

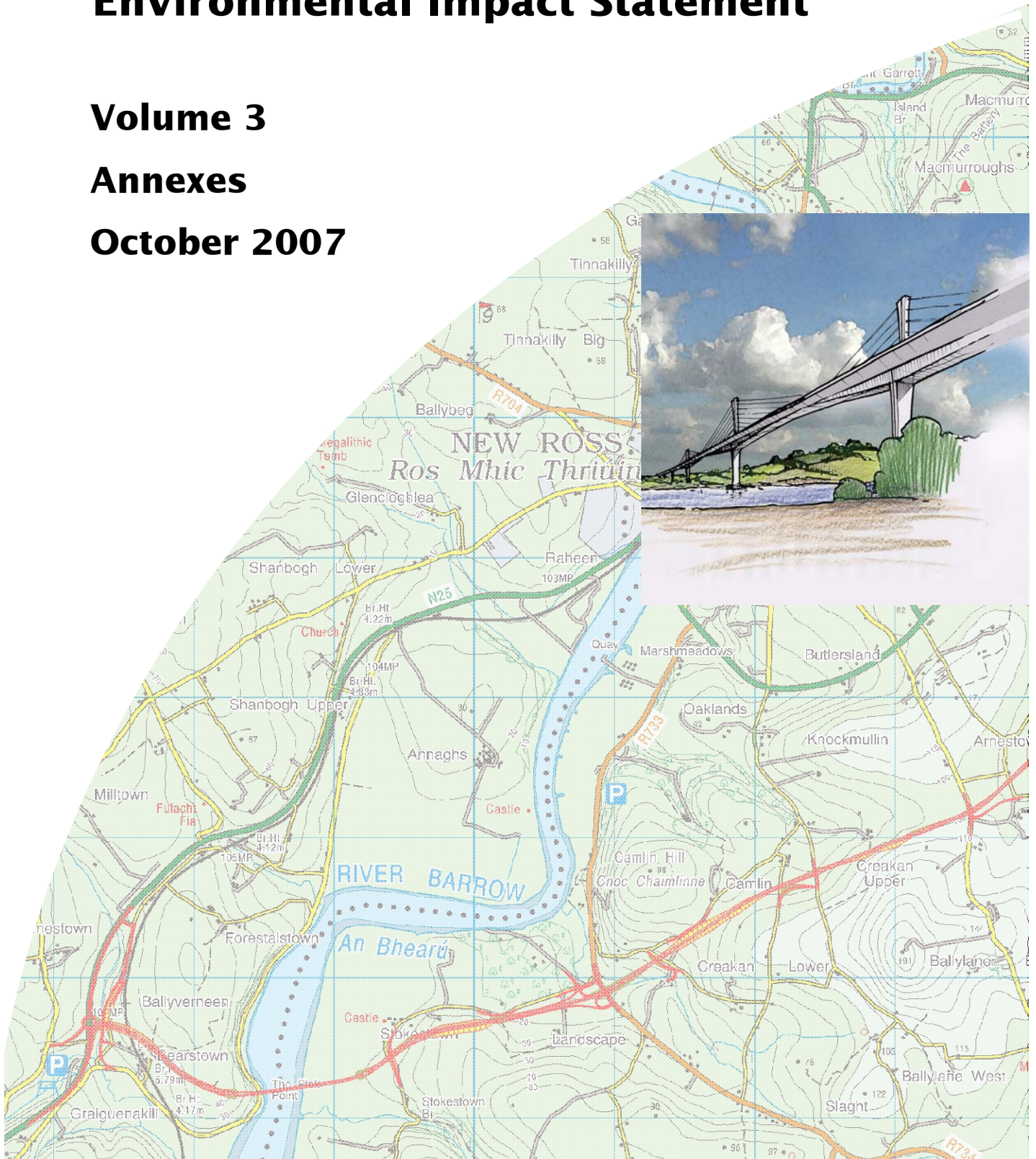
# New Ross Bypass

## Environmental Impact Statement

**Volume 3**

**Annexes**

**October 2007**







Kilkenny  
County  
Council



National  
Roads  
Authority



Wexford  
County  
Council

# **New Ross Bypass**

## **Environmental Impact Statement**

### **Volume 3**

### **Annexes**

### **October 2007**



Mott MacDonald Pettit



Tramore House  
Regional Design Office



ERM Ireland Ltd



## **Preface to *Volume 3* of the New Ross Bypass Environmental Impact Statement**

This Environmental Impact Statement (EIS) for the New Ross Bypass comprises the following volumes:

### ***Volume 1 Non-Technical Summary (NTS) and Main Text***

Volume 1 contains the following:

- NTS (also available as a separate booklet);
- List of Abbreviations Glossary of Terms;
- Main EIS Assessment Text (Chapters 1 to 19); and
- List of References.

A Table of Contents for Volume 1 page can be found at the front of Volume 1.

### ***Volume 2 Drawings (containing engineering and environmental drawings)***

Volume 2 contains a series of drawings and figures in A3 format. A full listing of all the figures in the EIS can be found in Volume 1 and Volume 2.

### ***Volume 3 Annexes***

Volume 3 contains four annexes to the EIS. These provide additional and supporting information to the chapters in Volume 1. The annexes are as follows:

- Annex A      Landscape & visual;
- Annex B      Ecology;
- Annex C      Agronomy; and
- Annex D      Archaeological heritage and Architectural, artistic, cultural & historic environment.

The NTS is also available as a separate document.

This document is Volume 3 of the EIS.

### **Note on Stage of Design**

All proposed road levels indicated in this Environmental Impact Statement or shown on drawings are based on preliminary stage designs and may be revised at detailed design stage. Modifications may be made to avail of opportunities to improve the design in the light of the experience of ground conditions or other innovations, provided this has no significant adverse environmental effect.



## Annex A

# Landscape & visual viewpoint tables



**Table A1.1** *Tabulated Assessment of Visual Impacts at Selected Viewpoint Locations*

ID	Description of Viewpoint and approximate townland location	Approximate Distance from Proposals (m)	Components in Existing View	Proposed View (pre establishment)	Viewer Sensitivity Pre Establishment	Magnitude of Change Pre Establishment	Significance of Impact Pre Establishment	Significance of Impact post Establishment
1	Group of Dwellings, Rathgaroge	50	Farmland and hedgerows	Proposed embankment associated with the N30 east tie-in is likely to be only partly visible, filtered through hedgerows	High	Small - medium	Moderate	Slight
2	Pair of dwellings, Rathgaroge	90	View across pastoral land and hedgerow boundary and rear of dwelling house (ID3)	Short range views of the proposals associated with the N30 east tie-in are likely to be gained	High	Large	Substantial	Moderate
3	Single dwelling, Rathgaroge	<50	Views of existing road and roadside hedgerow	Short range views of proposals associated with the N30 east tie-in including road embankment filtered through single roadside hedgerow are likely to be gained. Clear views of proposed new access onto existing N30 road route are likely to be gained	High	Large	Substantial	Moderate
4	Two storey dwelling, Rathgaroge	<50	Existing views over pastoral land and scattered dwellings	Short range views are likely to be gained of proposed junction and alignment associated with the N30 east tie in	High	Large	Substantial	Moderate
5	Dwelling house, Rathgaroge	90	Views to rear of dwelling of mature boundary hedgerow	Mature boundary hedgerow is likely to screen views of the proposed mainline. Views of the proposed tie in are likely to be screened substantially by other dwellings (ID4)	High	Not perceptible	Not significant	Not significant
6	Dwelling House, Knockroe	180	Mature trees and garden planting	Vegetation is likely to screen proposals from view. Distant views of the proposals are likely to be gained at the access gate. The view of the proposed mainline would be gained through a field gate on the opposite side of the road	Medium	Small	Slight	Not significant
7	Single Dwelling, Knockroe	400	Mature hedgerow and garden planting	Proposed mainline is likely to be substantially screened from view by mature vegetation.	Medium	Not Perceptible	Not Significant	Not significant

ID	Description of Viewpoint and approximate townland location	Approximate Distance from Proposals (m)	Components in Existing View	Proposed View (pre establishment)	Viewer Sensitivity Pre Establishment	Magnitude of Change Pre Establishment	Significance of Impact Pre Establishment	Significance of Impact post Establishment
8	Group of 3 dwellings, Knockroe	720	Pastoral landscape with hedgerows	Distant views of the proposed mainline may be gained from second storey windows. Views of proposals at ground level are likely to be screened by mature vegetation	Low	Small	Not Significant	Not significant
9	Single dwelling and farm buildings, Berkeley	320	Mature hedgerow and garden planting	Proposals are likely to be screened from view by mature vegetation	Low	Not Perceptible	Not Significant	Not significant
10	Dwelling, Berkeley	550	Berkeley House and wooded estate. Farmland	Proposals located at distance are likely to be substantially screened by intervening hedgerows. Filtered views may be scarcely available in wintertime owing to leaf loss	Low	Not Perceptible	Not Significant	Not significant
11	Dwelling House, Berkeley	630	Mature roadside hedgerows and scattered buildings (ID 10)	Proposals are likely to be substantially screened from view by intervening hedgerows and buildings. Slight views may be scarcely available in winter owing to leaf loss	Low	Not Perceptible	Not Significant	Not significant
12	Berkeley House and Wooded Estate	750	Pastoral landscape with mature hedgerow vegetation and isolated woodland groups	Proposals are likely to be substantially screened from view by mature vegetation	Low	Not Perceptible	Not Significant	Not significant
13	Two storey dwelling house, Lacken	450	Local road and roadside vegetation. Distant views over wider pastoral landscape	Views of proposed mainline is likely to be substantially screened by intervening mature field hedgerows. Partial views may be available from second storey windows particularly in wintertime owing to leaf loss	Low	Small	Slight-Not Significant	Not Significant
14	Two storey dwelling house, Lacken	270	Roadside hedgerows and dwelling house (ID 17) together with garden planting	Proposed mainline is likely to be substantially screened from view by dwelling house (ID 17) together with garden planting	Medium	Not Perceptible	Not Significant	Not significant

ID	Description of Viewpoint and approximate townland location	Approximate Distance from Proposals (m)	Components in Existing View	Proposed View (pre establishment)	Viewer Sensitivity Pre Establishment	Magnitude of Change Pre Establishment	Significance of Impact Pre Establishment	Significance of Impact post Establishment
15	Two storey dwelling house, Lacken	180	Local road and other dwellings, in particular ID 18	Distant views of proposed mainline and local road crossing from the gate entry of this house are likely to be gained. Partial views of mainline on embankment further south filtered through vegetation are likely to be gained in wintertime.	Medium	Medium	Moderate	Slight
16	Bungalow, Lacken	290	Pastoral land from rear of dwelling	Views are likely to be gained of the proposed cutting edge associated with mainline from rear boundary (western garden boundary features mature conifer hedge which is likely to screen views of proposals from this location)	Medium	Small	Slight	Not significant
17	Two storey dwelling house, Lacken	210	Boundary hedgerow and mature planting associated with adjacent dwelling (ID 18)	Proposed mainline is likely to be visible in part and screened from view in part by garden planting at the rear of this dwelling and mature planting associated with adjacent dwelling (ID 18)	Low	Not Perceptible	Slight - Moderate	Not significant
18	Bungalow, Lacken	180	Mature garden planting within and Dwelling (ID 15) on opposite side of road	Proposed mainline and local road interchange is likely to be largely screened from view by dwelling (ID 15) and mature vegetation.	Low	Small	Slight-Not significant	Not significant
19	Bungalow, Lacken	<50	Local road and wider farmed landscape with hedgerows	Gable end of dwelling faces conifer hedge which is likely to screen views of the proposals in part. Short range views of mainline on embankment are likely to be gained from unplanted boundary of this house. Views of the local road crossing are likely to be clearly gained from the entrance gate	High	Large	Substantial	Moderate - Substantial

ID	Description of Viewpoint and approximate townland location	Approximate Distance from Proposals (m)	Components in Existing View	Proposed View (pre establishment)	Viewer Sensitivity Pre Establishment	Magnitude of Change Pre Establishment	Significance of Impact Pre Establishment	Significance of Impact post Establishment
20	Bungalow dwelling, Lacken	240	Open views of Local road and wider pastoral landscape setting with hedgerow vegetation. (no internal garden planting as screen)	Partial screening of the proposed mainline on embankment is likely to be provided by the hedgerow vegetation	Medium	Small	Slight - Moderate	Not Significant
21	Dwelling House, Lacken	250	Garden planting and other dwellings	Proposed mainline is likely to be substantially screened from view by garden planting and other dwellings including ID 20	Low	Small	Slight-Not Significant	Not significant
22	Two storey dwelling, Lacken	90	Pastoral landscape with hedgerows	Proposed mainline on embankment is likely to be visible at short range especially from second storey windows. Garden planting and hedgerow vegetation provides some screening at ground level	High	Medium-Large	Moderate - Substantial	Moderate
23	Large stone house and farm buildings, Lacken	<50	Flat pastoral landscape with mature vegetation	Short range clear views of the mainline on embankment are likely to be gained	High	Large	Substantial	Moderate
24	Two storey dwelling house, Lacken	180	Local road and scattered dwellings against wider pastoral landscape	Proposals are likely to be largely screened from view by hedgerow on opposite side of the road. Filtered views of the proposed mainline may be gained in winter	Medium	Small	Slight	Not significant
25	Dwelling House, Lacken	700	Open pastoral landscape with hedgerows	Proposals are likely to be screened from view by intervening topography, specifically a localised ridgeline and vegetation	Low	Not Perceptible	Not Significant	Not significant

ID	Description of Viewpoint and approximate townland location	Approximate Distance from Proposals (m)	Components in Existing View	Proposed View (pre establishment)	Viewer Sensitivity Pre Establishment	Magnitude of Change Pre Establishment	Significance of Impact Pre Establishment	Significance of Impact post Establishment
26	Dwelling House, Lacken	630	Open pastoral landscape with hedgerows	Proposals are likely to be screened from view by intervening topography, specifically a localised ridgeline and vegetation	Low	Not Perceptible	Not significant	Not significant
27	Dwelling House, Lacken	600	Open pastoral landscape with hedgerows	Proposals are likely to be screened from view by intervening topography, specifically a localised ridgeline and vegetation	Low	Not Perceptible	Not significant	Not significant
28	Dwelling House, Lacken	630	Open pastoral landscape with hedgerows	Proposals are likely to be screened from view by intervening topography, specifically a localised ridgeline and vegetation.	Low	Not Perceptible	Not significant	Not significant
29	Dwelling House, Lacken	540	Open pastoral landscape with hedgerows	Proposals are likely to be screened from view by intervening topography, specifically a localised ridgeline and vegetation.	Low	Not Perceptible	Not significant	Not significant
30	Dwelling house, Lacken	<50	Local road and pastoral landscape setting with hedgerows	Short range views of the mainline edge of cutting are likely to be gained. Local road realignment and bridge crossing is predicted to be visible	High	Large	Substantial	Substantial - Moderate
31	Dwelling House, Lacken	<50	Pastoral landscape setting with hedgerows	Short range views of the mainline are likely to be gained, in particular the edge of the proposed cutting. Proposed local road bridge crossing will be located almost beside the driveway entrance to this dwelling from which short range views are likely to be gained.	High	Large	Substantial	Moderate - Substantial
32	Dwelling house, Lacken	150	Local road and roadside hedge	Short range views of the proposed mainline, particularly edge of cutting are likely to be gained in wintertime filtered through one hedgerow	High	Medium	Moderate-Substantial	Slight
33	Dwelling house, Lacken	180	Local road and roadside hedge.	Short range views of the proposed mainline as edge of cutting are likely to be gained in wintertime filtered through one hedgerow partial screening will be afforded by ID 34.	High	Medium	Moderate	Slight

ID	Description of Viewpoint and approximate townland location	Approximate Distance from Proposals (m)	Components in Existing View	Proposed View (pre establishment)	Viewer Sensitivity Pre Establishment	Magnitude of Change Pre Establishment	Significance of Impact Pre Establishment	Significance of Impact post Establishment
34	Farm Buildings, Lacken	140	Open farmland	Short range views of the proposed mainline as edge of cutting is likely to be gained in wintertime filtered through one hedgerow	Low	Medium	Slight	Not significant
35	Dwelling House, Ryleen	210	-----	-----			Abandoned	Abandoned
36	Bungalow, Lacken	140	Hedgerow in foreground. No long ranging views owing to flat topography	Proposed mainline on embankment is likely to be visible, from elevated location above hedgerow line. The proposed bridge crossing with local road is likely to be visible	High	Large	Substantial	Moderate - substantial
37	Dwelling house, Lacken	270	Hedgerow in foreground. No long ranging views owing to flat topography	Proposed mainline is likely to be visible on embankment at distance, filtered through hedgerow vegetation in winter.	High	Medium	Moderate-Substantial	Moderate
38	Bungalow, lacken	380	Local road and roadside trees	Proposals are likely to be substantially screened from view by hedgerow vegetation. Filtered views may be scarcely gained of the proposals in winter	Low	Small	Slight-Not Significant	Not significant
39	Dwelling house, Lacken	470	Roadside vegetation and a wider agricultural landscape. Factory site opposite	Views of the proposed mainline are likely to be screened in part by the factory (ID40) and existing vegetation	Low	Small	Slight-Not Significant	Not significant
40	Factory, Lacken	420	Open flat agricultural landscape	Filtered views of the proposed mainline are likely to be scarcely available through hedgerow vegetation typically in wintertime	Low	Medium	Slight – Not significant	Not significant
41	Dwelling house and farm, Lacken	90	Hedgerow and garden boundary vegetation	Short range filtered views of the mainline embankment are likely to be available in wintertime filtered through the vegetation	High	Medium	Moderate-Substantial	Moderate

ID	Description of Viewpoint and approximate townland location	Approximate Distance from Proposals (m)	Components in Existing View	Proposed View (pre establishment)	Viewer Sensitivity Pre Establishment	Magnitude of Change Pre Establishment	Significance of Impact Pre Establishment	Significance of Impact post Establishment
42	Farm buildings and dwelling, Lacken	90	Large farm buildings	Proposed bridge crossing with minor road is likely to be visible at short range only at entry /exit to dwelling	Low	Large	Slight-Moderate	Slight
43	Bungalow, Lacken	120	Other dwellings (ID 45) and large farm buildings (ID 42)	Proposals are likely to be substantially screened by dwelling and farm buildings as referenced in existing view description	High	Small	Slight-Moderate	Slight
44	Pair of Dwellings, Ryleen	180	Other dwellings (ID 45) and large farm buildings (ID 42)	Proposals are likely to be substantially screened from view by dwelling and farm buildings as referenced in existing view description	High	Small	Slight	Not significant
45	Two storey house, Ryleen	90	Open countryside with hedgerows	Short range views of the proposals are likely to be gained from second storey windows. Filtered views of the proposed mainline on embankment are likely to be gained in wintertime through hedgerow boundary at ground level	High	Large	Substantial	Moderate-Substantial
46	Two storey house, Ryleen	420	Panoramic views of pastoral landscape especially from second storey windows	Proposals are likely to be visible at distance filtered through hedgerow vegetation in wintertime	Medium	Small	Slight	Not significant
47	Dwelling House and farm buildings, Ryleen	130	Open pastoral landscape with hedgerows	Proposals are likely to be visible as mainline at grade filtered through hedgerow vegetation in winter	Medium	Medium	Moderate	Slight
48	Single dwelling, Ryleen	270	Mature garden planting and trees	Views of the proposed mainline at grade are likely to be screened by vegetation. In winter partial views may be gained owing to leaf loss	Medium	Small	Slight	Not significant

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49	Farm buildings, Ryleen	50	Views in between buildings of wider pastoral landscape setting.	Short range partial views of the proposals, in particular the edge of the cutting and sections of the alignment at grade together with moving traffic are likely to be gained	High	Large	Substantial	Moderate
50	Bungalow, Ballymacar	130	Hedgerow boundary to bungalow garden extent	Short range views of the proposals, specifically the edge of the cutting are likely to be gained through the weak hedgerow boundary	High	Medium	Moderate	Slight
51	Dwelling house and farm buildings, Ballymacar	150	Large conifer hedge (visible from the dwelling specifically)	Proposals are likely to be screened from view by existing conifer hedge	Low	Not Perceptible	Not Significant	Not significant
52	Dwelling house, Ballymacar	400	Rear boundary densely vegetated with mature hedgerow trees	Proposed mainline is likely to be largely screened from view by mature vegetation	Low	Small	Slight-Not Significant	Not significant
53	Dwelling House, Bergerin	360	Views downslope over Pastoral landscape setting	Proposals are likely to be substantially screened by vegetation. View from dwelling house proper is likely to be screened by farm buildings	Low	Small	Slight-Not Significant	Not significant
54	Dwelling House, Bergerin	450	Views downslope over Pastoral landscape setting	Proposals are likely to be visible at a distance filtered through hedgerows in wintertime	Low	Small	Slight-Not Significant	Not significant
55	Dwelling and farm buildings, Ballymacar	360	Filtered views through vegetation of pastoral landscape	In wintertime filtered views are likely to be gained at a distance of the proposed roundabout and mainline	Medium	Medium	Moderate	Slight

ID	Description of Viewpoint and approximate townland location	Approximate Distance from Proposals (m)	Components in Existing View	Proposed View (pre establishment)	Viewer Sensitivity Pre Establishment	Magnitude of Change Pre Establishment	Significance of Impact Pre Establishment	Significance of Impact post Establishment
56	Dwelling house, Ballymacar	760	Open countryside visible down slope together with farm buildings and dwelling (ID 55)	Distant views of the proposals may be gained filtered through vegetation	Low	Small	Slight-Not significant	Not significant
57	Dwelling House, Ballymacar	810	Open countryside visible down slope together with farm buildings and dwelling (ID 55). Dwelling (ID 56) visible in the foreground	Distant views of the proposals are likely to be gained filtered through hedgerows	Low	Small	Slight-Not significant	Not significant
58	Dwelling House, Ballymacar	450	Open pastoral landscape with hedgerows	Distant views of the proposals are likely to be gained filtered through hedgerows in wintertime	Low	Small	Slight-Not significant	Not significant
59	Dwelling House, Ballymacar	560	Short range views of pastoral landscape setting	Views of the proposals are likely to be screened by intervening topography (dwelling located in localised hollow) and vegetation.	Low	Not Perceptible	Not Significant	Not significant
60	Dwelling House and farm buildings, Ballymacar	120	Pastoral landscape with hedgerow boundaries	Views of the proposals including attenuation pond and lighting at night-time are likely to be partially gained. The dwelling is located in a localised hollow and partial screening of the proposals will result from this.	Low	Not Perceptible	Moderate	Not significant
61	Two storey dwelling, Ballymacar	100	Pastoral landscape setting with hedgerow boundaries	Short range views of the proposals on embankment are likely to be gained from the side of this property together with the proposed roundabout junction and lighting at night-time and local road realignment.	High	Large	Substantial	Moderate-Substantial

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62	NOT USED							
63	Bungalow, Ballymacar	<50	Existing N25 road and roadside vegetation	Views of the proposed roundabout interchange and mainline on embankment are likely to be gained	High	Large	Acquisition	Acquisition
64	Dwelling and farm building, Ballymacar	<50	Existing N25 road route and some garden boundary vegetation	Short range views of the proposed N25 interchange and mainline on embankment are likely to be gained from an elevated location	High	Large	Acquisition	Acquisition
65	Traditional stone house, now abandoned, Ballymacar	<50	----	-----			Abandoned	Abandoned
66	Two storey Dwelling House, Ballymacar	300	Pastoral landscape and farm buildings	Proposals are likely to be visible filtered through hedgerows in wintertime. Second storey window locations may afford some uninterrupted views of the proposed junction.	Medium	Medium	Moderate	Slight
67	Dwelling house, Ballymacar	540	Pastoral landscape and dense hedgerow vegetation	Proposals are likely to be screened from view by vegetation and intervening topography. Dwelling is located in a localised hollow	Low	Not Perceptible	Not Significant	Not significant
68	Dwelling house and farm buildings, Ballymacar	450	Mature vegetation in foreground	Proposals are likely to be screened from view by extensive mature vegetation	Low	Not Perceptible	Not Significant	Not significant

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69	Dwelling House and farm building, Arnestown	720	Garden setting and mature wooded vegetation	Proposals are likely to be screened from view by mature vegetation.	Low	Not Perceptible	Not Significant	Not significant
70	Dwelling and farm buildings, Arnestown	810	Woodland and farmland	The proposals are likely to be substantially screened from view by intervening vegetation and topography	Low	Not Perceptible	Not Significant	Not significant
71	Bungalow, Creakan Upper	<50	Pastoral landscape setting	Short range views of the proposals are likely to be gained. The local road realignment is likely to be visible at short range filtered through one hedgerow	High	High	Substantial	Moderate
72	Arnestown House and Demesne	130	Mature woodland and farm buildings	The proposed local road realignment crosses the lands associated with the original estate and will be visible at short range.	High	medium	Substantial	Moderate
73	Dwelling House, Creakan Upper	<50	Mature hedgerow boundary	Filtered views of the proposals are likely to be available in wintertime through vegetation. The realigned local road is likely to be visible at short range.	High	Large	Substantial	Moderate-Substantial
74	Dwelling, Creakan-Arnestown.	<50	Local road and pastoral landscape setting	Full short range views are likely to be gained of the proposed mainline and minor road crossing	High	High	Acquisition	Acquisition
75	Bungalow, Creakan-Arnestown.	90	Hedgerows and pastoral landscape setting.	Short range views are likely to be gained of the proposed mainline and bridge crossing filtered through some beech trees. Views of the proposals will be partly obscured by cottage dwelling (ID 74)	High	Medium	Moderate-Substantial	Moderate
76	Two newly built houses, Arnestown	180	Local road and roadside hedgerow. Pastoral landscape visible from rear of dwelling	Views of the proposals are likely to be clearly gained from the rear of the dwellings	High	Medium-Small	Moderate-Substantial	Slight

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77	Dwelling and farm building, Arnestown	530	Farmed valley setting	Views are likely to be gained of the proposed mainline in the distance filtered through some vegetation.	Low	Small	Slight-Not Significant	Not significant
78	Group of dwellings, Arnestown	720	Pastoral landscape setting viewed from slightly elevated position	Proposals are likely to be scarcely visible in part over existing hedgerows. Visibility may be increased in wintertime	Low	Small	Slight-Not Significant	Not significant
79	Dwelling house, Arnestown.	750	Pastoral landscape setting and scattered dwellings	Proposals are likely to be scarcely visible owing to screening effect of intervening hedgerows	Low	Not Perceptible	Not Significant	Not significant
80	Group of dwellings, Creakan Upper	630	Pastoral landscape setting downslope visible particularly from end house	Partial very distant views of the proposed mainline are likely to be gained from elevated position	Low	Small	Slight-Not Significant	Not significant
81	Dwelling house, Knockmullin	810	Mature woodland and commercial forestry together with open pastoral landscape	Proposals are likely to be screened from view by dense mature forestry	Low	Not Perceptible	Not significant	Not significant
82	Dwelling house, Knockmullin	830	Mature woodland and commercial forestry together with open pastoral landscape	Proposals are likely to be screened from view by dense mature forestry	Low	Not Perceptible	Not significant	Not significant
83	Two bungalow dwellings, Creakan Upper	500	Local road and mature roadside vegetation	Proposals are likely to be substantially screened by intervening hedgerows. Local road crossing will not be visible owing to bend in existing road	Low	Not Perceptible	Not significant	Not significant

ID	Description of Viewpoint and approximate townland location	Approximate Distance from Proposals (m)	Components in Existing View	Proposed View (pre establishment)	Viewer Sensitivity Pre Establishment	Magnitude of Change Pre Establishment	Significance of Impact Pre Establishment	Significance of Impact post Establishment
84	Dwelling, Creakan Upper	500	Pastoral landscape setting	Distant views of the proposals may be gained, filtered through hedgerow vegetation and from a more elevated position.	Low	Small	Slight	Not significant
85	Dwelling, Creakan Upper	610	Local road and mature roadside vegetation	Proposals are likely to be substantially screened by intervening hedgerows. Local road crossing will not be visible owing to bend in existing road.	Low	Small-Not perceptible	Not significant	Not significant
86	Dwelling, Creakan upper	600	Boundary hedge and planting in curtilage of property	Proposals likely to be largely screened from view by property boundary hedging and planting	Low	Not Perceptible	Not Significant	Not significant
87	NOT USED							
88	Dwelling, Creakan Upper	450	Boundary hedge in curtilage of property. Partial views of farmland from elevated location	Proposals are likely to be partly screened from view by boundary hedge and dwelling in front	Low	Small	Slight	Not significant
89	Dwelling and farm, knockmullin	270	Mature woodland and garden planting	Proposals are likely to be screened in part from view largely by garden planting and mature trees outside property boundary. Visibility may increase in wintertime.	Low	Small	Slight	Not significant
90	Two storey dwelling, Camlin	360	Short range views of pastoral setting and mature woodland areas	Dwelling is located in a localised hollow and hence proposals will be screened from view	Low	Not Perceptible	Not Significant	Not significant
91	Two new dwelling houses, Camlin	270	Local road and mature roadside hedgerow. Conifer boundary hedge at property ID93	Proposals are likely to be part screened by conifer hedge in adjacent property. Filtered views of part of the proposals available through hedgerows on opposite side of the road	Low	Small	Slight-Not Significant	Not significant

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92	Group of dwellings, Camlin	270	Conifer hedge on opposite side of road (ID 93)	Proposals are likely to be largely screened from view by vegetation and intervening buildings	Low	Small	Slight-Not Significant	Not significant
93	Dwelling, Camlin	220	Open views from rear of property of pastoral landscape setting	Proposals are likely to be clearly visible at a distance from an elevated location hence visibility of proposed road is afforded over the line of the existing hedgerows. Local road realignment is also likely to be visible	Medium	Medium	Moderate	Slight
94	Dwelling, Camlin	150	View over open fields	Short range views of the mainline on embankment is likely to be gained together with the local road realignment and attenuation pond.	High	Large	Substantial	Moderate-substantial
95	Farm building, Camlin	50	View over open fields	Short range views of the mainline on embankment are likely to be gained together with the local road realignment	Low	Large	Slight - Moderate	Slight
96	Farm buildings, Camlin	100	View over open fields	Short range views of the mainline are likely to be gained together with local road realignment	Low	Large	Slight - Moderate	Slight
97	Dwelling house, knockmullin	600	Mature woodland and commercial forestry	Proposals will be screened from view by mature woodland	Low	Not Perceptible	Not Significant	Not significant
98	Dwelling, Camlin	630	Wooded setting	Proposals are likely to be partly screened from view by vegetation. Glimpse views are likely to be gained of part of the mainline on embankment	Low	Not Perceptible	Not Significant	Not significant
99	Farm buildings, Camlin	220	Pastoral landscape setting, hedgerows and scattered buildings	Proposals are likely to be largely screened from view by components in existing view	Low	Small	Slight-Not Significant	Not significant

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100	Farm buildings, Camlin	180	Pastoral landscape setting, hedgerows and scattered buildings	Proposed mainline is likely to be largely screened from view by components in existing view	Low	Small	Slight-Not Significant	Not significant
101	Bungalow, Camlin	130	Local road and roadside vegetation	Proposed mainline is likely to be visible as edge of cutting principally at short range above the line of the roadside hedge	High	Medium	Moderate-Substantial	Slight
102	Farm buildings, Camlin	100	Local road and roadside vegetation	Proposals are likely to be visible at short range as edge of cutting above the line of the existing roadside hedge	High	Medium	Moderate-Substantial	Slight
103	Bungalow, Camlin	80	Local road and roadside vegetation	Proposals are likely to be visible as edge of cutting at short range through farm gate on opposite side of road	High	Medium	Moderate	Slight-Moderate
104	Dwelling house, Camlin	360	Located in elevated site, this site commands views of open pastoral landscape	Filtered views through hedgerows of the road mainline in particular the edge of the cutting are likely to be gained at a distance	Low	Small	Not Significant	Not significant
105	Two storey house on elevated location, Camlin	310	Panoramic views of pastoral landscape setting	Proposals are likely to be visible, in particular the edge of the mainline cutting at a distance from elevated location	Low	Medium	Slight	Not significant
106	Farm buildings, Camlin	360	Pastoral landscape setting and other dwellings (ID 105)	Proposals are likely to be visible, in particular the edge of the mainline cutting at a distance from elevated location	Low	Medium	Slight	Not significant
107	Dwelling, Camlin	500	Pastoral landscape setting	Proposals are likely to be barely visible filtered through mature vegetation	Low	Not Perceptible	Not Significant	Not significant

