

Summer 2023

Regional Water Resources Plan

North West

Strategic Environmental
Assessment

Environmental Report

Appendices A - G



Tionscadal Éireann
Project Ireland
2040



Data disclaimer: This document uses best available data at time of writing. Some sources may have been updated in the interim period. As data relating to population forecasts and trends are based on information gathered before the Covid 19 Pandemic, monitoring and feedback will be used to capture any updates. The National Water Resources Plan will also align to relevant updates in applicable policy documentation. In December 2022, the Water Services (Amendment) (No. 2) Act, 2022 was signed into law. This act provides that, from the 31 December 2022, Irish Water will only be known as Uisce Éireann. It also provides that, from that date, all references in any enactment, legal proceedings or other document to Irish Water shall be construed as references to Uisce Éireann only. The SEA Environmental Report and Appendices reflect this transition from Irish Water to Uisce Éireann.

Baseline data included in the RWRP-NW has been incorporated from numerous sources including but not limited to; National Planning Framework, Central Statistics Office, Regional Spatial and Economic Strategies, Local Authority data sets, Regional Assembly data sets and Uisce Éireann data sets. Data sources will be detailed in the relevant sections of the RWRP-NW. 2019 was selected as the base year to align with the planning period (2019-2025) of the NWRP.

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Figure 5.5b Biodiversity Context: Overview

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Figure 5.8b Northern Ireland Baseline: Surface Water Overview

Figure 5.8c Northern Ireland Baseline: Cultural Heritage

Biodiversity Figure Index Keys			
Designated Site	Label	Designated Site	Label
Figure 5.5a – Special Areas of Conservation			
Hempton's Turbot Bank SAC	1	Drumalough Bog SAC	110
Inishtrahull SAC	2	Annaghmore Lough (Roscommon) SAC	111
North Inishowen Coast SAC	3	Carrowbehy/Caher Bog SAC	112
Tory Island Coast SAC	4	Oldhead Wood SAC	113
Ballyhoorisky Point To Fanad Head SAC	5	Ballinafad SAC	114
Kindrum Lough SAC	6	Cloonchambers Bog SAC	115
Tranarossan And Melmore Lough SAC	7	Brackloon Woods SAC	116
Lough Nagreany Dunes SAC	8	Lough Forbes Complex SAC	117
Magheradrumman Bog SAC	9	Mullygollan Turlough SAC	118
Horn Head And Rinclevan SAC	10	Lough Cahasy, Lough Baun And Roonah Lough SAC	119
Mulroy Bay SAC	11	Brown Bog SAC	120
Sessiagh Lough SAC	12	Towerhill House SAC	121
Sheephaven SAC	13	Ardagullion Bog SAC	122

Biodiversity Figure Index Keys			
Designated Site	Label	Designated Site	Label
Ballyness Bay SAC	14	Cross Lough (Killadoon) SAC	123
Muckish Mountain SAC	15	Moore Hall (Lough Carra) SAC	124
Gweedore Bay And Islands SAC	16	Corliskea/Trien/Cloonfelliv Bog SAC	125
Lough Swilly SAC	17	Coolcam Turlough SAC	126
Fawnboy Bog/Lough Nacung SAC	18	Croaghill Turlough SAC	127
Ballyarr Wood SAC	19	Mweelrea/Sheeffry/Erriff Complex SAC	128
Leannan River SAC	20	Mount Jessop Bog SAC	129
Aran Island (Donegal) Cliffs SAC	21	Carrowkeel Turlough SAC	130
Cloghernagore Bog And Glenveagh National Park SAC	22	Corbo Bog SAC	131
Rutland Island And Sound SAC	23	Williamstown Turloughs SAC	132
Termon Strand SAC	24	Kilsallagh Bog SAC	133
Gannivegil Bog SAC	25	Inishbofin And Inishshark SAC	134
Meentygrannagh Bog SAC	26	Lough Carra/Mask Complex SAC	135
Coolvoy Bog SAC	27	Kilglassan/Caheravoostia Turlough Complex SAC	136
West Of Ardara/Maas Road SAC	28	Rusheenduff Lough SAC	137
River Finn SAC	29	Lisnageeragh Bog and Ballinastack Turlough SAC	138
Meenaguse Scragh SAC	30	Fortwilliam Turlough SAC	139
Lough Nillan Bog (Carrickatlieve) SAC	31	Skealaghan Turlough SAC	140
Slieve Tooley/Tormore Island/Loughros Beg Bay SAC	32	Greaghans Turlough SAC	141
Croaghonagh Bog SAC	33	Ardkill Turlough SAC	142
Meenaguse/Ardbane Bog SAC	34	Tully Lough SAC	143
Lough Eske and Ardnamona Wood SAC	35	Tully Mountain SAC	144
Rathlin O'Birne Island SAC	36	Lough Lurgreen Bog/Glenamaddy Turlough SAC	145
Slieve League SAC	37	Clyard Kettle-Holes SAC	146
Donegal Bay (Murvagh) SAC	38	Aughrusbeg Machair And Lake SAC	147
Dunragh Loughs/Pettigo Plateau SAC	39	Camderry Bog SAC	148
Lough Nageage SAC	40	Kildun Souterrain SAC	149

Biodiversity Figure Index Keys			
Designated Site	Label	Designated Site	Label
St. John's Point SAC	41	Omey Island Machair SAC	150
Durnesh Lough SAC	42	Aughrim (Aghrane) Bog SAC	151
Ballintra SAC	43	Barnahallia Lough SAC	152
Tamur Bog SAC	44	Lough Ree SAC	153
Lough Golagh And Breesy Hill SAC	45	The Twelve Bens/Garraun Complex SAC	154
Dunmuckrum Turloughs SAC	46	Ballymaglancy Cave, Cong SAC	155
Bunduff Lough And Machair/Trawalua/Mullaghmore SAC	47	Mocorha Lough SAC	156
Lough Melvin SAC	48	Shrule Turlough SAC	157
Streedagh Point Dunes SAC	49	Ballygar (Aghrane) Bog SAC	158
Arroo Mountain SAC	50	Kingstown Bay SAC	159
Ben Bulbin, Gleniff And Glenade Complex SAC	51	Levally Lough SAC	160
Glenade Lough SAC	52	Curraghleanagh Bog SAC	161
Cummeen Strand/Drumcliff Bay (Sligo Bay) SAC	53	Maumturk Mountains SAC	162
Broadhaven Bay SAC	54	Derrinlough (Cloonkeenleananode) Bog SAC	163
Erris Head SAC	55	Shankill West Bog SAC	164
Glenamoy Bog Complex SAC	56	Lough Funshinagh SAC	165
Lackan Saltmarsh and Kilcummin Head SAC	57	Carrownagappul Bog SAC	166
Corratirim SAC	58	Cloughmoyne SAC	167
Lough Gill SAC	59	Slyne Head Peninsula SAC	168
Boleybrack Mountain SAC	60	Lough Corrib SAC	169
Ballysadare Bay SAC	61	Slyne Head Islands SAC	170
Slieve Fyagh Bog SAC	62	Rosroe Bog SAC	171
Killala Bay/Moy Estuary SAC	63	Gortnandarragh Limestone Pavement SAC	172
Knockalongy and Knockachree Cliffs SAC	64	Murvey Machair SAC	173
Union Wood SAC	65	Cregduff Lough SAC	174
Kilroosky Lough Cluster SAC	66	Dog's Bay SAC	175

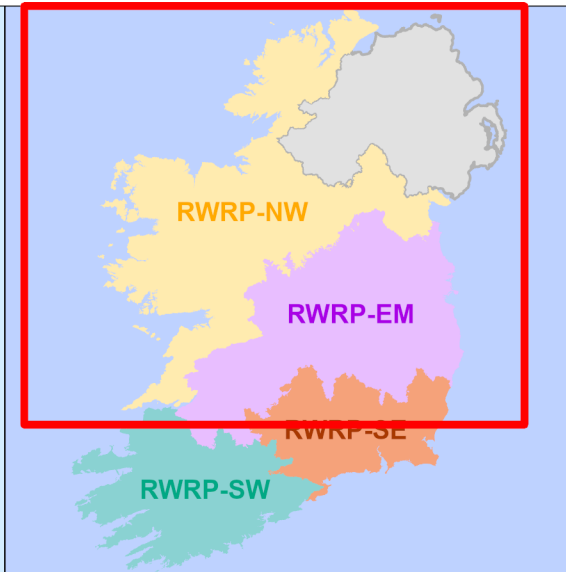
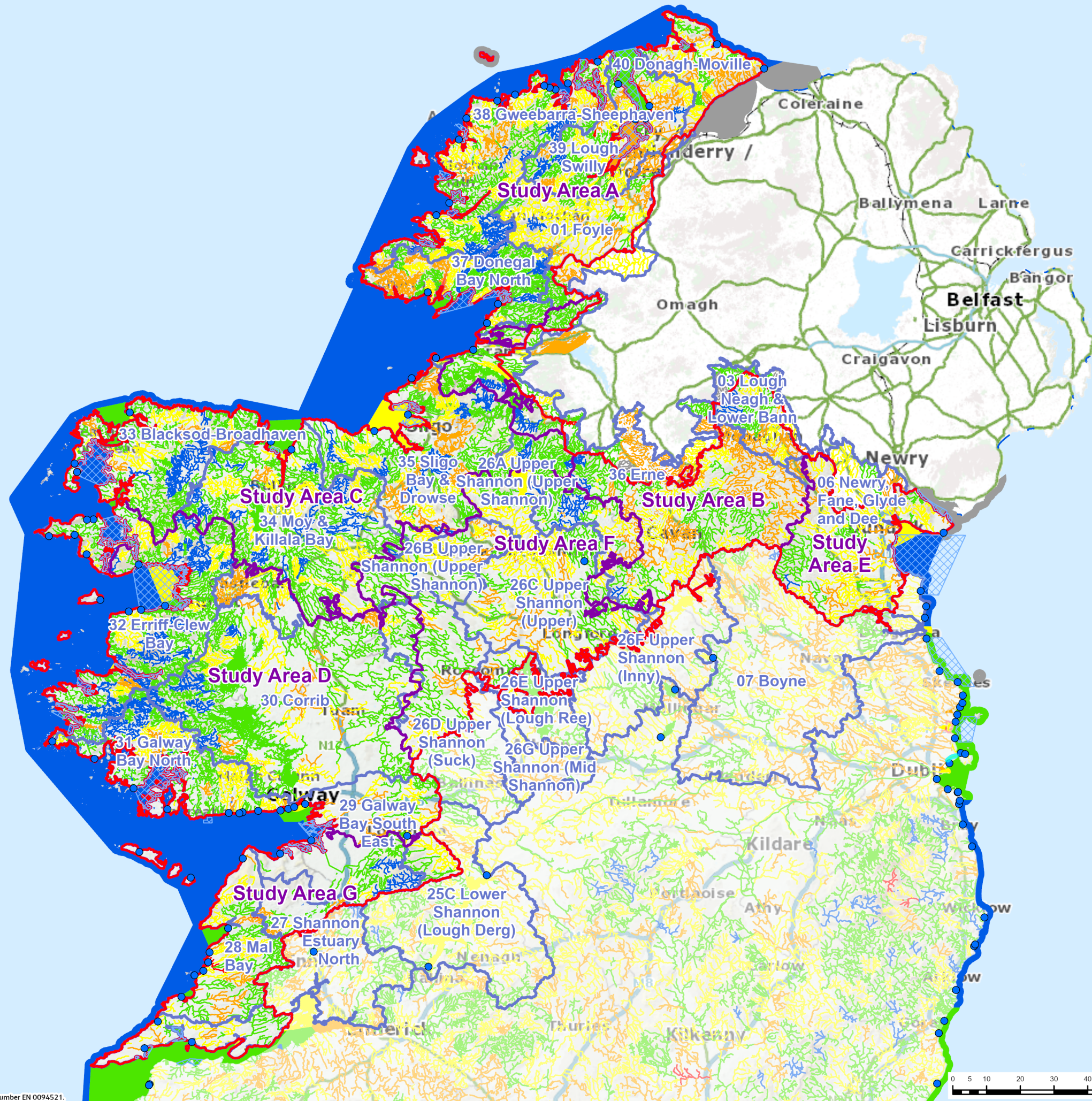
Biodiversity Figure Index Keys			
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Carrowmore Lake Complex SAC	67	Connemara Bog Complex SAC	176
Bellacorick Iron Flush SAC	68	Ross Lake And Woods SAC	177
Mullet/Blacksod Bay Complex SAC	69	Monivea Bog SAC	178
Unshin River SAC	70	Lough Nageeron SAC	179
Cuilcagh - Anierin Uplands SAC	71	Kilkieran Bay And Islands SAC	180
Ox Mountains Bogs SAC	72	Rahasane Turlough SAC	181
Bellacorick Bog Complex SAC	73	Galway Bay Complex SAC	182
Lough Dahybaun SAC	74	Lough Rea SAC	183
Templehouse And Cloonacleigha Loughs SAC	75	Castletaylor Complex SAC	184
Lough Nabrickeagh Bog SAC	76	Lough Fingall Complex SAC	185
Carlingford Mountain SAC	77	Kiltiernan Turlough SAC	186
Lough Hoe Bog SAC	78	Ardrahan Grassland SAC	187
Turloughmore (Sligo) SAC	79	Inishmore Island SAC	188
Lough Arrow SAC	80	Peterswell Turlough SAC	189
Lough Oughter And Associated Loughs SAC	81	Sonnagh Bog SAC	190
Bricklieve Mountains and Keishcorran SAC	82	Ballinduff Turlough SAC	191
Carlingford Shore SAC	83	Cahermore Turlough SAC	192
Doogort Machair/Lough Doo SAC	84	Ballyvaughan Turlough SAC	193
Doocastle Turlough SAC	85	Lough Coy SAC	194
Owenduff/Nephin Complex SAC	86	Carrowbaun, Newhall and Ballylee Turloughs SAC	195
Croaghaun/Slievemore SAC	87	Black Head-Poulsallagh Complex SAC	196
Flughany Bog SAC	88	Caherglassaun Turlough SAC	197
Cloonakillina Lough SAC	89	Kiltartan Cave (Coole) SAC	198
River Moy SAC	90	Inishmaan Island SAC	199
Achill Head SAC	91	Coole-Garryland Complex SAC	200
Keel Machair/Menaun Cliffs SAC	92	Moneen Mountain SAC	201
Dundalk Bay SAC	93	Inisheer Island SAC	202
Bellacragher Saltmarsh SAC	94	Drummin Wood SAC	203

Biodiversity Figure Index Keys			
Designated Site	Label	Designated Site	Label
Lough Gall Bog SAC	95	East Burren Complex SAC	204
Newport River SAC	96	Lough Cutra SAC	205
Tullaghanrock Bog SAC	97	Termon Lough SAC	206
Callow Bog SAC	98	Ballyteige (Clare) SAC	207
Corraun Plateau SAC	99	Gortacarnaun Wood SAC	208
Cloonshanville Bog SAC	100	Ballyyogan Lough SAC	209
Clew Bay Complex SAC	101	Moyree River System SAC	210
Urlaur Lakes SAC	102	Inagh River Estuary SAC	211
Derrinea Bog SAC	103	Dromore Woods And Loughs SAC	212
Bellanagare Bog SAC	104	Ballycullinan Lake SAC	213
Clare Island Cliffs SAC	105	Carrowmore Point To Spanish Point And Islands SAC	214
West Connacht Coast SAC	106	Carrowmore Dunes SAC	215
Errit Lough SAC	107	Tullaher Lough And Bog SAC	216
Balla Turlough SAC	108	Kilkee Reefs SAC	217
Clooneen Bog SAC	109	Lower River Shannon SAC	218
Figure 5.5b – Special Protected Areas			
Inishtrahull SPA	1	Blacksod Bay/Broad Haven SPA	43
Malin Head SPA	2	Inishkea Islands SPA	44
Trawbreaga Bay SPA	3	Duvillaun Islands SPA	45
Tory Island SPA	4	Lough Arrow SPA	46
Fanad Head SPA	5	Carlingford Lough SPA	47
Greers Isle SPA	6	Doogort Machair SPA	48
Horn Head to Fanad Head SPA	7	Lough Conn and Lough Cullin SPA	49
Inishbofin, Inishdoeey and Inishbeg SPA	8	Owenduff/Nephin Complex SPA	50
Falcarragh to Meenlaragh SPA	9	Lough Oughter SPA	51
Lough Foyle SPA	10	Dundalk Bay SPA	52
West Donegal Islands SPA	11	Lough Gara SPA	53
Lough Fern SPA	12	Bills Rocks SPA	54
Lough Swilly SPA	13	Stabannan-Braganstown SPA	55

Biodiversity Figure Index Keys			
Designated Site	Label	Designated Site	Label
Derryveagh And Glendowan Mountains SPA	14	Bellanagare Bog SPA	56
Illancrone and Inishkeeragh SPA	15	Clare Island SPA	57
Roaninish SPA	16	Lough Kinale and Derragh Lough SPA	58
Inishkeel SPA	17	Ballykenny-Fisherstown Bog SPA	59
Sheskinmore Lough SPA	18	Cross Lough (Killadoon) SPA	60
West Donegal Coast SPA	19	Lough Carra SPA	61
Lough Nillan Bog SPA	20	High Island, Inishshark and Davillaun SPA	62
Rathlin O'Birne Island SPA	21	Lough Mask SPA	63
Lough Derg (Donegal) SPA	22	Inishbofin, Omey Island and Turbot Island SPA	64
Pettigo Plateau Nature Reserve SPA	23	Illannanoon SPA	65
Inishduff SPA	24	Cruagh Island SPA	66
Durnesh Lough SPA	25	Lough Ree SPA	67
Donegal Bay SPA	26	Lough Corrib SPA	68
Inishmurray SPA	27	River Suck Callows SPA	69
Stags of Broad Haven SPA	28	Connemara Bog Complex SPA	70
Sligo/Leitrim Uplands SPA	29	Slyne Head To Ardmore Point Islands SPA	71
Ardboline Island and Horse Island SPA	30	Cregganna Marsh SPA	72
Ballintemple and Ballygilgan SPA	31	Rahasane Turlough SPA	73
Illanmaster SPA	32	Inner Galway Bay SPA	74
Slieve Beagh SPA	33	Lough Rea SPA	75
Drumcliff Bay SPA	34	Inishmore SPA	76
Cummeen Strand SPA	35	Coole-Garryland SPA	77
Aughris Head SPA	36	Lough Cutra SPA	78
Termoncarragh Lake and Annagh Machair SPA	37	Slieve Aughty Mountains SPA	79
Ballysadare Bay SPA	38	Cliffs of Moher SPA	80
Killala Bay/Moy Estuary SPA	39	Corofin Wetlands SPA	81
Inishglora and Inishkeeragh SPA	40	Mid-Clare Coast SPA	82

Biodiversity Figure Index Keys			
Designated Site	Label	Designated Site	Label
Mullet Peninsula SPA	41	River Shannon and River Fergus Estuaries SPA	83
Carrowmore Lake SPA	42	Loop Head SPA	84
Figure 5.5c – Natural Heritage Areas and Ramsar			
Slieve Snaght Bogs NHA	1	Corracramph Bog NHA	41
Illies Hill Bog NHA	2	Rinn River NHA	42
Umrycam Bog NHA	3	Aghnamona Bog NHA	43
Camowen River Bog NHA	4	Cloonageeher Bog NHA	44
Corveen Bog NHA	5	Lough Kinale And Derragh Lough NHA	45
Meenmore West Bog NHA	6	Lough Greney Bog NHA	46
Roaninish NHA	7	Tawnymackan Bog NHA	47
Meenagarranroe Bog NHA	8	Moorfield Bog/Farm Cottage NHA	48
Lough Hill Bog NHA	9	Lough Namucka Bog NHA	49
Cashelnavean Bog NHA	10	Bracklagh Bog NHA	50
Crocknamurrin Mountain Bog NHA	11	Derrycanan Bog NHA	51
Barnesmore Bog NHA	12	Mount Jessop Bog NHA	52
Inishduff NHA	13	Lisnanarriagh Bog NHA	53
Lough Fad Bog NHA	14	Slieve Bog NHA	54
Aghavoghil Bog NHA	15	Keeloges Bog NHA	55
Eshbrack Bog NHA	16	Funshin Bog NHA	56
Dough/Thur Mountains NHA	17	Clooncullaun Bog NHA	57
Crockauns/Keelogyboy Bogs NHA	18	Forthill Bog NHA	58
Inagh Bog NHA	19	Leaha Bog NHA	59
Pollatomish Bog NHA	20	Tooreen Bog NHA	60
Ummerantarry Bog NHA	21	Cloon And Laghtanabba Bog NHA	61
Glenturk More Bog NHA	22	Aughrim Bog NHA	62
Ederglen Bog NHA	23	Kilmore Bog NHA	63
Slieveward Bog NHA	24	Ballygar Bog NHA	64
Tristia Bog NHA	25	Derrinlough Bog NHA	65
Forrew Bog NHA	26	Derrynagran Bog And Esker NHA	66
Slieve Rushen Bog NHA	27	Castle Ffrench East Bog NHA	67

Biodiversity Figure Index Keys			
Designated Site	Label	Designated Site	Label
Corry Mountain Bog NHA	28	Suck River Callows NHA	68
Carrane Hill Bog NHA	29	Killaclogher Bog NHA	69
Bangor Erris Bog NHA	30	Oughterard District Bog NHA	70
Tullaghan Bay And Bog NHA	31	Lough Tee Bog NHA	71
Kilronan Mountain Bog NHA	32	Carna Heath And Bog NHA	72
Doogort East Bog NHA	33	Raford River Bog NHA	73
Cunnagher More Bog NHA	34	Moycullen Bogs NHA	74
Sraheens Bog NHA	35	Cregganna Marsh NHA	75
Croaghmoyle Mountain NHA	36	Slieve Aughty Bog NHA	76
Tullaghan Bog (Roscommon) NHA	37	Slievecallan Mountain Bog NHA	77
Cornaveagh Bog NHA	38	Lough Naminna Bog NHA	78
Bella Bridge Bog NHA	39	Cragnashingaun Bogs NHA	79
Cashel Bog (Leitrim) NHA	40	Lough Acrow Bogs NHA	80
Trawbreaga Bay	1	Blacksod Bay and Broadhaven	10
Lough Barra Bog	2	Owenduff catchment	11
Meenachullion Bog	3	Lough Oughter	12
Pettigo Plateau	4	Dundalk Bay	13
Cummeen Strand	5	Lough Gara	14
Killala Bay/Moy Estuary	6	Lough Corrib	15
Knockmoyle/Sheskin	7	Inner Galway Bay	16
Easky Bog	8	Coole Lough & Garryland Wood	17
Owenboy	9	Blacksod Bay and Broadhaven	10



Legend

- North West region boundary
- Study area boundary
- Water Framework Directive (WFD) Catchment
- Bathing Waters
- Shellfish Waters
- Ecological Status or Potential, 2016-2021*
- Bad
- Good
- High
- Moderate
- Poor
- Unassigned
- Projection*
- At risk
- Ecological Status or Potential, 2016-2021*
- High
- Good
- Moderate
- Poor
- Bad
- Unassigned
- Approved Risk*
- At risk

0	7/19/2023	DRAFT	SMD	SJ	RV	TOG
Rev.	Date	Purpose of revision	Drawn	Check'd	Rev'd	Appr'd



Project
REGIONAL WATER RESOURCES PLAN NORTH WEST

Drawing Title
WATER CONTEXT: SURFACE WATERBODIES - OVERVIEW

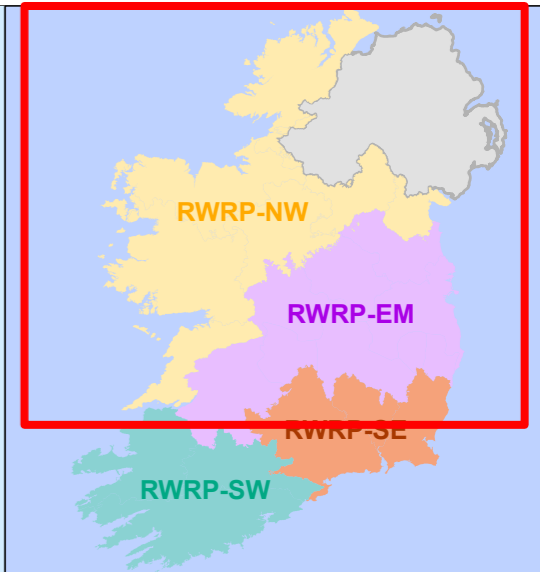
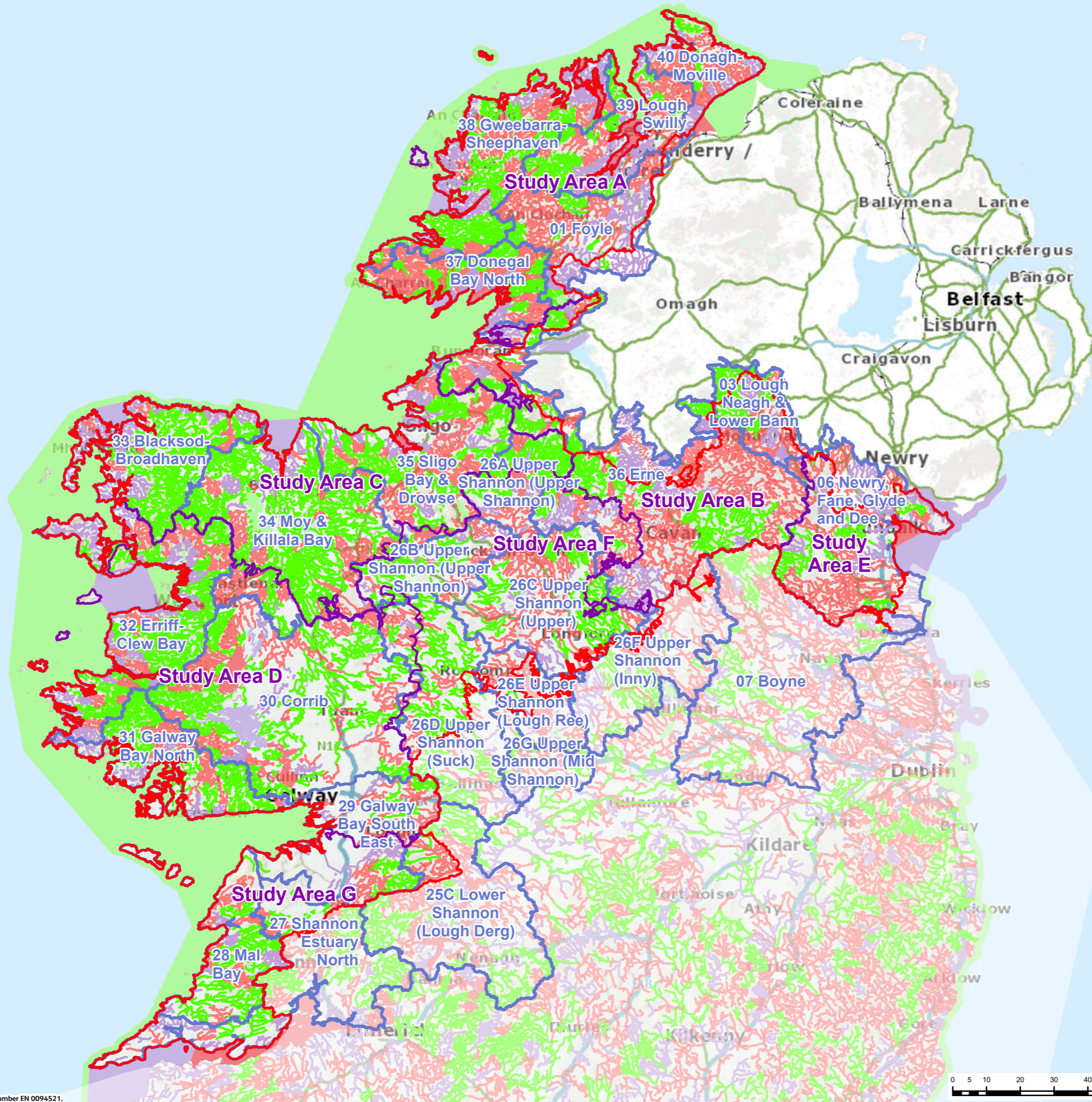
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Drawing No.
FIGURE 5.2a

This drawing is not to be used in whole or in part other than for the intended purpose and project as defined on this drawing. Refer to the contract for full terms and conditions.



