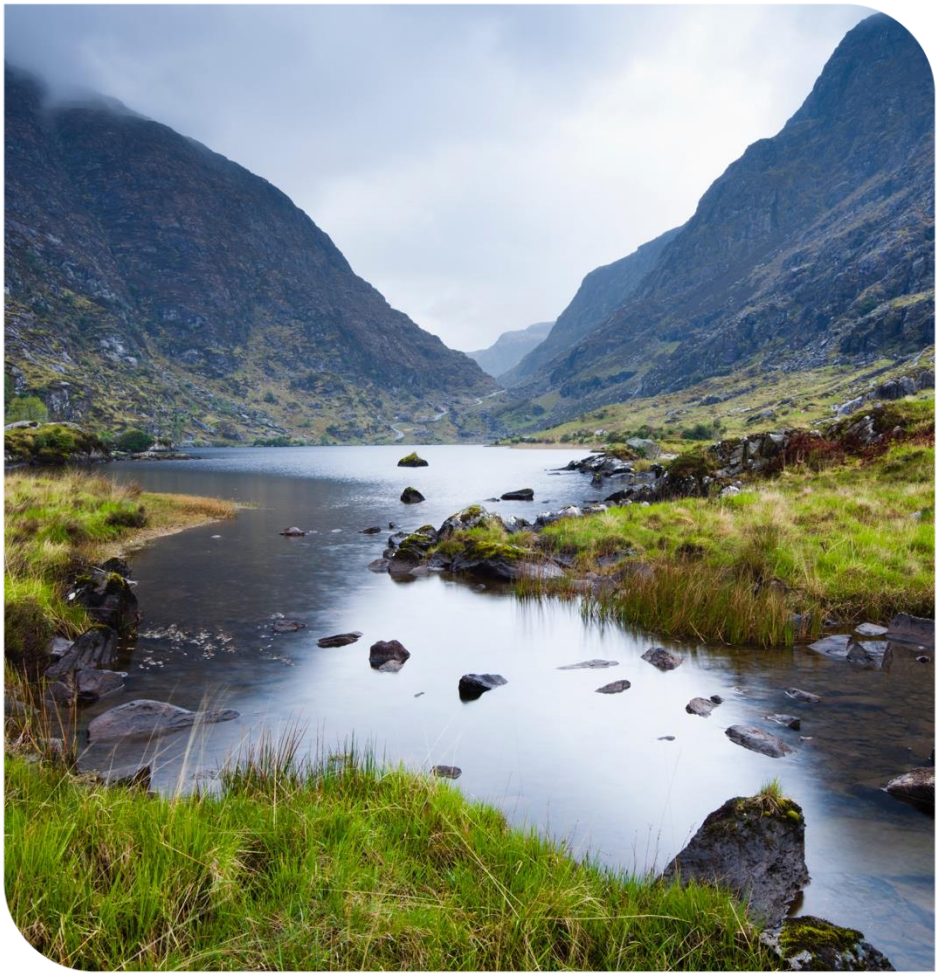
September 2019

Site Selection Methodology Report

Sludge Hub Centres – South Region



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Content

1. Introduction

In 2016 Irish Water published the National Wastewater Sludge Management Plan (NWSMP). The Plan sets out a nationwide strategy to deliver a sustainable and standardised approach to managing wastewater sludge now and over the next 25 years.

Sludge is generated from the treatment of wastewater, but once it is produced it needs to be treated so that it is suitable for either disposal or re-use. Since 2014, Irish Water has been building and upgrading wastewater treatment plants nationwide. The volume of sludge is increasing year on year and is predicted to continue to increase.

Irish Water has been developing ways of reducing sludge volumes for the most efficient movement of sludge, to achieve the best balance between the cost of transport and the cost of treatment. This means that Irish Water must invest in strategic sludge management infrastructure at some of their wastewater treatment plants to ensure all regions are served in the most efficient way possible. The NWSMP proposes to develop a Sludge Hub Centre and Satellite Dewatering Site network for wastewater sludge treatment, optimised on a regional rather than county basis.

The use of a 'hub and satellite' approach for the management of wastewater sludge provides for wastewater sludge from outlying rural works to be directed via intermediate treatment plants (Satellite Dewatering Sites) where sludge is dewatered prior to transfer to a centralised treatment facility (Sludge Hub Centre).

Currently at Sludge Hub Centres, wastewater sludge is treated to produce biosolids. Sludge hubs are typically located at large wastewater treatment plants and accept sludge from the surrounding region for treatment.