ID	Description of Viewpoint and approximate townland location	Approximate Distance from Proposals (m)	Components in Existing View	Proposed View (pre establishment)	Viewer Sensitivity Pre Establishment	Magnitude of Change Pre Establishment	Significance of Impact Pre Establishment	Significance of Impact post Establishment
108	Farm buildings, Camlin	540	Pastoral landscape setting and other dwellings (ID 105)	Proposed mainline and local road realignment (both on embankment) are likely to be visible at a distance from elevated location	Low	Small	Slight-Not Significant	Not significant
109	Two storey dwelling, Camlin	160	Views from an elevated location of pastoral landscape setting	Proposals are likely to be visible at relatively short range from elevated location. Proposed bridge interchange with local road is likely to be visible together with road realignment.	High	High	Substantial	Moderate-Substantial
110	Dwelling, Camlin	<50	Pastoral landscape setting and local road	Proposed mainline and bridge crossing at local road are likely to be visible at short range	High	High	Substantial	Moderate-Substantial.
111	Dwelling and farm buildings, Camlin	80	Pastoral landscape setting and other dwellings (ID 110 and ID 112)	Proposals are likely to be largely screened from view by other dwellings and mature vegetation	Low	Small	Not Significant	Not significant
112	Dwelling and farm building, Camlin	90	Local road and roadside hedgerows, farm buildings.	Proposed mainline on embankment is likely to be largely screened from view by farm buildings in curtilage of property	Low	Small	Slight	Not Significant
113	Bungalow, Camlin	270	Local road and R734 road route	Mainline on embankment is likely to be clearly visible together with part of the proposed junction filtered through vegetation at distance	Medium	Medium	Moderate	Slight
114	Dwelling House, Camlin	490	Open pastoral landscape with hedgerows	Filtered views of the mainline proposals through existing hedgerow vegetation in winter are likely to be gained. Proposed crossing of local road will not be visible owing to bend in this road	Low	Small	Not Significant	Not significant
115	Dwelling House, Camlin	560	Local road and roadside vegetation	Proposed crossing of local road is unlikely to be visible owing to bend in this road. Filtered views through hedgerows are likely to be gained of the mainline on embankment in winter owing to leaf loss	Low	Small	Not Significant	Not significant

ID	Description of Viewpoint and approximate townland location	Approximate Distance from Proposals (m)	Components in Existing View	Proposed View (pre establishment)	Viewer Sensitivity Pre Establishment	Magnitude of Change Pre Establishment	Significance of Impact Pre Establishment	Significance of Impact post Establishment
116	Bungalow, Camlin	<50	Existing regional road R734 lined with mature trees	Short range views of the mainline on embankment and interchange with the R734 and lighting at night-time are likely to be gained	High	High	Substantial	Moderate-substantial
117	Two bungalows, Camlin	80	Existing regional road R734 lined with mature trees	Short range partial views of the mainline and interchange with the R734 and lighting at night-time are likely to be gained. Some screening is provided by vegetation	High	High	Substantial	Moderate-Substantial
118	Dwelling, Landscape	<50	Local road and pastoral landscape setting	Short range views of the mainline and junction and lighting at night-time are likely to be visible	High	High	Substantial	Moderate-Substantial
119	Dwelling House and farm buildings, Landscape	120	Open arable landscape setting with hedgerows and mature tree lines	Short range views of the mainline and proposed interchange and lighting at night-time are likely to be gained	High	High	Substantial	Moderate-Substantial
120	Two storey dwelling, Landscape	360	Hedgerow vegetation and mature trees	Proposals largely screened from view by mature vegetation	Low	Not Perceptible	Not Significant	Not significant
121	Dwelling, Landscape	220	Open arable landscape setting with hedgerows and mature tree lines	Short range views of the mainline and proposed interchange are likely to be gained	High	High	Substantial	Moderate
122	Dwelling, Landscape	610	Pastoral landscape and woodland groups	Proposals largely screened from view by intervening vegetation.	Low	Not Perceptible	Not Significant	Not significant
123	Bungalow, Oldcourt		Pastoral landscape and woodland groups	Proposals largely screened from view by intervening vegetation	Low	Not Perceptible	Not Significant	Not significant

ID	Description of Viewpoint and approximate townland location	Approximate Distance from Proposals (m)	Components in Existing View	Proposed View (pre establishment)	Viewer Sensitivity Pre Establishment	Magnitude of Change Pre Establishment	Significance of Impact Pre Establishment	Significance of Impact post Establishment
124	Dwelling, Oldcourt		Pastoral landscape and woodland groups	Proposals largely screened from view by buildings in foreground (ID 125)	Low	Not Perceptible	Not Significant	Not significant
125	Dwelling, Oldcourt		Views over open countryside	Proposed mainline is likely to be visible at a distance	Medium	Medium	Moderate	Slight
126	Dwelling, Landscape	400	Pastoral landscape setting and other dwellings in foreground	Proposals largely screened from view by buildings and planting in the foreground	Low	Not Perceptible	Not Significant	Not significant
127	Dwelling, Landscape	<50	Farmland setting with hedgerows	Proposals are likely to be visible as mainline at short range. The junction with the R734 route and lighting at night-time are also predicted to be visible	High	High	Substantial	Moderate-Substantial
128	Bungalow, Landscape	<50	Local road and roadside vegetation	Proposed tie in associated with the planned interchange with the R734 will be visible from the side of this property at very short range	High	High	Acquisition	Acquisition
129	Factory buildings, Landscape	60	Dense woodland vegetation.	Proposals screened by dense woodland	Low	Not Perceptible	Not Significant	Not significant
130	Factory buildings, Landscape	180	Dense woodland vegetation.	Proposals screened by dense woodland	Low	Not Perceptible	Not Significant	Not significant
131	Factory Buildings, Landscape	360	Dense woodland vegetation.	Proposals screened by dense woodland	Low	Not Perceptible	Not Significant	Not significant
132	Dwelling House, Landscape	<50	Wooded vegetation and regional road R734	Proposals likely to be visible at short range on embankment together with proposed interchange and lighting at night-time albeit filtered through few trees	High	High	Substantial	Moderate-substantial

ID	Description of Viewpoint and approximate townland location	Approximate Distance from Proposals (m)	Components in Existing View	Proposed View (pre establishment)	Viewer Sensitivity Pre Establishment	Magnitude of Change Pre Establishment	Significance of Impact Pre Establishment	Significance of Impact post Establishment
133	Dwelling House, Landscape	100	Boundary planting and regional road R733	Proposals largely screened from view by garden planting	Low	Small	Slight-Not Significant	Not significant
134	Dwelling, Landscape	200	Regional Road R733 and roadside vegetation together with scattered dwellings. River Barrow and factory/cement works in distance	Proposals not predicted to be visible owing to screening effect of topography	Low	Not perceptible	Moderate-Substantial	Slight
135	Dwelling House, Landscape	80	Local road and roadside vegetation	Short range views are likely to be gained of the mainline on embankment and junction with regional road and lighting at night-time from this dwelling in an elevated location	High	High	Substantial	Moderate-Substantial
136	Bungalow, Landscape	120	Views over wider landscape over roof level of other dwellings (ID 135)	Proposed mainline, junction and night-time lighting are likely to be visible at medium range albeit partly screened by roofline of intervening house	High	Medium	Moderate	Slight
137	Two dwellings, Landscape	100	Views of wider landscape setting filtered through trees on local road	Proposed mainline is likely to be visible on embankment at short range, filtered through trees. Views of the proposed junction and night-time lighting are likely to be gained.	High	High	Substantial	Moderate
138	Dwelling House, Landscape	120	Regional Road R733 and roadside vegetation	Proposed interchange with regional road is likely to be clearly visible together with night-time lighting.	High	High	Substantial	Moderate - Substantial
139	Public House, Landscape	360	Existing R733 road route and farmland	Proposed junction is likely to be partly visible	Low	Medium	Slight-Not significant	Slight-Not significant

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140	Dwelling House, Landscape	500	Regional Road R733 and roadside vegetation	Proposals largely screened from view by vegetation and curvature of regional road	Low	Not perceptible	Not Significant	Not significant
141	NOT USED							
142	NOT USED							
143	NOT USED							
144	Dwelling house and farm, Stokestown	180	Open farmland with hedgerows	Medium range views of the proposed bridge crossing are likely to be gained, filtered through one hedgerow in winter	Medium	Medium	Moderate	Slight
145	Dwelling House, Stokestown	580	Open flat farmland	Medium range views are likely to be gained of proposed bridge crossing and road approach from western side of river	Medium	Medium - Large	Moderate - Substantial	Moderate -
146	Dwelling House, Stokestown	360	Woodland vegetation within property boundary	Proposals largely screened from view by existing woodland	Low	Small	Slight-Not Significant	Slight-Not significant
147	Dwelling House, Stokestown	60	Farmed landscape setting	Proposals are likely to be visible at short range as mainline alignment. on embankment. Local road realignment visible also at short range	High	High	Substantial	Moderate-substantial
148	Stokestown House	540	Mature wooded vegetation	Proposals largely screened from view by mature wooded vegetation	Low	Not Perceptible	Not Significant	Not significant

ID	Description of Viewpoint and approximate townland location	Approximate Distance from Proposals (m)	Components in Existing View	Proposed View (pre establishment)	Viewer Sensitivity Pre Establishment	Magnitude of Change Pre Establishment	Significance of Impact Pre Establishment	Significance of Impact post Establishment
149	Site of the Gate lodge to Stokestown House	100	Open farmland and local road with some roadside vegetation	Proposals largely screened from view at this viewpoint by mature wooded vegetation	High	Medium	Not Significant	Not significant
150	Dwelling house, Stokestown	<50	Open farmland with hedgerows	Edge of proposed mainline cutting likely to be visible at short range	High	Large	Substantial	Slight
151	Dwelling House, Stokestown	<50	Open farmland with hedgerows	Proposed mainline on embankment likely to be visible at short range	High	Large	Substantial	Moderate
152	Farm buildings, Stokestown	<50	Open farmland with hedgerows	Proposed mainline on embankment likely to be visible at short range	Low	Large	Slight-Moderate	Slight
153	Stokestown Castle.	130	Open farmland with hedgerows	Proposed mainline on embankment likely to be visible at some distance to visitors to this site. Local road realignment is likely to be visible at short range.	Low	Large	Moderate - Substantial	Moderate
154	Group of dwellings, Ballyverneen	200	Local road and roadside vegetation and scattered dwellings	Proposals likely to be not visible, being located further uphill north east of the dismantled railway line. Local road realignment is also likely to be screened by vegetation and curvature of the road	Low	Not Perceptible	Not Significant	Not significant
155	Two dwellings, Ballyverneen	180	Local road and roadside vegetation and scattered dwellings Marsh land landscape	Proposals unlikely to be visible, being located further uphill north east of the dismantled railway line. Local road realignment is also likely to be screened by vegetation and curvature of the road	Low	Not Perceptible	Not Significant	Not significant
156	Dwelling and farm buildings, Ballyverneen	60	Open farmland	Short range views are likely to be gained of the proposed edge of the road cutting	High	High	Substantial	Moderate

ID	Description of Viewpoint and approximate townland location	Approximate Distance from Proposals (m)	Components in Existing View	Proposed View (pre establishment)	Viewer Sensitivity Pre Establishment	Magnitude of Change Pre Establishment	Significance of Impact Pre Establishment	Significance of Impact post Establishment
157	Dwelling, Ballyverneen	150	Rear garden hedgerow, Wider marsh landscape	Proposals likely to be screened from view by steeply rising topography and hedgerow planting to ID 158 and 156. Filtered views through vegetation are likely to be gained of the local road realignment	Low	Small	Slight	Not significant
158	Dwelling with farm buildings, Ballyverneen	<50	Open farmland	Short range views of the proposals in cutting are likely to be gained	High	High	Substantial	Moderate
159	Dwelling house, Ballyverneen	60	Mature garden planting to rear of dwelling	Short range views of the proposed road cutting are likely to be gained	High	High	Substantial	Moderate
160	Two storey dwelling, Ballyverneen	<50	Open farmland and hedgerow vegetation including trees	Short range views of the proposed cutting are likely to be gained together with the proposed roundabout interchange and night-time lighting and local road realignment	High	High	Substantial	Moderate-substantial
161	Bungalow dwelling, Ballyverneen	<50	Local road and roadside vegetation.	Short range views of the proposed road cutting are likely to be gained together with the proposed roundabout interchange, night-time lighting and local road realignment albeit partly screened by vegetation	High	High	Substantial	Moderate-substantial
162	Dwelling house, Ballyverneen	<50	Open hilly farmland and scattered dwellings	Views are likely to be gained of the proposals and the interchange to the N25, night-time lighting and the local road realignment	High	High	Substantial	Moderate
163	Dwelling, Graiguenakill	360	Open hilly farmland and scattered dwellings	Proposals visible in the medium distance, screened in part by intervening dwellings and hedgerows	Medium	Medium	Moderate	Slight
164	Dwelling house and farm buildings, Graiguenakill	450	Local road and open farmland	Proposed interchange with the N25 is likely to be partly visible at medium range together with the proposed cutting associated with the mainline	Medium	Medium	Moderate	Slight

ID	Description of Viewpoint and approximate townland location	Approximate Distance from Proposals (m)	Components in Existing View	Proposed View (pre establishment)	Viewer Sensitivity Pre Establishment	Magnitude of Change Pre Establishment	Significance of Impact Pre Establishment	Significance of Impact post Establishment
165	Group of three dwellings, Graiguenakill	540	N25 Road route and open farmland	Proposed interchange with the N25 is likely to be partly visible at medium range together with the proposed cutting associated with the mainline	Medium	Medium	Moderate	Slight
166	Two storey dwelling house, Graiguenakill	700	N25 Road route and open farmland	Proposed interchange with the N25 is likely to be visible at medium range	Medium	Medium	Moderate	Slight
167	Dwelling, Graiguenakill	720	Steep sided hilly terrain with woodland	Proposals will be screened from view	Low	Not Perceptible	Not Significant	Not significant
168	Dwelling house, Cappagh	500	Farmland. Large area of woodland	Proposed roundabout interchange will be screened from view by intervening vegetation. Proposed access road to roundabout will be visible in part. The mainline is likely to be visible in part as edge of cutting	Low	Small	Slight-Moderate	Slight-not significant
169	Dwellings at Edge of Glenmore Village, Cappagh	630	Steep sided hilly terrain with woodland	Proposals are likely to be substantially screened from view by woodland	Low	Not Perceptible	Not Significant	Not significant
170	Two storey dwelling house, Carrickcloney	1440	Panoramic countryside views and the N25 road route	Proposed junction with the N25 is likely to be visible at a far distance together with lighting	Low	Low	Slight-Not Significant	Not significant
171	Two storey dwelling house, Carrickcloney	1080	Panoramic countryside views and the N25 road route	Proposed mainline is likely to be visible at a distance	Low	Low	Slight-Not Significant	Not significant
172	Group of dwellings, Carrickcloney	1080	Countryside setting visible through garden planting	Proposed mainline is likely to be visible at a distance, filtered through vegetation	Low	Low	Slight-Not Significant	Not significant

ID	Description of Viewpoint and approximate townland location	Approximate Distance from Proposals (m)	Components in Existing View	Proposed View (pre establishment)	Viewer Sensitivity Pre Establishment	Magnitude of Change Pre Establishment	Significance of Impact Pre Establishment	Significance of Impact post Establishment
173	Dwelling, Carrickcloney	1080	Local road and vegetation	Proposals will not be visible from this location	Low	Not Perceptible	Not Significant	Not significant
174	Group of dwellings, Carrickcloney	1100	Hedgerows and garden planting	Glimpse views from second storey windows of proposed river crossing are likely to be gained	Low	Small	Slight-Not significant	Slight-Not significant
175	Buildings including bungalow dwelling, Carrickcloney	1200	River and adjacent farmland	Medium range clear views are likely to be gained of the bridge crossing	Medium	Medium	Moderate – Substantial	Moderate – Substantial
176	NOT USED							
177	NOT USED							
178	Dwelling, Jamestown	270	Local road and hedgerow on opposite side of the road. Slieve Coltair in the distance	Glimpse views of the proposed mainline may be gained as it cuts through farmland in Ballyverneen	Low	Small-medium	Slight-Moderate	Slight
179	Dwelling, Jamestown	300	Garden planting. Slieve Coltair in the distance	Views of the proposals will be largely screened by garden planting. The proposed mainline edge of cutting is likely to be visible at the gate entry to this house	Low	Small-medium	Slight-moderate	Slight
180	2 no Two storey dwellings, Ballyverneen	100	Rear garden hedgerow and rising hill behind	Proposals are likely to be screened from view by steeply rising topography and hedgerow planting. The local road realignment is likely to be visible filtered through vegetation	Low	Not Perceptible	Not significant	Not significant

ID	Description of Viewpoint and approximate townland location	Approximate Distance from Proposals (m)	Components in Existing View	Proposed View (pre establishment)	Viewer Sensitivity Pre Establishment	Magnitude of Change Pre Establishment	Significance of Impact Pre Establishment	Significance of Impact post Establishment
181	Dwelling, Ballyverneen	130	Woodland on opposite side of the road	The mainline is likely to be substantially screened by an intervening dwelling. The realigned local road is likely to be visible at short range	Low	Small	Moderate - Substantial	Moderate
182	Dwelling, Cappagh	<50	Local road and roadside hedgerows	The proposed tie in from the local road to the roundabout junction is likely to be visible from the gate of this dwelling	High	High	Substantial	Moderate
183	Dwelling house, Arnestown	850	Pastoral landscape setting and scattered dwellings	Proposals scarcely visible owing to screening effect of intervening hedgerows	Low	Not Perceptible	Not Significant	Not significant
184	Dwelling house, Arnestown	320	Local road and roadside vegetation. Open countryside setting	Glimpse views of the proposed mainline are likely to be gained filtered through vegetation in winter	Low	Small	Slight-Not Significant	Not significant
185	Dwelling House, Creakan Upper	100	View of open countryside filtered through hedgerow vegetation.	Short range views of the proposed mainline and local road realignment are likely to be gained.	Medium	Medium	Substantial	Moderate
186	Dwelling and farm building, Creakan Upper	180	View of open countryside filtered through hedgerow vegetation. Buildings also in view (ID 185)	Partial views of the proposed mainline and local road realignment are likely to be gained, albeit partly screened by hedgerows and intervening buildings	Medium	Medium	Moderate	Slight
187	Two storey dwelling house, Creakan Upper	240	Views over open countryside from elevated location	Proposed mainline is likely to be visible in part, partial screening being provided by woodland	Medium	Medium	Moderate	Slight

ID	Description of Viewpoint and approximate townland location	Approximate Distance from Proposals (m)	Components in Existing View	Proposed View (pre establishment)	Viewer Sensitivity Pre Establishment	Magnitude of Change Pre Establishment	Significance of Impact Pre Establishment	Significance of Impact post Establishment
188	Farm Buildings, Creakan Upper	80	Mature woodland	Proposed mainline largely screened from view by mature wooded vegetation	Low	Not Perceptible	Not significant	Not significant
189-199	NOT USED							
200	Dwelling, Creakan Upper	<50	Open farmland and hedgerow line of mature trees	Short range views are likely to be gained of the proposed mainline filtered through the tree line	High	Large	Substantial	Moderate
201	Dwelling and farm, Creakan Upper	100	Farm buildings and woodland	Proposals are likely to be screened by vegetation and buildings	Low	Not Perceptible	Not significant.	Not significant
202	Dwelling, Creakan Upper	270	Farmland	Proposed mainline on embankment is likely to be clearly visible at distance	Medium	Medium	Moderate	Slight
203	Bungalow Dwelling, Forestalstown	1380	River Barrow landscape setting. Slieve Coltair clearly visible further afield	Proposed River crossing will be clearly visible in the medium range. This visual impact could be perceived as positive or negative depending on the attitude of the viewer	Medium	Medium	Moderate	Moderate
204	Two Storey Dwelling, Forestalstown	1450	River Barrow landscape setting. Slieve Coltair clearly visible further afield.	Proposed River crossing will be clearly visible in the medium range. This visual impact could be perceived as positive or negative depending on the attitude of the viewer	Medium	Medium	Moderate	Moderate
205	Two storey dwelling, Forestalstown	1980	River Barrow setting and Slieve Coltair in the distance	Proposed bridge crossing is likely to be substantially screened from view by intervening topography and elements	Low	Not Perceptible	Not significant	Not significant

ID	Description of Viewpoint and approximate townland location	Approximate Distance from Proposals (m)	Components in Existing View	Proposed View (pre establishment)	Viewer Sensitivity Pre Establishment	Magnitude of Change Pre Establishment	Significance of Impact Pre Establishment	Significance of Impact post Establishment
206	Bungalow dwelling, Forestalstown	1640	River Barrow setting and Slieve Coltair in the distance	Glimpse views of the proposed river crossing are likely to be gained, filtered through vegetation, in particular in winter. This visual impact could be perceived as positive or negative depending on the attitude of the viewer	Low	Small	Slight	Slight
207	Bungalow dwelling and farm building, Forestalstown	1710	River Barrow setting and Slieve Coltair in the distance	Glimpse views of the proposed river crossing are likely to be gained, filtered through vegetation, in particular in winter. This visual impact could be perceived as positive or negative depending on the attitude of the viewer	Low	Small	Slight	Slight
208	Group of dwellings, Jamestown	360	Hedgerow on opposite side of the road and hilly farmland beyond	Edge of proposed mainline in cutting is likely to be visible in part above the hedge line	Low	Small	Slight	Not significant
209	Two storey dwelling, Cappagh	630	Local road and roadside trees. Farmland as localised valley	Proposals are expected to be substantially screened from view	Low	Not perceptible	Not significant	Not significant
210	Two storey dwelling, Ballyverneen	60	Hedgerow on opposite side of local road. Woodland area	Short range views are likely to be gained of the proposed local road realignment, roundabout junction and night-time lighting and attenuation pond.	High	Large	Substantial	Moderate - Substantial
211	Two storey dwelling, Ballyverneen	<50	Hedgerow on opposite side of local road. Woodland area	Short range views are likely to be gained of the proposed local road realignment and roundabout junction and night-time lighting. Removal of part of the existing woodland will be a requirement	High	Large	Substantial	Moderate-Substantial
212	Two storey dwelling and farm, Jamestown	350	Rolling farmland	Filtered views through vegetation are likely to be gained of the proposed road in a cutting at Ballyverneen	Low	Small-medium	Slight-moderate	Slight
213	Dwelling, Knockroe	270	Farmland	Proposed route tie in (on embankment) to the existing N30 is likely to be visible in the distance albeit filtered through vegetation	Low	Small	Slight	Not significant

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214	Group of dwellings and farm buildings, Rathgaroge	160	Existing N30 road route and hedgerow on roadside	Proposed route tie in (on embankment) to the existing N30 is likely to be visible albeit filtered through vegetation	Medium	Small-medium	Slight – Moderate.	Slight
215	Dwelling, Knockroe	60	Farmland. Existing N30 road route.	The proposals are predicted to be visible at very short range, Specifically the tie in of the mainline with the existing N30 road	High	Large	Substantial	Moderate
216	Dwelling, Knockroe	360	Farmland. Existing N30 road route	The proposals are predicted to be visible filtered through vegetation, Specifically the tie in of the mainline with the existing N30 road	Medium	Medium	Slight - Moderate.	Slight
217	Dwelling, Berkeley	550	Dwelling and vegetation on opposite side of road	Views of the proposals are likely to be screened by intervening vegetation	Low	Not perceptible	Not significant	Not significant
218	Cottage, Berkeley	80	Garden Planting	Views of the proposals are expected to be substantially screened from the side of this house by vegetation. Glimpse views of the proposals are likely to be gained from the rear of this dwelling filtered through hedgerows	Low	Small	Slight	Not significant
219	Dwelling at Ryleen	320	Farmland	Views are likely to be gained of the mainline from an elevated location at a distance	Low	Small	Slight	Not significant
220	Group of dwellings, Ryleen	500	Farmland and dwellings on opposite side of the road	Views of the proposals are likely to be substantially screened by other dwellings	Low	Small	Slight-Not significant.	Not significant
221	Pair of dwellings, Ryleen	450	Farmland	Views are likely to be gained of the mainline from an elevated location at a distance	Low	Small	Slight	Not significant

ID	Description of Viewpoint and approximate townland location	Approximate Distance from Proposals (m)	Components in Existing View	Proposed View (pre establishment)	Viewer Sensitivity Pre Establishment	Magnitude of Change Pre Establishment	Significance of Impact Pre Establishment	Significance of Impact post Establishment
222	Bungalow dwelling, Lacken	<50	Local road and roadside hedgerow	Views are likely to be gained of a section of the mainline on embankment. In addition, the edge of the proposed cutting associated with the mainline is likely to be gained filtered through one hedgerow. The local road realignment will be visible at short range.	Medium	Medium	Substantial.	Moderate - Substantial
223	Dwelling, Arnestown	590	Farmland and wider valley setting	The proposed mainline is predicted to be scarcely visible in wintertime through deciduous hedgerows	Low	Small-Not perceptible	Slight-Not significant.	Not significant
224	NOT USED							
225	Dwelling in Arnestown	360	Local road and farmland	Views are likely to be gained of the mainline filtered through some hedgerows	Low-medium	Medium	Slight-Moderate.	Not significant
226	NOT USED							
227	Dwelling, Creakan Upper	310	Farmland, dwelling in front. Woodland	Partial views of the mainline on embankment are likely to be gained, partial screening being provided by other dwelling and some vegetation	Low	Small	Slight.	Not significant
228	Dwelling House, Creakan Upper	720	Farmland	The proposed mainline is possibly visible at a distance from elevated location	Low	Small	Slight	Not significant
229	Pair of dwellings, Creakan Upper	360	Farmland	Filtered views are likely to be gained of the proposed mainline on embankment from an elevated location	Low	Small	Slight	Not significant

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230	Dwelling, Camlin	<50	Boundary hedge and farmland	Proposed local road realignment is likely to be visible at short range	High	Large	Substantial	Moderate-Substantial
231	Dwelling, Landscape	360	Woodland	The proposals are likely to be screened from view	Low	Not Perceptible	Not Significant.	Not significant

Annex B

Ecology:

**B1.** Phase 1 Habitat  
Assessment & Appropriate  
Assessment.

**B2.** Assessment of Potential  
impacts of New Ross  
Bypass to the River Barrow  
& Nore Candidate Special  
Area of Conservation.



## **B1 INTRODUCTION**

### **B1.1 INTRODUCTION**

#### **B1.1.1 Overview**

This Phase 1 Habitat Assessment Report has been prepared by Environmental Resources Management Ireland Ltd (“ERM”) on behalf of *Mott MacDonald Pettit Ltd* for the National Roads Authority (NRA). It presents an overview of the ecological baseline relating to the proposed New Ross Bypass. This Report has been prepared in the context of a proposal to develop a bypass for the town of New Ross in accordance with the objectives of the Wexford and Kilkenny Development Plans together with the National Roads Needs Study undertaken by the NRA.

The overall objective of the report is to identify the key ecological resources that the preferred route option supports so that a baseline condition is established prior to the commencement of any developments on the site that may alter the ecological resource.

#### **B1.1.2 Scope of the Report**

This Report provides the Design Team with data on the key baseline features of the site with respect to the following issues:

- A review of statutory designated areas and protected species.
- Terrestrial and aquatic habitat:

### **B1.2 METHODOLOGY**

#### **B1.2.1 Phases of Work**

The methodology employed in the preparation of this Report follows three distinct phases:

- Desktop Research;
- Phase 1 Habitats Surveys; and
- Consultation.

The approach to each of these phases is outlined in *Sections 1.2.2-1.2.4* below.

#### **B1.2.2 Desk-top Research**

The desk-based assessment focused on the proposed site (and those areas directly or indirectly effected by the consequences of the development) and its broad ecological context.

In addition, a review was undertaken of public information and other available documentation and field observations relating to the site. The purpose of this was to:

- determine the flora and fauna that were recorded on the site prior to the survey being undertaken by ERM;
- review aerial photography to inform the habitat classifications;
- identify any rare or protected species that have been recorded; and
- identify any areas, within 10km of the site that have been designated statutory protection for its ecological value and conservation.

The relevant ecological information was collected from a range of sources, with the level of detail being dependent upon the importance of the ecological resource and the extent of likely impact.

The desktop research was undertaken in parallel to, and in support of, the field surveys of the estate.

#### **B1.2.3**      *Phase One Habitat Survey*

The aim of the field surveys was to identify, record and map the key habitats within the route corridor, in line with the Heritage Council's 2000 Guidelines <sup>(1)</sup>. All habitats recorded within the corridor are illustrated on Habitat Maps, *Figure 10.1 in Vol. 2*. The results of the field survey are discussed in *Section B1.2* below.

#### **B1.2.4**      *Consultation*

Additional baseline data on designated areas and the presences of flora and fauna species was sought from the National Parks and Wildlife Service. Site synopses for designated sites within 10km of the proposed development location were downloaded from the NPWS website ([www.heritagedata.ie](http://www.heritagedata.ie)).

### **B1.3**      *LOCATION AND SETTING*

New Ross is located on the Wexford Kilkenny border in the southeast of Ireland. The town is located south of the confluence of the rivers Barrow and Nore. The proposed route extends from Glenmore, Co. Kilkenny in the southwest to Knockroe, Co Wexford in the northeast.

New Ross is currently served by the N25 Cork-Waterford-Rosslare National Primary route (Euroroute E30) and the N30 National Primary route to Dublin via Enniscorthy. New Ross is also an established international port, with the Barrow providing navigable access to the sea as well as to an extensive navigable system of inland waterways.

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<sup>(1)</sup> Fossitt, J. (2000). A Guide to Habitats in Ireland, The Heritage Council, Ireland

**B1.4*****PHASE 1 HABITAT SURVEY***

Description of species and characteristics of habitats that may be affected by the proposed development are described in this *Section*. Information derived from desktop research was supplemented by a habitat survey.

A habitat survey was undertaken in March and April, 2005, using the Heritage Council's *Guide to Habitat Classification* (Heritage Council 2000) and the *Draft Habitat Survey Guidelines*.

The results of the habitat survey are discussed below.

**B1.4.1*****Ecological Evaluation***

The evaluation of the ecological resource was assessed according to the NRA's Site Evaluation Scheme outlined in *Table B1.1* below. This Site Evaluation Scheme is taken from the NRA's *Guidelines for Assessment of Ecological Impacts of National Road Scheme*. These criteria evaluate the significance of an ecological resource within a defined geographical context. The IEEM's Guidelines for Ecological Impact Assessment, which also evaluate ecological resources according to a defined geographical context provided guidance for the baseline ecological evaluation. The Ratcliffe Criteria <sup>(1)</sup> were also referred to during the baseline categorisation. Any habitats or ecological sites of moderate value or greater are described in *Table 10.3 in Volume 1* and illustrated on the habitat maps which are provided in *Figure 10.1 (Vol. 2)*.

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(1) Ratcliffe, D.A. (1976) A Nature Conservation Review

**Table B1.1 Site Evaluation Scheme**

<b>Rating</b>	<b>Qualifying Criteria</b>
<b>A</b>	<b>Internationally Important</b> Site designated (or qualifying for designation) as Special Area of Conservation (SAC) or Special Protection Area (SPA) under the EU Habitats or Birds Directives. Undesignated sites containing good examples of Annex I priority habitats under the EU Habitats Directive. Major salmon river fisheries. Major salmonid (salmon, trout or char) lake fisheries.
<b>B</b>	<b>Nationally Important</b> Sites or waters designated or proposed as a Natural Heritage Area (NHA) or statutory Nature Reserves. Undesignated sites containing good examples of Annex I habitats (under EU Habitats Directive). Undesignated sites containing significant numbers of resident or regularly occurring populations of Annex II species under the EU Habitats Directive or Annex I species under the EU Birds Directive or species protected under the Wildlife (Amendment) Act 2000. Major trout river fisheries. Water bodies with major amenity fishery value. Commercially important coarse fisheries.
<b>C</b>	<b>High Value, locally important</b> Sites containing semi-natural habitat types with high biodiversity in a local context and a high degree of naturalness, or significant populations of locally rare species. Small water bodies with known salmonid populations or with good potential salmonid habitat. Sites containing any resident or regularly occurring populations of Annex II species under the EU Habitats Directive or Annex I species under the EU Birds Directive. Large water bodies with some coarse fisheries value.
<b>D</b>	<b>Moderate Value, locally important</b> Sites containing some semi-natural habitat or locally important for wildlife. Small water bodies with some coarse fisheries value or some potential salmonid habitat. Any water body with unpolluted water (Q-value rating 4-5).
<b>E</b>	<b>Low Value, locally important</b> Artificial or highly modified habitats with low species diversity and low wildlife value. Water bodies with no current fisheries value and no significant potential fisheries value

**B1.5 RECEIVING ENVIRONMENT****B1.5.1 Designated Sites****B1.5.1.1 River Barrow and River Nore SAC (002162)**

This site consists of the freshwater stretches of the Barrow /Nore River catchments as far upstream as the Slieve Bloom Mountains and it also includes the tidal elements and estuary as far downstream as Creadun Head in

Waterford. The site passes through eight counties – Offaly, Kildare, Laois, Carlow, Kilkenny, Tipperary, Wexford and Waterford.