Legend

- North West region boundary
- Study area boundary
- Water Framework Directive (WFD) Catchment

WFD River Waterbody, 2016-2021
Approved Risk Projection

- At risk
- Not at risk
- Review

WFD Lake, Transitional or Coastal Waterbody, 2016-2021
Approved Risk Projection

- At risk
- Not at risk
- Review

0	7/21/2023	FINAL	SMD	SJ	RV	TOG
Rev.	Date	Purpose of revision	Drawn	Check'd	Rev'd	Appr'd



Project
REGIONAL WATER RESOURCES PLAN NORTH WEST

Drawing Title
SURFACE WATERBODIES AT RISK (EPA, AUGUST 2022)

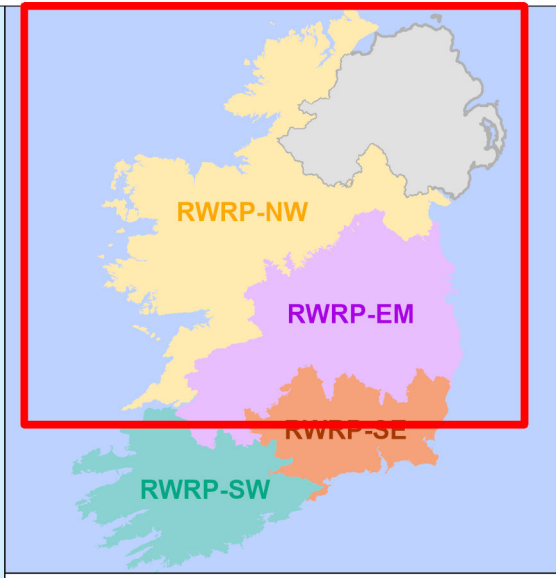
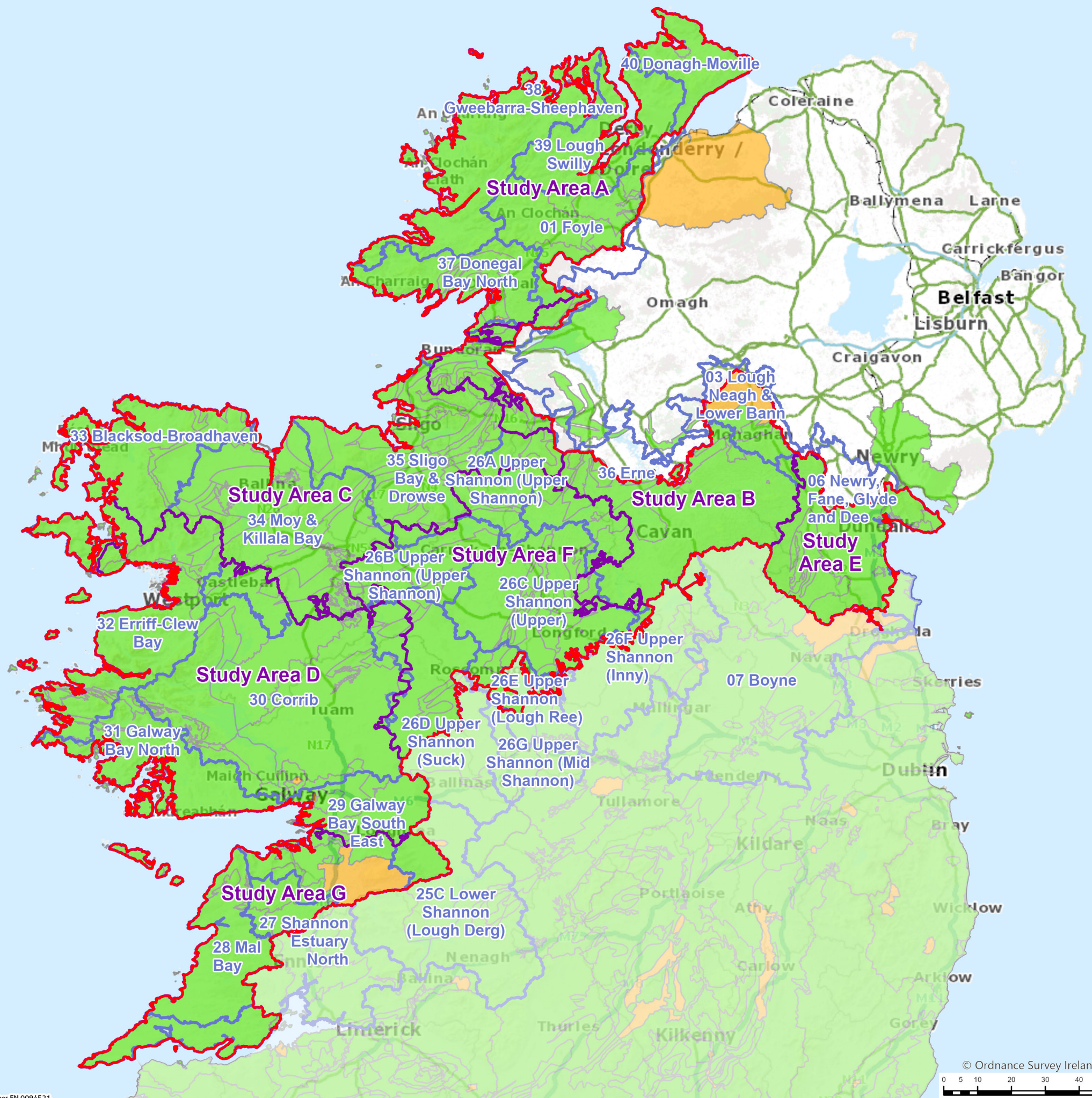
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Drawing No.
FIGURE 5.2b

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Legend

- North West region boundary
- Study area boundary
- Water Framework Directive (WFD) Catchment

Ground Waterbody
Overall Groundwater Status 2016-2021

- Good
- Poor

0	7/18/2023	DRAFT	SMD	SJ	RV	TOG
Rev.	Date	Purpose of revision	Drawn	Check'd	Rev'd	Appr'd



Project
REGIONAL WATER RESOURCES PLAN NORTH WEST

Drawing Title
WATER CONTEXT: GROUNDWATER - OVERVIEW

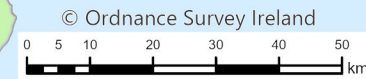
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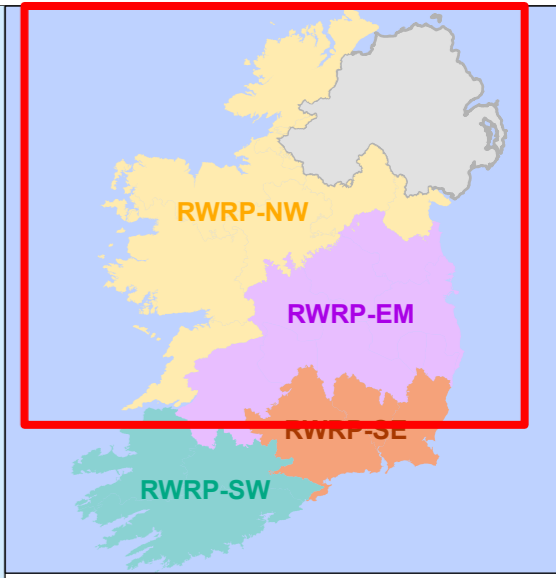
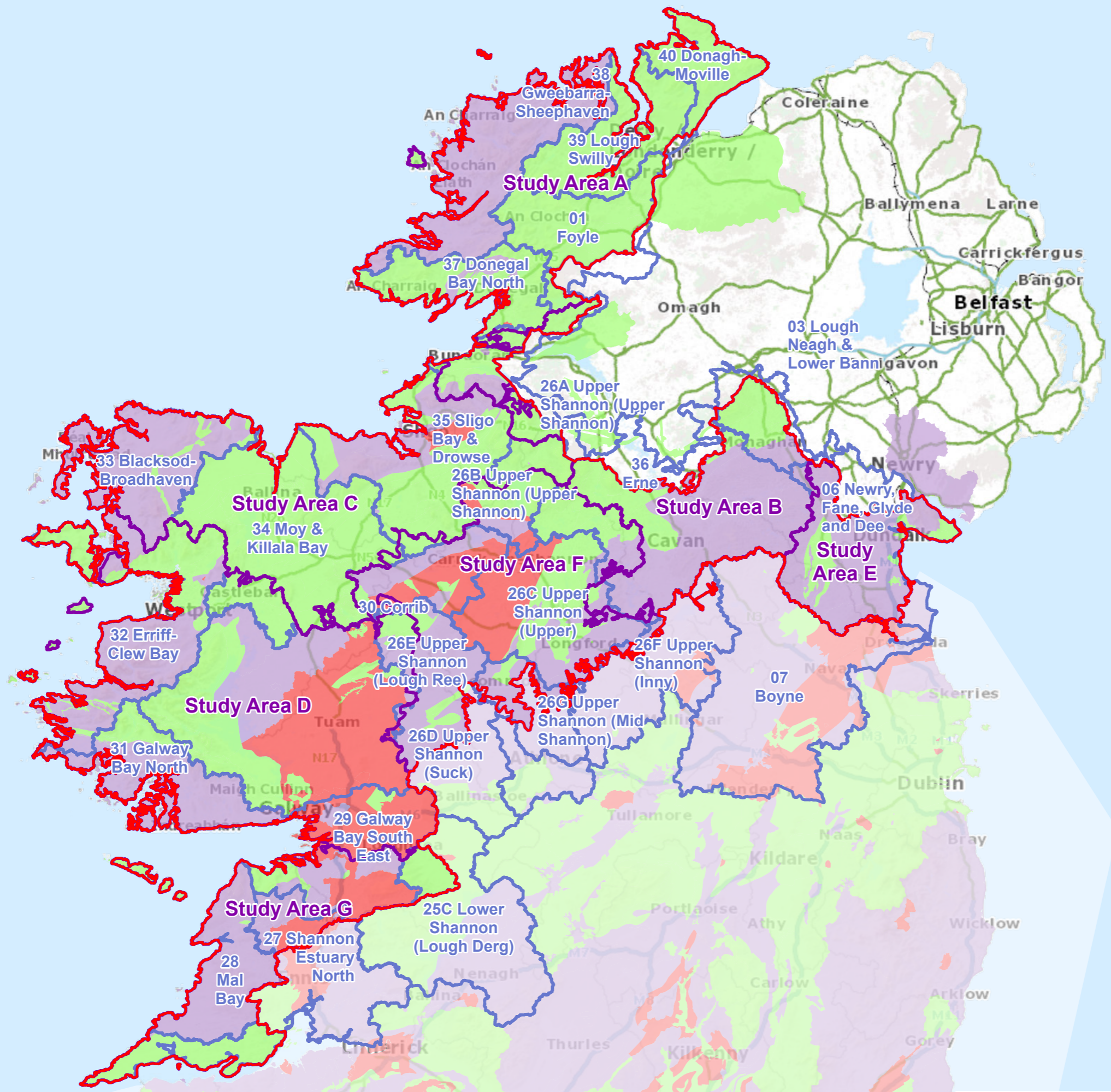
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Drawing No.
FIGURE 5.3a

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Legend

- North West region boundary
- Study area boundary
- Water Framework Directive (WFD) Catchment

**WFD Ground Waterbody, 2016-2021
Approved Risk Projection**

- At risk
- Not at risk
- Review

0	7/21/2023	FINAL	SMD	SJ	RV	TOG
Rev.	Date	Purpose of revision	Drawn	Check'd	Rev'd	Appr'd



Project
REGIONAL WATER RESOURCES PLAN NORTH WEST

Drawing Title
GROUND WATERBODIES AT RISK (EPA, AUGUST 2022)

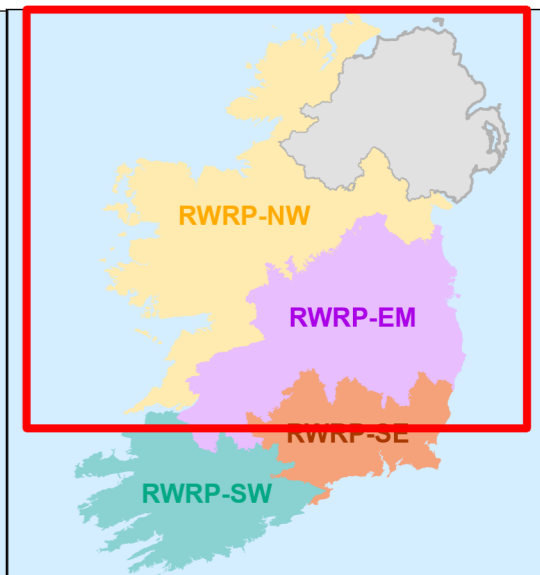
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Drawing No.
FIGURE 5.3b

This drawing is not to be used in whole or in part other than for the intended purpose and project as defined on this drawing. Refer to the contract for full terms and conditions.



Legend

- North West region boundary
- Study area boundary
- Pluvial Flooding: 10% Annual Exceedance Probability (AEP)
- Pluvial Flooding: 1% Annual Exceedance Probability (AEP)
- Fluvial Flooding: 10% Annual Exceedance Probability (AEP)
- Fluvial Flooding: 1% Annual Exceedance Probability (AEP)
- Coastal Flooding: 10% Annual Exceedance Probability (AEP)
- Coastal Flooding: 1% Annual Exceedance Probability (AEP)
- Maximum Historic Groundwater Flooding
- Maximum Historic Groundwater/Surface Water Flooding

0	06/09/2022	FINAL	SMD	SJ	RV	TOG
Rev.	Date	Purpose of revision	Drawn	Check'd	Rev'd	Appr'd



Project
**REGIONAL WATER RESOURCES PLAN
NORTH WEST**

Drawing Title
**WATER CONTEXT:
FLOOD RISK**

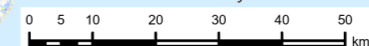
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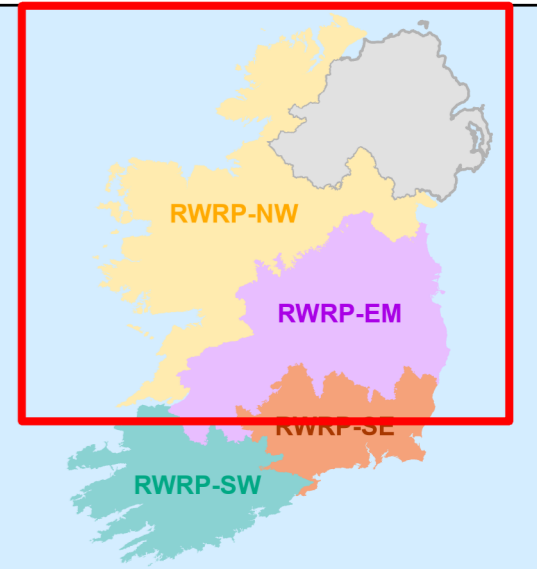
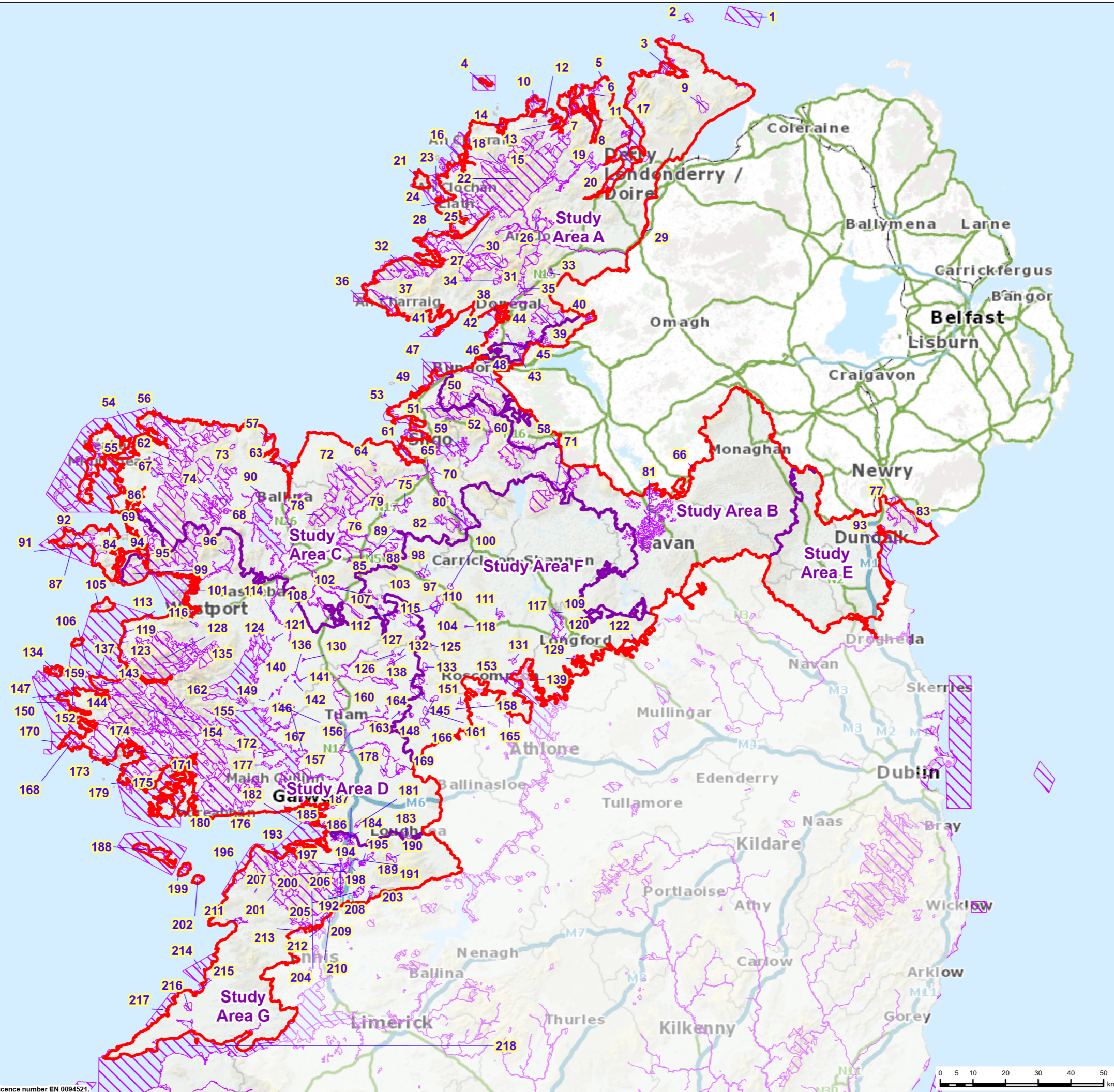
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Drawing No.
FIGURE 5.4

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Legend

- North West region boundary
- Study area boundary
- Special Area of Conservation (SAC)

Reference Labels Key
xx : SAC Reference Label

0	06/09/2022	DRAFT	SMD	SJ	RV	TOG
Rev.	Date	Purpose of revision	Drawn	Check'd	Rev'd	Appr'd



