment**	**Score**
Drainage (carriageway drainage, crossing of watercourses, specific drainage requirements through high vulnerability areas).	Atkins	A full road drainage system with attenuation and interceptors will be required with outfalls to the local watercourse network. There is potentially 1 watercourse to be crossed. Circa. 91% of the route crosses Extreme/High Groundwater vulnerability.		3
Construction (Comparative ease of construction and Traffic Management).	Atkins	Fully off-line with 9 local roads, twice over the greenway/old railway line and 4 significant private access affected	As the route is off-line the ease of constructability for the mainline will be good with minor traffic management required at the local roads and the New Ross and Waterford Bypass roundabouts at either end of the scheme. This scheme is a significant distance to the east of the existing N25 and the construction of the connection from the proposed N25 to the existing N25 may require existing narrow secondary roads to be upgraded. These roads have low traffic volumes but it will impact existing users and adjacent property owners.	4
Comparative Service Conflicts (electricity, telecommunications, gas, broadband, cable TV, water, wastewater etc.).	Atkins	Off line alignment crosses 2 HV O/H powerlines, minimum impact to other utilities off line and requirement for new services and service connections. On-line section will impact existing services where present.	This corridor impacts two high voltage power lines and potentially impacts local telecom, transmission gas main, water and possibly broadband utilities. There will be a requirement to provide services along the proposed route with connections to the existing networks which could extend a distance given the location of the proposed corridor.	1
Comparisons on Land & Property (land take, land severance, land use, residential acquisitions, and accommodation works requirements).	Atkins	There are 152 No. properties (B1 - 7, B2 - 24, B3 - 87, B4 - 27) potentially impacted within the corridor. 116 residentail, 5 Commercial Residential, 8 Commercial, 7 agricultural, 7 agricultural/ residential, 3 Private storage, 6 unknown	This corridor impacts 152 properties, 76% are residential, 8% commercial and 9% agricultural. The majority of the properties affected are in beyond a 100m but there is a high % of residentill properties affected and may increase the likely impact by earthwork slopes, land acquisition and severance	2
				32.00

Engineering Criteria	**Owner**	**Preliminary Assessment of Option :** *Orange (Route K)*		**Date:**
		Quantitative Assessment	**Qualitative Assessment**	**Score**
Traffic Assessment & Route Cross-section.	Atkins	9.3km Type 1	This route is considered one of the shorter options and is approximately 0 .5 and 2.5km east of the original alignment.	6
Technical Standards (DMRB, Minimum Horizontal Radii, Maximum Vertical Gradients, Relaxations, Departures)	Atkins	Possible relaxation/departure in horizontal radius due to back to back curves with short connexting lengths. Possible departures/ relaxations at access and junctions. 7 Horizontal radii - 1 No. 1100, 1500, 2 No. 1020 and 3 No. 720 and vertical curves above desirable minimum with 4.7km with 4% gradient.	The alignment has 7 horizontal radii and three sections with back to back curves and short lengths connecting to avoid constraints The radii will require superelevation. Vertical radii are desirable minimum or above and gradients are between 0.5 and 4.0%. Potentially 51% of the alignment is at 4% due to the hilly terrain and all 7 require superelevation.	2
Principal Junctions and Interchanges, Access Control and interaction with Existing Road Network	Atkins	4 No. junctions - 2 at grade roundabout junctions at the Waterford and New Ross tie-ins, a grade separated junction at Rochestown and a left/in left/out junction where the off-line meets the on-line section of the existing N25. Upgrade of existing roads to provide connectivity to existing N25 and local road network.	This scheme is mainly off-line and as a result the existing properties can be a serviced by the current road network thus limiting direct access onto the mainline. The on-line section will potentially require an extra junction where the proposed route connects to the existing N25 alignment. Access to the proposed N25 will be provided at either end of the scheme and via a grade separated junction mid-way. The existing N25 will be declassified and provide a high standard of regional road.	3
Structures (River, Road & Rail bridges, culverts, underpasses and other structures, clearances and headroom).	Atkins	Impacts 9 Local Roads, twice over the greenway/old railway, 1 significant private access tracks, 3 significant watercourses	Within the corridor the proposed scheme could potentially impact 9 Local Roads, 1 significant private access tracks, 3 significant watercourses and twice across the proposed greenway. As this corridor crosses many property boundaries a number of underpasses/ accommodation bridges will be required to facilitate residential, commercial and agricultural operations and mitigate against severance.	4
Geology (underlying ground conditions, sensitive areas / areas of poor ground including karst, caves, peat etc.)	Atkins	Soft ground may be encountered where three localised deposits of alluvium are located in the north, centre and south. The southern end encounters ~300m length of lacustrine deposits. The route encounters occasional localised bedrock outcrops 100m to 400m in length.	Soft ground could be an issue where a large lacustrian deposit (~300m length) is located along the southern end of the route. Localised deposits of alluvium within the northern, central and southern areas of the route may also be an issue and will need to be delineated during a preliminary ground investigation by means of DCP's and CP boreholes. The route encounters occasional localised bedrock outcrops 100m to 400m in length. Undulating topography could result in extensive cut and fill along the route leading to further cost.	2
Groundwater (aquifers, springs, wells and their vulnerability to major earthworks).	Atkins	N/A. Acccounted for in Environment Section under Route K. Refer to section Water Quality, Geology and Hydrogeology	N/A. Acccounted for in Environment Section under Route K. Refer to section Water Quality, Geology and Hydrogeology	
Earthworks (Cut and Fill volumes, comparative earthworks balance, maximum depth of cuttings and height of embankments)	Atkins	24.6m cut / 25m embankment 2776374 Cu/m Cut 2654501 Cu/m Fill	The embankment and fill areas are high and over significant lengths. These heights could locally increase to provide clearance to underpasses/ accommoation bridges	3
Road Safety Impact Assessment (Assessment of Route Options).	Atkins	Alignment has 3 reverse curves with short lengths connecting the curves. Structures at 15 locations for local roads/ tracks/watercourses	The horizontal alignment uses desirable minimum radii which will require superelevation and roll overs which impacts the drainage potentially inducing flat spots and standing water. The vertical profile has gradients between 0.5 and 4% which may induce high speeds and impact braking distances, especially for HGVs. Structures potentially required at 17 locations for local roads/ tracks/watercourses. There will be a requirement for underpass/overbridges to reduce severance. Access to properties will be maintained via the existing road network and potentially no requirement for direct assesses except for road maintenance operations.	3

Engineering Criteria	**Owner**	**Preliminary Assessment of Option :** *Orange (Route K)*		**Date:**
		Quantitative Assessment	**Qualitative Assessment**	**Score**
Drainage (carriageway drainage, crossing of watercourses, specific drainage requirements through high vulnerability areas).	Atkins	A full road drainage system with attenuation and interceptors will be required with outfalls to the local watercourse network. There is potentially 1 watercourse to be crossed. Circa. 86% of the route crosses Extreme/High Groundwater vulnerability.		4
Construction (Comparative ease of construction and Traffic Management).	Atkins	Fully off-line with 9 local roads, twice over the greenway/old railway line and 1 significant private access affected	As the route is off-line the ease of constructability for the mainline will be good with minor traffic management required at the local roads and the New Ross and Waterford Bypass roundabouts at either end of the scheme. This scheme is a significant distance to the east of the existing N25 and the construction of the connection from the proposed N25 to the existing N25 may require existing narrow secondary roads to be upgraded. These roads have low traffic volumes but it will impact existing users and adjacent property owners.	4
Comparative Service Conflicts (electricity, telecommunications, gas, broadband, cable TV, water, wastewater etc.).	Atkins	Off line alignment crosses 2 HV O/H powerlines, minimum impact to other utilities off line and requirement for new services and service connections. On-line section will impact existing services where present.	This corridor impacts two high voltage power lines and potentially impacts local telecom, transmission gas main, water and possibly broadband utilities. There will be a requirement to provide services along the proposed route with connections to the existing networks which could extend a distance given the location of the proposed corridor.	2
Comparisons on Land & Property (land take, land severance, land use, residential acquisitions, and accommodation works requirements).	Atkins	There are 81 No. properties (B1 - 5, B2 - 18, B3 - 29, B4 - 29) potentially impacted within the corridor. 53 residentail, 2 Commercial Residential, 3 Commercial, 5 agricultural, 12 agricultural/ residential, 0 Private storage, 6 unknown	This corridor impacts 81 properties, 65% are residential, 6% commercial and 21% agricultural. The majority of the properties affected are in beyond a 100m but there is a high % of residentill properties affected and may increase the likely impact by earthwork slopes, land acquisition and severance	6
				39.00

Engineering Criteria	**Owner**	**Preliminary Assessment of Option :** *Turquoise (Route P)*		
		Quantitative Assessment	**Qualitative Assessment**	**Score**
Traffic Assessment & Route Cross-section.	Atkins	12.7km Type 1	This route is considered one of the longer options and is approximately 1.5 to 2.5km west of the original alignment.	1
Technical Standards (DMRB, Minimum Horizontal Radii, Maximum Vertical Gradients, Relaxations, Departures)	Atkins	Possible relaxation/departure in horizontal radius due to back to back curves with short connexting lengths. Possible departures/ relaxations at access and junctions. 6 Horizontal radii - 1 No. 720, 1500, 3500 and 3 No. 1020 and vertical curves above desirable minimum with 2.0km with 4% gradient.	The alignment has 6 horizontal radii and five sections with back to back curves and short lengths connecting to avoid constraints Vertical radii are desirable minimum or above and gradients are between 0.5 and 4.0%. Potentially 16% of the alignment is at 4% due to the hilly terrain and and one horizontal curve is above 2040 and the remaining 5 require superelevation.	3
Principal Junctions and Interchanges, Access Control and interaction with Existing Road Network	Atkins	4 No. junctions - 2 at grade roundabout junctions at the Waterford and New Ross tie-ins, a grade separated junction at Ardbeg/Groga and a roundabout or at-grade junction on the Waterford bypass.. Upgrade of existing roads to provide connectivity to existing N25 and local road network.	This scheme is off-line and as a result the existing properties can be a serviced by the current road network thus limiting direct access onto the mainline. Access to the proposed N25 will be provided at either end of the scheme via the existing roundabout at he northen end, a proposed grade separated junction on the Waterfrod Bypass and via a grade separated junction mid-way. The existing N25 will be declassified and provide a high standard of regional road.	2
Structures (River, Road & Rail bridges, culverts, underpasses and other structures, clearances and headroom).	Atkins	Impacts 8 Local Roads, 3 significant private access tracks, 3 significant watercourses and introduces an additional junction on the Waerford Bypass.	Within the corridor the proposed scheme could potentially impact 8 Local Roads, 3 significant private access tracks, 3 significant watercourses and the Waterford Bypass. As this corridor crosses many property boundaries a number of underpasses/ accommodation bridges will be required to facilitate residential, commercial and agricultural operations and mitigate against severance.	2
Geology (underlying ground conditions, sensitive areas / areas of poor ground including karst, caves, peat etc.)	Atkins	Soft ground could be an issue where a large 'peat over raised cut' deposit (300m length) and a large lacustrian deposit (~300m length) are located along the southern end of the route. The central and northern end intersects two small pockets of alluvium. Areas of potential soft ground will require intrusive investigation (CP borehoes and DCPs) to delineate the vertical and lateral extents of the material. Compared with other options this route is relatively level with a rise in topography towards the midpoint where the route passes between two hills, afterwhich the topography gradually reduces towards the northern end.	This route appears to be less restrictive than previous routes in terms of topography, geology and soft ground. A preliminary ground investigation could delineate the lateral and vertical extent of any potential soft ground caused by alluvial and lacustrine deposit. Location of rock outcrops needs to be compared with the CAD vertical and horizontal alignments in CAD to better assess if rock will be in any cuttings.	6
Groundwater (aquifers, springs, wells and their vulnerability to major earthworks).	Atkins	N/A. Acccounted for in Environment Section under Route P. Refer to section Water Quality, Geology and Hydrogeology	N/A. Acccounted for in Environment Section under Route P. Refer to section Water Quality, Geology and Hydrogeology	
Earthworks (Cut and Fill volumes, comparative earthworks balance, maximum depth of cuttings and height of embankments)	Atkins	29m cut / 21m embankment 3323130 Cu/m Cut 2953589 Cu/m Fill	The embankment and fill areas are high and over significant lengths. These heights could locally increase to provide clearance to underpasses/ accommoation bridges	2
Road Safety Impact Assessment (Assessment of Route Options).	Atkins	Alignment has 1 reverse curve with a short length connecting the curves. Structures at 13 locations for local roads/ tracks/watercourses.	The horizontal alignment uses desirable minimum radii and 5 pf the 6 radii will require superelevation and roll overs which impacts the drainage potentially inducing flat spots and standing water. The vertical profile has gradients between 0.5 and 4% which may induce high speeds and impact braking distances, especially for HGVs. Structures potentially required at 13 locations for local roads/ tracks/watercourses. There will be a requirement for underpass/overbridges to reduce severance. Access to properties will be maintained via the existing road network and potentially no requirement for direct assesses except for road maintenance operations.	

Engineering Criteria	**Owner**	**Preliminary Assessment of Option :** *Turquoise (Route P)*		
		Quantitative Assessment	**Qualitative Assessment**	**Score**
Drainage (carriageway drainage, crossing of watercourses, specific drainage requirements through high vulnerability areas).	Atkins	A full road drainage system with attenuation and interceptors will be required with outfalls to the local watercourse network. There is potentially 1 watercourse to be crossed. Circa. 56% of the route crosses Extreme/High Groundwater vulnerability.		7
Construction (Comparative ease of construction and Traffic Management).	Atkins	Fully off-line with 9 local roads, twice over the greenway/old railway line and 1 significant private access affected	As the route is off-line the ease of constructability for the mainline will be good with minor traffic management required at the local roads and the New Ross and Waterford Bypass roundabouts at either end of the scheme. This scheme is a significant distance to the west of the existing N25 and the construction of the connection from the proposed N25 to the existing N25 may require existing narrow secondary roads to be upgraded. These roads have low traffic volumes but it will impact existing users and adjacent property owners.	4
Comparative Service Conflicts (electricity, telecommunications, gas, broadband, cable TV, water, wastewater etc.).	Atkins	Additional junction on Waterford Bypass impacting HV ESB O/H cables. Off line alignment crosses 2 HV O/H powerlines, minimum impact to other utilities off line and requirement for new services and service connections. On-line section will impact existing services where present.	This corridor impacts four high voltage power lines and potentially impacts local telecom, water and possibly broadband utilities. There will be a requirement to provide services along the proposed route with connections to the existing networks which could extend a distance given the location of the proposed corridor.	1
Comparisons on Land & Property (land take, land severance, land use, residential acquisitions, and accommodation works requirements).	Atkins	There are 85 No. properties (B1 - 3, B2 - 14, B3 - 30, B4 - 38) potentially impacted within the corridor. 57 residentail, 3 Commercial Residential, 1 Commercial, 8 agricultural, 13 agricultural/ residential, 0 Private storage, 3 unknown	This corridor impacts 85 properties, 67% are residential, 5% commercial and 25% agricultural. The majority of the properties affected are in beyond a 100m but there is a high % of residentill properties affected and may increase the likely impact by earthwork slopes, land acquisition and severance	6
				37.00

Engineering Criteria	**Owner**	**Preliminary Assessment of Option :** *Lime Green (Route Q)*		
		Quantitative Assessment		**Score**
Traffic Assessment & Route Cross-section.	Atkins	8.9km	This route is considered one of the shorter options and is approximately 0 - 0.5km east of the original alignment.	7
Technical Standards (DMRB, Minimum Horizontal Radii, Maximum Vertical Gradients, Relaxations, Departures)	Atkins	Possible 1 relaxation/departure in horizontal radius on approach to New Ross roundabout (mainline matching existing to avoid SAC). Possible departures/relaxations at access and junctions. 7 Horizontal radii - 1 No. 610, 1020, 1200, 1500 and 3 No. 2880 and vertical curves above desirable minimum with 2.8km with 4% gradient.	The alignment has a number of large horizontal radii and 2 sections with back to back curves and 1 section with successsive curves to match the alignment of the existing N25 at the northern end and short lengths connecting to avoid constraints. Vertical radii are desirable minimum or above and gradients are between 0.5 and 4.0%. Potentially 26% of the alignment is at 4% due to the hilly terrain and and three horizontal curves are above 2040 and the remaining 4 require superelevation.	7
Principal Junctions and Interchanges, Access Control and interaction with Existing Road Network	Atkins	4 No. junctions - 2 at grade roundabout junctions at the Waterford and New Ross tie-ins, a grade separated junction at Ballyrahan and a left/in left/out junction where the off-line meets the on-line section of the existing N25. Upgrade of existing roads to provide connectivity to existing N25 and local road network.	This scheme is mainly off-line (75%) and as a result the existing properties can be a serviced by the current road network thus limiting direct access onto the mainline. The on-line section will potentially require an extra junction where the proposed route connects to the existing N25 alignment. Access to the proposed N25 will be provided at either end of the scheme and via a grade separated junction mid-way. The existing N25 will be declassified and provide a high standard of regional road.	4
Structures (River, Road & Rail bridges, culverts, underpasses and other structures, clearances and headroom).	Atkins	Impacts 7 Local Roads, 3 significant private access tracks, 1 significant watercourse	Within the corridor the proposed scheme could potentially impact 7 Local Roads, 3 significant private access tracks and 1 significant watercourses. As this corridor crosses many property boundaries a number of underpasses/ accommodation bridges will be required to facilitate residential, commercial and agricultural operations and mitigate against severance.	4
Geology (underlying ground conditions, sensitive areas / areas of poor ground including karst, caves, peat etc.)	Atkins	Soft ground could be an issue at the southern end of the route which is underlain by a linear 300m length deposit of lacustrine sediments. There are two small deposits of alluvium in the central and northern sections. Significant rock exposure ~2km along the northern end on sloping ground. Rock outcrops are shown scattered along the proposed route. Topography may not be an issue if route follows rise and fall of the land. Vertical and horizontal alignments need to be checked.	Soft ground could be an issue where a large lacustrian deposit (~300m length) is located at the southern end of the route. Two localised deposits of alluvium are less of an issue however would need to deleneate the vertical and lateral extents of any soft ground by ground intrusive methods (CP borehoels and DCPs). There is a significant rock exposure (~2km) at the northern end of the route along sloping ground which could increase the cost of construction if drilling / blasting method required if rock is in a cutting.	3
Groundwater (aquifers, springs, wells and their vulnerability to major earthworks).	Atkins	N/A. Acccounted for in Environment Section under Route Q. Refer to section Water Quality, Geology and Hydrogeology	N/A. Acccounted for in Environment Section under Route Q. Refer to section Water Quality, Geology and Hydrogeology	
Earthworks (Cut and Fill volumes, comparative earthworks balance, maximum depth of cuttings and height of embankments)	Atkins	23m cut / 17m embankment 2368008 Cu/m Cut 2148241 Cu/m Fill	The embankment and fill areas are high and over significant lengths. These heights could locally increase to provide clearance to underpasses/ accommoation bridges	3
Road Safety Impact Assessment (Assessment of Route Options).	Atkins	Alignment has large radii which removes roll-overs and improves drainage. Alignment has 1 section with a reverse curve and 2 sections with successive curves and all have short lengths connecting the curves (mainly matching existing N25 at northern end. Has a I step relaxation in curve (610m) on approach to NR roundabout but this matches existing approach and avoids SAC. Structures at 11 locations for local roads/ tracks/watercourses	The horizontal alignment uses desirable minimum radii and 4 pf the 7 radii will require superelevation and roll overs which impacts the drainage potentially inducing flat spots and standing water. The vertical profile has gradients between 0.5 and 4% which may induce high speeds and impact braking distances, especially for HGVs. Structures potentially required at 11 locations for local roads/ tracks/watercourses. There will be a requirement for underpass/overbridges to reduce severance. Access to properties will be maintained via the existing road network and potentially no requirement for direct assesses except for road maintenance operations.	5

Engineering Criteria	**Owner**	**Preliminary Assessment of Option :** *Lime Green (Route Q)*		
		Quantitative Assessment		**Score**
Drainage (carriageway drainage, crossing of watercourses, specific drainage requirements through high vulnerability areas).	Atkins	A full road drainage system with attenuation and interceptors will be required with outfalls to the local watercourse network. There is potentially 1 watercourse to be crossed. Circa. 93% of the route crosses Extreme/High Groundwater vulnerability.		3
Construction (Comparative ease of construction and Traffic Management).	Atkins	Approx. 75% off-line and 25% on-line with 7 local roads and 3 significant private access affected	As the route is 75% off-line the ease of constructability for the mainline will be good with minor traffic management required at the local roads and the New Ross and Waterford Bypass roundabouts at either end of the scheme. This scheme is o.5km east of the existing N25 and the construction of the connection from the proposed N25 to the existing N25 may require existing narrow secondary roads to be upgraded. These roads have low traffic volumes but it will impact existing users and adjacent property owners.	5
Comparative Service Conflicts (electricity, telecommunications, gas, broadband, cable TV, water, wastewater etc.).	Atkins	Off line alignment crosses 2 HV O/H powerlines, minimum impact to other utilities off line and requirement for new services and service connections. On-line section will impact existing services where present.	This corridor impacts two high voltage power lines and potentially impacts local telecom, water and possibly broadband utilities. There will be a requirement to provide services along the proposed route with connections to the existing networks which could extend a distance given the location of the proposed corridor.	2
Comparisons on Land & Property (land take, land severance, land use, residential acquisitions, and accommodation works requirements).	Atkins	There are 167 No. properties (B1 - 3, B2 - 27, B3 - 97, B4 - 40) potentially impacted within the corridor. 126 residentail, 5 Commercial Residential, 9 Commercial, 6 agricultural, 14 agricultural/ residential, 3 Private storage, 4 unknown	This corridor impacts 167 properties, 75% are residential, 8% commercial and 12% agricultural. The majority of the properties affected are in beyond a 100m but there is a high % of residentill properties affected and may increase the likely impact by earthwork slopes, land acquisition and severance	2
				45.00

Engineering Criteria	**Owner**	**Preliminary Assessment of Option :** *Cyan Dashed (Route 2)*		
		Quantitative Assessment	**Qualitative Assessment**	**Score**
Traffic Assessment & Route Cross-section.	Atkins	9.4km Type 1	This route is considered one of the shorter options and is approximately 0 - 1.0km west of the original alignment.	6
Technical Standards (DMRB, Minimum Horizontal Radii, Maximum Vertical Gradients, Relaxations, Departures)	Atkins	Possible departure in horizontal radius on approach to New Ross roundabout (mainline matching existing to avoid SAC). Possible departures/relaxations at access and junctions. 11 Horizontal radii - 1 No. 610, 1200, 1250, 1500, 2100, 3500, 2 No. 900 and 3 No. 720 and vertical curves above desirable minimum with 0.7km with 4% gradient.	The alignment has 11 horizontal radii with 7 sections with back to back curves and 2 sections with successsive curves connected by short lengths to match the alignment of the existing N25 at the northern end to avoid constraints. Vertical radii are desirable minimum or above and gradients are between 0.5 and 4.0%. Potentially 7% of the alignment is at 4% due to the hilly terrain and and one horizontal curve is above 2040 and the remaining 7 require superelevation.	4
Principal Junctions and Interchanges, Access Control and interaction with Existing Road Network	Atkins	4 No. junctions - 2 at grade roundabout junctions at the Waterford and New Ross tie-ins, a grade separated junction and a left/in left/out junction where the off-line meets the on-line section of the existing N25. Upgrade of existing roads to provide connectivity to existing N25 and local road network.	This scheme is mainly off-line (70%) and as a result the existing properties can be a serviced by the current road network thus limiting direct access onto the mainline. The on-line section will potentially require an extra junction where the proposed route connects to the existing N25 alignment. Access to the proposed N25 will be provided at either end of the scheme and via a grade separated junction mid-way. The existing N25 will be declassified and provide a high standard of regional road.	3
Structures (River, Road & Rail bridges, culverts, underpasses and other structures, clearances and headroom).	Atkins	Impacts 9 Local Roads, 0 significant private access tracks, 1 significant watercourse	Within the corridor the proposed scheme could potentially impact 9 Local Roads and 1 significant watercourses. As this corridor crosses many property boundaries a number of underpasses/ accommodation bridges will be required to facilitate residential, commercial and agricultural operations and mitigate against severance.	4
Geology (underlying ground conditions, sensitive areas / areas of poor ground including karst, caves, peat etc.)	Atkins	Soft ground could be an issue at the southern end of the route which is underlain by a linear 300m length deposit of lacustrine sediments. There are two small deposits of alluvium in the central and northern sections. Significant rock exposure ~2km along the northern end on sloping ground. Rock outcrops are shown scattered along the proposed route. Topography may not be an issue if route follows rise and fall of the land. Vertical and horizontal alignments need to be checked.	Soft ground could be an issue where a large lacustrian deposit (~300m length) is located at the southern end of the route. Two localised deposits of alluvium are less of an issue however would need to deleneate the vertical and lateral extents of any soft ground by ground intrusive methods (CP borehoels and DCPs). There is a significant rock exposure (~2km) at the northern end of the route along sloping ground whihc could increase the cost of construction if drilling / blasting method required if rock is in a cutting.	3
Groundwater (aquifers, springs, wells and their vulnerability to major earthworks).	Atkins	N/A. Acccounted for in Environment Section under Route 2. Refer to section Water Quality, Geology and Hydrogeology	N/A. Acccounted for in Environment Section under Route 2. Refer to section Water Quality, Geology and Hydrogeology	
Earthworks (Cut and Fill volumes, comparative earthworks balance, maximum depth of cuttings and height of embankments)	Atkins	12m cut / 20m embankment 1160751 Cu/m Cut 1098172 Cu/m Fill	The embankment and fill areas are moderate and not over significant lengths. These heights could locally increase to provide clearance to underpasses/ accommoation bridges	4
Road Safety Impact Assessment (Assessment of Route Options).	Atkins	Alignment has 7 section with reverse curves and 2 sections with successive curves and all have short lengths connecting the curves (mainly matching existing N25 at northern end). Has a I step relaxation in curve (610m) on approach to NR roundabout but this matches existing approach and avoids SAC. Structures at 10 locations for local roads/ tracks/watercourses	The horizontal alignment uses desirable minimum radii but has 7 sections with back to back radii and 2 sections with successive curves and 9 of the 11radii will require superelevation and roll overs which impacts the drainage potentially inducing flat spots and standing water. The vertical profile has gradients between 0.5 and 4% over 7% of the routte which may slightly induce high speeds and impact braking distances, especially for HGVs. Structures potentially required at 10 locations for local roads/ tracks/watercourses. There will be a requirement for underpass/overbridges to reduce severance. Access to properties will be maintained via the existing road network and potentially no requirement for direct assesses except for road maintenance operations.	3

