Winter 2023

Regional Water Resources Plan

South East

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-SE 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-SE. 2019 was selected as the base year to align with the planning period (2019-2025) of the NWRP.

Limitation: This report has been prepared on behalf of, and for the exclusive use of Jacobs' Client (Uisce Éireann), and is subject to, and issued in accordance with, the provisions of the contract between Jacobs and the Client. Jacobs accepts no liability or responsibility whatsoever for, or in respect of, any use of, or reliance upon, this report by any third party.

Appendix A Baseline Environment Figures

Figure 5.1 Population, Health and Material Assets (Built) Context – Overview

Figure 5.2a Water Context: Surface Waterbodies – Overview

Figure 5.2b Surface Waterbodies at Risk (EPA, August 2022)

Figure 5.3a Water Context: Groundwater – Overview

Figure 5.3b Ground Waterbodies at Risk (EPA, August 2022)

Figure 5.4 Water Context: Flood Risk

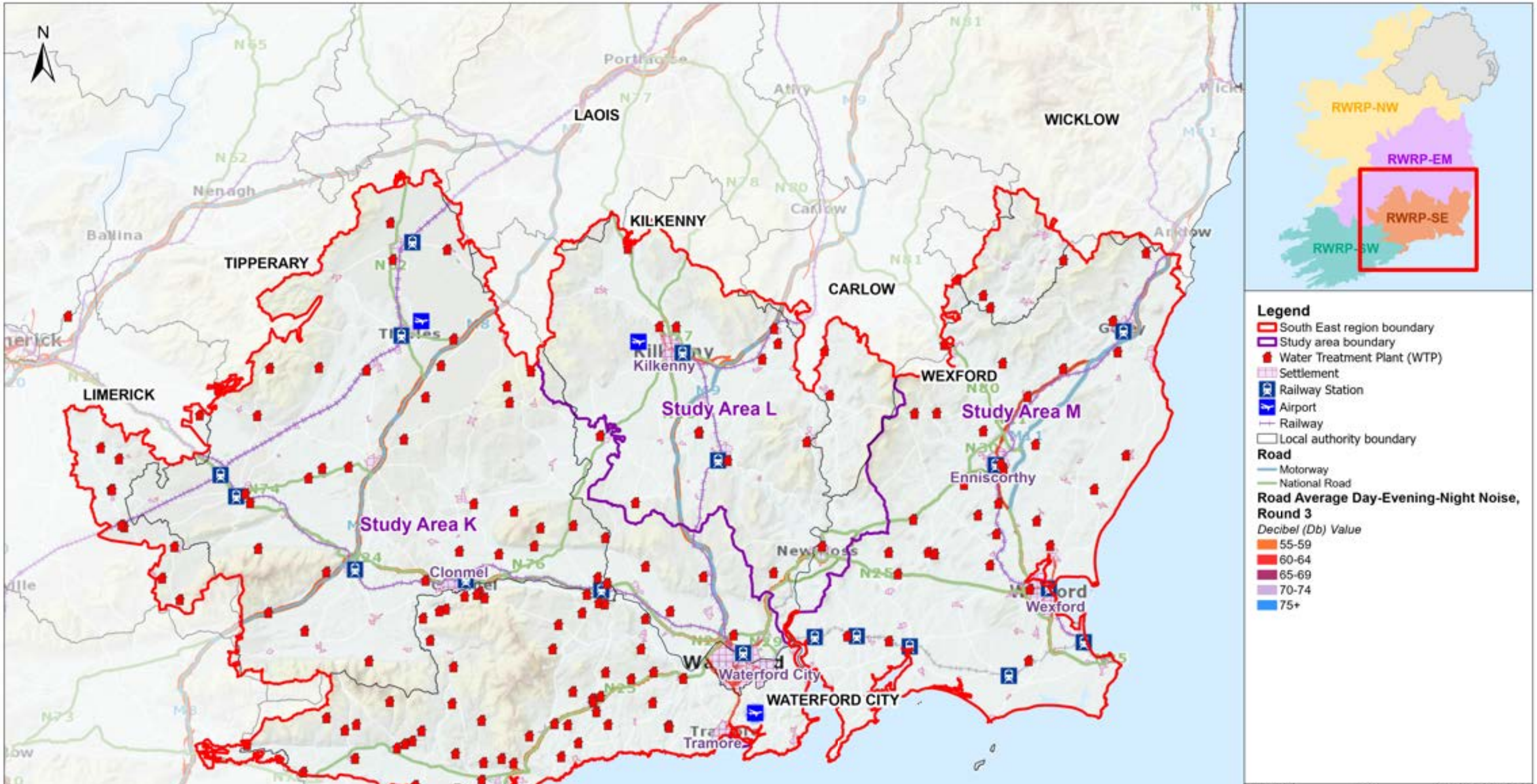
Figure 5.5 Biodiversity Context: Overview

Figure 5.6 Material Assets (Natural Assets) Context - Overview

Figure 5.7 Hydrogeology

Figure 5.5 Index Table			
Designated Sites	**Label**	**Designated Sites**	**Label**
Special Protection Areas			
Slievefelim to Silvermines Mountains SPA	1	Tacumshin Lake SPA	8
River Nore SPA	2	Lady's Island Lake SPA	9
Cahore Marshes SPA	3	Tramore Back Strand SPA	10
The Raven SPA	4	Blackwater Callows SPA	11
Wexford Harbour and Slobs SPA	5	Mid-Waterford Coast SPA	12
Bannow Bay SPA	6	Dungarvan Harbour SPA	13
Ballyteigue Burrow SPA	7	Helvick Head to Ballyquin SPA	14
Special Areas of Conservation			
Cahore Polders and Dunes SAC	1	Cullahill Mountain SAC	18
Kilmuckridge-Tinnaberna Sandhills SAC	2	Spahill And Clomantagh Hill SAC	19
Carnsore Point SAC	3	Helvick Head SAC	20
Raven Point Nature Reserve SAC	4	Comeragh Mountains SAC	21
Lady's Island Lake SAC	5	Glendine Wood SAC	22
Screen Hills SAC	6	Nier Valley Woodlands SAC	23
Tacumshin Lake SAC	7	Lower River Suir SAC	24
Slaney River Valley SAC	8	Ardmore Head SAC	25
Saltee Islands SAC	9	Kilduff, Devilsbit Mountain SAC	26
Ballyteige Burrow SAC	10	Anglesey Road SAC	27
Bannow Bay SAC	11	Galtee Mountains SAC	28

Figure 5.5 Index Table			
Designated Sites	**Label**	**Designated Sites**	**Label**
Blackstairs Mountains SAC	12	Philipston Marsh SAC	29
Hook Head SAC	13	Moanour Mountain SAC	30
Tramore Dunes and Backstrand SAC	14	Blackwater River (Cork/Waterford) SAC	31
River Barrow And River Nore SAC	15	Glen Bog SAC	32
Thomastown Quarry SAC	16	Lower River Shannon SAC	33
Hugginstown Fen SAC	17		



0	15/09/2023	DRAFT	SMD	SJ	RV	TOG
Rev	Date	Purpose of revision	Drawn	Check'd	Rev'd	App'd

Uisce Éireann Irish Water

Project: REGIONAL WATER RESOURCES PLAN SOUTH EAST

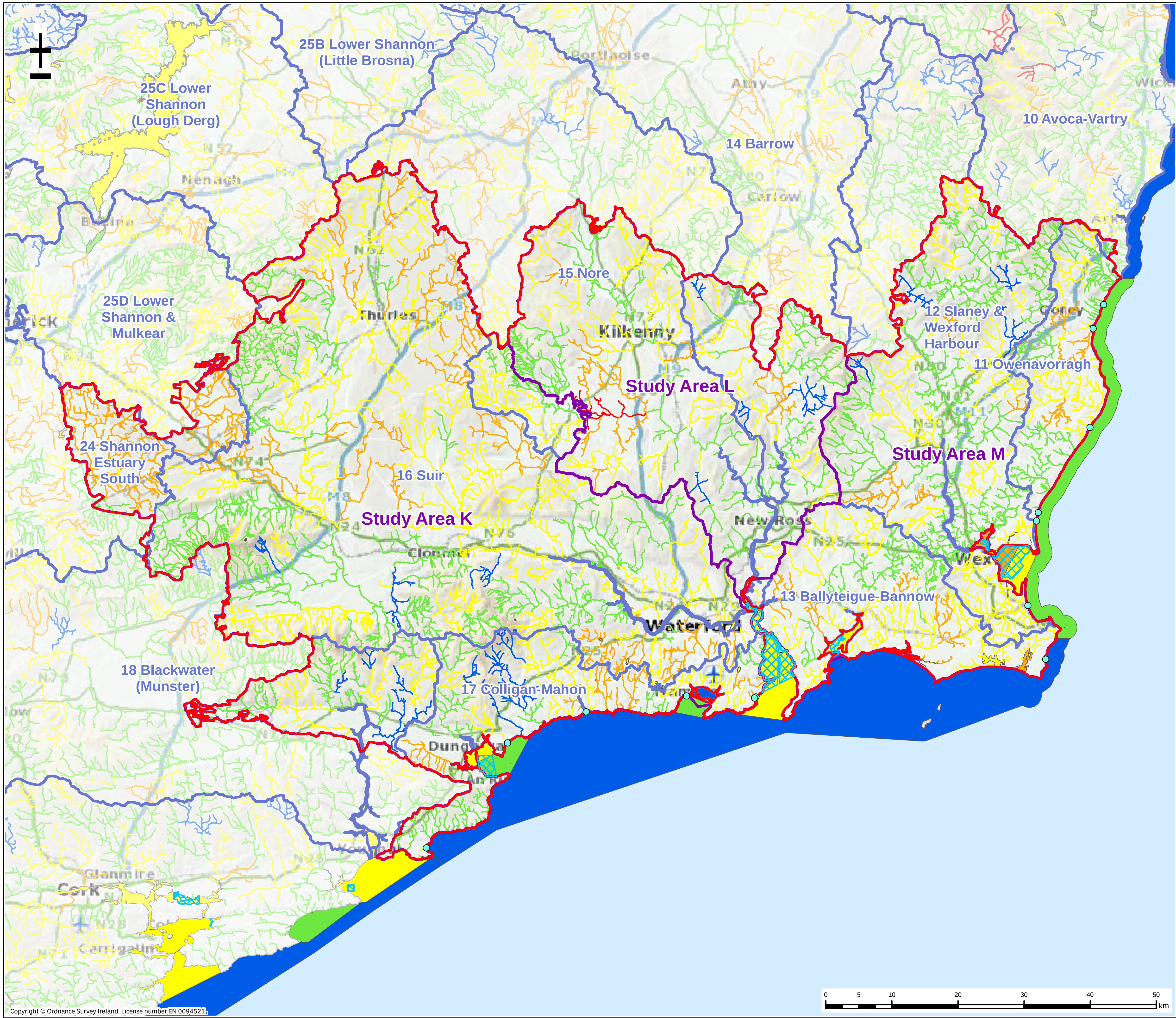
Drawing Title: POPULATION, HEALTH AND MATERIAL ASSETS (BUILT) CONTEXT – OVERVIEW