The site is a candidate SAC selected for alluvial wet woodlands and petrifying springs, priority habitats on Annex I of the E.U. Habitats Directive. Old oak woodlands, floating river vegetation, estuary, tidal mudflats, *Salicornia* mudflats, Atlantic salt meadows, Mediterranean salt meadows, dry heath and eutrophic tall herbs, all habitats listed on Annex I of the E.U. Habitats Directive, also occur within the site. The following species listed on Annex II of the same directive are supported by the site:

- Sea Lamprey;
- River Lamprey;
- Brook Lamprey;
- Freshwater Pearl Mussel;
- Nore Freshwater Pearl Mussel;
- Crayfish;
- Twaite Shad;
- Atlantic Salmon;
- Otter;
- *Vertigo Moulinsiana*; and
- Killarney Fern.

#### *B1.5.1.2 Barrow River Estuary pNHA (000689)*

This proposed Natural Heritage Area (pNHA) comprises the lower and upper tidal reaches of the river Barrow before it enters Waterford Harbour. It extends from St. Mullins in Co. Carlow to Cheek Point in Co. Waterford (approximately 20-25 kilometres) and includes both sides of the river. This site is located immediately adjacent to the proposed alignment at the junction of the R733 and the L-4026-1 tertiary road. The site grades from wet grassland with alder and ash wet woodland, to marsh, dominated by reed sweet-grass which in turn grades into dense reedbeds which continue to the bank of the River Barrow.

#### *B1.5.1.3 Oaklands Wood pNHA (000774)*

Oaklands Wood pNHA is located to the east of the River Barrow. This comprises a narrow strip of woodland extending north of the main body of woodland, on the hillside above the R733. This section of woodland is dominated by Oak (*Quercus spp.*) and Beech (*Fagus sylvatica*), with some Ash (*Fraxinus excelsior*) and Sycamore (*Acer pseudoplatanus*) and an understorey of Holly. The ground flora includes Bluebell (*Hyacinthoides non-scripta*), Lesser Celandine (*Ranunculus ficaria*), Honeysuckle (*Lonicera periclymenum*), Ivy (*Hedera helix*), Soft Shield-fern, Creeping Soft-grass (*Holcus mollis*), Lords-and-Ladies (*Arum maculatum*), Polypody (*Polypodium vulgare*), Navelwort (*Umbilicus rupestris*), Bramble (*Rubus fruticosus*), Wood Anemone (*anemone nemorosa*), Harts-tongue (*Phyllitis scolopendrium*) and Hogweed (*Heracelum*

*sphondylium*). To the north, Spruce (*Picea spp.*) has been extensively planted in the woodland.

### **B1.5.2 Overview of Habitats**

The proposed route is predominantly confined to agricultural land, which is divided between arable land and improved pasture grassland. Discrete areas of less intensively managed wet grassland were also recorded. These areas are typically more species-rich than the improved grassland areas. The farm-holdings along the route are mainly extensive in size, with pockets of smaller holdings. While hedgerows and treelines are the predominant field boundary, evidence of hedgerow removal was recorded during fieldwork exercises. The undulating landscape coupled with the intensive management of the agricultural land has led to the creation of drainage ditches throughout scheme's length.

Interspersed throughout the length of the route are discrete areas of semi-natural and natural habitats which are of varying ecological importance. Pockets of native woodland habitats are located along the route. While native in character these woodlands support non-native species such as beech and sycamore, which are actively regenerating within the woodland.

A number of rivers and streams are encountered along the length of the scheme. The principal river is the Barrow. The other rivers or streams consist of juvenile stretches or feeder streams for larger rivers. A spring-fed wetland is located to the northeast of the route, while an area of swamp is located adjacent to Glenmore Junction.

### **B1.5.3 Grassland habitats**

The grasslands within and adjacent to the proposed route have been classified as:

- *GA1, Improved agricultural grassland.*
- *GS4, Wet Grassland and*
- *GM1, Marsh*

The dominant grassland habitat along the proposed route is the improved agricultural grassland. **GA1/A** and **GA1/B** were stocked with grazing cattle during the survey. This category of grassland is typically represented by the dominant presence of:

- perennial ryegrass (*Lolium perennia.*);
- meadow-grasses (*Poa spp.*);
- nettle (*Urtica dioica*); and
- thistles (*Cirsium arvense*, *C. vulgare*).

The species that were found within the **GA1** habitats included:

- perennial ryegrass (*Lolium perennia*);
- meadow-grasses (*Poa* spp.);
- nettle (*U. dioica*);
- thistles (*Cirsium arvense*, *C. vulgare*);
- docks (*Rumex* spp.);
- Yorkshire-fog (*Holcus lanatus*); and
- plantains (*Plantago* spp.).

These grasslands are highly modified by human activities for livestock grazing. They are intensively managed, with frequent mowing and fertiliser application. As a result this habitat is of low diversity and of low ecological importance.

An area of wet grassland habitat dominated by dense stands occurs to the north of the Glenmore roundabout. The wet grassland occurs on wet or waterlogged mineral or organic soils that are poorly drained and subject to flooding. A more species rich area of wet grassland/marsh occurs to the north of this roundabout. A visible water layer was recorded within this area, with large patches of floating vegetation. Individual tree species, characteristic of wet woodlands, such as alder and ash, as well as oak, occurred scattered within the marsh area. The marsh habitat supports a more diverse assemblage of herbaceous flora which includes:

- Meadowsweet (*Filipendula ulmaria*);
- Water horsetail (*Equisetum aquatica*);
- Water mint (*menthe aquatica*);
- Marsh pennywort (*Hydrocotyl vulgaris*);
- Fools watercress (*Apium nodifolium*);
- Mouse-ear (*Cerastium fontanum*);
- Cuckoo plant (*Cardimine pratensis*);
- Cocksfoot (*Dactylis glomerata*);
- Creeping Bent (*Agrostis stolonifera*);
- Soft rush (*Juncus effusus*);
- Yellow iris (*Iris pseudocarus*);
- Great willowherb (*Epilobium hirsutum*);
- Marsh willowherb (*Epilobium palustre*);
- Marsh bedstraw (*Galium palustre*);
- Marsh cinquefoil (*Potentilla palustris*); and
- Common sedge (*Carex nigra*).

These areas of wet grassland and marsh form part of an ecological mosaic which is considered to be of high ecological value and locally important.

A discrete area of wet grassland (GS4) was identified along the route, located at Ch. 8550. This habitat is characterised by abundant rushes and/or sedges along with a variety of grasses. The wet grassland habitat identified at Ch. 8,550 consists of a wet grassland field situated adjacent to the Maudlin Stream, which flows north and then west towards New Ross town. It is characterised by a wet field fed from water from a slope to the east, which drains gradually into the Maudlin Stream. A range of grass and herbaceous species were recorded at this site, including watercress (*Rorippa nasturtium-aquaticum*), ivy-leaved crowfoot (*Ranunculus hederaceus*), lesser spearwort (*R.flammula*) and water starwort (*Callitriche cf stagnalis*), which grow between tussocks of soft rush (*Juncus effusus*) and some scattered sharp-flowered rush (*J.acutiflorus*). More generally the field is dominated by rushes and wet grass, including creeping bent (*Agrostis stolonifera*), floating sweet grass (*Glyceria fluitans*), rough-stalked meadowgrass (*Poa trivialis*) and Yorkshire fog (*Holcus lanatus*). Lady's smock (*Cardamine pratensis*), bog stitchwort (*Stellaria uliginosa*), creeping buttercup (*Ranunculus repens*) and greater bird's-foot trefoil (*Lotus pedunculatus*). This site is of moderate ecological value.

The proposed route crosses the western part of a shallow valley at Ch. 2,900 of the N30 Tie-in. The upper parts of the valley is more mineral than peaty and clumps of bramble (*Rubus fruticosus*) and elder *Sambucus nigra* occur with soft rush *Juncus effusus* and nettle *Urtica dioica* in between. Docks *Rumex obtusifolius*, *R.conglomeratus* are also conspicuous as cattle tend to cross the valley here rather than lower down. There are a few runnels of water in winter with brooklime *Veronica beccabunga* and bog stitchwort *Stellaria uliginosa*.

Downstream, and to the east of the proposed alignment the ecological quality of the habitat increases. There are extensive areas of yellow flag *Iris pseudacorus*, sharp-flowered rush *Juncus acutiflorus* and soft rush *J.effusus* as well as clumps of gorse *Ulex europaeus*, eared willow *Salix aurita* and ash *Fraxinus excelsior*. Additional marsh plants include:

- Lesser spearwort *Ranunculus flammula*
- Round-leaved water crowfoot *R.romiophyllus*
- ivy-leaved water crowfoot *R.hederaceus*
- floating sweet grass *Glyceria fluitans*
- small sweet grass *G.declinata*
- marsh bedstraw *Galium palustre*
- creeping forget-me-not *Myosotis secunda*
- marsh cinquefoil *Potentilla palustris*
- tormentil *P.erecta*
- greater birdsfoot trefoil *Lotus pedunculatus*
- spotted orchid *Dactylorhiza fuchsii*

A summary of the habitat classifications recorded within the grassland areas is provided in Table B1.2.

**Table B1.2 Summary of Grassland Classification**

**GA 1: Improved agricultural grassland.** Intensively managed or highly modified agricultural grassland that is heavily grazed or used for silage making. Typically species poor, rye grasses (*Lolium spp.*) may dominate, frequently with White Clover (*Trifolium repens*). Abundant rushes may occur on poorly drained improved grassland.

**GS 4: Wet Grassland.** This category occurs on wet or waterlogged mineral or organic soils that are poorly drained or subjected to seasonal flooding. It includes areas of poorly drained farmland that have not recently been improved. Species composition varies considerably. Typical species include rushes (*Juncus spp.*), sedges (*Carex spp.*), Yorkshire fog (*Holcus lanatus*), Creeping Bent (*Agrostis stolonifera*) and Meadow Grass (*Poa spp.*). Common herbaceous species occurring on wet grasslands include Creeping Buttercup (*Ranunculus repens*), Silverweed (*Potentilla anserine*) and Meadowsweet (*Filipendula ulmaria*). Wet grasslands may also be important for orchids such as Spotted Orchids (*Dactylorhiza maculate*)

**GM 1: Marsh.** This habitat is found on level ground near river banks, lakeshores and in other places where the water table is close to ground level for most of the year. It is a species rich habitat and supports a high proportion of wetland species in addition to the typical dominants: rushes (*Juncus spp.*), sedges (*Carex spp.*) and Meadowsweet (*Filipendula ulmaria*). The broadleaved herb component includes Water Mint (*Mentha aquatica*), Wild Angelica (*Angelica sylvestris*), Yellow Iris (*Iris pseudacorus*), reeds and other large grasses and sedges, but these should not be dominant.

Source: Heritage Council (2000) Guide to Habitat Classification

#### **B1.5.4 Freshwater & Coastal Habitats**

The Freshwater Habitats identified within the site have been classified as

- FW1 Eroding/Upland rivers
- FW4 Drainage ditches
- FP2 Non-calcareous springs
- FS1 Reeds and large sedge swamps
- CW2 Tidal Rivers
- CW1 Lagoons and saline lakes

The proposed route crosses four eroding rivers (FW1), the Graiguenakill Stream, Camlin Stream, Maudlin Stream and the Aughnacrew River.

The Graiguenakill Stream (RS-02/RS-04), to the south of the Glenmore Junction, at its confluence with the Graiguenakill River was between 2m to 3m wide and had an approximate 25% riparian cover and 50% instream cover. The riparian vegetation was dominated by willow (*Salix spp.*), ash (*Fraxinus excelsior*) and reed canary grass (*Phalaris arundinacea*). In-stream macro-flora consisted of pondweeds (*Potamogeton spp.*) water cress (*Rorippa nasturtium-aquaticum agg.*) and water starwort (*Callitriche stagnalis*)

The river substrate was made up of approximately 30% gravel, 20% fine gravel, 30% silt and sand and 20% mud. Overall the stream could be

considered to be of good salmonid nursery habitat. No EPA Q-value rating is available for this river.

A further stretch of the Graiguenakill Stream was assessed to the north of Glenmore Junction. At this location the stream averaged two metres in width, with narrower sections identified to the north. Natural riparian vegetation, characterised by willow, ash and oak were recorded along the eastern bank of the stream. The western bank of the stream was dominated by aquatic flora such as bulrushes, willowherbs, reed sweet-grass, yellow iris and bindweed. To the north of the site heavily poached and improved wet grassland is located to the west, while a linear coniferous plantation is located to the east of the stream. Discrete sections of the stream were smothered in aquatic vegetation, suggesting localised enrichment.

The Camlin Stream (RS-08) forms the boundary of the cSAC for a short section between the site and L-4026-1. This stream was also surveyed at this boundary. The stream is between 1m to 1.5m wide and had an approximate 90 - 100% riparian cover, forming a tunnelled profile along the stream. The riparian habitat was characterised by a mature treeline dominated by ash (*F. excelsior*) with alder (*Alnus glutinosa*) and holly (*I. aquifolium*) also occurring. Due to the extremely high levels of shade caused by the tunnelling no instream flora was recorded.

The stream substrate was made up of approximately 50% rocks and cobble with sand and silt making up the remainder. Overall, the stream is considered to be of good salmonid nursery habitat. This watercourse, which forms the boundary of the cSAC is considered to have high ecological value and is locally important as a feeder stream for the Barrow System.

The Maudlin Stream is typical of eroding conditions with fast flowing turbulent water and a characteristic river bed consists of exposed rocks and accumulated pebbles gravels and coarse sand. Water-crowfoot (*Ranunculus spp.*) and Bulbous Rush (*Juncus Bulbosus*) dominated the in-stream flora.

A number of drainage ditches transect the proposed route. Two drainage ditches adjacent to the eastern shoreline of the River Barrow have a well developed flora. The western ditch contains such plants as Water starwort (*Callitriche cf stagnalis*), Floating sweet grass (*Glyceria fluitans*) and Great willowherb (*Epilobium hirsutum*). It is overhung by tall fescue (*Festuca arundinacea*), Fox sedge (*Carex otrubae*) and Yorkshire fog (*Holcus lanatus*) into which woody species are spreading, both elder (*Sambucus nigra*) and bramble (*Rubus fruticosus*). The eastern (inner) drain is more stable and has more open water, in which grows;

- water plantain *Alisma plantago-aquatica*
- Small pondweed *Potamogeton berchtoldii*
- Bur reed *Sparganium erectum*
- Greater pond sedge *Carex riparia*
- Common reed *Phragmites australis*

- Marsh bedstraw *Galium palustre*
- Water figwort *Scrophularia auriculata*

Meadowsweet (*Filipendula ulmaria*) is again frequent on the edge where a little crow garlic (*Allium vineale*) also grows.

The Aughnacrew River (RS-22) rises adjacent to the proposed Corcoran's Cross Junction and is crossed by the N30 East Tie-in at Ch. 1,150. This river is a tributary of the Pollymounty River, which is itself a tributary of the River Barrow. The Pollymounty River joins the main River Barrow channel to the west of Bigwood, north of New Ross. EPA Q-value records are available for this river from the monitoring station located at Ballinvegga Bridge, approximately 1km to the north of the survey site. Previous water quality analysis from this monitoring station resulted in a Q-value of 3 – 4, indicating slightly polluted water quality. Analysis undertaken in 2003 resulted in a Q-value of 3 indicating a decline in the rivers water quality from slightly polluted to moderately polluted.

The stream is between 0.5m to 1m wide and had an approximate 90 - 100% riparian cover, forming a tunnelled profile along the stream. The riparian vegetation was dominated by ornamental garden plants and other native species such as hawthorn, willow species and alder (*A. glutinosa*). Due to the extremely high levels of shade caused by the tunnelling no instream flora was recorded.

The stream substrate was made up of approximately 50% stones and pebbles with sand and silt making up the remainder. Overall the stream, at this point, could be considered to be of moderate salmonid nursery habitat. This river is of moderate ecological value and locally important to the Barrow system.

The non-calcareous springs (FP2) are located adjacent to the proposed route at Ch. 2900 of the N30 tie-in. this habitat has been described above in *Section 2.1.3*

An area of swamp (FS1) dominated by dense stands of reed sweet-grass (*Glyceria maxima*) occurs to the south of the Glenmore roundabout. The swamp (FS1) occurs on wet or waterlogged mineral or organic soils that are poorly drained and subject to flooding. A low species diversity is associated with this swamp habitat. At the edges of the swamp habitat, bordering the drainage ditch to the west and the Graiguenakill Stream to the east, a number of other species were recorded, including bulrush (*Typha latifolia*), great willowherb (*Epilobium hirsutum*), field bindweed (*Convolvulus arvensis*) and meadowsweet (*Filipendula ulmaria*).

The Coastal Habitats identified within the site have been classified as

- CW 2 Tidal Rivers

The reach of the River Barrow at which the proposed route crosses it is tidal (CW2). The tidal influence is derived from the sites close proximity to the

Barrow estuary at Waterford Harbour. While this river is classed as tidal due to the fluctuations in water levels, salinity and turbidity it also displays characteristics typical of a low lying depositing river (FW2).

The western bankside of the river, where the proposed route crosses, consists of a sandstone cliff face. The cliff is sparsely colonised by ruderal plants such as Willowherb, Nettles (*U. dioica*) and Ragwort. On the eastern bankside a narrow belt of reeds form a nonspecific layer between the river and the shoreline embankment. Sea clubrush (*Bolboschoenus maritimus*) occurs at the seaward margin, then common reed (*Phragmites australis*) with some hemlock water dropwort (*Oenanthe crocata*), Curled dock (*Rumex crispus*) and English scurvygrass (*Cochlearia anglica*). Bindweed (*Calystegia* cf *sylvatica*) grows out from the embankment which is otherwise covered by False oat (*Arrhenatherum elatius*), Teasel (*Dipsacus fullonum*), Bittersweet (*Solanum dulcamara*) and Meadowsweet (*Filipendula ulmaria*).

An artificial lagoon is located to the north of Pink Point. The lagoon contains brackish water and is bordered to the east by a rock armour wall and to the west by a tertiary road.

A summary of the freshwater and coastal classifications are provided in *Table B1.3* below.

**Table B1.3 Summary of Freshwater Classification**

**FW1: Eroding/Uplanding River.** This category includes natural watercourses that are actively eroding, unstable and where there is little or no deposition of fine sediment. The bed of eroding rivers are characterised by exposed bedrock and loose rock. Pebbles, gravel and coarse sand may accumulate in places, but finer sediments are rarely deposited. These rivers vary in size but are usually small and shallow. Higher plants are generally rare or absent except in places where fine sediments are trapped. Typical species include water-crowfoots (*Ranunculus penicillatus*, *R. aquatilis*), alternative water milfoil (*Myriophyllum alterniflorum*) and the aquatic form of Bulbous rush (*Juncus bulbosus*).

**FW2: Drainage Ditches.** This category includes linear water bodies or wet channels that are entirely artificial in origin, and some sections of watercourses that have been excavated or modified to enhanced drainage and control the flow of water. Drainage ditches should contain water (flowing or stagnant) or be wet enough to support wetland vegetation. Dry ditches that lack wetland plants are not included.

**FP2: Non-calcareous Springs.** This category is used for springs that are irrigated and kept permanently moist by acidic to neutral water that is base-poor and typically oligotrophic. They may be associated with skeletal mineral or peaty soils. Vegetation is typically dominated by mosses (*Sphagnum auriculatum*, *Calliergon sarmentosum* and *Polytrichum commune*), grasses (*Agrostis* spp., *Nardus stricta*), Bulbous rush (*Juncus bulbosus*) and wetland species such as Marsh Violet (*Viola palustris*), Lesser spearwort (*Ranunculus flammula*) and Marsh Pennywort (*Hydrocotyle vulgaris*).

**FS1: Reed and Large Sedge Swamps.** This category includes species-poor stands of herbaceous vegetation that are dominated by reeds and other large grasses. Most reeds and large swamps are overwhelmingly dominated by one or a small number of species. Typical components include common reed (*Phragmites australis*) and reed sweet-grass (*Glyceria maxima*).

**CW2: Tidal Rivers.** This category is for the lower stretches of rivers or streams that are tidal and where there are regular fluctuations in salinity and turbidity and in the rate and direction of water flow. The characteristics of these rivers may also resemble the freshwater habitat category of low lying depositing rivers (FW2). This category includes watercourses that erode their banks and meander across floodplains. Fine sediments are deposited on the river bed and depositing conditions are typical of low-lying areas where gradients are low and water flow is slow and sluggish. Vegetation may include floating and submerged aquatics. Floating aquatics include water lilies (*Nuphar lutea*, *Nymphaea alba*), pondweeds (*Potamogeton* spp.) and water starworts (*Callitriche* spp.). Tall emergents such as Common Reeds (*Phragmites australis*) and Yellow Iris (*Iris pseudacarus*) may also be present.

**CW1: Lagoons and saline lakes.** This category includes all enclosed bodies of standing brackish water that are wholly or partially separated from the sea by banks of sand, shingle or rock or by land barriers of rock or peat. Strong water currents are absent and salinity is highly variable. Water levels associated with lagoons fluctuate on a daily and seasonal basis.

Source: Heritage Council (2000) Guide to Habitat Classification

### **B1.5.5 Cultivated & Built Land**

The cultivated and built land identified along the proposed route is as follows:

- BC1 Arable crops
- BL1 Stonewalls and other stone structures
- BL2 Earth Banks

Both arable land and stonewalls and other stone structures do not represent significant ecological resources along the proposed route. The arable land is

dominant along certain stretches of the proposed route. Much of the crops being cultivated within these areas include cereals such as corn, wheat and barley. Plant species supported within arable habitats include many weed species such as Common poppy (*Papaver rhoeas*), Common field-speedwell (*Veronica persica*), Knotgrasses (*Polygonum spp.*) and Wild carrot (*Daucus carota*).

Stonewalls in Wexford in general, and along the proposed route in particular, are associated with hedgerows. Many stonewalls along the alignment have been colonised by vegetation which has formed a humic layer over the stonewall feature so that it now resembles an earth-bank. However the stonewalls frequently supported the following plant species;

- Ivy (*Hedera helix*)
- Herb Robert (*Geranium robertianum*)
- Red Valerian (*Centranthus ruber*)
- Harts tongue (*Phyllitis scolopendrium*)
- Navelwort (*Umbilicu rupestris*)

Only one purpose built embankment, located along the eastern shoreline of the River Barrow is encountered along the route of the alignment. Plant species associated with this feature have been listed in *Section B1.5.4*.

**Table B1.4 Summary of Built Land Classification**

**BC1: Arable Crops.** Agricultural land that is cultivated and managed for the production of arable crops including cereals (wheat, oats, barley) and root, leaf, energy or fibre crops. Arable crops may harbour a variety of weed species. Common poppy (*Papaver rhoeas*), Bladder Campion (*Silene vulgaris*), Wild Carrot (*Daucus carota*), Corn spurrey (*Spergula arvensis*), Corn Marigold (*Chrysanthemum segetum*) and knotgrasses (*Polygonum spp.*) may be abundant in some arable fields

**BL1: Stone walls and other stone work.** This category incorporates stone walls and most other built stone structures in rural and urban situations, apart from intact buildings. It includes dry stone and old mortar walls that occur as field or property boundaries; retaining walls against banks of soil; stone jetties or piers in lakes or rivers; derelict or ruinous buildings made of stone; and old stone monuments, fortifications or ruins. Older and more neglected structures are generally more important for wildlife. Stone structures may support a diverse flora with abundant lichens, mosses and ferns (particularly *Asplenium trichomanes*, *A. rut-muraria* and *A. ceterach*). Other common components include Ivy (*Hedera helix*), grasses (*Aira and Catapodium spp.*), stonecrops (*Sedum spp.*) and non-native species such as Red Valerian (*Centranthus ruber*) and Wallflower (*Erysimum cheiri*).

**BL2: Earth banks.** Earth banks are a common type of field boundary in many parts of Ireland. Constructed from local materials such as peat, earth, gravel or stone, these narrow linear ridges are often bordered by drainage ditches. Most are completely vegetated when intact and feature elements of a range of habitats, including grassland, heath hedgerow and scrub. Earth banks usually support abundant grasses and a wide range of broadleaved herbs such as Foxgloves (*Digitalis purpurea*), Violets (*Viola spp.*), Yarrow (*Achillea millefolium*), Common Knapweed (*Centaurea nigra*) and Primrose (*Primula vulgaris*).

Source: Heritage Council (2000) *Guide to Habitat Classification*

**B1.5.6****Woodland & Scrub Habitat**

The woodland and scrub habitats encountered along the proposed route have been classified as;

- WN2 Oak-ash-hazel woodland;
- WN 1 Oak-birch-holly woodland;
- WD 2 Mixed Broadleaved/conifer woodland;
- WS 2 Immature Woodland;
- WL 1 Hedgerows; and
- WL 2 Treelines.

A linear strip of woodland is located to the north of the Glenmore Roundabout, adjacent to the LS-7513 realignment. Even though this woodland is not entirely representative of oak-ash-hazel woodland (WN2), this code is deemed to provide the closest description of this woodland. While non-native tree species, particularly beech (*Fagus. sylvatica*) and sycamore (*Acer pseudoplatanus*) occur and are actively regenerating within this woodland, it still retains features of native woodland and supports a diverse range of tree and herbaceous species. However, the continued regeneration of beech and sycamore will, over time, decrease the naturalness of this habitat.

The woodland is dominated by oak species (*Quercus spp.*), with ash (*Fraxinus excelsior*) less dominant but more frequent towards the base of the wooded slope. As mentioned above the woodland also supports a frequent distribution of beech (*Fagus sylvatica*) and sycamore (*Acer pseudoplatanus*). The sub-canopy tree-layer includes hawthorn (*Crataegus monogyna*) and holly (*Ilex aquifolium*) with grey willow (*Salix cineria*) and eared willow (*Salix aurita*) recorded at the base of the woodland slope adjacent to the river.

The herb layer is dominated by dense ivy (*Helix heder*) cover, with bramble (*Rubus fruticos*) dominant in patches. Other species recorded include:

- Herb robert (*Geranium robertianum*);
- Hogweed (*Heracleum sphondylium*);
- Honeysuckle (*Lonicera periclymenum*);
- Hart's tongue (*Phyllitis scolopendrium*);
- Bracken (*Pteridium aquilinum*);
- Wood avens (*Geum urbanum*);
- Wood sage (*Teucrium scorodonia*);
- Bluebell (*Hyacinthoides non-scripta*); and
- Great brome (*Bromopsis ramosa*).

This woodland is of high ecological value and local nature conservation importance.

The high ground at Pink Rock (Ch. 1350) is fringed by oakwood which has been augmented by planting but retains features of native woodland. While this woodland has been designated as Oak-brich-holly woodland (WN1), this

is not entirely representative of the site but was deemed the most suitable description of the site from the *Guide to Habitats*. Pedunculate oak (*Quercus robur*) grows with Wych elm (*Ulmus glabra*) and Wild cherry (*Prunus avium*) but there is some Scot's pine (*Pinus sylvestris*) above the quarry as well as Bramble (*Rubus fruticosus*), Gorse (*Ulex europaeus*) and Field rose (*Rosa arvensis*) in more open ground. A full ground flora occurs with ferns rather prominent beneath the trees - Shield fern (*Polystichum setiferum*), Male fern (*Dryopteris filix-mas*) and Hart's tongue (*Phyllitis scolopendrium*) frequent. The herb species consist of;

- False brome (*Brachypodium sylvaticum*);
- Wood sage (*Teucrium scorodonia*);
- Wall pennywort (*Umbilicus rupestris*);
- Great brome (*Bromopsis ramosa*);
- Common violet (*Viola riviniana*);
- Bugle (*Ajuga reptans*);
- Bluebell (*Hyacinthoides non-scripta*);
- Wood avens (*Geum urbanum*);
- Herb robert (*Geranium robertianum*);
- Wild strawberry (*Fragaria vesca*);
- Barren strawberry (*Potentilla sterilis*);
- Greater stitchwort (*Stellaria holostea*); and
- Primrose (*Primula vulgaris*).

As this woodland is located within the cSAC boundary it is considered to be of international ecological importance.

A mixed broadleaved/conifer woodland (WD2) belt is crossed at Ch. 3100, situated at the side of a shallow valley. It is north-facing and consists mainly of Sitka spruce (*Picea sitchensis*) and beech (*Fagus sylvatica*) with some sycamore (*Acer pseudoplatanus*), Holly (*Ilex aquifolium*) and Sweet chestnut (*Castanea sativa*). The ground flora is relatively open as the site is dry and on shallow soil. The slatey Ordovician rock is exposed in a few places and often has wall pennywort *Umbilicus rupestris* growing on it. Elsewhere ferns characterise the surface; Shield fern (*Polystichum setiferum*), Buckler fern (*Dryopteris dilatata*) and Scalp male fern (*D.affinis*). There is also:

- Ivy (*Hedera helix*);
- Honeysuckle (*Lonicera periclymenum*);
- Great woodrush (*Luzula sylvatica*);
- Wood sorrel (*Oxalis acetosella*);
- Bluebell (*Hyacinthoides non-scripta*);
- Foxglove (*Digitalis purpurea*);
- Great stitchwort (*Stellaria holostea*);
- Enchanter's nightshade (*Circaea lutetiana*);
- Tutsan (*Hypericum androsaemum*); and

- A moss (*Mnium hornum*).

A wet woodland site is crossed at Ch. 3,900. This site is characterised by a high water level, with areas of low-lying muddy substrate. The Camlin Stream, an eroding river (FW1) flows through the eastern section of the site. Woodland, consisting of ash (*F. excelsior*), beech (*F. sylvatica*) and oak (*Quercus spp.*) dominates the site. The eastern bank of the stream slopes steeply to the sites boundary. The dryer slope of this area (as well as the dryer area to the west of the site) is reflected by the flora associated with it, which includes:

- Blue bell (*Hyacinthoides non-scripta*);
- Primrose (*Primula vulgaris*);
- Lords and ladies (*Arum maculatum*);
- Hart's tongue (*Phyllitis scolopendrium*);
- Hard fern (*Blechnum spicants*);
- Bracken (*Pteridium aquilinum*);
- Common dog-violet (*Viola riviniana*);
- Greater stitchwort (*Stellaria holostea*);
- Creeping buttercup (*R. repens*);
- Common sorrel (*R. acetosa*);
- Nettle (*U. dioica*);
- Bush vetch (*Vicia sepium*); and
- Lesser Celandine (*Ranunculus ficaria*).

The herb layer associated with the wetter area of the site include:

- Meadowsweet (*F. ulmiara*);
- Water forget-me-not (*Myosotis scorpioides*);
- Opposite-leaved saxifrage (*Chrysosplenium oppositifolium*);
- Water mint (*M. aquatica*);
- Water plantain (*Alisma Plantago-aquatica*);
- Brooklime (*V. beccabunga*); and
- Cuckoo plant (*C. pratensis*).

A small pond, choked by aquatic vegetation, such as common water-starwort (*C. stagnalis*) and fool's water-cress (*A. nodifolium*) a drainage ditch (FW4) flows to the west of the site.

A large number of large red damselflies (*Pyrrhosoma nymphula*) and variable damselflies (*Coenagrion pulchellum*) were recorded foraging within the site.

This site displays similar characteristics to the wetland habitats forming part of the River Barrow cSAC which is separated from this site by the L-4026-1 tertiary road. However due to the discrete size of this site and on-going enrichment indicated by the extensive stands of nettles, the ecological value of

the site has been reduced. This area of woodland is considered to be of moderate ecological value, locally important

An immature woodland (WS 2) area of deciduous trees is crossed at Ch. 3350 of the N30 Tie-ie, in which oak (*Q. robur*) is the main species though Hawthorn (*Crataegus monogyna*), Blackthorn (*Prunus spinosa*), Gorse (*Ulex europaeus*), Elder (*Sambucus nigra*) and Ash (*F. excelsior*) are regenerating also. Where ground flora occurs it is that of an overgrown field with False oat (*Arrhenatherum elatius*), Cocksfoot (*Dactylis glomerata*), Marsh thistle (*Cirsium palustre*) etc but it is more common for Bramble (*R. fruticosus*) to have monopolised spaces between and among the planted trees.

Adjacent land supports tall Beech trees (*F. sylvatica*) together with some Scot's pine (*Pinus sylvestris*).