Engineering Criteria	**Owner**	**Preliminary Assessment of Option :** *Cyan Dashed (Route 2)*		
		Quantitative Assessment	**Qualitative Assessment**	**Score**
Drainage (carriageway drainage, crossing of watercourses, specific drainage requirements through high vulnerability areas).	Atkins	A full road drainage system with attenuation and interceptors will be required with outfalls to the local watercourse network. There is potentially 1 watercourse to be crossed. Circa. 95% of the route crosses Extreme/High Groundwater vulnerability.		2
Construction (Comparative ease of construction and Traffic Management).	Atkins	Approx. 70% off-line and 30% on-line with 9 local roads and 1 significant watercourse affected	As the route is 70% off-line the ease of constructability for the mainline will be good with minor traffic management required at the local roads and the New Ross and Waterford Bypass roundabouts at either end of the scheme. This scheme is 1.0km east of the existing N25 and the construction of the connection from the proposed N25 to the existing N25 may require existing narrow secondary roads to be upgraded. These roads have low traffic volumes but it will impact existing users and adjacent property owners.	4
Comparative Service Conflicts (electricity, telecommunications, gas, broadband, cable TV, water, wastewater etc.).	Atkins	Off line alignment crosses 3 HV O/H powerlines, minimum impact to other utilities off line and requirement for new services and service connections. On-line section will impact existing services where present.	This corridor impacts two high voltage power lines and potentially impacts local telecom, water and possibly broadband utilities. There will be a requirement to provide services along the proposed route with connections to the existing networks given the location of the proposed corridor.	2
Comparisons on Land & Property (land take, land severance, land use, residential acquisitions, and accommodation works requirements).	Atkins	There are 154 No. properties (B1 - 4, B2 - 15, B3 - 87, B4 - 48) potentially impacted within the corridor. 98 residentail, 10 Commercial Residential, 14 Commercial, 5 agricultural, 18 agricultural/ residential, 3 Private storage, 6 unknown	This corridor impacts 154 properties, 64% are residential, 16% commercial and 15% agricultural. The majority of the properties affected are in beyond a 100m but ther is a high % of agricultural properties affected and may increase the likely impact by earthwork slopes, land acquisition and severance	1
				36.00

Engineering Criteria	**Owner**	**Preliminary Assessment of Option :** *Dark Blue Dashed (Route 3)*		
		Quantitative Assessment		**Score**
Traffic Assessment & Route Cross-section.	Atkins	8.7km Type 1	This route is considered one of the shorter options and is approximately 0.5 - 2.0km east of the original alignment.	7
Technical Standards (DMRB, Minimum Horizontal Radii, Maximum Vertical Gradients, Relaxations, Departures)	Atkins	2 No 510 radii back to back on the approach to the NR roundabout (departure). Possible departures/relaxations at access and junctions. 10 Horizontal radii - 1 No. 720, 1400, 1500, 2 No. 510 and 5 No. 1020 and vertical curves above desirable minimum with 2.3km with 4% gradient.	The alignment has 10 horizontal radii with 5 sections with back to back curves connected by short lengths with 2 510 radii back to back on approach to the NR roundabout at the northern end to avoid constraints. All 10 radii will require superelevation. Vertical radii are desirable minimum or above and gradients are between 0.5 and 4.0%. Potentially 27% of the alignment is at 4% due to the hilly terrain and all 10 horizontal radii require superelevation.	2
Principal Junctions and Interchanges, Access Control and interaction with Existing Road Network	Atkins	4 No. junctions - 2 at grade roundabout junctions at the Waterford and New Ross tie-ins, a grade separated junction and a left/in left/out junction where the off-line meets the on-line section of the existing N25. Upgrade of existing roads to provide connectivity to existing N25 and local road network.	This scheme is mainly off-line and as a result the existing properties can be a serviced by the current road network thus limiting direct access onto the mainline. The on-line section will potentially require an extra junction where the proposed route connects to the existing N25 alignment. Access to the proposed N25 will be provided at either end of the scheme and via a grade separated junction mid-way. The existing N25 will be declassified and provide a high standard of regional road.	4
Structures (River, Road & Rail bridges, culverts, underpasses and other structures, clearances and headroom).	Atkins	Impacts 9 Local Roads, 3 significant private access tracks, 3 significant watercourses and crosses the greenway/old railway twice	Within the corridor the proposed scheme could potentially impact 9 Local Roads, 3 access trsacks, 3 significant watercourses and twice across the proposed greenway. As this corridor crosses many property boundaries a number of underpasses/ accommodation bridges will be required to facilitate residential, commercial and agricultural operations and mitigate against severance.	2
Geology (underlying ground conditions, sensitive areas / areas of poor ground including karst, caves, peat etc.)	Atkins	Soft ground could be an issue at the southern end of the route which is underlain by a linear 300m length deposit of lacustrine sediments. There are three small deposits of alluvium in the central and northern sections. There are occasional rock outcrops in the northern end of the route with only two outcrops shown in the southern end. Undulating topography with sections of relatively level terrain.	Soft ground could be an issue where a large lacustrian deposit (~300m length) is located at the southern end of the route. Two localised deposits of alluvium are less of an issue however would need to deleneate the vertical and lateral extents of any soft ground by ground intrusive methods (CP borehoels and DCPs). There are occasional rock outcrops (more so in the north) with no significant exposures. Depending on the cut / fill ratios this route could be a realistic option.	3
Groundwater (aquifers, springs, wells and their vulnerability to major earthworks).	Atkins	N/A. Acccounted for in Environment Section under Route 3. Refer to section Water Quality, Geology and Hydrogeology	N/A. Acccounted for in Environment Section under Route 3. Refer to section Water Quality, Geology and Hydrogeology	
Earthworks (Cut and Fill volumes, comparative earthworks balance, maximum depth of cuttings and height of embankments)	Atkins	32m cut / 43 embankment 12112156 Cu/m Cut 15842012 Cu/m Fill	Over the southern half of the scheme the cut and fill embankment heights are excessive and over significant lengths. These heights could locally increase to provide clearance to underpasses/accommoation bridges	2
Road Safety Impact Assessment (Assessment of Route Options).	Atkins	Alignment has 4 section with desirable minimum reverse curves all have short lengths connecting the curves Has 2 No. 510m radii back to back with a short connection on approach to NR roundabout. Structures at 14 locations for local roads/ tracks/watercourses	The horizontal alignment uses 10 desirable minimum radii but has 4 substandard back to back radii with 2 No. 510 radii back to back on the approach to the NR roundabout.. All 10 radii will require superelevation and roll overs which impacts the drainage potentially inducing flat spots and standing water. The vertical profile has gradients between 0.5 and 4% which may induce high speeds and impact braking distances, especially for HGVs. Structures potentially required at 14 locations for local roads/ tracks/watercourses. There will be a requirement for underpass/overbridges to reduce severance. Access to properties will be maintained via the existing road network and potentially no requirement for direct assesses except for road maintenance operations.	2

Engineering Criteria	**Owner**	**Preliminary Assessment of Option :** *Dark Blue Dashed (Route 3)* **Quantitative Assessment**		**Score**
Drainage (carriageway drainage, crossing of watercourses, specific drainage requirements through high vulnerability areas).	Atkins	A full road drainage system with attenuation and interceptors will be required with outfalls to the local watercourse network. There is potentially 1 watercourse to be crossed. Circa. 71% of the route crosses Extreme/High Groundwater vulnerability.		6
Construction (Comparative ease of construction and Traffic Management).	Atkins	Fully off-line with 9 local roads, twice over the greenway/old railway line and 3 significant private access affected	As the route is off-line the ease of constructability for the mainline will be good with minor traffic management required at the local roads and the New Ross and Waterford Bypass roundabouts at either end of the scheme. This scheme is a significant distance to the west of the existing N25 and the construction of the connection from the proposed N25 to the existing N25 may require existing narrow secondary roads to be upgraded. These roads have low traffic volumes but it will impact existing users and adjacent property owners.	4
Comparative Service Conflicts (electricity, telecommunications, gas, broadband, cable TV, water, wastewater etc.).	Atkins	Off line alignment crosses 2 HV O/H powerlines, minimum impact to other utilities off line and requirement for new services and service connections. On-line section will impact existing services where present.	This corridor impacts two high voltage power lines and potentially impacts local telecom, transmission gas main, water and possibly broadband utilities. There will be a requirement to provide services along the proposed route with connections to the existing networks which could extend a distance given the location of the proposed corridor.	1
Comparisons on Land & Property (land take, land severance, land use, residential acquisitions, and accommodation works requirements).	Atkins	There are 66 No. properties (B1 - 1, B2 - 11, B3 - 20, B4 - 34) potentially impacted within the corridor. 36 residentail, 1 Commercial Residential, 1 Commercial, 3 agricultural, 21 agricultural/ residential, 0 Private storage, 4 unknown	This corridor impacts 66 properties, 54% are residential, 3% commercial and 36% agricultural. The majority of the properties affected are in beyond a 100m but ther is a high % of agricultural properties affected and may increase the likely impact by earthwork slopes, land acquisition and severance	7
				40.00

Engineering Criteria	**Owner**	**Preliminary Assessment of Option :** *Pink Dashed (Route 4)*		
		Quantitative Assessment	**Qualitative Assessment**	**Score**
Traffic Assessment & Route Cross-section.	Atkins	9.2km Type 1	This route is considered one of the shorter options and is approximately 0.5km east and west of the original alignment.	6
Technical Standards (DMRB, Minimum Horizontal Radii, Maximum Vertical Gradients, Relaxations, Departures)	Atkins	600 radius on the approach to the NR roundabout (departure if visibility affected). Possible departures/relaxations at access and junctions. 10 Horizontal radii - 1 No. 600, 950, 2 No. 1250 and 6 No. 1020 and vertical curves above desirable with 3% gradient.	The alignment has 10 horizontal radii with 4 sections with back to back curves and 1 section with successsive curves connected by short lengths to match the alignment of the existing N25 at the northern end to avoid constraints All 10 radii will require superelevation. Vertical radii are desirable minimum or above and gradients are between 0.5 and 3.0%. All 10 horizontal radii require superelevation.	4
Principal Junctions and Interchanges, Access Control and interaction with Existing Road Network	Atkins	4 No. junctions - 2 at grade roundabout junctions at the Waterford and New Ross tie-ins, a grade separated junction at Ballyrahan and a left/in left/out junction where the off-line meets the on-line section of the existing N25. Upgrade of existing roads to provide connectivity to existing N25 and local road network.	This scheme is mainly off-line (70%) and as a result the existing properties can be a serviced by the current road network thus limiting direct access onto the mainline. The on-line section will potentially require an extra junction where the proposed route connects to the existing N25 alignment. Access to the proposed N25 will be provided at either end of the scheme and via a grade separated junction mid-way. The existing N25 will be declassified and provide a high standard of regional road.	4
Structures (River, Road & Rail bridges, culverts, underpasses and other structures, clearances and headroom).	Atkins	Impacts 9 Local Roads, 3 significant private access tracks, 2 significant watercourses and crosses the greenway/old railway twice	Within the corridor the proposed scheme could potentially impact 9 Local Roads, 3 access trsacks, 2 significant watercourses and twice across the proposed greenway. As this corridor crosses many property boundaries a number of underpasses/ accommodation bridges will be required to facilitate residential, commercial and agricultural operations and mitigate against severance.	2
Geology (underlying ground conditions, sensitive areas / areas of poor ground including karst, caves, peat etc.)	Atkins	Soft ground could be an issue at the southern end of the route which is underlain by a linear 300m length deposit of lacustrine sediments. There are two deposits of alluvium in the central and northern sections. There is a significant rock exposure ~2km along the northern end on sloping ground. Rock outcrops are shown scattered along the proposed route, with two large (300m length) rock exposures in the central and southern sections of the route. Topography rises from 60m to 120m elevation in the south, continues to undulate to 60m and again to 110m twards the central section. As the route turns east the elevation reduces to 10m towards the northern end.	Soft ground could be an issue where a large lacustrian deposit (~300m length) is located at the southern end of the route. Two localised deposits of alluvium are less of an issue however would need to deleneate the vertical and lateral extents of any soft ground by ground intrusive methods (CP borehoels and DCPs). There is a significant rock exposure (~2km) at the northern end of the route along sloping ground whihc could increase the cost of construction if drilling / blasting method required if rock is in a cutting.	2
Groundwater (aquifers, springs, wells and their vulnerability to major earthworks).	Atkins	N/A. Acccounted for in Environment Section under Route 4. Refer to section Water Quality, Geology and Hydrogeology	N/A. Acccounted for in Environment Section under Route 4. Refer to section Water Quality, Geology and Hydrogeology	
Earthworks (Cut and Fill volumes, comparative earthworks balance, maximum depth of cuttings and height of embankments)	Atkins	21m cut / 37 embankment 2917043 Cu/m Cut 3001574 Cu/m Fill	The embankment and fill areas are high and over significant lengths. These heights could locally increase to provide clearance to underpasses/ accommoation bridges	2
Road Safety Impact Assessment (Assessment of Route Options).	Atkins	Alignment has 4 section with reverse curves and 1 sections with successive curves and all have short lengths connecting the curves (mainly matching existing N25 at northern end Has 1 No. 600m radius on approach to NR roundabout. Structures at 16 locations for local roads/ tracks/watercourses	The horizontal alignment uses 10 desirable minimum radii but has 4 substandard back to back radii with a 600 radius on the approach to the NR roundabout.. All 10 radii will require superelevation and roll overs which impacts the drainage potentially inducing flat spots and standing water. The vertical profile has gradients between 0.5 and 3% which may help control speeds and braking distances, especially for HGVs. Structures potentially required at 14 locations for local roads/ tracks/watercourses. There will be a requirement for underpass/overbridges to reduce severance. Access to properties will be maintained via the existing road network and potentially no requirement for direct assesses except for road maintenance operations.	4

Engineering Criteria	**Owner**	**Preliminary Assessment of Option :** *Pink Dashed (Route 4)*		
		Quantitative Assessment	**Qualitative Assessment**	**Score**
Drainage (carriageway drainage, crossing of watercourses, specific drainage requirements through high vulnerability areas).	Atkins		A full road drainage system with attenuation and interceptors will be required with outfalls to the local watercourse network. There is potentially 1 watercourse to be crossed. Circa. 100% of the route crosses Extreme/High Groundwater vulnerability.	1
Construction (Comparative ease of construction and Traffic Management).	Atkins	Approx. 70% off-line and 30% on-line with 7 local roads and 3 significant private access affected	As the route is 70% off-line the ease of constructability for the mainline will be good with minor traffic management required at the local roads and the New Ross and Waterford Bypass roundabouts at either end of the scheme. This scheme is 0.5km east and west of the existing N25 and the construction of the connection from the proposed N25 to the existing N25 may require existing narrow secondary roads to be upgraded. These roads have low traffic volumes but it will impact existing users and adjacent property owners.	4
Comparative Service Conflicts (electricity, telecommunications, gas, broadband, cable TV, water, wastewater etc.).	Atkins	Off line alignment crosses 2 HV O/H powerlines, minimum impact to other utilities off line and requirement for new services and service connections. On-line section will impact existing services where present.	This corridor impacts two high voltage power lines and potentially impacts local telecom, water and possibly broadband utilities. There will be a requirement to provide services along the proposed route with connections to the existing networks given the location of the proposed corridor.	2
Comparisons on Land & Property (land take, land severance, land use, residential acquisitions, and accommodation works requirements).	Atkins	There are 143 No. properties (B1 - 5, B2 - 14, B3 - 85, B4 - 39) potentially impacted within the corridor. 101 residentail, 6 Commercial Residential, 11 Commercial, 4 agricultural, 12 agricultural/ residential, 3 Private storage, 6 unknown	This corridor impacts 143 properties, 70% are residential, 12% commercial and 11% agricultural. The majority of the properties affected are in beyond a 100m but may impacted by earthwork slopes, land acquisition and severance	2
				33.00

Engineering Criteria	**Owner**	**Preliminary Assessment of Option :** *Orange Dashed (Route 6)*		
		Quantitative Assessment	**Qualitative Assessment**	**Score**
Traffic Assessment & Route Cross-section.	Atkins	12.1km	This route is considered one of the longer options and is approximately 0.5 to 2km west of the original alignment.	2
Technical Standards (DMRB, Minimum Horizontal Radii, Maximum Vertical Gradients, Relaxations, Departures)	Atkins	Possible departure in horizontal radius on approach to New Ross roundabout (mainline matching existing to avoid SAC). Possible departures/relaxations at access and junctions. 10 Horizontal radii - 1 No. 950, 1440, 2500 and 7 No. 1020 and vertical curves above desirable minimum with 1.53km with 4% gradient.	The alignment has 10 horizontal radii with 2 sections with back to back curves connected by short lengths to avoid constraints The 2500 radius will nt require superelevation but all 9 other radii will require superelevation. Vertical radii are desirable minimum or above and gradients are between 0.5 and 4.0%. Potentially 13% of the alignment is at 4% due to the hilly terrain and and one horizontal curve is above 2040 and the remaining 9 require superelevation.	3
Principal Junctions and Interchanges, Access Control and interaction with Existing Road Network	Atkins	4 No. junctions - 2 at grade roundabout junctions at the Waterford and New Ross tie-ins, a grade separated junction at Ballyrahan and a left/in left/out junction where the off-line meets the on-line section of the existing N25. Upgrade of existing roads to provide connectivity to existing N25 and local road network.	This scheme is mainly off-line and as a result the existing properties can be a serviced by the current road network thus limiting direct access onto the mainline. The on-line section will potentially require an extra junction where the proposed route connects to the existing N25 alignment. Access to the proposed N25 will be provided at either end of the scheme and via a grade separated junction mid-way. The existing N25 will be declassified and provide a high standard of regional road.	4
Structures (River, Road & Rail bridges, culverts, underpasses and other structures, clearances and headroom).	Atkins	Impacts 8 Local Roads, 2 significant private access tracks, 2 significant waterway	Within the corridor the proposed scheme could potentially impact 8 Local Roads, 2 access trsacks and 2 significant watercourses. As this corridor crosses many property boundaries a number of underpasses/ accommodation bridges will be required to facilitate residential, commercial and agricultural operations and mitigate against severance.	3
Geology (underlying ground conditions, sensitive areas / areas of poor ground including karst, caves, peat etc.)	Atkins	The southern end of the route is underlain by a linear 300m length deposit of lacustrine sediments. There are three deposits of alluvium in the central and northern sections. Scattered outcrops along the route with two signififcant rock exposures along the central section where the route encouters two hills (Coolnaleen). Topography is relatively level from southern end, and rises from 70m to 120m elevation over a hill along the central section. Elevation remains at 120m to 130m along the central section, then rises to 140m to 160m. Elevation driops 140m to 110m towards where the route turns east with a gradual fall in elevation towards the northern end.	Soft ground could be an issue where a large lacustrian deposit (~300m length) is located at the southern end of the route. Three localised deposits of alluvium are less of an issue however would need to deleneate the vertical and lateral extents of any soft ground by ground intrusive methods (CP borehoels and DCPs). The route encounters occasional localised bedrock outcrops 50m to 350m in length.	5
Groundwater (aquifers, springs, wells and their vulnerability to major earthworks).	Atkins	N/A. Acccounted for in Environment Section under Route 6. Refer to section Water Quality, Geology and Hydrogeology	N/A. Acccounted for in Environment Section under Route 6. Refer to section Water Quality, Geology and Hydrogeology	
Earthworks (Cut and Fill volumes, comparative earthworks balance, maximum depth of cuttings and height of embankments)	Atkins	20m cut / 26 embankment 1584516 Cu/m Cut 2464056 Cu/m Fill	The embankment and fill areas are high and over moderate lengths. These heights could locally increase to provide clearance to underpasses/ accommoation bridges	3
Road Safety Impact Assessment (Assessment of Route Options).	Atkins	Alignment has 2 sections with reverse curve with a short length connecting the curves. Structures at 12 locations for local roads/ tracks/waterways.	The horizontal alignment uses 10 desirable minimum radii and has 2 substandard back to back radii with short conections. The 2500 radius wil not require superelevation but 9 of the 10 radii will require superelevation and roll overs which impacts the drainage potentially inducing flat spots and standing water. The vertical profile has gradients between 0.5 and 4% which may induce high speeds and impact braking distances, especially for HGVs. Structures potentially required at 14 locations for local roads/ tracks/watercourses. There will be a requirement for underpass/overbridges to reduce severance. Access to properties will be maintained via the existing road network and potentially no requirement for direct assesses except for road maintenance operations.	4

Engineering Criteria	**Owner**	**Preliminary Assessment of Option :** *Orange Dashed (Route 6)*		
		Quantitative Assessment	**Qualitative Assessment**	**Score**
Drainage (carriageway drainage, crossing of watercourses, specific drainage requirements through high vulnerability areas).	Atkins		A full road drainage system with attenuation and interceptors will be required with outfalls to the local watercourse network. There is potentially 1 watercourse to be crossed. Circa. 82% of the route crosses Extreme/High Groundwater vulnerability.	4
Construction (Comparative ease of construction and Traffic Management).	Atkins	Fully off-line with 8 local roads and 2 significant private access affected	As the route is off-line the ease of constructability for the mainline will be good with minor traffic management required at the local roads and the New Ross and Waterford Bypass roundabouts at either end of the scheme. This scheme is a significant distance to the west of the existing N25 and the construction of the connection from the proposed N25 to the existing N25 may require existing narrow secondary roads to be upgraded. These roads have low traffic volumes but it will impact existing users and adjacent property owners.	4
Comparative Service Conflicts (electricity, telecommunications, gas, broadband, cable TV, water, wastewater etc.).	Atkins	Off line alignment crosses 2 HV O/H powerlines, minimum impact to other utilities off line and requirement for new services and service connections. On-line section will impact existing services where present.	This corridor impacts two high voltage power lines and potentially impacts local telecom, water and possibly broadband utilities. There will be a requirement to provide services along the proposed route with connections to the existing networks given the location of the proposed corridor.	2
Comparisons on Land & Property (land take, land severance, land use, residential acquisitions, and accommodation works requirements).	Atkins	There are 88 No. properties (B1 - 1, B2 - 8, B3 - 36, B4 - 43) potentially impacted within the corridor. 62 residentail, 5 Commercial Residential, 2 Commercial, 4 agricultural, 9 agricultural/ residential, 0 Private storage, 6 unknown	This corridor impacts 88 properties, 70% are residential, 8% commercial and 15% agricultural. The majority of the properties affected are beyond a 100m but may impacted by earthwork slopes, land acquisition and severance	5
				39.00