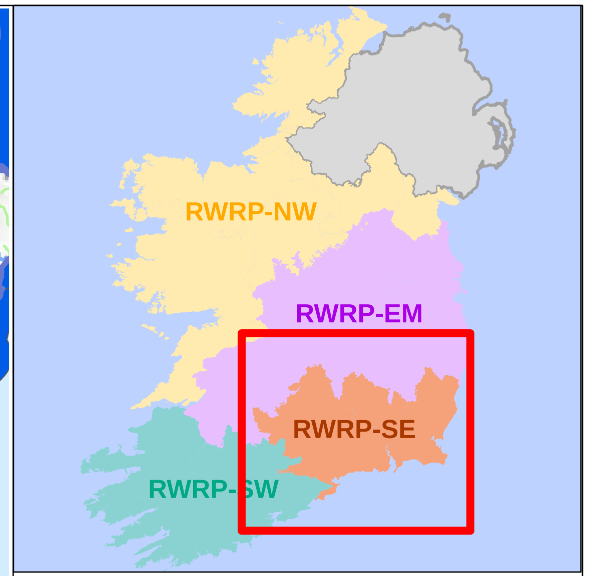
Drawing Status: DRAFT

Scale @A3: 1:550,000 DO NOT SCALE

Drawing No. FIGURE 5.1

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





Legend

- South East region boundary
- Study area boundary
- Bathing Waters
- Shellfish Waters
- Water Framework Directive (WFD) Catchment

WFD Lake, Transitional or Coastal Waterbody

Ecological Status or Potential, 2013-2018

- High
- Good
- Moderate
- Bad
- Poor
- Unassigned

Rev.	Date	Purpose of revision	Drawn	Check'd	Rev'd	Appr'd
0	23/10/2023	DRAFT	SMD	SJ	RV	TOG

Uisce Éireann
Irish Water

Project
REGIONAL WATER RESOURCES PLAN SOUTH EAST

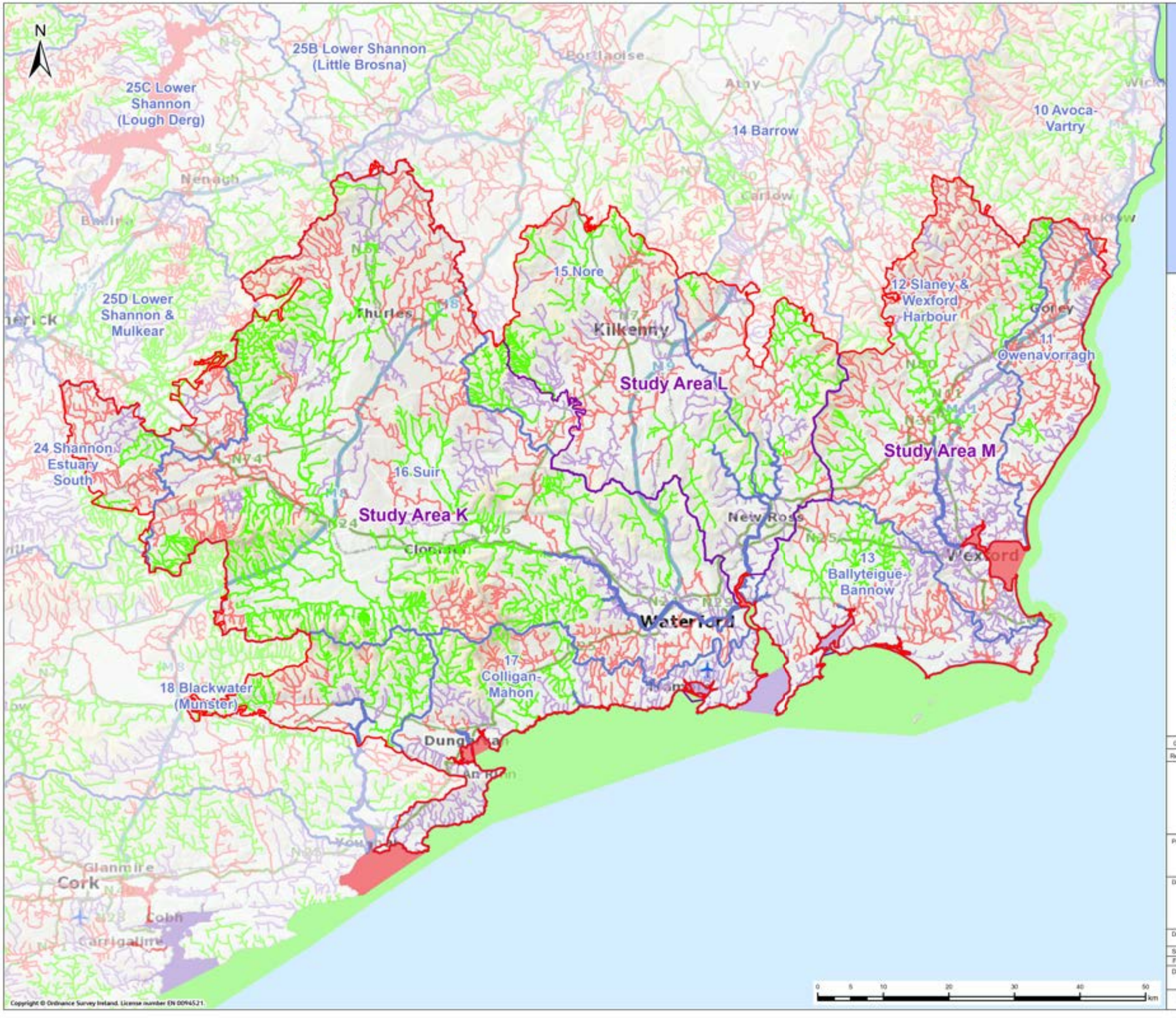
Drawing Title
WATER CONTEXT: SURFACE WATERBODIES - OVERVIEW

Drawing Status
DRAFT

Scale @A3 1:550,000 DO NOT SCALE

Filepath \\gbbri0vs01\GISProj\B321120AA_NWRP\ArcGIS\GA3_SouthEast\NWRP-SE_POST-CONSULTATION_EDITS\NWRP_SE_SEA_PC_Edit.aprx

Drawing No.
FIGURE 5.2a



Legend

- South East region boundary
- Study area boundary
- Water Framework Directive (WFD) Catchment

WFD River Waterbody
Approved Risk Projection
- At risk
- Not at risk
- Review

WFD Lake, Transitional or Coastal Waterbody
Approved Risk Projection
- At risk
- Not at risk
- Review

Rev	Date	Purpose of revision	Drawn	Check'd	Rev'd	Appr'd
0	15/08/2023	FINAL	SMD	SJ	RV	TOG

Uisce Éireann
Irish Water

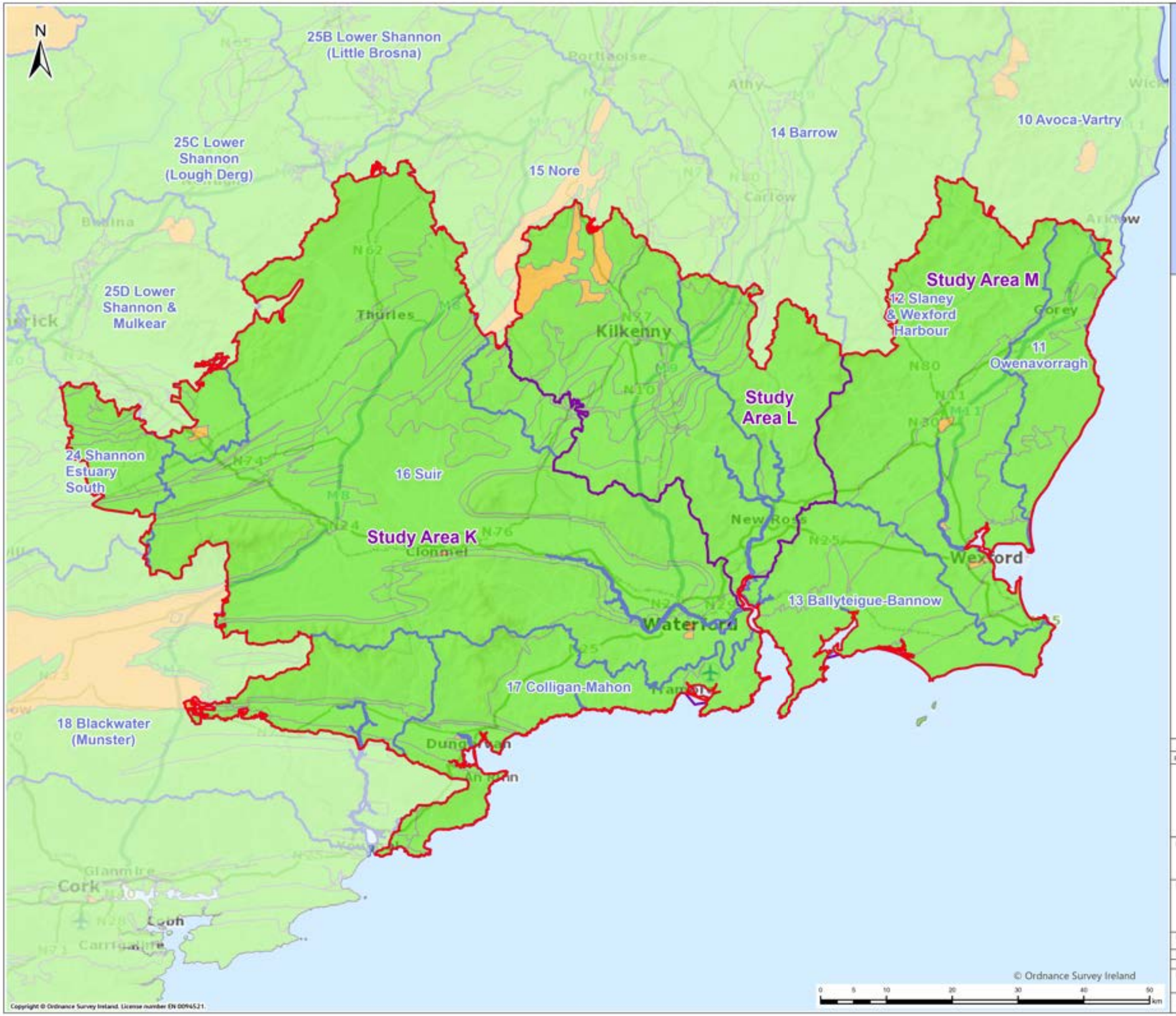
Project
REGIONAL WATER RESOURCES PLAN
SOUTH EAST

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

Drawing Status: **FINAL**

Scale @A3	1:550,000	DO NOT SCALE
Filepath		

Drawing No.
FIGURE 5.2b



Rev.	Date	Purpose of revision	Drawn	Check'd	Rev'd	Appr'd
0	15/08/2023	DRAFT	SMD	SJ	RV	TOG

Uisce Éireann
Irish Water

Project
REGIONAL WATER RESOURCES PLAN
SOUTH EAST

Drawing Title
WATER CONTEXT:
GROUNDWATER - OVERVIEW

Drawing Status: DRAFT

Scale @A3: 1:550,000 DO NOT SCALE

Filepath:

Drawing No.
FIGURE 5.3a

N

25B Lower Shannon (Little Brosna)

25C Lower Shannon (Lough Derg)

14 Barrow

10 Avoca-Vartry

11 Owenavorragh

15 Nore

25D Lower Shannon & Mulkear

12 Slaney & Wexford Harbour

Study Area L

Study Area M

24 Shannon Estuary South

16 Suir

Study Area K

13 Ballyteigue-Bannow

17 Colligan-Mahon

18 Blackwater (Munster)

Legend

- South East region boundary
- Study area boundary
- Water Framework Directive (WFD) Catchment

WFD Ground Waterbody

Approved Risk Projection

- At risk
- Not at risk
- Review

Rev.	Date	Purpose of revision	Drawn	Check'd	Rev'd	App'd
0	15/08/2023	FINAL	SMD	SJ	RV	TOG