Project
REGIONAL WATER RESOURCES PLAN NORTH WEST

Drawing Title
BIODIVERSITY CONTEXT: OVERVIEW

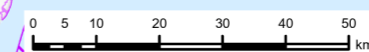
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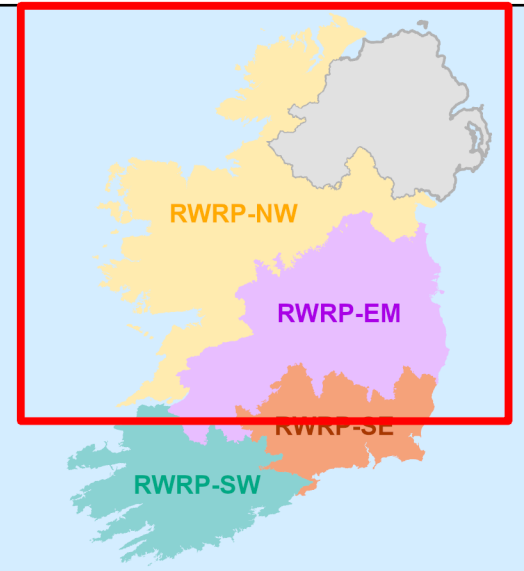
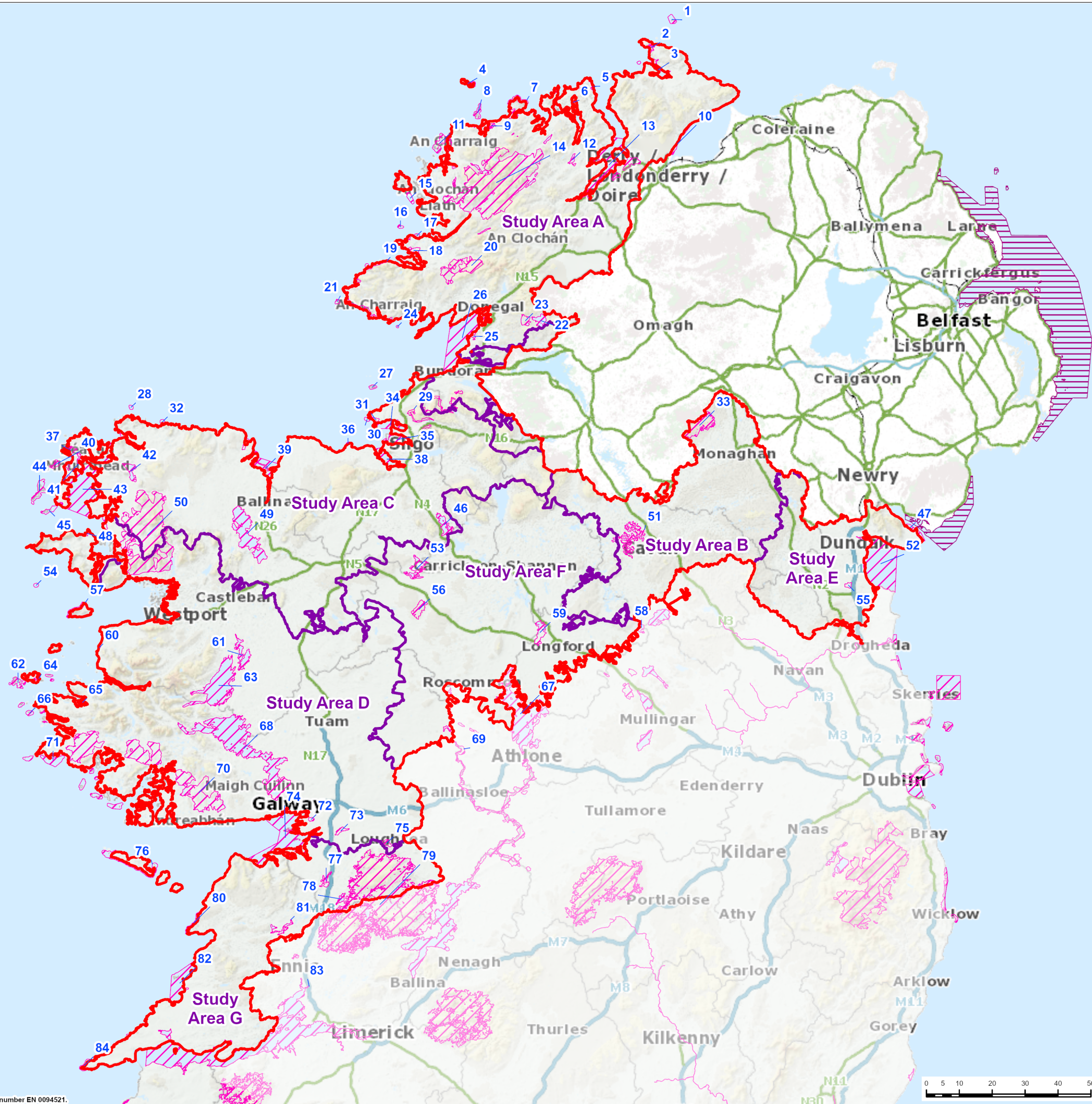
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Drawing No.
FIGURE 5.5A

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Legend

-  North West region boundary
-  Study area boundary
-  Special Protection Area (SPA)
-  Marine Protected Areas

Reference Labels Key

xx: SPA Reference Label

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Project
REGIONAL WATER RESOURCES PLAN
NORTH WEST

Drawing Title
BIODIVERSITY CONTEXT:
OVERVIEW

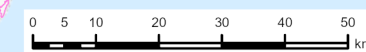
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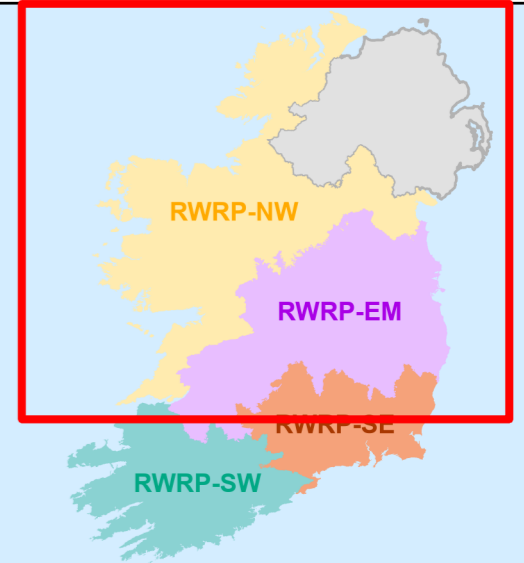
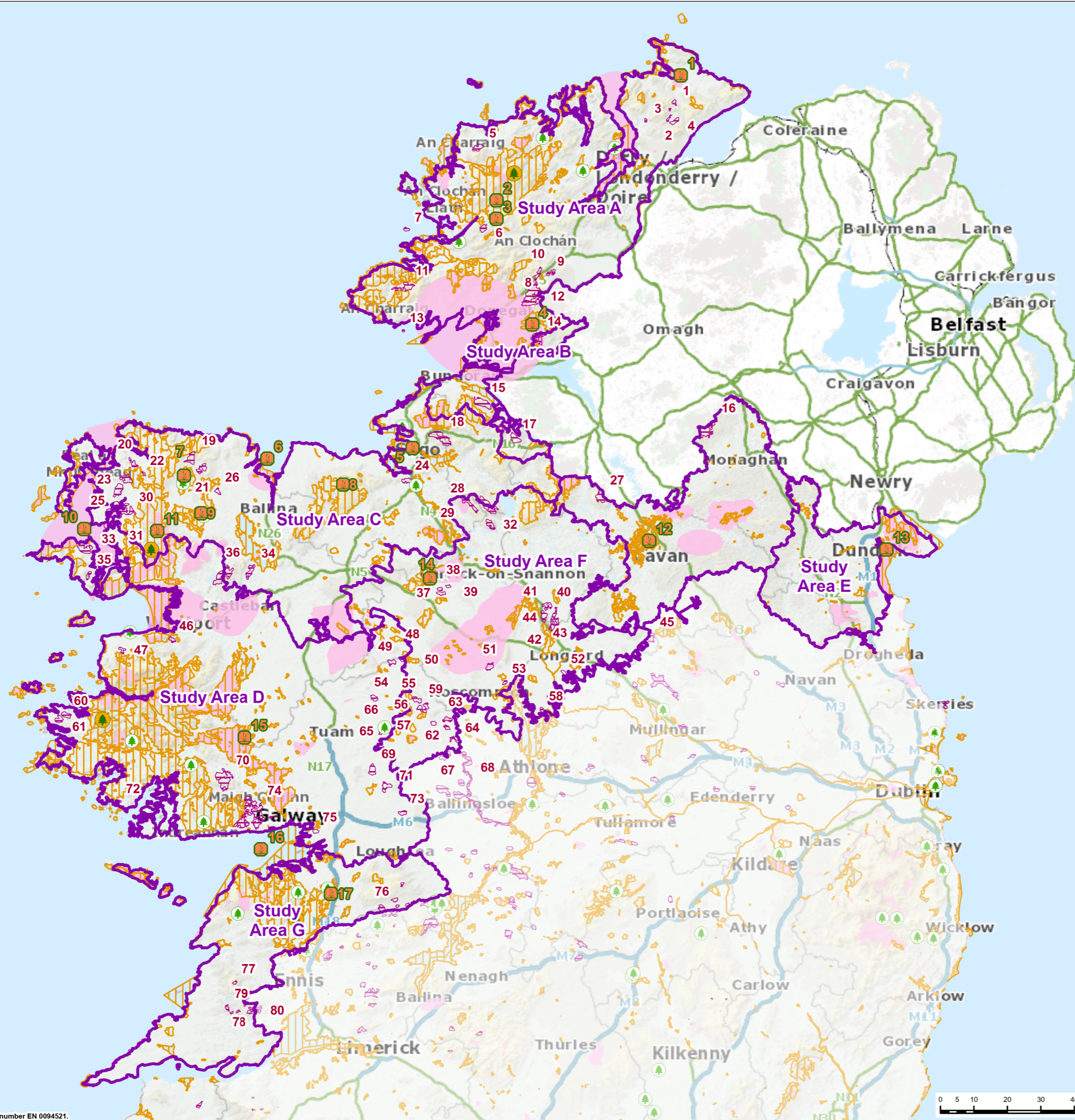
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Drawing No.
FIGURE 5.5B

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Legend

- North West region boundary
- Study area boundary
- Ramsar Site
- National Park
- Nature Reserve
- Natural Heritage Area (NHA)
- Proposed Natural Heritage Area (pNHA)
- Geological Heritage Site

Reference Labels Key
 xx : Ramsar Site Reference Label
 xx : NHA Reference Label

0	06/09/2022	DRAFT	SMD	SJ	RV	TOG
Rev.	Date	Purpose of revision	Drawn	Check'd	Rev'd	Appr'd



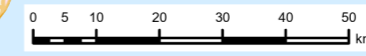
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 REGIONAL WATER RESOURCES PLAN
 NORTH WEST

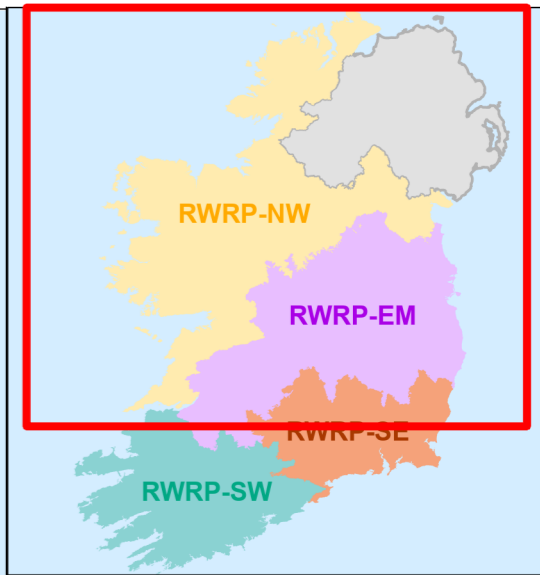
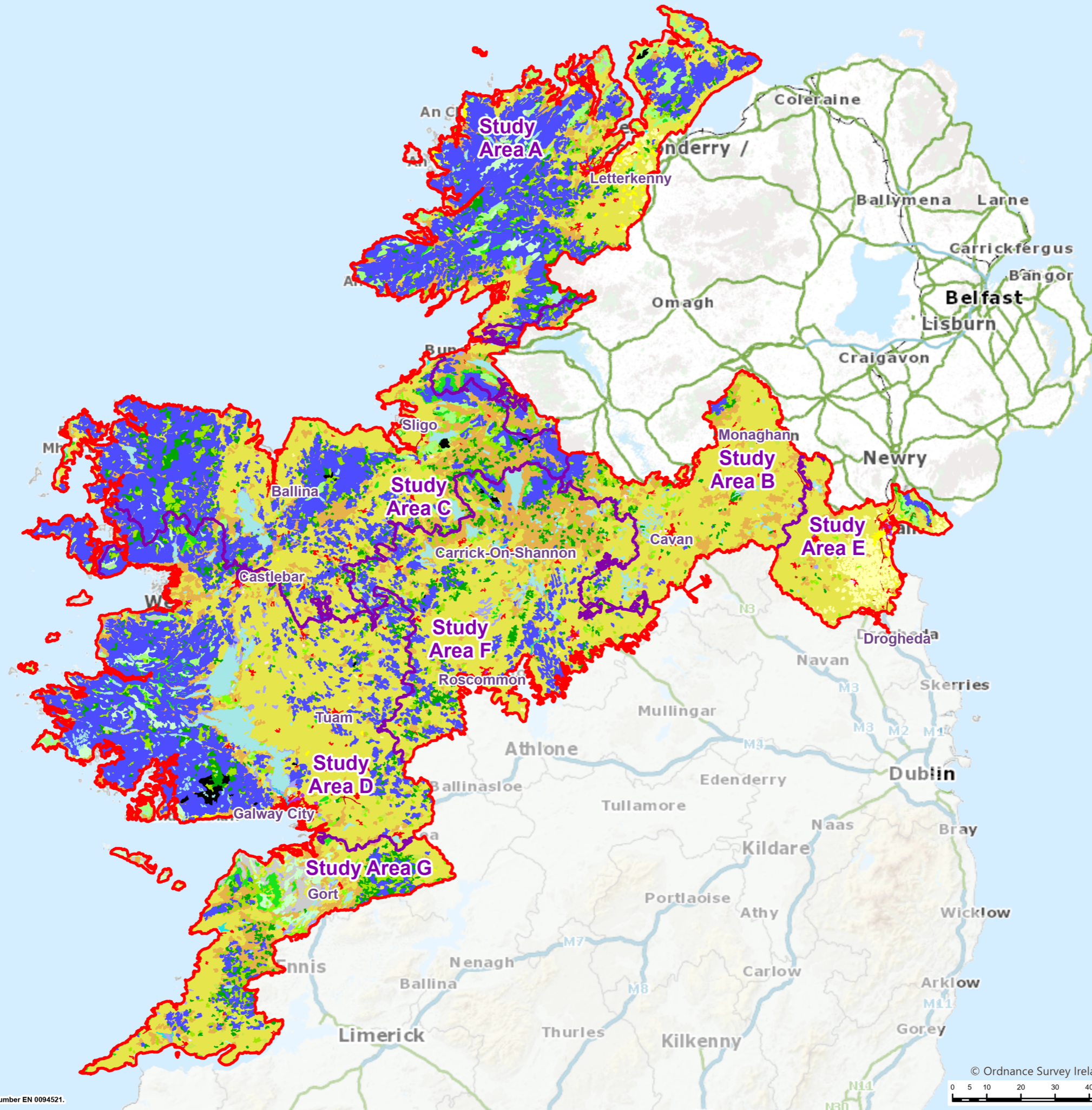
Drawing Title
 BIODIVERSITY CONTEXT:
 OVERVIEW

Drawing Status
 DRAFT

Scale @A3
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Drawing No.
 FIGURE 5.5C





- Legend**
- ▬ North West region boundary
 - ▬ Study area boundary
 - 111 Continuous urban fabric
 - 112 Discontinuous urban fabric
 - 121 Industrial or commercial units
 - 122 Road and rail networks
 - 123 Sea ports
 - 124 Airports
 - 131 Mineral extraction sites
 - 132 Dump
 - 141 Green urban sites
 - 142 Sport and leisure facilities
 - 211 Non-irrigated land
 - 231 Pastures
 - 242 Complex cultivation patterns
 - 243 Land principally occupied by agriculture with areas of natural vegetation
 - 311 Broad-leaved forest
 - 312 Coniferous forest
 - 313 Mixed forest
 - 321 Natural grassland
 - 322 Moors and heaths
 - 324 Transitional woodland scrub
 - 331 Beaches dunes sand
 - 332 Bare rocks
 - 333 Sparsely vegetated areas
 - 334 Burnt areas
 - 411 Inland marshes
 - 412 Peat bogs
 - 421 Salt Marshes
 - 423 Intertidal flats
 - 511 Stream courses
 - 512 Water bodies
 - 521 Coastal lagoons
 - 522 Estuaries

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Project
REGIONAL WATER RESOURCES PLAN NORTH WEST

Drawing Title
MATERIAL ASSETS (NATURAL ASSETS) CONTEXT - OVERVIEW

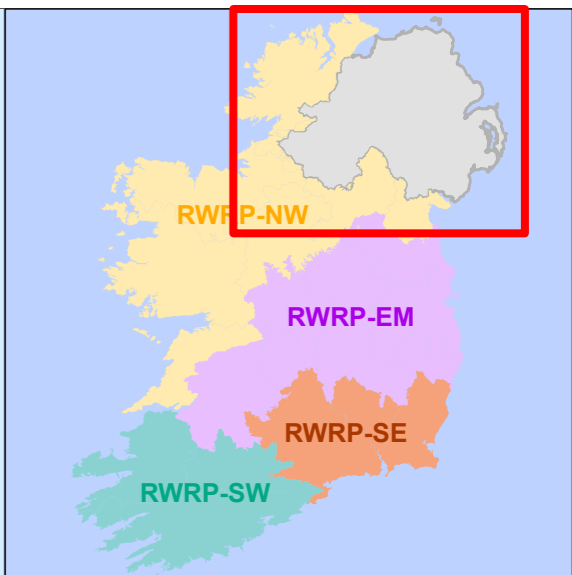
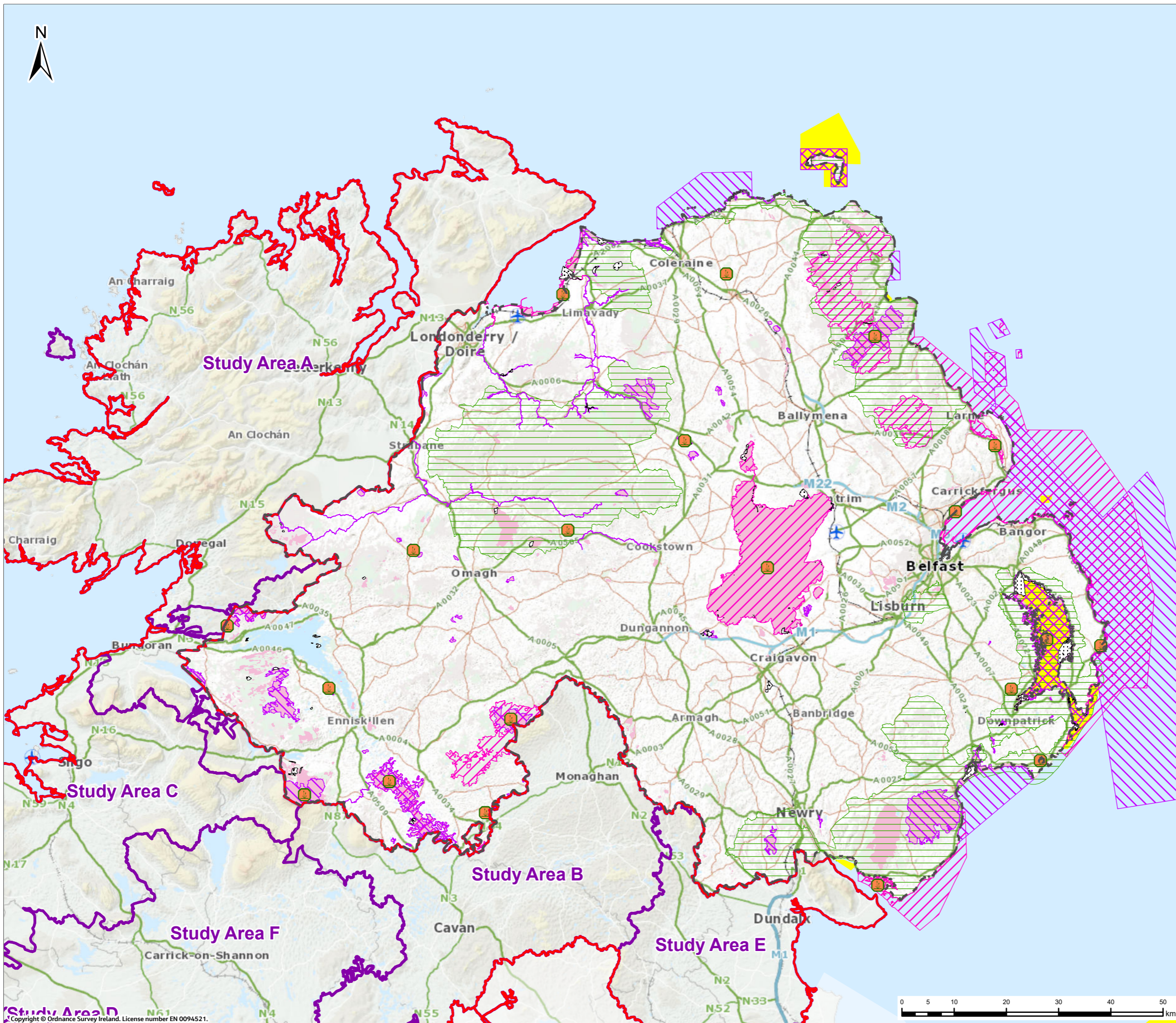
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Drawing No.
FIGURE 5.6a

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Legend

- National border
- North West region boundary
- Study area boundary
- Ramsar Site
- National Nature Reserves
- Special Protection Area (SPA)
- Special Area of Conservation (SAC)
- Area of Outstanding Natural Beauty (AONB)
- Marine Conservation Zones
- Area of Special Scientific Interest (ASSI)

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Project
REGIONAL WATER RESOURCES PLAN NORTH WEST

Drawing Title
NORTHERN IRELAND BIODIVERSITY MAP

Drawing Status
FINAL

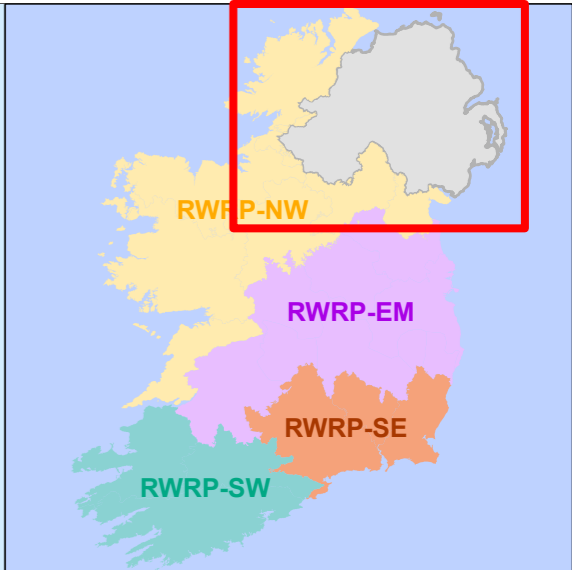
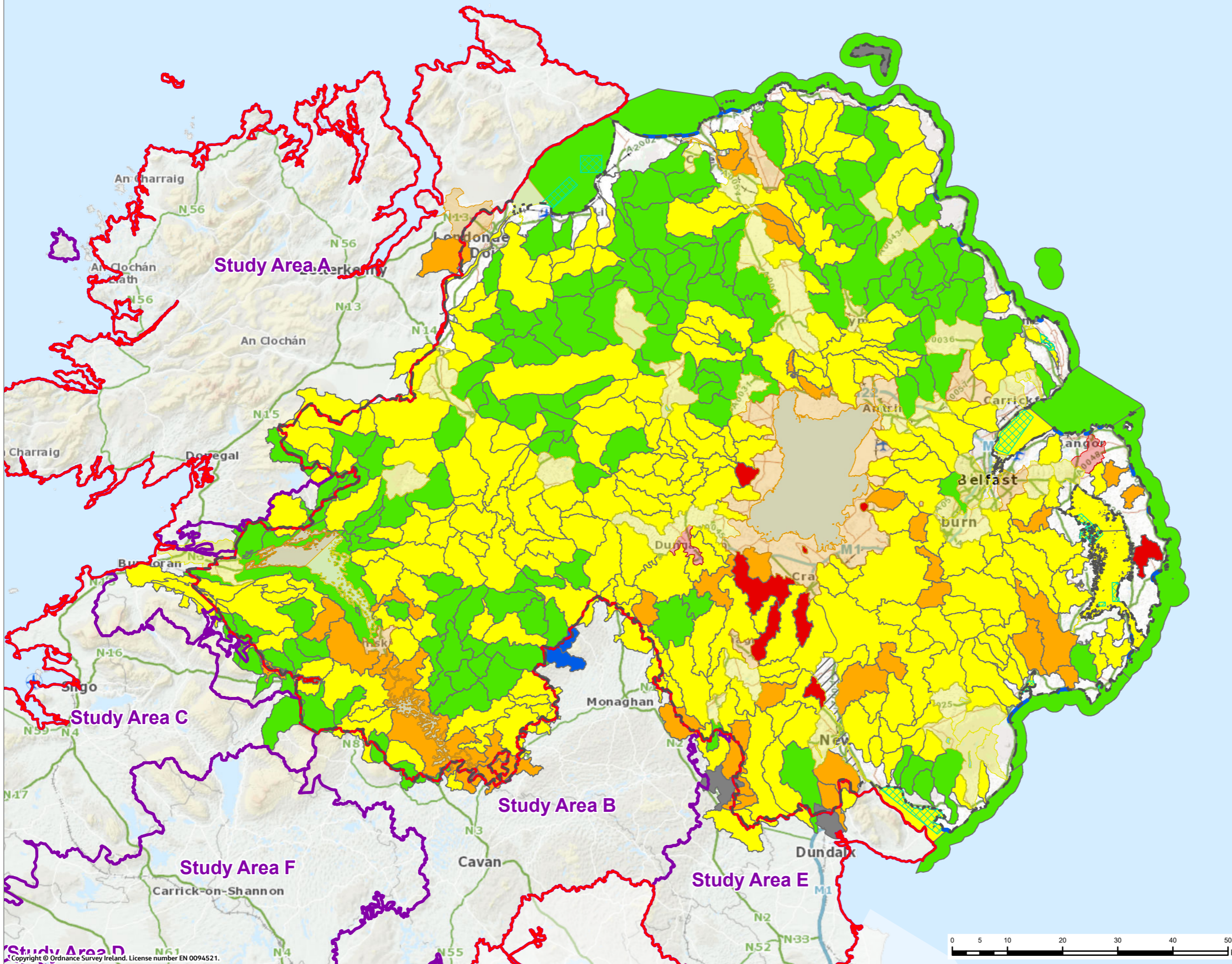
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Drawing No.
FIGURE 5.8a