Hedgerows (WL1) and treelines (WL2) are a significant feature of the New Ross hinterland. They are an important ecological resource as they provide connectivity between larger habitats and shelter for a range of mammal and bird species. The hedgerows along the route alignment range in density and form, with the denser hedgerows providing a greater ecological resource. The typical species occurring in the hedgerows along the proposed route are as follows:

- Bramble (*R. fruticosus*)
- Nettle (*U. dioica*)
- Honeysuckle (*L. periclymenum*)
- Hedge Bindweed
- Hart's Tongue (*P. scolopendrium*)
- Ivy (*H. helix*)
- Gorse (*Ulex europaeus*)
- Blackthorn (*Prunus spinosa*)
- Hawthorn (*Crataegus monogyna*)
- Ash (*F. excelsior*)

While many mature treelines are generally associated with hedgerows throughout the route alignment, they also occur independently of them. The majority of the treelines consist of mature tree species such as Oak (*Quercus spp.*), Beech (*F. sylvatica*), Ash (*F. excelsior*), Sycamore (*A. pseudoplatanus*), Poplar (*Populus spp.*), Horse chestnut (*Aesculus hippocastanum*) and Limes (*Tilia spp.*).

**Table B1.5 Summary of Woodland Classification**


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**WN 1: Oak-birch-holly woodland.** This category includes native semi-natural broadleaved woodland that occurs on acid or base poor soils that may be either dry or humid, but not waterlogged. Stands are usually dominated by Sessile Oak (*Quercus petraea*) or mixed stands of Sessile and Pedunculate Oak (*Q. petraea* and *Q. robur*).

**WD 2: Mixed Broadleaved/Conifer Woodland.** This category includes woodland areas with mixed stands of broadleaved trees and conifers, where both types have a minimum of 25% and a maximum of 75%. Trees may be either native or non-native species. Stands of immature or sapling trees are excluded.

**WS 2: Immature woodland.** Immature woodland includes areas that are dominated by young or sapling trees that have not yet reached the threshold heights (5m, or 4m in the case of wetland areas) for inclusion in the woodland categories previously described. Recently planted areas and young plantations should also be included here, with the exception of conifer plantations.

**WL 1: Hedgerows.** Linear strips of shrubs frequently with occasional trees that usually enclose fields or property boundaries. Most hedgerows were planted and often occur on raised earth banks, a consequence of excavation of drainage ditches. Hedgerow dimensions vary greatly and can be gappy or overgrown if neglected. Commonly hedgerows support a high proportion of spinose plants such as hawthorn (*Crataegus monogyna*), blackthorn (*Prunus spinosa*), gorse (*Ulex europaeus*) in addition to trees and shrubs such as ash (*Fraxinus excelsior*) and beech (*Fagus sylvatica*). Climbing plants such as ivy (*Hedera helix*) and tall grasses, herbs and ferns can also be supported in hedgerow habitats.

**WL2: Treelines.** A treeline is a narrow row or single line of trees that is greater than 5 m in height and typically occurs along field or property boundaries. This category includes tree-lined roads or avenues, narrow shelter belts with no more than a single line of trees, and overgrown hedgerows that are dominated by trees. Most treelines are planted and trees are often regularly spaced. They commonly comprise a high proportion of non-native species such as beech (*Fagus sylvatica*), horse chestnut (*Aesculus hippocastanum*), sycamore (*Acer pseudoplatanus*), limes (*Tilia spp.*), some poplars (*Populus spp.*) and conifers. Trees may occur on level ground or on banks of earth. The presence or absence of hedgerow or scrub at the base should be noted.

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Source: Heritage Council (2000) *Guide to Habitat Classification*

### **B1.5.7 Exposed Rock & Disturbed Ground**

Exposed rock (ER1) occurs in the wood on the northern side of the quarry. A suite of acid plants occur here: ling (*Calluna vulgaris*), Fraochan (*Vaccinium myrtillus*), Greater woodrush (*Luzula sylvatica*), Shining St John's wort (*Hypericum pulchrum*), Heath pea (*Lathyrus linifolius*), Goldenrod (*Solidago virgaurea*) and a hawkweed (*Hieracium cf sabaudum*).

A mixed broadleaved/conifer woodland (WD2) belt is crossed at Ch. 3100, situated at the side of a shallow valley. It is north-facing and consists mainly of Sitka spruce (*Picea sitchensis*) and beech (*Fagus sylvatica*) with some sycamore (*Acer pseudoplatanus*), Holly (*Ilex aquifolium*) and Sweet chestnut (*Castanea sativa*). The ground flora is relatively open as the site is dry and on shallow soil. The slatey Ordovician rock is exposed in a few places and often

has wall pennywort *Umbilicus rupestris* growing on it. Elsewhere ferns characterise the surface; Shield fern (*Polystichum setiferum*), Buckler fern (*Dryopteris dilatata*) and Scaly male fern (*D.affinis*). There is also

- Ivy (*Hedera helix*);
- Honeysuckle (*Lonicera periclymenum*);
- Great woodrush (*Luzula sylvatica*);
- Wood sorrel (*Oxalis acetosella*);
- Bluebell (*Hyacinthoides non-scripta*);
- Foxglove (*Digitalis purpurea*);
- Great stitchwort (*Stellaria holostea*);
- Enchanter's nightshade (*Circaea lutetiana*);
- Tutsan (*Hypericum androsaemum*); and
- A moss (*Mnium hornum*).

#### **B1.5.8 Littoral Habitats**

Tidal mudflats (LS4) characterised by soft mud shores are associated with the River Barrow. This habitat is of qualifying interest to the River Barrow cSAC. These mud flats are representative of the Annex I Habitat *Mudflats and sandflats not covered by sea water at low tide Code 1140*. During low tides, the intertidal mud flats are exposed, primarily on the eastern bank of the river. No salt marsh vegetation is associated with the area of mudflat identified along the Barrow.

**Table B1.6 Summary of Woodland Classification**

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**LS4: Mud Shores** Mud shores are formed primarily of very fine sediment and usually occur along the most sheltered sections of coastline. The silt/clay fraction of the sediment should be at least 30%. Small amounts of coarser material mainly gravel and pebbles, may also be present. This category includes some sandy muds, in addition to soft mud shores that are typically found in the upper reaches of estuaries. These are subject to variable, reduced or low salinity.

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*Source: Heritage Council (2000) Guide to Habitat Classification*

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## **B2** *ASSESSMENT OF POTENTIAL IMPACTS OF NEW ROSS BYPASS TO THE RIVER BARROW & NORE CANDIDATE SPECIAL AREA OF CONSERVATION*

### **B2.1** *INTRODUCTION*

Under the *European Communities (Natural Habitats) Regulations 1997 - 2005*, the Competent Authority (in this case An Bord Pleánala), must undertake an Appropriate Assessment of proposals which may have significant impacts on the integrity of any Natura 2000 sites which the New Ross Bypass may affect in view of the Conservation Objectives for which the Natura 2000 site has been designated.

The purpose of this *Annex* is to summarise the information available to assist the Competent Authority in fulfilling the requirements of the Habitats Regulations.

### **B2.2** *APPROACH TO THE ASSESSMENT*

European guidance <sup>(1)</sup> on Appropriate Assessment includes a staged process to the assessment.

1. Define the proposal.
2. Establish that the proposal is not necessary to the management of the site for nature conservation purposes.
3. Determine whether the proposal is likely to have a significant effect on the site (see process below).
4. If a project is likely to have a significant effect, assess the implications of the proposal for the site's Conservation Objectives so as to answer the question "*can it be demonstrated that the proposal will not adversely affect the integrity of the site?*" This is referred to as the Appropriate Assessment.
5. If the Appropriate Assessment indicates that no adverse effect will occur, the competent authority may proceed to grant consent; if not, further steps are required to demonstrate that specific reasons why the development should be permitted apply, before consent may be granted.

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(1) <sup>(1)</sup> European Commission Environment Division 2001; Assessment of plans and projects significantly affecting Natura 2000 sites.

**B2.3****PROCESS OF DETERMINING LIKELY SIGNIFICANT EFFECT**

To determine if the proposal is likely to have any significant effects on the designated sites the following issues are considered:

- could the proposals affect the qualifying interest and are they sensitive to the effect;
- the probability of the effect happening;
- the likely consequences for the site's Conservation Objectives if the effect occurred; and
- the magnitude, duration and reversibility of the effect.

The aim of the Habitats Regulations process is to demonstrate that the proposals will not have an adverse effect on the integrity of the site. Site integrity is defined as:

*"the coherence of its structure and function across its whole area that enables it to sustain the habitat, complex of habitats and/or the levels of populations of the species for which it was classified" <sup>(1)</sup>.*

Recent European Court of Justice (ECJ) case law in relation to Article 6(3) and 6(4) assessments has also informed the approach to this appropriate assessment.

The decision on whether the site integrity could be adversely affected by the proposals should focus on and be limited to the site's Conservation Objectives.

The assessment has drawn on the following information:

- description of the River Barrow & Nore cSAC (to be referred to as the River Barrow cSAC), and the qualifying interest features for which the site is designated;
- details on the proposed project, highlighting possible effects on the qualifying interest features of the Natura 2000 sites;
- identification and evaluation of impacts on the ecology and nature conservation value of the site; and
- the potential for in-combination effects when considered along with other existing and proposed schemes.

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(2) <sup>(1)</sup> European Communities (2000) Managing Natura 2000 sites - The provisions of Article 6 of the 'Habitats' Directive 92/43/CEE. EC

### **B2.3.1      *The New Ross Bypass and Nature Conservation Management***

*Chapter 3* (Project Description) defines the project and it is clear from this description that the New Ross Bypass is not necessary to the management of any Natura 2000 site for nature conservation purposes. Therefore fuller consideration was given to the proposals and whether they were likely to have a significant effect and if so what the implications would be to the Conservation Objectives for any Natura 2000 sites.

### **B2.3.2      *Consideration of Likely Significant Effect***

Information on the ecological baseline characteristics of the River Barrow cSAC is provided in *Section B2.4.1* Part of the cSAC will be crossed by a bridge, and there will be a small area of land take from within the designated site.

Conservation Objectives are set for all Natura 2000 sites to ensure that the obligations of the Habitats Directive are met, particularly to ensure that there should be no deterioration of, or significant disturbance to, the qualifying features from their condition at the time the Natura status of the site was formally identified. The Conservation Objectives are also essential in determining whether a plan or project is likely to have a significant effect <sup>(1)</sup>.

The NPWS has indicated during consultations that no Conservation Objectives have been established yet for the River Barrow cSAC, and there is no information available on the condition or status of the designated features of the cSAC. Therefore, to allow an assessment to be made, generic conservation objectives have been drawn up. These are based on those used at SACs in the UK.

A review of the New Ross proposals has indicated that the qualifying interest of the Natura 2000 sites might be affected by:

- loss of Annex I habitats such as old oak woodlands due to the bridge crossing of the River Barrow;
- effects on habitats from air emissions and dust due to the construction and operation of the bridge over the River Barrow;
- loss of habitat / disturbance to otter, an Annex II species due to the bridge crossing of the River Barrow;
- water pollution / disturbance to lamprey, freshwater pearl mussel, Atlantic salmon and twaite shad, all Annex II species due to the bridge crossing of the River Barrow.
- Direct loss of habitat through the construction of bridge support structures within the cSAC.
- Release of suspended solids into the watercourses as a result of direct construction works, run off from construction sites or as a result of operational run off from the development.

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(3) <sup>(1)</sup> Article 6.2 of the Habitats Directive.

- Alteration to flow characteristics and accessibility of rivers and streams caused by temporary construction works and the long term operation of engineering structures, principally culverts and bridge piers.

As a result it was not possible to conclude that the New Ross Bypass would not affect the integrity of the Natura 2000 site. It was agreed in consultations with NPWS that an Appropriate Assessment would be required.

## B2.4

## SUPPORTING INFORMATION FOR THE APPROPRIATE ASSESSMENT

### B2.4.1

### *Qualifying Interests of the River Barrow cSAC*

This site qualifies as a cSAC because of its alluvial wet woodlands and petrifying springs, which are priority habitats on Annex I of the EU Habitats Directive. Old oak woodlands, floating river vegetation, estuarine habitats including tidal mudflats, *Salicornia* mudflats, Atlantic salt meadows, Mediterranean salt meadows, as well as dry heath and eutrophic tall herbs, all habitats listed on Annex I of the EU Habitats Directive, also occur within the site. The site supports the following species, all listed on Annex II of the Directive:

- Sea lamprey (*Petromyzon marinus*), river lamprey (*Lampetra fluviatilis*) and brook lamprey (*Lampetra planeri*): the River Barrow supports all three species of lamprey. Sea lamprey is widely distributed around the Irish coast. Important populations of river lamprey are associated with the River Barrow. Brook lamprey are the most widespread of the three lamprey species and it is likely that they occur in most catchments throughout Ireland. The principal threat to these species is impediments to upstream migration created by artificial barriers such as weirs, locks and dams <sup>(1)</sup>.
- Atlantic Salmon (*Salmo salar*): Important populations are supported by the River Barrow, and while the Barrow itself is not designated a Salmonid Water, the River Nore, whose confluence with the River Barrow is located upstream of the proposed bypass, is designated a salmonid water. Salmon fry and or parr were also recorded in four of the five watercourses surveyed during the summer of 2005, further indicating the importance of the River Barrow estuary catchment area for supporting populations of Atlantic salmon. Atlantic Salmon (*Salmo salar*): Important populations are supported by the River Barrow, and while the Barrow itself is not designated a Salmonid Water, the River Nore, whose confluence with the River Barrow is located upstream of the proposed bypass, is designated a salmonid water. Salmon fry and or parr were also recorded in four of the five watercourses surveyed during the summer of 2005, further indicating the importance of the

(1) Igoe, F. et al., (2004). The Sea Lamprey (*Petromyzon marinus* L.), River Lamprey (*Lampetra fluviatilis* L.) and Brook Lamprey (*Lampetra planeri* (Bloch)) in Ireland: General biology, Ecology, Distribution and Status with recommendations for Conservation. Biology and Environment: Proceedings of the Royal Irish Academy, Vol 104B, No. 3, pp. 43 – 56.

River Barrow estuary catchment area for supporting populations of Atlantic salmon.

- Twaite shad (*Alosa fallax lacepede*): The River Barrow is the principle watercourse in Ireland supporting anadromous twaite shad. This species is declining throughout Europe and is also listed as vulnerable in the Irish Red Data Book. The only known spawning population of twaite shad in Ireland occurs in the upper tidal limit of the River Barrow. The spawning ground is located approximately 20km upstream from the proposed bridge crossing near St. Mullins. Mature twaite shad migrate upstream to the spawning site between April and June, with peak spawning activity occurring in late May. The reach of the River Barrow associated with the proposed bypass supports migrating shad. It has been noted that the twaite shad population of the River Barrow are especially threatened by deteriorating water quality and habitat degradation <sup>(1)</sup>.
- Otter (*Lutra lutra*): Otters are known to occupy the main channel of the River Barrow and otter field signs were recorded adjacent to the Graiguenakill River and along the eastern shore of the River Barrow. It is likely that otters are supported by watercourses that support fish species.
- Freshwater pearl mussel (*Margaritifera margaritifera*): This species is found in clean, well-oxygenated rivers which flow over non-calcareous rocks. A river's substrate is of particular importance for freshwater pearl mussels, with clean gravel and sand essential. While this species is generally restricted to soft water, species of *Margaritifera durrovensis* have been recorded from the hard water associated with the River Nore. The distribution of *Margaritifera margaritifera* is widespread, with remnant populations dispersed throughout the country away from the central limestone plain <sup>(2)</sup>. This species is highly endangered. The reasons for the decline of this species are various, with alterations to river beds, increases in turbidity and water pollution providing an example of some of the threats identified. Moorkens (1999) also states that the development of roads close to rivers can result in silt run-off, altering the habitat requirements of this species.
- White-clawed crayfish (*Austropotamobius pallipes*): This species requires relatively hard water with a pH of 7 or above and calcium concentrations of at least 5 mg/l <sup>(3)</sup>. It is widespread in the midlands of Ireland in rivers and lakes underlain by Carboniferous limestone. While this species is associated with the River Barrow cSAC, there are no historical records of this species occurring within or adjacent to the route corridor. Historical records for this species, collected between 1975 and 1985 recorded this species in the Polomounty River. More recent records collected between 1990 and 2003 recorded this species

(1) Doherty et al., 2004. the Biology, Ecology and Future Conservation of Twaite Shad (*Alosa fallax lace*), Aliis Shad (*Alosa alosa l.*) and Killarney Shad (*Alosa fallax killarnensis tate regan*) in Ireland. Biology and Environment: Proceedings of the royal Irish Academy, Vol 104B, No. 3, pp. 93 – 102.

(2) Moorkens, E. A. (1999). Conservation Management of the freshwater Pearl Mussel (*Margaritifera margaritifera*). Part 1: Biology of the species and its present situation in Ireland. Irish wildlife Manual No. 8.

(3) Reynolds, J.D., (1998). Conservation Management of the White Clawed Crayfish (*Austropotamobius pallipes*). Irish Wildlife Manual, No. 1. National Parks and Wildlife Service.

along the River Nore. While this species is associated with the River Barrow, there are no recent records of it occurring within the wider catchment area associated with the bypass.

- Desmoulin's whorl snail (*Vertigo Moulinsiana*): This species is restricted to old calcareous wetlands. It occurs in Ireland throughout the central limestone region and is associated with the upper reaches of the River Barrow and the River Nore.
- Killarney Fern (*Trichomanes speciosum*): The two-stage life cycle of this fern species requires specific habitat conditions. The sporophyte stage occurs in dripping caves, cliff faces, crevices by waterfalls and cascades, rock crevices in woodlands and very occasionally on the floor of damp woodlands. The gametophyte grows in similar habitats, albeit drier and darker, as it does not appear to require direct contact with water. Stretches of the River Barrow flowing through Co. Carlow support this species. This species is considered to be rare in Ireland and factors causing its loss or decline include, inter alia, collection of samples, human disturbance and grazing <sup>(1)</sup>.

The qualifying species associated with area of the cSAC adjacent to the bypass include lamprey species, twaite shad, Atlantic salmon and otters.

The extent of the cSAC is illustrated on *Figure 10.3 (Vol. 2)* of the EIS, while *Figure 10.1 (Vol. 2)* illustrates the cSAC habitats associated with the proposed bypass.

#### **B2.4.2 Conservation Objectives**

No conservation objectives have been developed for the River Barrow cSAC.

For the purposes of this assessment the objectives listed below have been used. These are based on objectives used at other SACs in the UK.

Subject to natural change maintain <sup>(2)</sup> in a favourable condition the following Annex I habitats:

- alluvial wet woodlands;
- petrifying springs;
- old oak woodlands;
- floating river vegetation;
- tidal mudflats;
- *Salicornia* mudflats;
- Atlantic salt meadows;
- Mediterranean salt meadows;
- dry heath; and
- eutrophic tall herbs.

This includes ensuring that the following are maintained:

(1) NPWS, (2007). Draft All-Ireland Species Action Plan - Killarney Fern

(2) Maintain implies restoration if the feature is not currently in favourable condition.

- extent of the habitat on site;
- distribution of the habitat within site;
- structure and function of the habitat;
- processes supporting the habitat;
- distribution of typical species of the habitat;
- viability of typical species as components of the habitat; and
- no significant disturbance of typical species of the habitat.

Subject to natural change, maintain in favourable condition the habitats for the internationally important populations of the following regularly occurring Annex II species:

- sea lamprey;
- freshwater pearl mussel;
- white-clawed crayfish;
- twaite shad;
- Atlantic salmon;
- Otter;
- Desmoulin's whorl snail; and
- Killarney fern.

and to ensure for these species that the following are maintained in the long term:

- population of the species (including range of genetic types *where relevant*) as a viable component of the site;
- distribution of the species within site;
- distribution and extent of habitats supporting the species;
- structure, function and supporting processes of habitats supporting the species;
- no significant disturbance of the species;
- distribution and viability of the species' host species (where relevant); and
- structure, function and supporting processes of habitats supporting the species' host species (where relevant).

## B2.5

### APPROPRIATE ASSESSMENT

This section describes the predicted impacts on the qualifying interest features of the River Barrow cSAC from the proposals, and is intended to inform the competent authority during its determination of whether the scheme will adversely affect the integrity of the Natura 2000 sites. The information is provided in *Table B2.1 & B 2.2* below.

**Table B2.1** *Appropriate Assessment of Qualifying Habitats for the River Barrow cSAC*

Qualifying Interest Feature	Conservation Objective	Potential Impact	Assessment
<b>River Barrow cSAC</b>			
Alluvial wet woodlands	Subject to natural change, maintain the alluvial wet woodlands in favourable condition.	No potential impacts associated with the bypass will affect this habitat.	The condition of this habitat will not be affected by the proposed development.
Petrifying springs	Subject to natural change, maintain the petrifying springs in favourable condition.	No potential impacts associated with the bypass will affect this habitat.	As Above. The condition of this habitat will not be affected by the proposed development.
Old oak woodlands	Subject to natural change, maintain the old oak woodlands in favourable condition.	<p>The Bypass will bridge old oak woodland at N25 Ch. 1,350 (see <i>Figure 10.1a</i>, Vol. 2). The quality of this habitat is higher to the north of the Barrow Crossing, as the woodland thins out at and to the south of the crossing point. Due to the steep terrain in this area, its anticipated construction will only result in the loss of taller mature trees occurring under the bridge. However the extent and distribution of this woodland habitat will be retain and hence impacts on the integrity of this qualifying habitat are not predicted. Also construction activity will be minimised within this woodland, further minimising direct impacts to the habitat.</p> <p>The L-4026-1 tertiary road will be realigned adjacent to the site resulting in a loss of wet grassland habitat amounting to approximately 6,400m<sup>2</sup> (0.64 Ha). However terrestrial species of qualifying interest were not recorded at this section of the cSAC and hence it is predicted that there will be no adverse affect on the qualifying interest of the site. Also the loss of a small strip of habitat at the edge of the cSAC is unlikely to have an adverse effect on the habitats of qualifying interest.</p> <p>The disturbance to these terrestrial habitats will constitute a temporary moderate, negative impact during the construction phase of the Bypass.</p> <p>Vehicle exhaust emissions during the operation phase of the bypass have the potential to impact upon cSAC. The key pollutant derived from vehicle emissions which can</p>	<p>Where possible, tall trees of the old oak woodland occurring under the bridge will be retained using arboricultural techniques. Where the felling of mature tree species is necessitated, compensatory planting will be required. While the Barrow Bridge will prevent the replanting of high-growing oak tree species, shrub and herbaceous species representative of the woodland habitat will be planted so that any vegetation to be removed is replaced. Further mitigation measures outlined to reduce potential impacts to this habitat include:</p> <ul style="list-style-type: none"> <li>Construction activity will be minimised from this woodland, further reducing direct impacts to the woodland;</li> <li>Sensitive lighting regime will be used to avoid impacts to fauna species; and</li> <li>With the exception of traffic along haul routes, none of the other likely sources of dust will be located within or adjacent to the old oak woodland.</li> </ul> <p>To further avoid the possibility of dust deposition having a localised impact upon vegetation within this habitat, the following mitigation measures should be adopted during construction:</p> <ul style="list-style-type: none"> <li>Management plans are to take into consideration best practice and the NRA Guidelines for the Treatment of Air Quality During the Planning and Construction of National Road Schemes;</li> <li>The use of wind breaks and barriers is to be assessed;</li> <li>Operation and management of a wheel wash and</li> </ul>

Qualifying Interest Feature	Conservation Objective	Potential Impact	Assessment
		<p>cause harm to sensitive vegetation are oxides of nitrogen (NO<sub>x</sub>). The critical level for NO<sub>x</sub>, above which harm is thought to occur, is 30 µg/m<sup>3</sup>.</p> <p>The bridge will be 25m wide and the maximum predicted NO<sub>x</sub> concentration 10m from the centre carriageway along the bridge is 31.4 µg m<sup>-3</sup>, which is predicted to occur in 2013. At a distance of 20m the concentration is predicted to be below the threshold level at 26.2 µg m<sup>-3</sup>. Whilst the level will be around 30 µg m<sup>-3</sup> in the very immediate vicinity of the bridge, the majority of the habitat will experience levels much lower, below the threshold limit. Therefore it is predicted NO<sub>x</sub> emissions will not have a significant impact upon this qualifying habitat of the cSAC.</p> <p>In the absence of mitigation, construction noise from the Bypass has the potential to negatively impact upon otters. As no holts were recorded in the vicinity of the Bypass, otters are only likely to be disturbed during foraging. Any impacts to foraging otters are likely to affect the conservation status of this species.</p> <p>Results of noise assessments in the vicinity of the cSAC (see <i>Chapter 8</i>) have indicated the potential for substantial to severe changes in noise levels at particular receptor locations during the operation phase of the Bypass. The fauna likely to be affected by such changes include bats, badgers, and particularly birds associated with the old oak woodland, none of which are qualifying species for the cSAC designation. With the exception of otters, the qualifying species associated with the Bypass are restricted to the aquatic environment. Therefore it is not anticipated that noise generated during the operation of the bypass will significantly affect the site's ability to support qualifying species. (Impacts to none-qualifying fauna are assessed below <i>Chapter 10</i> of <i>Vol. 1</i>).</p> <p>The main air quality issue during the construction phase is the deposition of dust. Dust deposition on vegetation can block the stomata of plant leaves which can prevent plant growth. The impact of dust on vegetation is</p>	<p>concrete wash out areas;</p> <ul style="list-style-type: none"> <li>Use of a road sweeper(s) to clean the construction site and access roads;</li> <li>Trucks hauling spoil or materials are to be covered; and</li> <li>Trucks arriving on site to haul material are to be clean, to prevent dirt/ mud (leading to potential sources of dust) being brought into the area – contractual condition with haulage company;</li> <li>Speed limits for construction vehicles;</li> <li>All plant to be used on site is to be in good working order, will be required to run on low sulphur diesel where possible and is to be of modern design incorporating abatement devices where available. These requirements are to be stipulated in contracts;</li> <li>Plant is not to be left running when not in use;</li> <li>The lay-down area and contractor's yard(s) are to be sealed as soon as practicable; and</li> <li>No on-site burning will be allowed.</li> </ul> <p>The source of dust emissions during construction, as outlined in Section 10.4.3.1 (<i>Vol. 1</i>), will be minimised, with the following sources excluded from land within or adjacent to the site:</p> <ul style="list-style-type: none"> <li>stockpiles of earth for landscaping and building;</li> <li>stripping;</li> <li>demolition of any existing structures; and</li> <li>soiling of main roads.</li> </ul> <p>The realignment of the L-4026-1 will involve a small area of fill immediately inside the cSAC boundary. Landscaping of this area with native tree species, sourced locally, will be undertaken. The appropriate landscaping of this area will ensure that a buffer area is reinstated between the L-4026-1 tertiary road and the cSAC.</p> <p>A construction method statement will be developed in consultation with the NPWS prior to the commencement of construction activity within the cSAC.</p> <p>To avoid any impacts to otters construction activities will avoid,</p>

Qualifying Interest Feature	Conservation Objective	Potential Impact	Assessment
		<p>restricted to a 100m area either side of the Bypass during construction. Areas on the proposed site likely to be sources of dust have been identified as follows:</p> <ul style="list-style-type: none"> <li>▪ stockpiles of earth for landscaping and building;</li> <li>▪ stripping;</li> <li>▪ demolition of any existing structures;</li> <li>▪ traffic on haul roads; and</li> <li>▪ soiling of main roads.</li> </ul> <p>With the exception of traffic along haul routes, none of the above sources will be located within or adjacent to the cSAC. Also any dust generating activities associated with the construction of the bridge are likely to be of a temporary (shorter than the construction phase) and of a localised nature. Nevertheless, without mitigation measures these impacts have the potential to temporarily impact upon the integrity of the old oak woodland qualifying habitat.</p>	<p>where possible, the main periods of otter foraging activity. Mammal passes and/or mammal ledges will be incorporated into all watercourse crossings of high ecological quality or greater (see <i>Table 11.7</i> in <i>Vol. 1</i>). Where the road bridges watercourses of high ecological value, mammal-resistant fencing will be placed along both sides of the alignment for a minimum of 50 metres in either direction. Mammal proof fencing should also be installed at both sides of the alignment, adjacent to stretches of the road where a median barrier is to be located. The provision of mammal passes at watercourses of moderate ecological value will be determined at the detail design stage.</p> <p>All measures to mitigate/reduce the impact to badgers outlined in the NRA's Guidelines for the Treatment of Otters prior to the Construction of a National Road Scheme will be adopted.</p> <p>The felling of oak trees associated with the old oak woodland will result in a minor negative impact to the cSAC. As the landscaping of the boundary of the cSAC adjacent to the L-4026-1 will take a number of years to establish there will be short to medium-term minor negative impacts associated with the loss of habitat at this area of the cSAC. However, once established the landscaping will offset any long-term residual impacts to this part of the cSAC.</p> <p>The implementation of mitigation measures will avoid any residual impacts to otters.</p> <p>The implementation of dust mitigation measures will ensure that the impacts to the vegetation associated with the old oak woodland will constitute a temporary, minor negative impact upon the cSAC.</p>
Floating river vegetation	Subject to natural change, maintain the floating river vegetation in favourable condition.	No potential impacts associated with the bypass will affect this habitat.	The condition of this habitat will not be affected by the proposed development
Atlantic salt meadows	Subject to natural change, maintain the Atlantic salt meadows in favourable condition.	No potential impacts associated with the bypass will affect this habitat.	As above. The condition of this habitat will not be affected by the proposals.
<i>Salicornia</i> and	Subject to natural change,	No potential impacts associated with the bypass will	As above. The condition of this habitat will not be affected by the

Qualifying Interest Feature	Conservation Objective	Potential Impact	Assessment
other annuals colonising mud and sand	maintain Salicornia and other annuals colonising mud and sand in favourable condition.	affect this habitat.	proposed development.
Mud flats and sand flats not covered by seawater at low tide	Subject to natural change, maintain the mudflats and sandflats not covered by seawater at low tide in favourable condition.	<p>One bridge pier will be placed within the intertidal mudflats towards the east of the channel. The potential impacts of the bypass to this habitat include:</p> <ul style="list-style-type: none"> <li>Increased levels of suspended solids and turbidity as a result of construction of operation of the bypass and bridge;</li> <li>Changes to the hydrology and sediment transport;</li> <li>Changes to the surrounding habitat as a result of alterations to erosive/deposition processes surrounding the pier;</li> <li>Loss of habitat through direct disturbance</li> <li>Pollution resulting from construction and operation phases of the operations.</li> </ul>	<p>The extent of direct habitat loss associated with the installation of the bridge pier in the intertidal mudflats represents a tiny proportion of the extent of this habitat.</p> <p>Minimising the potential for impact arising from the construction and operation of the bridge pier on the water and sediment flow patterns in the River Barrow cSAC was a key consideration for the design team. It is the opinion of the design team that the morphological impact of the proposed bridge support pier on the River Barrow will be negligible and confined to minor, localised areas of scour. As a result the impact of the bridge pier on the SAC is judged to be negligible in this regard</p> <p>There are a number of mitigation measures which will be implemented during the construction of the Bypass to minimise the risk of the development resulting in a significant impact on the cSAC;</p> <ul style="list-style-type: none"> <li>The area of landtake required for the construction of the pier will be kept to a necessary minimum;</li> <li>During construction works which are physically below the MHWS tide, potential increases in siltation and suspended solids will be minimised by the installation of a temporary impermeable, sealed work area; or another appropriate construction technique, which will be developed in consultation with NPWS and SRFB. The installation of the sealed area or alternative construction technique will facilitate the carrying out of construction activity throughout the construction period, while at the same time protecting the aquatic ecology from potential significant adverse impacts. Unless otherwise agreed by the SRFB or the NPWS. These impermeable, sealed work areas or construction technique will be minimised in size (where practicable) and installed in the dry season, outside the fish spawning season.</li> <li>A detailed construction method statement for the construction of the River Barrow cSAC Bridge Crossing will be</li> </ul>

Qualifying Interest Feature	Conservation Objective	Potential Impact	Assessment
			<p>developed in consultation with the NPWS and the SRFB.</p> <p>All site runoff associated with the construction of the River Barrow bridge crossing will be directed to storm control areas or tanks to prevent direct discharge into the river.</p> <p>Mitigation measures to minimise impacts to the riparian vegetation are outlined in Chapter 10, Section 10.5.3.1.</p> <p>During the operation phase of the road all surface runoff will be intercepted in a sealed drainage system and directed towards storm control areas. Any drainage outfalls into the cSAC will be such that they do not negatively impact upon the integrity or reduce the water quality of the cSAC.</p> <p>On the basis of the information currently available and reviewed above, and assuming the proposed mitigation measures are adopted it is not anticipated that there will be a significant impact on the qualifying interests of the cSAC.</p>
Dry heath	Subject to natural change, maintain the dry heath in favourable condition.	No potential impacts associated with the bypass will affect this habitat.	The condition of this habitat will not be affected by the proposed development.
Eutrophic tall herbs	Subject to natural change, maintain the eutrophic tall herbs in favourable condition.	No potential impacts associated with the bypass will affect this habitat.	As above. The condition of this habitat will not be affected by the proposed development.