Uisce Éireann
Irish Water

Project
REGIONAL WATER RESOURCES PLAN
SOUTH EAST

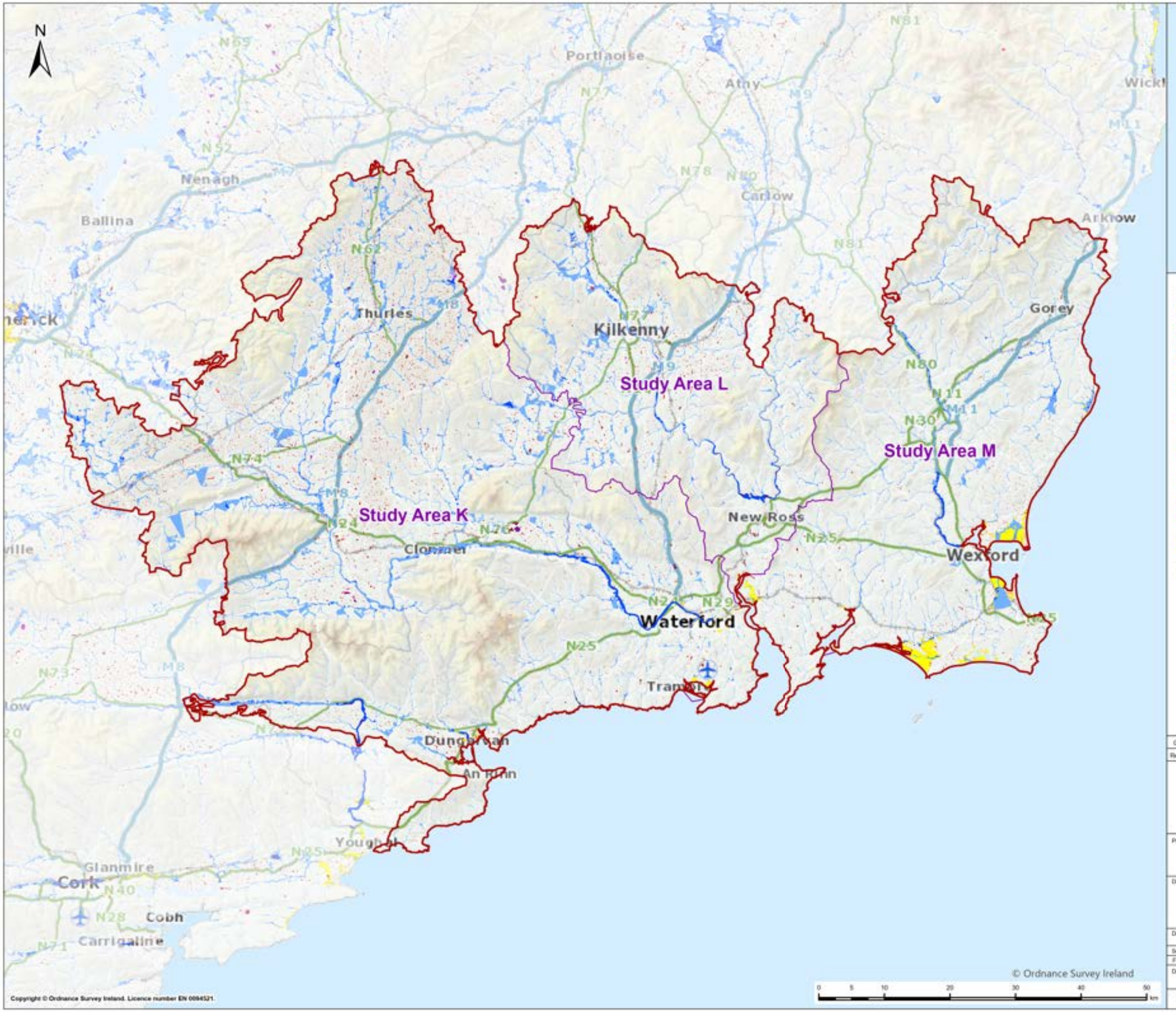
Drawing Title
GROUND WATERBODIES AT RISK
(EPA, AUGUST 2022)

Drawing Status: **FINAL**

Scale @A3: 1:550,000 — DO NOT SCALE

Filepath:

Drawing No.
FIGURE 5.3b



Rev	Date	Purpose of revision	Drawn	Check'd	Rev'd	Appr'd
0	15/08/2023	FINAL	SMD	SJ	RV	TOG

Uisce Éireann
Irish Water

Project
REGIONAL WATER RESOURCES PLAN
SOUTH EAST

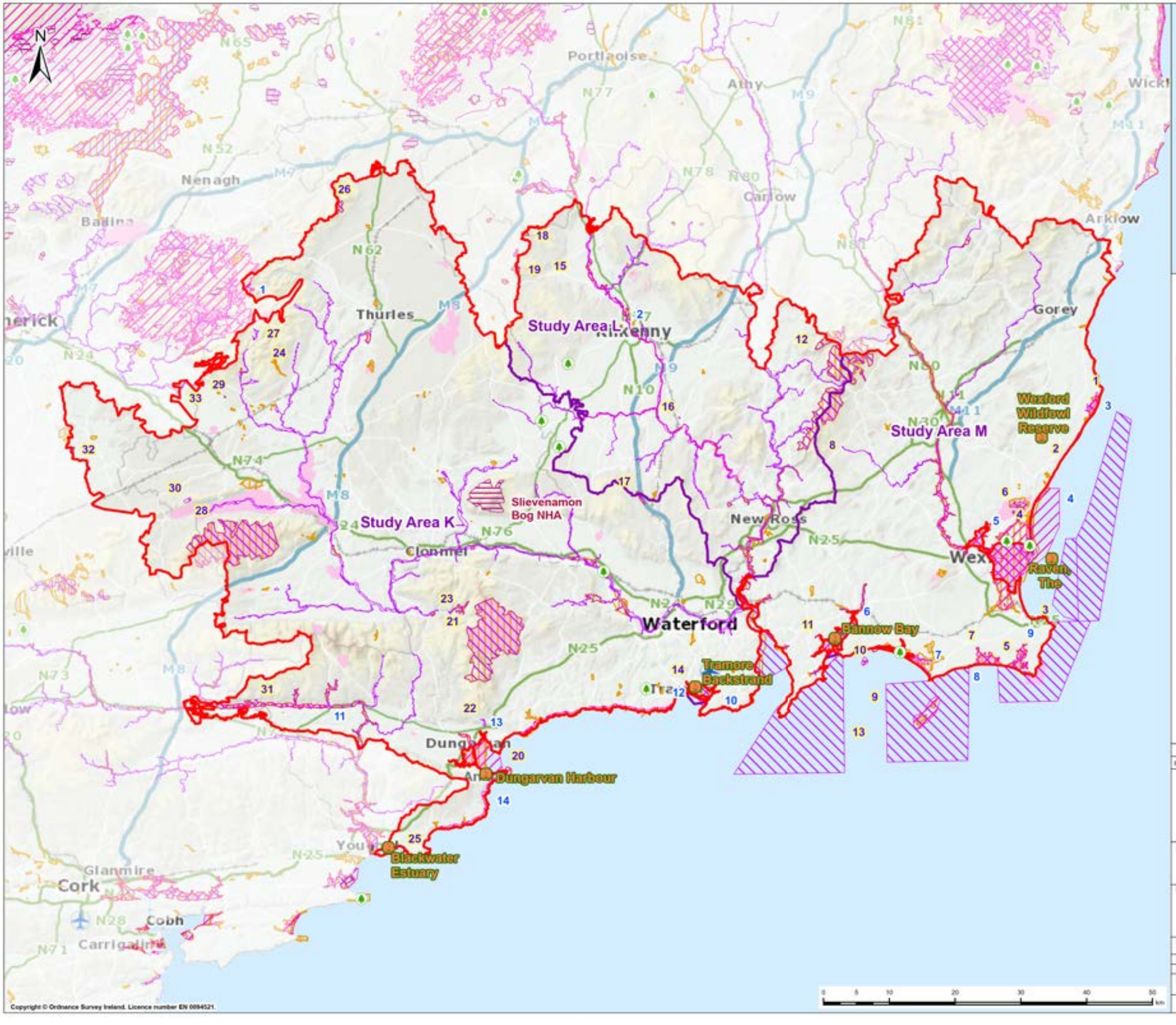
Drawing Title
WATER CONTEXT:
FLOOD RISK

Drawing Status: DRAFT

Scale @A3: 1:550,000 DO NOT SCALE

Filepath:

Drawing No
FIGURE 5.4


N
Portlaoise
Athy
Wicklow
Nenagh
Ballina
Carlow
Arklow
Thurles
Study Area L
Kilkenny
Gorey
Study Area M
Wexford Wildfowl Reserve
Slievenamon Bog NHA
Study Area K
Clonmel
New Ross
Wexford
Raven, The
Waterford
Bannow Bay
Tramore Backstrand
Dungarvan
Dungarvan Harbour
Blackwater Estuary
Youghal
Glanmire
Cork
Cobh
Carrigaline
Copyright © Ordnance Survey Ireland. Licence number EN 0094521.
RWRP-NW
RWRP-EM
RWRP-SE
RWRP-SW
Legend
Ramsar Site
Nature Reserve
South East region boundary
Study area boundary
Special Protection Area (SPA)
Special Area of Conservation (SAC)
Natural Heritage Area (NHA)
Proposed Natural Heritage Area (pNHA)
Geological Heritage Site
Reference Labels Key
xx : SPA Reference Label
xx : SAC Reference Label
0 15/08/2023 DRAFT SMD SJ RV TOG
Rev. Date Purpose of revision Drawn Check'd Rev'd Appr'd
Uisce Éireann
Irish Water
Project
REGIONAL WATER RESOURCES PLAN
SOUTH EAST
Drawing Title
BIODIVERSITY CONTEXT:
OVERVIEW
Drawing Status
DRAFT
Scale @A3
1:550,000
DO NOT SCALE
Filepath
Drawing No.
FIGURE 5.5
This drawing is not to be used in whole in or part other than for the intended purpose and project as defined on this drawing. Refer to the contract for full terms and conditions.