Environmental Criteria	**Owner**	**Preliminary Assessment of Option :** *Purple - Route A* - 11.5km		
		Quantitative Assessment	**Qualitative Assessment**	**Score**
Human Beings including compatibility with development policy	Coakley O'Neill	Route traverses a site where planning permission for a dwelling was recently granted, and a site which is the subject of a current planning application for a dwelling. The route traverses 1 National Monument. The proposed route is within approximately 50-100m of 7 dwellings.	The proposed route is located outside the area designated to be kept free from development for the provision of the realigned N25 as per Figure 11.1 of the County Development Plan 2014-2020. However, there is not a specific policy/objective outlined in the County Development Plan which states that routes will need to be within this defined corridor. In terms of planning designations, it is noted that this route appears to traverse a National Monument included on the Record of Monuments and Places (Reference KK041-20). The Planning Authority have strong policies in place to protect such sites as outlined in Objective 8I of the Plan. There are 2 significant constraints to the development of this route having regard to current and permitted planning applications. Firstly, the route appears to dissect a landholding where planning permission was granted for a dwelling under application register reference 18689. In addition, a new planning application (Register reference 2010) has been lodged with Kilkenny County Council, seeking permission for a dwelling house. The location of this permitted and proposed dwellings along the subject route is likely to have significant implications in terms of objections to the development in the planning process, if this route is progressed past this preliminary assessment stage. It is further noted that the proposed route comes within 50m - 100m of 7 existing dwellings and on this basis, objections are on the grounds of noise impact, air quality, and construction impacts etc. This is one of just 3 of the proposed routes that does not traverse a Special Area of Conservation or a proposed Natural Heritage Area. Having regard to the presence of a permitted dwellings, and a valid planning application seeking permission for a new dwelling along	2
Flora & Fauna (comparative impact on designated sites/species and other areas of national, regional or local ecological value).	Atkins	Negatively impacts the following; • 1 County Environmentally Sensitive Area (ESA) • 3 High Local ESA • 2 Low Local ESA • 3 Watercourses	This route is considered one of the longer options and is approximately 1.5 to 2km west of the original alignment. The route skims the edge of the River Barrow And River Nore Special Area of Conservation (SAC) in a number of places as it passes to the north, with no direct impact to Special Protection Areas, Natural Heritage Areas (NHAs) or Proposed Natural Heritage Areas (pNHAs) predicted. This route negatively impacts the northern half of ESA-1 (Ballybraghy); a site of county importance. Includes area of WN6 wet woodland. Significant Impacts to 3 sites of high local importance (i.e. ESA-4, 5 & 19). Areas of WN6 recorded within all 3. Significant Impacts to 1 site of low local importance (i.e. ESA-6); moderate impact to edge of one further site (ESA-14). The route traverses 3 crossings from Barrow to Nore and 0 at Suir.	3
Water Quality (comparative impact on watercourses, water supplies and aquatic ecology)	Atkins	Traversal of 3 un-named watercourses and 2 river catchments.	Route crosses two river catchments i.e. the Suir and Nore. The route crosses three un-named streams (within the Nore catchment) which eventually flow to the River Barrow. The River Barrow is part of the River Barrow and River Nore Special Area of Conservation (SAC). A small localised point within the study area has been identified to be at potential risk of flooding located at Slieverue, to the south west of the Luffany roundabout.	5
Geology & Hydrogeology (comparative impact on vulnerable rocks and soils, aquifers and wells of national, regional or local importance.	Atkins	6 Wells/boreholes identified within 300m of route. Route crosses the following aquifers: • 2 Regionally Important; • 5 Locally Important; • 1 Poor. Approximately 56% (6.6km) of the route crosses Extreme/High Groundwater Vulnerability.	A number of datasets have been examined and the following features have not been identified in proximity to the study area: geological heritage sites; waste facilities; active quarries or pits; mines; major areas of peat; or karst features. 2 isolated pockets of alluvium are intersected by the route in the north which could give rise to potential soft ground requiring excavation. The general bedrock geology of the area is a slate, sandstone, mudstone, greywacke conglomerate. Glenmore Source Protection Zone located approximately 0.8km north of route. Groundwater will be vulnerable to contamination and potential impact on groundwater flow can be expected in area of deep excavations.	3
Air Quality and Climate (existing air quality environment and number of sensitive receptors).	AWN	There are no sensitive receptors within 50m of route.	A review of Environmental Protection Agency (EPA) monitoring data for similar Zone D locations suggests that there is a good level of air quality in the study area. A conservative background concentration of 5 ug/m^3 for NO_2 has been estimated with a background of 10 ug/m^3 estimated for PM_{10}. The existing national routes are considered the primary sources of air pollution in the area. As no receptors are impacted by this route option it is considered positive in terms of air quality.	7
Climate	AWN		Longer routes will require greater amounts of material for construction and will have high Greenhouse Gas (GHG) emissions. Longer journeys will also produce higher GHG emissions. All routes are ranked 3 in terms of climate as there is no significant difference between route options.	3

Environmental Criteria	**Owner**	**Preliminary Assessment of Option :** *Purple - Route A* - 11.5km		
		Quantitative Assessment	**Qualitative Assessment**	**Score**
Noise (identification of sensitive receptors, characteristics of the prevailing noise climate and opportunities for noise mitigation).	AWN	Passive Infrared (PIR) score = 94 58 properties, excluding agriculture, are within 300m of the new roads. None of these properties are within 50m and 8 properties are within 100m.	Expected noise climate to be quiet in the rural area and the introduction of a 100km/h road would significantly change the noise environment. However, due to the low PIR readings, the noise mitigation at the 7 properties within 100m distance may be possible and would make it a marginally more preferable route to the dark blue dashed (PR3) and orange dashed route (PR6),which have a marginally higher PIR in the 0-100m bands.	3
Landscape & Visual (comparative impact on landscape character, topography, vegetation, natural features, views and obstructions)	Eamonn Byrne	N/A	Route travels in close proximity to the lower slopes and wooded vegetation of the system of narrow stream valleys north and west of Glenmore.travels too close to this intimate valley system especially at Mullennahone). Significant adverse effects on valley system. Immediately east of Ardbeg this route travels close to a prominent ridge of high ground at Ballinclare. From south of Ardbeg towards Nicholastown the route travels across the steep side slopes of a locally prominent ridge of higher ground. The side slopes are integral to the ridge and provide large scale views over the surrounding countryside. The side slopes of this ridge are visible from a wide surrounding area extending far to the west, and the route in this location may be widely visible. Significant adverse effects on side slopes of ridge of high ground from Ardbeg to Nicholstown. Alignment of large section of route is very straight (approximately 5km), this would be at odds with the predominately curved pattern of the landscape and existing routes.	1
Material Assets (comparative impact on utilities, properties, quarries, transport and infrastructure, etc.).	Atkins	Property counts within 300m of the Route include:. Residential: 45 Commerical (Residential): 1 Commerical: 2 Agriculture: 5 Agriculture (Residential): 7 Private Storage: 0 Unknown: 3 **Total: 63** Route crosses 3 high voltage overhead powerlines at the southern end of the scheme.	Route crosses a number of secondary and minor roads. This route does not cross the existing N25. No active quarries or pits have been identified in proximity to the study area. Potential impacts to other existing utilies such as telecom, broadband etc and there will be a requirement for new services along the scheme and connections to existing.	4
Agriculture (comparative impact on farm operations, farm types, livestock and other agri-business).	Philip Farrelly	Landtake of 24.99 ha, impact on approximately 54 holdings and 9 dairy farms.	Good quality agricultural land, majority of the route impacting on grassland, and some tillage to the northern end of the route. Small area of forestry. The route is offline and will result in severance to land holdings.	1
Archaeology & Cultural Heritage (comparative impact on Recorded Monuments and Places, areas of archaeological potential, Architectural Heritage, and any other areas of cultural significance as per TII Guidelines for the Assessment of Archaeological Heritage Impacts of National Road Schemes and TII Guidelines for the Assessment of Architectural Heritage Impacts of National Road Schemes).	Moore Archaeology	Route could directly impact 1 known or potential archaeological, architectural or cultural heritage sites or features. The route crosses 18 townland boundaries which may be of archaeological significance.	This route has a potential impact on the setting of 4 cultural heritage sites.	4
Human Health - Methodology to be agreed - similar to what in constraints report but v high level	Atkins	Passive Infrared (PIR) score = 94 58 properties (excluding agriculture) are within 300m of the new roads. None of these properties are within 50m and 8 properties are within 100m.	Expected noise climate to be quiet in the rural area and the introduction of a 100km/h road would significantly change the noise environment. However, due to the low PIR readings, the noise mitigation at the 7 properties within 100m distance may be possible and would make it a marginally more preferable route to the dark blue dashed (PR3) and orange dashed route (PR6),which have a marginally higher PIR in the 0-100m bands.	3

Environmental Criteria	**Owner**	**Preliminary Assessment of Option :** *Grey - Route B* **-** 10.4km		
		Quantitative Assessment	**Qualitative Assessment**	**Score**
Human Beings including compatibility with development policy	Coakley O'Neill	Route traverses a site where planning permission for a dwelling was recently granted, and a site which is the subject of a current planning application for a dwelling. The route traverses 1 National Monument. The route dissects an existing dwelling and the access to an existing farm holding. There are 4 dwellings within 50-100 metres of the subject route.	The proposed route is located outside the area designated to be kept free from development for the provision of the realigned N25 as per Figure 11.1 of the County Development Plan 2014-2020. However, there is not a specific policy/objective outlined in the County Development Plan which states that routes will need to be within this defined corridor. In terms of impacts on human beings, it is noted that the proposed route dissects an existing dwelling at the junction of L3406-15 and L3406-28, as well as dissecting an access to a farm holding on the L7466-40. In terms of planning designations, this route appears to traverse a National Monument included on the Record of Monuments and Places (Reference KK041-20). The Planning Authority have strong policies to protect such sites as outlined in Objective 8I of the Plan. There are 2 significant constraints to the development of this route having regard to current and permitted planning applications. Firstly, the route appears to dissect a landholding where planning permission was granted for a dwelling under application register reference 18689. In addition, a new planning application (Register reference 2010) has been lodged with Kilkenny County Council, seeking permission for a dwelling house. The location of this permitted and proposed dwellings along the subject route is likely to have significant implications in terms of objections to the development in the planning process, if this route is progressed past this preliminary assessment stage. There are only 4 dwellings located within approximately 50m - 100m of the route. This is one of 3 of the proposed routes that does not traverse a Special Area of Conservation or a proposed Natural	1
Flora & Fauna (comparative impact on designated sites/species and other areas of national, regional or local ecological value).	Atkins	Route runs close to 1 potential Natural Heritage Areas Negatively impacts the following; • 1 County Environmentally Sensitive Area (ESA) • 1 Low Local ESA • 1 Watercourse	This route is considered one of the longer options and is approximately 0.5 to 1.5km west of the original alignment. The route crosses the Special Area of Conservation (SAC) near Glenmore, with no direct impact to Special Protection Areas (SPAs) predicted. No impact to Natural Heritage Areas (NHAs) or Proposed Natural Heritage Areas (pNHAs) predicted. The route Runs close to Lough Cullin & associated watercourses - possible minor indirect impact. Negatively impacts northern half of ESA-1 (Ballybraghy); a site of county importance. Includes area of WN6 wet woodland. Significant Impacts to 1 site of low local importance (i.e. ESA-18) The route traverses 1 crossing from Barrow to Nore and 0 at Suir.	4
Water Quality (comparative impact on watercourses, water supplies and aquatic ecology)	Atkins	Traversal of 1 un-named watercourses and 2 river catchments.	Route crosses two river catchments i.e. the Suir and Nore, and one un-named stream (within the Nore catchment) which eventually flows to the River Barrow. The River Barrow is part of the River Barrow and River Nore Special Area of Conservation (SAC). No areas of flooding noted in close proximity to option.	6
Geology & Hydrogeology (comparative impact on vulnerable rocks and soils, aquifers and wells of national, regional or local importance.	Atkins	5 Wells/boreholes identified within 300m of route. Route crosses the following aquifers: • 3 Regionally Important; • 3 Locally Important; • 1 Poor. Approximately 80% (8.2km) of the route crosses Extreme/High Groundwater Vulnerability.	A number of datasets have been examined and the following features have not been identified in proximity to the study area: geological heritage sites; waste facilities; active quarries or pits; mines; major areas of peat; or karst features. 2 isolated pockets of alluvium are intersected by the route in the north which could give rise to potential soft ground requiring excavation. The general bedrock geology of the area is a slate, sandstone, mudstone, greywacke conglomerate. Glenmore Source Protection Zone located approximately 1.3km north of route.	2
Air Quality and Climate (existing air quality environment and number of sensitive receptors).	AWN	1 residential property within 50m of route.	A review of Environmental Protection Agency (EPA) monitoring data for similar Zone D locations suggests that there is a good level of air quality in the study area. A conservative background concentration of 5 ug/m^3 for NO_2 has been estimated with a background of 10 ug/m^3 estimated for PM_{10}. The existing national routes are considered the primary sources of air pollution in the area. The sensitive receptor impacted will likely experience an increase in pollutant concentrations as a result of the proposed route.	3
Climate	AWN	N/A	Longer routes will require greater amounts of material for construction and will have high Greenhouse Gas (GHG) emissions. Longer journeys will also produce higher GHG emissions. All routes are ranked 3 in terms of climate as there is no significant difference between route options	3

Environmental Criteria	**Owner**	**Preliminary Assessment of Option :** *Grey - Route B* **-** 10.4km		
		Quantitative Assessment	**Qualitative Assessment**	**Score**
Noise (identification of sensitive receptors, characteristics of the prevailing noise climate and opportunities for noise mitigation).	AWN	Passive Infrared (PIR) score = 142 90 properties (excluding agriculture) are within 300m of the new roads (grey). One of these properties is within 50m and 6 properties are within 50-100m.	Follows similar lines to blue route (D) until Robinstown, then is at a reasonable distance to properties at Ballinclare before it then follows similar route to turquoise route (P), heading further west through rural areas. Further distance to properties than the turquoise route (P) from Atateenmore to Luffany west. Expected noise climate in some sections to be a rural environment and introduction of a busy 100km/h road to be large disruption to the smaller number of houses in the area. Preferable over turquoise route (P) due to the lower number of properties affected. Possible mitigation where required for new alignment passing to rear of properties currently influenced by the existing route at Glenmore. Favourable topography from Atateenmore to Luffany west which is not evident	3
Landscape & Visual (comparative impact on landscape character, topography, vegetation, natural features, views and obstructions)	Eamonn Byrne	N/A	Route will cross and affect some woodland in narrow stream valley at Glenmore. Travels in the valley immediately adjacent to the north west of Glenmore village. Likely to have significant adverse visual effects on receptors (people) at Glenmore village. Will adversely affect the setting of Glenmore village. Route crosses through a primary ridgeline (Kilkenny Landscape Character Assessment) at Ballinclare the across side slopes of this ridge towards Nicholstown. Significant adverse effects on this ridgeline. From south of Ardbeg towards Nicholastown the route travels across the steep side slopes of a locally prominent ridge of higher ground. The side slopes are integral to the ridge and provide large scale views over the surrounding countryside. The side slopes of this ridge are visible from a wide surrounding area extending far to the west, and the route in this location may be widely visible. Significant adverse effects on side slopes of ridge of high ground from Ardbeg to Nicholstown. South of Nicholastown the route will travel on lower lands, however it travels close to an existing local road and adjacent dwellings, which may lead to some adverse visual effects on local dwellings.	1
Material Assets (comparative impact on utilities, properties, quarries, transport and infrastructure, etc.).	Atkins	Property counts within 300m of the Route include: Residential: 64 Commerical (Residential): 3 Commerical: 7 Agriculture: 7 Agriculture (Residential): 13 Private Storage: 0 Unknown: 3 **Total: 97** Route crosses 3 high voltage overhead powerlines and at grade junction on the Waterford Bypass it impacts an additional high voltage overhead cable.	Route crosses a number of secondary and minor roads but does not cross the existing N25. No active quarries or pits have been identified in proximity to the study area. Potential impacts to other existing utilies such as telecom, broadband etc and there will be a requirement for new services along the scheme and connections to existing.	4
Agriculture (comparative impact on farm operations, farm types, livestock and other agri-business).	Philip Farrelly	Landtake of 23ha, impact on approximately 53 holdings, 9 dairy farms, and one equine holding.	Good quality agricultural land, some medium quality land at the southern end of the route. A majority of the route impacting on grassland, and some tillage. The route is offline and will result in severance to land holdings.	2
Archaeology & Cultural Heritage (comparative impact on Recorded Monuments and Places, areas of archaeological potential, Architectural Heritage, and any other areas of cultural significance as per TII Guidelines for the Assessment of Archaeological Heritage Impacts of National Road Schemes and TII Guidelines for the Assessment of Architectural Heritage Impacts of National Road Schemes).	Moore Archaeology	Route could directly impact 1 known or potential archaeological, architectural or cultural heritage sites or features. The route also crosses 11 townland boundaries which may be of archaeological significance.	This route has a potential impact on the setting of 1 cultural heritage sites.	4
Human Health - Methodology to be agreed - similar to what in constraints report but v high level	Atkins	Passive Infrared (PIR) score = 142 90 properties (excluding agriculture) are within 300m of the new roads (grey). One of these properties is within 50m and 6 properties are within 50-100m.	Follows similar lines to blue route (D) until Robinstown, then is at a reasonable distance to properties at Ballinclare before it then follows similar route to turquoise route (P), heading further west through rural areas. Further distance to properties than the turquoise route (P) from Atateenmore to Luffany west. Expected noise climate in some sections to be a rural environment and introduction of a busy 100km road to be large disruption to the smaller number of houses in the area. Preferable over turquoise route (P) due to the lower number of properties affected. Possible mitigation where required for new alignment passing to rear of properties currently influenced by the existing route at Glenmore. Favourable topography from Atateenmore to Luffany west which is not evident for turquoise route (P).	3

Environmental Criteria	**Owner**	**Preliminary Assessment of Option :** *Blue - Route D* - 10.1km		
		Quantitative Assessment	**Qualitative Assessment**	**Score**
Human Beings including compatibility with development policy	Coakley O'Neill	Within 50-100 metres of 6 existing dwellings. The route traverses the River Barrow and River Nore Special Area of Conservation (SAC).	The proposed route is largely located within the area designated to be kept from development for the provision of the realigned N25 as per Figure 11.1 of the County Development Plan 2014-2020. However, there is not a specific policy/objective outlined in the County Development Plan which states that routes will need to be within this defined corridor. The proposed route is located within 50-100 metres of 6 dwellings, on this basis, objections are likely on the grounds of noise impact, air quality, and construction impacts etc. In addition, the site traverses the River Barrow and River Nore Special Area of Conservation. The County Development Plan seeks their protection under Object 8B and 8C of the Plan. Overall and considering the above, the proposed route is considered to be moderately positive, as the potential for negative impacts is significantly less than the alternative routes proposed.	6
Flora & Fauna (comparative impact on designated sites/species and other areas of national, regional or local ecological value).	Atkins	Negatively impacts the following; • 1 County Environmentally Sensitive Area (ESA) • 5 High Local ESA • 2 Low Local ESA • 1 Watercourse	This route is considered one of the longer options and is approximately 0.5km west of the original alignment. The route crosses the Special Area of Conservation (SAC) near Glenmore with no direct impact to Special Protection Areas (SPAs), Natural Herital Areas (NHAs) or Potential Natural Heritage Areas (pNHAs) predicted. Negatively northern half of ESA-1 (Ballybraghy); a site of county importance. Includes area of WN6 wet woodland. Significant impacts to 2 sites of high local importance (i.e. ESA-11 & 19). Areas of WN6 recorded within both. Significant impacts to ESA-10 and ESA-14; minor impacts to ESA-9 and negligible impacts to ESA-12. The route traverses 1 crossing from Barow to Nore and 0 at Suir.	4
Water Quality (comparative impact on watercourses, water supplies and aquatic ecology)	Atkins	Traversal of 1 un-named watercourses and 2 river catchments.	The route crosses two river catchments i.e. the Suir and Nore, and crosses one un-named stream (within the Nore catchment) which eventually flows to the River Barrow. The River Barrow is part of the River Barrow and River Nore Special Area of Conservation (SAC). A small localised point within the study area has been identified to be at potential risk of flooding located at Slieverue, to the south west of the Luffany roundabout.	5
Geology & Hydrogeology (comparative impact on vulnerable rocks and soils, aquifers and wells of national, regional or local importance.	Atkins	6 Wells/boreholes identified within 300m of route. Route crosses the following aquifers: • 1 Regionally Important; • 3 Locally Important; • 1 Poor. Approximately 82% (8.3km) of the route crosses Extreme/High Groundwater Vulnerability.	A number of datasets have been examined and the following features have not been identified in proximity to the study area: geological heritage sites; waste facilities; active quarries or pits; mines; major areas of peat; or karst features. 3 isolated pockets of alluvium are intersected by the route. 1 in the central region and 2 in the north which could give rise to potential soft ground requiring excavation. The general bedrock geology of the area is a slate, sandstone, greywacke conglomerate. Glenmore Source Protection Zone located approximately 1.3km north of route. Groundwater will be vulnerable to contamination and potential impact on groundwater flow can be expected in area of deep excavations.	2
Air Quality and Climate (existing air quality environment and number of sensitive receptors).	AWN	6 sensitive receptors within 50m of route.	A review of Environmental Protection Agency (EPA) monitoring data for similar Zone D locations suggests that there is a good level of air quality in the study area. A conservative background concentration of 5 ug/m^3 for NO_2 has been estimated with a background of 10 ug/m^3 estimated for PM_{10}. The existing national routes are considered the primary sources of air pollution in the area. The sensitive receptors impacted will likely experience an increase in pollutant concentrations as a result of the proposed route.	3
Climate	AWN	N/A	Longer routes will require greater amounts of material for construction and will have high Greenhouse Gas (GHG) emissions. Longer journeys will also produce higher GHG emissions. All routes are ranked 3 in terms of climate as there is no significant difference between route options.	3

Environmental Criteria	**Owner**	**Preliminary Assessment of Option :** *Blue - Route D* - 10.1km		
		Quantitative Assessment	**Qualitative Assessment**	**Score**
Noise (identification of sensitive receptors, characteristics of the prevailing noise climate and opportunities for noise mitigation).	AWN	Passive Infrared (PIR) score = 203 116 properties (excluding agriculture) are within 300m of the new roads (blue). 6 of these properties are within 50m and 14 properties are within 50-100m.	Follows similar alignment to grey route (B) route until Robinstown when it moves closer to dark blue (G) and cyan dashed (PR2) routes until Ballinclare i.e. it passes to the rear of the existing routes. Potential for mitigation to rear of properties along existing route. Passes closer to properties at Atateenmore than purple route (A) with a higher PIR. Marginally higher PIR than brown route (F). Moves closer to a large number of properties from Atateenmore to Luffany. Possibility of favourable topography for mitigation however it would be extended over a long section of the route as properties are not in clusters.	2
Landscape & Visual (comparative impact on landscape character, topography, vegetation, natural features, views and obstructions)	Eamonn Byrne	N/A	The route will cross and affect some woodland in narrow stream valley at Glenmore. Travels in the valley immediately adjacent to the north west of Glenmore village. Likely to have significant adverse visual effects on receptors (people) at Glenmore village. Will adversely affect the setting of Glenmore village. Travels close to and parallel to existing N25 up to Davidstown , which limits the effects of the route on surrounding wider landscape. However, at Davidstown the route climbs and cuts through a principal ridgeline towards Treanaree (Kilkenny Landscape Character Assessment). Significant adverse effects on this ridgeline.	1
Material Assets (comparative impact on utilities, properties, quarries, transport and infrastructure, etc.).	Atkins	Property counts within 300m of the Route include: Residential: 79 Commerical (Residential): 6 Commerical: 12 Agriculture: 4 Agriculture (Residential): 16 Private Storage: 0 Unknown: 3 **Total: 120** Route crosses 3 high voltage overhead powerlines.	The route crosses a number of secondary and minor roads. This route does not cross the existing N25. No active quarries or pits have been identified in proximity to the study area. Potential impacts to local telecom, water and possibly broadband utilities. There will be a requirement to provide services along the proposed route with connections to the existing networks.	4
Agriculture (comparative impact on farm operations, farm types, livestock and other agri-business).	Philip Farrelly	Landtake of 22 ha, impact on approximately 38 holdings 6 dairy farms, in close proximity to 1 farmyard.	Good quality agricultural land. A majority of the route impacting on grassland, some tillage, and some forestry in the southern end of the route. The route is offline and will result in severance to land holdings.	2
Archaeology & Cultural Heritage (comparative impact on Recorded Monuments and Places, areas of archaeological potential, Architectural Heritage, and any other areas of cultural significance as per TII Guidelines for the Assessment of Archaeological Heritage Impacts of National Road Schemes and TII Guidelines for the Assessment of Architectural Heritage Impacts of National Road Schemes).	Moore Archaeology	The route could directly impact 4 known or potential archaeological, architectural or cultural heritage sites or features. The route also crosses 14 townland boundaries which may be of archaeological significance.	This route has a potential impact on the setting of 4 cultural heritage sites.	2
Human Health - Methodology to be agreed - similar to what in constraints report but v high level	Atkins	Passive Infrared (PIR) score = 203 116 properties (excluding agriculture) are within 300m of the new roads (blue). 6 of these properties are within 50m and 14 properties are within 50-100m.	Follows similar alignment to grey route (B) until Robinstown when it moves closer to dark blue (G) and cyan dashed (PR2) routes until Ballinclare i.e. it passes to the rear of the existing routes. Potential for mitigation to rear of properties along existing route. Passes closer to properties at Atateenmore than purple route (A) with a higher PIR. Marginally higher PIR than brown route (F). Moves closer to a large number of properties from Atateenmore to Luffany. Possibility of favourable topography for mitigation however it would be extended over a long section of the route as properties are not in clusters.	2