Table B2.2 *Appropriate Assessment of Qualifying Species for the River Barrow cSAC*

Qualifying Interest Feature	Conservation Objective	Potential Impact	Assessment
<b>River Barrow cSAC</b>			
River lamprey	Subject to natural change, maintain the habitats of river lamprey in favourable condition.	<p>Potential impacts to river lamprey associated with the bypass include:</p> <ul style="list-style-type: none"> <li>▪ creation of barriers to upstream movement by water crossings.</li> <li>▪ changes in tidal sediment regime caused by the River Barrow bridge pier in the intertidal mudflats have the potential to create barriers to the movement of river lamprey;</li> <li>▪ impacts to river lamprey caused by the realignment of streams;</li> <li>▪ alterations the hydraulic characteristics of watercourses;</li> <li>▪ a degradation of instream aquatic habitats; and</li> <li>▪ a reduction in water quality.</li> </ul>	<p>All stream and river crossings will adhere to the SRFB guidance document <i>Maintenance and Protection of the Inland Fisheries Resource during Road Construction and Improvement Works</i>. Where possible stream and river crossings will avoid directly impacting upon the watercourse. Streams will be crossed using clear span bridges or over-sized bottomless box culverts. The lengths of culverts will be minimised. The natural bankside of the streams will be retained. The installation of such crossings will ensure that the natural profile of the riverbed, including gravel beds, pools and riffles, which are used by river lamprey at various stages of their lifecycles will be retained.</p> <p>The clear spanning or installation of over-sized bottomless culverts will, as far as possible, avoid alterations to the hydraulic characteristics of streams or the deterioration of in stream aquatic habitats.</p> <p>Water quality of streams and rivers associated with the bypass will be maintained by implementing the following mitigation measures:</p> <ul style="list-style-type: none"> <li>• an impermeable, sealed work area; or another appropriate construction technique, will be developed in consultation with NPWS and SRFB. The installation of the sealed area or alternative construction technique will facilitate the carrying out of construction activity throughout the construction period, while at the same time protecting the aquatic ecology from potential significant adverse impacts. Unless otherwise agreed by the SRFB or the NPWS; these impermeable, sealed work areas or construction technique will be minimised in size (where practicable) and installed in the dry season, outside the fish spawning season.</li> <li>• construction vehicles should be restricted to specified construction areas and site clearance areas should be clearly marked, with as much vegetation as possible retained within the construction site boundary;</li> <li>• construction activity that is to take place close to</li> </ul>

Qualifying Interest Feature	Conservation Objective	Potential Impact	Assessment
			<p>watercourses should be, where possible, scheduled for drier months i.e. outside the fish spawning season during the summer months;</p> <ul style="list-style-type: none"> <li>• site runoff should be diverted away from denuded areas and these areas should be re-vegetated as soon as possible;</li> <li>• sediment traps, sediment fences and sediment control ponds should be installed to retain sediments on site. The contractor's responsibilities for controlling silt laden water should be specified in the contract documents;</li> <li>• monitoring of suspended sediments associated with the construction of the Bypass will be undertaken on a regular basis by the contractor. The contractor will consult with the SRFB and the NPWS when establishing threshold levels (above which remedial action will be undertaken) of suspended solids in sediment control ponds.</li> <li>• the following areas should be kept to a minimum size and well away from all watercourses: <ul style="list-style-type: none"> <li>• sand and gravel stockpiles;</li> <li>• construction machinery service areas; and</li> <li>• concrete mixing areas.</li> </ul> </li> <li>• potential polluting materials such as fuels, oils, grease and hydraulic fluids should be stored in robust bunded compounds well away from all watercourses. Refuelling of machinery should be carried out in bunded areas;</li> <li>• pouring of concrete for aprons, sills, and other works should be carried out in dry conditions and allowed cure for 48 hours before re-flooding. Pumped or tremied concrete should be monitored carefully to ensure no accidental discharge into the watercourse. Mixer washings and excess concrete should not be discharged to watercourses. Oil storage tank(s), associated filling areas and distribution pipe work should be situated at least 10m away from watercourses (rivers, lakes, streams, field drains) and 50m from wells or boreholes;</li> <li>• permanent stream diversion should be completed well in</li> </ul>

Qualifying Interest Feature	Conservation Objective	Potential Impact	Assessment
			<p>advance of their use. The potential release of suspended solids should be minimised from the new channel before the river is re-routed into it. All temporary stream diversions should be constructed to the criteria laid down for permanent stream diversions; and</p> <ul style="list-style-type: none"> <li>the construction of watercourse crossings and diversions should adhere to the guidance contained within the <i>SRFB Maintenance and Protection of the Inland Fisheries Resource during Road Construction and Improvement Works</i>.</li> <li>storm run-off from the proposed road to watercourses of fisheries value will be intercepted by drains and directed to storm control areas that will be designed with adequate storage capacity and in a manner to facilitate maintenance and cleaning. Oil interceptors and sediment traps will also be provided. The installation of the drainage system will ensure that the level of particulate matter entering the watercourses will be minimal and as such will have a negligible affect on water quality.</li> </ul> <p>On the basis of the information currently available and reviewed above, and assuming the proposed mitigation measures are adopted it is not anticipated that there will be a significant impact on this qualifying interests of the cSAC.</p>
Sea lamprey	Subject to natural change, maintain the habitats of sea lamprey in favourable condition.	<p>Potential impacts to sea lamprey associated with the bypass include:</p> <ul style="list-style-type: none"> <li>creation of barriers to upstream movement by water crossings.</li> <li>changes in tidal sediment regime caused by the River Barrow bridge pier in the intertidal mudflats have the potential to create barriers to the movement of sea lamprey;</li> <li>impacts to sea lamprey caused by the realignment of streams;</li> <li>alterations the hydraulic characteristics of watercourses;</li> <li>a degradation of instream aquatic habitats; and</li> <li>a reduction in water quality.</li> </ul>	As above (see <i>River Lamprey Section</i> ). On the basis of the information currently available and reviewed above, and assuming the proposed mitigation measures are adopted it is not anticipated that there will be a significant impact on this qualifying interests of the cSAC.
Brook lamprey	Subject to natural change, maintain the habitats of brook	Potential impacts to brook lamprey associated with the bypass include:	As above (see <i>River Lamprey Section</i> ). On the basis of the information currently available and reviewed above, and

Qualifying Interest Feature	Conservation Objective	Potential Impact	Assessment
	lamprey in favourable condition.	<ul style="list-style-type: none"> <li>creation of barriers to upstream movement by water crossings.</li> <li>changes in tidal sediment regime caused by the River Barrow bridge pier in the intertidal mudflats have the potential to create barriers to the movement of brook lamprey;</li> <li>impacts to brook lamprey caused by the realignment of streams;</li> <li>alterations the hydraulic characteristics of watercourses;</li> <li>a degradation of instream aquatic habitats; and</li> <li>a reduction in water quality.</li> </ul>	assuming the proposed mitigation measures are adopted it is not anticipated that there will be a significant impact on this qualifying interests of the cSAC.
Atlantic salmon	Subject to natural change, maintain the habitats of Atlantic salmon	<p>Potential impacts to Atlantic salmon associated with the bypass include:</p> <ul style="list-style-type: none"> <li>creation of barriers to upstream movement by water crossings.</li> <li>changes in tidal sediment regime caused by the River Barrow bridge pier in the intertidal mudflats have the potential to create barriers to the movement of Atlantic salmon;</li> <li>impacts to Atlantic salmon caused by the realignment of streams;</li> <li>alterations the hydraulic characteristics of watercourses;</li> <li>a degradation of instream aquatic habitats; and</li> <li>a reduction in water quality.</li> </ul>	As above (see <i>River Lamprey Section</i> ). On the basis of the information currently available and reviewed above, and assuming the proposed mitigation measures are adopted it is not anticipated that there will be a significant impact on this qualifying interests of the cSAC.
Twaite shad	Subject to natural change, maintain the habitats of twaite shad	<p>Potential impacts to twaite shad associated with the bypass include:</p> <ul style="list-style-type: none"> <li>alterations the hydraulic characteristics of the River Barrow changes in tidal sediment regime caused by the River Barrow bridge pier in the intertidal mudflats have the potential to create barriers to the movement of twaite shad;</li> <li>a degradation of instream aquatic habitats; and</li> <li>a reduction in water quality.</li> </ul>	As above (see <i>River Lamprey Section</i> ). On the basis of the information currently available and reviewed above, and assuming the proposed mitigation measures are adopted it is not anticipated that there will be a significant impact on this qualifying interests of the cSAC.
Otter	Subject to natural change, maintain the habitats of otter	<p>Potential impacts to otter associated with the bypass include:</p>	No holt or lying-up sites were recorded within the vicinity of the site, therefore it is not anticipated that any otter breeding sites

Qualifying Interest Feature	Conservation Objective	Potential Impact	Assessment
		<ul style="list-style-type: none"> <li>Impacts to breeding sites resulting from physical disturbance to banksides;</li> <li>Disturbance to otter movement along watercourses associated with the bypass resulting from construction activity, stream and river crossings and stream realignments; and</li> <li>Reduction in water quality resulting from inputs of polluting material from construction and operational runoff.</li> </ul>	<p>will be affected by the proposed development.</p> <p>There will be a presumption that stream and river banksides will be retained, wherever possible, during the construction of the bypass. Realigned watercourse banksides will be established prior to the diversion of any watercourse. Otter passage will be maintained along all watercourses of fisheries value. Passage will be maintained by ensuring that at least one bankside is retained or a mammal underpasses or mammal ledge, where appropriate, is installed at stream and river crossings. Good site management practices for otters will be adopted during the construction period and the NRA's <i>Guidelines for the Treatment of Otters prior to the Construction of National Road Schemes</i> will be adhered to. Impacts to water quality will be avoided by implementing the mitigation measures outlined above (see River Lamprey section).</p> <p>The implementation of the above measures, coupled with the low otter activity levels recorded within the route corridor will ensure that the bypass will not adversely affect otter habitats.</p>
Freshwater pearl mussel	Subject to natural change, maintain the habitats of freshwater pearl mussel	Freshwater pearl mussel is not found in the vicinity of the wider area associated with the bypass. No potential impacts associated with bypass will affect the habitats of this species.	The proposed bypass will not affect freshwater pearl mussel habitats.
White-clawed crayfish	Subject to natural change, maintain the habitats of white-clawed crayfish	White-clawed crayfish is not found in the vicinity of the wider area associated with the bypass. No potential impacts associated with bypass will affect the habitats of this species.	The proposed bypass will not affect white-clawed crayfish habitats.
Desmoulin whorl snail	Subject to natural change, maintain the habitats of Desmoulin whorl snail	Desmoulin whorl snail is not found in the vicinity of the wider area associated with the bypass. No potential impacts associated with bypass will affect the habitats of this species.	The proposed bypass will not affect Desmoulin whorl snail habitats.
Killarney fern	Subject to natural change, maintain the habitats of Killarney fern	Killarney fern is not found in the vicinity of the wider area associated with the bypass. No potential impacts associated with bypass will affect the habitats of this species.	The proposed bypass will not affect Killarney fern habitats.

**B2.6*****CONCLUSIONS & LIMITATIONS***

On the basis of the information currently available and reviewed above, and assuming the proposed mitigation measures are adopted it is not anticipated that there will be a significant impact on the qualifying interests of the cSAC.

## Annex C

### Agronomy: Individual farm assessment results



**Table C1.1 Summary of Individual land owner assessments**

Farm id (Fig 13.1)	Area (ha) of affected farm (see note 1)	Type of Farm Enterprise	Land type and quality (as described in Section 13.3.4)		Land taken (ha) (note 2)	% taken	Severance	% severed (of the area remaining)	Nature of impact (before mitigation) (Refer to Figure 13.1 for location of land parcels)	Recommended Mitigating measures (see notes 3, 5)	Overall (assuming mitigating measures) (see note 4)
			Soil Association	Land quality							
100	2.0	Beef	Soil Association No 19	Good quality land - steep slopes	0.11	5.4%	No	0.0%	Land take at the edge of the farm.	Maintain access and water supply from the public road.	Not significant
106 & 107	95.5	Dairy and Beef	Soil Association No 14	The majority of the land is good quality. There is some poor land quality on the southern and eastern edge of the farm.	13.012	13.6%	Yes	49.1%	Severance and land loss. The severance is across the middle of the farm and along one of the main farm roads and close to farm yard.	Provide access to severed land eg under pass. Provide water and ESB to severed land.	Severe
108	40.0	Drystock (on affected land parcel).	Soil Association No 14	Good land - free draining.	1.067	2.7%	No	0.0%	Land loss.	Maintain access and water supply.	Minor
109	12.2	Tillage	Soil Association No 14	Good quality land	0.68	5.6%	No	0.0%	Land take at the edge of the farm.	Maintain access from the public road.	Minor

Farm id (Fig 13.1)	Area (ha) of affected farm (see note 1)	Type of Farm Enterprise	Land type and quality (as described in Section 13.3.4)		Land taken (ha) (note 2)	% taken	Severance	% severed (of the area remaining)	Nature of impact (before mitigation) (Refer to Figure 13.1 for location of land parcels)	Recommended Mitigating measures (see notes 3, 5)	Overall (assuming mitigating measures) (see note 4)
			Soil Association	Land quality							
200	101.0	Drystock beef	Soil Association No 14 & reclaimed marsh	Reclaimed grassland - good quality	3.255	3.2%	Yes	4.6%	Severance and land loss. Drinking points for livestock affected.	Maintain access under bridge.	Minor
201	128.0	Tillage and Drystock	Soil Association No 14 & reclaimed marsh	Good quality land. Land adjoining river is reclaimed grassland but quality is good.	11.846	9.3%	Yes	15.5%	Severance and land loss. Proposed road is in cut near well.	Maintain water supply to severed land. Allow enough height for tillage machinery to use bridge.	Moderate
202	101.0	Sheep	Soil Association No 14	Good quality - free draining	0.231	0.2%	No	0.0%	Land loss at northern tip of affected land parcel. Access lane to field is severed. Shelter will be removed.	Provide access to the affected land parcel.	Not significant
204	56.5	Pedigree beef production and tillage	Soil Association No 14	Good quality	7.125	12.6%	Yes	2.1%	Land loss and severance. Impact on access lane to dwelling, farmyard and land.	Provide access to farmyard + dwelling. Maintain water supply to land parcels north of road. Maintain drainage outlet.	Major
204(i)	1.1	Tillage	Soil Association No 14	Good quality	0.696	63.6%	No	0.0%	Land loss	Provide access to dwelling. Maintain water supply to land north of road. Maintain drainage outlet.	Severe

Farm id (Fig 13.1)	Area (ha) of affected farm (see note 1)	Type of Farm Enterprise	Land type and quality (as described in Section 13.3.4)		Land taken (ha) (note 2)	% taken	Severance	% severed (of the area remaining)	Nature of impact (before mitigation) (Refer to Figure 13.1 for location of land parcels)	Recommended Mitigating measures (see notes 3, 5)	Overall (assuming mitigating measures) (see note 4)
			Soil Association	Land quality							
209	50.0	Sheep and Tillage	Soil Association No 14	Good quality	0.549	1.1%	No	0.0%	Land loss	Maintain access from R 734. Maintain drainage outlet.	Not significant
214	5.9	Beef and tillage	Soil Association No 14	Good quality	0.191	3.3%	No	0.0%	Land loss at edge of farm	None	Not significant
215	10.2	Breeding and training top quality dogs and good quality horses.	Soil Association No 14	Good - heavy in nature close to stream.	2.412	23.7%	Yes	45.6%	Land loss and severance	Provide access to severed land (eg under pass). Maintain water supply to severed land.	Severe
216	2.1	Drystock beef	Soil Association No 14	Good quality	1.468	70.2%	No	0.0%	Land loss	Maintain access and water supply to severed land.	Severe
217	1.1	Fallow	Soil Association No 14	Good quality	0.048	4.2%	No	0.0%	Land loss	None	Not significant
218	36.0	Dairy and Beef	Soil Association No 14	Good quality.	1.301	3.6%	Yes	2.3%	Land loss and severance. Impact on access to land.	Maintain access to fields via public road (or similar) during construction phase. Maintain access points to	Minor

Farm id (Fig 13.1)	Area (ha) of affected farm (see note 1)	Type of Farm Enterprise	Land type and quality (as described in Section 13.3.4)		Land taken (ha) (note 2)	% taken	Severance	% severed (of the area remaining)	Nature of impact (before mitigation) (Refer to Figure 13.1 for location of land parcels)	Recommended Mitigating measures (see notes 3, 5)	Overall (assuming mitigating measures) (see note 4)
			Soil Association	Land quality							
										fields. Maintain existing water supply.	
219	24.0	Dairy farm	Soil Association No 14	Good quality	4.362	18.2%	No	0.0%	Land loss. Impact on access to land.	Provide access points to fields. Maintain existing water supply. Access to fields via public road (or similar) during construction phase.	Moderate
220	0.3	Beef	Soil Association No 14	Good quality	0.064	19.4%	No	0.0%	Land loss along public road.	Maintain access	Not significant
221	1.4	Beef	Soil Association No 14	Good quality land	0.027	2.0%	No	0.0%	Severance and land take at the edge of the farm.	Maintain access	Minor
223 & 222	73.0	Dairy, Beef and Tillage.	Soil Association No 14	Good quality.	7.832	10.7%	Yes	40.4%	Land loss and severance of land close to milking parlour.	Provide access to severed land. Maintain water supply and electric fencing to severed land. Drainage design must be adequate to allow for storm water outfalls.	Major

Farm id (Fig 13.1)	Area (ha) of affected farm (see note 1)	Type of Farm Enterprise	Land type and quality (as described in Section 13.3.4)		Land taken (ha) (note 2)	% taken	Severance	% severed (of the area remaining)	Nature of impact (before mitigation) (Refer to Figure 13.1 for location of land parcels)	Recommended Mitigating measures (see notes 3, 5)	Overall (assuming mitigating measures) (see note 4)
			Soil Association	Land quality							
224	78.0	Tillage and drystock beef and sheep	Soil Association No 14	Good quality - some steep slopes	6.156	7.9%	Yes	61.8%	Severance and land loss. Water source may be affected.	Provide access to severed land. Maintain water supply. Provide adequate storm water drainage outlet.	Severe
225	97.0	Dairying	Soil Association No 14	Good quality.	2.877	3.0%	Yes	14.7%	Severance and land loss.	Maintain water supply to severed land. Maintain electricity ducting to severed land.	Moderate
231	320.0	Dairy and Beef	Soil Association No 14	Good quality.	3.28	1.0%	Yes	2.8%	Severance and land loss.	Provide access to severed land. Provide water to severed land.	Minor
232	41.4	Suckler Cow Beef	Soil Association No 14	Good quality	4.1	9.8%	No	0.0%	Land loss. Severance of one field north of the N25. Drinking points on stream lost. Access from farm yard to largest land parcel is altered.	Maintain water supply. Maintain drainage outfalls in field drains.	Moderate

Farm id (Fig 13.1)	Area (ha) of affected farm (see note 1)	Type of Farm Enterprise	Land type and quality (as described in Section 13.3.4)		Land taken (ha) (note 2)	% taken	Severance	% severed (of the area remaining)	Nature of impact (before mitigation) (Refer to Figure 13.1 for location of land parcels)	Recommended Mitigating measures (see notes 3, 5)	Overall (assuming mitigating measures) (see note 4)
			Soil Association	Land quality							
233	20.0	Drystock beef and tillage.	Soil Association No 14	Good quality land.	1.3	6.6%	No	0.0%	Land loss. Drinking points affected.	Maintain water supply.	Minor
234	36.0	Dairy, Beef and Tillage	Soil Association No 14	Good quality	4.5	12.5%	No	0.0%	Land loss	None	Moderate
237	22.4	Beef (poultry & tillage)	Soil Association No 14	Good quality	1.3	5.8%	No	0.0%	Land loss at edge of farm	None	Minor
239	38.6	Drystock beef and tillage	Soil Association No 14	Good quality	2.1	5.5%	Yes	23.5%	Land loss and severance	Maintain access to severed land. Maintain water supply to severed land.	Moderate
245	22.6	Dairy	Soil Association No 14	Good quality	2.1	9.1%	Yes	13.7%	Land loss and severance very close to farmyard.	Provide access to severed land. Provide water and electric ducting to severed land.	Major
246	19.8	Drystock beef, horses, tillage	Soil Association No 14	Good land quality	1.6	8.0%	Yes	8.7%	Land loss and severance.	Provide access, water and ESB to severed land	Major
247	5.5	Drystock beef, horses, tillage	Soil Association No 14	Good land quality	0.5	9.3%	Yes	10.2%	Land loss and severance	Provide access, water and ESB to severed land	Major

Farm id (Fig 13.1)	Area (ha) of affected farm (see note 1)	Type of Farm Enterprise	Land type and quality (as described in Section 13.3.4)		Land taken (ha) (note 2)	% taken	Severance	% severed (of the area remaining)	Nature of impact (before mitigation) (Refer to Figure 13.1 for location of land parcels)	Recommended Mitigating measures (see notes 3, 5)	Overall (assuming mitigating measures) (see note 4)
			Soil Association	Land quality							
249 & 248	160.0	Tillage (including potatoes) Grain mill and bagging unit in farm yard.	Soil Association No 14	Good quality	4.1	2.6%	Yes	25.5%	Land loss and severance. Land loss close to farm yard and mill. Impact on potato growing land.	Provide access and water to severed land.	Moderate
250	42.0	Beef and Tillage	Soil Association No 14	Good with moderate slopes.	2.2	5.2%	Yes	45.6%	Land loss and severance.	Provide access and water and ESB to severed land parcel.	Moderate
251 & 252	31.0	Suckler cow beef.	Soil Association No 14	Good quality	1.3	4.2%	Yes	0.0%	Land loss and severance close to house. Main impact is on rented land.	None	Minor
253	18.9	Suckler cow beef and tillage	Soil Association No 14	Good quality land except for low lying area adjoining stream.	0.7	3.8%	No	0.0%	Land loss	None - maintain access if affected.	Minor
255	20.3	Sheep	Soil Association No 14	Mainly good - some marginal land in low lying area.	5.1	25.1%	Yes	64.2%	Land loss and severance	Maintain access and water and electricity supply to severed land.	Severe
260	80.9	Horticulture, beef, sheep and tillage. Organic Producer	Soil Association No 14	Good quality	2.7	3.3%	Yes	11.5%	Land loss and severance	Maintain access to severed land parcel. Maintain water supply to severed land parcel.	Minor

Farm id (Fig 13.1)	Area (ha) of affected farm (see note 1)	Type of Farm Enterprise	Land type and quality (as described in Section 13.3.4)		Land taken (ha) (note 2)	% taken	Severance	% severed (of the area remaining)	Nature of impact (before mitigation) (Refer to Figure 13.1 for location of land parcels)	Recommended Mitigating measures (see notes 3, 5)	Overall (assuming mitigating measures) (see note 4)
			Soil Association	Land quality							
261	53.7	Suckler beef and tillage.	Soil Association No 14	Good quality - low-lying but dry.	6.5	12.1%	Yes	28.6%	Land loss and severance. R.O.W. to land parcel severed.	Maintain water supply south of proposed road. Maintain access to severed land.	Moderate
262	29.1	Dairying (some tillage)	Soil Association No 14	Good quality	1.8	6.1%	Yes	17.9%	Land loss and severance	Maintain access to severed land. Maintain water supply and electricity supply to severed land.	Moderate
263	48.5	Suckler cow, Beef, Sheep and Tillage.	Soil Association No 14	Good quality. Most easterly affected land parcel is low-lying and heavy but good grassland.	2.2	4.6%	Yes	1.5%	Land loss and severance	Provide piped water to severed land.	Minor
264	59.6	Beef & sheep	Soil Association No 18	Good quality land	0.1	0.1%	No	0.0%	Land take at the edge of the farm.	None	Not significant
266	67.0	Suckler cow beef and tillage.	Soil Association No 14	Low-lying heavy grassland - 70% good quality and 30% poor quality.	0.1	0.2%	No	0.0%	Land loss	Maintain stream in affected land parcel.	Not significant
267	22.1	Beef & sheep	Soil Association No 14	Good quality land	1.19	5.4%	Yes	11.6%	Severance and land take. Access to stream cut off.	Maintain access to land south of the proposed road and provided water to land parcel north of the proposed road.	Moderate

Farm id (Fig 13.1)	Area (ha) of affected farm (see note 1)	Type of Farm Enterprise	Land type and quality (as described in Section 13.3.4)		Land taken (ha) (note 2)	% taken	Severance	% severed (of the area remaining)	Nature of impact (before mitigation) (Refer to Figure 13.1 for location of land parcels)	Recommended Mitigating measures (see notes 3, 5)	Overall (assuming mitigating measures) (see note 4)
			Soil Association	Land quality							
268	33.0	Suckler cow beef and tillage.	Soil Association No 14	Good quality land	2.54	7.7%	Yes	33.8%	Severance and land take. Access to stream is severed	Maintain access and water to land affected by the proposed road.	Major
270	5.6	Dairying	Soil Association No 17	Good quality land	0.04	0.8%	No	0.0%	Land take at edge of farm	Maintain access and water supply from the public road.	Not significant

Note 1: The farm size is approximate.

Note 2 : The area of land taken is approximate and may vary from the amount of land purchased through CPO.

Note 3 : It is assumed that fences, electricity supply, water sources and damage to drainage or soil structure during the road works will be repaired. Also holding pens and gates may be required in severed parcels of land.

The access tracks referred to are taken from the proposed route specifications as supplied by the project engineer.

Note 4: The combined impacts of severance, land loss, enterprise, land quality, size of the land parcel and proposed mitigating measures are taken into account.



## Annex D

# Archaeological and architectural heritage



**D1****REGISTER OF FIELDS WITHIN INDIVIDUAL THE WIDER STUDY CORRIDOR.**

The following is a register of notes and observations taken during the course of field-walking and based on comparison with aerial photographs and cartographic sources. In total the fields were allocated 119 numbers running roughly from southwest to northeast. Two provisos should be made concerning the nature of the landscape. The Barrow area is largely involved in intensive arable agriculture. The nature of this agriculture makes monuments hard to see in the field. The landscape was also under heavy crop and pasture fields contained a high silage crop at the time of field walking making observation difficult. As such this is in no way a complete appraisal of the archaeology that may be encountered during the scheme.

An area containing an AHC should automatically be considered as being of higher archaeological potential.

The field are described in the following format:

<i>Field Number</i>	<i>Land Usage</i>	<i>Slope</i>
<i>Description:</i>		
<i>Archaeology:</i>		

<i>Field 1</i>	<i>Field under Pasture</i>	<i>Moderate slope from northwest to southeast</i>
A narrow rectangular field, orientated north south, located immediately to the west of the N25. A low hawthorn hedge boundary is located to west and to north. The eastern boundary is a modern concrete fence and a belt of young trees. The field is depicted as divided into two smaller fields on the Ordnance Survey maps, with the eastern half removed by the road		
<i>No features of potential archaeological significance were identified.</i>		

<i>Field 2</i>	<i>Mixture of Pasture and Woodland</i>	<i>Very steep slope from N25 down to river</i>
Immediately to the east of the N25, and within the road take, the ground drops steeply down towards a small stream. The western banks have been planted with young trees and are overgrown with briar and bramble and the stream is extremely difficult to access from the road. A shelter belt of mature trees extends along the eastern side of the stream. Beyond this the field is under pasture, with a low 'step' adjacent to the riverbank. The eastern limits of the field are located on a townland boundary.		
<i>No features of potential archaeological significance were identified.</i>		

<i>Field 3</i>	<i>Field under pasture with cattle grazing.</i>	<i>Steep downward slope from east to west and from north to south.</i>
The field consists of a long narrow strip extending north-south bordered by a secondary road to the east, with the proposed bypass extending east-west across its southern half. A bungalow is located immediately to the south of the field. The grass is cropped relatively low. The boundaries consist of mature hedgerows, with a low tree line incorporated into its western boundary depicted on the Ordnance Survey maps, possibly marking the demesne of Bearstown Farm to the east. The surface is pocked and uneven from cattle use. The western limits of the field are on a townland boundary.		
<i>No features of potential archaeological significance were identified.</i>		

<b>Field 4</b>	Field under pasture.	Steep downward slope from east to west and from north to south.
The field is sub-rectangular in shape; with the proposed road extending east west across it's centre. A modern bungalow is located immediately beyond its northern boundary and beyond the southern end of the field. A secondary, north-south road forms its western boundary. The boundaries consist of mature hedgerows. The grass is cropped relatively low, and the surface relatively even.		
<i>No features of potential archaeological significance were identified.</i>		
<b>Field 5</b>	Field under crop	Steep downward slope from east to west, gentle downward slope from north to south.
The field is triangular in shape, pointing northwards, with the abandoned railway line to the east. The boundaries consist of thick broad overgrown hedgerows to east, west and south. The surface is relatively even, despite the slope		
<i>No features of potential archaeological significance were identified.</i>		
<b>Field 6</b>	Under pasture with cattle grazing.	Gentle downward slope from east to west and from north to south.
The field consists of a narrow north-south strip, immediately to the northwest of Bearstown Farm, with the road take extending east west across the southern half. The boundaries consist of low hedgerows of gorse and hawthorn; the eastern boundary consists of a low bank revetted with stone on its west-facing side, with a 'step' of c. 1m up to the adjacent Field 7, suggesting terracing. The disused railway line lies immediately beyond its western boundary. The surface of the field is pocked and uneven from cattle use.		
<i>No features of potential archaeological significance were identified.</i>		
<b>Field 7</b>	Under pasture	Steep downward slope from east to west.
A large rectangular field orientated north south, situated on the western brow of a low hill, with Bearstown Farm located immediately beyond the southern boundary. The proposed bypass extends northwest southeast across the field. The boundaries consist of substantial hedgerows on all sides.		
<i>No features of potential archaeological significance were identified.</i>		
<b>Field 8</b>	Under pasture	Moderate downward slope from northeast to southwest.
A rectangular field situated on the western brow of a low hill, with the road take clipping the southwest corner, and Bearstown Farm a short distance to the west. The boundaries are substantial hedgerows with a low line of trees incorporated into the northwest boundary forming a shelter belt. Farm tracks extend immediately outside the western and southern boundaries towards Bearstown Farm.		
<i>No features of potential archaeological significance were identified.</i>		
<b>Field 9</b>	Under pasture	Moderate downward slope from north to south, gentle downward slope from east to west
A very large, irregularly shaped field, situated on the southern brow of a low hill. A lane extending southeast from Bearstown Farm forms its southern boundary; with the road take extending northwest southeast across the southern half of the field. In the OS maps this field is divided into a number of smaller, north-south strips, and the erased boundaries are visible on the surface. Bearstown Farm is located at the western end of the field. Mature boundaries incorporating low shelter belts of trees are visible to the north and west. The surface is undulating.		