N

LAOIS

WICKLOW

KILKENNY

TIPPERARY

CARLOW

WEXFORD

LIMERICK

CORK

WATERFORD

Study Area L

Study Area M

Study Area K

Kilkenny

Enniscorthy

Clonmel

Wexford

Waterford City

Tramore

Portlaoise

Athy

Carlow

Arklow

Nenagh

Ballina

Youghal

Glanmire

Cork

Cobh

Carrigaline

RWRP-NW

RWRP-EM

RWRP-SE

RWRP-SW

Legend

- South East 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
- 133 Construction sites
- 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
- 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

Rev.	Date	Purpose of revision	Drawn	Check'd	Rev'd	Appr'd
0	15/08/2023	DRAFT	SMD	SJ	RV	TOG

Uisce Éireann
Irish Water

Project
REGIONAL WATER RESOURCES PLAN
SOUTH EAST

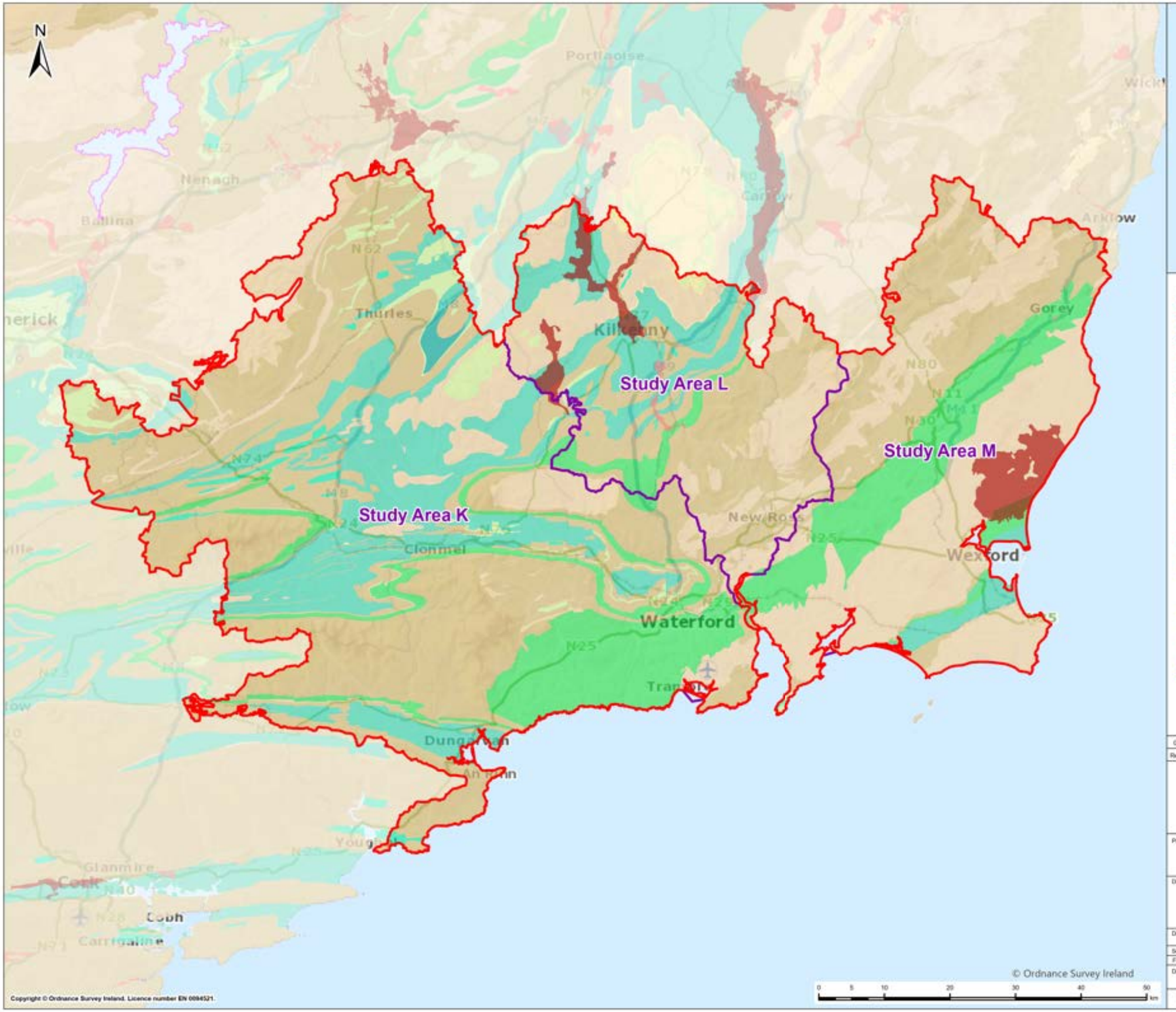
Drawing Title
MATERIAL ASSETS (NATURAL ASSETS)
CONTEXT - OVERVIEW

Drawing Status: **DRAFT**

Scale @A3: 1:550,000 DO NOT SCALE

Filepath:

Drawing No.
FIGURE 5.6



Legend

- South East region boundary
- Study area boundary

Gravel Aquifer

- Locally important gravel aquifer
- Regionally important gravel aquifer

Bedrock Aquifer

- Regionally Important Aquifer - Karstified (diffuse)
- Regionally Important Aquifer - Karstified
- Regionally Important Aquifer - Fissured bedrock
- Locally Important Aquifer - Bedrock which is Generally Moderately Productive
- Locally Important Aquifer - Karstified
- Locally Important Aquifer - Bedrock which is Moderately Productive only in Local Zones
- Poor Aquifer - Bedrock which is Generally Unproductive except for Local Zones
- Poor Aquifer - Bedrock which is Generally Unproductive
- Lake

Rev	Date	Purpose of revision	Drawn	Check'd	Rev'd	Appr'd
0	15/08/2023	DRAFT	SMD	SJ	RV	TOG

Uisce Éireann
Irish Water

Project
REGIONAL WATER RESOURCES PLAN
SOUTH EAST

Drawing Title
HYDROGEOLOGY

Drawing Status: **DRAFT**

Scale @A3: 1:550,000 — DO NOT SCALE

Filepath:

Drawing No.
FIGURE 5.7

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?	• 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.	• 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**	
	• 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?	relation to water quality, water borne disease transmission, insect borne disease transmission, recreational and agricultural land take, and risks of flooding. • 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.	• 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?	• Type of land take • Duration of land take • Level of impact on recreational amenity	• 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)

	• 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 bunded reservoirs for example)	• 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?	• 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	• Catchments.ie for additional information on catchments • Uisce Éireann 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

	considered based on review of potential over abstraction risk from existing abstractions. • 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?	• % 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	• 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		• Catchments.ie for additional information on catchments	3	N/A	
			2	N/A	

WFD Status of water body status, in terms of hydromorphology?	• 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	• 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?	• 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. * *Water savings options are not currently considered as Uisce Éireann's leakage	• 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?	• 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	• 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?	• Potential for impacts on navigable waterways – based on proximity of works to navigable waterways and type of works.	• 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?	• Undermining the sites conservation objectives through direct or indirect effect pathways. • Direct loss of habitat or supporting habitat.	• 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

	• 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?	• 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	• 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

	• 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).	• 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	• 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**	
	• Outside of European and Nationally designated sites	• 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	• 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.	• 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?	• Species listed on the third schedule of the Hab+A94:C102itats Regulations 2011, (S.I. 477)	• National Biodiversity Data Centre	3	N/A
			2	N/A
			1	N/A

	Regs 49 & 50 Prohibition on dispersal of certain species. • 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?	• 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	• 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	• Uisce Éireann GIS layer on land use can highlight areas	• Uisce Éireann GIS layers • Myplan.ie	3	N/A
			2	N/A

option conflict with existing business, planned land use or valuable agricultural land. (see W6 for Navigation impact)	where agricultural land may be disrupted. • 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	
Could this option impact the landscape character areas, townscape character areas or important views – detract or improve?	• 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.	• 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?	• 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 • Note: Carbon calculations for embodied and operational carbon and NPV costings undertaken	• Option descriptions	3	N/A
			2	N/A
			1	N/A
			0	Small increases in abstraction at existing sites <10m3/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 50Mld), pumping water through >20-50km of network

Fine Screening Question CC1	Criteria	Data Sources	Score	
	after fine screening and used as an input for the approach development rather than the MCA carbon scoring. • 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 (>50Ml/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	• Is the option located in proximity distance of these sites?	• 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?	• 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.	• 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?	• 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	• 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	
	geological features are avoided. • 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 SAK Preferred Approach

WRZ	SAK Preferred Approach	
	Option Description	SA Option
1900SC0030: Kilteely	SAK-749 Rationalise Kilteely to Limerick City (Clareville WTP) WRZ.	185c
1900SC0008: Herbertstown	SAK-750 Rationalise Herbertstown to Limerick City (Clareville WTP) WRZ.	185c
1900SC0010: Knocklong/Hospital	SAK-751 Rationalise Knocklong/Hospital to Limerick City (Clareville WTP).	185c
1900SC0011: Galbally Water Supply	SAK-753 Rationalise Galbally to Limerick City (Clareville WTP).	185c
1900SC0012: Ballylanders Water Supply	SAK-752 Rationalise Ballylanders to Limerick City (Clareville WTP).	185c
1900SC0026: Anglesboro Water Supply	SAK-055 Upgrade existing WTP for water quality improvements. The WRZ is not in deficit.	-
1500SC0001: South Kilkenny Environs	SAK-648 Bring back Silverspring WTP to production and supply deficit.	-
1500SC0019: Piltown-Fiddown	SAK-073 New GW and upgrade Jamestown WTP to supply deficit (progressing as project to address RAL).	-
1500SC0005: Callan WS 1001	SAK-077	-

WRZ	SAK Preferred Approach	
	Option Description	SA Option
	Increase GW abstraction from existing spring and borehole and upgrade Callan WTP to supply deficit.	
2900SC0009: Twomileborris	SAK-687 Rationalise Twomileborris to Thurles WRZ.	175
2900SC0013: Horse and Jockey	SAK-684 Rationalise Horse and Jockey to Thurles WRZ.	175
2900SC0014: Thurles	SAK-688 Supply spare capacity to neighbouring WRZs in deficit.	175
2900SC0042: Templemore/Templetuohy:	SAK-106 Rationalise Templetuohy to Templemore (rationalise to College Hill WTP). Rationalisation within WRZ.	-
2900SC0016: Littleton	SAK-685 Rationalise Littleton to Thurles WRZ.	175
2900SC0032: Galtee Regional	SAK-120 New SW abstraction from Aherlow river and upgrade Rossadrehid WTP, Thomas Augmentation WTP, Springmount Source WTP and Farranamnagh WTP for water quality.	-
1900SC0038: Carrigmore	SAK-748 Rationalise Carrigmore to Limerick City (Clareville WTP).	185c
2900SC0025: Clonmel	SAK-734 New abstraction from the River Suir and new WTP at Barnes (site identified)	183
2900SC0021: Ardfinnan Regional	SAK-735 Interconnect Ardfinnan Regional with Clonmel WRZ and supply deficit from Clonmel (new SW abstractionfrom River Suir).	183

WRZ	SAK Preferred Approach	
	Option Description	SA Option
2900SC0029: Dundrum Regional	SAK-686 Interconnect Dundrum Regional and Thurles and supply deficit from Thurles.	175
2900SC0049: Tipperary Town Supply	SAK-180 New GW abstraction, new WTP to supply deficit and upgrade of Fawnagown WTP for water quality purposes.	
2900SC0039: Templetney/Brackford Bridge PWS	SAK-733 Interconnect Templetney/Brackford Bridge and Clonmel WRZs and supply deficit from Clonmel (new SW from River Suir).	183
2900SC0024: Carrick-On-Suir	SAK-289 New GW abstraction and new Linguan WTP to supply deficit.	37
2900SC0023: Burncourt Ballylooby	SAK-211 Increase GW abstraction from no.2 boreholes and upgrade Ballylooby Springs WTP to supply deficit.	-
2900SC0026: Fethard & Mullenbawn Regional Public Water Supply	SAK-222 Increase abstraction at Mullinbawn spring and upgrade Mullinbawn WTP to supply deficit to neighbouring WRZ in deficit. SAK-239 Interconnect Coalbrook/ Commons and Fethard & Mullenbawn and supply deficit from Fethard & Mullenbawn (Mullinbawn WTP).	53
2900SC0020: Ahenny	SAK-738 Rationalise Tullohea, Kilcash, Ahenny and Ballinvir to Templetney/Brackford Bridge WRZ (River Suir).	183
2900SC0031: Tullohea	SAK-736 Rationalise Tullohea, Kilcash, Ahenny and Ballinvir to Templetney/Brackford Bridge WRZ (River Suir).	183