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Legend

- National border
- North West region boundary
- Study area boundary
- Shellfish Waters
- Bathing Waters
- WFD Surface Waterbody, 2016-2021**
- High
- Good
- Moderate
- Poor
- Bad
- No Data
- Additional Ecological Status (Northern Ireland)**
- Good Ecological Potential
- Moderate Ecological Potential
- Moderate Ecological Potential but Artificial Water Body
- Poor Ecological Potential
- Bad Ecological Potential
- NO DATA

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Project
REGIONAL WATER RESOURCES PLAN NORTH WEST

Drawing Title
NORTHERN IRELAND SURFACE WATER MAP

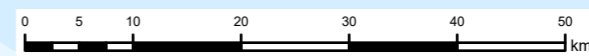
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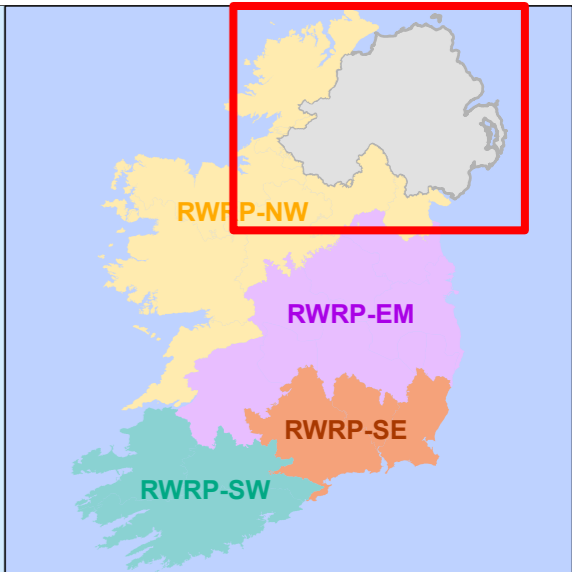
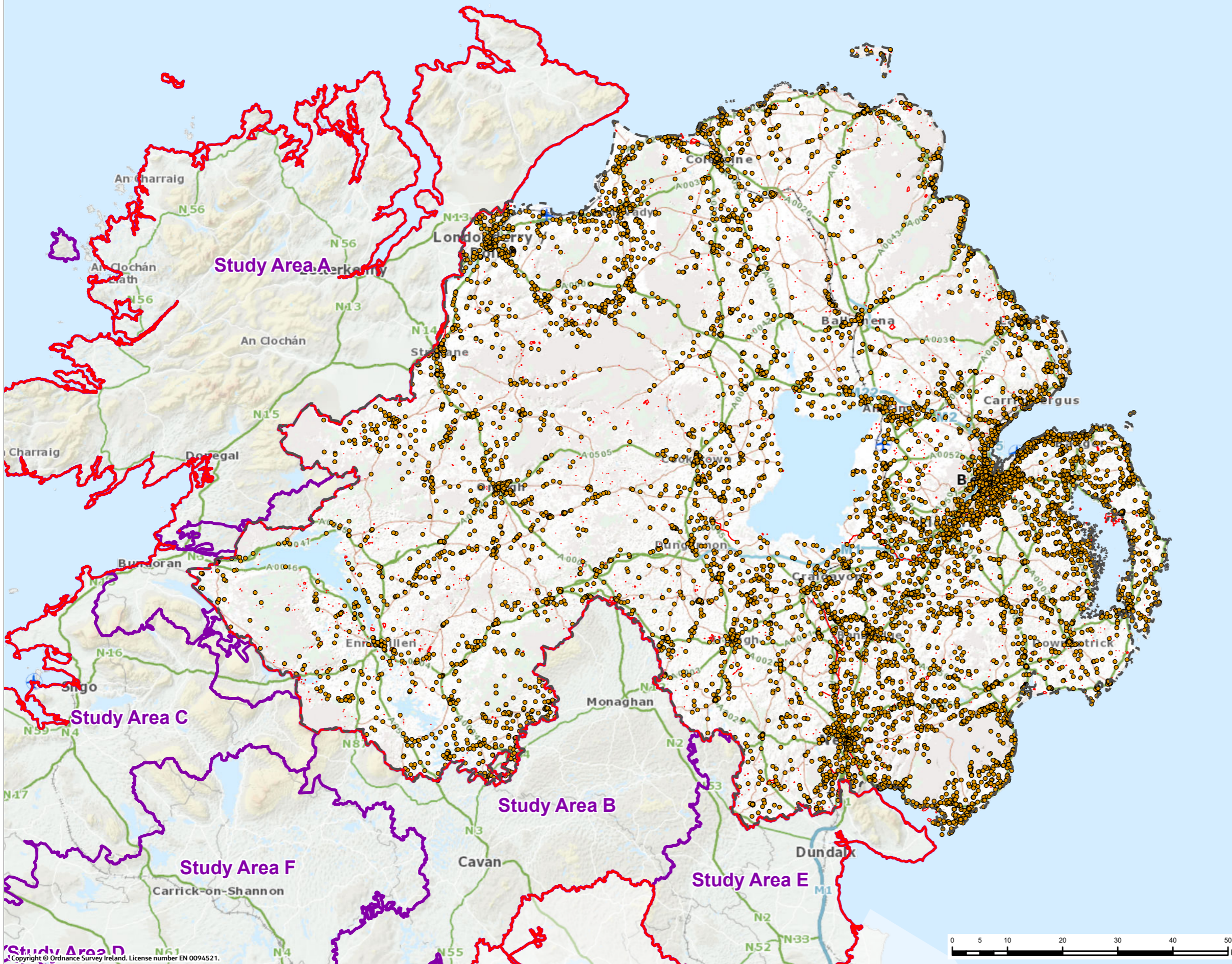
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
Drawing No.
FIGURE 5.8b

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Legend

-  National border
-  North West region boundary
-  Study area boundary
-  Listed Buildings
-  Scheduled Monument Areas

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Rev.	Date	Purpose of revision	Drawn	Check'd	Rev'd	Appr'd



Project
**REGIONAL WATER RESOURCES PLAN
NORTH WEST**

Drawing Title
**NORTHERN IRELAND
CULTURAL HERITAGE MAP**

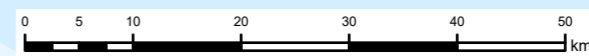
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Drawing No.
FIGURE 5.8c

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Appendix B MCA Environment Criteria Scoring Rules

B.1 Fine Screening MCA: Environmental Scoring Rules Applied

In the Framework Plan, Uisce Éireann describe the Option Assessment Methodology that will be used to develop a national programme of proposed solutions for all of their water supplies. The solutions will be used to reduce or eliminate the Supply Demand Balance (SDB), Water Quality, Reliability and Sustainability risks.

The purpose of Uisce Éireann's options assessment process is to consider the widest practicable range of solutions to resolve identified need within a given area. Environmental and social assessment criteria were included from the earliest stages of the screening process, with screening criteria being applied to filter out any options that are not feasible, or viable on environmental sustainability, resilience or deliverability grounds.

In the first stage of the options screening process the unconstrained options were identified to address need. These options were then subject to coarse screening against the criteria of resilience, deliverability and environment. Any unconstrained options were rejected at this stage if they were unviable in relation to one or more assessment criteria. The remaining options were progressed to further assessment through the fine screening process.

B.2 Fine Screening

The remaining options were subject to a more detailed Multi Criteria Assessment (MCA) at the Fine Screening Stage using desktop assessments of best available environmental data. The objective of the fine screening process is to ensure that all options which will progress to the feasible options list meet the following overarching criteria:

- Resilient;
- Feasible and Flexible;
- Progressible;
- Environmentally and socially viable; and
- Cost Effective.

These criteria were broken down into sub-criteria (see Table B-1) which were then rated between 3 and -3 depending on the option's impact (see Figure B-1).

For the environmental and social criteria, each topic was rated using specific rules covered in this Appendix to provide a basis for consistency and comparability. The fine screening process, assessment criteria and general scoring guide are provided in the Framework Plan.

Major Positive / Beneficial	Moderate Positive / Beneficial	Minor Positive / Beneficial	Neutral / Negligible Risk	Minor Risk	Moderate Adverse Risk	Major Adverse Risk
3	2	1	0	-1	-2	-3

Figure B-1 Fine Screening Rating

B.2.1 Limitations

This is a high-level desk based assessment using option descriptions and indicative locations and routings. The scoring guidance and rules are intended to help provide a consistent approach across a

large number of options of different types and levels of information. The MCA is a comparative assessment and does not replace requirements for more detailed or project level assessment. Option costings are based on unit cost values and provide a consistent approach for option comparison, these costs do not include environmental mitigation costs at this stage and these would expect to be developed as part of option design and assessment for feasibility and planning consent stages.

B.3 MCA Scoring Criteria

These scoring rules focus on the environmental and social criteria and are based on the SEA objectives. They provide more detail to support consistent scoring and take account of data available and the range of options under consideration.

B.3.1 Sustainability (Environmental and Social Impacts)

The criteria for Sustainability (Environmental and Social impacts) and the questions used to rate options within the criteria for the fine screening are shown in Table B-1.

Table B-1 Fine Screening Sustainability (Environmental and Social Impacts) Criteria

SEA Objective /Topic Headings	Scoring Questions
Sustainability (Environmental and Social impacts)	
Population, health, economy and recreation	P1: Will the option impact public health and quality of life, during construction?
	P2: Will the option impact public health and quality of life, during operation?
	P3: What is the impact on recreational amenities?
Water Environment: Quality and Resources	W1: Would the option or associated construction activities affect WFD Status of water body status, in terms of quantity and quality for surface water?
	W2: Would the option or associated construction activities affect WFD Status of water body status, in terms of quantity and quality for groundwater?
	W3: Would the option or associated construction activities affect WFD Status of water body status, in terms of hydro morphology?
	W4: Would this option reduce pressure on water environment through water savings?
	W5: Is there a potential for this option to increase flood risk – e.g. increase base flow or result in loss of flood plain?
	W6: Will Navigation be affected?
Biodiversity, Flora and Fauna	B1: Potential to result in adverse effects on the integrity of a European site?
	B2: Potential to impact on Annex species outside designated areas?
	B3: Potential to impact on National designated sites?
	B4: Potential to impact Biodiversity in all other areas?
	B5: Risk of INNS?
Material Assets	M1: Will the option make effective use of existing assets?

SEA Objective /Topic Headings	Scoring Questions
	M2: Will this option conflict with critical infrastructure, or does the option conflict with existing business, planned land use or valuable agricultural land?
Landscape and Visual	L1: Could this option impact the landscape character areas, townscape character areas or important views – detract or improve?
Climate Change	CC1: What is the level of construction and operational carbon emissions associated with the option – tonnes?
Culture, Heritage and Archaeology	CH1: Does this option avoid direct damage to, or detract from the setting of, designated cultural heritage assets, or does this contribute to protecting them?
Geology and Soils	G1: Would any designated or non-designated geological features, valuable soils, or contaminated land sites be affected?

So that the criteria could be rated comparatively across the Study Areas and options, it was important that a set of rules were followed in the rating process. The rules for the Sustainability (Environmental and Social impacts) criteria are shown in Table B-2 - Table B-9.

B.3.2 Population, Economy, Tourism and Recreation, and Human Health

Table B-2 Fine Screening Questions for P1, P2 and P3

Fine Screening Question P1	Criteria	Data Sources	Score	
Will the option impact public health and quality of life, during construction?	<ul style="list-style-type: none"> Level of concern about temporary risks to health, for example in relation to disturbance or loss of access due to construction or increased risk from poor water quality and risks of flooding during construction. Ratings should be assigned relative to schemes/options under consideration rather than to absolute values. Check GIS for impacts on roads/towns and whether they are urban/rural. No construction would be for example an abstraction increase with no associated works. 	<ul style="list-style-type: none"> Uisce Éireann GIS layer on settlements and amenities Consideration to scale of the option and sensitivity of the area Are options located in close proximity to settlements (distance <2km)? Are options routed through settlements? 	3	N/A
			2	N/A
			1	N/A (no positive impact from construction works)
			0	No or minimal construction
			-1	Rural – small scale construction/upgrade and/or remote from sensitive receptors
			-2	Urban – large scale construction/upgrade and near sensitive receptors
-3	No foreseeable -3 impact for this criterion. Construction impact expected to be temporary and subject to standard mitigation			
Fine Screening Question P2	Criteria	Data Sources	Score	
	<ul style="list-style-type: none"> Level of concern about risks to health, for example in 		3	N/A

Will the option impact public health and quality of life, during operation?	<p>relation to water quality, water borne disease transmission, insect borne disease transmission, recreational and agricultural land take, and risks of flooding.</p> <ul style="list-style-type: none"> Ratings should be assigned relative to schemes/options under consideration rather than to absolute values. Benefits: improved Level of service or water quality /access is an overall objective through options in combination. Unlikely to be sufficient information for individual options on for allocation of +2/+3 scoring. Positive scores where WTPs on RAL are upgraded. 	<ul style="list-style-type: none"> Uisce Éireann GIS layers on settlements and amenities Are options located in close proximity to settlements (distance <2km)? Are options routed through settlements? 	2	N/A
			1	Upgrades to WTP/new WTP likely to result in improved water quality/reliability
			0	Below ground assets in rural/urban area, upgrades to existing sites or new sites within industrial areas
			-1	New above ground assets in rural areas near sensitive receptors
			-2	New above ground assets in urban areas near sensitive receptors
			-3	Unlikely for individual options to score -3 as standard mitigation expected to be applied.
Fine Screening Question P3	Criteria	Data Sources	Score	
What is the impact on recreational amenities?	<ul style="list-style-type: none"> Type of land take Duration of land take Level of impact on recreational amenity 	<ul style="list-style-type: none"> Uisce Éireann GIS layer for amenities (based on Failte Ireland information) and GIS layer for walking trails. 	3	N/A
			2	N/A
			1	Potential for a net improvement to amenity provision (informal or formal recreation)

<ul style="list-style-type: none"> Improvement or creation of new recreation amenity (however this potential for should be improvement would need to be indicated in the option design. Uisce Éireann reservoirs for water supply normally have restrictions for recreational use this so cannot be assumed as a benefit for impoundments or banded reservoirs for example) 	<ul style="list-style-type: none"> Is the option located within close distance of an amenity marked on the layer? Layers may not accurately reflect all amenities in an area. 	0	No change
		-1	Temporary amenity area loss/loss of access to amenity area during construction
		-2	Reduction/restriction of amenity
		-3	Permanent amenity area loss

* Extra costs associated

B.3.3 Water Environment: Quality and Resources

Table B-3 Fine Screening Questions W1, W2, W3, W4 and W5

Fine Screening Question W1	Criteria	Data Sources	Score	
Would the option or associated construction activities affect WFD Status of water body status, in terms of quantity and quality for surface water?	<ul style="list-style-type: none"> Based on standards outlined in WFD: % of Q95 – detailed scoring guide takes account of WFD water body status and whether a river or lake waterbody. Potential to contribute to meeting WFD objectives 	<ul style="list-style-type: none"> Catchments.ie for additional information on catchments GIS layer for surface water WFD status. Check Hydrotool/Hydronet to ensure that proposed abstraction is within 10% of Q95. 	3	N/A
			2	N/A
			1	Option involves removing existing surface water abstraction identified as at risk of over abstraction
			0	=<5% Q95 OR No abstraction from surface water
			-1	5-7.5% Q95
			-2	7.5-10% Q95

	<p>considered based on review of potential over abstraction risk from existing abstractions.</p> <ul style="list-style-type: none"> Unlikely to be sufficient information for allocation of +2/+3 scoring for individual options 		-3	>10% of Q95 also preventing a return to good status*	
Fine Screening Question W2	Criteria	Data Sources	Score	Bedrock	Gravels
Would the option or associated construction activities affect WFD Status of water body status, in terms of quantity and quality for groundwater?	<ul style="list-style-type: none"> % of average recharge. WFD Assessment of Impact & Assignment of Risk Categories Table 4 Option = Proposed Q [Ml/d] Review of sustainability of groundwater abstractions Unlikely to be sufficient information for allocation of +2/+3 scoring for individual options 	<ul style="list-style-type: none"> Check underlying aquifer and 'Average Recharge' (GSI) Groundwater Working Group Document No. 5, 2005) 	3	N/A	N/A
			2	N/A	N/A
			1	Option involves removing existing groundwater abstraction identified as at risk of over abstraction	
			0	<2% OR No abstraction from groundwater	<2% OR No abstraction from groundwater
			-1	<10%	<20%
			-2	<20%	<30%
			-3	>20%	>30%
Fine Screening Question W3	Criteria	Data Sources	Score		
Would the option or associated construction activities affect		<ul style="list-style-type: none"> Catchments.ie for additional information on catchments 	3	N/A	
			2	N/A	

WFD Status of water body status, in terms of hydromorphology?	<ul style="list-style-type: none"> Option type and its perceived effect on hydromorphology Potential benefits from river restoration/ removal of barriers such as weirs where this is feasible and there is agreement with parties responsible for the structures. Unlikely to be sufficient information for allocation of +2/+3 scoring for individual options 	<ul style="list-style-type: none"> Uisce Éireann GIS layer for groundwater WFD status, groundwater risk status, and surface water WFD status. 	1	Option likely to contribute to WFD objectives by removing barriers or structures such as weirs or by including river restoration
			0	No change to hydromorphology
			-1	Lower intake on lake abstraction – new infrastructure
			-2	New river abstraction and intake structure
			-3	Impoundment option – online with loss of river channel
Fine Screening Question W4	Criteria	Data Sources	Score	
Would this option reduce pressure on water environment through water savings?	<ul style="list-style-type: none"> Does the option include leakage reduction or a reduction in abstraction? Positive score if option includes mains replacement reducing leakage or a reduction in abstraction – supporting objectives of use less and lose less. * <p>*Water savings options are not currently considered as Uisce Éireann's leakage</p>	<ul style="list-style-type: none"> EPA Hydrometric data (initially) Qube Model 	3*	N/A
			2*	N/A
			1	Unlikely to be sufficient information to score positive benefits for water savings from individual options
			0	No water savings associated with this option
			-1	N/A

	reduction targets were included in their supply demand balance calculations for this iteration of the Framework Plan. (note negative effects on environment addressed through criteria W1,2 3 and 4)		-2	N/A
			-3	N/A
Fine Screening Question W5	Criteria	Data Sources	Score	
Is there a potential for this option to increase flood risk – e.g. increase base flow or result in loss of flood plain?	<ul style="list-style-type: none"> OPW Rules Floodinfo.ie to determine whether option would result in loss of flood plain Option supporting retention of water in upper catchment Option providing storage capacity for flood water 	<ul style="list-style-type: none"> OPW online resource for flood mapping and previous flood events (not used at this stage) Floodinfo.ie for flood mapping and previous flood events 	3	Unlikely to be sufficient information for allocation of +3 scoring
			2	Unlikely to be sufficient information for allocation of +2 scoring
			1	Option provides additional flood storage or promotes retention of water in upper catchment
			0	No loss of flood plain or change to flood risk (e.g. upgrade of existing infrastructure)
			-1	Above ground asset adjacent to/on flood plain with potential for loss of flood plain or effect on drainage
			-2	Loss of flood storage area with some added risk of downstream flooding
			-3	Loss of flood storage area with potential added risk to downstream settlements/urban areas
Fine Screening Question W6	Criteria	Data Sources	Score	

Will Navigation be affected?	<ul style="list-style-type: none"> Potential for impacts on navigable waterways – based on proximity of works to navigable waterways and type of works. 	<ul style="list-style-type: none"> Navigable Waterways GIS information 	3	N/A
			2	N/A
			1	N/A
			0	No impact on navigable waterways expected
			-1	Navigation could potentially be affected by option such as a new abstraction on a navigable waterway but impacts likely to be avoidable through siting and design
			-2	Navigation could potentially be affected by option due to reduced water levels in navigable waterway
			-3	Navigation would potentially be affected by option due to proposed structures or reduced water levels in navigable waterways

B.3.4 Biodiversity, Flora and Fauna

Table B-4 Fine Screening Questions B1, B2, B3, B4 and B5

Fine Screening Question B1	Criteria	Data Sources	Score *	
Is there potential for the option to result in adverse effects on the integrity of a European site?	<ul style="list-style-type: none"> Undermining the sites conservation objectives through direct or indirect effect pathways. Direct loss of habitat or supporting habitat. 	<ul style="list-style-type: none"> NPWS GIS Database for European Designated sites including SACs and SPAs SAC/SPA Conservation Objectives 	3	N/A
			2	N/A
			1	Potential for benefits to designated site from removal or reduction of an impact - thereby improving the conservation status or condition of a European site.
			0	No potential for option to impact on European site

	<ul style="list-style-type: none"> • Mortality of Qualifying Interest species (QIs). • Changes to water quality, both qualitatively and quantitatively. • Changes in hydrology impacting on water dependant species and habitats (ground water dependant terrestrial ecosystems -GWDTE). • Unlikely to be sufficient information for allocation of +2 or +3 positive scoring for level of benefit 		-1	Hydrological link to European site (SAC/SPA). No direct habitat loss within European site. No works within a European site. Potential for disturbance to QI species outside European site (e.g. mobile QI species otter, birds etc.). Impacts can be mitigated
			-2	No direct habitat loss within European site. Temporary works within or adjacent to European site or direct crossing of river European site. Potential for temporary disturbance to QI species within European site. Impacts can be mitigated
			-3	In some instances, impacts may not be fully known or understood without further detailed site assessment. Site assessment could identify potential adverse effects on site integrity (AESI) for which mitigation or alternative option may be required
Fine Screening Question B2	Criteria	Data Sources	Score	
Is there potential for the option to impact Annex I habitats or Annex II/ IV species outside European sites?	<ul style="list-style-type: none"> • Undermining the favourable conservation status of species and habitats listed on the annexes of the Habitats Directive (e.g. species and habitats listed in Article 17 reports). • Direct habitat loss • Disturbance to species 	<ul style="list-style-type: none"> • NPWS GIS Layer - Ecosystem Provision • National Biodiversity Data Centre (NBDC) • NPWS Article 17 GIS Layer 	3	N/A
			2	N/A
			1	Potential benefits to Annexed species through for example removal of obstructive weir or addition of fish pass
			0	No potential for option to impact on Annex I habitats or Annex II/ IV species
			-1	Disturbance to Annex I habitats or Annex II/ IV species

	<ul style="list-style-type: none"> Disturbance to or loss of commuting or foraging habitat Direct mortality of species Unlikely to be sufficient information for allocation of +2 or +3 scoring of level of benefit 			Disturbance to or loss of commuting or foraging habitat used by Annexed species
			-2	Direct mortality of Annexed species outside of European sites
			-3	Unlikely to be sufficient information for allocation of -3 scoring therefore level of negative impact currently not measurable
Fine Screening Question B3	Criteria	Data Source	Score	
Is there potential for the option to impact on a Nationally Designated site (e.g. NHAs, pNHAs).	<ul style="list-style-type: none"> Undermining the conservation of national designated sites. Direct impact on designated site (e.g. direct loss of habitat) Disturbance (e.g. spread of invasive species from adjacent sites). Unlikely to be sufficient information for allocation of +2 or +3 scoring of level of benefit 	<ul style="list-style-type: none"> NPWS GIS layer -NHAs, pNHAs. GIS layer – foss wetland 	3	N/A
			2	N/A
			1	Potential for benefits to designated site from enhancement or removal of an effect such as from an existing abstraction
			0	No impact on national designated sites expected
			-1	No direct loss of habitat within designated area. Indirect (temporary) impact.
			-2	Direct loss of habitat within designated area. Direct (permanent) impact.
			-3	No -3 scoring as there will be avoidance and/or mitigation to prevent significant impact on National Designated sites.
Fine Screening Question B4	Criteria	Data Sources	Score	
	<ul style="list-style-type: none"> Outside of European and Nationally designated sites 	<ul style="list-style-type: none"> GIS layer – foss wetland/aerial photography 	3	Potential to create new high value habitat on a large scale

Is there potential for the option to impact on Biodiversity in all other areas	<ul style="list-style-type: none"> Loss of significant areas of ecologically valuable habitat and/or by undermining biodiversity objectives outlined in local or national plans (e.g. county development plans) Direct habitat loss (e.g. hedgerows/woodlands other semi-natural habitats) Disturbance to species protected under the wildlife act (e.g. badger, common frog, newts, nesting birds etc.) Direct mortality of species protected under the wildlife act (e.g. badger, common frog, newts, nesting birds etc.) Positive scoring for overall biodiversity enhancements where sufficient information is available for the options. 	<ul style="list-style-type: none"> National Biodiversity Data Centre (NBDC) 	2	Potential to create new high value habitat on a small scale
			1	Potential to improve biodiversity through enhancement of existing habitat or improving connectivity
			0	No impact on biodiversity expected
			-1	Temporary loss of habitat or temporary disturbance to species.
			-2	Permanent loss of habitat and or direct mortality of species protected under the wildlife act.
			-3	No -3 scoring as there will be avoidance and/or mitigation to prevent biodiversity loss as included in the option design.
Fine Screening Question B5	Criteria	Data Sources	Score	
Is there potential for the option to spread invasive non-native species?	<ul style="list-style-type: none"> Species listed on the third schedule of the Hab+A94:C102itats Regulations 2011, (S.I. 477) 	<ul style="list-style-type: none"> National Biodiversity Data Centre 	3	N/A
			2	N/A
			1	N/A

<p>Regs 49 & 50 Prohibition on dispersal of certain species.</p> <ul style="list-style-type: none"> • Presence of highly invasive species e.g. Japanese knotweed (JK), Himalayan balsam (HB), zebra mussel (ZM) etc). • Unlikely to be sufficient information for scoring positive benefits from removal of invasive species 	0	No risk of spreading invasive species (e.g. tankering of water) OR no high risk options. Uisce Éireann do not allow transfer of raw water between catchments
	-1	No major risk identified e.g. no records of key invasive (JK, HB, ZM etc.) identified on NBDC. However, site assessment would still be required to rule out presence of invasive at project level.
	-2	Risk identified e.g. records of key invasive species (JK, HB, ZM etc.) identified on NBDC. Significant cost to eradicate H.B. J.K. and aquatic species. Can mitigate for this however, associated time constraint and cost.
	-3	No high-risk options such as raw-water transfer are removed through Coarse Screening

* Score of -1, -2 or -3 = potential likely significant effects (LSEs) have been identified at fine screening stage in the absence of mitigation (stage 1 of the AA process cannot take mitigation into account).