*No features of potential archaeological significance were identified.*

<b>Field 10</b>	Under Pasture with cattle grazing	Steep downward slope from north to south and gentle downward slope from east to west.
A very large open field extending northwest southeast across the southern brow of the hill, with Bearstown farm at its western end. The road take extends across its northern half. The field seems to be the product of recent land improvements, with the OS maps depicting the field divided into a number of smaller north-south strips. The field is now paddocked into separate grazing enclosures by temporary electric fences. The surface is undulating and uneven, and pocked in places from cattle use. A lane extending southeast from Bearstown Farm forms its northern boundary. Trees enclose the farm to the west and a thicker tree belt extends along the southern boundary to the north of a secondary road, possibly associated with the demesne of Bearstown Farm, depicted on the OS maps.		
<i>No features of potential archaeological significance were identified.</i>		

<b>Field 11</b>	Under Pasture	Gentle downward slope from centre to west, east and north
A sub-rectangular field, extending north south across the top of a low hill, with the proposed bypass clipping its southern half. A lane extending east from Bearstown Farm extends along its southern boundary which consists of an earthen bank revetted with stone in places. The boundary to the west and east is similar.		
<i>No features of potential archaeological significance were identified.</i>		

<b>Field 12</b>	Under Pasture	Steep downward slope form west to east.
A very large irregular field located on the east-facing slope of a low hill, with a thick belt of trees extending around its southern and eastern boundaries, possibly marking the demesne boundary of Bearstown Farm. The hill overlooks the Barrow Estuary to the east and a secondary road curves around the southern and eastern boundaries. The road take extends east west across the southern half of the field. The southern boundary consists of a high earthen bank, revetted with stone in places. Midway across the field there is a sharp break in this boundary, where the earthen bank, curves briefly to the north, before curving back to its east-west orientation. This break is surrounded by a high mound of earth and field stone, possibly the result of recent clearance of a boundary depicted extending north from this point on the OS maps; this field is an amalgamation of a number of smaller fields depicted on the OS maps. But the curving nature of the boundary is worth noting. A deep broad bank forms the eastern boundary of the field – 3m wide and 2m deep; beyond this the tree belt extends down a very steep slope to the road. Beyond this lies the secondary road, extending along a ridge above the river Barrow. The ridge is marked 'Pink Point' on the OS and Discovery Series maps and would form a natural location for a beacon, or a defensive position, guarding access up the river. A large modern lighting installation is located on the point at present.		
<i>This field partially contains AHC 1</i>		

<b>Field 13</b>	Field under silage	Steep downward slope to east and to south.
A very large field extending down the southern face of a low hill, overlooking the Barrow Estuary to the east and south. A thick belt of trees extends along its southern boundary, possibly marking the demesne boundary of Bearstown Farm as depicted on the OS maps. The road take extends across the northern half of the field. A farm track extends inside the northern boundary. The field is a recent amalgamation of a number of smaller field units depicted on the OS maps. The northern boundary is described above.		
<i>This field partially contains AHC 1</i>		

<b>Field 14</b>	<b>Floodplain</b>	<b>Gentle slope from east to west, towards the river.</b>
<p>This 'field' consisted of a narrow strip of floodplain extending along the eastern bank of the river Barrow, consisting of flood sediments overgrown with high reeds. The eastern boundary consists of a high artificial bank composed of a mixture of large field stone and earth, c. 4m high and 5m wide, forming a flood barrier. A deep drainage ditch extends along the eastern side of this barrier, within field 15. A number of low 'jetties' extend out into the river forming modern tidal barriers. Geological Investigations have shown topsoil to be between 0.2-0.5m with up to a maximum of 8m of Alluvium underneath.</p> <p><i>This field fronts the Barrow Estuary and the 'Pink Point' on the river's western bank. The Barrow Estuary would be a natural axis of settlement and human activity and thus presents a high degree of archaeological potential (AHC 3).</i></p>		

<b>Field 15</b>	<b>Pasture</b>	<b>Flat</b>
<p>A narrow triangular field with its 'point', pointing northwest, with the road take extending across its northern half. Its western boundary is formed by the high modern flood barrier previously described, with a drainage ditch at the base of the bank, c. 2m wide and 2m deep. A similar ditch forms the fields eastern boundary. The ground consists of scrubby uneven pasture marked on the OS maps as subject to flooding. Geological Investigations have shown topsoil to be between 0.2-0.5m with up to a maximum of 8m of Alluvium underneath.</p> <p><i>This field fronts the Barrow Estuary on the river's eastern bank. The Barrow Estuary would be a natural axis of settlement and human activity and thus presents a high degree of archaeological potential (AHC 3). The field is also contained within AHC 29 Stokestown Demesne</i></p>		

<b>Field 16</b>	<b>Pasture with cattle grazing</b>	<b>Flat</b>
<p>A large open flat field presumably subject to regular flooding from the adjacent Barrow Estuary, given the high flood barrier to the west and the deep drainage ditches, and thus probably the creation of modern reclamation projects. Scrubby pasture. Bounded by a deep drainage ditch, c. 2m deep, to the southwest and the flood barrier previously described to the west with a shallower drainage ditch to the east. Geological Investigations have shown topsoil to be between 0.2-0.5m with up to a maximum of 8m of Alluvium underneath.</p> <p><i>This field forms part of AHC 29 Stokestown Demesne.</i></p>		

<b>Field 17</b>	<b>Pasture</b>	<b>Flat</b>
<p>Similar in description to fields 15 and 16: Flat open pasture bounded by a drainage ditch to the west with a very low adjacent hedge, a deep ditch and hawthorn hedge to the north, with a simple fence to the east. Presumably subject to flooding and possibly the creation of reclamation works. Geological Investigations have shown topsoil to be between 0.2-0.5m with up to a maximum of 8m of Alluvium underneath.</p> <p><i>This field forms part of AHC 29 Stokestown Demesne.</i></p>		

<b>Field 18</b>	<b>Field under crop</b>	<b>Gentle slope upwards to east.</b>
<p>The ground is rising in this field away from the floodplain of the Barrow Estuary, on the western brow of a low hill, and the land quality appears correspondingly better. A large well-maintained even crop field with low fences forming the boundaries to west and north. Geological Investigations have shown topsoil to be between 0.2-0.5m with up to a maximum of 8m of Alluvium underneath.</p> <p><i>This field forms part of AHC 29 Stokestown Demesne.</i></p>		

<b>Field 19</b>	<b>Field under crop</b>	<b>Gentle slope upwards to northeast</b>
<p>A large crop field situated on the southwestern brow of a low hill, with Stokestown Castle a short distance to the north. A substantial earthen bank revetted, with a holly hedge with stone forms the southern boundary, a broad hedge of mature hawthorn trees forms the western boundary with a belt of mature trees extending along the northeast and eastern boundaries. A secondary road extends immediately beyond the eastern and northeastern boundaries.</p>		

A walled 'garden' enclosure attached to Stokestown Castle, presumably of late 18<sup>th</sup> or early 19<sup>th</sup> century origin, is located in the northern corner of the field, with substantial stone walls, replaced with brick in places, over 3.5m in height. The road take appears to clip the southern wall of this enclosed area. The surface of the field is even and well maintained.

*This field contains the walled garden AHC 4 as well as forming part of Stokestown Demesne AHC29.*

<b>Field 20</b>	Field under crop	Gentle slope upwards from west to east
A very large field under crop on the western brow of a low hill – immediately to the east of Stokestown Castle (AHC 27) with a secondary road extending along its western boundary. The road take extends northeast across the northern half of the field. The western boundary consists of a thick hedge composed of holly, hawthorn and bramble. The surface is even and well maintained.		
<i>This field forms part of AHC 29 Stokestown Demesne.</i>		

<b>Field 21</b>	Field under crop	Sloping down from centre to west and east.
An extremely large field under crop, set atop a low hill, with the road take extending across its northern half. Low hedge and bank boundaries to east and west. A modern bungalow is located in the northwest corner of the field. An octagonal structure, (AHC 5) located on the highest part of the hill, is marked 'turret' on the 3 <sup>rd</sup> OS maps, but not depicted on the 1 <sup>st</sup> edition OS. The structure is now roofless, but contains an internal chimneystack and the remains of plasterwork and wood panelling are visible inside. Four 'gothic' style windows are set at regular intervals. The structure was presumably associated with Stokestown house. The field is depicted as a more elaborate demesne landscape on the OS maps, with the south-western corner planted with trees and a belt of trees extending across the centre, both removed. The surface of the field is even and well maintained.		
<i>The proximity to Stokestown Castle (WX034:015) and the adjacent road, may suggest potential for related settlement. The 'Turret' is also a protected structure under the Wexford Development plan 2001 (AHC 5). A garden identified on the aerial photographs may also be constructed in a ringfort or enclosure just north of the road take in field 21. (AHC 6)</i>		

<b>Field 22</b>	Field under pasture with sheep grazing	Moderate slope downward from west to east.
A pasture field extending down the eastern brow of the hill, with a thick belt of trees forming the northern boundary, part of the demesne of Stokestown House. Depicted as part of Field 21 on the OS maps, the western boundary is a low fence. The ground is uneven and undulating. A farm lane extends along the eastern boundary of the field, also forming the townland boundary between Landscape and Stokestown.		
<i>This field forms part of AHC 29 Stokestown Demesne.</i>		

<b>Field 23</b>	Woodland	Moderate slope downward from west to east.
This 'field' is within a narrow belt of woodland apparently forming part of Stokestown demesne. The trees are ash, sycamore, larch, chestnut, Scots pine and holly. The ground between is covered with a thick undergrowth of briar and bramble, making it impossible to make any close examination. The eastern boundaries of this field form a townland boundary.		
<i>This field forms part of AHC 29 Stokestown Demesne.</i>		

<b>Field 24</b>	Field under crop	Gentle slope downward from south to north.
A very large open field under crop, immediately to the north of Landscape House. A mature shelter belt of beech trees runs along its northern boundary, with the road just beyond, a farm lane – fenced on either side, forms its western boundary, also the townland boundary. The road take extends broadly east west across the northern half of the field. The surface is even, well maintained and planted with lettuce. The southern half of the field has been paddocked off, and		

cattle are grazing. Landscape House (AHC 30) is a large imposing, 3-storey, 5-bay building, facing north over the field. It is depicted on the 1<sup>st</sup> edition OS. A modern farm is situated to the northeast of the house.

*This field forms part of AHC 31 Landscape Demesne.*

<b>Field 25</b>	Field under crop	Gentle slope down from south to north
<p>A large open rectangular field under crop, with a mature belt of trees extending along its northern boundary, with a secondary road immediately beyond. A tree-lined avenue, leading through a farm to Landscape House forms its western boundary, is depicted on the 1<sup>st</sup> edition OS. A mature tree belt, part of the demesne of Landscape House, forms its southern boundary. The R733 road extends along its eastern boundary, which is also the townland boundary. The road take extends east-west across the northern half of the field, between two modern bungalows accessed from the avenue. The surface of the field is even and well maintained, with the height of the crop obscuring any possible topographical features.</p> <p>A walled rectangular 'garden', attached to Landscape House, is located in the southwest corner. The walled 'garden' appears to have a small structure incorporated into its northern side. A third dwelling is located in the northern half of the field, with vernacular features in its construction, but not depicted on the 1<sup>st</sup> OS. The field was originally divided into three smaller strips on the OS maps.</p> <p><i>The road runs extremely close the walled garden and associated structure (AHC 7) as well as running directly through Landscape Demesne (AHC 31).</i></p>		

<b>Field 26</b>	Field under pasture	Gentle slope down from east to west
<p>Located immediately to the east of the R733 road, the field is under thick grass. A bungalow is situated immediately beyond the southern corner of the field, a stream extends along its northern boundary, and the boundaries consist of mature hedgerows of hawthorn. The western limits of the field form a townland boundary.</p> <p><i>No features of potential archaeological significance were identified</i></p>		

<b>Field 27</b>	Field under pasture	Moderate slope upwards from south to north
<p>An open pasture field bordered by a canalised stream and adjacent bank to the south. A large concrete yard, a bungalow and a farm are situated at the northern end of the field. The surface consists of scrubby uneven pasture grazed by horses at present. The field flattens out slightly towards its southern end, adjacent to the stream. The boundaries are hawthorn hedges atop low earthen banks. The western limits of the field form a townland boundary</p> <p><i>No features of potential archaeological significance were identified.</i></p>		

<b>Field 28</b>	Field under pasture	Steep slope upwards
<p>A small triangular field 'pointing' north. A small canalised stream extends along its southern boundary. The boundaries to the west and northeast consist of a hawthorn hedge and a low bank. The surface consists of scrubby undulating pasture.</p> <p><i>No features of potential archaeological significance were identified.</i></p>		

<b>Field 29</b>	Field under pasture with cattle grazing	Steep slope upwards from north to south.
<p>A small irregularly shaped field on a steep slope on the southern brow of a low hill. The surface is undulating and uneven, pockmarked by recent cattle use, and the boundaries consist of low bank with hawthorn hedges.</p> <p><i>No features of potential archaeological significance were identified.</i></p>		

<b>Field 30</b>	Field under pasture with horses grazing.	Steep slope upwards from south to north
<p>Situated on the southern brow of a low hill, and sloping steeply downwards from a secondary</p>		

road forming its northern boundary, the field consists of scrubby, uneven pasture. The boundaries consist of mature hedgerows to north, northeast, south and southwest.
<i>No features of potential archaeological significance were identified.</i>

<b>Field 31</b>	Field under pasture	Moderate slope upwards from south to north
The road take clips the northwest corner of this small rectangular northwest-southeast orientated field. The field is under pasture, with a farm lane extending along its southern side. The boundaries consist of substantial hedges of hawthorn atop low banks, with the outer side of the southern boundary extending along the lane revetted with stone. A ditch is incorporated into the northern boundary. The surface is uneven and undulating.		
<i>No features of potential archaeological significance were identified.</i>		

<b>Field 32</b>	Field under pasture	Moderate slope upwards from south to north.
Small rectangular field on the southern face of a low hill, with secondary roads extending along the southern and western boundaries, and a lane to the east. Substantial holly and hawthorn hedge to west, low hedges of hawthorn and briar to south and east, consolidated hedge with mature hawthorn to the north. Surface sloping but relatively even.		
<i>No features of potential archaeological significance were identified</i>		

<b>Field 33</b>	Field under pasture	Steep slope upwards from south to north
Triangular field sloping steeply south from secondary road extending along its northern boundary. Overgrown with high grass obscuring any possible topographical features in undulating surface. Solid hawthorn boundaries on all three sides. A secondary lane extends along the southeast side of the field.		
<i>No features of potential archaeological significance were identified.</i>		

<b>Field 34</b>	Field under pasture	Gentle slope downwards from north to south
The road take clips the southeast corner of a rectangular field with a secondary road extending along the southern boundary. The field has been freshly cut and is relatively even.		
<i>No features of potential archaeological significance were identified.</i>		

<b>Field 35</b>	Field under pasture	Gentle slope downwards from north to south
A small rectangular field orientated north south close to the top of a low hill. The road take clips the southern half of the field.		
<i>No features of potential archaeological significance were identified.</i>		

<b>Field 36</b>	Field under crop	Gentle slope down from north to south
A long field extending southwest- northeast along the southeastern brow of Camlin Hill. A secondary road extends along its northwestern boundary. The field boundaries consist of low bank and hedge, with a broader bank to the south, over 2.5m wide and heavily overgrown, which is the townland boundary of Camlin. The field passes over the peak of a slope, before sloping gently down to the northeast. The OS maps depict it as divided into three smaller fields. The western limit of the field forms part of a townland boundary.		
<i>No features of potential archaeological significance were identified.</i>		

<b>Field 37</b>	Field under crop	Sloping downward from northeast to southwest
The road take clips the northwest corner of a large field under crop. The boundaries consist of hawthorn hedges. The eastern limit of the field forms part of a townland boundary.		
<i>No features of potential archaeological significance were identified.</i>		

<b>Field 38</b>	Under pasture with cattle grazing	Sloping steeply down from east to west.
The road take extends across the northwest half of a sub-rectangular field at the top of the hill. The boundaries consists of mature hawthorn hedges. The eastern limit of the field forms part of a townland boundary.		
<i>No features of potential archaeological significance were identified.</i>		

<b>Field 39</b>	Under crop	Flat
A large flat rectangular open field under crop, extending north-south with a modern farm located in the northeast corner, and secondary roads extending along its northern side and eastern sides. The farm is marked in the same location on the 1 <sup>st</sup> Edition OS. Flat even terrain with low hawthorn hedge and bank boundaries on all sides. Mature trees are incorporated into the eastern boundary		
<i>No features of potential archaeological significance were identified.</i>		

<b>Field 40</b>	Under pasture	Flat
Similar to field 39 and located to the immediate south, a large rectangular field under heavy grass with the road take extending across its northern half. The boundaries consist of low earthen banks with mature hawthorn boundaries. A secondary road extends along its eastern boundary. Flat even terrain.		
<i>No features of potential archaeological significance were identified.</i>		

<b>Field 41</b>	Under pasture	Level
Flat even pasture field with boundaries consisting of low earthen banks and well kept hawthorn hedges. Farm depicted on 1 <sup>st</sup> edition OS located to north. Field 41 is in close proximity to settlement depicted on 1 <sup>st</sup> edition OS.		
<i>No features of potential archaeological significance were identified.</i>		

<b>Field 42</b>	Under pasture	Very gentle slope down towards the northeast.
Flat even pasture field with boundaries as described above; low earthen banks and well kept hawthorn hedges. Farm depicted on 1 <sup>st</sup> edition OS is located to the north. The field has been fenced into a number of temporary grazing enclosures – creating the impression of separate fields on the OS maps. A low mound is visible in the southwest corner – most likely the result of recent ground clearance. The western limit of field 42 forms part of a townland boundary.		
<i>No features of potential archaeological significance were identified.</i>		

<b>Field 43</b>	Under pasture with cattle grazing	Level
Very large sub-rectangular field with secondary road to the west – the townland boundary between Creakan Upper and Creakan Lower, and an avenue leading to a house forming its northern boundary. The road take clips the southern half of the field. The farmstead at the end of the avenue, beyond the northeastern corner of the field, is depicted on the first edition OS maps. The avenue to the north is bordered by stone revetting walls on either side, with an earthen bank c. 1m high on its southern, internal side and an adjacent ditch c. 1.3m deep and 1.5m wide. The avenue is lined with young trees. The western and southern boundaries of the field are similarly composed of young trees planted within the last 100 years. The 1 <sup>st</sup> edition OS maps depict the field divided into five smaller units with a substantial boundary extending across the centre - two mature oak trees are still present as the remains of this boundary. The 1 <sup>st</sup> edition maps depict a ‘demesne’ landscape around the farm to the northwest with boundaries of large tree belts. A stone facing (AHC 8) is visible within the kink midway along the southern boundary, extending to a height of 1.7m but it is impossible to determine whether this represents a structural element or simply revetting of a field boundary. No structure is depicted on the OS maps. Elsewhere the southern boundary consists of a high earthen bank – heavily overgrown.		
<i>The kink in the southern boundary (AHC 8) should be stripped of overgrowth and examined before removal to confirm its nature. The road to the west forms a townland boundary, which may indicate a</i>		

*significance as an historic axis of settlement, in addition to the proximity of a farmstead depicted on the 1<sup>st</sup> edition OS.*

<b>Field 44</b>	<b>Under crop</b>	<b>Gentle slope from southeast to northwest</b>
A large rectangular field extending east from a secondary north-south road – which forms the townland boundary between Creakan Upper and Creakan Lower. The boundary to the north has been previously described. The boundaries to south, east and west are low hawthorn hedges. The crop is relatively high, inhibiting the identification of any topographical features. The surface appears to be even and well ploughed.		
<i>The kink in the southern boundary should be stripped of overgrowth (AHC 8) and examined before removal to confirm its nature. The road to the west forms a townland boundary, which may indicate significance as an historic axis of settlement.</i>		

<b>Field 45</b>	<b>Field under crop</b>	<b>Moderate slope down from southeast to northwest corner</b>
The road clips the northern side of a large field, currently under crop, on the northwestern brow of a low hill. A well is located in the southwest corner of the field. It has been capped with breezeblocks, but the drystone construction of the wellshaft is still visible below. This does not appear to be depicted on the OS maps, but it is located well outside the road take.		
The boundaries elsewhere consist of mature hawthorn, with the southern boundary incorporating a line of trees and a low fence to the east. The path or track visible on the aerial photograph is not on the ground. More mature trees suggesting demesne planting, close to the farm are visible in the northern and northeast boundaries with substantial stone revetment of the northern boundary.		
<i>If possible the dating and local traditions around the well in the southwest corner of the field should be confirmed (AHC 9).</i>		

<b>Field 46</b>	<b>Field under pasture</b>	<b>Steep slope down from south to north</b>
Small field to the immediate east of a farmstead, bordered by mature trees on all sides. The farm and the adjacent field is depicted on the 1 <sup>st</sup> edition OS maps. The surface of the field is very uneven, with a large area overgrown with gorse and briar in the centre, and the remainder pocked and pitted from recent cattle use. The slope from south to north is very steep for such a small field and a number of uneven hillocks are visible in the surface of the field.		
<i>No features of potential archaeological significance were identified.</i>		

<b>Field 47</b>	<b>Field under pasture</b>	<b>Steep slope down from south to north</b>
The field extends east from the farmstead, surrounded by mature tree boundaries on all four sides, set atop low earthen banks handsomely revetted with stone to the north. The trees represent part of the demesne planting in the immediate hinterland of the farm. The field surface is undulating, and pocked from recent cattle use. The field is in close proximity to settlement marked on the 1 <sup>st</sup> edition OS.		
<i>No features of potential archaeological significance were identified.</i>		

<b>Field 48</b>	<b>Field under pasture</b>	<b>Level</b>
A large open pasture field in the immediate vicinity of a farmstead. The boundary to the west consists of mature trees, set atop an earthen bank revetted handsomely with stone. The boundary to the east consists of a low hedge and bank, to the south a border of younger trees.		
The site of a delisted monument – WOX34:003 – is located less than 75 metres to the south of the road take. This enclosure is clearly depicted on the 1 <sup>st</sup> edition OS maps as a substantial feature. The site has subsequently been used as a quarry and a modern silage pit and there are a number of modern buildings on the site, which is surrounded by a conifer plantation. It was presumably delisted because it was destroyed and this does not affect the archaeological potential.		

*The proximity to the road take of a substantial monument, though delisted presumably due to destruction, increases the potential for archaeological remains to be exposed (AHC 10).*

<b>Field 49</b>	<b>Under crop</b>	<b>Generally flat – very slight rise to southwest</b>
A large open field under crop, with the boundaries consisting of low hawthorn hedges, incorporating some larger trees to the south. The terrain is even and well ploughed and the crop is high. A secondary road extends along the eastern boundary. The road is also the townland boundary between Creakan Upper and Arneston.		
<i>No features of potential archaeological significance were identified.</i>		

<b>Field 50</b>	<b>Under pasture</b>	<b>Flat</b>
A very large flat pasture field extending east from a north-south road (the townland boundary between Creakan Upper and Arneston). The boundary to the south consists of a belt of mature trees – part of the demesne around Arneston House. The boundaries to the east, west and north consist of belts of younger trees. A second road extends along the eastern boundary.		
The road take crosses an area depicted on the 1 <sup>st</sup> and 3 <sup>rd</sup> edition OS maps as a series of enclosed gardens attached to Arneston House. These are partially visible on the aerial photographs as cropmarks. A series of garden or estate features are visible on the OS maps near Arneston House to the south of the road take.		
<i>As noted previously the proximity of the townland boundary as a potential axis of settlement and the proximity of a house depicted on the 1<sup>st</sup> edition map (Arneston) house, may be significant. The 1<sup>st</sup> edition also shows the road take crosses a small settlement/structure (AHC 11)</i>		

<b>Field 51</b>	<b>Garden attached to modern dwelling</b>	<b>Flat</b>
A small enclosed garden immediately to the south of a modern bungalow, overgrown and covered with modern debris. The bungalow is within the road take.		
<i>No features of potential archaeological significance were identified.</i>		

<b>Field 52</b>	<b>Field under crop</b>	<b>Gentle slope downward from west to east.</b>
A large sub-rectangular field extending east from a secondary road. Level and well maintained. A canalised stream extends along the eastern boundary with a belt of trees on a bank on the eastern side. A high earthen bank with an external ditch forms its northern boundary. A very large derelict brick farm building is located in the top northwest corner, adjacent to the secondary road, and a short distance from the proposed road take.		
<i>The road take is in extremely close proximity to AHC 12 a large derelict building, this may increase the potential for archaeology.</i>		

<b>Field 53</b>	<b>Field under pasture</b>	<b>Gentle slope downward from west to east</b>
A large field under pasture to the north of Field 52. A modern farm lane extends along its southern side. The road take clips the southeast corner of the field. The grass has been cut very recently and the surface is even and well maintained. The eastern boundary consists of an earthen bank revetted with stone, with a mature belt of trees.		
<i>No features of potential archaeological significance were identified.</i>		

<b>Field 54</b>	<b>Field under pasture</b>	<b>Flat</b>
The road take clips the northwest corner of a pasture field. The western boundary consists of an earthen bank revetted with stone and a belt of mature trees. The boundary to the south consists of a fenced modern farm path. A low curving depression extends northeast southwest across the centre of the field, possibly the remains of an erased field boundary. The eastern boundary of the field is also the townland boundary between Arneston and Ballymacar, but the road does not extend across it within this field.		
<i>No features of potential archaeological significance were identified.</i>		

<b>Field 55</b>	Field under pasture	Gentle rise from north to south
<p>A sub-rectangular field orientated east west. The boundary to the west is an earthen bank and ditch, to the south a bank revetted with a stone wall and a canalised stream extends along the northern boundary, 2m below the field surface. Mature trees are incorporated into the boundaries. The eastern boundary of the field is also the townland boundary between Arneston and Ballymacar, but the road does not extend across it within this field. The surface of the field is undulating and uneven scrubby pasture. A low sub-circular hillock is visible on the southern side of the field, matching the location of two semi-circular concentric features depicted on the 3<sup>rd</sup> edition OS maps abutting the southern boundary.</p> <p><i>The nature of the low hillocks/mounds should be confirmed. It is possibly simply a modern agricultural feature, given that it is clearly depicted on the 3<sup>rd</sup> OS but not marked on the RMP maps (AHC 13).</i></p>		

<b>Field 56</b>	Field under pasture	Gentle slope downward from west to east
<p>A rectangular east-west field; the surface is low grass. A bank, hedge and stream forms the southern boundary, a bank and deep ditch forms the western boundary, with a hawthorn hedge to the north and young trees to the south. The road take crosses the eastern boundary of the field, a thick belt of mature trees, with two parallel stream tributaries extending along within with a tributary of the stream extending within; this is also the townland boundary between Arneston and Ballymacar. The boundaries incorporate mature trees.</p> <p><i>No features of potential archaeological significance were identified.</i></p>		

<b>Field 57</b>	Field under pasture	Steep slope downwards from northeast to southwest
<p>A large field extending in a steep slope along the western face of a low hill, under scrubby pasture, overgrown with pockets of gorse and briary along its western brow. A stream extends along its western boundary, incorporated into a belt of mature trees, forming the townland boundary. The boundary to the south consists of a low bank and hawthorn hedge. There is a break of slope in the centre of the field, extending north south, with a steep slope down to the stream to the west, and a gentler slope upward to the east. This is marked by an irregular line of mounded stone, possibly the result of field clearance, as the field is depicted divided into four smaller fields on the 3<sup>rd</sup> edition OS.</p> <p><i>No features of potential archaeological significance were identified.</i></p>		

<b>Field 58</b>	Field under pasture with cattle grazing	Steep slope downwards from south to north
<p>The field is steeply sloping and uneven, with the surface pitted by cattle use. The stream forming the townland boundary between Arneston and Ballymacar forms its northwestern boundary, a low-lying flat area extends adjacent to the river bank.</p> <p><i>No features of potential archaeological significance were identified.</i></p>		

<b>Field 59</b>	Field under pasture	Steep slope downwards from west to east
<p>The field is located on the western banks of a stream, sloping steeply down, with a low-lying flat area adjacent to the stream on the eastern side of the field. The surface of the field is very uneven, and pitted from recent cattle use. The northern boundary consists of a low field wall overgrown with gorse and briary. There are a number of large hillocks visible in the surface of the field which appear to be outcrops of the underlying rock. One smaller hillock located in the field may not be natural. The field has been paddocked into separate grazing enclosures, but was depicted as a number of separate fields on the 3<sup>rd</sup> edition OS.</p> <p><i>The low-lying marginal ground adjacent to the stream would suggest the potential for the survival of fulachta fiadh. In addition the stream forms a townland boundary. The low hillocks visible in the field surface appear to be natural but should be confirmed as such (AHC 72).</i></p>		

<b>Field 60</b>	Field under crop	Gentle slope from centre to north, east, south and west
A large field under crop located on the northwest bank of a stream. Beyond the eastern boundary of the field the ground slopes very steeply down towards the surface of the river for c. 20m, but the field itself is relatively level, with gentle slopes down from the centre to all sides. The eastern field boundary is a bank overgrown with hawthorn and gorse. The boundary to the southwest is a low field wall, also overgrown. The surface of the field has been ploughed prior to crop and is even. The site of Arnestown Castle (AHC39) is c. 500m to the north. The stream in the field forms part of a townland boundary.		
<i>No features of potential archaeological significance were identified.</i>		

<b>Field 61</b>	Field under pasture	Gentle slope from centre to north, east, south and west
A very large open pasture field, with a stream forming a townland boundary situated a short distance below a boundary consisting of a bank and belt of trees. The surface is even. The boundaries consist of low hawthorn hedges to south and west. A secondary road extends along its northern boundary, with a handsome 19 <sup>th</sup> century stone cottage located in the northern corner of the field.		
<i>A portion of Ballymacar bridge and crossing point (AHC14) is contained within this field, this area may also be an axis of settlement.</i>		

<b>Field 62</b>	Field under scrubby pasture	Uneven
A low-lying field of scrubby pasture overgrown with gorse, on the banks of a stream immediately to the south of Ballymacar bridge. A secondary road extends along its northern boundary, with structures depicted on the northern side of the road on the 1 <sup>st</sup> edition OS		
<i>A portion of Ballymacar bridge and crossing point (AHC14) is contained within this field, this area may also be an axis of settlement. A bridge is marked here on the 1<sup>st</sup> edition OS and it may preserve the location of an early crossing point</i>		

<b>Field 63</b>	Field under pasture with cattle grazing	Sloping steeply down from east to west and south
A narrow triangular field located on the northern side of the N25. The field is under pasture, with a modern boundary consisting of a concrete fence and recent planting to the south. The canalised stream extending along the northern and northeastern boundary also marks the boundary between the townlands of Ballymacar and Ryleen. The western boundary forms the boundary between Ballymacar and Arneston. A low line of trees has been planted along the northern boundary. The 1 <sup>st</sup> edition OS maps shows the field as divided into 3 smaller units, with what appears to be a small structure adjacent to the southern boundary, possibly a farm outbuilding.		
<i>The road crosses a townland boundary within field 63 and is located in close proximity to Ballymacar Bridge (AHC 14). The field is also close to a number of AHC's (see below) and what appears to be a small structure is depicted within the road take on the 1<sup>st</sup> Edition OS map (AHC 15).</i>		

<b>Field 64</b>	Field under pasture	Moderate slope from northeast to southwest.
A large open field under pasture. The boundaries on all sides consist of low closely maintained earthen banks with hedges composed of gorse and hawthorn. A stream extends along the southern base of the field which also forms the townland boundary between Ballymacar and Ryleen. The stream has been canalised between two modern banks. The hawthorn boundary to the northeast shows as a white line on the AP.		
<i>No features of potential archaeological significance were identified, however this area is in close proximity to a number of AHC's.</i>		

<b>Field 65</b>	Field under pasture with cattle grazing.	Moderate slope from northeast to southwest.
A large field under pasture with low maintained boundaries consisting of low hawthorn and gorse hedges atop earthen banks to all sides and a canalised stream incorporated into the southern boundary. The 1 <sup>st</sup> edition OS map depicts what appears to be a group of small buildings located in the northern end of the field, accessed by a tree-lined avenue extending northwest from the adjacent road. These are not depicted on the 3 <sup>rd</sup> edition OS, and are not visible on the ground.		
<i>The road take extends across what appears to be a small farmstead settlement depicted on the 1<sup>st</sup> edition OS maps, which may reflect continuity from earlier settlement. The field is also located on a south-facing slope and is in close proximity to a number of other AHC's possibly indicating an axis of settlement, (AHC 16).</i>		

<b>Field 66</b>	Field under pasture	Gentle slope down to southeast
A pasture field with a modern farm track extending along the southwest and southeast boundaries. The boundaries consist of narrow hawthorn hedges atop earth and stone banks. As noted for field 65 the 1 <sup>st</sup> edition map depicts what appear to be a small group of buildings located either in the eastern side of the field, or just beyond its eastern boundary.		
<i>The road take extends across what appears to be a small farmstead settlement depicted on the 1<sup>st</sup> Edition OS maps (AHC 17), which may reflect continuity from earlier settlement. The field is also located on a south-facing slope as well as being in close proximity to a number other AHC's.</i>		

<b>Field 67</b>	Field under crop	Moderate slope from northeast to southwest
A large field on the southern brow of a low rise. The boundaries are as previously described: low maintained hawthorn hedges atop earthen banks revetted with stone, with very few trees. The surface of the field is even and well maintained. The 1 <sup>st</sup> Edition OS maps show a very different fieldscape, but there appear to be two very small structures located in the southern corner of Field 67, possibly farm outbuildings.		
<i>Two small structures appear to be depicted in the southern corner of this field on the 1<sup>st</sup> edition OS maps. The site is also in close proximity to a number of other AHC's, (AHC 18).</i>		

<b>Field 68</b>	Field under pasture	Gentle slope from northeast to southwest and from northwest to southeast.
A large pasture field which is an amalgamation of a number of smaller units depicted on the 1 <sup>st</sup> edition OS. A farm located beyond the southeast boundary is depicted on the 1 <sup>st</sup> edition OS maps; the existing farm appears to contain some buildings of 19 <sup>th</sup> century origin. The boundaries of the field are low maintained hawthorn hedges atop earthen banks revetted with stone, with very few trees, and the field plan appears to have been extensively altered. A farm lane extends along the southwest boundary. As noted a number of small buildings appear to be depicted immediately to the southeast		
<i>No features of potential archaeological significance were identified during field survey, but the farmstead to the southeast is depicted in some form on the 1<sup>st</sup> edition OS maps. The field is also in close proximity to a number of other AHC's.</i>		

<b>Field 69</b>	Field under pasture with cattle grazing	Gentle slope from north to south
Sub-rectangular field on southern brow of low hill. The boundaries of the field are low well-maintained hawthorn hedges atop earthen banks revetted with stone, with no trees, and the field plan appears to have been extensively altered from the 1 <sup>st</sup> edition depiction.		
<i>No features of potential archaeological significance were identified, but the site is in close proximity to a number of AHC's.</i>		