WRZ	SAK Preferred Approach	
	Option Description	SA Option
2900SC0067: Coalbrook/Commons	SAK-247 New GW abstraction and new WTP to supply deficit.	-
2900SC0022: Ballinvir	SAK-739 Rationalise Tullohea, Kilcash, Ahenny and Ballinvir to Templetney/Brackford Bridge WRZ (River Suir).	183
2900SC0036: Kilcash	SAK-737 Rationalise Tullohea, Kilcash, Ahenny and Ballinvir to Templetney/Brackford Bridge WRZ (River Suir).	183
3100SC0033: East Waterford Water Supply Scheme	SAK-356 New SW abstraction from River Suir upstream of Carrick-on-Suir. Pump raw water to Adamstown WTP and treat at Adamstown WTP to supply deficit.	149
2900SC0069: Glengar	SAK-695 Rationalise Glengar to Dundrum regional WRZ.	176
3100SC0095: Lismore/Cappoquin/Ballyduff (LCB)	SAK-675 Increase GW (to include commissioning new TW) abstraction from existing borehole and upgrade LCB Lismore Deerpark WTP to supply deficit.	173
3100SC0077: Ballynoe/Melleray	SAK-386 Upgrade existing WTP for water quality improvements. The WRZ is not in deficit.	-
3100SC0111: Deelish/Ballinacourty	SAK-387 Upgrade existing WTP for water quality improvements. The WRZ is not in deficit.	-
3100SC0101: Scrahan	SAK-608 Rationalise Scrahan to East Waterford WRZ (new SW abstraction from River Suir).	149
3100SC0005: Ardmore	SAK-392	-

WRZ	SAK Preferred Approach	
	Option Description	SA Option
	Upgrade existing WTP for water quality improvements. The WRZ is not in deficit.	
3100SC0097: Ballyogarty	SAK-399 Rationalise Ballyogarty to East Waterford WRZ (new SW abstraction from River Suir).	149
3100SC0081: Moores Well	SAK-677 Rationalise Lacken and Morees Well to Lismore / Cappoquin / Ballyduff (LCB) WRZ (Deerpark WTP).	173
3100SC0083: Stradbally	SAK-784 Rationalise Stradbally to Dungarvan WRZ.	195
3100SC0030: Carrowgarriff	SAK-416 Upgrade existing WTP for water quality improvements. The WRZ is not in deficit.	-
3100SC0024: Ballysaggart	SAK-672 Rationalise Ballysaggart, Monatariff and Carrognagower to LCB (Deerpark WTP).	173
3100SC0099: Kilmacthomas	SAK-438 Rationalise Kilmacthomas to East Waterford WRZ (new SW abstraction from River Suir).	149
3100SC0054: Ballymacarbry	SAK-441 New GW abstraction (karstic) and new WTP to supply deficit.	-
3100SC0027: Boolavonteen/Kilcooney/Tooraneena	SAK-444 Increase GW abstraction from Tooraneena borehole and upgrade Tooraneena WTP to supply deficit.	-
3100SC0079: Adramone/Kilrossanty	SAK-450 Increase GW abstraction from Kilrossanty borehole and upgrade Kilrossanty WTP to supply deficit.	-
3100SC0001: Dungarvan	SAK-783	195

WRZ	SAK Preferred Approach	
	Option Description	SA Option
	Increase GW abstraction from no. 4 borehole and upgrade Ballinamuck WTP to supply partial deficit.	
3100SC0089: Rathgormuck	SAK-265 Rationalise Rathgormuck to Carrick on Suir WRZ (Linguan WTP).	37
3100SC0051: Ballyguiry	SAK-472 Increase GW abstraction from Ballyguiry borehole and upgrade Ballyguiry WTP to supply deficit.	-
3100SC0053: Inchinleamy	SAK-476 Upgrade existing WTP for water quality improvements. The WRZ is not in deficit.	-
3100SC0112: Modeligo	SAK-477 Upgrade existing WTP for water quality improvements. The WRZ is not in deficit.	-
3100SC0114: Liskealty	SAK-478 Upgrade existing WTP for water quality improvements. The WRZ is not in deficit.	-
3100SC0098: Ballyshunnock	SAK-481 Increase GW abstraction from borehole and Ballyshunnock WTP to supply deficit.	-
3100SC0091: Dunhill - Cois Coille	SAK-495 Rationalise Dunhill - Cois Coille to East Waterford WRZ (new SW abstraction from River Suir).	149
3100SC0118: Russelstown	SAK-740 Rationalise Russelstown to Clonmel WRZ.	183
3100SC0042: Faha	SAK-501 Rationalise Faha to East Waterford WRZ (new SW abstraction from River Suir).	149
3100SC0093: Graiguenageeha	SAK-783	195

WRZ	SAK Preferred Approach	
	Option Description	SA Option
	Increase GW abstraction from no. 4 borehole and upgrade Ballinamuck WTP to supply partial deficit	
3100SC0116: Kilbrien	SAK-509 Upgrade existing WTP for water quality improvements. The WRZ is not in deficit.	-
3100SC0113: Lacken	SAK-676 Rationalise Lacken and Morees Well to LCB WRZ (Deerpark WTP).	173
3100SC0044: Garrahylish	SAK-525 Upgrade existing WTP for water quality improvements. The WRZ is not in deficit.	-
3100SC0035: Smoor	SAK-530 Rationalise Smoor to East Waterford WRZ (new SW abstraction from River Suir).	149
3100SC0092: Dunhill Ballinageeragh	SAK-538 Rationalise Dunhill Ballinageeragh to East Waterford WRZ (new SW abstraction from River Suir).	149
3100SC0123: Carrigeen	SAK-548 Upgrade existing WTP for water quality improvements. The WRZ is not in deficit.	-
3100SC0045: Fews	SAK-555 Rationalise Fews to East Waterford WRZ (new SW abstraction from River Suir).	149
3100SC0124: Portlaw	SAK-618 New GW abstraction and new WTP to partly supply deficit. SAK-560 Increase GW abstraction from Portlaw borehole and Portlaw spring and upgrade Portlaw WTP to partly supply deficit.	-
3100SC0087: Glenagad	SAK-742	183

WRZ	SAK Preferred Approach	
	Option Description	SA Option
	Rationalise Glennagad to Clonmel WRZ (new abstraction from the River Suir and new WTP at Barnes site).	
3100SC0120: Lyreanearla	SAK-569 Upgrade existing WTP for water quality improvements. The WRZ is not in deficit.	-
3100SC0126: Monatarriff	SAK-756 New GW abstraction and upgrade WTP LCB Cappoquin WTP to partly supply deficit.	-
3100SC0129: Kilmanahan	SAK-741 Rationalise Kilmanahan to Clonmel WRZ.	183
3100SC0119: Poulavanogue (Waterford)	SAK-743 Rationalise Poulavanogue (Waterford) to Clonmel WRZ (new abstraction from the River Suir and new WTP at Barnes site).	183
3100SC0107: Ballyknock	SAK-269 Rationalise Ballyknock to Carrick-on-Suir WRZ (Linguan WTP).	37
3100SC0110: Crehanagh	SAK-271 Rationalise Crehanagh to Carrick-on-Suir WRZ (Linguan WTP).	37
3100SC0108: Garravoone	SAK-273 Rationalise Garravoone to Carrick on Suir WRZ (Linguan WTP).	37
3100SC0102: Kill/Ballylaneen	SAK-604 Rationalise Kill/Ballylaneen to East Waterford WRZ (new SW abstraction from River Suir).	149
3100SC0127: Carrignagower	SAK-674 Rationalise Ballysaggart, Monatariff and Carrognagower to LCB (Deerpark WTP).	173

WRZ	SAK Preferred Approach	
	Option Description	SA Option
3100SC0115: Ardmore Grange	SAK-625 Increase GW abstraction and upgrade WTP to supply deficit.	-

C.2 SAL Preferred Approach

WRZ	SAL Preferred Approach	
	Option Description	SA Option
0100SC0009: Borris	SAL-083 Rationalise Borris WRZ to Gowran-Goresbridge-Paulstown WRZ.	26
0100SC0010: Ballinkillen	SAL-083 Rationalise Borris WRZ to Gowran-Goresbridge-Paulstown WRZ.	26
1500SC0002: Glenmore PWS	SAL-015 Increase GW abstraction from Busherstown Springs and upgrade Glenmore WTP to supply deficit.	-
1500SC0003: Kilkenny City	SAL-052 Upgrade Troyswood WTP and abandon Radestown WTP.	11
1500SC0007: Ballyragget PWS	SAL-007 Rationalise Ballyragget to Kilkenny City WRZ for incresed resilience and long term OPEX savings.	11
1500SC0012: Gowran-Goresbridge-Paulstown	SAL-085 New GW abstraction and new WTP located at Woodquater to supply full demand - currently under development and maintain existing abstraction.	26
1500SC0013: Graiguenamanagh PWS	SAL-036	21

WRZ	SAL Preferred Approach	
	Option Description	SA Option
	Rationalise Graiguenamanagh to Thomastown WRZ	
1500SC0017: Thomastown/Inistioge	SAL-036 Rationalise Graiguenamanagh to Thomastown WRZ	21
1500SC0020: Bennettsbridge & Kilmaganny	SAL-078 New GW abstraction and new WTP for Bennettesbridge.	-
3300SC0025: New Ross	SAL-073 New GW abstraction/wellfield located south of New Ross WRZ and new WTP to supply deficit.	-

C.3 SAM Preferred Approach

WRZ	SAM Preferred Approach	
	Option Description	SA Option
3300SC0020: Coolgreaney WS	SAM-004 Rationalise Coolgreaney to Arklow WRZ (SA1 increase GW abstraction).	1
3300SC0003: Gorey	SAM-198 Rationalise Kilmuckbridge WTP to new Ballyminaunhill WTP. Rationalisation within WRZ.	-
3300SC0002: Camolin WSS	SAM-017 Upgrade existing WTP for water quality improvements. The WRZ is not in deficit.	-
3300SC0003: Ferns WS	SAM-029 New GW abstraction and new WTP to partly supply full demand (abandon existing SW source).	-

WRZ	SAM Preferred Approach	
	Option Description	SA Option
3300SC0004: Bunclody WS	SAM-036 New GW abstraction and upgrade Carrickduff WTP to supply deficit.	-
3300SC0032: Kiltealy	SAM-044 Increase GW abstraction and upgrade Ballycrystal WTP to supply deficit.	-
3300SC0031: Ballindaggin	SAM-050 Increase GW abstraction and upgrade Ballindaggin WTP to supply deficit.	-
3300SC0030: Marshalstown	SAM-230 Rationalise Bree, Ballyhogue, Glynn and Marshalstown to Enniscorthy WRZ.	76
3300SC0034: Monageer	SAM-061 Increase GW abstraction and upgrade Monageer WTP to supply deficit.	-
3300SC0023: Enniscorthy Town	SAM-226 Increase SW abstraction from River Slaney and upgrade Vinegar Hill WTP to supply deficit.	76
3300SC0035: Davidstown	SAM-073 Upgrade existing WTP for water quality improvements. The WRZ is not in deficit.	-
3300SC0077: Bree	SAM-227 Rationalise Bree, Ballyhogue, Glynn and Marshalstown to Enniscorthy WRZ.	76
3300SC0032: Ballyhogue	SAM-228 Rationalise Bree, Ballyhogue, Glynn and Marshalstown to Enniscorthy WRZ.	76
3300SC0033: Clonroche	SAM-100 New GW abstraction and upgrade Clonroche WTP to supply full demand.	-

WRZ	SAM Preferred Approach	
	Option Description	SA Option
3300SC0027: Woodview Drive Adamstown	SAM-105 Increase GW abstraction and upgrade WTP to supply deficit.	
3300SC0066: Raheen (Adamstown)	SAM-108 Upgrade existing WTP for water quality improvements. The WRZ is not in deficit.	-
3300SC0022: Carrigbyrne WS	SAM-224 Rationalise Carrigbyrne to South Regional WRZ.	75
3300SC0037: Glynn WS	SAM-229 Rationalise Bree, Ballyhogue, Glynn and Marshalstown to Enniscorthy WRZ.	76
3300SC0078: Fardystown	SAM-148 New GW abstraction and upgrade Mayglass WTP to supply deficit. Bring unused BHs back to production (GW abstraction from existing BHs currently not in supply).	-
3300SC0080: Sow Regional	SAM-127 Increase GW abstraction and upgrade WTP to partly supply deficit. SAM-207 New GW and new WTP to partly supply deficit.	-
3300SC0079: South Regional	SAM-225 New GW abstraction and new WTP to supply deficit.	75
3400SC0053: Ballingate Public Suppy	SAM-140 Rationalise Ballingate to Tinahely WRZ (not in deficit).	47
3400SC0045: Ballynavortha Public Supply	SAM-141 Increase GW abstraction and upgrade Ballinavortha WTP to supply deficit.	-

WRZ	SAM Preferred Approach	
	Option Description	SA Option
3400SC0030: Coolboy Coolafancy Public Supply	SAM-144 Upgrade existing WTP for water quality improvements. The WRZ is not in deficit.	-
3400SC0033: Raheengraney Public Supply	SAM-146 Upgrade existing WTP for water quality improvements. The WRZ is not in deficit.	-
3300SC0081: Wexford Town	SAM-149 New GW wellfield at Adamstown and new WTP to supply deficit.	-

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 three SAs of Region/Group 3.