0 score: those options scoring 0 are those unlikely to result in likely significant effects (LSEs) on a European site (based on desktop review). During the optioneering process Uisce Éireann identify if these 0 scoring options meet the “Objectives of the Plan” and are assessed as having no potential impact on a European Site, it is automatically adopted as the Preferred Approach at WRZ level.

-1 score: potential for LSE (generally construction related impacts) identified. However, it is considered that these LSEs will not result in adverse effects on site integrity (AESI) with standard best practice project specific mitigation (for example pollution control compliant with legislation to protect the general environment and not always specifically for European sites or their qualifying interest features). These options are not considered to lead AESI based on the plan level rules/protective measures applied and desktop information available at the time of assessment.

-2 score: potential for LSE (generally construction related impact) identified. However, it is considered that these s LSEs will not result in AESI with standard best practice project specific mitigation. These options are not considered to lead AESI based on the plan level rules/protective measures applied and desktop information available at the time of assessment.

-3 score: potential for LSEs that may be harder to mitigate or where uncertainty around potential impacts remains (uncertainty may remain until site level assessments are carried out) and although deemed feasible through Stage 2, may require a higher burden of site based proof to succeed if it ever progresses to project level. As part of the feedback loop from the Natura Impact Statement for the Plan, any sites with a -3 score are noted and a better approach to these options identified where possible (e.g. an option that meets the Plan objectives and doesn't score -3). Where there are no options that meet this criterion the -3 options are progressed as the Preferred Approach. For such options mitigation in the form of avoidance is provided within the Plan, for example should potential adverse effects on European sites be identified at the project level from such an option the Plan will have identified other options that could be progressed at the project level if required.

B.3.5 Material Assets

Table B-5 Fine Screening Questions M1 and M2

Fine Screening Question M1	Criteria	Data Sources	Score	
Will the option make effective use of existing assets?	<ul style="list-style-type: none"> Negatively scored if additional infrastructure required e.g. new WTP, pipeline, boreholes. Neutral score if existing assets utilised Positive score for improved efficiency and allowing decommissioning of old/failing assets Unlikely to be sufficient information for allocation of +2 or +3 scoring of level of benefit 	<ul style="list-style-type: none"> Uisce Éireann GIS layers 	3	N/A
			2	N/A
			1	Rationalisation of existing assets
			0	Component upgrade within existing site
			-1	Brownfield Site, WTP upgrade, new/replaced network <20km
			-2	Greenfield Site new WTP, new/replaced network 20-50km
-3	New WTP with limited life span (e.g. Lough Talt). Significant above ground assets (desal), new/replaced network >50km			
Fine Screening Question M2	Criteria	Data Sources	Score	
Will this option conflict with critical infrastructure, or does the	<ul style="list-style-type: none"> Uisce Éireann GIS layer on land use can highlight areas 	<ul style="list-style-type: none"> Uisce Éireann GIS layers Myplan.ie 	3	N/A
			2	N/A

<p>option conflict with existing business, planned land use or valuable agricultural land.</p> <p>(see W6 for Navigation impact)</p>	<p>where agricultural land may be disrupted.</p> <ul style="list-style-type: none"> • Uisce Éireann GIS layer for existing water infrastructure • Cannot assess planned land use on Uisce Éireann GIS but can use Myplan.ie to check how land is zoned in a number of different areas • Cumulative impacts on other plans and projects will be assessed separately. 		1	Unlikely to have positive impact
			0	No long term impact on critical infrastructure or operations – such as below ground assets where land can be reinstated
			-1	Loss of agricultural land. New above ground assets that will change land use
			-2	Loss to amenities, parks and designated sites or below ground works on land with strategic use.
			-3	Land with strategic use potential and above ground infrastructure

B.3.6 Landscape and Visual

Table B-6 Fine Screening Questions L1

Fine Screening Question L1	Criteria	Data Sources	Score	
<p>Could this option impact the landscape character areas, townscape character areas or important views – detract or improve?</p>	<ul style="list-style-type: none"> • Does the option entail new assets e.g. WTP, pipeline and boreholes? • Proximity to settlements • Are there any landscape considerations in this area? • Score more negatively if located in a sensitive landscape. 	<ul style="list-style-type: none"> • Datasets/Documents exist for some counties (e.g. Wicklow) but no central map with all counties • Uisce Éireann GIS layers 	3	Unlikely to be sufficient information for allocation of +3 scoring
			2	Unlikely to be sufficient information for allocation of +2 scoring
			1	Rationalisation involving removal of above ground structures
			0	No additional visual impact – such as upgrade within an existing site
			-1	Temporary View Impact i.e. construction of below ground assets

Fine Screening Question L1	Criteria	Data Sources	Score	
			-2	New above ground assets
			-3	New significant above ground assets in landscape amenity areas

B.3.7 Climate Change

Table B-7 Fine Screening Questions CC1

Fine Screening Question CC1	Criteria	Data Sources	Score	
What is the level of construction and operational carbon emissions associated with the option – tonnes?	<ul style="list-style-type: none"> Carbon cost information to be used if available for fine screening otherwise scoring based on indicators of construction and operational scale from initial option descriptions New large WTPs scored negatively based on energy requirements. Energy intensive processes such as desalination and effluent reuse to be reflected in scoring <p>Note: Carbon calculations for embodied and operational carbon and NPV costings undertaken</p>	<ul style="list-style-type: none"> Option descriptions 	3	N/A
			2	N/A
			1	N/A
			0	Small increases in abstraction at existing sites <10m ³ /d or small scale upgrades.
			-1	Increases in abstraction, pumping water through <20km of network, increase in abstraction to from 0.1 to 10Ml/d
			-2	Significant new/increases in abstraction (>10 to 50Ml/d), pumping water through >20-50km of network

Fine Screening Question CC1	Criteria	Data Sources	Score	
	<p>after fine screening and used as an input for the approach development rather than the MCA carbon scoring.</p> <ul style="list-style-type: none"> There might be opportunity for reducing carbon through the use of renewable energy sources. If this information is not available for scoring it will be highlighted in the assessment for consideration either for a specific scheme or in relation to opportunities across a WRZ/study area/region. 		-3	Significant new/increases in abstraction (>50MI/d), pumping water through >50km of network or energy intensive treatment such as desalination

B.3.8 Cultural Heritage

Table B-8 Fine Screening Questions CH1

Fine Screening Question CH1	Criteria	Data Sources	Score	
Does this option avoid direct damage to, or detract from the setting of, designated cultural	<ul style="list-style-type: none"> Is the option located in proximity distance of these sites? 	<ul style="list-style-type: none"> Uisce Éireann GIS layers for National Monuments in State Care and NIAHs 	3	N/A
			2	N/A
			1	N/A

Fine Screening Question CH1	Criteria	Data Sources	Score	
heritage assets, or does this contribute to protecting them?	<ul style="list-style-type: none"> Unknown archaeological risk is not scored at this stage but to be considered at later assessment stages. Unlikely to be sufficient information to score any benefits such as improvements to access to sites. 	<ul style="list-style-type: none"> Online historic environment viewer 	0	No or low risk to cultural heritage sites
			-1	New above ground assets close to heritage site (NIAH/SMR) – potential to detract from setting
			-2	New above ground/below ground asset close to heritage site (NIAH/SMR) that would not result in a loss of site but would involve a large amount of archaeological input
			-3	New above ground/below ground asset resulting in loss of NIAH/SMR site (e.g. a pipeline through an earthworks site)

B.3.9 Geology and Soils

Table B-9 Fine Screening Questions G1

Fine Screening Question G1	Criteria	Data Sources	Score	
Would any designated or non-designated geological features, valuable soils, or contaminated land sites be affected?	<ul style="list-style-type: none"> Loss of valuable geological sites or risks from contaminated sites and loss of soils resources. Lack of detail on design and routing at this stage so not possible to assess to sufficiently to compare options other than to check 	<ul style="list-style-type: none"> Online GSI database Uisce Éireann GIS layers for soils, geological features 	3	N/A
			2	N/A
			1	N/A
			0	No or low risk to geological heritage sites

Fine Screening Question G1	Criteria	Data Sources	Score	
	<p>geological features are avoided.</p> <ul style="list-style-type: none"> • Further assessment of impact on soils or risks from contaminated land would be required at a more detailed assessment stage. 		-1	New above ground assets close to geological heritage site – potential to detract from setting. Some risk to archaeological interest from below ground construction
			-2	New above ground/below ground asset within geological heritage site that would not result in a loss of site but would involve a large amount of input
			-3	New above ground/below ground asset resulting in loss of geological heritage site

Appendix C Preferred Approaches for the Study Areas

Note: SA options are also known as ‘group options’

C.1 SAA Preferred Approach

WRZ	SAA Preferred Approach	
	Option Description	SA Option
0600SC0001: Inishowen West & Carndonagh & Culdaff	SAA-262 Interconnect Inishowen West/Carndonagh/ Culdaff to new sources developed near Letterkenny	66
0600SC0006: Rosses	SAA-118a New SW abstraction from Loch an Luir and new WTP.	-
0600SC0007: Arranmore Island	SAA-141 Increase existing SW abstraction from Lough Shore. Involves rebuilding dam structure to increase operational lake storage volume	-
0600SC0009: Killybegs	SAA-273 Increase existing SW abstraction from Lough Aderry.	67
0600SC0010: Donegal (River Eske)	SAA-193 Interconnect Donegal (River Eske) WRZ with new Ballyshannon WTP at Knaddar on River Erne/ESB Dam-Kathleen Falls and supply deficit.	42
0600SC0012: Culdaff	SAA-261 Rationalise Culdaff to new sources developed near Letterkenny	66
0600SC0013: Owenteskiny	SAA-274 Interconnect Owenteskiny and Killybegs to meet deficit from Lough Aderry	67

WRZ	SAA Preferred Approach	
	Option Description	SA Option
0600SC0026: Gortahork-Falcarragh	SAA-111a New SW abstraction from Lough Altan and new WTP.	-
0600SC0028: Lough Mourne	SAA-026a Interconnect Lough Mourne with new WTP at Knaddar, Ballyshannon on River Erne/Kathleen Falls (ESB) and supply deficit.	42
0600SC0029: Letterkenny & Inishowen East & Pollan Dam	SAA-264, SAA-265 and SAA-266 Develop Pollan Dam, Glen Lough and Gartan Lough for Letterkenny & Inishowen East & Pollan Dam WRZ and surrounding WRZs	66
0600SC0030: Ballyshannon & Bundoran	SAA-191 New Ballyshannon WTP at Knaddar on River Erne/ESB Dam-Kathleen Falls and supply deficit.	42
0600SC0035: Glenties-Ardara	SAA-272 Split WRZ and supply part of the WRZ from Killybegs and another part from Lettermacaward and decommission existing source.	67
0600SC0036: Frosses-Inver	SAA-192 Interconnect Frosses-Inver WRZ with new Ballyshannon WTP at Knaddar on River Erne/ESB Dam-Kathleen Falls and supply deficit.	42
0600SC0038: Lettermacaward	SAA-271 Increase existing SW abstraction from Lough Derkmore impoundment. Involves significant project to raise dam.	67
0600SC0039: Creeslough Dunfanaghy	SAA-268 Rationalise Creeslough Dunfanaghy to new sources developed near Letterkenny	66

WRZ	SAA Preferred Approach	
	Option Description	SA Option
0600SC0043: Carrigart-Downings & Cranford	SAA-267 Rationalise Carrigart-Downings & Cranford to new sources developed near Letterkenny	66
0600SC0045: Buncrana	SAA-263 Rationalise Buncrana to new sources developed near Letterkenny	66
0600SC0046: Fanad West	SAA-269 Rationalise Fanad West to new sources developed near Letterkenny	66
0600SC0047: Fanad East	SAA-270 Rationalise Fanad East to new sources developed near Letterkenny	66
0600PRI3077: Alt Raws	SAA-217 Rationalise Alt Raws to Lough Mourne WRZ.	-
0600PRI3078: Meeneragh/ Cronalaghey	SAA-218 Rationalise Meeneragh to Lough Mourne WRZ	-

C.2 SAB Preferred Approach

WRZ	SAB Preferred Approach	
	Option Description	SA Option
0200SC0014: Cavan RWSS	SAB-011 Interconnect Cavan and Ballyjamesduff WRZs. Supply spare capacity from Ballyjamesduff RWSS to Cavan RWSS.	01

WRZ	SAB Preferred Approach	
	Option Description	SA Option
	0200SC0012 - Upgrade WTP for water quality improvements. Ballyjamesduff RWSS is not in deficit and supply spare capacity to Cavan RWSS.	
0200SC0016: Belturbet PWS	SAB-024 Rationalise Belturbet WRZ, Swanlinbar and Bawnboy to Ballyconnell WRZ and create a new regional scheme.	38
0200SC0011: Ballyconnell PWS	SAB-029 Increase GW abstraction (Newtown-Ballyconnell GWB (karstic)) from existing boreholes to supply deficit at Ballyconnell PWS	38
0200SC0013: Bawnboy PWS	SAB-041 Rationalise Belturbet WRZ, Swanlinbar and Bawnboy to Ballyconnell WRZ and create a new regional scheme.	38
0200SC0019: Swanlinbar PWS	SAB-048 Rationalise Belturbet WRZ, Swanlinbar and Bawnboy to Ballyconnell WRZ and create a new regional scheme.	38
0200SC0012: Ballyjamesduff RWSS	SAB-053 Interconnect Cavan and Ballyjamesduff WRZs. Supply spare capacity from Ballyjamesduff RWSS to Cavan RWSS. 0200SC0012 - Upgrade WTP for water quality improvements. Ballyjamesduff RWSS is not in deficit and supply spare capacity to Cavan RWSS.	01
0200SC0017: Cootehill PWS	SAB-060 New SW abstraction from River Drumore to supply deficit. Treat at the existing Kilawaun WTP.	-

WRZ	SAB Preferred Approach	
	Option Description	SA Option
0200SC0008: Ballyhaise PWS (GWS Import)	SAB-067 Keep supplying Ballyhaise WRZ from Annagh GWS	-
0200SC0006: Shercock PWS (GWS Import)	SAB-072 Keep supplying Shercock WRZ from Dhuish GWS.	-
0200SC0002: Blacklion PWS (GWS Import)	SAB-077 & SAB-078 Keep supplying Blacklion WRZ from Gowlan GWS (Cuilcagh Mountain Spring and Garvagh Lough).	-
0200SC0004: Gowna (GWS Import)	SAB-084 Keep supplying Gowna WRZ from Erne Valley GWS.	-
2400SC0003: Clones	SAB-086 Increase GW abstraction (productive fissured bedrock) from existing boreholes to supply deficit at Clones WRZ	-
2400SC0004: Newbliss	SAB-189 Upgrade Newbliss WTP for water quality improvements. Newbliss WRZ is not in deficit.	-
2400SC0010: Smithboro	SAB-104 Interconnect Smithboro WRZ and Stranodan GWS and supply deficit from GWS.	-
2400SC0011: Monaghan	SAB-190 Upgrade Togan (Lake) WTP for water quality improvements. Monaghan WRZ is not in deficit. SAB-191 Upgrade Crosses WTP for water quality improvements. Monaghan WRZ is not in deficit.	-

WRZ	SAB Preferred Approach	
	Option Description	SA Option
2400SC0008: Emyvale (GWS Import)	SAB-115 Keep supplying Emyvale WRZ from Glaslough and Tyholland GWS.	-
2400SC0005: Glaslough (GWS Import)	SAB-123 Keep supplying Glaslough WRZ from Glaslough and Tyholland GWS.	-
2400SC0002: Lough Egish	SAB-127 Upgrade Kilkitt WTP for water quality improvements. Lough Egish WRZ is not in deficit.	-
1700SC0004: Kinlough Tullaghan	SAB-202 New SW abstraction from Glenade Lough and upgrade of existing Glenade WTP	-
2000SC0004: Gowna	SAB-133 Replace rising main connecting raw water pump station and WTP at Lough Gowna (Cornadrung Pump Station), namely flooding of pump station, lack of control (raw water pumps control flow through plant) and increase SW abstraction to supply deficit.	-
0600SC0041: Cashilard	SAB-170 Rationalise Cashilard to Ballymagoarty (part of Ballyshannon/Bundoran WRZ)	49
0600SC0011: Pettigo Pub	SAB-173 Increase GW abstraction from existing BHs to supply deficit at Pettigo Pub WRZ.	-
N/A: Derrykillev	SAB-185 and SAB-157 New SW abstraction from Assaroe Lake and new WTP (Planning Permission granted for new abstraction and WTP at Knaddar, Ballyshannon on River Erne/Kathleen Falls-ESB Dam). Rationalise Derrykillev to Ballyshannon WRZ (Assaroe lake source).	35

C.3 SAC Preferred Approach

WRZ	SAC Preferred Approach	
	Option Description	SA Option
2700SC0001: Lough Talt	SAC-143 Rationalise Lough Talt to Lisglennon WTP	43
2200SC0004: Ballina	SAC-144 Increase SW abstraction from Lough Conn. Upgrade Lisglennon WTP for increased capacity and and maintain Wherrew WTP at current capacity	43
2200SC0019: Knock Airport	SAC-35 Rationalise Knock Airport to Kilkelly WRZ	15
2200SC0006: Ceide Fields	SAC-39 Increase GW abstraction (Belmullet GWB (poorly productive bedrock)) to supply deficit at Ceide Fields WRZ, upgrade Ceide Fields WTP	-
2700SC0003: North Sligo Regional Water Supply	SAC-44 New GW abstraction to supply deficit at North Sligo, upgrade WTP. To be used in conjunction with current Ardnaglass BH	-
2200SC0018: Swinford	SAC-137 Rationalise Swinford to Kilaturley GWS	-
2200SC0011: Foxford	SAC-67 New GW abstraction to supply deficit at Foxford, upgrade WTP	-
2200SC0008: Charlestown	SAC-73 Interconnect Kilaturley GWS with Charlestown and supply deficit from GWS.	-
2200SC0012: Kilkelly	SAC-35a	15

WRZ	SAC Preferred Approach	
	Option Description	SA Option
	Increase GW abstraction at Kilkelly WRZ, upgrade Kilkelly WTP	
2200SC0014: Kiltimagh PWS	SAC-139 Rationalise Kiltimagh to Lough Mask WRZ	42
2200SC0007: Erris RWSS	SAC-86 Increase SW abstraction from Carrowmore Lake to supply deficit at Erris WRZ, upgrade Erris WTP	-
2200SC0005: Achill	SAC-142 New SW abstraction from Keel Lough and new raw water transfer to existing WTP. Includes WTP upgrade. New source to supplement Accorymore Lake during dry periods only.	-
2700SC0002: Lough Easkey RWSS	SAC-145 Rationalise Lough Easky to Lisglennon WTP	43
2700SC0004: Sligo Town & Environs Foxes Den Public Water Supply	SAC-101 Rationalise Kilsellagh impoundment if deemed unreliable source and increase abstraction from Lough Gill and expand of Foxes Den WTP to cover Kilsellagh supply and supply deficit.	-
1700SC0003: North Leitrim RWSS	SAC-108 Upgrade Moneyduff WTP - no deficit	-
2700SC0005: Riverstown	SAC-138 Refurb existing spring and upgrade WTP for water quality improvements	-
0200SC0003: Dowra	SAC-131	-

WRZ	SAC Preferred Approach	
	Option Description	SA Option
	Keep supplying Dowra WRZ from Doobally GWS.	