The provision of new or upgraded sludge treatment facilities with import reception facilities to allow treatment of wastewater sludge on a wider regional basis will improve environmental outcomes, reduce sludge quantities for disposal, improve energy recovery, reduce operating costs and reduce overall energy consumption. Irish Water's objective is to provide more efficient and effective treatment of sludge.

Existing sludge hubs and a list of potential infrastructure upgrades are identified in the NWSMP. As part of the Sludge Hub Centres project, Irish Water will carry out an assessment of the capability of existing wastewater treatment plants currently accepting and treating sludge across the country. Through this assessment the sites most suited to serve as Sludge Hub Centres on a regional basis will be identified.

This report has been prepared to explain the proposed methodology for assessing and comparing the potential sites. A separate report will be prepared when the assessment has taken place that will explain the outcome of the site selection assessment.

The potential wastewater treatment plants (potential sites) to be considered in the site selection process are described in Section 4 of this report and the proposed methodology, which involves a multi-criteria comparative assessment, is described in Section 5.

Stakeholders and the public are being consulted and their feedback is invited on the proposed methodology and any additional information that should be considered by the project team in the site selection process. This feedback will be considered and, where appropriate, incorporated into the implemented methodology.

2. Background

2.1 Wastewater Sludge

Sludge from wastewater treatment plants is primarily the organic by-product of the biological treatment of wastewater, and comprises the solids removed during the treatment processes. Wastewater treatment plants operate biologically active processes and sludge is the natural product of this process.

Wastewater sludge from the wastewater treatment process is normally separated from the treated effluent using gravity settlement. This produces a liquid wastewater sludge with a solids concentration typically ranging 1 – 3% dry solids (DS). This sludge is further treated using mechanical, biological or chemical processes, or a combination of these processes, prior to recycling. These processes are aimed at removing water, hence reducing sludge volume, and stabilising the organic matter.

When appropriately treated and managed it does not present a risk to the environment or human health and it can be safely recycled to provide a benefit to society and the environment. Wastewater sludge is considered to be a valuable product with potential benefits in terms of nutrients, organic and energy content. In particular, it is a source of phosphorus which is a limited diminishing resource essential for all plant growth. Treated wastewater sludge can be particularly beneficial as a soil conditioner and source of nutrient enrichment (fertiliser).

2.2 Legislation and Policy

2.2.1 Legislative Requirements

The majority of sludge treatment standards and legislation relate to agricultural use of wastewater sludge. Waste management legislation is also relevant to the management of wastewater sludge.

In addition to legislation there are a number of guidance documents and plans both nationally and internationally in relation to sludge management. The regional waste management plans for Ireland, published in May 2015, consider the quantities of wastewater sludge being produced and the requirements for management. The European Committee for Standardisation (CEN) has issued a number of documents in relation to wastewater sludge.

There are three main European Directives which significantly impact the management of wastewater sludge as follows:

- Directive 86/278/EEC of 12 June 1986 on the protection of the environment, and in particular of the soil, when sewage sludge is used in agriculture - referred to hereafter as the ‘Sewage Sludge Directive’;

- Council Directive 91/676/EEC concerning the protection of waters against pollution caused by nitrates from agricultural sources - referred to hereafter as the 'Nitrates Directive';
- Directive 2008/98/EC of the European Parliament and of the Council of 19 November 2008 on waste and repealing certain Directives - referred to hereafter as the 'Waste Framework Directive'.

The Sewage Sludge Directive facilitates the use of sludge in agriculture subject to specified technical requirements, without the need for a specific waste authorisation. This directive has been transposed into Irish legislation by S.I. No. 148 of 1998 - Waste Management (Use of Sewage Sludge in Agriculture) Regulations, 1998, as amended by the SI No. 267 of 2001. The main restrictions for reuse of wastewater sludge in agriculture are set out in terms of limit values for heavy metals and nutrients.

The Waste Framework Directive establishes the framework requirements for management of waste and the main provisions relating to wastewater sludge management in Ireland have been transposed through the Irish legislation.

Wastewater sludge is classified as a waste under the EU "List of Waste" codes in Irish Legislation. A waste licence is not required for wastewater sludge for use in agriculture. The use of wastewater sludge on non-agricultural land, e.g. silviculture and biomass crops, is regulated by S.I. 821 of 2007 as amended. S.I. No. 32 of 2010, Waste Management (Registration of Sewage Sludge Facility) Regulations 2010, introduced a requirement for registration of wastewater sludge facilities. This excludes wastewater treatment plants and as such does not apply to Irish Water sludge facilities which are located within wastewater treatment plants. Facilities which are licenced under a Waste Licence are also excluded from these regulations. The collection and transport of sludge is regulated by S.I. 821 of 2007, as amended.