Table D-2 Region/Group 3 significant impacts and corresponding mitigation measures

SEA Topic (abridged)	Significant Impact Identified in SEA	Mitigation Measures
Population & Health	Construction-stage disruption to access routes and recreational areas Construction-stage noise disturbance, dust and extra traffic Changes to drinking water quality caused by WTPs at risk of failure	• 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	Draw-down of groundwater levels caused by abstraction Abstraction of surface water with risk to reduce flow or water levels Impacts on water quality from surface water runoff or drawdown of water levels Increase in flood risk due to construction of new infrastructure or changes to drainage affecting flood risk during operation.	• 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
		• 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	Loss or fragmentation of habitats within development footprint Disturbance to wildlife during construction Discharges of pollutants into water bodies and subsequent impacts on aquatic biodiversity Spread of invasive species during construction works	• 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	Impacts on local landscapes and visual amenity during construction	• 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	Disruption to infrastructure or access to infrastructure, access routes, public spaces and agricultural land	• 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	Reduced resilience to climate change impacts Increase in greenhouse gas emissions	• 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
		• 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	• 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 etc

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_2e/ha	2013
Carbon sequestration rate for adult coniferous trees	4.47	tCO_2e/ha	2013
Carbon sequestration rate for young broadleaved trees	2.20	tCO_2e/ha	2013
Carbon sequestration rate for adult broadleaved trees	4.71	tCO_2e/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 document[1], 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 Bank[2]; 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.

[1] https://www.gov.ie/en/publication/public-spending-code/
[2] https://data.worldbank.org/indicator/NY.GDP.DEFL.ZS?locations=IE

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 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 roads[3].

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 Britain[5]. 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.

[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

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 Manual[6]. An average of the gross margin for different arable land types was used.

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 Bank[7]. 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 rate[8].

[6] https://www.mcm-online.co.uk/handbook/
[7] https://data.worldbank.org/indicator/NY.GDP.DEFL.ZS?locations=IE
[8] https://www.bankofengland.co.uk/boeapps/database/fromshowcolumns.asp?Travel=NIxSUx&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 Capita 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	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) The European Union Drinking Water Regulations 2023 (S.I 99/2023), 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. Fàilte Ireland's 10 Year Tourism Strategy 43. Fàilte 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	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

Theme	Policies, Plans and Programmes
	57. River Basin Management Plan 2018 - 2021 58. Draft River Basin Management Plan 2022-2027 59. General Scheme of the Water Environment (Abstractions) Bill 2020 60. Water Environment (Abstractions and Associated Impoundments) Act, 2022 (the Abstractions Act) 61. Bathing Water Directive (2006/7/EC) 62. Bathing Water Quality Regulations 2008 S.I. No. 79/2008 (as amended 2016 S.I. No. 163/2016) 63. Floods Directive (2007/60/EC) 64. European Communities (Assessment and Management of Flood Risks) Regulations 2010 S.I. No. 122/2010 65. Nitrates Directive (91/676/EEC and derogation 2018/209) 66. European Union (Good Agricultural Practice for Protection of Waters) Regulations 2014 S.I. No. 31/2014 (as amended 2020 S.I. No. 529/2020) 67. Urban Wastewater Treatment Directive (91/271/EEC as amended 98/15/EEC) 68. Urban Waste Water Treatment Regulations 2001 S.I. No. 254/2001 (as amended 2010 S.I. No. 48/2010) 69. EU Urban Waste Water Directive and Revision 70. Marine Strategy Framework Directive (2008/56/EC) 71. European Communities (Marine Strategy Framework) Regulations 2011 S.I. No. 249/2011 (as amended 2018 S.I. No. 648/2018) 72. Groundwater Directive (2006/118/EC) 73. European Communities Environmental Objectives (Groundwater) Regulations 2010 S.I. No. 9/2010 (as amended 2016 S.I. No. 366/2016) 74. Catchment Flood Risk Management (CFRAM) Programme 75. Flood Risk Management Plans 76. Fifth Nitrates Action Programme 2022-2025 77. National Marine Planning Framework 78. Maritime Spatial Planning Directive 2014/89/EU 79. The Maritime Area Planning Act 2021 80. Marine and Coastal Access Act 2009 81. UK Marine Strategy
Biodiversity, flora and fauna	82. International and European Council Conventions 83. EU Biodiversity Strategy for 2030 84. The Habitats Directive (92/43/EEC) 85. The Birds Directive (2009/147/EC) 86. European Communities (Birds and Natural Habitats) Regulations 2011 S.I. No. 477/2011(as amended 2015 S.I. No. 355/2015)

Theme	Policies, Plans and Programmes
	87. Green Infrastructure: Enhancing Europe's Natural Capital Strategy 88. Creating Green Infrastructure for Ireland: Enhancing Natural Capital for Human Wellbeing 89. Wildlife Act 1976 (as amended including 2010) 90. Fisheries Consolidation Act, 1959 91. Other National Biodiversity related regulations 92. National Biodiversity Action Plan 2017-2021 93. All-Ireland Pollinator Plan 2021-2025 94. Proposed EU Nature Restoration Law
Material assets	95. Waste Framework Directive (2008/98/EC) 96. Infrastructure and Capital Investment Plan 2016-2021 97. Waste Management Acts 1996 – 2005 98. Ireland 2040: Our Plan, National Planning Framework 99. National Peatland Strategy 100. Ireland's Forest Strategy (2023 – 2030) 101. Waste Action Plan for a Circular Economy 102. Whole of Government Circular Economy Strategy 2022 103. National Hazardous Waste Management Plan 2014-2020 104. National Hazardous Waste Management Plan 2021 – 2027
Landscape and visual amenity	105. European Landscape Convention 106. National Landscape Strategy for Ireland 2015-2025
Air quality	107. Ambient Air Quality Directive (2008/50/EC) 108. Air Quality Standards Regulations 2011 S.I. No. 180/2011 109. Industrial Emissions Directive (2010/75/EU) 110. European Union (Industrial Emissions) Regulations 2013 S.I. No. 138/2013
Noise	111. Environmental Noise Directive (2002/49/EC) 112. European Communities (Environmental Noise) Regulations 2018 S.I. No. 549/2018
Climate change	113. The Kyoto Protocol 114. Paris Agreement 2015 115. EU Energy and Climate (2020) Package 2009 116. The Climate Action and Low Carbon Development Act 20 117. Climate Action and Low Carbon Development (Amendment) Bill 2021 118. National Climate Change Adaptation Framework including the Sectoral Adaptation Plans including the Climate Change Adaptation for the Health Sector 2018-2024

Theme	Policies, Plans and Programmes
	119. Ireland's National Policy Position on Climate Action and Low Carbon Development (2014) 120. National Mitigation Plan, 2017 121. Energy White Paper: Delivering a Sustainable Energy Future for Ireland – The Energy Policy Framework 2007-2020 122. National Renewable Energy Action Plan (Directive 2018/2001) 123. European Union (Renewable Energy) Regulations 2020 S.I. No. 365/2020 124. Offshore Renewable Energy Development Plan (2014) and Interim Review (2018) 125. Irish Water Sustainable Energy Strategy 126. National Climate Action Plan 2023 127. European Green Deal 128. Ireland's CAP Strategic Plan 2023-2027 129. National Energy and Climate Plan 2021-2030
Cultural heritage (archaeological and architectural)	130. EU Conventions on Archaeological, Architectural and Cultural Heritage 131. Planning and Development Acts 132. Heritage Act 2018 133. Historic and Archaeological Heritage and Miscellaneous Provisions Bill 2023 134. National Monuments Act 2004 (as amended) 135. Architectural Heritage and Historic Monuments Act 1999 136. National Heritage Plan 2022, Heritage Ireland 2030 137. Built & Archaeological Heritage Climate Change Sectoral Adaptation Plan 138. National Policy on Town Defences 139. UNESCO Convention on the Protection of the Underwater Cultural Heritage 140. Framework and principles for the protection of the archaeological heritage
Geology and soils	141. Planning and Development Act 142. Proposed - Planning and Development Bill 2022 143. Action Plan for Rural Development 144. Proposed EU Soil Health Directive 145. EU Soil Strategy for 2030
Transboundary (Note no transboundary effects related have been identified for the South East Region and interaction with NI plans and policies have been considered and scoped out)	146. Planning Act (NI) 2011 147. Regional Development Strategy: Building a Better Future, 2035 148. Northern Ireland's Climate Change Adaptation Programme 2019 – 2024 149. Climate Change Act (Northern Ireland) 2022 150. Climate Risk Independent Assessment 2021 151. The Water Environment (Floods Directive) Regulations (Northern Ireland) 2009 152. Water Abstraction and Impoundment (Licensing) (Amendment) Regulations (Northern Ireland) 2007

Theme	Policies, Plans and Programmes
	153. The Water Supply (Water Quality) Regulations (Northern Ireland) 2017 154. NI Water (2020) Our Strategy 2021-2046 155. NI Water (2020) Water Resource and Supply Resilience Plan 156. The Private Water Supplies Regulations (Northern Ireland) 2017 157. Sustainable Water – A Long term water strategy for Northern Ireland (2015 – 2040) 158. Fisheries Act (NI) 1966 (as amended) 159. Flood Risk Management Plan 2021-2027 160. Marine Act (Northern Ireland) 2013 161. UK Marine Policy Statement 162. Draft Marine Plan for Northern Ireland 163. Historic Monuments and Archaeological Objects (Northern Ireland) Order 1995 164. Protection of Wrecks Act 1973 165. Archaeology 2030 - A Strategic Approach for Northern Ireland 166. Draft 3rd cycle River Basin Management Plan 2021-2027 167. The Wildlife (NI) Order 1985 (as amended) 168. Wildlife and Natural Environment Act (NI) 2011 169. The Conservation (Natural Habitats, etc.) Regulations (Northern Ireland) 1995 (as amended) 170. The Environment (NI) Order 2002 171. The Planning (Environmental Impact Assessment) Regulations (Northern Ireland) 2017 172. The Strategic Planning Policy Statement (SPPS) for Northern Ireland 173. Planning Policy Statements (will be superseded by Local Development Plans when adopted) 174. Biodiversity Strategy for NI to 2020 175. Draft Environment Strategy 176. Draft Northern Ireland Peatland Strategy 2021-2040 177. Strategic Planning Policy Statement 178. Northern Ireland Landscape Character Assessment 179. Regional Landscape Assessment 180. Draft Green Growth Strategy for Northern Ireland 181. Northern Ireland Energy Strategy 2050 Northern Ireland Energy Strategy 2050 182. Wildlife (Northern Ireland) Order 1985 183. Conservation (Natural Habitats, etc.) Regulations (Northern Ireland) 1995 184. The Marine and Coastal Access Act 2009 185. Strategic Planning Policy Statement for Northern Ireland 2015