C.4 SAD Preferred Approach

WRZ	SAC Preferred Approach	
	Option Description	SA Option
1200SC0007: Ballyconneely	SAD-196 Rationalise to Carna Kilkieran	41
1100SC0001_B: Carna Kilkieran RWSS	SAD-195 New SW abstraction from Lough Skannive and upgrade existing WTP and upgrade existing Carna Kilkieran WTP	41
2200SC0002: Clare Island	SAD-014 New GW abstraction (poorly productive bedrock - Clare Island groundwater body)	-
1200SC0010: Cleggan Claddaghduff	SAD-209 New Connemara RWSS (Kylemore Lough)	45
1200SC0011: Clifden	SAD-027 New SW abstraction from Lough Auna and upgrade existing Clifden WTP	-
1200SC0012: Clonbur	SAD-033 New SW abstraction from Lough Corrib and new WTP	-
1100SC0001_D: Dunmore/Glenamaddy (Glenamaddy)	SAD-040	-

WRZ	SAC Preferred Approach	
	Option Description	SA Option
	New GW abstraction from Gortgarogh GWB (Sean, Robbie spring) spring	
1100SC0001: Galway City (Terryland & Lumineagh)	SAD-046A Increase existing SW abstraction at Terryland from River Corrib	-
1200SC0037: Carraroe	SAD-200 Rationalise Carraroe to Spiddal (Lough Bouliska)	43
1200SC0038: Spiddal	SAD-199 Increase existing SW abstraction from Lough Bouliska and connect with neighbouring WRZs	43
1200SC0017: Inisboffin	SAD-055 Desalination plant to supply full deficit. No blending, chemical remineralization only.	-
1200SC0018: Inishere	SAD-058 Optimise GW abstraction from current springs (includes GW harvesting/raw water storage)	-
1200SC0004: Inishmean	SAD-069 Optimise GW abstraction from current springs (includes GW harvesting/raw water storage)	-
1200SC0019: Inishmore	SAD-074 Increase GW abstraction from existing boreholes and new raw water storage to maximise GW availability in winter months	-
2200SC0003: Inishturk	SAD-158	-

WRZ	SAC Preferred Approach	
	Option Description	SA Option
	Raise existing dam height and new impoundment on the other side of the lake. Increase SW abstraction from existing Lake Coolacknick impoundment and WTP upgrade.	
1200SC0024: Leenane	SAD-210 New Connemara RWSS (Kylemore Lough)	45
2200SC0001: Lough Mask & Westport	SAD-218 Increase SW abstraction from existing Lough Mask and upgrade Tourmakeady WTP	48
2200SC0015: Louisburgh	SAD-217 Rationalise Louisburgh via new Community/GWS being developed to take water from Westport to Murrisk	48
1100SC0001_H: Mid-Galway	SAD-101 Increase existing GW abstraction from existing spring (karstic bedrock - Clare-Corrib groundwater body)	-
2200SC0016: Mulranny	SAD-111 New GW abstraction (karstic bedrock - Newport groundwater body)	-
2200SC0017: Newport	SAD-117A Increase SW abstraction from existing River Newport and upgrade existing Newport WTP	-
1100SC0001_J: Oughterard	SAD-122 Increase SW abstraction from existing Lough Buffy	-
1100SC0001_K: Rosmuc	SAD-201 Rationalise Rosmuc to Spiddal (Lough Bouliska)	43

WRZ	SAC Preferred Approach	
	Option Description	SA Option
1100SC0001_M: Teeranea Lettermore	SAD-202 Rationalise to Spiddal (Lough Bouliska)	43
1200SC0035: Tully-Tullycross	SAD-211 New Connemara RWSS (Kylemore Lough)	45

C.5 SAE Preferred Approach

WRZ	SAC Preferred Approach	
	Option Description	SA Option
2100SC0002 Cavanhill & North Louth	SAE-001 Dependent on operational regime implementation. Increase abstraction from the River Fane and upgrade existing WTP to meet critical peak demand. SCADA and weir control system upgrade required.	-
2100SC0007 Ardee, Collon and Drybridge	SAE-049 & SAE-050 Rationalise Collon Drybridge to South Louth East Meath and new GW (partial supply) for Ardee within WTP vicinity	8
2300SC0004 Drumcondrath	SAE-037 & SAE-038 Groundwater from Pure Bedded Lst aquifer at Possextown and refurb of existing borehole from Rolagh townland	13
2300SC0024 Castletown	SAE-021	-

WRZ	SAC Preferred Approach	
	Option Description	SA Option
	Groundwater enhancement at Castletown	
2300SC0025 Kilmainhamwood	SAE-024 Maintain both plants and new GW abstractions in Kingscourt GWB	-
2100SC0013 Carrickarnon	SAE-033 Maintain import from Northern Ireland Water - isolated scheme	-
0200SC0018 Kingscourt	SAE-061 Upgrade Lisnisky WTP for water quality improvements. Kingscourt WRZ is not in deficit.	-
2400SC0006 Carrickmacross	SAE-050 New GW (partial supply) for Ardee within WTP vicinity	-
2400SC0009 Inniskeen	SAE-052 Upgrade Inniskeen WTP for water quality improvements. Inniskeen WRZ is not in deficit.	-

C.6 SAF Preferred Approach

WRZ	SAC Preferred Approach	
	Option Description	SA Option
2600SC0007: Arigna Regional PWS	SAF-068 Arigna Regional PWS not in deficit - Castletenison WTP Upgrade	-
0200SC0001: Arvagh PWS (GWS Import)	SAF-147 Maintain supply to Arvagh WRZ from Erne Valley GWS	-
1200SC0001: Ballymoe P.S	SAF-072	-

WRZ	SAC Preferred Approach	
	Option Description	SA Option
	Ballymoe WTP upgrade - no deficit	
2600SC0008: Boyle Regional	SAF-066 Interconnect Boyle Ardcarne with South Leitrim WRZ and supply deficit	29
2600SC0003: Castlerea PWS	SAF-039 Increase GW abstraction at Longford Springs to supply deficit and upgrade WTP	-
2000SC0002: Granard	SAF-030 Increase SW abstraction from Lough Kinale, re-locate existing intake and upgrade WTP	-
1100SC0001_F: Kilkerrin/Moylough	SAF-081 Rationalise to Dunmmore Glenamaddy	34
0200SC0005: Killeshandra PWS (GWS Import)	SAF-150 Keep supplying Killeshandra WRZ from Erne Valley GWS.	-
200SC0001: Lanesboro & Newtowncashel	SAF-021 New GW abstraction to supply deficit at Lanesboro & Newtowncashel, upgrade Lisreevagh WTP	-
2000SC0005: Longford Central	SAF-009 Increase SW abstraction from Lough Forbes and upgrade WTP	-
1100SC0001_I: Mountbellew	SAF-084 Increase GW abstraction for Mountbellew WRZ to supply deficit, decommission Ballygar WTP	-
2600SC0002: North East Regional PWS	SAF-161 Not in deficit - Grange WTP upgrade	-

WRZ	SAC Preferred Approach	
	Option Description	SA Option
2600SC0009: North Roscommon RWSS	SAF-052 Abandon existing intake. New intake from middle lake to meet full demand. New 1.6km raw water mains to existing WTP. Upgrade of WTP to meet full demand.	-
2600SC0004: Roscommon Central WSS	SAF-038 WTP Upgrade - Roscommon Central WSS not in deficit, pump tests to prove high yield spring and BHs	-
1700SC0001: South Leitrim Regional Carrick-on-Shannon	SAF-128 Interconnect Boyle Ardcarne with South Leitrim WRZ and supply deficit (increase abstraction from Shannon and upgrade WTP)	29

C.7 SAG Preferred Approach

WRZ	SAC Preferred Approach	
	Option Description	SA Option
0300SC0005: Kilkeedy PWS	SAG-01 Increase GW abstraction at Kilkeedy BH (Lough Mannagh Turlough groundwater body - karstic bedrock) and upgrade Kilkeedy WTP to supply deficit	-
0300SC0013: Killadysart PWS	SAG-70 Increase SW abstraction from Doo Lough and upgrade existing New Doolough WTP. Rationalise Old Doolough WTP.	13
0300SC0021: Ennistymon	SAG-16	1

WRZ	SAC Preferred Approach	
	Option Description	SA Option
	Interconnect Ennistymon and West Clare (distance TBC, new watermains and network upgrades required) for increased resilience and supply part of the deficit from West Clare (New Doolough WTP) to Ennistymon WRZ	
0300SC0022: Turlough	SAG-62 Increase GW abstraction from Turlough BH (Ballyvaughan Uplands groundwater body - karstic bedrock) and upgrade Turlough WTP	6
0300SC0001: West Clare	SAG-57 Increase abstraction from Doo Lough and upgrade existing New Doolough WTP. Rationalise Old Doolough WTP. SAG-23 Rationalise Killadysart PWS WRZ to West Clare Old Doolough WTP	1/13
0300SC0003: Corofin PWS	SAG-79 No deficit - upgrade Corofin WTP	-
0300SC0004: Carran PWS	SAG-36 Rationalise Carran WRZ to Turlough WRZ to supply deficit	6
1200SC0016: Gort	SAG-39 Increase existing GW abstraction from boreholes (poorly productive bedrock - Caherglassaun Turlough groundwater body)	-
1200SC0023: Kinvara	SAG-46 Increase existing GW abstraction from Kinvara Well (karstic bedrock - Kinvara-Gort groundwater body) - saline intrusion	-

Appendix D SEA Mitigation Measures

SEA options assessment assumes the implementation of standard mitigation measures, such as operation of water sources in line with regulatory requirements and the use of good construction practice. Examples of standard measures expected to be embedded in the design and development of infrastructure options are listed in Table D-1.

Table D-1 Embedded standard mitigation

Mitigation assumptions
Studies and surveys
Feasibility and scheme option studies, including detailed pipeline routing, siting and technology options to avoid effects on designated sites and species.
Studies, surveys and consultation on environmental effects of proposed development following relevant good practice guidance to inform design, identify relevant mitigation and to support appropriate planning permission, EIA and licencing processes.
Investigation, monitoring and modelling studies for groundwater and surface water abstractions to be agreed where relevant in context of schemes meeting WFD no deterioration requirements and RBMP objectives and to support AA requirements.
Short term/construction impacts
Local residents provided with due notice of construction works.
Ensure safe access for pedestrians, cyclists and equestrians, providing diversions where necessary.
Implementation of traffic management measures to minimise disruption to minor roads, including, where possible, limitation of works within peak periods or times.
Use of construction techniques that avoid or minimise disruption to major infrastructure and river crossings, such as directional drilling (where appropriate).
Any disruption to the road to be agreed in advance with transport authorities and traffic management plans to be used where needed.
No works to take place within curtilage of designated cultural heritage sites without necessary consents in place. Directional drilling where needed. Archaeological watching briefs during ground works where agreed as needed to address risk with planning authorities.
No works to take place within or in close proximity to designated sites without necessary consents in place and impacts to be avoided through detailed routing and trenchless construction approaches or timing to avoid disturbance where appropriate.
Appropriate permissions and consents to be obtained for all works which may affect a European protected species or nationally protected species.
A suitably qualified and experienced ecological clerk of works (ECoW) to carry out site supervision works during activities that affect sensitive habitats and species, ensure that site specific mitigation identified following surveys is undertaken.
Appropriate watercourse consents and environmental permits to be obtained for construction activities in or near water.

Consent for noisy works to be obtained and noise barriers used where required.

Best practice measures to control noise, air and water pollution in accordance with guidance.

Long-term mitigation (outside permanent footprints)

Full reinstatement of all footpaths and recreational areas.

Full reinstatement of all habitat types, including hedgerows, and provision of compensation habitat where appropriate.

All river abstraction points to be fitted with fish screens.

Full reinstatement of landscape features, and good management practice for the long-term restoration of landscape features.

Full restoration of agricultural land and previously undeveloped land.

Appropriate abstraction licence to be obtained for new, increased or traded licences.

New built infrastructure to incorporate the appropriate flood defence measures.

Table D-2 illustrates the mitigation measures that specifically respond to the significant environmental effects identified for each SEA topic within the seven SAs of Region/Group 1.

Table D-2 Region/Group 1 significant impacts and corresponding mitigation measures

SEA Topic (abridged)	Significant Impact Identified in SEA	Mitigation Measures
Population & Health	<p>Construction-stage disruption to access routes and recreational areas</p> <p>Construction-stage noise disturbance, dust and extra traffic</p> <p>Changes to drinking water quality caused by WTPs at risk of failure</p>	<ul style="list-style-type: none"> • Regular community liaison • Construction Environmental Management Plan, Traffic Management Plan • Drinking water safety plans, catchment management, leakage reduction programmes, drought management actions – see EAP • Design of upgraded plant to meet drinking water standards
Water	<p>Draw-down of groundwater levels caused by abstraction</p> <p>Abstraction of surface water with risk to reduce flow or water levels</p> <p>Impacts on water quality from surface water runoff or drawdown of water levels</p> <p>Increase in flood risk due to construction of new infrastructure or changes to drainage affecting flood risk during operation.</p>	<ul style="list-style-type: none"> • All abstractions to be operated within the defined sustainability levels • Detailed studies required to determine abstraction regime that will not result in significant negative impacts on surface water or groundwater waterbody WFD status and how WFD objectives can be supported – see climate resilience measure below • Use of treatment and dispersal technologies appropriate to the source effluent and receiving waters • Improvements to residuals management • Implementation of best practice pollution prevention guidance, e.g. IFI 2016, CIRIA C532 • Emergency Pollution Response Plan

SEA Topic (abridged)	Significant Impact Identified in SEA	Mitigation Measures
		<ul style="list-style-type: none"> • Environmental flow linked abstraction limits to minimise impact on summer low flows or fish migration periods • Catchment management to improve water quality where relevant • Locate new infrastructure away from areas of high flood risk. Where this is unavoidable, implement appropriate flood protection measures
Biodiversity	<p>Loss or fragmentation of habitats within development footprint</p> <p>Disturbance to wildlife during construction</p> <p>Discharges of pollutants into water bodies and subsequent impacts on aquatic biodiversity</p> <p>Spread of invasive species during construction works</p>	<ul style="list-style-type: none"> • Location and design of development to take account of designated sites or important habitats • Project level AA screening/AA required • Pre-construction Surveys/Seasonal Restrictions/ECOW • Ecology surveys, CEMPs and consultation to inform site-specific location, design and mitigation • Construction site reinstatement to include biodiversity enhancement and habitat connectivity measures where possible. • INNS Management Plan and biosecurity protocols in relation to water quality and biological sampling • Environmental flow linked abstraction limits to minimise impact on summer low flows or fish migration periods
Landscape	<p>Impacts on local landscapes and visual amenity during construction</p>	<ul style="list-style-type: none"> • Design of new plant to minimise visual effects and agree design with local authorities • Use landscape screening if appropriate, to reduce visual impacts during construction • Tree protection fencing • Lighting management • Link provision of biodiversity and land use reinstatement and enhancement to landscape opportunities where possible
Material assets	<p>Disruption to infrastructure or access to infrastructure, access routes, public spaces and agricultural land</p>	<ul style="list-style-type: none"> • Refine site locations and pipeline alignments to avoid built and natural assets • WRZ configuration – rationalisation opportunities for assets, waste and energy use, sustainable source use – see EAP
Climate change	<p>Reduced resilience to climate change impacts</p> <p>Increase in greenhouse gas emissions</p>	<ul style="list-style-type: none"> • Design criteria to emphasise climate change resilience • Prepare and implement a Climate Change Adaptation and Mitigation Strategy – see WSSP • Climate Sensitive Catchments Project, leakage reduction programmes, drought management actions – see EAP

SEA Topic (abridged)	Significant Impact Identified in SEA	Mitigation Measures
		<ul style="list-style-type: none"> • Development of operational procedures for new groundwater abstraction which seek to limit abstraction volumes under conditions of environmental stress. Further research and assessment work required to inform development of operational procedures • Consider potential for use of renewable energy sources and energy efficiency measures to reduce carbon footprint during construction and operation
Cultural heritage	Loss or damage to cultural heritage assets within construction footprint or through setting or consequential effects.	<ul style="list-style-type: none"> • Maintenance of access to cultural heritage assets during construction • Locations of known archaeological interest/value, or areas where archaeological work is planned, will be signposted/fenced off to avoid unintentional damage • Where a previously unknown heritage asset is discovered, or a known heritage asset proves to be more significant than foreseen at the time of application, the developer will inform the local planning authority and inform the project team of a solution that protects the significance of the new discovery, as far as practicably possible • Further cultural heritage and archaeological assessment and consultation to influence site location, design, pipeline alignment and operational effects such as changes to water flow or level or setting effects.

Appendix E Environmental and Social Costs

E.1 Introduction

This methodology sets out the approach to estimating the environmental and social (E&S) costs for individual options for Uisce Éireann. It uses an ecosystem services approach and uses both data relating to UK-based studies and Irish-based studies.

The aim of the calculations was to capture and value significant residual impacts in relation to ecosystem services. The availability of options data and robust ecosystem services values mean that potential impacts on three ecosystem services are valued:

- Climate regulation – woodland;
- Traffic impacts – opportunity cost of time due to road congestion from roadworks; and
- Food – crops and livestock.

(Note: Carbon emissions are addressed separately and are calculated alongside the construction and operational costs for the options).

Valuation of potential impacts on recreation and biodiversity were excluded from the E&S costs to avoid double counting, as potential effects on recreational amenities are captured within the Multi-Criteria Analysis (Environmental/Population, health, economy and recreation category).

There is the potential for additional ecosystem services categories to be captured within the E&S costs if additional time was available to undertake research into the availability of additional relevant studies.

As the actual route selection and site selection for the options has not yet been carried out, the E&S costs are based on the best available geographic information. A number of assumptions have been made in terms of land type and the size of the land take. Once route and site selection have taken place, the E&S costs can be refined to reflect this updated information.

The E&S costs were provided as a snapshot for one year – they are included in the EBSD model where they are discounted to produce the costs over the required time period.

The E&S costs are presented in 2018 prices, as 2018 is the most recent available data for the GDP deflator. If the E&S costs are required in a different base year to facilitate comparison of costs, assumptions could be made to convert them to the required base year.

The following section looks at individual impact categories in more detail.

E.2 Methodology

E.2.1 Climate regulation – woodland

The climate regulation/woodland impacts are calculated as an annual value – the impact of any woodland lost will continue to be felt in terms of loss of carbon sequestration.

The carbon sequestration rate per hectare of woodland is used to calculate the value of climate regulation for three categories of woodland – broadleaved, coniferous and mixed forest.

For coniferous and broadleaved, the values are calculated as weighted averages of the carbon sequestration rate for young and adult trees. The carbon sequestration rate is taken from the UK Forestry Commission's Woodland Carbon Code Carbon Look-Up Tables (2013) and is weighted by the

proportion of young and adult trees (UK Forestry Commission's National Inventory of Woodland and Trees, 2003).

The mixed forest carbon sequestration rate is the weighted average of the coniferous and broadleaved sequestration rates, based on the biomass stocks of living coniferous and broadleaved trees.

Table E-1 Carbon sequestration assumptions

Assumption	Value	Unit	Study year
Total area of young coniferous trees	84,221	Hectares	2003
Total area of adult coniferous trees	1,228,121	Hectares	2003
Total area of young broadleaved trees	26,879	Hectares	2003
Total area of adult broadleaved trees	510,299	Hectares	2003
Carbon sequestration rate for young coniferous trees	2.64	tCO ₂ e/ha	2013
Carbon sequestration rate for adult coniferous trees	4.47	tCO ₂ e/ha	2013
Carbon sequestration rate for young broadleaved trees	2.20	tCO ₂ e/ha	2013
Carbon sequestration rate for adult broadleaved trees	4.71	tCO ₂ e/ha	2013
Biomass stocks in living coniferous trees in GB	218	Million tonnes oven dry	2013
Biomass stocks in living broadleaved trees in GB	208	Million tonnes oven dry	2013

The non-traded value of carbon is used as there is no market for carbon sequestration – it is the social cost.

The carbon cost is taken from the PSC Central Technical References and Economic Appraisal Parameters document¹, published by the Department of Public Expenditure and Reform.

The non-trade price of carbon is uplifted to 2018 prices using the GDP deflator for Ireland published by the World Bank²; 2018 prices were selected, as this was the most recent year for the GDP deflator.

E.2.2 Traffic impacts – opportunity cost of time due to road congestion from roadworks

The traffic impacts are calculated as a one-off value – this is because these impacts will only be realised during construction.

The number of vehicles per day, speed of pipe laying and time of delay at roadworks for different road types are used with the average value of time per hour to calculate the cost of congestion.

The number of vehicles per day are taken from the UK Department for Transport's 'Road Traffic Estimates: Great Britain 2017'. The speed of pipe laying has been informed by professional judgement

¹ <https://www.gov.ie/en/publication/public-spending-code/>

² <https://data.worldbank.org/indicator/NY.GDP.DEFL.ZS?locations=IE>

and is assumed to be 30m/day. The time of delay at roadworks is presented by type of road – motorway, A road, B road, minor road – averaging the values for urban and rural roads³.

Table E-2 Traffic assumptions

Assumption*	Value	Unit	Study year
Number of vehicles per day on a motorway (passing a reference point)	88,000	Vehicles	2017
Number of vehicles per day on an A road (passing a reference point)	35,500	Vehicles	2017
Number of vehicles per day on a B road (passing a reference point)	14,000	Vehicles	2017
Number of vehicles per day on a minor road (passing a reference point)	1,600	Vehicles	2017
Average time delay at road works for motorway	0.06	Hours/vehicle	2005
Average time delay at road works for A road	0.06	Hours/vehicle	2005
Average time delay at road works for B road	0.03	Hours/vehicle	2005
Average time delay at road works for minor road	0.004	Hours/vehicle	2005

*Road categories adapted where appropriate to reflect traffic levels

The average value of time per hour is calculated using the value of time from Transport Infrastructure Ireland's 'Project Appraisal Guidelines for National Roads Unit 6.11'⁴, and apportioning it by the vehicle miles by type of vehicle for Great Britain⁵. Data for Ireland for vehicle miles was not readily available. This produced an estimate for the value of time per hour for an average vehicle.

The length of pipe laid which intersects different types of road was provided through GIS data.

E.2.3 Food – crops and livestock

The food/crops and livestock impacts are calculated as an annual value – the impact of any agricultural land lost will continue to be felt in terms of loss of productive agricultural land.

The area of land take for each option was calculated using information on the proposed new infrastructure – water treatment plants, desalination plants, pumping stations, groundwater treatment plants, boreholes and reservoirs. As the geographic information for each option is only indicative at this stage, it was assumed that all of the proposed land take was agricultural land.

The value of the agricultural land was calculated using information on the indicative monetary estimates of the gross margins (£/hectare) for selected crops from the Multi-Coloured Manual⁶. An average of the gross margin for different arable land types was used.

³ Goodwin, P. (2005) Utilities' street works and the cost of traffic congestion, London, National Joint Utilities Group. Available at: <http://www.njug.org.uk/wp-content/uploads/93.pdf>

⁴ <https://www.tiipublications.ie/library/PE-PAG-02030-01.pdf>

⁵ Data table TRA4213 in Department for Transport (2017) 'Road Traffic Estimates: Great Britain 2017' available from <https://www.gov.uk/government/statistics/road-traffic-estimates-in-great-britain-2017>

⁶ <https://www.mcm-online.co.uk/handbook/>

Table E-3 Agricultural land MCM assumptions

MCM group	Gross margin (£/ha) 2017 prices	MCM group assumption
Winter wheat	758	Assumes 9t/ha
Extensive arable	741	Assumes wheat 70%, oil seed rape 20%, beans 10% by area
Intensive arable	1,370	Assumes wheat 66%, sugar beet 17%, potatoes and vegetables 17% by area

This was uplifted to 2018 prices using the GDP deflator for Ireland published by the World Bank⁷. 2018 prices were selected, as this was the most recent year for the GDP deflator. It was converted to euros using the Bank of England's euro/sterling spot exchange rate⁸.

⁷ <https://data.worldbank.org/indicator/NY.GDP.DEFL.ZS?locations=IE>

⁸ <https://www.bankofengland.co.uk/boeapps/database/fromshowcolumns.asp?Travel=NlxSUx&FromSeries=1&ToSeries=50&DAT=RNG&FD=1&FM=Jan&FY=2010&TD=28&TM=Jul&TY=2020&FNY=&CSVF=TT&html.x=167&html.y=37&C=DMD&Filter=N>

Appendix F Policy, Plan and Programme Review

F.1 National and regional level

Theme	Policies, Plans and Programmes
All aspects	1. EU Sustainability Policy
	2. UN Sustainable Development Goals
	3. Our Sustainable Future, a Framework for Sustainable Development for Ireland
	4. Strategic Environmental Directive (2001/42/EC)
	5. European Communities (Environmental Assessment of Certain Plans and Programmes) Regulations 2004 S.I. No. 435/2004 (as amended 2011 S.I. No. 200/2011)
	6. Planning and Development (Strategic Environmental Assessment) Regulations 2004 S.I. No. 436/2004 (as amended 2011 S.I. No. 201/2011)
	7. Environmental Impact Assessment Directive (2014/52/EU)
	8. European Union (Planning and Development) (Environmental Impact Assessment) Regulations 2018 S.I. No. 296/2018 (as amended S.I. No. 646/2018)
	9. Environmental Liability Directive (2004/35/EC)
	10. European Communities (Environmental Liability) Regulations 2008 S.I. No. 547/2008 (as amended 2015 S.I. No. 293/2015)
	11. European Green Deal
	12. Water Services Act, 2013 (as amended 2017)
	13. Ireland 2040: Our Plan, National Planning Framework
	14. Water Services Policy Statement 2018 - 2025
	15. National Spatial Strategy for Ireland 2002-2020 (Department of the Environment and Local Government, 2002)
	16. Regional Spatial and Economic Strategies
	17. Planning and Development Act 2000 (as amended)
	18. Planning and Development Regulations 2001 (as amended)
	19. Capital Investment Plan 2016-2021
	20. Climate Action Plan 2023
	21. Ireland's Environment - An Integrated Assessment 2020
	22. National Implementation Plan for the Sustainable Development Goals 2022-2024
	23. National Development Plan 2021-2030
	24. National Development Plan 2018-2027
	25. Creating Green Infrastructure for Ireland: Enhancing Natural Capital for Human Wellbeing
	26. Our Rural Future – Rural Development Policy 2021-2025

Theme	Policies, Plans and Programmes
Population, economy, tourism and recreation and human health	<ul style="list-style-type: none"> 27. Aarhus Convention 28. Drinking Water Directive (2020/2184) 29. European Union (Drinking Water) Regulations 2014 S.I. No. 122/2014 (as amended 2017 S.I. No. 464/2017) 30. EPA Drinking Water Advice Note No. 8: Developing Drinking Water Safety Plans (2011) 31. Groundwater Protection Schemes (1999) 32. World Health Organization Guidelines for Drinking Water Quality (4th edition, 2017) 33. Water safety plan manual: step-by-step risk management for drinking-water suppliers (2009) 34. Irish Water - Water Services Strategic Plan 2015 35. Irish Water - National Wastewater Sludge Management Plan 36. Irish Water - Lead in Drinking Water Mitigation Plan 37. Healthy Ireland Framework 2013-2025 38. Draft Agri-Food Strategy 2030 39. Food Vision 2030 40. Food Wise 2025 41. Food Harvest 2020 42. Fáilte Ireland's 10 Year Tourism Strategy 43. Fáilte Ireland Visitor Experience Development Plans 44. EU Tourism Policy 45. National Countryside Recreation Strategy 46. Tourism Policy Statement 47. Tourism Development and Innovation. A Strategy for Investment 2016-2022 48. Tourism Action Plan 2019-2021 49. Waterways Ireland Tourism Masterplan for the River Shannon 2020-2030 50. Healthy Ireland Framework 2019-2025 51. The National Outdoor Recreation Strategy 2023-2027 52. People, Place, and Policy – Growing Tourism to 2025
Water environment	<ul style="list-style-type: none"> 53. Water Framework Directive (2000/60/EC) 54. European Communities (Water Policy) Regulations 2003 S.I. No. 722/2003 (as amended 2010 S.I. No. 326/2010) 55. European Union (Water Policy) (Abstractions Registration) Regulations 2018 (S.I. No. 261/2018) 56. Ireland's UN SDGs - Report on Indicators for Goal 6 Clean Water and Sanitation: Overview – SDG 6 Clean Water and Sanitation 57. River Basin Management Plan 2018 - 2021