Environmental Criteria	**Owner**	**Preliminary Assessment of Option :** *Brown - Route F* - 10.0km		
		Quantitative Assessment	**Qualitative Assessment**	**Score**
Human Beings including compatibility with development policy	Coakley O'Neill	Within 50-100 metres of 10 existing dwellings. The route traverses the River Barrow and River Nore Special Area fo Conservation (SAC). Route appears to traverse Glenmore GAA club.	The proposed route is largely within the area designated to be kept from development for the provision of the realigned N25 as per Figure 11.1 of the County Development Plan 2014-2020. However, there is not a specific policy/objective outlined in the County Development Plan which states that routes will need to be within this defined corridor. In terms of impact on human beings, the proposed route appears to traverse the grounds of Glenmore GAA club. Objective 7a of the Plan seeks the preservation and improvement of such facilities and therefore it is unlikely to be supported from a planning perspective. Furthermore, the proposed route comes within 50-100 metres of 10 dwellings along the route and on this basis, objections are on the grounds of noise impact, air quality, and construction impacts etc. The location of these existing dwellings along the subject route is likely to have significant implications in terms of objections to the development in the planning process, if this route is progressed past this preliminary assessment stage. In addition, the site traverses the River Barrow and River Nore Special Area of Conservation. The County Development Plan seeks their protection under Object 8B and 8C of the Plan. Having regard to the route which passes through the Glenmore GAA club grounds, this route could significantly impact on a key recreational facility within the community. On this basis, this route is considered to be majorly negative, as the loss of sports grounds is a key planning issue.	1
Flora & Fauna (comparative impact on designated sites/species and other areas of national, regional or local ecological value).	Atkins	Negatively impacts the following; • 2 High Local Environmentally Sensitive Area (ESA) • 1 Watercourse	This route is considered one of the longer options and is approximately 0.5km and 1km west of the original alignment. The route crosses the Special Area of Conservation (SAC) near Glenmore with no direct impact to Special Protected Areas (SPAs), Natural Heritage Areas (NHAs) or Proposed Natural Heritage Areas (pNHAs) predicted. Entirety of ESA-1 (Ballybraghy) is located within the study corridor for the route; a site of county importance which includes the area of WN6 wet woodland. Significant impacts to 2 sites of high local importance (i.e. ESA-11 & 19). Areas of WN6 recorded within both. Significant impacts to ESA-10. Likley that neglible impacts to ESA-12 and ESA-15 can be avoided at detailed design stage. The route traverses 1 crossing from Barrow to Nore and 0 at Suir.	4
Water Quality (comparative impact on watercourses, water supplies and aquatic ecology)	Atkins	Traversal of 1 un-named watercourse and 2 river catchments.	The route crosses two river catchments i.e. the Suir and Nore, and crosses one un-named stream (within the Nore catchment) which eventually flows to the River Barrow. The River Barrow is part of the River Barrow and River Nore Special Area of Conservation (SAC). A small localised point within the study area has been identified to be at potential risk of flooding located at Slieverue, to the south west of the Luffany roundabout.	5
Geology & Hydrogeology (comparative impact on vulnerable rocks and soils, aquifers and wells of national, regional or local importance.	Atkins	3 Wells/boreholes identified within 300m of route. Route crosses the following aquifers: • 0 Regionally Important; • 3 Locally Important; • 1 Poor. Approximately 92% (9.2km) of the route crosses Extreme/High Groundwater Vulnerability.	A number of datasets have been examined and the following features have not been identified in proximity to the study area: geological heritage sites; waste facilities; active quarries or pits; mines; major areas of peat; or karst features. 2 isolated pockets of alluvium are intersected by the route in the north which could give rise to potential soft ground requiring excavation. The general bedrock geology of the area is a slate, sandstone, greywacke conglomerate. Glenmore Source Protection Zone located approximately 1.4km north of route. Groundwater will be vulnerable to contamination and potential impact on groundwater flow can be expected in area of deep excavations.	2
Air Quality and Climate (existing air quality environment and number of sensitive receptors).	AWN	5 sensitive receptors within 50m of route.	A review of Environmental Protection Agency (EPA) monitoring data for similar Zone D locations suggests that there is a good level of air quality in the study area. A conservative background concentration of 5 ug/m^3 for NO_2 has been estimated with a background of 10 ug/m^3 estimated for PM_{10}. The existing national routes are considered the primary sources of air pollution in the area. The sensitive receptors impacted will likely experience an increase in pollutant concentrations as a result of the proposed route.	3
Climate	AWN	N/A	Longer routes will require greater amounts of material for construction and will have high Greenhouse Gas (GHG) emissions. Longer journeys will also produce higher GHG emissions. All routes are ranked 3 in terms of climate as there is no significant difference between route options	3

Environmental Criteria	**Owner**	**Preliminary Assessment of Option :** *Brown - Route F* - 10.0km		
		Quantitative Assessment	**Qualitative Assessment**	**Score**
Noise (identification of sensitive receptors, characteristics of the prevailing noise climate and opportunities for noise mitigation).	AWN	Passive Infrared (PIR) score = 189 112 properties, excluding agriculture, are within 300m of the new roads (brown). 5 of these properties are within 50m and 13 properties are within 50-100m.	Closer to properties at Carpagh than grey route (B) and blue (D) routes. Passes in closer proximity to a cluster of properties at Ballynaraha (~13) than grey route (B), dark blue (G) and cyan dashed route (PR2) routes. Passes closer to properties at Davidstown than cyan dashed and pink dashed routes. Rural noise climate with potentially unsuitable topography between Grogan and Treanaree, making mitigation a challenge.	2
Landscape & Visual (comparative impact on landscape character, topography, vegetation, natural features, views and obstructions)	Eamonn Byrne	N/A	Route will cross and affect some woodland in narrow stream valley at Glenmore. Travels in the valley immediately adjacent to the north west of Glenmore village. Likely to have significant adverse visual effects on receptors (people) at Glenmore village. Will adversely affect the setting of Glenmore village. Route will have significant adverse effects on a local hill at Robinstown which is visually prominent in the local landscape. The route almost travels through the summit. There would be significant adverse effects as the route crosses through a principal ridgeline (Kilkenny Landscape Character Assessment) at Davidstown towards Treanaree.	1
Material Assets (comparative impact on utilities, properties, quarries, transport and infrastructure, etc.).	Atkins	Property counts within 300m of the Route include: • Residential: 81 • Commerical (Residential): 5 • Commerical: 7 • Agriculture: 8 • Agriculture (Residential): 15 • Private Storage: 1 • Unknown: 3 Total: 120 Route crosses 3 high voltage overhead powerlines.	The route crosses a number of secondary and minor roads but does not cross the existing N25. No active quarries or pits have been identified in proximity to the study area. Potential impacts to other existing utilies such as telecom, broadband etc and there will be a requirement for new services along the scheme and connections to existing.	4
Agriculture (comparative impact on farm operations, farm types, livestock and other agri-business).	Philip Farrelly	Landtake of 22 ha, impact on approximately 39 holdings 6 dairy farms, 1 equine holding and in close proximity to 3 farmyards.	Good quality agricultural land, majority of the route impacting on grassland, some tillage, and some forestry . The route is offline and will result in severance to land holdings.	2
Archaeology & Cultural Heritage (comparative impact on Recorded Monuments and Places, areas of archaeological potential, Architectural Heritage, and any other areas of cultural significance as per TII Guidelines for the Assessment of Archaeological Heritage Impacts of National Road Schemes and TII Guidelines for the Assessment of Architectural Heritage Impacts of National Road Schemes).	Moore Archaeology	The route could directly impact 2 known or potential archaeological, architectural or cultural heritage sites or features. The route also crosses 12 townland boundaries which may be of archaeological significance.	This route has a potential impact on the setting of 2 cultural heritage sites.	3
Human Health - Methodology to be agreed - similar to what in constraints report but v high level	Atkins	Passive Infrared (PIR) score = 189 112 properties, excluding agriculture, are within 300m of the new roads (brown). 5 of these properties are within 50m and 13 properties are within 50-100m.	Closer to properties at Carpagh than grey route (B) and blue (D) routes. Passes in closer proximity to a cluster of properties at Ballynaraha (~13) than grey route (B), dark blue (G) and cyan dashed route (PR2) routes. Passes closer to properties at Davidstown than cyan dashed and pink dashed routes. Rural noise climate with potentially unsuitable topography between Grogan and Treanaree, making mitigation a challenge.	2

Environmental Criteria	**Owner**	**Preliminary Assessment of Option :** *Dark Blue - Route G* - 9.7km		
		Quantitative Assessment	**Qualitative Assessment**	**Score**
Human Beings including compatibility with development policy	Coakley O'Neill	Within 50m of 3 existing dwellings. The route traverses the River Barrow and River Nore Special Area fo Conservation (SAC).	The proposed route is largely within the area designated to be kept from development for the provision of the realigned N25 as per Figure 11.1 of the County Development Plan 2014-2020. However, there is not a specific policy/objective outlined in the County Development Plan which states that routes will need to be within this defined corridor. The proposed route comes within 50-100 metres of 14 dwellings along the route and on this basis, objections are likely on the grounds of noise impact, air quality, and construction impacts etc. The location of these existing dwellings along the subject route is likely to have significant implications in terms of objections to the development in the planning process, if this route is progressed past this preliminary assessment stage. In addition, the site traverses the River Barrow and River Nore Special Area of Conservation. The County Development Plan seeks their protection under Object 8B and 8C of the Plan. Overall and considering the above, the proposed route is considered to be moderately positive, as the potential for negative impacts is significantly less than the alternative routes proposed.	6
Flora & Fauna (comparative impact on designated sites/species and other areas of national, regional or local ecological value).	Atkins	Negatively impacts the following; • 4 High Local Environmentally Sensitive Area (ESA) • 3 Low Local ESA • 1 Watercourse	This route is similar in nature and length to the existing N25 and approximately 0.5km to 1km west of the existing alignment. The route runs through and along a section of Special Area of Conservation (SAC) near Glenmore with no direct impact to Special Protection Areas (SPAs), Natural Heritage Areas (NHAs) or Proposed Natural Heritage Areas (pNHAs) predicted. No direct impact on ESA County level. Significant impacts to 3 sites of high local importance (i.e. ESA-8, 17 & 19). Very minor impacts to 1 further sites of high local importance (i.e. ESA-11). Significant impacts predicted to 2 sites of low local value; to ESA-10 & 12. While very minor impacts to ESA-15 are possible, it is likely that these can be avoided. The route traverses 1 crossing from Barrow to Nore and 0 crossing at Suir.	4
Water Quality (comparative impact on watercourses, water supplies and aquatic ecology)	Atkins	Traversal of 1 un-named watercourses and 2 river catchments.	The route crosses two river catchments i.e. the Suir and Nore, and crosses one un-named stream (within the Nore catchment) which eventually flows to the River Barrow. The River Barrow is part of the River Barrow and River Nore Special Area of Conservation (SAC). A small localised point within the study area has been identified to be at potential risk of flooding located at Slieverue, to the south west of the Luffany roundabout.	5
Geology & Hydrogeology (comparative impact on vulnerable rocks and soils, aquifers and wells of national, regional or local importance.	Atkins	4 Wells/boreholes identified within 300m of route. Route crosses the following aquifers: • 0 Regionally Important; • 2 Locally Important; • 1 Poor. Approximately 97% (9.4km) of the route crosses Extreme/High Groundwater Vulnerability.	A number of datasets have been examined and the following features have not been identified in proximity to the study area: geological heritage sites; waste facilities; active quarries or pits; mines; major areas of peat; or karst features. 1 isolated pocket of alluvium is intersected by the route in the north which could give rise to potential soft ground requiring excavation. The general bedrock geology of the area is a slate, sandstone, greywacke conglomerate. Glenmore Source Protection Zone located approximately 1.8km north west of route. Groundwater will be vulnerable to contamination and potential impact on groundwater flow can be expected in area of deep excavations. .	2
Air Quality and Climate (existing air quality environment and number of sensitive receptors).	AWN	4 sensitive receptors within 50m of route.	A review of Environmental Protection Agency (EPA) monitoring data for similar Zone D locations suggests that there is a good level of air quality in the study area. A conservative background concentration of 5 ug/m^3 for NO_2 has been estimated with a background of 10 ug/m^3 estimated for PM_{10}. The existing national routes are considered the primary sources of air pollution in the area. The sensitive receptors impacted will likely experience an increase in pollutant concentrations as a result of the proposed route.	3
Climate	AWN	N/A	Longer routes will require greater amounts of material for construction and will have high Greenhouse Gas (GHG) emissions. Longer journeys will also produce higher GHG emissions. All routes are ranked 3 in terms of climate as there is no significant difference between route options	3

Environmental Criteria	**Owner**	**Preliminary Assessment of Option :** *Dark Blue - Route G* - 9.7km		
		Quantitative Assessment	**Qualitative Assessment**	**Score**
Noise (identification of sensitive receptors, characteristics of the prevailing noise climate and opportunities for noise mitigation).	AWN	Passive Infrared (PIR) score = 272 139 properties (excluding agriculture) are within 300m of the new roads (dark blue). 4 of these properties are within 50m and 20 properties are within 50-100m.	Route diverts west at a similar distance to the existing route, passing by rear facades of properties to a rural noise environment. Mitigation option to the rear of the facades along the existing alignment with noise reduction at front of facades but higher PIR than cyan dashed route (PR2) at Ballinclare. Mitigation potential due to topography at rear of facades between Davidstown and Cariganurra.	3
Landscape & Visual (comparative impact on landscape character, topography, vegetation, natural features, views and obstructions)	Eamonn Byrne	N/A	Follows the existing N25 alignment to south of Glenmore thus, avoiding effects on Glenmore and narrow stream valleys. From Ballinclare to south of Davidstown the route continues parallel to the existing N25 corridor and travels along the lower side slopes of a ridge of high ground, avoiding the higher contours. At Carriganurra to route crosses through this ridge of high ground and to the west of a local rock outcrop (with cross on top) which is a prominent local landmark.	3
Material Assets (comparative impact on utilities, properties, quarries, transport and infrastructure, etc.).	Atkins	Property counts within 300m of the Route include: Residential: 96 Commerical (Residential): 9 Commerical: 13 Agriculture: 7 Agriculture (Residential): 13 Private Storage: 3 Unknown: 5 **Total: 146** Route crosses 3 high voltage overhead powerlines.	The route crosses a number of secondary and minor roads including the existing N25. The N25 is recorded as the only public transport route through the study area, serviced by the Bus Eireann Route 370. No active quarries or pits have been identified in proximity to the study area. Potential impacts to local telecom, water and possibly broadband utilities. There will be a requirement to provide services along the proposed route with relatively short connections to the existing networks given the location of the proposed corridor.	3
Agriculture (comparative impact on farm operations, farm types, livestock and other agri-business).	Philip Farrelly	Landtake of 21ha, impact on approximately 31 holdings 5 dairy farms, and in close proximity to 1 farmyard.	Good quality agricultural land, majority of the route impacting on grassland, some tillage and some forestry in the southern end of the route. The route is offline and will result in severance to land holdings. However, the route is online in the Northern section and the online section will not cause severance to land holdings.	2
Archaeology & Cultural Heritage (comparative impact on Recorded Monuments and Places, areas of archaeological potential, Architectural Heritage, and any other areas of cultural significance as per TII Guidelines for the Assessment of Archaeological Heritage Impacts of National Road Schemes and TII Guidelines for the Assessment of Architectural Heritage Impacts of National Road Schemes).	Moore Archaeology	The route could directly impact 2 known or potential archaeological, architectural or cultural heritage sites or features. The route also crosses 13 townland boundaries which may be of archaeological significance.	This route has a potential impact on the setting of 2 cultural heritage sites.	3
Human Health - Methodology to be agreed - similar to what in constraints report but v high level	Atkins	Passive Infrared (PIR) score = 272 139 properties (excluding agriculture) are within 300m of the new roads (dark blue). 4 of these properties are within 50m and 20 properties are within 50-100m.	Route diverts west at a similar distance to the existing route, passing by rear facades of properties to a rural noise environment. Mitigation option to the rear of the facades along the existing alignment with noise reduction at front of facades but higher PIR than cyan dashed route (PR2) at Ballinclare. Mitigation potential due to topography at rear of facades between Davidstown and Cariganurra.	2

Environmental Criteria	**Owner**	**Preliminary Assessment of Option :** *Magenta - Route H* - 9.4km		
		Quantitative Assessment	**Qualitative Assessment**	**Score**
Human Beings including compatibility with development policy	Coakley O'Neill	Within 50m of 13 no. existing dwellings. The route traverses the River Barrow and River Nore Special Area of Conservation (SAC). Traverses 3 no. national monuments.	The proposed route is located within the area designated to be kept from development for the provision of the realigned N25 as per Figure 11.1 of the County Development Plan 2014-2020. However, there is not a specific policy/objective outlined in the County Development Plan which states that routes will need to be within this defined corridor. In addition, the proposed route is located within 50-100 metres of 29 no. dwellings. Notwithstanding this, a significant portion of these dwellings are located along the existing route of the N25. On this basis, it is expected that any impacts will be limited to the construction stage of development, from a planning perspective. In addition, the site traverses the River Barrow and River Nore Special Area of Conservation. The County Development Plan seeks their protection under Object 8B and 8C of the Plan. The subject route is located within the zone of notification of several national monuments (Ref: KK041-025, KK041-024 and KK041-021). The Planning Authority have strong policies in place to protect such sites as outlined in Objective 8I of the Plan. Overall it is considered that this route, which generally follows the existing route of the N25, will not have significant impacts. Notwithstanding this, it is noted that the proposed route traverses the zone of notification of 3 no. National Monuments. However, the zones of notification of these monuments are already traversed by the N25 and on this basis, the proposed route is considered to be neutral.	4
Flora & Fauna (comparative impact on designated sites/species and other areas of national, regional or local ecological value).	Atkins	Negatively impacts the following; • 6 High Local Environmentally Sensitive Area (ESA) • 2 Low Local ESA • 3 Watercourses	This route is predominantly on-line with short lengths off-line to improve the existing alignment. The route runs through & along a section of SAC near Glenmore with no direct impact to Special Protection Areas (SPAs), Natural Heritage Areas (NHAs) or Propoesd Natural Heritage Areas pNHAs predicted. No direct impact on ESA County level. Significant impacts to 3 sites of high local importance (i.e. ESA-8, 11 & 13). Minor impacts to 3 further sites of high local importance (i.e. ESA-16, 17 & 19). Significant impacts predicted to 2 sites of low local value; to ESA-9 & 10. Barrow - Nore: 1 crossings; Suir: 2 crossings.	4
Water Quality (comparative impact on watercourses, water supplies and aquatic ecology)	Atkins	Traversal of 1 un-named watercourse, 1 named (Luffany) and 2 catchments. 5 Wells identified within 300m of Route option.	The route crosses two river catchments i.e. the Suir and Nore, and crosses one un-named stream (within the Nore catchment) which eventually flows to the River Barrow and one named stream, Luffany (within the Suir catchment) which eventually flows to the River Suir. The River Barrow is part of the River Barrow and River Nore Special Area of Conservation (SAC) and the River Suir is part of the Lower River Suir SAC. A small localised point within the study area has been identified to be at potential risk of flooding located at Slieverue, to the south west of the Luffany roundabout.	4
Geology & Hydrogeology (comparative impact on vulnerable rocks and soils, aquifers and wells of national, regional or local importance.	Atkins	5 Wells/boreholes identified within 300m of route. Route crosses the following aquifers: • 0 regionally important; • 2 Locally Important; and • 1 poor. Approximately 96% (9.0km) of the route crosses Extreme/High Groundwater Vulnerability.	A number of datasets have been examined and the following features have not been identified in proximity to the study area: geological heritage sites; waste facilities; active quarries or pits; mines; major areas of peat; or karst features. A long Alluvium vein is intersected by the route in the Glenmore region along with Ino. pocket in the north which could give rise to potential soft ground requiring excavation. The general bedrock geology of the area is a slate, sandstone, greywacke conglomerate. Glenmore Source Protection Zone located approximately 1.8km north west of route. Groundwater will be vulnerable to contamination and potential impact on groundwater flow can be expected in area of deep excavations.	2
Air Quality and Climate (existing air quality environment and number of sensitive receptors).	AWN	23 sensitive receptors within 50m of route.	A review of Environmental Protection Agency (EPA) monitoring data for similar Zone D locations suggests that there is a good level of air quality in the study area. A conservative background concentration of 5 ug/m^3 for NO_2 has been estimated with a background of 10 ug/m^3 estimated for PM_{10}. The existing national routes are considered the primary sources of air pollution in the area. This is the most online route option and the properties impacted would likely already experience elevated levels of air pollutants as a result fo traffic on the existing N25 and therefore would have a higher tolerance to pollutants. Some properties will experience an increase in pollutant concentrations as a result of the route.	3
Climate	AWN	N/A	Longer routes will require greater amounts of material for construction and will have high Greenhouse Gas (GHG) emissions. Longer journeys will also produce higher GHG emissions. All routes are ranked 3 in terms of climate as there is no significant difference between route options.	3

Environmental Criteria	**Owner**	**Preliminary Assessment of Option :** *Magenta - Route H* - 9.4km		
		Quantitative Assessment	**Qualitative Assessment**	**Score**
Noise (identification of sensitive receptors, characteristics of the prevailing noise climate and opportunities for noise mitigation).	AWN	Passive Infrared (PIR) = 401 176 properties, excluding agriculture, are within 300m of the new roads (magenta). Twenty-four of these properties are within 50m and 35 properties are within 50-100m.	Closest alignment to the existing route. While the PIR is high with a number of properties affected, the existing noise environment will be improved due to realignment of the existing route i.e. magenta route (H) at a greater distance to properties along existing route from Ballynamona and Gaulstown. Towards southern end of the route (Curraghmore and Luffany) magenta route (H) moves to rear of NSLs affected by existing route (comparable distance). Change from current noise environment will likely be reduced at a selection of properties due to opportunities for mitigation to rear of properties (Luffany).	3
Landscape & Visual (comparative impact on landscape character, topography, vegetation, natural features, views and obstructions)	Eamonn Byrne	N/A	Generally, follows existing N25 alignment towards Ballyrownagh. Thus, avoiding effects on Glenmore and narrow stream valleys and ridges of surrounding higher ground either side of the existing N25 Road. Diverts west from existing N25 towards Carriganurra. At Carriganurra the route travels close to a local rock outcrop (with cross on top) which is a prominent local landmark. With mitigation this landmark may be successfully integrated.	3
Material Assets (comparative impact on utilities, properties, quarries, transport and infrastructure, etc.).	Atkins	Property counts within 300m of the Route include: Residential: 134 Commerical (residential): 8 Commerical: 14 Agriculture: 6 Agriculture (Residential): 12 Private Storage: 3 Unknown: 5 **Total: 182** The route crosses 3 HV O/H powerlines.	The route crosses a number of secondary and minor roads. This route crosses the existing N25. The N25 is recorded as the only public transport route through the study area, serviced by the Bus Eireann Route 370. No active quarries or pits have been identified in proximity to the study area. This corridor impacts linear high voltage power lines and local telecom lines and possibly impacts existing water and possibly broadband utilities. There will be a requirement to provide additional services along the proposed route with short connects to the existing networks given the location of the proposed corridor.	3
Agriculture (comparative impact on farm operations, farm types, livestock and other agri-business).	Philip Farrelly	Landtake of 20 ha, impact on approximately 24 holdings, 4 dairy farms and in close proximity to 1 farmyard	Good quality agricultural land, majority of the route impacting on grassland, and some tillage. The majority of the route is online and will not result in severance to land holdings where the route is online.	3
Archaeology & Cultural Heritage (comparative impact on Recorded Monuments and Places, areas of archaeological potential, Architectural Heritage, and any other areas of cultural significance as per TII Guidelines for the Assessment of Archaeological Heritage Impacts of National Road Schemes and TII Guidelines for the Assessment of Architectural Heritage Impacts of National Road Schemes).	Moore Archaeology	The route could directly impact 3 known or potential archaeological, architectural or cultural heritage sites or features. The route also crosses 16 townland boundaries which may be of archaeological significance.		3
Human Health - Methodology to be agreed - similar to what in constraints report but v high level	Atkins	PIR = 401 176 properties, excluding agriculture, are within 300m of the new roads (magenta). Twenty-four of these properties are within 50m and 35 properties are within 50-100m.	Closest alignment to the existing route. While the PIR is high with a number of properties affected, the existing noise environment will be improved due to realignment of the existing route i.e. magenta route (H) route at a greater distance to properties along existing route from Ballynamona and Gaulstown. Towards southern end of the route (Curraghmore and Luffany) magenta route (H) route moves to rear of NSLs affected by existing route (comparable distance). Change from current noise environment will likely be reduced at a selection of properties due to opportunities for mitigation to rear of properties (Luffany).	3