Theme	Policies, Plans and Programmes
	186. An Integrated Coastal Zone Management Strategy for Northern Ireland 2006-2026 187. Northern Ireland Regional Seascape Character Assessment 2014 188. North Atlantic Salmon Conservation Organisation (NASCO) 189. Convention for the Conservation of Salmon in the North Atlantic Implementation Plan for the period 2019 – 2024 190. Policy Statement on Geothermal Energy for a Circular Economy

F.2 Local Level

Theme	Policies, plans and programmes
All aspects	1. Carlow Graiguecullen Joint Urban Local Area Plan 2023-2029 2. Carlow County Development Plan 2022-2028 3. Draft Project Carlow 2040 A Vision for Regeneration 4. Cork County Development Plan 2022-2028 5. Cork City Development Plan 2022-2028 6. Kilkenny City and County Development Plan 2021-2027 7. Callan Local Area Plan 2019-2025 8. Castlecomer Local Area Plan 2018- 2024 9. Ferrybank Belview Local Area Plan (published 2017) 10. Graiguenamanagh-Tinnahinch Local Area Plan 2021-2027 11. Thomastown Local Area Plan 2019-2025 12. Kilkenny City and Environs Development Plan 2021 13. Kilkenny City and County Development Plan 2021-2027 14. Mountmellick Local Area Plan 2018-2024 15. Joint Spatial Plan for the Greater Carlow Graigeucullen Urban Area 2012-2018 (extended until 2022) 16. Portlaoise Local Area Plan 2018-2024 17. Portarlington Joint Local Area Plan 2018-2024 18. Laois County Development Plan 2021-2027 19. 2040 and Beyond A Vision for Portlaoise: A Strategy For a Better Town Centre 20. Limerick Metropolitan District Movement Framework Study (published 2015) 21. Limerick Metropolitan Cycle Network Study (published 2018) 22. Limerick Development Plan 2022-2028 23. Tipperary County Development Plan 2022-2028 24. Roscrea Local Area Plan 2012-2018 25. Draft Roscrea Local Area Plan 2023-2029 26. Cahir Local Area Plan 2021-2027

Theme	Policies, plans and programmes
	27. Waterford City & County Development Plan 2022-2028 28. Lismore Local Area Plan 2014-2020 29. Tramore Local Area Plan 2014-2020 30. Portlaw Local Area Plan 2014-2020 31. Waterford Metropolitan Area Transport Strategy (2022) 32. Waterford City and County Development 2022 - 2028 33. Wexford County Development Plan 2022-2028 34. Taghmon Local Area Plan 2009-2015 35. Gorey Local Area Plan 2017-2023 36. Wicklow County Development Plan 2022-2028
Population, economy, tourism and recreation and human health	37. County Carlow Local Economic and Community Plan 2023-2028 (in preparation) 38. County Carlow Local Economic and Community Plan 2016-2021 39. Cork Healthy Cities Action Plan 2020-2030 40. Cork County Local Economic and Community Plan (published 2016) 41. Cork City Local Economic & Community Plan 2016-2021 42. Visit Cork Sustainability Strategy 2020-2023 43. Kilkenny Local Economic and Community Plan 2023-2028 44. Kilkenny County Council Corporate Plan 2019-2024 45. Kilkenny Local Transport Plan (published 2021) 46. Kilkenny Socio-Economic Statement 2023-2028 47. Kilkenny County Council Tourism Statement of Strategy and Work Programme 2017-2022 48. Laois Local Economic and Community Plan 2023-2028 49. Laois County Council Road Safety Plan 2017-2022 50. Strategic Plan for Tourism in Laois 2018-2023 51. Limerick Tourism Development Strategy 2019-2023 52. Tourism Masterplan for the Shannon 2020-2030 53. Limerick Wild Atlantic Way Gateway City Strategy 54. Tipperary Transforming, Tourism Product Development Plan 2020-2030 55. County Tipperary Local Economic and Community Plan 2015-2020 56. Tipperary County Council Corporate Plan 2020-2024 57. Waterford City and County Council Tourism Statement of Strategy and Work Plan 2017-2022 58. One Waterford: Local Economic and Community Plan 2023-2029 59. Local Economic & Community Plan 2023-2029 60. Waterford City and County Council Corporate Plan 2019-2024 61. Wexford Local Economic and Community Plan 2023-2028

Theme	Policies, plans and programmes
	62. Wexford Local Economic and Community Plan 2023-2028 63. Wexford County Council Corporate Plan 2019-2024 64. Ireland's Ancient East Path to Growth 65. Healthy Wicklow Action Plan 2018-2021 66. County Wicklow Age Friendly Strategy 2023 – 2027 67. The Wicklow Local Economic and Community Plan (LECP) 2016-2022 68. County Wicklow Outdoor Recreation Strategy 2020-2025
Biodiversity, flora and fauna	69. Draft Carlow Biodiversity Action Plan 2023 – 2028 70. County Cork Biodiversity Action Plan 2009-2014 71. Cork City Heritage & Biodiversity Plan 2021-2026 72. Cork County Council Environmental Awareness Strategy 2016-2020 73. Cork City Heritage and Biodiversity Plan 2021-2026 74. Kilkenny County Council Cultural Strategy. Arts, Heritage and Libraries 75. Laois Heritage Plan 2020-2025 76. Limerick City Council Biodiversity Plan 77. North Tipperary Local Biodiversity Action Plan 2007 78. South Tipperary Biodiversity Action Plan 2010-2015 79. Tipperary County Development Plan 2022-2028 80. Tipperary Town Landscape and Biodiversity Plan 2022-2027 81. Waterford City Biodiversity Action Plan 2010 82. County Waterford Local Biodiversity Action Plan 2008-2013 83. Wexford County Council Biodiversity Action Plan 2013-2018 84. County Wicklow Heritage Plan 2017-2022 85. Wicklow Biodiversity Action Plan 2010-2015
Material assets	86. Waste Management Plan - Southern Waste Region
Landscape and visual amenity	87. InCarlow Economic Development and Business Support Strategy 2022-2027 88. Cork City Landscape Study for Cork City Council (published 2008) 89. Strategic Environmental Assessment (SEA) Kilkenny City and County Development Plan 2021-2027 90. Strategic Environmental Assessment for the Joint Spatial Plan for the Greater Carlow Graiguecullen Urban Area 2012-2018 91. Strategic Environmental Framework for the Shannon Estuary 2013-2020 92. Tipperary Town Landscape and Biodiversity Plan 2022-2027 93. Landscape Character Assessment for Tipperary
Noise	94. County Carlow Tourism Strategy and Action Plan 2020-2025 95. Cork County Council Noise Action Plan 2018-2023

Theme	Policies, plans and programmes
	96. Cork Agglomeration Area Noise Action Plan 2018-2023 97. Kilkenny County Council Noise Action Plan 2019-2023 98. Laois County Council Noise Action Plan 2019-2022 99. Limerick City and County Council Noise Action Plan 2018-2023 100. Tipperary County Council Noise Action Plan 2018-2023 101. Waterford City & County Council Noise Action Plan 2019-2023 102. Wexford County Council Noise Action Plan 2019-2023 103. Wicklow County Council's Noise Action Plan 2018 - 2023
Climate change	104. Carlow County Council Climate Change Adaptation Strategy 2019-2024 105. Cork County Council Climate Adaptation Strategy 2019-2024 106. Cork City Council Climate Change Adaptation Strategy 2019-2024 107. Kilkenny County Council Climate Change Adaptation Strategy 2019-2024 108. Laois County Council Climate Change Adaptation Strategy 2019-2024 109. Limerick City & County Council Climate Change Adaptation Strategy 2019-2024 110. Tipperary County Council Climate Adaptation Strategy 2019-2024 111. Waterford City & County Council Climate Change Adaptation Strategy 2019-2024 112. Wexford County Council Climate Adaptation Strategy 2019-2024 113. Wicklow County Council Climate Adaptation Strategy 2019
Cultural heritage (archaeological and architectural)	114. Cork City Heritage and Biodiversity Plan 2021-2026 115. Muskerry Heritage Plan: Conservation, Management and Interpretation Plan 2018-2023 116. Kilkenny County Council Cultural Strategy – Arts, Heritage and Libraries 2018-2022 117. Kilkenny Culture and Creativity Strategy 2023-2027 118. Laois Heritage And Biodiversity Strategy 2021 – 2026 119. Limerick Cultural Strategy: A Framework 2016-2030 120. Tipperary Heritage Action Plan 2020-2022 121. Waterford Heritage Plan 2017-2022 122. County Wicklow Heritage Plan 2017-2022

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- SE.
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-SE.
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 the SEA Environmental 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 5 year 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	We have included chapter 10, Mitigation and Monitoring Plans which covers the integration of environmental and sustainability considerations throughout implementation of the Regional Plan. There is a section on monitoring and feedback in the Regional Plan. The plans will be subject to ongoing review within the 5 year plan cycle including annual review and the

Consultee	Submission comment	Response
	Directive, Marine Strategy Framework Directive, etc.	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	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 South East 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.
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 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

Consultee	Submission comment	Response
		emissions targets, biodiversity enhancement and river restoration
Northern Ireland Environment Agency	Regarding the plan's objectives, no targets or indicators have been provided. Alongside the objectives of the plan, targets and indicators should also be provided within the Environmental Report.	Targets and indicators are provided in the SEA Environmental Report as part of the Monitoring Plan.
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 (OREDP) 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: • Environmental Protection Agency; • Minister for Housing, Local Government and Heritage; • Minister for Environment, Climate and Communications; • 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 environmental authorities as part of the SEA scoping process.	Stakeholder workshops were held on the SEA scoping report for the Framework plan and on the development of the options appraisal 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	The SEA and draft RWRP identify priorities for improving monitoring and

Consultee	Submission comment	Response
	commitments to help address these on a priority basis during the implementation phase of the Plan.	gathering better data. Limitations or data gaps and assumptions are identified. 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. Data and knowledge gaps are identified in the limitations and assumptions section in both the SEA Report and the RWRP SE and commitments to improve data is included within the environmental action plan and as part of the RWRP SE monitoring and feedback process.
Department of Agriculture, Food and the Marine (Ireland)	We are concerned by the possible impacts the outflows of desalination plants may have on fisheries and coastal nursing/spawning species. The hypersalinated outflows would need to be treated appropriately to avoid any adverse impact on fish stocks. In the event that there were large losses of fish and fish eggs, this would be a major cause for concern. Any other general impacts on commercial sea fisheries would need to be screened in to the environmental assessment, too.	There are no desalination options proposed for the South East region thus no impacts are predicted.
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 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.	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 are no desalination options proposed for the South East region thus no impacts are predicted

Consultee	Submission comment	Response
Legislation, Plans and Policies		
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 (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.	The Group water scheme (GWS) sector covers the private group water schemes Uisce Éireann considers options for connecting to GWSs, taking over GWSs and also where 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 has been highlighted in the SEA Environmental Report Monitoring Plan for updating habitats and land use information as part of plan implementation.
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. This is particularly relevant 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	We will take the Draft Guidelines into account once available and have added a note to the SEA ensure this.