<b>Field 70</b>	Field under pasture with cattle grazing	Gentle slope from north to south
Sub-rectangular field on southern brow of low hill, with a secondary road (cul de sac) extending along its south-eastern boundary. A modern bungalow is contained in the southern half of the field, surrounded by a conifer border. The boundaries of the field low well-maintained hawthorn hedges atop earthen banks revetted with stone, with very few trees. The surface is even and well-maintained.		
<i>No features of potential archaeological significance were identified but the field is also in close proximity to a number of AHC's.</i>		

<b>Field 71</b>	Field under pasture	Gentle slope from north to south
A pasture field recently cut for silage, with a modern corrugated hayshed in the eastern corner and silage bales to the north. The boundaries of the field are low well-maintained hawthorn hedges atop earthen banks revetted with stone, with very few trees. The field is to the northwest of a modern farmstead, which is depicted in an earlier form on the 1 <sup>st</sup> edition OS.		
<i>The road take appears to just clip a settlement that is marked on the 1<sup>st</sup> edition of the OS on the border of field 71 and 74. A modern farmstead is now on the site. The site is also on a south-facing slope which may indicate additional potential for settlement, (AHC 19)</i>		

<b>Field 72</b>	Field under pasture	Gentle slope from north to south
A large flat open field. The boundaries of the field are low well-maintained hawthorn hedges atop earthen banks revetted with stone, with very few trees. Fields 71-72 were originally a single field immediately to the northwest of a farmstead depicted on the 1 <sup>st</sup> edition OS map.		
<i>No features of potential archaeological significance were identified.</i>		

<b>Field 73</b>	Field under crop	Very gentle slope from northwest to southeast
A large crop field atop a low plateau on the southern brow of a hill. The boundaries of the field are low well-maintained hawthorn hedges atop earthen banks revetted with stone, with a small number of mature hawthorn trees incorporated into the boundaries. The surface is even and well-maintained with crops.		
<i>A faint crop mark is visible just outside the road take of a large enclosure. This appears to be abutting a second circular feature which may be modern. The position on a south-facing slope may indicate additional potential for settlement (AHC 19).</i>		

<b>Field 74</b>	Field under pasture	Gentle slope from northwest to southeast.
The road take clips the northern corner of a pasture field immediately to the north of the farmstead depicted on the 1 <sup>st</sup> edition OS. The boundaries are as previously described.		
<i>The road take appears to just clip a settlement that is marked on the 1<sup>st</sup> edition of the OS on the border of field 71 and 74. A modern farmstead is now on the site. The site is also on a south-facing slope which may indicate additional potential for settlement, (AHC 19).</i>		

<b>Field 75</b>	Field under crop	Very gentle slope down to southeast
A large field on the southern brow of a low hill, depicted as two separate fields on the 1 <sup>st</sup> edition OS. The boundaries are as described above. The road take extends across the southern half of the field.		
<i>No features of potential archaeological significance were identified</i>		

<b>Field 76</b>	Field under pasture	Very gentle slope at southern corner
A relatively flat level pasture field with only a slight slope at the southern corner. The boundaries of the field are low, well-maintained hawthorn hedges atop earthen banks revetted with stone.		
<i>No features of potential archaeological significance were identified</i>		
<b>Field 77</b>	Field under pasture	Moderate slope from northeast to southwest
The road take clips the northwest side of a sub-rectangular pasture field. The boundaries are as previously described. The field originally appears to have been two separate fields as depicted on the 1 <sup>st</sup> edition OS map. The farmstead ringed by trees to the southeast is also depicted in some form on the OS.		
<i>No features of potential archaeological significance were identified</i>		
<b>Field 78</b>	Field under pasture	Gentle slope down from northeast to southwest
An overgrown pasture field with high grass and untidy, overgrown boundaries composed of gorse and briar on all sides.		
<i>No features of potential archaeological significance were identified</i>		
<b>Field 79</b>	Field under pasture	Moderate slope from northeast to southwest
A large overgrown pasture field with high grass and untidy, overgrown boundaries of gorse, briar and hawthorn. Gentle rise in southwest corner. The ground is gently undulating. The field appears to be attached to a poorly maintained farmstead immediately to the north, with a number of derelict buildings. The farm is depicted on the 1 <sup>st</sup> edition OS maps.		
<i>No features of potential archaeological significance were identified, but the position adjacent to a farmstead depicted on the 1<sup>st</sup> edition OS may indicate additional potential for settlement.</i>		
<b>Field 80</b>	Field under pasture	Gentle slope from north to south
A large overgrown pasture field with high grass and low earthen bank boundaries to west, southwest and north, with a conifer belt forming the eastern boundary, on the southern brow of a low hill. The terrain is undulating. While the eastern boundary is a recent conifer border, it extends along the location of what the 1 <sup>st</sup> edition OS marks as a lane or road, but visible on the ground now only as an intermittent farm track. The field was originally two smaller fields, immediately to the east of a farmstead depicted on the 1 <sup>st</sup> edition OS.		
<i>No features of potential archaeological significance were identified</i>		
<b>Field 81</b>	Abandoned modern house site	Flat
A rectangular landscaped area enclosed by a modern conifer border and laid with gravel overgrown with nettle and briar. The outline of a number of containers, caravans or porta-cabins visible in the gravel. No buildings. A lane depicted on the 1 <sup>st</sup> edition OS map extends from the northern side of the enclosed area.		
<i>No features of potential archaeological significance were identified.</i>		
<b>Field 82</b>	Field under crop	Very gentle slope from north to south
A large even sub-rectangular cropfield extending south from a secondary road to the north. Bordered to the west by the farm lane and modern conifer border previously described. The eastern boundary is a broad overgrown bank with mature hawthorn trees atop. Crop is up to 18 inches high. The surface is level and well maintained. The 1 <sup>st</sup> edition appears to depict the field divided into at least five smaller units. The eastern boundary is the townland boundary between Ryleen and Lacken.		
<i>No features of potential archaeological significance were identified</i>		

<b>Field 83</b>	Field under crop	Very gentle slope down to southeast
The road take clips the very southwest corner of a large crop field, flat level and well maintained. The boundaries are overgrown earthen banks with mature hawthorn trees atop. The western boundary, as previously noted, is the townland boundary between Ryleen and Lacken. The field is an amalgamation of two smaller fields depicted on the 1 <sup>st</sup> edition OS.		
<i>No features of potential archaeological significance were identified.</i>		

<b>Field 84</b>	Field under crop	Very gentle slope down from north to south and from west to east.
A very large crop field extending south from the Old Ross Road, an amalgamation of four smaller fields depicted on the 1 <sup>st</sup> edition OS. The western boundary, consisting of an overgrown earthen bank with hawthorn trees, is the townland boundary between Ryleen and Lacken. The surface of the field is even, level and well maintained. To the east the field is bounded by a tree-lined avenue extending down from the Old Ross Road to a farmstead in the south-eastern corner of the field, marked on the 1 <sup>st</sup> edition maps, but which appears to have been recently abandoned, though two handsome 19 <sup>th</sup> century stone outbuildings centred round a large two-storey stone farmhouse are still extant and in good repair, and outside the road take. A large overgrown mound of irregular boulders is visible at the southern end of the field, overgrown with hawthorn trees, and possibly the result of modern field clearance (AHC 21).		
<i>The position may indicate additional potential for settlement. The field also fronts a townland boundary on its western side. The provenance of the boulders should be secured as modern (AHC 21).</i>		

<b>Field 85</b>	Field under crop	Gentle downward slope from north to south
A large crop field extending north from the Old Ross Road, with a number of large industrial buildings to the west. The field is level and well maintained. A belt of sycamore trees forms the eastern boundary, and the northeast boundary consists of a low bank and hedge. The field is an amalgamation of two smaller units depicted on the 1 <sup>st</sup> edition OS.		
<i>No features of potential archaeological significance were identified.</i>		

<b>Field 86</b>	Field under pasture	Very gentle slope from south to north
A very large pasture field, recently cut for silage, sloping gently down to the north, with the boundaries consisting of low banks overgrown with hawthorn and briar. The surface is even, level and well maintained.		
<i>No features of potential archaeological significance were identified.</i>		

<b>Field 87</b>	Field under crop	Gentle slope from west to east
A large crop field. The surface is even, level and well maintained. The boundaries are as above, low hawthorn hedges, with only two trees incorporated within. A secondary road extends along its eastern boundary.		
<i>No features of potential archaeological significance were identified.</i>		

<b>Field 88</b>	Field under crop	Gentle slope from north to south
The road take clips the eastern corner of a large sub-rectangular field presently under crop. The boundaries are as previously described, low overgrown banks with hawthorn hedges.		
<i>No features of potential archaeological significance were identified.</i>		

<b>Field 89</b>	Field under pasture	Very gentle slope down to east
The road take clips the western half of a small triangular field pointing north, with a secondary road extending along its eastern boundary (depicted on the 1 <sup>st</sup> edition OS map). The boundaries are low earthen banks overgrown with briar and hawthorn and few trees. A stone revetment of		

vertically set stone is visible on the road-facing side of the eastern boundary.

*No features of potential archaeological significance were identified.*

<b>Field 90</b>	Field under pasture with cattle grazing	Flat
A field of low, flat scrubby pasture, the surface pitted from cattle use. The boundary to the northwest is a thick overgrown band of gorse and briar, with a low bank of hawthorn to southwest. The road facing side of the northeastern boundary is revetted with stone as described above (the road is depicted on the 1 <sup>st</sup> edition OS). The field plan of fields 86-90 is largely as depicted on the 1 <sup>st</sup> edition OS.		
<i>No features of potential archaeological significance were identified.</i>		

<b>Field 91</b>	Field under pasture with cattle grazing	Gentle slope downward from southwest to northeast
A small rectangular field bordered to the southwest by a secondary road, and by an access lane to a house to the southeast, bounded by two revetted earthen banks lined with spruce. The border to the southwest is of young beech and that to the northwest of gorse; all boundaries have earthen banks faced with vertically set stone. The surface of the field is uneven and pocked from cattle use. The house and lane to the east are depicted on the 1 <sup>st</sup> edition OS map.		
<i>No features of potential archaeological significance were identified.</i>		

<b>Field 92</b>	Field under pasture with sheep grazing	Gentle slope downward from southwest to northeast
A large open field to the south of a farmstead depicted on the 1 <sup>st</sup> edition OS. The boundaries consist of earthen banks revetted with stone topped by gorse and hawthorn hedges, with a low shelter belt of trees to the north lining the entrance to the farmstead and a secondary road extending to the west. The field has been temporarily paddocked into two separate enclosures. The proximity of two listed sites to a farmstead depicted on the 1 <sup>st</sup> edition OS is significant. It suggests a broad continuity of site extending back into the early medieval period, or intermittent reuse of a site with natural topographical advantages. The 1 <sup>st</sup> edition OS files marks a location within the field immediately to the south of the farmstead as 'Site of Castle' (WX030:029) and the field is known locally as 'Castle Field'. The area of the potential castle site has a series of low hummocks visible in the ground, the largest (c. 8m in diameter) broadly in the suggested location of the castle, but modern rubbish and build debris is visible in the surface of the area, suggesting these may be of recent origin. A fragment of mortared stone is visible in the surface to the east of the largest hummock. A member of the family holding the farm and the attached land believes that the area of the 'Castle Site' has not been ploughed in the last 40 years; part of the area was cordoned off for a kitchen garden, the other part was a dunghheap within recent memory. The RMP description suggests ambiguity about the nature of the site, with limited documentary references. The northern corner of the field contains a series of low artificial hillocks enclosed by a low bank, which appear to be the result of recent reclamation works. An enclosure (WX030:030) is located in field 93 – immediately to the northeast of the farmstead - further evidence of the significance of the location. A second enclosure (WX039:020) is located c.200m to the northwest, on the opposite side of the adjacent road, suggesting that the road itself may have formed an axis of settlement from the early medieval period.		
<i>There is a high possibility of exposing archaeological remains in this field – two listed sites are located immediately adjacent to a farmstead depicted on the 1<sup>st</sup> edition OS maps, a very short distance from the road take. A second farm marked on the 1<sup>st</sup> Edition OS is located on the southern side of the field. The adjacent road itself may be of medieval or early medieval origin. The road will require mitigation where it crosses this area (AHC 22 et. al.).</i>		

<b>Field 93</b>	Overgrown pasture	Flat
A heavily overgrown field, thick with gorse, nettle and briar up to 5 feet in height. The field boundaries consist of earthen banks faced with stone and topped with mature hawthorn. The surface of the field is very uneven. The site of a listed RMP site WX030:030 ('enclosure') appears to be located directly within the road take, but the area of the potential site is overgrown with an area of gorse and rushes, making it very difficult to ascertain if any surface indications		

survive. The site is clearly marked on the 1<sup>st</sup> edition OS map. The marginal nature of the ground itself may have aided the preservation of archaeological remains.

*The road take extends directly over the location of a listed site within this field – WX030:030 – which will require extensive mitigation measures to be put in place. As noted the enclosure WX030:030 is located immediately to the northeast of a farmstead depicted on the 1<sup>st</sup> edition OS and proximate to a listed castle site (WX030:029) possibly indicating continuity of settlement from the early medieval to the modern period, and with the potential for the survival of a rich range of archaeological material beyond the enclosure itself (AHC 23.).*

<b>Field 94</b>	Field under pasture with cattle grazing	Gentle slope downward from west to east
The road take clips the eastern half of a small field under scrubby pasture. The boundaries consist of low earthen banks with mature hawthorn atop. The surface is uneven, and pitted from cattle use. The farm depicted on the 1 <sup>st</sup> edition OS is located a short distance to the southwest, and the location of WX030:030 is located within the road take immediately beyond the field's eastern boundary.		
<i>This field can be considered of high archaeological potential – where the road take crosses the location of a listed site (WX030:030) and to the northeast of a farmstead depicted on the 1<sup>st</sup> edition OS. As noted extensive archaeological mitigation will be required. See above. Fields 92-94 can be considered of high archaeological potential.</i>		

<b>Field 95</b>	Field under pasture with sheep grazing	Gentle slope downward from north to south
A large sub-rectangular pasture field extending south from a secondary road (depicted on the 1 <sup>st</sup> edition OS). The boundaries consist of low earthen banks topped with mature hawthorn trees. The surface is gently undulating.		
<i>No features of potential archaeological significance were identified. Field is proximal to settlement in field 92-94 see above.</i>		

<b>Field 96</b>	Field under pasture with sheep grazing	Gentle slope downward from north to south
A large open pasture field tenanted by sheep. The boundaries are low earthen banks, revetted with stone in places, topped with mature trees.		
<i>No features of potential archaeological significance were identified. Field is proximal to settlement in field 92-94 see above.</i>		

<b>Field 97</b>	Planted with trees	Flat
Located immediately to the north of a secondary road (depicted on the 1 <sup>st</sup> edition OS), this field is planted with young trees, and overgrown with briar. The roadside boundary to the south is an impenetrable band of briar and hawthorn over 2m in height, and the field is fenced off on its other three sides. The 1 <sup>st</sup> edition OS appears to depict a small structure or cluster of structures abutting the northeast corner of the field, with a lane extending to the north, all within the road take. These are not depicted on the 3 <sup>rd</sup> edition OS. A site listed in the RMP files is located in the field immediately to the east – WX030:031. It conforms broadly to the RMP description, a large oval enclosure accessed by an overgrown tree-lined avenue from the road to the south, with the enclosure c. 40m in max. diameter, a bank c. 1.2m high planted with 10 Scots pine – all suggestive of estate plantation rather than an archaeological feature. The feature is depicted on the 1 <sup>st</sup> edition OS map.		
<i>The road take is within 200m of a listed site WX030:031 to the east, and a number of structures are depicted on the 1<sup>st</sup> edition map abutting the northern corner of the field, apparently within the road take, all indicating the potential for archaeological remains (AHC 24 and 61).</i>		

<b>Field 98</b>	Field under crop	Gentle slope down from east to west
The road take clips the northeast corner of a large crop field extending northeast from the secondary road to the south. The boundaries consist of overgrown banks topped with gorse and young hawthorn, revetted with stone in places. The top northeast corner is overgrown and not under crop. The 1 <sup>st</sup> edition OS depicts the field divided into six smaller units, with a number of		

buildings depicted in the centre of the field – to the west of the road take, none of which are depicted in the 3<sup>rd</sup> edition OS map.

*No features of potential archaeological significance were identified within the road take, but the site is proximate to WX030:031 and to buildings depicted on the 1<sup>st</sup> edition map to the east and west.*

<b>Field 99</b>	Field under pasture	Gentle slope down to SSE
A large open pasture field. The boundaries consist of low earthen banks revetted with stone on all sides, overgrown with hawthorn briar and gorse. The surface appears level and even. The 1 <sup>st</sup> edition OS depicts a cluster of structures in the southern corner of the field, adjacent to the boundary with Field 98, accessed by a lane extending along the field's eastern boundary. The field was originally divided into three smaller units. The structures appear to be located within the road take.		
<i>The road take crosses the location of structures depicted on the 1<sup>st</sup> edition OS map which are no longer present. They may reflect the location of an earlier settlement. (AHC 25)</i>		

<b>Field 100</b>	Under pasture	Gentle slope down from west to east and from north to south
The road take clips the western side of a large open pasture field. The boundaries are as described above. The surface is even and relatively level. The field is divided into two smaller units on the 1 <sup>st</sup> edition OS, with a lane depicted extending along its western side, within the road take. The eastern edge of the road take is within c. 200m of WX030:031 (AHC 61)		
<i>No features of archaeological significance were identified.</i>		

<b>Field 101</b>	Under pasture	Gentle slope from west to east
A large field under deep grass. The boundaries are as described above, but both the boundaries and the surface itself is overgrown. The road take clips the western side of the field. The 1 <sup>st</sup> edition OS depicts the field divided into two smaller units, with a lane extending along its western side.		
<i>No features of potential archaeological significance were identified.</i>		

<b>Field 102</b>	Under pasture	Gentle slope down from north to south
A very large field under deep grass, with the boundaries low earthen banks revetted with stone, and topped by low hawthorn and gorse hedges. The field surface is even and relatively level. The northern boundary forms the townland boundary between Lacken and Berkeley. The 1 <sup>st</sup> edition OS map depicts the field divided into two smaller units.		
<i>No features of potential archaeological significance were identified.</i>		

<b>Field 103</b>	Recently ploughed and sown	Very gentle slope from northwest to southeast
A large field recently ploughed and sown, its western half clipped by the road take. The surface is level and even. The boundaries are as described above. No finds are visible in the ploughzone. The field is depicted as divided into at least 5 smaller units on the 1 <sup>st</sup> edition OS, and a cluster of buildings, presumably a farmstead, is depicted adjacent to its bottom northeast corner a short distance from the road take. The boundary to the north is part of the townland boundary between Lacken and Berkeley.		
<i>No features of potential archaeological significance were identified.</i>		

<b>Field 104/105</b>	Recently ploughed and sown	Very gentle slope from northwest to southeast
Essentially a single field, divided by a temporary track extending down the centre. The boundaries are as those described above, except a belt of mature trees is incorporated into the western boundary. A temporary fence has separated the northern half of the field, which is being grazed by cattle. The field has been recently ploughed and sown. The surface is level and even and no finds are visible in the ploughzone. The southern boundary forms part of the townland boundary between Lacken and Berkeley. The 1 <sup>st</sup> edition OS depicts the field divided		

into five smaller units with a lane extending down the centre.

*No features of potential archaeological significance were identified.*

<b>Field 106</b>	Recently ploughed and sown	Very gentle slope from south down to north
A large field under crop, with boundaries of low earthen banks overgrown with gorse and briar, with occasional hawthorn. There is a visible dip in the level at the northern end of the field, but elsewhere the surface is relatively level and even, and no finds are visible in the ploughzone. The 1 <sup>st</sup> edition OS map depicts the field divided into three smaller units. A structure is depicted just beyond the southeast corner of the field, outside the road take.		
<i>No features of potential archaeological significance were identified.</i>		

<b>Field 107</b>	Field under crop	Level
The road take clips the southeast end of a northwest-southeast field to the northwest of Field 106, currently under pasture. The boundaries are uniform with those described above, and the surface is level and even.		
<i>No features of potential archaeological significance were identified.</i>		

<b>Field 108</b>	Field under crop	Level
The road take clips the southeast corner of a crop field similar to Field 107. The surface is level and even, the boundaries are as previously described, and there are no finds visible in the ploughzone. The 1 <sup>st</sup> edition OS map depicts Fields 108 and 109 as a single unit.		
<i>No features of potential archaeological significance were identified.</i>		

<b>Field 109</b>	Field recently ploughed and sown	Very slight slope down to northeast
The road take clips the southern end of a field under crop, and identical in description to Field 108. No finds are visible in the ploughzone. The 1 <sup>st</sup> edition OS map depicts fields 108 and 109 as a single unit.		
<i>No features of potential archaeological significance were identified.</i>		

<b>Field 110</b>	Field recently ploughed and sown	Gentle slope down from southwest to northeast
A large field, recently ploughed and sown with crop. The boundaries are low earthen banks overgrown with grass, fern, briar and some hawthorn. A secondary road extends along its eastern boundary. The surface is even and well maintained. The 1 <sup>st</sup> edition OS depicts the field divided into two separate units, with the road marked to the east.		
<i>No features of potential archaeological significance were identified.</i>		

<b>Field 111</b>	Field under crop	Gentle slope down from southwest to northeast
A large field under crop, with boundaries similar to those described above, except to the north where a conifer belt borders a modern dwelling. A secondary road, marked on the 1 <sup>st</sup> edition OS map extends along the field's eastern boundary.		
<i>No features of potential archaeological significance were identified.</i>		

<b>Field 112</b>	Overgrown pasture	Level
A small overgrown field entered by a spur road extending southeast from the main road take. A narrow strip overgrown with high grass, with thick boundaries of gorse, hawthorn and fern up to 3m in depth. The townland boundary between Berkeley and Knockroe incorporates the eastern boundary of the field, a tree belt extending from a farmstead to the south. A secondary road depicted on the 1 <sup>st</sup> edition OS map extends along its western boundary.		
<i>No features of potential archaeological significance were identified.</i>		

<b>Field 113</b>	<b>Overgrown pasture</b>	<b>Level</b>
The spur road clips a fraction of the southwest corner of an overgrown pasture field to the south of Field 112. The field is similar overgrown pasture, with the townland boundary extending along its eastern end and a secondary road to the west.		
<i>No features of potential archaeological significance were identified.</i>		

<b>Field 114</b>	<b>Pasture with sheep grazing</b>	<b>Gentle slope down to north</b>
A large open pasture field, surface even, though pitted from livestock use. The boundaries are earthen banks revetted with stone and overgrown with gorse, hawthorn and briar. A secondary road extends along its western boundary, while a tree belt forms its eastern boundary. The eastern boundary is the townland boundary between Berkeley and Knockroe, crossed by the road-take. The 1 <sup>st</sup> edition OS depicts the field divided into three smaller units, with the road to the west.		
<i>No features of potential archaeological significance were identified.</i>		

<b>Field 115</b>	<b>Overgrown pasture</b>	<b>Level</b>
A small narrow strip field of scrubby pasture, overgrown and recently tenanted by cattle, and only entered by a small spur of the road in its northwest corner. A canalised stream extends along its southern boundary. Deep internal drainage ditches extend along its northern and eastern boundaries. All three boundaries have high earthen banks, revetted with stone in places, overgrown with gorse and mature hawthorn, and planted with oak. The northern boundary is also the townland boundary between Knockroe and Rathgaroge, crossed by the road take. The 1 <sup>st</sup> edition OS map depicts a farmstead two fields away to the southeast, and buildings two fields away to the east.		
<i>No features of potential archaeological significance were identified.</i>		

<b>Field 116</b>	<b>Field under pasture</b>	<b>Level</b>
A spur of the proposed road extends across the northwest corner of this pasture field. The surface is level with an overgrown area of gorse visible in the centre. The boundaries are high earthen banks (c.1.7m) overgrown with gorse, hawthorn, and planted with ash and oak. The western boundary incorporates the townland boundary between Berkeley and Knockroe. The northern boundary incorporates the stream previously described.		
<i>No features of potential archaeological significance were identified.</i>		

<b>Field 117</b>	<b>Field under pasture with cattle grazing</b>	<b>Level</b>
The road take splits into three spurs within this northwest-southeast strip field. The field is level and even, but pockmarked from cattle use. The southern boundary of the field is formed by a canalised stream, c.1.2m below the ground level, with a high bank along its southern side revetted with stone, overgrown with gorse, hawthorn and young oak. The eastern boundary is a bank similar to that above. The southwest boundary incorporates a drainage ditch. The N30 road extends along its northern boundary. The 1 <sup>st</sup> edition OS map depicts the field divided into three smaller units, with the secondary road visible.		
<i>No features of potential archaeological significance were identified. The field is located southeast of a crossroads adjacent to the listed site of a church (WX030:014) suggesting the crossroads may mark the location of a vanished settlement. The field also borders a townland boundary. (AHC 26 and 68)</i>		

<b>Field 118</b>	<b>Field under pasture</b>	<b>Level</b>
A large field bordered by the N30 road to the northwest. The surface is relatively level with a very gentle slope from north to south. The white line depicted on the Aerial Photograph is simply an erased boundary visible as decaying gorse. A canalised stream incorporated into the southeastern boundary previously described, is the townland boundary between Knockroe and Rathgaroge. The northern boundary is a low bank topped with hawthorn and briar.		
<i>No features of potential archaeological significance were identified.</i>		

<b>Field 119</b>	Field under pasture	Level
An eastern spur of the road enters a small strip field to the south of the N30. The field is under pasture, bordered by earthen banks topped with mature hawthorn trees. The field is adjacent to the first edition settlement of Whitemoore.		
<i>No features of potential archaeological significance were identified.</i>		

## D2

**GLOSSARY OF ARCHAEOLOGICAL AND ARCHITECTURAL TERMS**

Taken from Guidelines for the Assessment of Archaeological Heritage Impacts of National Road Schemes (National Roads Authority 2005) and Guidelines for the Assessment of Architectural Heritage Impacts of National Road Schemes (National Roads Authority 2005).

Anglo-Norman	Large parts of Ireland were colonised by the Anglo-Normans in the later medieval period bringing about changes in social order, land and property holding, agriculture, trade, architecture and the legal system.
ACA	Architectural Conservation Area - An architectural conservation area is a place, area, group of structures or townscape that is of special architectural, historical, archaeological, artistic, cultural, scientific, social or technical interest of contributes to the appreciation of protected structures.
Archaeology	The study of past societies through surviving structures, artefacts and environmental data.
Architectural heritage	Structures, buildings, traditional and designed, and groups of buildings including street-scapes and urban vistas, which are of historical, archaeological, artistic, engineering, scientific, social or technical interest, together with their setting, attendant grounds, fixtures, fittings and contents.
Barrow	Circular burial monument of the Bronze Age and Iron Age with a central area defined by a ditch and an external bank.
Bivallate	Two sets of ramparts.
Bronze Age	c. 2400 – 500BC the introduction of metallurgy in Ireland. A time of technological, social and economic development and change.
Burnt Mound	A spread of burnt material attributable to more than one period in antiquity.
Cairn	Mound composed of stones, sometimes with internal structures; usually a burial monument, but sometimes used as a memorial.
Cashel	A ringfort with stone instead of earthen banks.

Cist	Pits lined with stone flags containing a burial.
Cropmark	Where buried features such as ditches or walls affect the covering soil and alter the colour of surface vegetation and/or crop.
Cumulative Impact	The addition of many small impacts to create one larger, more significant impact.
DoEHLG	Department of the Environment, Heritage and Local Government.
Dún	A ringfort, usually with earthen banks, but a name also given to prehistoric ceremonial enclosures.
Earthwork	Any monument made entirely or largely of earth.
EIA	Environmental Impact Assessment - The term used to describe the process of EIA throughout its stages.
EIS	Environmental Impact Statement - A statement of the significant or likely significant effects, if any, which a proposed development, if carried out, would have on the environment.
Enclosure	Any monument consisting of an enclosing feature, such as a bank or a ditch, usually earthen, such as barrows or ringforts.
EPA	Environmental Protection Agency
Excavation	As an archaeological term, excavation means the manual and mechanical excavation by an archaeologist-led team with specific objectives as regards information, preservation, recording, etc. of archaeological information. Its purpose is to fully investigate archaeological deposits and features.
Field System	Pattern of fields, now no longer in use, sometimes visible as low earthworks and often associated with medieval or earlier settlements.
Fosse	A ditch.
<i>Fulacht fiadh</i>	Prehistoric cooking site characterised by a crescentic mound of burnt stone; usually located in damp areas, where the trench (trough) for cooking would fill with water; usually found in groups (plural;

	<i>fulachta fiadh</i> ).
Geophysics	A non-invasive survey method involving one or more of the following, earth resistance, various types of magnetometry and ground penetrating radar.
Henge	Large earthen embanked enclosure with an internal ditch and external bank.
Hillfort	Large Late Bronze Age/Iron Age defensive hilltop enclosure defined by one or more large ramparts and consisting of banks with external ditches.
Holy Well	A natural spring or well associated with a saint or a tradition of cures.
ICOMOS	International Council on Monuments and Sites - The International Council on Monuments and Sites (ICOMOS) is an organisation dedicated to the conservation of the world's historic monuments and sites. It was founded the year after the international adoption of the Charter for the Conservation and Restoration of Monuments and Sites in Venice (1964).
In Situ	In its original place.
Iron Age	c. 500 BC to c. 500 AD. Also described as the Celtic period, when influences from central Europe and Britain led to the adoption of the Celtic language and the development of an Irish style of Celtic art.
Lime kiln	A stone and brick structure utilised for the burning of lime. Mostly built in the eighteenth and nineteenth centuries when the burning of lime as an agricultural fertiliser was widespread.
Megalithic Tomb	A prehistoric tomb made of large stones or megaliths.
Mesolithic	Middle Stone Age (c. 7000-4000BC).
Mitigation	Measures taken to avoid, reduce or remedy adverse impacts.
Moated Site	An Anglo-Norman defended homestead consisting of a square or rectangular enclosure defined by a bank and a broad, flat-bottomed ditch; dating to the thirteenth and fourteenth centuries and often built in damp land in order that the moat would

	fill with water.
Motte and Bailey	An Anglo-Norman defensive structure consisting of a large, steep-sided earthen mound – the motte – with a rectangular enclosure at the base – the bailey; date from the twelfth and thirteenth centuries.
Multivallate	More than two sets of ramparts.
Neolithic	The New Stone Age c. 4000-2500BC, when agriculture and animal husbandry was developed in Ireland.
NIAH	National Inventory of Architectural Heritage - The NIAH is a unit within the Heritage and Planning Division of the DOEHLG. It was placed on a statutory footing by the Architectural Heritage (National Inventory) and Historic Monuments Act 1999.
NMAP	National Monuments and Protection Division - Now replaced by Heritage and Planning Division of Department of the Environment, Heritage and Local Government.
Occupation Site	A settlement site; the term is usually used to indicate a prehistoric site.
Passage Tomb	Megalithic tomb dating to the Neolithic period characterised by an oval or circular mound, kerbing, and a passage, often terminating with a chamber in which cremated burials were placed; often situated on hilltops.
Potential impacts	The full extent of the adverse effects before mitigation has taken effect.
Predicted impacts	The extent of the impact, the magnitude and complexity of the impact, the probability of the impact, the duration, frequency and reversibility of the impact, construction and operational impacts.
PS (Protected Structure)	Means (a) a structure, or (b) a specified part of a structure which is included in a record of protected structures, and, where that record so indicates includes, any specified feature which is within the attendant grounds of the structure and which would not otherwise be included in this definition. (Section 2 of the 2000 Planning and Development Act).

Raheen	Small fort.
Rath	A ringfort, usually with earthen banks, or with any circular enclosure.
Residual impact:	The final or intended impact after proposed mitigation measures have taken effect.
Ring Barrow	Barrow with raised or domed central area.
Ring Ditch	Barrow with flat or dished central area.
Ringfort	Early medieval (c. 500 AD to 1100) defended secular settlement consisting of a bank and external ditch defining a central circular area that contained dwelling structures of occupants; also called fairy fort, rath, lios, or cashel (the latter constructed of stone as opposed to earth).
RPS (Record of Protected Structures)	For the purpose of protecting structures, which form part of the architectural heritage and which are of special architectural, historical, archaeological, artistic, cultural, scientific, social or technical interest, every development plan shall include a record of protected structures and shall include in that record every structure which is, in the opinion of the planning authority, of such interest within its functional area (Section 51 (1) of the 2000 Planning and Development Act).
Souterrain	Underground passages, probably built for storage purposes or possibly as temporary refuges; often associated with ringforts.
Standing Stone	Upright stone, usually single but sometimes in pairs or groups. They can be shaped or natural and are usually dated to the Bronze Age but occasionally to the Neolithic. Used to mark routes, sacred areas, boundaries or, occasionally, burials.
Suitably Qualified Archaeologist	An experience field archaeologist that has the suitable experience as deemed necessary by the National Monuments Section of the Department of the Environment, Heritage and Local Government.
Test Excavation	A form of archaeological excavation where the purpose is to establish the nature and extent of archaeological deposits and features present in a location that is proposed for development. Its purpose is not to fully investigate those deposits or features.