Environmental Criteria	**Owner**	**Preliminary Assessment of Option :** *Red - Route I* - 8.9km		
		Quantitative Assessment	**Qualitative Assessment**	**Score**
Human Beings including compatibility with development policy	Coakley O'Neill	Within 50-100 metres of 15 no. existing dwellings. The route traverses both a Special Area of Consevation (SAC) and Proposed Natural Heritage Area (pNHA). The route crosses the rail line twice. Route traverses access road to equine centre.	The proposed route is not located within the area designated to be kept from development for the provision of the realigned N25 as per Figure 11.1 of the County Development Plan 2014-2020. However, there is not a specific policy/objective outlined in the County Development Plan which states that routes will need to be within this defined corridor. The proposed route appears to traverse a national monument (ref: KK044-023). The Planning Authority have strong policies in place to protect such sites as outlined in Objective 8I of the Plan. Of significance is that the proposed route appears to traverse the grounds of Beacon Hill Equine Centre. This is likely to be a critical issue due to economic impact in terms of operating the stables, as well as likely impact on the horses at the centre. The proposed route is located within 50-100 metres of 15 no. dwelling houses and on this basis, objections are likely on the grounds of noise impact, air quality, and construction impacts etc. The location of these existing dwellings along the subject route is likely to have significant implications in terms of objections to the development in the planning process, if this route is progressed past this preliminary assessment stage. Furthermore, the route also traverses both the Barrow River Estuary proposed Natural Heritage Area and the River Barrow and River Nore SAC. The County Development Plan seeks their protection under Object 8B and 8C of the Plan. In addition, it is noted that this route traverses the rail line at 2 no. locations and therefore consultation with Iarnrod Eireann is likely to be required. Having regard to the fact that this route traverses both an SAC and pNHA, as well as the potential impact on the Beacon Hill Equine	1
Flora & Fauna (comparative impact on designated sites/species and other areas of national, regional or local ecological value).	Atkins	• 1 pHNA Negatively impacts the following; • 2 High Local Environmentally Sensitive Area (ESA) • 2 Low Local ESA • 3 Watercourses	This route is considered one of the shorter options and is approximately 0.5 and 2.5km east of the original alignment. The route crosses the River Barrow And River Nore Special Area of Conservation (SAC) where it rejoins the existing alignment of the N25. Impact dependant on nature and scale of works. No direct impact to SPAs, NHAs or pNHAs predicted. Northern terminus of the route approaches close to the River Barrow Estuary pNHA at the N25 tie-in; indirect impact possible, but likely to be minor. No direct impact on ESA County level. Significant impacts to 1 site of high local importance (i.e. ESA-3). While minor impacts could occur at ESA-16, it is likley that these can be avoided at detailed design. Significant impacts predicted to 2 sites of low local value; to ESA-20 & ESA-21. Barrow - Nore: 1 crossings; Suir: 2 crossings.	2
Water Quality (comparative impact on watercourses, water supplies and aquatic ecology)	Atkins	Traversal of 2 un-named watercourses, 1 named (Luffany) and 2 catchments. 3 Wells identified within 300m of Route option.	The route crosses two river catchments i.e. the Suir and Nore, and crosses two un-named stream (within the Nore catchment) which eventually flows to the River Barrow and one named stream, Luffany (within the Suir catchment) which eventually flows to the River Suir. The River Barrow is part of the River Barrow and River Nore Special Area of Conservation (SAC) and the River Suir is part of the Lower River Suir SAC. A small localised point within the study area has been identified to be at potential risk of flooding located at Slieverue, to the south west of the Luffany roundabout.	4
Geology & Hydrogeology (comparative impact on vulnerable rocks and soils, aquifers and wells of national, regional or local importance.	Atkins	3 Wells/boreholes identified within 300m of route. Route crosses the following aquifers: • 0 regionally important; • 3 Locally Important; and • 1 poor. Approximately 74% (6.6km) of the route crosses Extreme/High Groundwater Vulnerability.	A number of datasets have been examined and the following features have not been identified in proximity to the study area: geological heritage sites; waste facilities; active quarries or pits; mines; major areas of peat; or karst features. 3 isolated pockets of Alluvium are intersected by the route. 2no in the central region and 1no. in the north which could give rise to potential soft ground requiring excavation. The general bedrock geology of the area is a slate, sandstone, greywacke conglomerate. Glenmore Source Protection Zone located approximately 1.8km north west of route. Groundwater will be vulnerable to contamination and potential impact on groundwater flow can be expected in area of deep excavations.	3
Air Quality and Climate (existing air quality environment and number of sensitive receptors).	AWN	3 sensitive receptors within 50m of route.	A review of Environmental Protection Agency (EPA) monitoring data for similar Zone D locations suggests that there is a good level of air quality in the study area. A conservative background concentration of 5 ug/m^3 for NO_2 has been estimated with a background of 10 ug/m^3 estimated for PM_{10}. The existing national routes are considered the primary sources of air pollution in the area. The sensitive receptors impacted will likely experience an increase in pollutant concentrations as a result of the proposed route.	3
Climate	AWN	N/A	Longer routes will require greater amounts of material for construction and will have high (Greenhouse Gas) GHG emissions. Longer journies will also produce higher GHG emissions. All routes are ranked 3 in terms of climate as there is no significant difference between route options	3

Environmental Criteria	**Owner**	**Preliminary Assessment of Option :** *Red - Route I* - 8.9km		
		Quantitative Assessment	**Qualitative Assessment**	**Score**
Noise (identification of sensitive receptors, characteristics of the prevailing noise climate and opportunities for noise mitigation).	AWN	Passive Infrared (PIR) = 158 78 properties, excluding agriculture, are within 300m of the new roads (red). Three of these properties are within 50m and 21 properties are within 50-100m.	Similar to orange route (K) as it starts along the existing route from New Ross bypass to Graiguenakill then diverts furthest east through clusters of properties between Carrickcloney and Redgap. Follows dark blue dashed route (PR3) closely from Curraghmore to Luffany. Rural noise environment with route passing close to many small clusters of properties in the 0-100m bands (24no.) in comparison to grey route (B) route (7no.).	2
Landscape & Visual (comparative impact on landscape character, topography, vegetation, natural features, views and obstructions)	Eamonn Byrne	N/A	Travels up steep hillside and over stream valley from Craiguenakil to Carrickcloney. Significant adverse effects on landscape character of this sloping land which connects with the River Barrow valley. Potential adverse visual effects from dwellings at Carrickcloney. Will travel along River Barrow valley side of a ridge of high ground at Aylwardstown and south to Rathinure. Significant adverse effects on this ridge of high ground and to wider River Barrow valley landscape. Travels through local valley between Rathinure and Redgap and sidelong of a hill at Redgap, which are visually connected with the River Barrow valley corridor and views from along this corridor. Thus, potential significant adverse effects on hill at Redgap and on views through this valley and on landscape character of the wider river Barrow valley.	1
Material Assets (comparative impact on utilities, properties, quarries, transport and infrastructure, etc.).	Atkins	Property counts within 300m of the Route include: Residential: 57 Commerical (residential): 1 Commerical: 2 Agriculture: 6 Agriculture (Residential): 12 Private Storage: 0 Unknown: 6 **Total: 84** The route crosses 2 HV O/H powerlines.	The route crosses a number of secondary and minor roads. This route crosses the existing N25. The N25 is recorded as the only public transport route through the study area, serviced by the Bus Eireann Route 370. No active quarries or pits have been identified in proximity to the study area. This corridor impacts two high voltage power lines and potentially impacts local telecom, transmission gas main, water and possibly broadband utilities. There will be a requirement to provide services along the proposed route with connections to the existing networks which could extend a distance given the location of the proposed corridor.	3
Agriculture (comparative impact on farm operations, farm types, livestock and other agri-business).	Philip Farrelly	Landtake of 19ha, Impact on approximately 30 holdings 7 dairy farms, 1 equine holding " Beacon Hill" and in close proximity to 2 farmyards.	Good quality agricultural land, majority of the route impacting on grassland, tillage land to the northern end of the route. The majority of the route is offline and will result in severance to land holdings.	2
Archaeology & Cultural Heritage (comparative impact on Recorded Monuments and Places, areas of archaeological potential, Architectural Heritage, and any other areas of cultural significance as per TII Guidelines for the Assessment of Archaeological Heritage Impacts of National Road Schemes and TII Guidelines for the Assessment of Architectural Heritage Impacts of National Road Schemes).	Moore Archaeology	The route could directly impact 3 known or potential archaeological, architectural or cultural heritage sites or features. The route also crosses 13 townland boundaries which may be of archaeological significance.	This route has a potential impact on the setting of 9 cultural heritage sites.	3
Human Health - Methodology to be agreed - similar to what in constraints report but v high level	Atkins	PIR = 158 78 properties, excluding agriculture, are within 300m of the new roads (red). Three of these properties are within 50m and 21 properties are within 50-100m.	Similar to orange route (K) as it starts along the existing route from New Ross bypass to Graiguenakill then diverts furthest east through clusters of properties between Carrickcloney and Redgap. Follows dark blue dashed route (PR3) closely from Curraghmore to Luffany. Rural noise environment with route passing close to many small clusters of properties in the 0-100m bands (24no.) in comparison to grey route (B) route (7no.).	2

Environmental Criteria	**Owner**	**Preliminary Assessment of Option :** *Cyan - Route J* - 9.6km		
		Quantitative Assessment	**Qualitative Assessment**	**Score**
Human Beings including compatibility with development policy	Coakley O'Neill	Within 50-100 metres of 18 no. existing dwellings. 1 no. permitted dwelling located along route with live planning permission in place. Traverses 1 no. national monument as well as a rail line. The route traverses the River Barrow and River Nore Special Area of Conservation (SAC). Route traverses' access to existing dwelling and to an Equine centre.	The proposed route is located outside the area designated to be kept free from development for the provision of the realigned N25 as per Figure 11.1 of the County Development Plan 2014-2020. However, there is not a specific policy/objective outlined in the County Development Plan which states that routes will need to be within this defined corridor. In terms of impact on human beings, it is noted that the proposed route dissects access to an existing dwelling on the L7470-24, as well as the access to an Equine Training Centre. This could potentially have significant economic impacts and is likely to be highly contested on the grounds of impacts to the equine centre. Dissecting this access should be avoided if possible. Furthermore, the proposed route comes within 50-100 metres of 18 no. dwellings along the route and on this basis, objections are on the grounds of noise impact, air quality, and construction impacts etc. Critically, the route appears to traverse a site which was recently granted planning permission under application register reference (18/525) and this would provide an opportunity for a strong objection by the landowner in terms of economic and social impacts. It is further noted that this route traverses a rail line and on this basis consultation with Iarnrod Eireann will be required. The location of this permitted and existing dwellings along the subject route is likely to have significant implications in terms of objections to the development in the planning process, if this route is progressed past this preliminary assessment stage. In terms of planning designations, it is noted that this route appears to traverse a National Monument included on the Record of Monuments and Places (Reference KK-044-023). The Planning Authority have strong policies in place to protect such	2
Flora & Fauna (comparative impact on designated sites/species and other areas of national, regional or local ecological value).	Atkins	Negatively impacts the following; • 1 High Local Environmentally Sensitive Area (ESA) • 2 Low Local ESA • 2 Watercourses	This route is considered one of the shorter options and is approximately 0.5 and 2.5km east of the original alignment. The route runs through & along a section of River Barrow and River Nore SAC near Glenmore with no direct impact to Special Protection Area (SPAs), Natural Heritage Areas (NHAs) or Proposed Natural Heritage Areas (pNHAs) predicted. No direct impact on ESA County level. Significant mpacts to 1 sites of high local importance (i.e. ESA-8). Significant impacts predicted to 1 site of low local value; to ESA-21. While minor impacts could occur at ESA-20, it is likley that these can be avoided at detailed design. Barrow - Nore: 1 crossings; Suir: 1 crossings.	4
Water Quality (comparative impact on watercourses, water supplies and aquatic ecology)	Atkins	Traversal of 1 un-named watercourses, 1 named (Luffany) and 2 catchments. 2 Wells identified within 300m of Route option.	The route crosses two river catchments i.e. the Suir and Nore, and crosses one un-named stream (within the Nore catchment) which eventually flows to the River Barrow and one named stream, Luffany (within the Suir catchment) which eventually flows to the River Suir. The River Barrow is part of the River Barrow and River Nore SAC and the River Suir is part of the Lower River Suir SAC. A small localised point within the study area has been identified to be at potential risk of flooding located at Slieverue, to the south west of the Luffany roundabout.	4
Geology & Hydrogeology (comparative impact on vulnerable rocks and soils, aquifers and wells of national, regional or local importance.	Atkins	2 Wells/boreholes identified within 300m of route. Route crosses the following aquifers: • 0 regionally important; • 3 Locally Important; and • 1 poor. Approximately 91% (8.7km) of the route crosses Extreme/High Groundwater Vulnerability.	A number of datasets have been examined and the following features have not been identified in proximity to the study area: geological heritage sites; waste facilities; active quarries or pits; mines; major areas of peat; or karst features. 3 isolated pockets of Alluvium are intersected by the route. 1no. in the southern region, 1no in the central region and 1no. in the north which could give rise to potential soft ground requiring excavation. The general bedrock geology of the area is a slate, sandstone, greywacke conglomerate. Glenmore Source Protection Zone located approximately 1.7km north west of route. Groundwater will be vulnerable to contamination and potential impact on groundwater flow can be expected in area of deep excavations.	2
Air Quality and Climate (existing air quality environment and number of sensitive receptors).	AWN	6 sensitive receptors within 50m of route.	A review of Environmental Protection Agency (EPA) monitoring data for similar Zone D locations suggests that there is a good level of air quality in the study area. A conservative background concentration of 5 ug/m^3 for NO_2 has been estimated with a background of 10 ug/m^3 estimated for PM_{10}. The existing national routes are considered the primary sources of air pollution in the area. The sensitive receptors impacted will likely experience an increase in pollutant concentrations as a result of the proposed route.	3
Climate	AWN	N/A	Longer routes will require greater amounts of material for construction and will have high Greenhouse Gas (GHG) emissions. Longer journeys will also produce higher GHG emissions. All routes are ranked 3 in terms of climate as there is no significant difference between route options.	3

Environmental Criteria	**Owner**	**Preliminary Assessment of Option :** *Cyan - Route J* - 9.6km		
		Quantitative Assessment	**Qualitative Assessment**	**Score**
Noise (identification of sensitive receptors, characteristics of the prevailing noise climate and opportunities for noise mitigation).	AWN	Passive Infrared (PIR) = 292 145 properties, excluding agriculture, are within 300m of the new roads (cyan). Six of these properties are within 50m and 22 properties are within 50-100m.	Along existing route from New Ross bypass to north of Kilmakevoge then diverts east through rural area in close proximity to a small cluster of houses at Ballyhobuck (~3), Ballyrowragh and Curraghamore (~6), Ballinlaw (~16) and Luffany (~3). Expected noise climate to be a quiet in the rural area and the introduction of a 100km/h road would significantly change the noise environment. Higher PIR than Red (I) and Orange (K) routes but fewer property clusters to introduce noise mitigation measures. Topography may not be favourable for noise mitigation e.g. at Ballyhobuck.	2
Landscape & Visual (comparative impact on landscape character, topography, vegetation, natural features, views and obstructions)	Eamonn Byrne	N/A	Follows existing N25 alignment to south of Glenmore. Thus, avoiding effects on Glenmore and narrow stream valleys. From south of Glenmore, will cut though some of the highest contours of a ridge of high ground between Ballynamona and Aylwardstown and south to Rathinure. Significant adverse effects on this ridge of high ground. Travels through local valley between Rathinure and Redgap and a hill at Redgap, which are visually connected with the River Barrow valley corridor and views from along this corridor. Thus, potential significant adverse visual effects on views through this valley and on landscape character of the river Barrow valley.	1
Material Assets (comparative impact on utilities, properties, quarries, transport and infrastructure, etc.).	Atkins	Property counts within 300m of the Route include: Residential: 116 Commerical (residential): 5 Commerical: 8 Agriculture: 7 Agriculture (Residential): 7 Private Storage: 3 Unknown: 6 **Total: 152** The route crosses 2 HV O/H powerlines.	The route crosses a number of secondary and minor roads. This route crosses the existing N25. The N25 is recorded as the only public transport route through the study area, serviced by the Bus Eireann Route 370. No active quarries or pits have been identified in proximity to the study area. This corridor impacts two high voltage power lines and potentially impacts local telecom, transmission gas main, water and possibly broadband utilities. There will be a requirement to provide services along the proposed route with connections to the existing networks which could extend a distance given the location of the proposed corridor.	3
Agriculture (comparative impact on farm operations, farm types, livestock and other agri-business).	Philip Farrelly	Landtake of 21ha, Impact on approximately 37 holdings impact on 1 dairy farm, 1 equine holding " Beacon Hill" and in close proximity to 2 farmyards.	Good quality agricultural land, majority of the route impacting on grassland, small amount of tillage land dispersed through the route. The majority of the route is offline and will result in severance to land holdings, small online section at northern end there will not be any severance to land holdings along the online section.	2
Archaeology & Cultural Heritage (comparative impact on Recorded Monuments and Places, areas of archaeological potential, Architectural Heritage, and any other areas of cultural significance as per TII Guidelines for the Assessment of Archaeological Heritage Impacts of National Road Schemes and TII Guidelines for the Assessment of Architectural Heritage Impacts of National Road Schemes).	Moore Archaeology	The route could directly impact 2 known or potential archaeological, architectural or cultural heritage sites or features. The route also crosses 14 townland boundaries which may be of archaeological significance.	This route has a potential impact on the setting of 1 cultural heritage sites.	3
Human Health - Methodology to be agreed - similar to what in constraints report but v high level	Atkins	PIR = 292 145 properties, excluding agriculture, are within 300m of the new roads (cyan). Six of these properties are within 50m and 22 properties are within 50-100m.	Along existing route from New Ross bypass to north of Kilmakevoge then diverts east through rural area in close proximity to a small cluster of houses at Ballyhobuck (~3), Ballyrowragh and Curraghamore (~6), Ballinlaw (~16) and Luffany (~3). Expected noise climate to be a quiet in the rural area and the introduction of a 100km road would significantly change the noise environment. Higher PIR than Red (I) and Orange (K) routes but fewer property clusters to introduce noise mitigation measures. Topography may not be favourable for noise mitigation e.g. at Ballyhobuck.	2

Environmental Criteria	**Owner**	**Preliminary Assessment of Option :** *Orange - Route K* - 9.3km		
		Quantitative Assessment	**Qualitative Assessment**	**Score**
Human Beings including compatibility with development policy	Coakley O'Neill	The route traverses both a Special Area of Conservation (SAC) and Proposed Natural Heritage Area (pNHA). The route crosses the rail line twice. Within 50-100metres of 10 no. existing dwellings. The route traverses a rail line. The route dissects the Beacon Hill Equine Centre.	The proposed route is not located within the area designated to be kept from development for the provision of the realigned N25 as per Figure 11.1 of the County Development Plan 2014-2020. However, there is not a specific policy/objective outlined in the County Development Plan which states that routes will need to be within this defined corridor. The proposed route appears to traverse a national monument (ref: KK044-023). The Planning Authority have strong policies in place to protect such sites as outlined in Objective 8I of the Plan. There are 10 no. dwellings located within c. 50-100 metres of the proposed route, and on this basis, objections are likely on the grounds of noise impact, air quality, and construction impacts etc. Of significance is that the proposed route appears to traverse the grounds of Beacon Hill Equine Centre. This is likely to be a critical issue due to economic impact in terms of operating the stables, as well as likely impact on the horses at the centre. Furthermore, the route also traverses both the Barrow River Estuary proposed Natural Heritage Area and the River Barrow and River Nore Special Area of Conservation. The County Development Plan seeks their protection under Object 8B and 8C of the Plan. In addition, it is noted that this route traverses the rail line and therefore consultation with Iarnrod Eireann is likely to be required. Having regard to the fact that this route traverses both an SAC and pNHA, as well as the potential impact on the Beacon Hill Equine Centre, this route is considered to be majorly negative.	2
Flora & Fauna (comparative impact on designated sites/species and other areas of national, regional or local ecological value).	Atkins	Negatively impacts the following; • 1 High Local Environmentally Sensitive Area (ESA) • 3 Low Local ESA • 3 Watercourses	This route is considered one of the shorter options and is approximately 0.5km and 2.5km east of the original alignment. The route crosses the SAC where it rejoins the existing alignment of the N25. Impact dependant on nature and scale of works. No direct impact to Special Protection Area (SPAs), Natural Heritage Area (NHAs) or pNHAs predicted. Northern terminus of the route approaches close to the River Barrow Estuary pNHA at the N25 tie-in; indirect impact possible, but likely to be minor. No direct impact on ESA County level. Significant mpacts to 1 sites of high local importance (i.e. ESA-3). Significant impacts predicted to 1 sites of low local value; to ESA-21. While minor impacts could occur at ESA-16 & ESA-20, it is likley that these can be avoided at detailed design. Barrow - Nore: 2 crossings; Suir: 1 crossings.	2
Water Quality (comparative impact on watercourses, water supplies and aquatic ecology)	Atkins	Traversal of 2 un-named watercourses, 1 named (Luffany) and 2 catchments. 5 Wells identified within 300m of Route option	The route crosses two river catchments i.e. the Suir and Nore, and crosses two un-named stream (within the Nore catchment) which eventually flows to the River Barrow and one named stream, Luffany (within the Suir catchment) which eventually flows to the River Suir. The River Barrow is part of the River Barrow and River Nore SAC and the River Suir is part of the Lower River Suir SAC. An area noted to the north east of the study area is considered 'liable to flood'. The route is located approximately 120m west of this potential flood area at its closest point. In addition, a small localised point within the study area has been identified to be at potential risk of flooding located at Slieverue, to the south west of the Luffany roundabout.	3
Geology & Hydrogeology (comparative impact on vulnerable rocks and soils, aquifers and wells of national, regional or local importance.	Atkins	5 Wells/boreholes identified within 300m of route. Route crosses the following aquifers: • 0 regionally important; • 4 Locally Important; and • 1 poor. Approximately 86% (8.0km) of the route crosses Extreme/High Groundwater Vulnerability.	A number of datasets have been examined and the following features have not been identified in proximity to the study area: geological heritage sites; waste facilities; active quarries or pits; mines; major areas of peat; or karst features. 3 isolated pockets of Alluvium are intersected by the route. 1no. in the southern region, 1no in the central region and 1no. in the north which could give rise to potential soft ground requiring excavation. The general bedrock geology of the area is a slate, sandstone, greywacke conglomerate. Glenmore Source Protection Zone located approximately 1.7km north west of route. Groundwater will be vulnerable to contamination and potential impact on groundwater flow can be expected in area of deep excavations.	2
Air Quality and Climate (existing air quality environment and number of sensitive receptors).	AWN	5 sensitive receptors within 50m of route.	A review of Environmenal Proetection Area (EPA) monitoring data for similar Zone D locations suggests that there is a good level of air quality in the study area. A conservative background concentration of 5 ug/m^3 for NO_2 has been estimated with a background of 10 ug/m^3 estimated for PM_{10}. The existing national routes are considered the primary sources of air pollution in the area. The sensitive receptors impacted will likely experience an increase in pollutant concentrations as a result of the proposed route.	3
Climate	AWN	N/A	Longer routes will require greater amounts of material for construction and will have high Greenhouse Gas (GHG) emissions. Longer journeys will also produce higher GHG emissions. All routes are ranked 3 in terms of climate as there is no significant difference between route options	3