Theme	Policies, Plans and Programmes
	<ul style="list-style-type: none"> 58. Draft River Basin Management Plan 2022-2027 59. General Scheme of the Water Environment (Abstractions) Bill 2020 60. Bathing Water Directive (2006/7/EC) 61. Bathing Water Quality Regulations 2008 S.I. No. 79/2008 (as amended 2016 S.I. No. 163/2016) 62. Floods Directive (2007/60/EC) 63. European Communities (Assessment and Management of Flood Risks) Regulations 2010 S.I. No. 122/2010 64. Nitrates Directive (91/676/EEC and derogation 2018/209) 65. European Union (Good Agricultural Practice for Protection of Waters) Regulations 2014 S.I. No. 31/2014 (as amended 2020 S.I. No. 529/2020) 66. Urban Wastewater Treatment Directive (91/271/EEC as amended 98/15/EEC) 67. Urban Waste Water Treatment Regulations 2001 S.I. No. 254/2001 (as amended 2010 S.I. No. 48/2010) 68. Marine Strategy Framework Directive (2008/56/EC) 69. European Communities (Marine Strategy Framework) Regulations 2011 S.I. No. 249/2011 (as amended 2018 S.I. No. 648/2018) 70. Groundwater Directive (2006/118/EC) 71. European Communities Environmental Objectives (Groundwater) Regulations 2010 S.I. No. 9/2010 (as amended 2016 S.I. No. 366/2016) 72. Catchment Flood Risk Management (CFRAM) Programme 73. Flood Risk Management Plans 74. Fifth Nitrates Action Programme 2022-2025 75. National Marine Planning Framework 76. Maritime Spatial Planning Directive 2014/89/EU 77. Marine and Coastal Access Act 2009 78. UK Marine Strategy
Biodiversity, flora and fauna	<ul style="list-style-type: none"> 79. International and European Council Conventions including the North Atlantic Salmon Conservation Organisation (NASCO), Convention for the Conservation of Salmon in the North Atlantic Implementation Plan (2019 – 2024). 80. EU Biodiversity Strategy for 2030 81. The Habitats Directive (92/43/EEC) 82. The Birds Directive (2009/147/EC) 83. European Communities (Birds and Natural Habitats) Regulations 2011 S.I. No. 477/2011(as amended 2015 S.I. No. 355/2015) 84. Green Infrastructure: Enhancing Europe's Natural Capital Strategy 85. Creating Green Infrastructure for Ireland: Enhancing Natural Capital for Human Wellbeing

Theme	Policies, Plans and Programmes
	<ul style="list-style-type: none"> 86. Wildlife Act 1976 (as amended including 2010) 87. Fisheries Consolidation Act, 1959 88. Other National Biodiversity related regulations 89. National Biodiversity Action Plan 2017-2021 90. All-Ireland Pollinator Plan 2021-2025
Material assets	<ul style="list-style-type: none"> 91. Waste Framework Directive (2008/98/EC) 92. Infrastructure and Capital Investment Plan 2016-2021 93. Waste Management Acts 1996 – 2005 94. Ireland 2040: Our Plan, National Planning Framework 95. National Peatland Strategy 96. Forestry Programme 2014-2020 97. Draft Ireland's Forest Strategy (2022 – 2030) 98. Waste Action Plan for a Circular Economy 99. National Hazardous Waste Management Plan 2014-2020 100. Draft National Hazardous Waste Management Plan 2021 – 2027
Landscape and visual amenity	<ul style="list-style-type: none"> 101. European Landscape Convention 102. National Landscape Strategy for Ireland 2015-2025
Air quality	<ul style="list-style-type: none"> 103. Ambient Air Quality Directive (2008/50/EC) 104. Air Quality Standards Regulations 2011 S.I. No. 180/2011 105. Industrial Emissions Directive (2010/75/EU) 106. European Union (Industrial Emissions) Regulations 2013 S.I. No. 138/2013
Noise	<ul style="list-style-type: none"> 107. Environmental Noise Directive (2002/49/EC) 108. European Communities (Environmental Noise) Regulations 2018 S.I. No. 549/2018
Climate change	<ul style="list-style-type: none"> 109. The Kyoto Protocol 110. Paris Agreement 2015 111. EU Energy and Climate (2020) Package 2009 112. The Climate Action and Low Carbon Development Act 2015 113. Climate Action and Low Carbon Development (Amendment) Bill 2021 114. National Climate Change Adaptation Framework including the Sectoral Adaptation Plans including the Climate Change Adaptation for the Health Sector 2018-2024 115. Ireland's National Policy Position on Climate Action and Low Carbon Development (2014) 116. National Mitigation Plan, 2017 117. Energy White Paper: Delivering a Sustainable Energy Future for Ireland – The Energy Policy Framework 2007-2020

Theme	Policies, Plans and Programmes
	<ul style="list-style-type: none"> 118. National Renewable Energy Action Plan (Directive 2018/2001) 119. European Union (Renewable Energy) Regulations 2020 S.I. No. 365/2020 120. Offshore Renewable Energy Development Plan (2014) and Interim Review (2018) 121. Irish Water Sustainable Energy Strategy 122. National Climate Action Plan 2023 123. European Green Deal 124. Ireland's CAP Strategic Plan 2023-2027 125. National Energy and Climate Plan 2021-2030
Cultural heritage (archaeological and architectural)	<ul style="list-style-type: none"> 126. EU Conventions on Archaeological, Architectural and Cultural Heritage 127. Planning and Development Acts 128. Heritage Act 2018 129. National Monuments Act 2004 (as amended) 130. Architectural Heritage and Historic Monuments Act 1999 131. National Heritage Plan
Geology and soils	<ul style="list-style-type: none"> 132. Planning and Development Act 133. Action Plan for Rural Development
Transboundary	<ul style="list-style-type: none"> 134. Planning Act (NI) 2011 135. Regional Development Strategy: Building a Better Future, 2035 136. Northern Ireland's Climate Change Adaptation Programme 2019 – 2024 137. Climate Change Act (Northern Ireland) 2022 138. Climate Risk Independent Assessment 2021 139. The Water Environment (Floods Directive) Regulations (Northern Ireland) 2009 140. Water Abstraction and Impoundment (Licensing) (Amendment) Regulations (Northern Ireland) 2007 141. The Water Supply (Water Quality) Regulations (Northern Ireland) 2017 142. NI Water (2020) Our Strategy 2021-2046 143. NI Water (2020) Water Resource and Supply Resilience Plan 144. The Private Water Supplies Regulations (Northern Ireland) 2017 145. Sustainable Water – A Long term water strategy for Northern Ireland (2015 – 2040) 146. Fisheries Act (NI) 1966 (as amended) 147. NI Draft Flood Risk Management Plan 2021-2027 148. Marine Act (Northern Ireland) 2013 149. UK Marine Policy Statement 150. Draft Marine Plan for Northern Ireland 151. Historic Monuments and Archaeological Objects (Northern Ireland) Order 1995 152. Protection of Wrecks Act 1973

Theme	Policies, Plans and Programmes
	153. Archaeology 2030 - A Strategic Approach for Northern Ireland
	154. Draft 3rd cycle River Basin Management Plan 2021-2027
	155. The Wildlife (NI) Order 1985 (as amended)
	156. Wildlife and Natural Environment Act (NI) 2011
	157. The Conservation (Natural Habitats, etc.) Regulations (Northern Ireland) 1995 (as amended)
	158. The Environment (NI) Order 2002
	159. The Planning (Environmental Impact Assessment) Regulations (Northern Ireland) 2017
	160. The Strategic Planning Policy Statement (SPPS) for Northern Ireland
	161. Planning Policy Statements (will be superseded by Local Development Plans when adopted)
	162. Biodiversity Strategy for NI to 2020
	163. Draft Environment Strategy
	164. The Draft NI peatland policy
	165. Strategic Planning Policy Statement
	166. Northern Ireland Landscape Character Assessment
	167. Regional Landscape Assessment
	168. The Draft Green Growth Strategy Consultation on the draft Green Growth Strategy for Northern Ireland
	169. Northern Ireland Energy Strategy 2050 Northern Ireland Energy Strategy 2050
	170. Wildlife (Northern Ireland) Order 1985
	171. Conservation (Natural Habitats, etc.) Regulations (Northern Ireland) 1995
	172. The Marine and Coastal Access Act 2009
	173. Strategic Planning Policy Statement for Northern Ireland 2015
	174. An Integrated Coastal Zone Management Strategy for Northern Ireland 2006-2026
	175. Northern Ireland Regional Seascape Character Assessment 2014
	176. North Atlantic Salmon Conservation Organisation (NASCO)
	177. Convention for the Conservation of Salmon in the North Atlantic Implementation Plan for the period 2019 – 2024
	178. Draft Northern Ireland Marine Plan (2018)
	179. Draft Policy Statement on Geothermal Energy for a Circular Economy

F.2 Local level

Theme	Policies, plans and programmes
All aspects	<ol style="list-style-type: none"> 1. Leitrim County Development Plan 2022-2028 (emerging) 2. Draft Leitrim County Council Development Plan 2023-2029 (emerging)

Theme	Policies, plans and programmes
	3. Sligo County Development Plan 2017-2023
	4. Sligo County Development Plan 2023-2029 (emerging)
	5. Sligo City Centre Public Realm Plan (published 2018)
	6. Ballymote Local Area Plan 2012-2018
	7. Enniscrone Local Area Plan 2014-2020
	8. Tobercurry Local Area Plan 2015-2021
	9. County Donegal Development Plan 2018-2024
	10. Buncrana Local Area Plan (to be published in 2023)
	11. Seven Strategic Towns Local Area Plan 2018-2024
	12. Cavan County Development Plan 2014-2020
	13. Draft Cavan County Development Plan 2022-2028 (emerging)
	14. Monaghan County Development Plan 2019-2025
	15. Monaghan County Development Plan 2013-2019
	16. County Monaghan Development Plan 2007-2013
	17. Longford County Development Plan 2021-2027 (emerging)
	18. Longford Town Development Plan 2009-2015
	19. Longford Town & Environs Local Area Plan 2016-2022
	20. Longford Local Area Plan 2023-2029 (emerging)
	21. Louth Development Plan 2015-2021
	22. Louth County Development Plan 2021-2027
	23. Dunleer Local Area Plan 2017-2023
	24. Meath County Development Plan 2020-2026
	25. Westmeath County Development Plan 2021-2027
	26. Westmeath County Development Plan 2014-2020
	27. Mullingar Town Development Plan 2014-2020
	28. Athlone Town Development Plan 2014-2020
	29. Lissywollen South Framework Plan 2018-2024
	30. Clare County Development Plan 2017-2023
	31. Clare County Development Plan 2023- 2029 (emerging)
	32. Clare County Development Ennis Municipal District 2017-2023
	33. Shannon Town and Environs Local Area Plan 2012-2018 (as amended 2019)
	34. Galway County Development Plan 2015-2021
	35. Adapted Galway County Development Plan 2022-2028
	36. Draft Galway City Development Plan 2023-2029 (emerging)
	37. Ardaun Local Area Plan 2018-2024
	38. Athenry Local Area Plan 2012-2022
	39. Athenry Local Area Plan 2023-2029 (emerging)
	40. Gort Local Area Plan 2013-2023

Theme	Policies, plans and programmes
	<ul style="list-style-type: none"> 41. Draft Gort Local Area Plan 2024-2030 42. Loughrea Local Area Plan 2012-2022 43. Tuam Local Area Plan 2018-2024 44. Tuam Draft Local Area Plan 2023-2029 (proposed) 45. Mayo County Development Plan 2014-2020 46. Ireland West Airport Knock Local Area Plan 2012-2018 47. Ballina and Environs Development Plan 2009-2015 48. Ballina Town & Environs Plan 2021-2027 (emerging) 49. Castlebar and Environs Development Plan 2008-2014 50. Draft Castlebar Town & Environs Local Area Plan 2023-2029 51. Westport Town and Environs Development Plan 2010-2016 52. Westport Town & Environs Local Area Plan 2021-2027 (emerging) 53. Draft Mayo County Development Plan 2021-2027 (emerging) 54. Roscommon County Development Plan 2021-2027 (emerging) 55. Roscommon County Development Plan 2014-2020 56. Roscommon Local Area Plan 2023-2029 (emerging) 57. Boyle Local Area Plan 2023-2029 (emerging) 58. Ballaghaderreen Local Area Plan 2017-2023 59. Monksland/Bellandmullia (Athlone West) Local Area Plan 2016-2022 60. Castlerae Local Area Plan 2016-2022 61. Lough Key Local Area Plan 2015-2021 62. Boyle Local Area Plan 2015-2021
Population, economy, tourism and recreation and human health	<ul style="list-style-type: none"> 63. Mayo County Council Corporate Plan 2019-2024 64. Mayo Local Economic and Community Plan 2015-2021 65. County Roscommon Tourism Statement of Strategy and Work Programme 2017-2022 66. Roscommon County Council Local Economic and Community Plan 2016-2021 67. Roscommon County Council Corporate Plan 2019-2024 68. County Sligo Tourism Strategy 2018-2023 69. Wild Atlantic Way Operational Programme 2015-2019 70. County Cavan Tourism Development Plan 2017-2022 71. Cavan County Council Corporate Plan 2019-2024 72. Cavan Local Economic and Community Plan 2016-2021 73. Donegal County Council Tourism Strategy 2017-2020 74. Donegal County Council Corporate Plan 2020-2024 75. Donegal Local Economic and Community Plan 2016-2022 76. Monaghan County Council Tourism Statement of Strategy and Work Programme 2017-2022

Theme	Policies, plans and programmes
	<ul style="list-style-type: none"> 77. County Monaghan Tourism Strategy 2015-2020 78. Monaghan Tourism Strategy 2023-2028 (emerging) 79. Monaghan County Council Local Economic and Community Plan 2015-2021 80. Monaghan County Council Local Economic and Community Plan (2023, emerging) 81. County Monaghan Social Enterprise Strategy 2021-2025 82. Monaghan County Council Corporate Plan 2020-2024 83. Monaghan County Development Plan Strategic Environmental Assessment 2019-2025 84. Monaghan County Council Corporate Plan 2020-2024 85. Leitrim Local Economic and Community Plan 2015-2021 86. Leitrim Local Economic and Community Plan 2023-2029 (in preparation) 87. County Longford Tourism Statement of Strategy and Work Programme 2017-2022 88. Longford Local Economic and Community Plan 2016-2022 89. Longford Local Economic and Community Plan 2023-2029 90. County Longford Local Economic & Community Plan: Socio-Economic Statement & High Level Goals 2022-2028 91. County Louth Tourism and Heritage Action Plan 2016-2021 92. Westmeath Tourism Strategy 2021-2027 (emerging) 93. Westmeath Local Economic & Community Plan 2016-2021 94. Clare County Tourism Strategy 2030 95. Strategic Integrated Framework Plan for the Shannon Estuary 2013-2020 96. Spatial and Economic Plan for Ennis 2040 97. A growth strategy for tourism in Leitrim 2015-2021 98. Galway County Local Economic and Community Plan 2016-2022 99. Galway City Local Economic and Community Plan 2015-2021
Biodiversity, flora and fauna	<ul style="list-style-type: none"> 100. County Mayo Biodiversity Action Plan 2010-2015 101. Roscommon Town Community Biodiversity Action Plan 2019-2023 102. Biodiversity Species List for County Donegal May 2009 103. Monaghan Biodiversity and Heritage Strategic Plan 2020-2025 104. Local Biodiversity Action Plan for County Louth 2021-2026 105. County Meath Biodiversity Action Plan 2015-2020 106. County Westmeath Biodiversity Action Plan 2014-2020 107. Clare Biodiversity Action Plan 2017-2023 108. Galway county Heritage and Biodiversity Plan 2017-2022 109. County Leitrim Biodiversity Action Plan 2022-2027
Material assets	

Theme	Policies, plans and programmes
Landscape and visual amenity	<ul style="list-style-type: none"> 110. Galway County Council Landscape Character Assessment May 2021 111. Landscape Appraisal of County Mayo 112. Landscape Character Assessment of County Roscommon (published 2008) 113. County Monaghan Landscape Character Assessment August 2008 114. Seascape Character Assessment of County Donegal (published 2016) 115. Landscape Character Assessment of County Donegal (published 2016) 116. Settlement Character Assessment of County Donegal (published 2016) 117. Louth County Council Landscape Character Assessment December 2002 118. Landscape Character Assessment County Longford 2021-2027 119. Sligo and Environs Local Area Plan 2010-2016
Noise	<ul style="list-style-type: none"> 120. Galway County Council Noise Action Plan 2019-2023 121. Galway City Council Noise Action Plan 2019-2023 122. Leitrim County Council Noise Action Pan 2018-2023 123. Mayo County Council Noise Action Plan 2018-2023 124. Roscommon County Council Noise Action Plan 2018-2023 125. Noise Action Plan for Sligo County and City (published 2018) 126. Cavan County Council Noise Action Plan (published 2019) 127. Donegal County Council Draft Noise Action Plan 2018-2023 128. Monaghan County Council Noise Action Plan 2018-2023 129. Longford County Council Noise Action Plan 2018-2023 130. Louth County Council Noise Action Plan 2018-2023 131. County Meath Noise Action Plan 2019 132. Westmeath Noise Action Plan 2018-2023 133. Clare County Council Noise Action Plan (published 2018)
Climate change	<ul style="list-style-type: none"> 134. Galway City Council Climate Adaptation Strategy 2019 – 2024 135. Galway County Council Draft Climate Adaptation Strategy 2019 - 2024 136. Leitrim County Council Climate Change Adaptation Strategy 2019-2024 137. Mayo County Council Climate Adaptation Strategy (published 2019) 138. Roscommon County Council Climate Change Adaptation Strategy 2019-2024 139. Sligo County Council Climate Adaptation Strategy 2019-2024 140. Cavan County Council Climate Adaptation Strategy 2019-2024 141. Donegal County Council Climate Adaptation Strategy 2019-2024 142. Monaghan County Council Climate Change Adaptation Strategy 2019-2024 143. Louth County Council Climate Change Adaptation Strategy 2019-2024 144. Climate Action Strategy for County Meath February 2018 145. Westmeath County Council Climate Change Adaptation Strategy 2019-2024 146. Clare County Council Climate Change Adaptation Strategy 2019-2024

Theme	Policies, plans and programmes
	147. Longford County Council Climate Change Adaptation Strategy (published 2019)
Cultural heritage (archaeological and architectural)	148. Galway County Heritage and Biodiversity Plan 2017-2022 149. Draft County Longford Heritage Plan 2019-2024 150. Leitrim Heritage Plan 2020-2025 151. County Mayo Heritage Plan 2011-2016 152. County Mayo Heritage Plan 2021-2026 153. County Roscommon Heritage Plan 2017-2021 154. County Roscommon Heritage Plan 2012-2016 155. County Sligo Heritage Plan 2016-2020 156. County Sligo Heritage Plan 2023-2027 (emerging) 157. County Cavan Heritage Plan 2006-2011 158. County Donegal Heritage Plan 2014-2019 159. County Donegal Heritage Plan (2023) (emerging) 160. Ramelton Action Plan (published 2020) 161. County Monaghan Heritage Plan 2012-2017 162. Monaghan Biodiversity and Heritage Strategic Plan 2020-2025 163. County Meath Heritage Plan 2015-2020 164. County Westmeath Heritage Plan 2010-2015 165. County Westmeath Heritage Plan 2018-2023 166. Clare County Heritage Plan 2017-2023

Note: there are no local levels plans specific to the water or geology and soils topic areas. Plans of this nature tend to be regional or national level.

Appendix G SEA Scoping Consultation Responses

Consultee	Submission comment	Response
General comments		
Environmental Protection Agency	A note that in reference to the relevant aspects of Chapter 7 of the SOER2020, Uisce Éireann needs to consider water quality in the identification of deficiencies and needs in relation to water supply.	Identification of water quality deficiencies and needs in relation to water supply have been considered and referenced within SEA Report and the draft RWRP and the assessment of deficiencies has informed the identification of solution to address water quality treatment needs as well as quantity.
Environmental Protection Agency	It is recommended that SEA aligns with the relevant objectives and policy commitments of the National Planning Framework, the Regional Spatial and Economic Strategy, national commitments on climate change mitigation and adaptation, as well as any relevant sectoral, regional and local adaptation plans. A schematic presenting these links and inter-relationships is recommended.	SEA Report has taken into account the policy commitments in the general approach taken and the SEA objectives and assessment methodology. The NPF and RSES as well as relevant national, regional and sectoral climate adaptation and mitigation plans are included as key influences. A schematic showing these links is now included in SEA Environmental Report and the draft RWRP- NW.
Environmental Protection Agency	A recommendation for implementation of, annual or biannual report publications in between review periods for the Plan as well as aligning Plan implementation monitoring and reporting with the environmental monitoring required under the SEA legislation.	A commitment to undertake annual reviews is included in the recommendation to provide feedback and progress reporting against the environmental monitoring plan and is included as part of the monitoring and feedback process committed to in the draft RWRP-NW.
Environmental Protection Agency	A note that the SEA-related monitoring should address positive, negative and cumulative effects where they are likely to occur and should include provision for on-going review to facilitate an early response to any environmental issues that may arise. The Environmental Report should specify the monitoring frequency and responsibilities and include provisions for reporting on the monitoring. To avoid duplication in data collection, the same indicators should be used for the plan-related and SEA-related monitoring where possible.	Text added to SEA Report to clarify that the monitoring plan covers positive, negative and cumulative impacts. Annual reviews of implementation progress and environmental effects are identified along with responsibilities. These are integrated with the wider plan related monitoring and feedback.