Test Trenching	See test excavation.
Tower House	Small castle, usually of three storeys, dating from the fourteenth to sixteenth centuries.
Tumulus	Burial mound composed of earth, sometimes with internal structures.
Uncoursed	Masonry laid in a random form.
UNESCO	United Nations Educational, Scientific and Cultural Organisation.
Univallate	Single set of ramparts.

**D3****RECORDED SHIPWRECKS IN THE VICINITY OF THE PROPOSED DEVELOPMENT**

Name	Details
Love Increases	The Bristol ship was lost after taking provisions to Duncannon Fort. She came under orders of the Marquis of Ormonde and was lost while supporting the army. Her owner was John Moodey, and her master was John Webb. Thirteen crewmen sought compensation for lossees Date: 05/04/1643 Location: River of Rosse (Barrow?)
Unknown      Wooden River Barge	The remains of a wooden river barge containing a cargo of paving stone were located at Lucy Point, 700m north of Pink Point, during a survey conducted in 1998.
Unknown      Wooden Vessel	The remains of a wooden cessel were located at Ferry Point, south of Pink Point, during a survey conducted in 1998 (see Route Selection Report).



**D4****INVENTORY OF ARCHAEOLOGICAL SITES AND SITES OF  
ARCHAEOLOGICAL POTENTIAL**

<b>Identification No.</b>	<b>1</b>
<b>Legal Status</b>	-
<b>Reference Number</b>	-
<b>County</b>	Kilkenny
<b>Townland</b>	Ballyverneen
<b>OS Sheet No.</b>	Kilkenny 41
<b>Field No.</b>	12/13
<b>Site Type</b>	Curving field boundary
<b>NGR</b>	268267, 123187
<b>Description</b>	Curving field boundary on the border of field 12 and 13. Possibly modern but may merit further investigation.
<b>Sources</b>	Field survey
<b>Approximate Distance from Route Centreline.</b>	7m
<b>Type of impact</b>	Direct, potentially significant impact.
<b>Mitigation Measures</b>	Geophysics and site specific test excavation will be undertaken prior to development to determine if archaeological features survive within the road take.
<b>Identification No.</b>	<b>2</b>
<b>Legal Status</b>	-
<b>Reference Number</b>	-
<b>County</b>	Kilkenny
<b>Townland</b>	Ballyvernee
<b>OS Sheet No.</b>	Kilkenny 41
<b>Field No.</b>	12/13
<b>Site Type</b>	River Crossing
<b>NGR</b>	268482, 123203
<b>Description</b>	Shown on OS maps as the 'Pink Point' may have local significance. Western bank and rock face of the River Barrow The river is a focal point in the development of the area, waterlogged deposits also increase the probability of preserved organic deposits. See Route Selection Report, Figure 27.12a
<b>Sources</b>	OS 1 <sup>st</sup> and 3 <sup>rd</sup> editions Sheet 41 and Field survey
<b>Approximate Distance from Route Centreline.</b>	16m
<b>Type of impact</b>	Direct, potentially significant impact.
<b>Mitigation Measures</b>	A survey of the rock face to identify features mentioned in MAU report 2001.
<b>Identification No.</b>	<b>3</b>
<b>Legal Status</b>	-

<b>Reference Number</b>	-
<b>County</b>	Wexford
<b>Townland</b>	Stokestown
<b>OS Sheet No.</b>	Wexford 34
<b>Field No.</b>	14
<b>Site Type</b>	River crossing
<b>NGR</b>	268813, 123248
<b>Description</b>	River bank eastern. Eastern bank of the River Barrow The river is a focal point in the development of the area, waterlogged deposits also increase the probability of preserved organic deposits.
<b>Sources</b>	Field survey
<b>Approximate Distance from Route Centreline.</b>	12m
<b>Type of impact</b>	Direct, potentially significant impact.
<b>Mitigation Measures</b>	Underwater archaeological assessment has been undertaken, no further mitigation will be required.
<b>Identification No.</b>	5
<b>Legal Status</b>	-
<b>Reference Number</b>	-
<b>County</b>	Wexford
<b>Townland</b>	Stokestown
<b>OS Sheet No.</b>	Wexford 34
<b>Field No.</b>	Field 21 just north
<b>Site Type</b>	Possible monument off aerial photographs.
<b>NGR</b>	269772, 123724
<b>Description</b>	Extremely circular garden with mature border of trees just north of field 21. The garden is similar in size and shape to a ringfort. The site is located just off the northern limits of the road take and is occupied by modern settlement. Road take is extremely close to the possible feature increasing the potential for archaeology.
<b>Sources</b>	Aerial photographs
<b>Approximate Distance from Route Centreline.</b>	90m
<b>Type of impact</b>	Indirect, moderate impact.
<b>Mitigation Measures</b>	Geophysics and site specific test excavation will be undertaken prior to development to determine if archaeological features survive within the road take.
<b>Identification No.</b>	13
<b>Legal Status</b>	-
<b>Reference Number</b>	-
<b>County</b>	Wexford
<b>Townland</b>	Arnestown
<b>OS Sheet No.</b>	Wexford 34
<b>Field No.</b>	55
<b>Site Type</b>	Possible mounds

<b>NGR</b>	274219, 125791
<b>Description</b>	A low hillock matching the location of two semi-circular hachured features shown on the 3 <sup>rd</sup> edition OS. Possibly a modern agricultural feature. Located directly within the road take but may not be archaeological.
<b>Sources</b>	Field survey
<b>Approximate Distance from Route Centreline.</b>	1m
<b>Type of impact</b>	Direct, potentially significant impact.
<b>Mitigation Measures</b>	Geophysics and site specific test excavation will be undertaken prior to development to determine if archaeological features survive within the road take.
<b>Identification No.</b>	17
<b>Legal Status</b>	-
<b>Reference Number</b>	-
<b>County</b>	Wexford
<b>Townland</b>	Ryleen
<b>OS Sheet No.</b>	Wexford 29
<b>Field No.</b>	66
<b>Site Type</b>	Settlement location (1 <sup>st</sup> edition)
<b>NGR</b>	275094, 126729
<b>Description</b>	Settlement shown on the 1 <sup>st</sup> edition OS. Located within a cluster of AHC dating to the 19 <sup>th</sup> century (AHC 14, 15, 16 18 and 51) as well as being close to a townland boundary possibly indicating an axis of settlement. Road take appears to directly cross the site of the AHC.
<b>Sources</b>	1 <sup>st</sup> edition OS 6" Sheet 29
<b>Approximate Distance From Route Centreline.</b>	3m
<b>Type of impact</b>	Direct, moderate impact.
<b>Mitigation Measures</b>	Geophysical investigation of feature will be undertaken prior to construction.
<b>Identification No.</b>	20
<b>Legal Status</b>	-
<b>Reference Number</b>	-
<b>County</b>	Wexford
<b>Townland</b>	Ryleen
<b>OS Sheet No.</b>	Wexford 29
<b>Field No.</b>	73
<b>Site Type</b>	Possible enclosure off aerial photograph
<b>NGR</b>	275438, 126908
<b>Description</b>	Circular enclosure appearing as a faint crop mark just outside the road-take, the enclosure is directly beside a second clearer circular shape. However this is more likely to be modern such as cattle trampling around a feeder.
<b>Sources</b>	Aerial photographs
<b>Approximate Distance from</b>	101m

<b>Route Centreline.</b>	
<b>Type of impact</b>	No predicted Impact
<b>Mitigation Measures</b>	No further mitigation measures will be required.
<hr/>	
<b>Identification No.</b>	22
<b>Legal Status</b>	RMP
<b>Reference Number</b>	WX030:029
<b>County</b>	Wexford
<b>Townland</b>	Lacken
<b>OS Sheet No.</b>	Wexford 30
<b>Field No.</b>	92
<b>Site Type</b>	Castle site
<b>NGR</b>	276620, 128280
<b>Description</b>	RMP known as a castle site and marked on the 1 <sup>st</sup> edition OS. The RMP is directly south of a farmstead marked on the 1 <sup>st</sup> edition OS (AHC 58). A ringfort WX030:030, (AHC 23) is located directly northeast of the site in the adjacent field (field 93) and a second ringfort is located 200m to the northwest of the field (WX039:020) outside the road take (AHC 59). There is a high probability that remains will be encountered in this field. The surrounding sites and farmstead indicate this site provided a long term axis of settlement. A road running adjacent to field 92 may also be of medieval origin. The castle site may be marked by a series of low hummocks in the field however these may also be a result of modern reclamation or dumping activities. Surrounding fields 91-96 should also be considered in mitigation.
<b>Sources</b>	RMP
<b>Approximate Distance from Route Centreline.</b>	0m
<b>Type of impact</b>	Direct, profound impact.
<b>Mitigation Measures</b>	Geophysics and site specific test excavation will be undertaken prior to development to determine if archaeological features survive within the road take.
<hr/>	
<b>Identification No.</b>	23
<b>Legal Status</b>	RMP
<b>Reference Number</b>	WX030:030
<b>County</b>	Wexford
<b>Townland</b>	Lacken
<b>OS Sheet No.</b>	Wexford 30
<b>Field No.</b>	93
<b>Site Type</b>	Earthwork site
<b>NGR</b>	276740, 128390
<b>Description</b>	Ringfort located directly northeast of an existing farmstead that dates to the first edition OS (AHC 53) and a castle site (RMP WX030:029, AHC 22). A second ringfort (AHC 59) is also located in close proximity due east (WX030:020) beside a possible medieval road. The monument may form part of an axis of continued settlement with the other sites and the probability of encountering archaeology is extremely high. Mitigation should also be applied to the surrounding fields of 91-96.

<i>Sources</i>	RMP
<i>Approximate Distance from Route Centreline.</i>	0m
<i>Type of impact</i>	Direct, profound impact.
<i>Mitigation Measures</i>	Geophysics and site specific test excavation will be undertaken prior to development to determine if archaeological features survive within the road take.
<i>Identification No.</i>	<b>24</b>
<i>Legal Status</i>	-
<i>Reference Number</i>	-
<i>County</i>	Wexford
<i>Townland</i>	Lacken
<i>OS Sheet No.</i>	Wexford 30
<i>Field No.</i>	97
<i>Site Type</i>	Settlement location (1 <sup>st</sup> edition)
<i>NGR</i>	276794, 128771
<i>Description</i>	Shown on the first edition as containing settlement in the north east corner of the field with a laneway extending north. This may be related to features in the field directly adjacent. This contains RMP (WX030:031, AHC 61) which upon inspection appeared more consistent with a planted estate feature than an enclosure. This consists of an enclosed feature and associated laneway, a small stone structure was also visible in this field but will not be directly impacted. The site is also proximal to AHC 25. The road take appears to directly cross the site of the AHC.
<i>Sources</i>	1 <sup>st</sup> edition OS 6" Sheet 30
<i>Approximate Distance From Route Centreline.</i>	31m
<i>Type of impact</i>	Direct, moderate impact.
<i>Mitigation Measures</i>	Geophysical investigation will be undertaken prior to construction.
<i>Identification No.</i>	<b>25</b>
<i>Legal Status</i>	-
<i>Reference Number</i>	-
<i>County</i>	Wexford
<i>Townland</i>	Lacken
<i>OS Sheet No.</i>	Wexford 30
<i>Field No.</i>	99
<i>Site Type</i>	Settlement location (1 <sup>st</sup> edition)
<i>NGR</i>	276783, 128873
<i>Description</i>	First edition OS depicts a small structure towards the southern boundary of the field. Subsequent editions of the OS and aerial photographs do not show the structure. The site is also proximal to AHC 25 and 61, possibly indicating an axis of settlement. The road take appears to cross the site of the AHC.
<i>Sources</i>	1 <sup>st</sup> edition OS 6" Sheet 30
<i>Approximate Distance From</i>	64m

**Route Centreline.**

<b>Type of impact</b>	Indirect, moderate impact.
<b>Mitigation Measures</b>	Geophysical investigation of feature will be undertaken prior to construction.

<b>Identification No.</b>	<b>27</b>
<b>Legal Status</b>	RMP
<b>Reference Number</b>	RPS
	WX034:015
	WCC0719
<b>County</b>	Wexford
<b>Townland</b>	Strokestown
<b>OS Sheet No.</b>	Wexford 34
<b>Field No.</b>	Just north of Field 20
<b>Site Type</b>	Tower house
<b>NGR</b>	269400, 123690
<b>Description</b>	Strokestown Castle consisting of a tower house and 19 <sup>th</sup> century stable yard bonded into the original buildings fabric. Monument is probably related to AHC4, AHC 6, AHC 28 and AHC 29. Monument is extremely close to the road take but should not be directly effected. The building is listed as a protected structure under the Wexford Development Plan 2001.
<b>Sources</b>	RMP
<b>Approximate Distance from Route Centreline.</b>	10m
<b>Type of impact</b>	Direct, significant impact.
<b>Mitigation Measures</b>	Geophysics and site specific test excavation will be undertaken prior to development to determine if archaeological features survive within the road take.

<b>Identification No.</b>	<b>59</b>
<b>Legal Status</b>	RMP
<b>Reference Number</b>	WX029:020
<b>County</b>	Wexford
<b>Townland</b>	Lacken
<b>OS Sheet No.</b>	Wexford 30
<b>Field No.</b>	East of Field 94
<b>Site Type</b>	RMP
<b>NGR</b>	276470, 126410
<b>Description</b>	Enclosure measuring c. 28m in diameter, defined by a degraded bank and external fosse. Should not be directly effected by the road take however this area is within a possible axis of settlement and should be considered as of high archaeological potential, see also AHC 22, 23 and 58
<b>Sources</b>	RMP
<b>Approximate Distance from Route Corridor.</b>	33m
<b>Type of impact</b>	Direct, significant impact.
<b>Mitigation Measures</b>	Geophysics and site specific test excavation will be undertaken prior to development to determine if archaeological features survive within the

	road take.
<b>Identification No.</b>	<b>61</b>
<b>Legal Status</b>	RMP
<b>Reference Number</b>	WX030:031
<b>County</b>	Wexford
<b>Townland</b>	Lacken
<b>OS Sheet No.</b>	Wexford 30
<b>Field No.</b>	East of Field 97
<b>Site Type</b>	Enclosure
<b>NGR</b>	276969, 126840
<b>Description</b>	Enclosure measuring c. 40m by 30m defined by a ditch, possible related features around it such as a stone footing and estate laneway. Possibly a large demesne feature. The site is also close to AHC 24 and 25 and may indicate an axis of settlement. High likelihood of encountering archaeology in this area.
<b>Sources</b>	RMP
<b>Approximate Distance from Route Centreline.</b>	53m
<b>Type of impact</b>	Indirect, moderate impact.
<b>Mitigation Measures</b>	Geophysics and site specific test excavation will be undertaken prior to development to determine if archaeological features survive within the road take.
<b>Identification No.</b>	<b>68</b>
<b>Legal Status</b>	RMP
<b>Reference Number</b>	WX030:014
<b>County</b>	Wexford
<b>Townland</b>	Rathgaroge
<b>OS Sheet No.</b>	Wexford 30
<b>Field No.</b>	North west of Field 117
<b>Site Type</b>	Enclosure site
<b>NGR</b>	277240, 130390
<b>Description</b>	Chapel site marked on the first edition of the OS, no remains at ground level although the site is evident on some aerial photographs. Proximal to road take but should not be directly effected. Possibly indicative of an axis of settlement centred around Corcorans crossroads (AHC 26) and proximal first edition settlement (AHC 71). The boundaries of the adjoining field (117) also form an axis of the townland boundaries of Rathgaroge, Berkeley and Knockroe. High archaeological potential.
<b>Sources</b>	RMP
<b>Approximate Distance from Route Centreline.</b>	0m
<b>Type of impact</b>	Direct, profound impact.
<b>Mitigation Measures</b>	Geophysics and site specific test excavation will be undertaken prior to development to determine if archaeological features survive within the road take.

<b>Identification No.</b>	<b>69</b>
<b>Legal Status</b>	RMP
<b>Reference Number</b>	WX030:077
<b>County</b>	Wexford
<b>Townland</b>	Rathgaroge
<b>OS Sheet No.</b>	Wexford 30
<b>Field No.</b>	North west of Field 117
<b>Site Type</b>	Fulachta Fidh
<b>NGR</b>	277150, 130380
<b>Description</b>	Fulacht site measuring c. 9m by 7m, visible as black soil after ploughing.
<b>Sources</b>	RMP
<b>Approximate Distance from Route Centreline.</b>	30m
<b>Type of impact</b>	Direct, significant impact.
<b>Mitigation Measures</b>	Geophysics and site specific test excavation will be undertaken prior to development to determine if archaeological features survive within the road take.

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<b>Identification No.</b>	<b>72</b>
<b>Legal Status</b>	-
<b>Reference Number</b>	-
<b>County</b>	Wexford
<b>Townland</b>	Arnestown
<b>OS Sheet No.</b>	Wexford 29
<b>Field No.</b>	59
<b>Site Type</b>	Possible Mounds
<b>NGR</b>	274344, 125998
<b>Description</b>	Hillocks and mounds located in field 59, the majority appear to be natural. One smaller example may be archaeological. The mounds are located on a plateau which is close to a stream which also marks a townland boundary and is typical terrain for fulachts.
<b>Sources</b>	Field survey
<b>Approximate Distance from Route Centreline.</b>	61m
<b>Type of impact</b>	Indirect, moderate impact.
<b>Mitigation Measures</b>	Geophysics and site specific test excavation will be undertaken prior to development to determine if archaeological features survive within the road take.

D5

## INVENTORY OF ARCHITECTURAL HERITAGE SITES

<b>Identification No.</b>	<b>4</b>
<b>Legal Status</b>	-
<b>Reference Number</b>	-
<b>County</b>	Wexford
<b>Townland</b>	Stokestown
<b>OS Sheet No.</b>	Wexford 34
<b>Field No.</b>	19
<b>Site Type</b>	Estate garden feature
<b>NGR</b>	269340, 123541
<b>Description</b>	Walled garden feature probably associated with Stokestown Demesne. Stokestown Demesne (AHC 29) occupies fields 15-23 which may increase the likelihood of archaeological features. Proximal to Stokestown Castle, Turret and Lodge (AHC 6, 27 and 28). Road abuts the garden which is related to a series of other AHC.
<b>Sources</b>	Field survey; National Inventory of Architectural Heritage Survey of Historic Gardens and Designed Landscapes Refs. WX-76-S-694237 and WX-75-S-698243, Rowe, D. 2004. The Houses of Wexford. Ballinakella Press, County Clare
<b>Approximate Distance from Route Centreline.</b>	60m
<b>Type of impact</b>	Indirect, moderate impact.
<b>Mitigation Measures</b>	Geophysical investigation and architectural recording of feature will be undertaken prior to construction.

<b>Identification No.</b>	<b>6</b>
<b>Legal Status</b>	RPS
<b>Reference Number</b>	WCC0718
<b>County</b>	Wexford
<b>Townland</b>	Stokestown
<b>OS Sheet No.</b>	Wexford 34
<b>Field No.</b>	21
<b>Site Type</b>	Folly
<b>NGR</b>	269823, 123592
<b>Description</b>	Folly tower depicted on the 1 <sup>st</sup> edition OS and listed as a protected structure under Wexford County Development Plan.
<b>Sources</b>	Wexford County Development Plan; National Inventory of Architectural Heritage Survey of Historic Gardens and Designed Landscapes Refs. WX-76-S-694237 and WX-75-S-698243. Rowe, D. 2004. The Houses of Wexford. Ballinakella Press, County Clare
<b>Approximate Distance From Route Centreline.</b>	53m.
<b>Type of impact</b>	Indirect, significant impact.
<b>Mitigation Measures</b>	Retention of structure in situ.

<b>Identification No.</b>	<b>8</b>
<b>Legal Status</b>	-
<b>Reference Number</b>	-
<b>County</b>	Wexford
<b>Townland</b>	Creakan upper
<b>OS Sheet No.</b>	Wexford 34
<b>Field No.</b>	44/43
<b>Site Type</b>	Stone structure
<b>NGR</b>	272579, 124873
<b>Description</b>	Stone structure in fields north boundary. The structure was so overgrown it was impossible to tell if it was a demesne wall or actual structure. 1 <sup>st</sup> edition settlement, (AHC 35 and 36) is located proximal and may be related. Road take will clip the feature and as such the vegetation should be cleared and the nature of the masonry exposed.
<b>Sources</b>	Field survey
<b>Approximate Distance From Route Centreline.</b>	66m
<b>Type of impact</b>	Indirect, moderate impact.
<b>Mitigation Measures</b>	Architectural recording of feature will be undertaken prior to construction.
<b>Identification No.</b>	<b>11</b>
<b>Legal Status</b>	-
<b>Reference Number</b>	-
<b>County</b>	Wexford
<b>Townland</b>	Arnestown
<b>OS Sheet No.</b>	Wexford 34
<b>Field No.</b>	50
<b>Site Type</b>	Estate garden feature
<b>NGR</b>	273685, 125228
<b>Description</b>	Road take crosses Arnestown estate (AHC 42) in close proximity to Arnestown House (AHC 41). A rectangular feature probably a garden is depicted on the first edition. Road take directly crosses the feature depicted on the 1 <sup>st</sup> edition.
<b>Sources</b>	1 <sup>st</sup> edition OS 6" Sheet 34; National Inventory of Architectural Heritage Survey of Historic Gardens and Designed Landscapes Refs. WX-76-S-738252. Rowe, D. 2004. The Houses of Wexford. Ballinakella Press, County Clare
<b>Approximate Distance From Route Centreline.</b>	6m
<b>Type of impact</b>	Direct, moderate impact.
<b>Mitigation Measures</b>	Geophysical investigation of feature will be undertaken prior to construction.
<b>Identification No.</b>	<b>12</b>
<b>Legal Status</b>	-
<b>Reference Number</b>	-
<b>County</b>	Wexford

<i>Townland</i>	Arnestown
<i>OS Sheet No.</i>	Wexford 34
<i>Field No.</i>	52
<i>Site Type</i>	Settlement (1 <sup>st</sup> edition)
<i>NGR</i>	273685, 125228
<i>Description</i>	Large derelict 19 <sup>th</sup> century series of buildings. Located just north of the road take in the northwest corner of the field. Buildings are proximal to the road scheme. Rowe, D. 2004. The Houses of Wexford. Ballinakella Press, County Clare
<i>Sources</i>	1 <sup>st</sup> edition OS 6" Sheet 34
<i>Approximate Distance From Route Centreline.</i>	86m
<i>Type of impact</i>	Indirect, moderate impact.
<i>Mitigation Measures</i>	Architectural recording of feature will be undertaken prior to construction.
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<i>Identification No.</i>	14
<i>Legal Status</i>	-
<i>Reference Number</i>	-
<i>County</i>	Wexford
<i>Townland</i>	Ballymacar
<i>OS Sheet No.</i>	Wexford 29
<i>Field No.</i>	61/62
<i>Site Type</i>	Bridge
<i>NGR</i>	274733, 126484
<i>Description</i>	Stone bridge shown on the first OS, located just south of the existing N25. Bridge is located just east of a handsome 19 <sup>th</sup> century stone cottage and may mark an earlier crossing point. A series of 19 <sup>th</sup> century settlement (AHC 15-18) as well as a townland boundary is located just to the north. This may be a continuous axis of settlement. Road take directly crosses the bridge but appears not to directly effect the small cottage.
<i>Sources</i>	1 <sup>st</sup> edition 1 <sup>st</sup> edition OS 6" Sheet 29
<i>Approximate Distance From Route Centreline.</i>	12m
<i>Type of impact</i>	Direct, significant impact.
<i>Mitigation Measures</i>	Architectural recording of feature will be undertaken prior to construction.
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<i>Identification No.</i>	15
<i>Legal Status</i>	-
<i>Reference Number</i>	-
<i>County</i>	Wexford
<i>Townland</i>	Ballymacar
<i>OS Sheet No.</i>	Wexford 29
<i>Field No.</i>	63
<i>Site Type</i>	Settlement location and structure (1 <sup>st</sup> edition)
<i>NGR</i>	274850, 126536
<i>Description</i>	Small structure adjacent to the southern boundary marked on the OS 1 <sup>st</sup>

edition. Proximal to surrounding 19<sup>th</sup> century settlement AHC 16-18, AHC 51 as well as Ballymacar bridge (AHC 14) and is located close to a townland boundary possibly indicating an older axis of settlement. Road appears to cross AHC location.

<i>Sources</i>	1 <sup>st</sup> edition OS 6" Sheet 29
<i>Approximate Distance From Route Centreline.</i>	9m
<i>Type of impact</i>	Direct, moderate impact.
<i>Mitigation Measures</i>	Architectural recording of feature will be undertaken prior to construction.

<i>Identification No.</i>	16
<i>Legal Status</i>	-
<i>Reference Number</i>	-
<i>County</i>	Wexford
<i>Townland</i>	Ryleen
<i>OS Sheet No.</i>	Wexford 29
<i>Field No.</i>	65
<i>Site Type</i>	Settlement location (1 <sup>st</sup> edition)
<i>NGR</i>	275043, 126530
<i>Description</i>	Settlement shown on the 1 <sup>st</sup> edition OS, accessed by a tree lined avenue. Located within a cluster of AHC dating to the 19 <sup>th</sup> century (AHC 14, 15, 17 18 and 51) as well as close to a townland boundary possibly indicating an axis of settlement.
<i>Sources</i>	1 <sup>st</sup> edition OS 6" Sheet 29
<i>Approximate Distance From Route Centreline.</i>	100m
<i>Type of impact</i>	No predicted impact
<i>Mitigation Measures</i>	No further mitigation measures will be required.

<i>Identification No.</i>	18
<i>Legal Status</i>	-
<i>Reference Number</i>	-
<i>County</i>	Wexford
<i>Townland</i>	Ryleen
<i>OS Sheet No.</i>	Wexford 29
<i>Field No.</i>	67
<i>Site Type</i>	Settlement location (1 <sup>st</sup> edition)
<i>NGR</i>	275094, 126729
<i>Description</i>	Possible farm outbuildings shown on the 1 <sup>st</sup> edition OS. . Located within a cluster of AHC dating to the 19 <sup>th</sup> century (AHC 14, 15, 16 17 and 51) as well as being close to a townland boundary possibly indicating an axis of settlement. Road take appears to directly cross the site of the AHC
<i>Sources</i>	1 <sup>st</sup> edition OS 6" Sheet 29
<i>Approximate Distance From Route Centreline.</i>	42m

<i>Type of impact</i>	Direct, moderate impact.
<i>Mitigation Measures</i>	Architectural recording of feature will be undertaken prior to construction.
<i>Identification No.</i>	19
<i>Legal Status</i>	-
<i>Reference Number</i>	-
<i>County</i>	Wexford
<i>Townland</i>	Ryleen
<i>OS Sheet No.</i>	Wexford 29
<i>Field No.</i>	71/74
<i>Site Type</i>	Settlement location (1 <sup>st</sup> edition)
<i>NGR</i>	275479, 126700
<i>Description</i>	Settlement shown on the 1 <sup>st</sup> edition of the OS, modern settlement still survives on the site. Settlement is proximal to a cluster of possible archaeological sites.
<i>Sources</i>	1 <sup>st</sup> edition OS 6" Sheet 29
<i>Approximate Distance From Route Centreline.</i>	102m
<i>Type of impact</i>	No predicted impact
<i>Mitigation Measures</i>	No further mitigation measures will be required.
<i>Identification No.</i>	26
<i>Legal Status</i>	-
<i>Reference Number</i>	-
<i>County</i>	Wexford
<i>Townland</i>	Rathgaroge
<i>OS Sheet No.</i>	Wexford 30
<i>Field No.</i>	117
<i>Site Type</i>	Crossroads (1 <sup>st</sup> edition) with adjacent structures
<i>NGR</i>	277248, 130303
<i>Description</i>	Corcoran's crossroads shown on the 1 <sup>st</sup> edition of the OS. The crossroads are likely to have an attached nucleus of settlement as indicated by the chapel site (AHC 68, WX030:014) and proximal settlement (AHC 71). The boundaries of the adjoining field (117) also form an axis of the townland boundaries of Rathgaroge, Berkeley and Knockroe.
<i>Sources</i>	1 <sup>st</sup> edition OS 6" Sheet 30
<i>Approximate Distance From Route Centreline.</i>	30m
<i>Type of impact</i>	Direct, moderate impact.
<i>Mitigation Measures</i>	Architectural recording of features will be undertaken prior to construction.
<i>Identification No.</i>	29
<i>Legal Status</i>	-
<i>Reference Number</i>	-

<i>County</i>	Wexford
<i>Townland</i>	Strokestown
<i>OS Sheet No.</i>	Wexford 34
<i>Field No.</i>	14-23
<i>Site Type</i>	Estate
<i>NGR</i>	269400, 123690
<i>Description</i>	Strokestown Estate marked clearly on the first edition. Associated to AHC 4, 6, 27 and 28. The road runs directly through the estate fields 14-23.
<i>Sources</i>	1 <sup>st</sup> edition OS 6" Sheet 34; National Inventory of Architectural Heritage Survey of Historic Gardens and Designed Landscapes Refs. WX-76-S-694237 and WX-75-S-698243. Rowe, D. 2004. The Houses of Wexford. Ballinakella Press, County Clare
<i>Approximate Distance From Route Centreline.</i>	0m
<i>Type of impact</i>	Direct, significant impact.
<i>Mitigation Measures</i>	Geophysical investigation of feature will be undertaken prior to construction.
<i>Identification No.</i>	31
<i>Legal Status</i>	-
<i>Reference Number</i>	-
<i>County</i>	Wexford
<i>Townland</i>	Landscape
<i>OS Sheet No.</i>	Wexford 34
<i>Field No.</i>	24-25
<i>Site Type</i>	Estate
<i>NGR</i>	270628, 123593
<i>Description</i>	Landscape estate. Related to AHC 7 and AHC 30. The road runs through the estate from field 24-25.
<i>Sources</i>	1 <sup>st</sup> edition OS 6" Sheet 34; National Inventory of Architectural Heritage Survey of Historic Gardens and Designed Landscapes Refs. WX-76-S-705236. Rowe, D. 2004. The Houses of Wexford. Ballinakella Press, County Clare
<i>Approximate Distance From Route Centreline.</i>	0m
<i>Type of impact</i>	Direct, significant impact.
<i>Mitigation Measures</i>	Geophysical investigation of feature will be undertaken prior to construction.
<i>Identification No.</i>	42
<i>Legal Status</i>	-
<i>Reference Number</i>	-
<i>County</i>	Wexford
<i>Townland</i>	Arnestown
<i>OS Sheet No.</i>	Wexford 34
<i>Field No.</i>	50
<i>Site Type</i>	Estate (1 <sup>st</sup> edition)

<b>NGR</b>	273898, 124651
<b>Description</b>	Arnestown estate still partially preserved in field boundaries and shown clearly on the 1 <sup>st</sup> edition OS. Possibly related to AHC 11 and 41. Road take crosses the estate in field 50. The potential is higher for encountering archaeology in this area, see also AHC 11.
<b>Sources</b>	1 <sup>st</sup> edition OS 6" Sheet 34; 1 <sup>st</sup> edition OS 6" Sheet 34; National Inventory of Architectural Heritage Survey of Historic Gardens and Designed Landscapes Refs. WX-76-S-738252. Rowe, D. 2004. The Houses of Wexford. Ballinakella Press, County Clare
<b>Approximate Distance From Route Centreline.</b>	0m
<b>Type of impact</b>	Direct, significant impact.
<b>Mitigation Measures</b>	Geophysical investigation of feature will be undertaken prior to construction.
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<b>Identification No.</b>	58
<b>Legal Status</b>	-
<b>Reference Number</b>	-
<b>County</b>	Wexford
<b>Townland</b>	Lacken
<b>OS Sheet No.</b>	Wexford 30
<b>Field No.</b>	West of Field 54
<b>Site Type</b>	Settlement (1 <sup>st</sup> edition)
<b>NGR</b>	276618, 128378
<b>Description</b>	Settlement shown on the first edition of the OS. Settlement still survives on the site. The settlement is in close proximity to AHC 22, 57 and 58 (three listed monuments). Will not be directly effected by the road take The proximity of the road take to the settlement may however increase the potential of encountering archaeology. This area is also within a possible axis of settlement, see also AHC 22, 23 and 59.
<b>Sources</b>	1 <sup>st</sup> edition OS 6" Sheet 30
<b>Approximate Distance From Route Centreline.</b>	53m
<b>Type of impact</b>	Indirect, moderate impact.
<b>Mitigation Measures</b>	Architectural recording of feature will be undertaken prior to construction.