Environmental Criteria	**Owner**	**Preliminary Assessment of Option :** *Orange - Route K* - 9.3km		
		Quantitative Assessment	**Qualitative Assessment**	**Score**
Noise (identification of sensitive receptors, characteristics of the prevailing noise climate and opportunities for noise mitigation).	AWN	Passive Infrared (PIR) = 149 76 properties, excluding agriculture, are within 300m of the new roads (orange). Five of these properties are within 50m and 15 properties are within 50-100m.	Similar to the red route along existing route from New Ross bypass to Graiguenakill then diverts east through clusters of properties between Carrickcloney (~5) and Redgap. Follows cyan route (J) from Redgap to Luffany. Rural noise environment with route passing close to many small clusters of properties in the 0-100m bands (20no.) in comparison to grey route (B) route (7no.). Marginally higher number of properties in the 0-50m band than the red route.	2
Landscape & Visual (comparative impact on landscape character, topography, vegetation, natural features, views and obstructions)	Eamonn Byrne	N/A	Travels up steep hillside and over stream valley from Craiguenakil to Carrickcloney. Significant adverse effects on landscape character of this sloping land which connects with the River Barrow valley. Potential adverse visual effects from dwellings at Carrickcloney. Will cut though some the highest contours of a ridge of high ground at Aylwardstown and south to Rathinure. Significant adverse effects on this ridge of high ground. Will travel through a historic railway bridge south of Rathinure. Significant adverse effect on this element. Travels through local valley between Rathinure and Redgap and sidelong on a hill at Redgap, which are visually connected with the River Barrow valley corridor and views from along this corridor. Thus, potential significant adverse visual effects hill at Redgap and on views through this valley and on landscape character of the river Barrow valley.	1
Material Assets (comparative impact on utilities, properties, quarries, transport and infrastructure, etc.).	Atkins	Property counts within 300m of the Route include: Residential:53 Commerical (residential): 2 Commerical: 3 Agriculture: 5 Agriculture (Residential):12 Private Storage: 0 Unknown: 6 **Total: 81** The route crosses 2 HV O/H powerlines.	The route crosses a number of secondary and minor roads. This route crosses the existing N25. The N25 is recorded as the only public transport route through the study area, serviced by the Bus Eireann Route 370. No active quarries or pits have been identified in proximity to the study area. This corridor impacts two high voltage power lines and potentially impacts local telecom, transmission gas main, water and possibly broadband utilities. There will be a requirement to provide services along the proposed route with connections to the existing networks which could extend a distance given the location of the proposed corridor.	3
Agriculture (comparative impact on farm operations, farm types, livestock and other agri-business).	Philip Farrelly	Landtake of 20ha, Impact on approximately 35 holdings 6 dairy farms, 1 equine holding " Beacon Hill" and in close proximity to 2 farmyards.	Good quality agricultural land, majority of the route impacting on grassland, tillage land dispersed through the route mid section northwards. The majority of the route is offline and will result in severance to land holdings.	2
Archaeology & Cultural Heritage (comparative impact on Recorded Monuments and Places, areas of archaeological potential, Architectural Heritage, and any other areas of cultural significance as per TII Guidelines for the Assessment of Archaeological Heritage Impacts of National Road Schemes and TII Guidelines for the Assessment of Architectural Heritage Impacts of National Road Schemes).	Moore Archaeology	The route could directly impact 4 known or potential archaeological, architectural or cultural heritage sites or features. The route also crosses 12 townland boundaries which may be of archaeological significance.		2
Human Health - Methodology to be agreed - similar to what in constraints report but v high level	Atkins	PIR = 149 76 properties, excluding agriculture, are within 300m of the new roads (orange). Five of these properties are within 50m and 15 properties are within 50-100m.	Similar to the red route along existing route from New Ross bypass to Graiguenakill then diverts east through clusters of properties between Carrickcloney (~5) and Redgap. Follows cyan route (J) from Redgap to Luffany. Rural noise environment with route passing close to many small clusters of properties in the 0-100m bands (20no.) in comparison to grey route (B) route (7no.). Marginally higher number of properties in the 0-50m band than the red route.	2

Environmental Criteria	**Owner**	**Preliminary Assessment of Option :** *Turquoise - Route P* - 12.7km		
		Quantitative Assessment	**Qualitative Assessment**	**Score**
Human Beings including compatibility with development policy	Coakley O'Neill	The route traverses both a Special Area of Conservation (SAC) and Proposed Natural Heritage Area (pNHA). The route crosses the rail line twice. Within 50-100 metres of 10 no. existing dwellings.	The proposed route is not located within the area designated to be kept from development for the provision of the realigned N25 as per Figure 11.1 of the County Development Plan 2014-2020. However, there is not a specific policy/objective outlined in the County Development Plan which states that routes will need to be within this defined corridor. There are 10 no. dwellings located within c. 50 - 100 metres of the proposed route, and on this basis, objections are likely on the grounds of noise impact, air quality, and construction impacts etc. There are 2 no. significant constraints to the development of this route having regard to current and permitted planning applications. Firstly, the route appears to dissect a landholding where planning permission was granted for a dwelling under application register reference 19147. In addition, a new planning application (Register reference 2010) has been lodged with Kilkenny County Council, seeking permission for a dwelling house. This application is currently at pre-validation stage with the Council. The location of this permitted and proposed dwellings along the subject route is likely to have significant implications in terms of objections to the development in the planning process, if this route is progressed past this preliminary assessment stage. In addition, a section of the route appears to traverse the access to an existing farm holding. On this basis, it is likely that there will additional objections to this route by the landowner in terms of negative economic impact both during construction, and when the proposed road opens. Overall, and considering the constraint presented as a result of the permitted dwelling and a planning application seeking permission	2
Flora & Fauna (comparative impact on designated sites/species and other areas of national, regional or local ecological value).	Atkins	Negatively impacts the following; • Minor overlap of County (Ballybraghy) Environmentally Sensitive Area (ESA) • 1 High Local ESA • 1 Low Local ESA • 2 Watercourses	This route is considered one of the longer options and is approximately 1.5km to 2.5km west of the original alignment. No direct impact to SACs, Special Protection Areas (SPAs), Natural Heritage Area (NHAs) or pNHAs predicted. Runs close to Lough Cullin & associated watercourses - indirect impact possible, but likely to be minor. Minor overlap of the northern end of ESA-1 (Ballybraghy) with the study corridor; however, it is likley that this can be avoided at detailed design. Significant impacts to 1 site of high local importance (i.e. ESA-4); the site would be impacted across 3 no. valleys. While minor impacts could occur at ESA-18, it is likley that these can be avoided at detailed design. Barrow - Nore: 1 crossings; Suir: 1 crossings.	1
Water Quality (comparative impact on watercourses, water supplies and aquatic ecology)	Atkins	Traversal of 1 un-named watercourse, 1 named (Nicholastown 16) and 2 catchments. 2 Wells identified within 300m of Route option	The route crosses two river catchments i.e. the Suir and Nore, and crosses one un-named stream (within the Nore catchment) which eventually flows to the River Barrow and one named stream, Nicholastown 16 (within the Suir catchment) which flows in a northernly direction and drains to Lough Cullin, before ultimately discharging into the River Suir. The River Barrow is part of the River Barrow and River Nore SAC and the River Suir is part of the Lower River Suir SAC. A small area located to the north west of the study area is considered as 'liable to flood'. The route is the closest route option to this area, located approximately 170m west of flood risk area.	3
Geology & Hydrogeology (comparative impact on vulnerable rocks and soils, aquifers and wells of national, regional or local importance.	Atkins	2 Wells/boreholes identified within 300m of route. Route crosses the following aquifers: • 4 regionally important; • 5 Locally Important; and • 1 poor. Approximately 56% (7.1km) of the route crosses Extreme/High Groundwater Vulnerability.	A number of datasets have been examined and the following features have not been identified in proximity to the study area: geological heritage sites; waste facilities; active quarries or pits; mines; major areas of peat; or karst features. 1no. isolated pockets of Alluvium is intersected by the route in the north which could give rise to potential soft groun requiring excavation. The general bedrock geology of the area is a slate, sandstone, Mudstone, greywacke conglomerate. Glenmore Source Protection Zone located approximately 0.45km north of route. Groundwater will be vulnerable to contamination and potential impact on groundwater flow can be expected in area of deep excavations.	3
Air Quality and Climate (existing air quality environment and number of sensitive receptors).	AWN	3 sensitive receptors within 50m of route.	A review of Environmental Protection Agency (EPA) monitoring data for similar Zone D locations suggests that there is a good level of air quality in the study area. A conservative background concentration of 5 ug/m^3 for NO_2 has been estimated with a background of 10 ug/m^3 estimated for PM_{10}. The existing national routes are considered the primary sources of air pollution in the area. The sensitive receptors impacted will likely experience an increase in pollutant concentrations as a result of the proposed route.	3
Climate	AWN	N/A	Longer routes will require greater amounts of material for construction and will have high Greenhouse Gas (GHG) emissions. Longer journeys will also produce higher GHG emissions. All routes are ranked 3 in terms of climate as there is no significant difference between route options	3

Environmental Criteria	**Owner**	**Preliminary Assessment of Option :** *Turquoise - Route P* - 12.7km		
		Quantitative Assessment	**Qualitative Assessment**	**Score**
Noise (identification of sensitive receptors, characteristics of the prevailing noise climate and opportunities for noise mitigation).	AWN	Passive Infrared (PIR) = 134 77 properties, excluding agriculture, are within 300m of the new roads (turquoise). Three of these properties are within 50m and 11 properties are within 50-100m.	Diverts west at New Ross bypass through rural areas with no alignment along the existing route. Expected noise climate to be quiet rural and introduction of a busy 100km/h road would significantly change the noise environment. More properties to be mitigated compared to purple route (A) with potentially unfavourable topography at property clusters.	2
Landscape & Visual (comparative impact on landscape character, topography, vegetation, natural features, views and obstructions)	Eamonn Byrne	N/A	Mostly avoids lower slopes and wooded vegetation of narrow stream valleys north and west of Glenmore (travels close to the edge of this intimate valley system). However, will affect some woodland near Mullennahone. Will lead to significant adverse effects on hill at Ardbeg, cutting close to the hills summit, which forms a prominent backdrop in views especially from land to the south of Ardbeg. Immediately east of Ardbeg this route travels close to a prominent ridge of high ground at Ballinclare. From south of Ardbeg towards Nicholastown the route travels across the steep side slopes of a locally prominent ridge of higher ground. The side slopes are integral to the ridge and provide large scale views over the surrounding countryside. The side slopes of this ridge are visible from a wide surrounding area extending far to the west, and the route in this location may be widely visible. Significant adverse effects on side slopes of ridge of high ground from Ardbeg to Nicholstown. South of Nicholastown the route will travel on lower lands including much vegetation so would be less visible.	2
Material Assets (comparative impact on utilities, properties, quarries, transport and infrastructure, etc.).	Atkins	Property counts within 300m of the Route include: Residential: 57 Commerical (residential): 3 Commerical: 1 Agriculture: 8 Agriculture (Residential): 13 Private Storage: 0 Unknown: 3 **Total: 85** The route crosses 4 HV O/H powerlines.	The route crosses a number of secondary and minor roads. This route does not cross the existing N25. No active quarries or pits have been identified in proximity to the study area. This corridor impacts four high voltage power lines and potentially impacts local telecom, water and possibly broadband utilities. There will be a requirement to provide services along the proposed route with connections to the existing networks which could extend a distance given the location of the proposed corridor.	4
Agriculture (comparative impact on farm operations, farm types, livestock and other agri-business).	Philip Farrelly	Landtake of 27 ha, Impact on approximately 45 holdings 8 dairy farms, and in close proximity to 2 farmyards.	Good quality agricultural land, majority of the route impacting on grassland, and some tillage to the northern end of the route. The route is offline and will result in severance to land holdings.	2
Archaeology & Cultural Heritage (comparative impact on Recorded Monuments and Places, areas of archaeological potential, Architectural Heritage, and any other areas of cultural significance as per TII Guidelines for the Assessment of Archaeological Heritage Impacts of National Road Schemes and TII Guidelines for the Assessment of Architectural Heritage Impacts of National Road Schemes).	Moore Archaeology	The route crosses 18 townland boundaries which may be of archaeological significance.	This route has a potential impact on the setting of 2 cultural heritage sites.	5
Human Health - Methodology to be agreed - similar to what in constraints report but v high level	Atkins	PIR = 134 77 properties, excluding agriculture, are within 300m of the new roads (turquoise). Three of these properties are within 50m and 11 properties are within 50-100m.	Diverts west at New Ross bypass through rural areas with no alignment along the existing route. Expected noise climate to be quiet rural and introduction of a busy 100km road would significantly change the noise environment. More properties to be mitigated compared to purple route (A) with potentially unfavourable topography at property clusters.	2

Environmental Criteria	**Owner**	**Preliminary Assessment of Option :** *Lime Green - Route Q* - 8.9km		
		Quantitative Assessment	**Qualitative Assessment**	**Score**
Human Beings including compatibility with development policy	Coakley O'Neill	The route traverses a national monument. There are 19 no. dwellings located within c. 50 – 100 metres of the proposed route. The route traverses the River Barrow and River Nore Special Area of Conservation (SAC).	The proposed route is partially located within the area designated to be kept from development for the provision of the realigned N25 as per Figure 11.1 of the County Development Plan 2014-2020. However, there is not a specific policy/objective outlined in the County Development Plan which states that routes will need to be within this defined corridor. There are 19 no. dwellings located within c. 50 m of the proposed route, and on this basis, objections are likely on the grounds of noise impact, air quality, and construction impacts etc. The proposed route appears to traverse a national monument (ref: KK041-021). The Planning Authority have strong policies in place to protect such sites as outlined in Objective 8I of the Plan. In addition, the site traverses the River Barrow and River Nore Special Area of Conservation. The County Development Plan seeks their protection under Objective 8B and 8C of the Plan. In comparison to the alternative options put forward at this stage, this proposed route is considered to be slightly positive from a planning perspective.	5
Flora & Fauna (comparative impact on designated sites/species and other areas of national, regional or local ecological value).	Atkins	Negatively impacts on the following; • 5 High Local Environmentally Sensitive Areas (ESA) • 2 Watercourses	This route is considered one of the shorter options and is approximately 0 - 0.5km east of the original alignment. No direct impact to SACs, Special Protection Areas (SPAs), Natural Heritage Areas (NHAs) or Proposed Natural Heritage Areas (pNHAs) predicted. No direct impact on ESA County level. Significant impacts to 4 sites of high local importance (i.e. ESA-8, 13, 17 & 19); with minor impacts predicted at a fifth site, ESA-16. Barrow - Nore: 1 crossings; Suir: 1 crossings.	4
Water Quality (comparative impact on watercourses, water supplies and aquatic ecology)	Atkins	Traversal of 1 un-named watercourse, 1 named (Luffany) and 2 catchments. 2 Wells identified within 300m of Route option	The Route crosses two river catchments i.e. the Suir and Nore, and crosses one un-named stream (within the Nore catchment) which eventually flows to the River Barrow and one named stream, Luffany (within the Suir catchment) which eventually flows to the River Suir. The River Barrow is part of the River Barrow and River Nore SAC and the River Suir is part of the Lower River Suir SAC. A small localised point within the study area has been identified to be at potential risk of flooding. The flood risk is identified at Slieverue, near Rathpatrick, to the south west of the Luffany roundabout.	4
Geology & Hydrogeology (comparative impact on vulnerable rocks and soils, aquifers and wells of national, regional or local importance.	Atkins	2 Wells/boreholes identified within 300m of route. Route crosses the following aquifers: • 0 regionally important; • 3 Locally Important; and • 1 poor. Approximately 93% (8.3km) of the route crosses Extreme/High Groundwater Vulnerability.	A number of datasets have been examined and the following features have not been identified in proximity to the study area: geological heritage sites; waste facilities; active quarries or pits; mines; major areas of peat; or karst features. 2no. isolated pockets of Alluvium are intersected by the route. 1no in the central region and 1no. in the north which could give rise to potential soft ground requiring excavation. The general bedrock geology of the area is a slate, sandstone, greywacke conglomerate. Glenmore Source Protection Zone located approximately 1.8km north west of route. Groundwater will be vulnerable to contamination and potential impact on groundwater flow can be expected in area of deep excavations.	2
Air Quality and Climate (existing air quality environment and number of sensitive receptors).	AWN	3 sensitive receptors within 50m of route.	A review of Environmental Protection Agency (EPA) monitoring data for similar Zone D locations suggests that there is a good level of air quality in the study area. A conservative background concentration of 5 ug/m^3 for NO_2 has been estimated with a background of 10 ug/m^3 estimated for PM_{10}. The existing national routes are considered the primary sources of air pollution in the area. The sensitive receptors impacted will likely experience an increase in pollutant concentrations as a result of the proposed route.	3
Climate	AWN	N/A	Longer routes will require greater amounts of material for construction and will have high Greenhouse Gas (GHG) emissions. Longer journeys will also produce higher GHG emissions. All routes are ranked 3 in terms of climate as there is no significant difference between route options	3

Environmental Criteria	**Owner**	**Preliminary Assessment of Option :** *Lime Green - Route Q* - 8.9km		
		Quantitative Assessment	**Qualitative Assessment**	**Score**
Noise (identification of sensitive receptors, characteristics of the prevailing noise climate and opportunities for noise mitigation).	AWN	Passive Infrared (PIR) = 316 161 properties, excluding agriculture, are within 300m of the new roads (lime green). Three of these properties are within 50m and 26 properties are within 50-100m.	Along existing route from New Ross bypass to Kilmakevoge, then diverts east. Close to a cluster of properties at Kilmakevoge and Along existing route from New Ross bypass to Kilmakevoge, then diverts east. Close to a cluster of properties at Kilmakevoge and Ballyrahan (side facades), Scartnamo (rear facades). Intersects existing route at Ballyrowragh and heads west close to rear of properties along existing route at Curraghmore but further distance to pink/orange/cyan dashed routes. Rural noise environment with a higher PIR than dark blue dashed route (PR3). Mitigation near existing route at intersection and Curraghmore would be more beneficial to the current noise environment than the red and orange (K) routes in their rural local environments.	3
Landscape & Visual (comparative impact on landscape character, topography, vegetation, natural features, views and obstructions)	Eamonn Byrne	N/A	Follows existing N25 alignment to south of Glenmore. Thus, avoiding effects on Glenmore and narrow stream valleys. From south of Glenmore, will cut though some of the highest contours of a ridge of high ground between Ballynamona and Aylwardstown and south to Gaulstown. Significant adverse effects on this ridge of high ground. Descends into local stream valley at Ballyrahan including an ecological sensitive area of land cover. Significant adverse effects on local stream valley at Ballyrahan. Crosses over existing N25 towards Carriganurra. At Carriganurra the route goes through a local rock outcrop (with cross on top) which is a prominent local landmark. Significant adverse effects on this feature.	1
Material Assets (comparative impact on utilities, properties, quarries, transport and infrastructure, etc.).	Atkins	Property counts within 300m of the Route include: Residential: 126 Commerical (residential): 5 Commerical: 9 Agriculture: 6 Agriculture (Residential): 14 Private Storage: 3 Unknown: 4 **Total: 167** The Route crosses 2 HV O/H powerlines.	The route crosses a number of secondary and minor roads. This route crosses the existing N25. The N25 is recorded as the only public transport route through the study area, serviced by the Bus Eireann Route 370. No active quarries or pits have been identified in proximity to the study area. This corridor impacts two high voltage power lines and potentially impacts local telecom, water and possibly broadband utilities. There will be a requirement to provide services along the proposed route with connections to the existing networks which could extend a distance given the location of the proposed corridor.	3
Agriculture (comparative impact on farm operations, farm types, livestock and other agri-business).	Philip Farrelly	Landtake of 19ha, Impact on approximately 20 holdings 4 dairy farms, no equine.	Good quality agricultural land, majority of the route impacting on grassland, some tillage and some forestry in the southern end of the route. The majority of the route is offline and will result in severance to land holdings. However the Route is online in the Northern section and the online section will not cause severance to land holdings.	2
Archaeology & Cultural Heritage (comparative impact on Recorded Monuments and Places, areas of archaeological potential, Architectural Heritage, and any other areas of cultural significance as per TII Guidelines for the Assessment of Archaeological Heritage Impacts of National Road Schemes and TII Guidelines for the Assessment of Architectural Heritage Impacts of National Road Schemes).	Moore Archaeology	The route could directly impact 1 known or potential archaeological, architectural or cultural heritage sites or features. The route also crosses 10 townland boundaries which may be of archaeological significance.	This route has a potential impact on the setting of 2 cultural heritage sites.	4
Human Health - Methodology to be agreed - similar to what in constraints report but v high level	Atkins	PIR = 316 161 properties, excluding agriculture, are within 300m of the new roads (lime green). Three of these properties are within 50m and 26 properties are within 50-100m.	Along existing route from New Ross bypass to Kilmakevoge, then diverts east. Close to a cluster of properties at Kilmakevoge and Along existing route from New Ross bypass to Kilmakevoge, then diverts east. Close to a cluster of properties at Kilmakevoge and Ballyrahan (side facades), Scartnamo (rear facades). Intersects existing route at Ballyrowragh and heads west close to rear of properties along existing route at Curraghmore but further distance to pink/orange/cyan dashed routes. Rural noise environment with a higher PIR than dark blue dashed route (PR3). Mitigation near existing route at intersection and Curraghmore would be more beneficial to the current noise environment than the red and orange (K) routes in their rural local environments.	3

Environmental Criteria	**Owner**	**Preliminary Assessment of Option :** *Cyan Dashed - Route 2* **-** 9.4km		
		Quantitative Assessment	**Qualitative Assessment**	**Score**
Human Beings including compatibility with development policy	Coakley O'Neill	The route traverses a national monument. The route traverses the River Barrow and River Nore Special Area of Conservation (SAC). Within 50-100 metres of 8 no. dwellings.	The proposed route is partially located within the area designated to be kept from development for the provision of the realigned N25 as per Figure 11.1 of the County Development Plan 2014-2020. However, there is not a specific policy/objective outlined in the County Development Plan which states that routes will need to be within this defined corridor. The proposed route appears to traverse a national monument (ref: KK043-013). The Planning Authority have strong policies in place to protect such sites as outlined in Objective 8I of the Plan. In addition, the site traverses the River Barrow and River Nore SAC. The County Development Plan seeks their protection under Objective 8B and 8C of the Plan. There are 8 no. dwellings located within 50-100 metres of the subject site, and on this basis, objections are likely on the grounds of noise impact, air quality, and construction impacts etc. In comparison to the alternative options put forward at this stage, this proposed route is considered to be neutral from a planning perspective.	4
Flora & Fauna (comparative impact on designated sites/species and other areas of national, regional or local ecological value).	Atkins	Negatively impacts the following; • 4 High Local Environmentally Sensitive Areas (ESA) • 3 Low Local ESA • 1 Watercourse	This route is considered one of the shorter options and is approximately 0 - 1.0km west of the original alignment. No direct impact to Special Protectino Areas (SPAs), Natural Heritage Areas (NHAs) or Proposed Natural Heritage Areas (pNHAs) predicted. Significant Impacts to 3 sites of high local importance (i.e. ESA-8, 11, & 17); with minor impacts predicted at a fourth site, ESA-19. Significant impacts predicted to 4 sites of low local value; to ESA-10, 12 & 15. Barrow - Nore: 1 crossings; Suir: 0 crossings.	4
Water Quality (comparative impact on watercourses, water supplies and aquatic ecology)	Atkins	Traversal of 1 un-named watercourse and 2 catchments. 3 Wells identified within 300m of Route option	The route crosses two river catchments i.e. the Suir and Nore, and crosses one un-named stream (within the Nore catchment) which eventually flows to the River Barrow. The River Barrow is part of the River Barrow and River Nore SAC. A small localised point within the study area has been identified to be at potential risk of flooding. The flood risk is identified at Slieverue, near Rathpatrick, to the south west of the Luffany roundabout.	5
Geology & Hydrogeology (comparative impact on vulnerable rocks and soils, aquifers and wells of national, regional or local importance.	Atkins	3 Wells/boreholes identified within 300m of route. Route crosses the following aquifers: • 0 regionally important; • 3 Locally Important; and • 1 poor. Approximately 95% (9.0km) of the route crosses Extreme/High Groundwater Vulnerability.	A number of datasets have been examined and the following features have not been identified in proximity to the study area: geological heritage sites; waste facilities; active quarries or pits; mines; major areas of peat; or karst features. A long Alluvium vein is intersected by the route in the Glenmore region along with Ino. pocket in the north which could give rise to potential soft ground requiring excavation. The general bedrock geology of the area is a slate, sandstone, greywacke conglomerate. Glenmore Source Protection Zone located approximately 1.8km north west of route. Groundwater will be vulnerable to contamination and potential impact on groundwater flow can be expected in area of deep excavations.	2
Air Quality and Climate (existing air quality environment and number of sensitive receptors).	AWN	3 sensitive receptors within 50m of route.	A review of Environmental Protection Areas (EPA) monitoring data for similar Zone D locations suggests that there is a good level of air quality in the study area. A conservative background concentration of 5 ug/m^3 for NO_2 has been estimated with a background of 10 ug/m^3 estimated for PM_{10}. The existing national routes are considered the primary sources of air pollution in the area. The sensitive receptors impacted will likely experience an increase in pollutant concentrations as a result of the proposed route 2 (previous).	3
Climate	AWN	N/A	Longer routes will require greater amounts of material for construction and will have high Greenhouse Gas (GHG) emissions. Longer journeys will also produce higher GHG emissions. All routes are ranked 3 in terms of climate as there is no significant difference between route options	3