Consultee	Submission comment	Response
Environmental Protection Agency	A recommendation to align the five-year review cycle for the Plan with reviews of other similar plans such as the River Basin Management Plan, Regional Economic and Spatial Strategies and National Planning Framework. The review cycle should also reflect the timing of the five-year Long-Term Climate Strategies, a requirement of the forthcoming Climate Action and Low Carbon Development (Amendment) Bill. Although some of the plans are referenced throughout the scoping report, timing of the reviews will be crucial to maximise multiple benefits and/or the identification of stressors. Aligning the reviews of the various plans would allow for plan makers to address the issues using a holistic approach.	The plans will be subject to ongoing review within the 5year plan cycle including annual review and the changes to related plans and policies and legislation or emerging issues will be part of this ongoing review and to allow early responses to influence plan making along with engagement in the respective consultation processes.
Environmental Protection Agency	A suggestion that further detail should be provided in the Environmental Report on the relevant environmental assessments to be carried out at the project stage and relevant mitigation measures to be applied, as appropriate. There may be merit in exploring this issue further with the relevant Environmental Authorities during the Plan preparation and SEA processes.	Added additional sentence in section 10.1 Mitigation Measures 'Standard and specific mitigation measures identified include recommendations for further environmental assessment work to be undertaken at project stage to inform further inform mitigation development ' SEA recommendations include seeking catchment management schemes and aiming to build in and environmental enhancement opportunities into the project stage such as nature based solutions carbon reduction, zero carbon emissions targets, biodiversity enhancement and river restoration.
Environmental Protection Agency	A recommendation for the Plan to include a commitment to implement the environmental monitoring programme and associated reporting. We suggest including a separate section on 'Monitoring, Review and Reporting' in the Plan, setting out the provisions for monitoring and reporting on the implementation of the Plan and periodic reviews. There may be merits in aligning the periodic reviews of the Plan with existing cyclical reporting e.g. Ireland's Environment, National Planning Framework, Water Framework Directive, Marine Strategy Framework Directive, etc.	We have included chapter 10, Mitigation and Monitoring Plans which covers the integration of environmental and sustainability considerations throughout implementation of the Regional Plan. The plans will be subject to ongoing review within the 5year plan cycle including annual review and the changes to related plans and policies and legislation or emerging issues will be part of this ongoing review and to

Consultee	Submission comment	Response
		allow early responses to influence plan making along with engagement in the respective consultation processes.
Environmental Protection Agency	All recommendations from the SEA and Appropriate Assessment processes, including mitigation measures, should be integrated in the Plan. We recommend that the Plan includes summary tables outlining the key findings of the SEA and linking the significant environmental effects identified to Plan policies/measures, proposed mitigation measures and monitoring programme.	Both the SEA and the Plan address this and further details have now been added in the mitigation and monitoring sections and these are presented as drafts for consultation and comments are welcomed.
Environmental Protection Agency	The Plan should clearly set out the scope, remit and implementation related elements of the Plan. These will have implications for the SEA, in terms of guiding the level of assessment applicable at the appropriate level for the Plan. Where it is envisaged that measures proposed in the Plan will be implemented via other plans, which themselves have been or will be subject to SEA, this should be explained in the Environmental Report and taken into account in the assessment, e.g. interactions between the Plan and other regional water resources plans.	The Environmental Action Plan (EAP) set out in Table 10.1 of the North West SEA Report summarises the actions and areas of further study identified in the Environmental Report. The EAP provides a basis for tracking recommendations from the SEA during the NWRP implementation.
Northern Ireland Environment Agency	The Department of Agriculture, Environment and Rural Affairs Northern Ireland would like the SEA Environmental Report to contain a clear statement indicating the opinion about whether or not the implementation of the of the strategy is likely to have a significant effect on Northern Ireland, in combination with any identified measures envisaged to prevent, reduce and as fully as possible offset any significant adverse effects on the environment.	The potential for significant effects on the environment of Northern Ireland has been considered as part of the options and cumulative assessment and a statement on the conclusions is included in the SEA Environment Report.
Northern Ireland Environment Agency	Marine and Fisheries Division recommends that in the Scope of Assessment and SEA Objectives tables the water environment considers the hydrologically linked marine environment, that Landscape and Amenity considers seascape and that climate change mitigation and adaptation considers Nature based solutions.	The assessment includes consideration of the marine environment including seascape where relevant to the options. Uisce Éireann recognises the increasing importance of nature-based solutions and catchment measures in relation to improving water quality and reducing risk across our supplies. Uisce Éireann is an active participant in catchment-based initiatives and

Consultee	Submission comment	Response
		where possible will incorporate NBS solutions at project level. These aspects are also incorporated in the SEA EAP and Monitoring Plan.
Northern Ireland Environment Agency	The Marine Plan Team (MPT) stresses the importance of full marine consideration in the ongoing progression of the associated SEA process. The MPT would consider that by not fully exploring/referencing the relevant marine aspects within this iterative scoping document and AA screening, then it may be the case that the opportunities for the marine area and potential associated transboundary issues will not be fully considered at the Environmental Report stage. In accordance with Article 6(3) of the Habitats Directive, Stage 2 AA of the RWRP-NW is required.	Impacts on the marine environment have been part of the assessment and consideration of transboundary impacts. The basis of the assessment, relevant options identified for assessment, aspects considered and the conclusions are presented in the SEA Environmental Report and transboundary impacts on European Sites are also considered in the Appropriate Assessment.
Consultation and engagement		
Environmental Protection Agency	EPA states that given the significance of the series of regional plans as key water services plans, the establishment of a signal environmental working group would provide oversight of the environmental monitoring and reporting for all of the regional plans A suggestion to consider the implementation stages of plans such as the Offshore Renewable Energy Development Plan (OREDPA) and Food Wise 2025. Such a working group should be inherently linked to any such working groups associated with the National Water Resources Plan and the groups should work together in delivering the environmental monitoring required under the water resource plans.	In recognition of the importance of multi-stakeholder engagement and collaboration in managing shared natural resources, Uisce Éireann have formed a group of EPA, GSI, NFGWS, DHLG and Independent experts to provide steering on the strategy, objectives and high-level activities needed to ensure the concepts of the three pillars are consolidated
Environmental Protection Agency	Under the SEA Regulations, Uisce Éireann should consult with: <ul style="list-style-type: none"> • Environmental Protection Agency; • Minister for Housing, Local Government and Heritage; • Minister for Environment, Climate and Communications; and • Minister for Agriculture, Food and the Marine. 	Uisce Éireann consulted with all of these Bodies for scoping and all are included in the consultation document and will be part of the engagement process for the draft RWRP and SEA.
Environmental Protection Agency	A suggestion that Uisce Éireann give hosts an SEA scoping workshop with key stakeholders likely to be impacted by the Plan and the statutory SEA	Stakeholder workshops were held on the SEA scoping report for the Framework plan and on the development of the options appraisal

Consultee	Submission comment	Response
	environmental authorities as part of the SEA scoping process.	methodology. The draft RWRP and SEA Environmental report apply the methodology and a full programme of engagement with key stakeholders on the draft proposals will be part of the public consultation.
Environmental Protection Agency	Consultees noted the need to fully identify any significant data and knowledge gaps and include commitments to help address these on a priority basis during the implementation phase of the Plan.	<p>The SEA and draft RWRP identify priorities for improving monitoring and gathering better data. Limitations or data gaps and assumptions are identified.</p> <p>In terms of the adequacy of existing information the issue here is that it is not currently stored centrally, as it was historically collected and collated by Local Authorities. Uisce Éireann is building a telemetry system which will aid bringing all this data together but this will take time.</p> <p>Data and knowledge gaps are identified in the limitations and assumptions section in both the SEA Report and the RWRP NW and commitments to improve data is included within the environmental action plan and as part of the RWRP NW monitoring and feedback process.</p>
Northern Ireland Environment Agency	The Loughs Agency should be consulted in relation to this SEA Scoping exercise. As a statutory consultee The Department of Agriculture, Environment and Rural Affairs Northern Ireland (DAERA) Inland Fisheries will continue to provide comment on any proposals put forward as a result of this plan through the normal planning process.	Where any options are identified as having potential significant effects these would be identified and further consultation with DAERA and agencies such as the Loughs Agency would be undertaken if any such options are taken forward.
Department of Agriculture, Food and the Marine (Ireland)	A note that it is essential that any negative impacts on fisheries are avoided. The evaluation of potential impacts on any commercial sea fishing activities needs to be given consideration as part of any planning/proposal process and during the development process itself. It is imperative that engagement should be sought with the fishing industry and other relevant stakeholders at as early a stage as possible to discuss any changes that may affect them to afford a chance	Desalination options are the only options likely to have a significant negative impact on fisheries due to brine discharge therefore the potential impacts on fisheries will be considered as part of impact on biodiversity and socio-economic objectives. There is only 1 desalination option - this is a small scale island desalination plant

Consultee	Submission comment	Response
	for their input. Fishers' interests and livelihoods must be fully recognised, supported, and taken into account. We recommend including commercial fisheries as a material asset when assessing this plan.	within Study Area D potential impacts are identified for further assessment but with appropriate mitigation are not expected to be significant.
Legislation, Plans and Policies		
Environmental Protection Agency	A recommendation to review and update the list of legislation in the scoping report and add the transposing Irish legislations.	The list of legislation, Plans, Policies and Programmes for the PPP review within the SEA Report has been updated and the transposing Irish legislation has been added.
Environmental Protection Agency	The following additional legislation should be considered also: <ul style="list-style-type: none"> Climate Action and Low Carbon (Amendment) Bill 2021 The interim actions for the Climate Action Plan 2019, as well as the forthcoming Climate Action Plan 2021. 	The legislation and action plans have been added to the SEA Report in the PPP review and are included as key influences for the SEA and draft RWRP
Environmental Protection Agency	An observation that the Section on the Water Framework Directive does not consider water quality and focuses more on provision of water. This appears to be an oversight, as having better quality raw water means less costs and processes in water treatment and also results in greater treatment efficiency i.e. reduced volumes being abstracted. The environmental report should include water quality in the baseline data analysis.	The baseline analysis in the SEA Environment Report includes consideration of water quality including specific reference to pressures identified in SOER 2020. The benefits of improved raw water are recognized and potential to do more on catchment management initiatives and nature based solutions is specifically raised as a recommendation to take forward.
Environmental Protection Agency	A recommendation that the environmental report should consider the status quo / baseline with regard to existing water service provision i.e. what the asset base is, including water mains, and level of treatment, in addition to the concerns of the RAL.	The SEA Report considers baseline with regards to existing water provision. The SEA Report includes reference to the existing water service provision including level of service and treatment deficiencies and RAL list with more detail provided in the Study Area Environmental Review appendices.
Environmental Protection Agency	A recommendation that the environmental report should include the benefits from an indication of domestic versus non-domestic volumes supplied, any inter region transfers (included out of this study area) and interactions with the group water scheme sector	The Group water scheme (GWS) sector covers the private group water schemes Uisce Éireann considers options for connecting to GWSs and taking over GWSs and also where

Consultee	Submission comment	Response
	(as there are some that are operated as group water schemes on behalf of Uisce Éireann and vice versa). While it may not be possible to convey detail on these in the SEA, they warrant discussion nonetheless as they will be factors in the overall regional plan review.	there are deficits in WSZs that are fed from GWS owned sources and WTPs. This information is fed into the supply demand balance and option development.
Environmental Protection Agency	A recommendation to use the EPA OSI national land cover map, currently being developed by the EPA and partners, as addition to using Corine Land Dataset for further detailed habitats and land use information.	The EPA OSI national land cover map is not currently available, however it has been highlighted in the SEA Environmental Report review for use in future updating habitats and land use information once available.
Environmental Protection Agency	A recommendation that climate change risks identified by counties in the core baseline area should also include reference to water quality as a key risk area as climate change impacts from flooding and storm surges not only impact on land and water supply but also on the actual quality of the water itself, e.g. suspended solids, movement of contaminants, etc.	Whilst not specifically identified in county level plans, climate change induced risk of water contamination through changes such as increased sediment loads and release of nutrients from catchment soils and effects of flooding on water quality would be a consideration for the future and relevant particularly for catchment management approaches and wider land use management.
Environmental Protection Agency	In addition, the DHLGH are preparing Draft Guidelines for the incorporation of the Water Framework Directive into the Planning System, which is also undergoing SEA currently. This should in particular be taken into account in finalising and implementing the Plan.	We will take the Draft Guidelines into account once available and have added a note to the SEA ensure this.
Northern Ireland Department for Communities Historic Environment Division	<p>Historic Environment Division (HED) advises, the following legislation and plans should also be included:</p> <ul style="list-style-type: none"> • Historic Monuments and Archaeological Objects (Northern Ireland) Order 1995 • Protection of Wrecks Act 1973 • Archaeology 2030 - A Strategic Approach for Northern Ireland • The Strategic Planning Policy Statement <p>We would also note that District Councils in NI are currently in the process of taking forward their own local development plans and will have relevance in taking forward the RWRP-NW and any subsequent local plans or projects.</p>	<p>The legislation and action plans have been added to the SEA Report in the PPP review and are included as key influences for the SEA and draft RWRP.</p> <p>We will include review of local development plans prepared by the District Councils in NI as relevant to any options identified as having potential for impact on the environment in Northern Ireland.</p>

Consultee	Submission comment	Response
Northern Ireland Environment Agency	NI baseline conditions and relevant plans and programmes will need to be considered as part of the Environmental Report.	Figure 5.4 illustrates the transboundary environment and addresses the water environment and designated sites within Northern Ireland. Transboundary policies and plans have been reviewed as listed in Appendix F and potential for transboundary effects associated with plan proposals have been considered through the assessment process and findings are included in the Environmental Report. Section 6 outlines the approach and section 9 considers potential for options to have effects on Northern Ireland. No transboundary effects have been identified through this process. The draft RWRP-NW, SEA Environmental Report and NIS will be provided to the relevant Northern Ireland agencies as part of the consultation process.
Northern Ireland Environment Agency	<p>A note to include the following plans in the considerations:</p> <ul style="list-style-type: none"> • The Wildlife (NI) Order 1985 (as amended) • Wildlife and Natural Environment Act (NI) 2011 • The Conservation (Natural Habitats, etc.) Regulations (Northern Ireland) 1995 (as amended) • The Environment (NI) Order 2002 • The Planning (Environmental Impact Assessment) Regulations (Northern Ireland) 2017 • The Strategic Planning Policy Statement (SPPS) for Northern Ireland • Planning Policy Statements (PPS – in particular PPS2 and PPS18). It should be noted that the PPS's will be superseded by Local Development Plans when they are adopted • Biodiversity Strategy for NI to 2020 • Draft Environment Strategy • The Draft NI peatland policy 	<p>The legislation and action plans have been added to the SEA Report in the PPP review and are included as key considerations for the SEA and draft RWRP as relevant to the proposals put forward.</p> <p>Information sources have been reviewed and taken into consideration where necessary and relevant.</p>

Consultee	Submission comment	Response
	<ul style="list-style-type: none"> • The Draft Green Growth Strategy Consultation on the draft Green Growth Strategy for Northern Ireland • Northern Ireland Energy Strategy 2050 Northern Ireland Energy Strategy 2050 • Climate Change Act (Northern Ireland) 2022 • Climate Risk Independent Assessment 2021 • The Private Water Supplies Regulations (Northern Ireland) 2017 • Sustainable Water – A Long term water strategy for Northern Ireland (2015 –2040) • Strategic Planning Policy Statement • Regional Landscape Assessment • Draft River Basin Management Plan for the 3rd cycle period which runs from 2021-2027 • Northern Ireland State of the Environment Reports • Northern Ireland Environmental Statistics Reports • Designated Scientific Sites: www.daera-ni.gov.uk/landing-pages/protected-areas Regional Landscape Character Map viewer: https://www.daerani.gov.uk/services/regional-landscape-character-areas-map-viewer DAERA have a map browser for NI protected sites and known priority habitat: www.daera-ni.gov.uk/services/natural-environment-map-viewer Our natural environment datasets are available at the link below: www.daera-ni.gov.uk/articles/download-digital-datasets Appropriate Assessments should refer to the status of habitats and species in the relevant reports available on the JNCC website as follows: UK Article 17 report for the Habitats Directive https://jncc.gov.uk/our-work/article-17-habitats-directive-report-2019/ and the UK Article 12 report for the Birds Directive https://jncc.gov.uk/ourwork/european-reporting/#birds-directive-reporting Historic Environment Division Digital Datasets https://www.communities-ni.gov.uk/publications/historic-environment-digital-datasets 	

Consultee	Submission comment	Response
Northern Ireland Environment Agency	Reference to individual border area councils Local Development Plans could be considered in relation to Landscape designations.	Where there are any new proposals for new construction works or schemes that are in close proximity to the border and thus may have an impact, we will include consideration of local landscape designations.
Northern Ireland Environment Agency	<p>Marine and Fisheries Division (M&FD) recommends, where plans are in close proximity and hydrologically linked to Lough Foyle and Carlingford Lough the following plans, policies and programmes are also considered:</p> <ul style="list-style-type: none"> • Wildlife (Northern Ireland) Order 1985 • Conservation (Natural Habitats, etc.) Regulations (Northern Ireland) 1995 • The Marine and Coastal Access Act 2009 • Strategic Planning Policy Statement for Northern Ireland 2015 • An Integrated Coastal Zone Management Strategy for Northern Ireland 2006-2026 • Northern Ireland Regional Seascape Character Assessment 2014 	The plans, policies and programmes have been added to the SEA Report in the PPP review and are included as key influences for the SEA and draft RWRP.
Northern Ireland Environment Agency	The Marine Plan Team Advice (MPT) suggests that the draft NI Marine Plan (2018) be included in 4.6 'In-combination Effects' as a plan that is on a similarly strategic level and that has a clear potential to have an in-combination effect upon European Sites. The inclusion of the draft Marine Plan NI within the ongoing RWRP-NW AA process will enable full consideration of all possible marine related likely significant effects (LSEs).	We will consider effects on the marine environment as part of the in-combination/ cumulative effects chapter in the SEA and NIS.
Northern Ireland Environment Agency	In relation to transboundary catchments Inland fisheries would recommend that any subsequent SEA/AA be cognisant of both, North Atlantic Salmon Conservation Organisation (NASCO), Convention for the Conservation of Salmon in the North Atlantic Implementation Plan for the period 2019 – 2024, this an international commitment for Northern Ireland (as part of the UK; ROI through the EU is also a signatory) and should be included as this policy has the potential to impact this species and the goals of this plan; and also the Fisheries Act (NI) 1966 (as amended).	The plans, policies and programmes have been added to the SEA Report in the PPP review and are included as key influences for the SEA and draft RWRP and will also be taken forward for consideration in more detailed studies as relevant.

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Drinking water quality		
Environmental Protection Agency Geological Survey Ireland	A recommendation to consider the changes incorporated in the recast Drinking Water Directive. Furthermore, greater emphasis could be placed on the Drinking Water Directive in relation to the environmental report and it should be considered as a key influence in addition to those plans and programmes already listed.	Uisce Éireann considered changes included in the recast Drinking Water Directive and SEA Report now includes updated references. Drinking Water Directive is added to key national level influences listed in chapter 4.
Environmental Protection Agency	A recommendation that the baseline should include greater discussion of issues surrounding contaminants of existing and emerging concern which pose a threat to drinking water and to public health. For example, pesticides (of which there have been a number of exceedances in drinking water supplies in recent years), trihalomethane (THM) contamination, pharmaceuticals (including but not limited to antimicrobials (relevance to Ireland's National Action Plan on Antimicrobial Resistance (iNAP) as well as the forthcoming successor iNAP2)), microplastics, pathogenic and antimicrobial resistant bacteria and parasites (STEC/VTEC, Cryptosporidium, Giardia, etc.). The environmental report should give greater recognition of these challenges, how they may impact supplies and how they may be managed into the future taking account of projected population growth, urbanisation, agricultural activity and climate change.	Section 5.4.1 in the baseline includes consideration of the current and emerging concerns for water quality The source risk assessments currently in development align with the DWD Recast and will offer a leading/ potential indicator of risk of contamination rather than 'lagging'/ at the customers tap. This will be approached using the source-pathway-receptor concept and considering sources of contaminants in the catchment. These risk assessments will span existing contaminants in the short term, e.g. pesticides, Cryptosporidium, E. coli and natural organic matter, with a view to expanding of contaminants of emerging concern (microplastics, pathogenic and antimicrobial resistant bacteria, 'forever chemicals'.
Biodiversity, Flora and Fauna		
Northern Ireland Environment Agency	A recommendation to consider the following issues including the potential disturbance to/impact on NI/RoI migratory/mobile species such as salmon, for example within the Lough Melvin Special Area of Conservation which lies within both Northern Ireland and the Republic of Ireland. Cross border designated sites, European sites in Northern Ireland adjacent to or with pathways to/from the Republic of Ireland, priority habitats, river basins, and other landscape types also require special attention as ecological functionality and 'views' of landscape cross political boundaries. The SEA should consider all potential impacts including	These direct and indirect issues/impacts on cross-border designated sites, and priority habitats and species are considered in the SEA and NIS.

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	those which may impact Northern Ireland both directly and indirectly. Consideration should be given to priority habitats and species in NI that may be impacted.	
Northern Ireland Environment Agency	Note that following the decision of the United Kingdom to leave the European Union, the collective term of “Natura 2000” sites the network of European protected sites are now known as “National Site Network” sites within the United Kingdom, and is including Northern Ireland.	This has been considered and we will use National Site Network instead of Natura 2000 when referring to sites within Northern Ireland.
Northern Ireland Environment Agency	A recommendation that the SEA should consider all potential transboundary issues in relation to the aquatic environment. Cross border river basins require special attention as ecological functionality cross jurisdictional boundaries. The SEA should consider all potential impacts including those which may impact Northern Ireland both directly and indirectly.	As mentioned above, these direct and indirect issues/impacts on cross-border designated sites, and priority habitats and species are all be considered in the SEA Environmental Report and NIS.
Northern Ireland Environment Agency	M&FD would like to have the opportunity to comment on Desalination, in the future, if deemed a suitable option and if it was to occur near Lough Foyle and Carlingford Lough.	No desalination options are located in proximity to either Lough Foyle nor Carlingford Lough and no other options are identified with potential impacts anticipated on these receptors
Northern Ireland Environment Agency	M&FD lists several Northern Ireland MPAs which are associated with Lough Foyle and Carlingford Lough and recommend that they should be considered.	There are no options that affect Lough Foyle and Carlingford Lough
Northern Ireland Environment Agency	M&FD recommends considering the marine priority species listed on the Northern Ireland Priority Species List.	The marine priority species listed on the Northern Ireland Priority Species List will be considered
Northern Ireland Environment Agency	In relation to transboundary regions Inland Fisheries would recommend that any consideration of potential impacts should be in relation to all priority species and priority habitats as listed NIEA. Issues should include all loss of priority habitats and species.	The priority species and habitats as listed by NIEA will be considered in relation to potential impacts to the transboundary region.
Northern Ireland Environment Agency	A note that the issues which are likely to have a negative effect on Inland Fisheries interests would relate to Surface/Ground water abstractions and the introduction of reservoirs within transboundary catchments. These have the potential to affect fisheries habitats and species through habitat fragmentation,	SEA options assessment assumes the implementation of standard mitigation measures, such as operation of water sources in line with regulatory requirements and the use of good construction practice in order to minimise negative effects.

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	loss of habitats and deterioration/dewatering of habitats.	
Northern Ireland Environment Agency	M&FD recommends considering Nature based solutions (NbS) with regards to mitigation. NbS are defined by the IUCN as ‘actions to protect, sustainably manage and restore natural or modified ecosystems that address social challenges effectively and adaptively, simultaneously providing human well-being and biodiversity benefits	Uisce Éireann recognises the increasing importance of nature-based solutions and catchment measures in relation to improving water quality and reducing risk across our supplies. Uisce Éireann is an active participant in catchment-based initiatives and where possible will incorporate NBS solutions at project level. These aspects are also incorporated in the SEA EAP and Monitoring Plan.
Cultural heritage		
Northern Ireland Department for Communities Historic Environment Division	<p>Historic Environment Division (HED) notes that a large number of heritage assets predate the border itself.</p> <p>Transboundary environment paragraph should include consideration of the potential for impacts on cultural heritage, particularly in regard to transboundary effects on marine heritage and industrial heritage assets within a riverine context, such as bridges, mill buildings and mill races. Agreements with landowners and farmers to improve water catchment management, should also take into account the potential for transboundary effects on known and unknown archaeology.</p> <p>Note: HED consider that there may be an inadvertent error in the report, in that Page 17 states “that “No Potential for transboundary effects has been identified”, although this is contradicted in section 3.1.2 which states that “there is potential for transboundary effects”.</p>	<p>All of the impacts to heritage assets will be considered where relevant, especially within the transboundary environment.</p> <p>The scoping report concluded that there is a potential for transboundary effects (as stated in section 3.1.2) and the statement on Page 17 was an error. The effects on the transboundary environment will be considered as part of the SEA of the Draft NW.</p>
Northern Ireland Department for Communities Historic Environment Division	HED on behalf of Department for Communities, maintain a record of designated and non-designated heritage assets, which should be used in this process of information gathering to understand where there is a likelihood or potential for transboundary impacts on cultural heritage, the associated constraints, and potential mitigation measures. Our datasets are available to download at Historic Environment Digital Datasets Department for Communities (communities-ni.gov.uk) We also attach a link to our historic environment map viewer Historic Environment Map	The Historic Environment Digital Datasets along with the marine historic environment datasets will be considered when assessing the transboundary effects on heritage assets.

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	<p>Viewer Department for Communities (communities-ni.gov.uk).</p> <p>We further advise that additional datasets for Northern Ireland's marine historic environment may be obtained through contacting colin.dunlop@daera-ni.gov.uk</p>	
Northern Ireland Department for Communities Historic Environment Division	<p>HED suggests that the SEA objective for cultural heritage as set out in Table 4.2, is amended as follows, to align with regional guidance as set out in RG11 of the Regional Development Strategy and take account of the potential for indirect effects on cultural heritage.</p> <p>Protect, conserve and, where possible, enhance cultural heritage resources effected by provision of water services.</p> <p>We also consider that the issues and opportunities as set out in Table 4.1 should also include the potential for effects on architectural heritage.</p>	<p>Where this is potential for transboundary impacts, we will consider regional guidance.</p> <p>The potential impacts on architectural heritage will also be added and considered within the SEA report.</p>
Landscape and visual amenity		
Northern Ireland Environment Agency	<p>A note that transboundary concerns are particularly relevant to large water resource projects such as reservoirs, which could be located on or close to the border, and would potentially have a significant effect on landscape and visual amenity. Northern Ireland has designated Areas of Outstanding Natural Beauty (AONB), these areas are designated for the significant landscape quality. The Ring of Gullion AONB is located on the border and any proposals located in close proximity is likely to have a transboundary effect on this designation.</p>	<p>Landscape designations and major cultural heritage sites have been noted and considered. Additionally, there are no proposals within 20km of the Ring of Gullion AONB thus there is unlikely to be a transboundary effect on this designation.</p>
Northern Ireland Environment Agency	<p>Consideration of potential transboundary impacts on Landscape and Visual Amenity should be made more explicit in paragraph 3.11.4.</p>	<p>All transboundary impacts, including those regarding landscape and visual will be considered with chapter 5.12, with sources of information noted in Table 3.14.</p>
Northern Ireland Environment Agency	<p>Regarding the key environmental topics included, M&FD recommends the water environment also includes any hydrologically linked marine environments and that the landscape topic also includes consideration of seascape.</p> <p>M&FD recommends the inclusion of marine habitats such as saltmarshes and estuarine habitats.</p>	<p>Marine and coastal environments are included in the assessment and seascape is taken into account (see baseline section 5)</p>