Consultee	Submission comment	Response
	should in particular be taken into account in finalising and implementing the Plan.	
Environmental Protection Agency	The EPA guidance document 'Developing and Assessing Alternatives in Strategic Environmental Assessment (SEA) (EPA, 2015)' should be considered in preparing the SEA environmental report.	This guidance has been considered in developing the methodology and is referred to in the SEA Environmental Report.
Drinking water quality		
Department of the Environment, Climate, and Communications (DECC)	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 the SEA Report now includes updated references. Drinking Water Directive is added to key national level influences listed in chapter 4.
Water environment		
Department of the Environment, Climate, and Communications (DECC)	Geological Survey Ireland's (GSI) Groundwater and Geothermal Unit (GGU), provides advice, data and maps relating to groundwater distribution, quality and use, which is especially relevant for safe and secure drinking water supplies and healthy ecosystems.	Uisce Éireann confirms that GSI's advice, data and maps were utilised where available throughout the fine screening assessment, and that hydrogeological assessments of options were completed taking account of groundwater resources provided by the GSI, i.e. wells, drinking water source protection areas; national Aquifer, Vulnerability and Recharge map; subsoil permeability, karst features, tracer test database, turlough water levels (gwlevel.ie) and the Groundwater body descriptions database; and considered cumulative effects on WFD ground water status and interaction with existing Uisce Éireann abstractions. These assessments supported the options assessment process and considered the following additional data sources: Uisce Éireann recognises the invaluable ongoing contribution of the GSI's Groundwater and Geothermal Unit to
Department of the Environment, Climate, and Communications (DECC)	Proposed developments need to consider any potential impact on specific groundwater abstractions and on groundwater resources in general. They recommended using the groundwater maps on their Map viewer which "should include wells; drinking water source protection areas; the national map suite - aquifer, groundwater vulnerability, groundwater recharge and subsoil permeability maps". For areas underlain by limestone, DECC asked Uisce Éireann to refer to the karst specific data layers (karst features, tracer test database; turlough water levels (gwlevel.ie). DECC noted that background information is also provided in the Groundwater Body Descriptions, and they recommend that all disclaimers are read carefully when using GSI data.	

Consultee	Submission comment	Response
Department of the Environment, Climate, and Communications (DECC)	GW Climate is a groundwater monitoring and modelling project that aims to investigate the impact of climate change on groundwater in Ireland and is a follow on from a previous project (GW Flood) and the data may be useful in relation to Flood Risk Assessment (FRA) and management plans. DECC highlighted that GSI has completed Groundwater Protection Schemes (GWPSs) in partnership with Local Authorities, and there is now national coverage of GWPS mapping. The Groundwater Protection Response overview and link to the main reports can be found on the GSI website.	the Irish groundwater knowledge base. Uisce Éireann acknowledges the disclaimers associated with these datasets and communicates caveats with the datasets in the transition of plan to project level assessment approaches. These assessments supported the options assessment process. Uisce Éireann commends the GW Flood and GW Climate projects for their work in assessing climate change impact on groundwater. The outputs of these projects will inform Uisce Éireann' s Flood Risk Assessment and management plans where they are undertaken in the future.
Department of the Environment, Climate, and Communications (DECC)	GSI's Marine and Coastal Unit in partnership with the Marine Institute, jointly manages INFOMAR, Ireland's national marine mapping programme; providing key baseline data for Ireland's marine sector. "The programme delivers a wide range of benefits to multi-sectoral end-users across the national blue economy with an emphasis on enabling our stakeholders". DECC noted it is used across a suite of mapping products include Shipping & Navigation, Fisheries Management, Aquaculture, Off- shore Renewable Energies, Marine Leisure & Tourism and Coastal Behaviour.	
Department of the Environment, Climate, and Communications (DECC)	INFOMAR also produces a wide variety of seabed mapping products that enable public and stakeholders to visualize Ireland's seafloor environment with story maps developed providing a different perspective of some of the bays and harbours of the Irish coastline. DECC recommend use of the Marine and Coastal Unit datasets available on their website and Map Viewer.	
Department of the Environment, Climate, and Communications (DECC)	GSI is undertaking a new coastal vulnerability mapping initiative. They noted that maps produced by this project will provide an insight into the relative susceptibility of the Irish coast to adverse impacts of sea-level rise using a Coastal Vulnerability Index (CVI). The project, they explained, is currently being carried out on the east coast and will be rolled out nationally, detailed information and maps are available on their website. DECC commented that "these index-	

Consultee	Submission comment	Response
	based maps will offer a simple, easy visual representation of sensitive areas based on robust methods and conceptualised metrics from latest research, adapted to the Irish context…this will enable coastal managers to prioritize or concentrate efforts on adaptation".	
Landscape and visual amenity		
Department of the Environment, Climate, and Communications (DECC)	Physiographic Units are cartographic representations of the broad-scale physical landscape of a region and are valuable for regional land-use planning and in studies of the influence of physical landscape on the ecological environment. DECC highlighted the availability of a Physiographic Unit map produced in support of the actions to be implemented in National Landscape Strategy for Ireland 2015 – 2025.	Uisce Éireann acknowledges the recommendation from DECC to utilise additional datasets and can confirm that further evaluation of options will take place at project level. At which stage the proposed datasets and any new information and data will be considered and incorporated via the monitoring and feedback process in Section 8.3.8 of the Framework Plan.
Geology and soils		
Department of the Environment, Climate, and Communications (DECC)	DECC highlighted that GSI is in partnership with the National Parks and Wildlife Service (NPWS) in the Department of Housing Local Government and Heritage, to identify and select important geological and geomorphological sites throughout the country for designation as geological NHAs (Natural Heritage Areas). "This is addressed by the Geoheritage Programme in GSI, under 16 different geological themes, in which the minimum number of scientifically significant sites that best represent the theme were rigorously selected by a panel of theme experts".	The geological Natural Heritage Areas, Ireland's Geological Heritage Sites, the Irish Soils Information System national soils map and Geological Survey Ireland (GSI) Groundwater Flooding maps and geology maps available on Map Viewer, and GSI's online datasets of bedrock and subsoil geological mapping, were used to prepare descriptions of geology presented in the Study Area Technical Reports (Appendices 1 to 3 of the draft RWRP-SE) and the Study Area Environmental Reviews. Uisce Éireann confirms that GSI's advice, data and maps were utilised where available throughout the fine screening assessment, and that hydrogeological assessments of options were completed taking account of groundwater resources provided by the GSI.
Department of the Environment, Climate, and Communications (DECC)	County Geological Sites (CGSs) have been adopted in the National Heritage Plan and will form a major strand of geological nature conservation to complement the various ecological and cultural conservation measures. DECC highlighted it as important to note however, "that management issues for the majority of geological heritage sites may differ from ecological sites…CGSs are the optimal way of addressing the responsibility of each authority under the Planning and Development Act 2000 and its amendments, to protect sites of geological interest".	

Consultee	Submission comment	Response
	With any potential Irish Water infrastructure projects at or near CGSs, there may be potential impacts on the integrity of current CGSs should these sites not be assessed as constraints. Ideally, the sites should not be damaged or integrity impacted or reduced in any manner due to the proposed development. However, this is not always possible, and in this situation appropriate mitigation measures should be put in place to minimize or mitigate potential impacts.	Uisce Éireann is familiar with the GSI's GW3D project and as outputs are developed as part of this project, Uisce Éireann will ensure consideration and integration as plans transition to project level and site-specific investigations occur. Uisce Éireann acknowledges the recommendation from DECC to utilise additional datasets, i.e. Geotechnical Database Resources, Geo Hazards, Marine and Coastal Unit and Coastal Vulnerability Index and can confirm that further evaluation of options will take place at project level, at which stage the proposed datasets and any new information and data will be considered and incorporated via the monitoring and feedback process in Section 8.3.8 of the Framework Plan. The SEA Environment Report has been updated to reference the datasets recommended by DECC in the Monitoring Plan provided in Section 10 of the SEA Environmental report and also in Section 5 of this report.
Department of the Environment, Climate, and Communications (DECC)	DECC have 3D models that can "help stakeholders visualize, understand and characterise geology, for deposit and resource mapping, for flooding and for urban geology applications including basement impact assessment, Sustainable Drainage Systems (SuDS), and subsurface management". The 3D models offer a key element of geotechnical risk management by identifying areas requiring further site investigation. Further information and download instructions for the Quaternary 3D model of County Cork are available on the Geological Mapping programme on the GSI website.	
Department of the Environment, Climate, and Communications (DECC)	Geological Survey Ireland maintains online datasets of bedrock and subsoils geological mapping that are reliable and accessible. We would encourage you to use these data which can be found here, in your future assessments. GIS have recently launched QGIS compatible bedrock (100K) and Quaternary geology map data, with instructional manuals and videos. This makes our data more accessible to general public and external stakeholders. QGIS compatible data can be found in our downloadable bedrock 100k .zip file on the Data & Maps section of the website	
Department of the Environment, Climate, and Communications (DECC)	We recommend that geohazards be taken into consideration, especially when developing areas where these risks are prevalent, and we encourage the use of our data when doing so. Geological Survey Ireland has information available on landslides in Ireland via the National Landslide Database and Landslide Susceptibility Map both of which are available for viewing on our dedicated	

Consultee	Submission comment	Response
	Map Viewer. Associated guidance documentation relating to the National Landslide Susceptibility Map is also available. Geological Survey Ireland also engaged in a national project on Groundwater Flooding. The data from this project may be useful in relation to Flood Risk Assessment (FRA) and management plans	
Environment, Climate, and Communications (DECC)	DECC highlighted a project entitled "Historic Mine Site - Inventory and Risk Characterisation (HMS - IRC)" that the EPA, GIS and the former Exploration and Mining Division undertook. DECC advised that this project carried out detailed site investigations and characterisation on priority historic mine sites in the country with a risk ranking methodology developed which categorised the sites according to the risks posed to human and animal health and the environment. A final report and a GIS geodatabase was produced on completion of the project	
Environment, Climate, and Communications (DECC)	Geological Survey Ireland continues to populate and develop our national geotechnical database and viewer with site investigation data submitted voluntarily by industry. The current database holding is over 7500 reports with 134,000 boreholes; 31,000 of which are digitised which can be accessed through downloads from our Geotechnical Map Viewer. DECC would encourage the use of this database as part of any baseline geological assessment of the proposed development as it can provide invaluable baseline data for the region or vicinity of proposed development areas. This information may be beneficial and cost saving for any site-specific investigations that may be designed as part of the project.	
Material Assets		
Environment, Climate, and Communications (DECC)	We would recommend use of the Aggregate Potential Mapping viewer to identify areas of High to Very High source aggregate potential within the area. In keeping with a sustainable approach we would recommend use of our data and mapping viewers to identify and ensure that natural resources used in any proposed developments are sustainably sourced from properly recognised and	Uisce Éireann acknowledges the recommendation from DECC to utilise additional datasets and can confirm that further evaluation of options will take place at project level. At which stage the proposed datasets and any new information and data will be considered and incorporated via the

Consultee	Submission comment	Response
	licensed facilities, and that consideration of future resource sterilization is considered	monitoring and feedback process in Section 8.3.8 of the Framework Plan.