Environmental Criteria	**Owner**	**Preliminary Assessment of Option :** *Cyan Dashed - Route 2* **-** 9.4km		
		Quantitative Assessment	**Qualitative Assessment**	**Score**
Noise (identification of sensitive receptors, characteristics of the prevailing noise climate and opportunities for noise mitigation).	AWN	Passive Infrared (PIR) = 277 149 properties, excluding agriculture, are within 300m of the new roads (cyan dashed). Four of these properties are within 50m and 15 properties are within 50-100m.	Along existing route from New Ross bypass to Kilmakevoge then diverts west, following a similar line to the dark blue route (G). Passes further away from properties than the blue (D) and brown (F) routes between Ballinclare and Davidstown. Between Davidstown and Carrianurra cyan dashed route (PR2) route moves further from properties than the dark blue route (G). Rural noise climate expected with potential influence from the existing road in northern sections. Opportunity to mitigate at rear of properties at Ballynaraha, which will benefit from a noise reduction at the front facades from expected reduced traffic from the existing road. Mitigation also possible at Grogan and at similar areas to pink dashed route (PR4) and orange dashed route (PR6) routes between Davidstown and Luffany.	3
Landscape & Visual (comparative impact on landscape character, topography, vegetation, natural features, views and obstructions)	Eamonn Byrne	N/A	Follows the existing N25 alignment to south of Glenmore. Thus, avoiding effects on Glenmore and narrow stream valleys. From Ballinclare to south of Davidstown the route continues generally parallel to the existing N25 corridor and travels along the lower side slopes of a ridge of high ground, avoiding the higher contours. Travels on higher contours of ridge of higher ground from Davidstown to Carriganurra. Significant impacts on this ridge of high ground and area of sensitive vegetation and potential adverse effects on setting of local monuments.	2
Material Assets (comparative impact on utilities, properties, quarries, transport and infrastructure, etc.).	Atkins	Property counts within 300m of the Route include: Residential: 98 Commerical (residential): 10 Commerical: 14 Agriculture: 5 Agriculture (Residential): 18 Private Storage: 3 Unknown: 6 **Total: 154** The route crosses 2 HV O/H powerlines.	The route crosses a number of secondary and minor roads. This route crosses the existing N25. The N25 is recorded as the only public transport route through the study area, serviced by the Bus Eireann Route 370. No active quarries or pits have been identified in proximity to the study area. This corridor impacts two high voltage power lines and potentially impacts local telecom, water and possibly broadband utilities. There will be a requirement to provide services along the proposed route with connections to the existing networks given the location of the proposed corridor.	3
Agriculture (comparative impact on farm operations, farm types, livestock and other agri-business).	Philip Farrelly	Landtake of 20 ha, Impact on approximately 31 holdings 4 dairy farms.	Good quality agricultural land, majority of the route impacting on grassland, small amount of tillage land dispersed through the route. The majority of the route is offline and will result in severance to land holdings, small online section at northern end, there will not be any severance to land holdings along the online section.	2
Archaeology & Cultural Heritage (comparative impact on Recorded Monuments and Places, areas of archaeological potential, Architectural Heritage, and any other areas of cultural significance as per TII Guidelines for the Assessment of Archaeological Heritage Impacts of National Road Schemes and TII Guidelines for the Assessment of Architectural Heritage Impacts of National Road Schemes).	Moore Archaeology	The route could directly impact 4 known or potential archaeological, architectural o r cultural heritage sites or features. The route also crosses 12 townland boundaries which may be of archaeological significance.		4
Human Health - Methodology to be agreed - similar to what in constraints report but v high level	Atkins	PIR = 277 149 properties, excluding agriculture, are within 300m of the new roads (cyan dashed). Four of these properties are within 50m and 15 properties are within 50-100m.	Along existing route from New Ross bypass to Kilmakevoge then diverts west, following a similar line to the dark blue route (G). Passes further away from properties than the blue (D) and brown (F) routes between Ballinclare and Davidstown. Between Davidstown and Carrianurra cyan dashed route (PR2) route moves further from properties than the dark blue route (G). Rural noise climate expected with potential influence from the existing road in northern sections. Opportunity to mitigate at rear of properties at Ballynaraha, which will benefit from a noise reduction at the front facades from expected reduced traffic from the existing road. Mitigation also possible at Grogan and at similar areas to pink dashed route (PR4) and orange dashed route (PR6) routes between Davidstown and Luffany.	3

Environmental Criteria	**Owner**	**Preliminary Assessment of Option :** *Dark Blue Dashed - Route 3* - 8.7km		
		Quantitative Assessment	**Qualitative Assessment**	**Score**
Human Beings including compatibility with development policy	Coakley O'Neill	The route traverses a national monument. There are 16 no. dwellings located within c. 50 – 100 meres of the proposed route. The route traverses both a Special Area of Conseration (SAC) and Proposed Natual Heritage Area (pNHA). The route crosses the rail line.	The proposed route is not located within the area designated to be kept from development for the provision of the realigned N25 as per Figure 11.1 of the County Development Plan 2014-2020. However, there is not a specific policy/objective outlined in the County Development Plan which states that routes will need to be within this defined corridor. The proposed route appears to traverse a national monument (ref: KK044-023). The Planning Authority have strong policies in place to protect such sites as outlined in Objective 8I of the Plan. There are 16 no. dwellings located within c. 50 – 100 metres of the proposed route, and on this basis, objections are likely on the grounds of noise impact, air quality, and construction impacts etc. It is noted that this route traverses the rail line and therefore consultation with Iarnrod Eireann is likely to be required. Furthermore, the route also traverses both the Barrow River Estuary pNHA and the River Barrow and River Nore SAC. The County Development Plan seeks their protection under Objective 8B and 8C of the Plan Having regard to the proposed route traversing both an SAC and pNHA, this route is considered to be slightly negative from a planning perspective.	3
Flora & Fauna (comparative impact on designated sites/species and other areas of national, regional or local ecological value).	Atkins	• 1 pNHA Negatively impacts on the following; • 2 High Local Environmentally Sensitive Areas (ESA) • 2 Low Local ESA • 3 Watercourses	This route is considered one of the shorter options and is approximately 0.5 - 2.0km east of the original alignment. Crosses the SAC where it rejoins the existing alignment of the N25. **Impact dependant on - Paul to finish** No direct impacts to Special Protection Areas (SPAs), Natual Heritage Area (NHA) predicted. No direct impact to pNHAs predicted. Northern terminus of the route approaches close to the River Barrow Estuary pNHA at the N25 tie-in; indirect impact possible, but likely to be minor. Significant impacts to 2 sites of high local importance (i.e. ESA-3, & 16). Significant impacts predicted to 3 sites of low local value; to ESA-20 & 21. Barrow - Nore: 2 cossings; Suir: 1 crossing.	2
Water Quality (comparative impact on watercourses, water supplies and aquatic ecology)	Atkins	Traversal of 2 un-named watercourses, 1 named (Luffany) and 2 catchments. 5 Wells identified within 300m of Route option	The route crosses two river catchments i.e. the Suir and Nore, and crosses two un-named stream (within the Nore catchment) which eventually flows to the River Barrow and one named stream, Luffany (within the Suir catchment) which eventually flows to the River Suir. The River Barrow is part of the River Barrow and River Nore SAC and the River Suir is part of the Lower River Suir SAC. A small localised point within the study area has been identified to be at potential risk of flooding. The flood risk is identified at Slieverue, near Rathpatrick, to the south west of the Luffany roundabout.	4
Geology & Hydrogeology (comparative impact on vulnerable rocks and soils, aquifers and wells of national, regional or local importance.	Atkins	5 Wells/boreholes identified within 300m of route. Route crosses the following aquifers: • 0 regionally important; • 3 Locally Important; and • 1 poor. Approximately 71% (6.7km) of the route crosses Extreme/High Groundwater Vulnerability.	A number of datasets have been examined and the following features have not been identified in proximity to the study area: geological heritage sites; waste facilities; active quarries or pits; mines; major areas of peat; or karst features. 4no. isolated pockets of Alluvium are intersected by the route. 1no. in the southern region, 2no. in the central region and 1no. in the north which could give rise to potential soft ground requiring excavation. The general bedrock geology of the area is a slate, sandstone, greywacke conglomerate. Glenmore Source Protection Zone located approximately 1.8km north west of route. Groundwater will be vulnerable to contamination and potential impact on groundwater flow can be expected in area of deep excavations.	3
Air Quality and Climate (existing air quality environment and number of sensitive receptors).	AWN	No sensitive receptors within 50m of route.	A review of Environmental Protection Agency (EPA) monitoring data for similar Zone D locations suggests that there is a good level of air quality in the study area. A conservative background concentration of 5 ug/m^3 for NO_2 has been estimated with a background of 10 ug/m^3 estimated for PM_{10}. The existing national routes are considered the primary sources of air pollution in the area. As no receptors are impacted by this route option it is considered positive in terms of air quality.	7
Climate	AWN	N/A	Longer routes will require greater amounts of material for construction and will have high Grrenhouse Gas (GHG) emissions. Longer journeys will also produce higher GHG emissions. All routes are ranked 3 in terms of climate as there is no significant difference between route options	3

Environmental Criteria	**Owner**	**Preliminary Assessment of Option :** *Dark Blue Dashed - Route 3* - 8.7km		
		Quantitative Assessment	**Qualitative Assessment**	**Score**
Noise (identification of sensitive receptors, characteristics of the prevailing noise climate and opportunities for noise mitigation).	AWN	Passive Infrared (PIR) = 103 63 properties, excluding agriculture, are within 300m of the new roads (dark blue dashed). None of these properties are within 50m and 10 properties are within 50-100m.	Along existing route from New Ross bypass to Graiguenakill then diverts east, closer to existing route than orange (K) and red (I) routes. Expected noise climate to be quiet rural area but route is a reasonable distance from many clusters of properties (second lowest PIR) until it follows similar line to red route (I) at Curraghmore to Luffany. Mitigation may be possible due to topography at the 10 properties within 100m.	3
Landscape & Visual (comparative impact on landscape character, topography, vegetation, natural features, views and obstructions)	Eamonn Byrne	N/A	Travels up steep hillside and over stream valley from Craiguenakil to Carrickcloney. Significant adverse effects on landscape character of this sloping land which connects with the River Barrow valley. Potential adverse visual effects from dwellings at Carrickcloney. Will cut though some the highest contours of a ridge of high ground at Aylwardstown and south to Rathinure: a principal ridgeline (Kilkenny Landscape Character Assessment). Significant adverse effects on this ridge of high ground. Travels through local valley between Rathinure and Redgap, which is visually connected with the River Barrow valley corridor and views from along this corridor. Thus, potential significant adverse visual effects on views through this valley and on landscape character of the wider river Barrow valley. Potential for adverse visual effects to dwellings at Rathinure. From Ballyrownagh to Slieveroe roundabout follows a local stream valley parallel to the existing N25. Following this lower ground will help reduce potential visual effects however it will affect the setting of this stream valley and associated wetland vegetation.	1
Material Assets (comparative impact on utilities, properties, quarries, transport and infrastructure, etc.).	Atkins	Property counts within 300m of the Route include: Residential: 36 Commerical (residential): 1 Commerical: 1 Agriculture: 3 Agriculture (Residential): 21 Private Storage: 0 Unknown: 4 **Total: 66** The route crosses 2 HV O/H powerlines.	The route crosses a number of secondary and minor roads. This route crosses the existing N25. The N25 is recorded as the only public transport route through the study area, serviced by the Bus Eireann Route 370. No active quarries or pits have been identified in proximity to the study area. This corridor impacts two high voltage power lines and potentially impacts local telecom, transmission gas main, water and possibly broadband utilities. There will be a requirement to provide services along the proposed route with connections to the existing networks which could extend a distance given the location of the proposed corridor.	3
Agriculture (comparative impact on farm operations, farm types, livestock and other agri-business).	Philip Farrelly	Landtake of 19 ha, Impact on approximately 25 holdings 3 dairy farms.	Good quality agricultural land, majority of the route impacting on grassland, small amount of tillage land dispersed through the route. The majority of the route is offline and will result in severance to land holdings, small online section at northern end, there will not be any severance to land holdings along the online section.	2
Archaeology & Cultural Heritage (comparative impact on Recorded Monuments and Places, areas of archaeological potential, Architectural Heritage, and any other areas of cultural significance as per TII Guidelines for the Assessment of Archaeological Heritage Impacts of National Road Schemes and TII Guidelines for the Assessment of Architectural Heritage Impacts of National Road Schemes).	Moore Archaeology	The route could directly impact 5 known or potential archaeological, architectural or cultural heritage sites or features. The route also crosses 9 townland boundaries which may be of archaeological significance.		2
Human Health - Methodology to be agreed - similar to what in constraints report but v high level	Atkins	PIR = 103 63 properties, excluding agriculture, are within 300m of the new roads (dark blue dashed). None of these properties are within 50m and 10 properties are within 50-100m.	Along existing route from New Ross bypass to Graiguenakill then diverts east, closer to existing route than orange (K) and red (I) routes. Expected noise climate to be quiet rural area but route is a reasonable distance from many clusters of properties (second lowest PIR) until it follows similar line to red route (I) at Curraghmore to Luffany. Mitigation may be possible due to topography at the 10 properties within 100m.	3

Environmental Criteria	**Owner**	**Preliminary Assessment of Option :** *Pink Dashed - Route 4* - 9.2km		
		Quantitative Assessment	**Qualitative Assessment**	**Score**
Human Beings including compatibility with development policy	Coakley O'Neill	The route traverses the zone of notification for 2 no. national monument. The route traverses the River Barrow and River Nore Special Area of Conservation (SAC). There are 9 no. dwellings located within c. 50 – 100 meres of the proposed route.	The proposed route is largely located within the area designated to be kept from development for the provision of the realigned N25 as per Figure 11.1 of the County Development Plan 2014-2020. However, there is not a specific policy/objective outlined in the County Development Plan which states that routes will need to be within this defined corridor. The proposed route appears to traverse the zones of notification for 2 no. national monument (ref: KK041-023 and KK041-024). Furthermore, the route also traverses the River Barrow and River Nore SAC. The County Development Plan seeks their protection under Objective 8B and 8C of the Plan. In addition, the subject route is within 50-100 metres of 9 no. dwellings, and on this basis, objections are likely on the grounds of noise impact, air quality, and construction impacts etc. In comparison to the alternative options put forward at this stage, this proposed route is considered to be neutral from a planning perspective.	4
Flora & Fauna (comparative impact on designated sites/species and other areas of national, regional or local ecological value).	Atkins	Negatively impacts on the following; • 2 High Local Environmentally Sensitive Areas (ESA) • 2 Low Local ESA • 3 Watercourses	This route is considered one of the shorter options and is approximately 0.5km east and west of the original alignment. Runs through & along a section of SAC near Glenmore but no direct impact to Special Protection Areas (SPAs), Natual Heritage Area (NHA) or Proposed Natual Heritage Area (pNHAs) are predicted. Significant Impacts to 2 sites of high local importance (i.e. ESA-8, & 17); while minor impacts could occur at ESA-19, it is likely that these can be avoided at detailed design. Significant impacts predicted to 4 sites of low local value; to ESA-9, 12 & 15. Barrow - Nore: 1 crossings; Suir: 1 crossings.	4
Water Quality (comparative impact on watercourses, water supplies and aquatic ecology)	Atkins	Traversal of 1 un-named watercourse, 1 named (Luffany) and 2 catchments. 4 Wells identified within 300m of Route option	The route crosses two river catchments i.e. the Suir and Nore, and crosses one un-named stream (within the Nore catchment) which eventually flows to the River Barrow and one named stream, Luffany (within the Suir catchment) which eventually flows to the River Suir. The River Barrow is part of the River Barrow and River Nore SAC and the River Suir is part of the Lower River Suir SAC. A small localised point within the study area has been identified to be at potential risk of flooding. The flood risk is identified at Slieverue, near Rathpatrick, to the south west of the Luffany roundabout.	4
Geology & Hydrogeology (comparative impact on vulnerable rocks and soils, aquifers and wells of national, regional or local importance.	Atkins	4 Wells/boreholes identified within 300m of route. Route crosses the following aquifers: • 0 regionally important; • 3 Locally Important; and • 1 poor. Approximately 100% (9.2km) of the route crosses Extreme/High Groundwater Vulnerability.	A number of datasets have been examined and the following features have not been identified in proximity to the study area: geological heritage sites; waste facilities; active quarries or pits; mines; major areas of peat; or karst features. 3 isolated pockets of Alluvium are intersected by the route. 2no in the central region and 1no. in the north which could give rise to potential soft ground requiring excavation. The general bedrock geology of the area is a slate, sandstone, greywacke conglomerate. Glenmore Source Protection Zone located approximately 1.8km north west of route. Groundwater will be vulnerable to contamination and potential impact on groundwater flow can be expected in area of deep excavations.	2
Air Quality and Climate (existing air quality environment and number of sensitive receptors).	AWN	4 sensitive receptors within 50m of route.	A review of EPA monitoring data for similar Zone D locations suggests that there is a good level of air quality in the study area. A conservative background concentration of 5 ug/m^3 for NO_2 has been estimated with a background of 10 ug/m^3 estimated for PM_{10}. The existing national routes are considered the primary sources of air pollution in the area. The sensitive receptors impacted will likely experience an increase in pollutant concentrations as a result of the proposed route.	3
Climate	AWN	N/A	Longer routes will require greater amounts of material for construction and will have high Grrenhouse Gas (GHG) emissions. Longer journies will also produce higher GHG emissions. All routes are ranked 3 in terms of climate as there is no significant difference between route options.	3

Environmental Criteria	**Owner**	**Preliminary Assessment of Option :** *Pink Dashed - Route 4* - 9.2km		
		Quantitative Assessment	**Qualitative Assessment**	**Score**
Noise (identification of sensitive receptors, characteristics of the prevailing noise climate and opportunities for noise mitigation).	AWN	Passive Infrared (PIR) = 266 139 properties, excluding agriculture, are within 300m of the new roads (pink dashed). Five of these properties are within 50m and 14 properties are within 50-100m.	Along existing route from New Ross bypass to Kilmakevoge then diverts east until Ballyrahan where it intersects existing route and moves west. Passes through rural noise climates but at a further distance to properties than lime green route (Q) route e.g. at Gaulstown. Existing noise environment rural in nature with opportunity to provide mitigation at rear of properties near Luffany, where the orange dashed route (PR6) route and cyan dashed route (PR2) route also merge.	3
Landscape & Visual (comparative impact on landscape character, topography, vegetation, natural features, views and obstructions)	Eamonn Byrne	N/A	Follows the existing N25 alignment to south of Glenmore. Thus, avoiding effects on Glenmore and narrow stream valleys. From south of Glenmore, will cut towards the edge of a ridge of high ground between Ballynamona and Aylwardstown and south to Gaulstown. Avoids highest contours of this ridge. Significant adverse effects on this ridge of high ground. From Ballyrahan travels towards Davidstown. Travels on higher contours of ridge of higher ground from Davidstown to Carriganurra. Significant impacts on this ridge of high ground and area of sensitive vegetation and potential adverse effects on setting of local monuments.	2
Material Assets (comparative impact on utilities, properties, quarries, transport and infrastructure, etc.).	Atkins	Property counts within 300m of the Route include: Residential: 101 Commerical (residential): 6 Commerical: 11 Agriculture: 4 Agriculture (Residential): 12 Private Storage: 3 Unknown: 6 **Total: 143** The route crosses 2 HV O/H powerlines.	The route crosses a number of secondary and minor roads. This route crosses the existing N25. The N25 is recorded as the only public transport route through the study area, serviced by the Bus Eireann Route 370. No active quarries or pits have been identified in proximity to the study area. This corridor impacts two high voltage power lines and potentially impacts local telecom, water and possibly broadband utilities. There will be a requirement to provide services along the proposed route with connections to the existing networks given the location of the proposed corridor.	3
Agriculture (comparative impact on farm operations, farm types, livestock and other agri-business).	Philip Farrelly	Landtake of 20 ha, Impact on approximately 28 holdings 2 dairy farms.	Good quality agricultural land, majority of the route impacting on grassland, small amount of tillage land dispersed through the route. The majority of the route is offline and will result in severance to land holdings, small online section at northern end, there will not be any severance to land holdings along the online section.	2
Archaeology & Cultural Heritage (comparative impact on Recorded Monuments and Places, areas of archaeological potential, Architectural Heritage, and any other areas of cultural significance as per TII Guidelines for the Assessment of Archaeological Heritage Impacts of National Road Schemes and TII Guidelines for the Assessment of Architectural Heritage Impacts of National Road Schemes).	Moore Archaeology	The route could directly impact 6 known or potential archaeological, architectural or cultural heritage sites or features. The route also crosses 13 townland boundaries which may be of archaeological significance.	This route has a potential impact on the setting of 3 cultural heritage sites.	1
Human Health - Methodology to be agreed - similar to what in constraints report but v high level	Atkins	PIR = 266 139 properties, excluding agriculture, are within 300m of the new roads (pink dashed). Five of these properties are within 50m and 14 properties are within 50-100m.	Along existing route from New Ross bypass to Kilmakevoge then diverts east until Ballyrahan where it intersects existing route and moves west. Passes through rural noise climates but at a further distance to properties than lime green route (Q) route e.g. at Gaulstown. Existing noise environment rural in nature with opportunity to provide mitigation at rear of properties near Luffany, where the orange dashed route (PR6) route and cyan dashed route (PR2) route also merge.	3

Environmental Criteria	**Owner**	**Preliminary Assessment of Option :** *Orange Dashed - Route 6 - 12.1km*		
		Quantitative Assessment	**Qualitative Assessment**	**Score**
Human Beings including compatibility with development policy	Coakley O'Neill	There are 3 no. dwellings located within 50m of the route	The proposed route is not located within the area designated to be kept from development for the provision of the realigned N25 as per Figure 11.1 of the County Development Plan 2014-2020. However, there is not a specific policy/objective outlined in the County Development Plan which states that routes will need to be within this defined corridor. The proposed route appears to traverse the zones of notification for 2 no. national monument (ref: KK041-023 and KK041-024). F Furthermore, the route also traverses the River Barrow and River Nore Special Area of Conservation.. The County Development Plan seeks their protection under Objective 8B and 8C of the Plan. There are 3 no. dwellings located within 50-100metres of the proposed route. In comparison to the alternative options put forward at this stage, this proposed route is considered to be neutral from a planning perspective.	4
Flora & Fauna (comparative impact on designated sites/species and other areas of national, regional or local ecological value).	Atkins	Negatively impacts on; • 4 High Local Environmentally Sensitive Areas (ESA) • 2 Low Local ESA • 3 Watercourses	This route is considered one of the longer options and is approximately 0.5km to 2km west of the original alignment. No direct impact to Special Areas of Conservation (SACs), Special Protection Areas (SPAs), Natual Heritage Area (NHA) or Proposed Natual Heritage Area (pNHAs) predicted. Minor overlap of the northern end of ESA-1 (Ballybraghy) with the study corridor. Significant impacts to 2 sites of high local importance (i.e. ESA-4, & 17); while minor impacts could occur at ESA-19. While minor impacts may also occur at ESA-5, it is likely that these can be avoided at detailed design. Significant impacts predicted to 3 sites of low local value; to ESA-6 & 15. Barrow - Nore: 3 crossings; Suir: 0 crossings	1
Water Quality (comparative impact on watercourses, water supplies and aquatic ecology)	Atkins	Traversal of 2 un-named watercourses and 2 catchments. 3 Wells identified within 300m of Route option	The route crosses two river catchments i.e. the Suir and Nore, and crosses two un-named streams (within the Nore catchment) which eventually flows to the River Barrow. The River Barrow is part of the River Barrow and River Nore Special Area of Conservation (SAC). A small localised point within the study area has been identified to be at potential risk of flooding. The flood risk is identified at Slieverue, near Rathpatrick, to the south west of the Luffany roundabout.	5
Geology & Hydrogeology (comparative impact on vulnerable rocks and soils, aquifers and wells of national, regional or local importance.	Atkins	3 Wells/boreholes identified within 300m of route. Route crosses the following aquifers: • 0 regionally important; • 5 Locally Important; and • 1 poor. Approximately 82% (9.9km) of the route crosses Extreme/High Groundwater Vulnerability.	A number of datasets have been examined and the following features have not been identified in proximity to the study area: geological heritage sites; waste facilities; active quarries or pits; mines; major areas of peat; or karst features. 2no. isolated pockets of Alluvium are intersected by the route. 1no in the central region and 1no. in the north which could give rise to potential soft ground requiring excavation. The general bedrock geology of the area is a slate, sandstone, greywacke conglomerate. Glenmore Source Protection Zone located approximately 0.5km north of route. Groundwater will be vulnerable to contamination and potential impact on groundwater flow can be expected in area of deep excavations.	2
Air Quality and Climate (existing air quality environment and number of sensitive receptors).	AWN	1 sensitive receptors within 50m of route.	A review of Environmental Protection Agency (EPA) monitoring data for similar Zone D locations suggests that there is a good level of air quality in the study area. A conservative background concentration of 5 ug/m^3 for NO_2 has been estimated with a background of 10 ug/m^3 estimated for PM_{10}. The existing national routes are considered the primary sources of air pollution in the area. The sensitive receptors impacted will likely experience an increase in pollutant concentrations as a result of the proposed route.	3
Climate	AWN	N/A	Longer routes will require greater amounts of material for construction and will have high Greenhouse Gas (GHG) emissions. Longer journeys will also produce higher GHG emissions. All routes are ranked 3 in terms of climate as there is no significant difference between route options	3

Environmental Criteria	**Owner**	**Preliminary Assessment of Option :** *Orange Dashed - Route 6 - 12.1km*		
		Quantitative Assessment	**Qualitative Assessment**	**Score**
Noise (identification of sensitive receptors, characteristics of the prevailing noise climate and opportunities for noise mitigation).	AWN	Passive Infrared (PIR) = 138 84 properties, excluding agriculture, are within 300m of the new roads (orange dashed). One of these properties is within 50m and 8 properties are within 50-100m.	Diverts west at New Ross bypass through rural areas with no alignment along the existing route. Similar to the purple route (A) it is expected that the noise climate will be a quiet rural area and the introduction of a busy 100km/h road would significantly change the noise environment. More properties to be mitigated compared to purple route (A) (A) but the number of properties is comparable to dark blue dashed route (PR3).	3
Landscape & Visual (comparative impact on landscape character, topography, vegetation, natural features, views and obstructions)	Eamonn Byrne	N/A	Mostly avoids lower slopes and wooded vegetation of narrow stream valleys north and west of Glenmore (travels close to the edge of this intimate valley system). However, will affect some woodland near Mullennahone. Will lead to significant adverse effects on hill at Ardbeg, cutting close to the hills summit, which forms a prominent backdrop in views especially from land to the south of Ardbeg. From south of Ardbeg towards Carriganurra the route travels across the steep side slopes and higher contours of a locally prominent ridge of higher ground noted as a principal ridgeline (Kilkenny Landscape Character Assessment). The side slopes are integral to the ridge and provide large scale views over the surrounding countryside. The side slopes of this ridge are visible from a wide surrounding area extending far to the west, and the route in this location may be widely visible. Significant adverse effects on side slopes and ridge of high ground from Ardbeg to Carriganurra.	1
Material Assets (comparative impact on utilities, properties, quarries, transport and infrastructure, etc.).	Atkins	Property counts within 300m of the Route include: Residential: 62 Commerical (residential): 5 Commerical: 2 Agriculture: 4 Agriculture (Residential): 9 Private Storage: 0 Unknown: 6 **Total: 88** The route crosses 2 HV O/H powerlines.	The route crosses a number of secondary and minor roads. This route does not cross the existing N25. No active quarries or pits have been identified in proximity to the study area. This corridor impacts two high voltage power lines and potentially impacts local telecom, water and possibly broadband utilities. There will be a requirement to provide services along the proposed route with connections to the existing networks given the location of the proposed corridor.	4
Agriculture (comparative impact on farm operations, farm types, livestock and other agri-business).	Philip Farrelly	Landtake of 26 ha, Impact on approximately 44 holdings 6 dairy farm and in close proximity to one farmyard.	Good quality agricultural land, majority of the route impacting on grassland, small amount of tillage land dispersed through the route. The majority of the route is offline and will result in severance to land holdings.	2
Archaeology & Cultural Heritage (comparative impact on Recorded Monuments and Places, areas of archaeological potential, Architectural Heritage, and any other areas of cultural significance as per TII Guidelines for the Assessment of Archaeological Heritage Impacts of National Road Schemes and TII Guidelines for the Assessment of Architectural Heritage Impacts of National Road Schemes).	Moore Archaeology	The route could directly impact 3 known or potential archaeological, architectural or cultural heritage sites or features. The route also crosses 18 townland boundaries which may be of archaeological significance.	This route has a potential impact on the setting of 5 cultural heritage sites.	3
Human Health - Methodology to be agreed - similar to what in constraints report but v high level	Atkins	PIR = 138 84 properties, excluding agriculture, are within 300m of the new roads (orange dashed). One of these properties is within 50m and 8 properties are within 50-100m.	Diverts west at New Ross bypass through rural areas with no alignment along the existing route. Similar to the purple route (A) it is expected that the noise climate will be a quiet rural area and the introduction of a busy 100km/h road would significantly change the noise environment. More properties to be mitigated compared to purple route (A) (A) but the number of properties is comparable to dark blue dashed route (PR3).	3

Economy Criteria	Owner	Preliminary Assessment of Option : *Purple (Route A)*		
		Quantitative Assessment	**Qualitative Assessment**	**Score**
Efficiency and Effectiveness *	Systra	Route A will result in a total annual journey time savings benefit of €400K for the opening year.	Route A is the 13th best or 3rd worst performing route. The journey time benefits outlined have been comparatively scaled against the worst and best performing route and applied to 1-7 scoring system for a score of 2 - Moderately Negative. Though in absolute terms it still delivers some benefits and journey time improvements in comparison to the Do-Nothing it is very	2
Transport Quality & Reliability**	Systra	Route A will result in an estimated average daily journey time saving of 21 seconds per vehicle in the opening year of 2030 compared to the Do-Nothing. However, for HGVs there is a time saving of just 6 seconds which combined with the additional distance to travel results in the majority of HGV not transfering to the route.	Route A is the 13th best or 3rd worst performing route. The journey times outlined have been comparatively scaled against the worst and best performing route and applied to 1-7 scoring system for a score of 5 - minor or slightly negative. Though in absolute terms it still delivers a faster journey time than the Do-Nothing.	3
Wider economic impacts	Systra	Competition in the Market (Neutral): Agglomeration (Neutral);	All routes options provide an improved connection to Port of Waterford and Waterford City which may accrue wider	4
Funding Impacts	Systra	No non-exchequer funding available.	All routes are comparatively neutral as they have the same funding sources.	4

Economy Criteria	**Owner**	**Preliminary Assessment of Option :** *Grey (Route B)*		
		Quantitative Assessment	**Qualitative Assessment**	**Score**
Efficiency and Effectiveness *	Systra	Route B will result in a total annual journey time savings benefit of €1.3m for the opening year.	Route B is the 12th best or 4th worst performing route. The journey time savings and benefits outlined have been comparatively scaled against the worst and best performing route and applied to 1-7 scoring system for a score of 3-Minor or Slightly Negative.	3
Transport Quality & Reliability**	Systra	Route B will result in an estimated average daily journey time saving of 55 seconds per vehicle in the opening year of 2030 compared to the Do-Nothing. As the route begins west of the existing route and further from the port HGVs coming from the port will not transfer to the new route as the journey is comparable along the existing road.	Route B is the 12th best or 4th worst performing route. The journey time outlined have been comparatively scaled against the worst and best performing route and applied to 1-7 scoring system for a score of 4-Not Significant or Neutral.	4
Wider economic impacts	Systra	Competition in the Market (Neutral): Agglomeration (Neutral);	All routes options provide an improved connection to Port of Waterford and Waterford City which may accrue wider economic benefits.	4
Funding Impacts	Systra	No non-exchequer funding available.	All routes are comparatively neutral as they have the same funding sources.	4

Economy Criteria	**Owner**	**Preliminary Assessment of Option :** *Blue (Route D)*		
		Quantitative Assessment	**Qualitative Assessment**	**Score**
Efficiency and Effectiveness *	Systra	Route D will result in a total annual journey time savings benefit of €2.54m for the opening year.	Route D is the 10th best or 6th worst performing route. The journey time savings and benefits outlined have been comparatively scaled against the worst and best performing route and applied to 1-7 scoring system for a score of 5-Minor or slightly positive.	5
Transport Quality & Reliability**	Systra	Route D will result in an estimated average daily journey time saving of 74 seconds per vehicle in the opening year of 2030 compared to the Do-Nothing. The majority of light and heavy traffic will transfer to the route.	Route D is the 11th best or 5th worst performing route. The journey time outlined have been comparatively scaled against the worst and best performing route and applied to 1-7 scoring system for a score of 5-Minor or slightly positive.	5
Wider economic impacts	Systra	Competition in the Market (Neutral): Agglomeration (Neutral); Inward Investment (Neutral);	All routes options provide an improved connection to Port of Waterford and Waterford City which may accrue wider	4
Funding Impacts	Systra	No non-exchequer funding available.	All routes are comparatively neutral as they have the same funding sources.	4

Economy Criteria	**Owner**	**Preliminary Assessment of Option :** *Brown (Route F)*		
		Quantitative Assessment	**Qualitative Assessment**	**Score**
Efficiency and Effectiveness *	Systra	Route F will result in a total annual journey time savings benefit of €2.52m for the opening year.	Route F is the 11th best or 5th worst performing route. The journey time savings and benefits outlined have been comparatively scaled against the worst and best performing route and applied to 1-7 scoring system for a score of 5-Minor or slightly positive.	5
Transport Quality & Reliability**	Systra	Route F will result in an estimated average daily journey time saving of 78 seconds per vehicle in the opening year of 2030 compared to the Do-Nothing. The majority of light and heavy traffic will transfer to the route.	Route F is the 10th best or 6th worst performing route. The journey time savings outlined have been comparatively scaled against the worst and best performing route and applied to 1-7 scoring system for a score of 5-Minor or slightly positive.	5
Wider economic impacts	Systra	Competition in the Market (Neutral): Agglomeration (Neutral); Inward Investment (Neutral);	All routes options provide an improved connection to Port of Waterford and Waterford City which may accrue wider	4
Funding Impacts	Systra	No non-exchequer funding available.	All routes are comparatively neutral as they have the same funding sources.	4

Economy Criteria	**Owner**	**Preliminary Assessment of Option :** *Dark Blue (Route G)*		
		Quantitative Assessment	**Qualitative Assessment**	**Score**
Efficiency and Effectiveness *	Systra	Route G will result in a total annual journey time savings benefit of €3.15m for the opening year.	Route G is the 9th best or 7th worst performing route. The journey time savings and benefits outlined have been comparatively scaled against the worst and best performing route and applied to 1-7 scoring system for a score of 5-Minor or slightly positive.	5
Transport Quality & Reliability**	Systra	Route G will result in an estimated average daily journey time saving of 90 seconds per vehicle in the opening year of 2030 compared to the Do-Nothing. The majority of light and heavy traffic will transfer to the route.	Route G is the 9th best or 7th worst performing route. The journey time savings outlined have been comparatively scaled against the worst and best performing route and applied to 1-7 scoring system for a score of 6-Moderately Positive.	6
Wider economic impacts	Systra	Competition in the Market (Neutral): Agglomeration (Neutral); Inward Investment (Neutral);	All routes options provide an improved connection to Port of Waterford and Waterford City which may accrue wider economic	4
Funding Impacts	Systra	No non-exchequer funding available.	All routes are comparatively neutral as they have the same funding sources.	4

Economy Criteria	**Owner**	**Preliminary Assessment of Option :** *Magenta (Route H)*		
		Quantitative Assessment	**Qualitative Assessment**	**Score**
Efficiency and Effectiveness *	Systra	Route H will result in a total annual journey time savings benefit of €3.72m for the opening year.	Route H is the 6th best performing route. The journey time savings and benefits outlined have been comparatively scaled against the worst and best performing route and applied to 1-7 scoring system for a score of 6-Moderately Positive.	6
Transport Quality & Reliability**	Systra	Route H will result in an estimated average daily journey time saving of 105 seconds per vehicle in the opening year of 2030 compared to the Do-Nothing. The majority of light and heavy traffic will transfer to the route.	Route H is the 6th best performing route. The journey time savings outlined have been comparatively scaled against the worst and best performing route and applied to 1-7 scoring system for a score of 6-Moderately Positive.	6
Wider economic impacts	Systra	Competition in the Market (Neutral): Agglomeration (Neutral); Inward Investment (Neutral);	All routes options provide an improved connection to Port of Waterford and Waterford City which may accrue wider	4
Funding Impacts	Systra	No non-exchequer funding available.	All routes are comparatively neutral as they have the same funding sources.	4

Economy Criteria	**Owner**	**Preliminary Assessment of Option :** *Red (Route I)* **Quantitative Assessment**		**Score**
Efficiency and Effectiveness *	Systra	Route I will result in a total annual journey time savings benefit of €4.01m for the opening year.	Route I is the 3rd best performing route. The journey time savings and benefits outlined have been comparatively scaled against the worst and best performing route and applied to 1-7 scoring system for a score of 6-Moderately Positive.	6
Transport Quality & Reliability**	Systra	Route I will result in an estimated average daily journey time saving of 116 seconds per vehicle in the opening year of 2030 compared to the Do-Nothing. The majority of light and heavy traffic will transfer to the route.	Route I is the 3rd best performing route. The journey time savings outlined have been comparatively scaled against the worst and best performing route and applied to 1-7 scoring system for a score of 7-Major or Highly Positive.	7
Wider economic impacts	Systra	Competition in the Market (Neutral): Agglomeration (Neutral); Inward Investment (Neutral);	All routes options provide an improved connection to Port of Waterford and Waterford City which may accrue wider	4
Funding Impacts	Systra	No non-exchequer funding available.	All routes are comparatively neutral as they have the same funding sources.	4

Economy Criteria	Owner	Preliminary Assessment of Option : *Cyan (Route J)*		
		Quantitative Assessment	**Qualitative Assessment**	**Score**
Efficiency and Effectiveness *	Systra	Route J will result in a total annual journey time savings benefit of €3.3m for the opening year.	Route J is the 8th best performing route. The journey time savings and benefits outlined have been comparatively scaled against the worst and best performing route and applied to 1-7 scoring system for a score of 6-Moderately Positive.	5
Transport Quality & Reliability**	Systra	Route J will result in an estimated average daily journey time saving of 92 seconds per vehicle in the opening year of 2030 compared to the Do-Nothing. The majority of light and heavy traffic will transfer to the route.	Route J is the 8th best performing route. The journey time savings outlined have been comparatively scaled against the worst and best performing route and applied to 1-7 scoring system for a score of 6-Moderately Positive.	6
Wider economic impacts	Systra	Competition in the Market (Neutral): Agglomeration (Neutral); Inward Investment (Neutral);	All routes options provide an improved connection to Port of Waterford and Waterford City which may accrue wider	4
Funding Impacts	Systra	No non-exchequer funding available.	All routes are comparatively neutral as they have the same funding sources.	4

Economy Criteria	Owner	Preliminary Assessment of Option :		
		Quantitative Assessment	Qualitative Assessment	Score
Efficiency and Effectiveness *	Systra	Route K will result in a total annual journey time savings benefit of €3.85m for the opening year.	Route K is the 4th best performing route. The journey time savings and benefits outlined have been comparatively scaled against the worst and best performing route and applied to 1-7 scoring system for a score of 6-Moderately Positive.	6
Transport Quality & Reliability**	Systra	Route K will result in an estimated average daily journey time saving of 111 seconds per vehicle in the opening year of 2030 compared to the Do-Nothing. The majority of light and heavy traffic will transfer to the route.	Route K is the 4th best performing route. The journey time savings outlined have been comparatively scaled against the worst and best performing route and applied to 1-7 scoring system for a score of 6-Moderately Positive.	6
Wider economic impacts	Systra	Competition in the Market (Neutral): Agglomeration (Neutral); Inward Investment (Neutral);	All routes options provide an improved connection to Port of Waterford and Waterford City which may accrue wider	4
Funding Impacts	Systra	No non-exchequer funding available.	All routes are comparatively neutral as they have the same funding sources.	4

Economy Criteria	**Owner**	**Preliminary Assessment of Option :** *Turquoise (Route P)*		
		Quantitative Assessment	**Qualitative Assessment**	**Score**
Efficiency and Effectiveness *	Systra	Route P will result in a total annual journey time savings disbenefit of -€1.01m for the opening year. This is due to the length of the route which results in longer journey times than the Do-Nothing despite the increase in average speed.	Route P is the worst performing route. The journey time savings and benefits outlined have been comparatively scaled against the worst and best performing route and applied to 1-7 scoring system for a score of 1- Major or Highly Negative.	1
Transport Quality & Reliability**	Systra	Route P will result in an estimated average daily journey time increase of 28 seconds per vehicle in the opening year of 2030 compared to the Do-Nothing. This is due to length of the route which is over 3km longer than the existing which despite the higher average speeds results in a longer journey time. The route is also located further from the N29 and port, increasing journey times further for traffic from this road. As a result the majority of vehicles do not transfer onto the new route even with a lower speed limit applied to the existing road with the upgrade in place.	Route P is the worst performing route. The journey time savings outlined have been comparatively scaled against the worst and best performing route and applied to 1-7 scoring system for a score of 1- Major or Highly Negative.	1
Wider economic impacts	Systra	Competition in the Market (Neutral): Agglomeration (Neutral); Inward Investment (Neutral);	All routes options provide an improved connection to Port of Waterford and Waterford City which may accrue wider	4
Funding Impacts	Systra	No non-exchequer funding available.	All routes are comparatively neutral as they have the same funding sources.	4

Economy Criteria	**Owner**	**Preliminary Assessment of Option :** *Lime Green (Route Q)* **Quantitative Assessment**		**Score**
Efficiency and Effectiveness *	Systra	Route K will result in a total annual journey time savings benefit of €4.28m for the opening year.	Route Q is the 2nd best performing route. The journey time savings and benefits outlined have been comparatively scaled against the worst and best performing route and applied to 1-7 scoring system for a score of 7 - Major or Highly Positive.	7
Transport Quality & Reliability**	Systra	Route Q will result in an estimated average daily journey time saving of 120 seconds per vehicle in the opening year of 2030 compared to the Do-Nothing. The majority of light and heavy traffic will transfer to the route.	Route Q is the 2nd best performing route. The journey time savingsoutlined have been comparatively scaled against the worst and best performing route and applied to 1-7 scoring system for a score of 7 - Major or Highly Positive.	7
Wider economic impacts	Systra	Competition in the Market (Neutral): Agglomeration (Neutral); Inward Investment (Neutral);	All routes options provide an improved connection to Port of Waterford and Waterford City which may accrue wider	4
Funding Impacts	Systra	No non-exchequer funding available.	All routes are comparatively neutral as they have the same funding sources.	4

Economy Criteria	**Owner**	**Preliminary Assessment of Option :** *Cyan Dashed (Route 2)*		
		Quantitative Assessment	**Qualitative Assessment**	**Score**
Efficiency and Effectiveness *	Systra	Route 2 will result in a total annual journey time savings benefit of €3.48m for the opening year.	Route 2 is the 7th best performing route. The journey time savings and benefits outlined have been comparatively scaled against the worst and best performing route and applied to 1-7 scoring system for a score of 6 - Moderately Positive.	6
Transport Quality & Reliability**	Systra	Route 2 will result in an estimated average daily journey time saving of 99 seconds per vehicle in the opening year of 2030 compared to the Do-Nothing. The majority of light and heavy traffic will transfer to the route.	Route 2 is the 7th best performing route. The journey time savings outlined have been comparatively scaled against the worst and best performing route and applied to 1-7 scoring system for a score of 6 - Moderately Positive.	6
Wider economic impacts	Systra	Competition in the Market (Neutral): Agglomeration (Neutral); Inward Investment (Neutral);	All routes options provide an improved connection to Port of Waterford and Waterford City which may accrue wider	4
Funding Impacts	Systra	No non-exchequer funding available.	All routes are comparatively neutral as they have the same funding sources.	4

Economy Criteria	**Owner**	**Preliminary Assessment of Option :** *Dark Blue Dashed (Route 3)* **Quantitative Assessment**		**Score**
Efficiency and Effectiveness *	Systra	Route 3 will result in a total annual journey time savings benefit of €4.44m for the opening year.	Route 3 is the best performing route. The journey time savings and benefits outlined have been comparatively scaled against the worst and best performing route and applied to 1-7 scoring system for a score of 7 - Major or Highly Positive.	7
Transport Quality & Reliability**	Systra	Route 3 will result in an estimated average daily journey time saving of 128 seconds per vehicle in the opening year of 2030 compared to the Do-Nothing. The majority of light and heavy traffic will transfer to the route.	Route 3 is the best performing route. The journey time savings outlined have been comparatively scaled against the worst and best performing route and applied to 1-7 scoring system for a score of 7 - Major or Highly Positive.	7
Wider economic impacts	Systra	Competition in the Market (Neutral): Agglomeration (Neutral); Inward Investment (Neutral);	All routes options provide an improved connection to Port of Waterford and Waterford City which may accrue wider	4
Funding Impacts	Systra	No non-exchequer funding available.	All routes are comparatively neutral as they have the same funding sources.	4

Economy Criteria	**Owner**	**Preliminary Assessment of Option :** *Pink Dashed (Route 4)*		
		Quantitative Assessment	**Qualitative Assessment**	**Score**
Efficiency and Effectiveness *	Systra	Route 4 will result in a total annual journey time savings benefit of €3.83m for the opening year.	Route 4 is the 5th best performing route. The journey time savings and benefits outlined have been comparatively scaled against the worst and best performing route and applied to 1-7 scoring system for a score of 6 - Moderately Positive.	6
Transport Quality & Reliability**	Systra	Route 4 will result in an estimated average daily journey time saving of 108 seconds per vehicle in the opening year of 2030 compared to the Do-Nothing. The majority of light and heavy traffic will transfer to the route.	Route 4 is the 5th best performing route. The journey time savings outlined have been comparatively scaled against the worst and best performing route and applied to 1-7 scoring system for a score of 6 - Moderately Positive.	6
Wider economic impacts	Systra	Competition in the Market (Neutral): Agglomeration (Neutral); Inward Investment (Neutral);	All routes options provide an improved connection to Port of Waterford and Waterford City which may accrue wider	4
Funding Impacts	Systra	No non-exchequer funding available.	All routes are comparatively neutral as they have the same funding sources.	4

Economy Criteria	**Owner**	**Preliminary Assessment of Option :** *Orange Dashed (Route 46*		
		Quantitative Assessment	**Qualitative Assessment**	**Score**
Efficiency and Effectiveness *	Systra	Route 4 will result in a total annual journey time savings benefit of €77K for the opening year. However, it will have a slight time savings disbenefit for HGVs.	Route 6 is the 2nd worst performing route. The journey time savings and benefits outlined have been comparatively scaled against the worst and best performing route and applied to 1-7 scoring system for a score of 2 - Moderately Negative.	2
Transport Quality & Reliability**	Systra	Route 6 will result in an estimated average daily journey time saving of just 3 seconds per vehicle in the opening year of 2030 compared to the Do-Nothing. Some light vehicles and the majority of HGVs will not transfer to the new route as the journey times are longer or comparable to the existing road.	Route 6 is the 2nd worst performing route. The journey time savings and benefits outlined have been comparatively scaled against the worst and best performing route and applied to 1-7 scoring system for a score of 2 - Moderately Negative.	2
Wider economic impacts	Systra	Competition in the Market (Neutral): Agglomeration (Neutral); Inward Investment (Neutral);	All routes options provide an improved connection to Port of Waterford and Waterford City which may accrue wider	4
Funding Impacts	Systra	No non-exchequer funding available.	All routes are comparatively neutral as they have the same funding sources.	4