The Nitrates Directive (Council Directive 91/676/EEC concerning the protection of waters against pollution caused by nitrates from agricultural sources) is also relevant to sludge reuse in agriculture. This Directive was transposed into Irish legislation by S.I. No. 610 of 2010: which has subsequently been replaced by S.I. 31 of 2014 European Union (Good Agricultural Practices for Protection of Waters) Regulations 2014 as amended by S.I. 134 of 2014.

Standards in relation to sludge management have been produced by the European Committee for Standardisation, CEN, which provides recommendations for sludge management particularly in relation to treatment, reuse and risk assessment. In Ireland, the Department of Housing, Planning, Community and Local Government (DHPCLG) developed a Code of Good Practice for Use of Biosolids in Agriculture. Irish Water policy requires compliance with this code of good practice.

2.2.2 Water Services Strategic Plan (WSSP)

Irish Water completed its Water Services Strategic Plan (WSSP) in October 2015 which is required under Section 33 of the Water Services No. 2 Act of 2013. Effective and safe management of wastewater sludge, utilising its potential for energy generation and/or reuse where feasible, is identified as a key objective in Irish Water's WSSP. This forms the highest tier of asset management plans which Irish Water will prepare and it sets the overarching framework for subsequent detailed (Tier 2) implementation plans and water services projects. One of the Tier 2 Implementation Plans Identified is the National Wastewater Sludge Management Plan (NWSMP).

2.2.3 National Wastewater Sludge Management Plan (NWSMP)

The National Wastewater Sludge Management Plan (NWSMP) outlines Irish Water's strategy to ensure a nationwide standardised approach for managing wastewater sludge over the next 25 years (Irish Water, 2018).

As part of the development of the NWSMP, Irish Water has looked at how wastewater sludge is currently managed and has set out sustainable proposals for the investment in future treatment, transport and reuse or disposal of the sludge in keeping with the following objectives:

- To avoid endangering human health or harming the environment;
- To maximise the benefits of wastewater sludge as a soil conditioner and source of nutrients;
- To ensure that all regulatory and legislative controls are met, and due regard is given to non-statutory Codes of Practice and industry guidance;
- To establish long term, secure and sustainable reuse/disposal methods;
- To ensure cost-effective and efficient treatment and reuse/disposal techniques;
- To reduce potential for disruption from sludge transport and sludge facilities;
- To extract energy and other resources where economically feasible; and
- To drive operational efficiencies, e.g. through the use of Sludge Hub Centres.

2.3 Wastewater Sludge Treatment

The treatment of wastewater sludge generally involves a process to reduce sludge volume and sludge quantity and a process to produce biosolids. Each process is not mutually exclusive in that the process to produce biosolids reduces sludge volume and can reduce sludge quantity.

Sludge volume reduction is provided at wastewater treatment plants to reduce the cost of transport of waste sludge from the treatment process. There is a balance to

be achieved between the capital and operating costs of sludge thickening and dewatering and the cost of sludge transport. The reduction of sludge volumes is provided mainly by sludge thickening and sludge dewatering processes. There are a variety of technologies available to deliver these processes.

For the production of biosolids, there are a number of treatment processes that provide sufficient pathogen reduction to ensure biosolids produced is suitable for use in agriculture. These processes, which have been incorporated into the Code of Good Practice for Use of Biosolids in Agriculture, are listed as follows:

- Mesophilic Anaerobic Digestion with pre- or post-pasteurisation;
- Thermophilic Anaerobic Digestion;
- Thermophilic Aerobic Digestion;
- Composting;
- Alkaline Stabilisation;
- Thermal Drying.

Where anaerobic digestion is implemented biogas containing a high proportion of methane is produced which can be used to provide heat and power to the treatment plant. Emerging technologies which can increase energy recovery from digestion and improve pathogen destruction will be considered.

The treatment of wastewater sludges results in different types of sludge, typically defined by percentage of dry solid content. Dried solid content is the ratio, by weight, of solid content and liquid content in sludge and is expressed as a percentage. Table 1 provides broad definition of different types of wastewater sludges.

Table 1 – Types of Wastewater Sludges

Sludge Type	Description
Liquid Sludge	Sludge that is derived from the wastewater treatment process but has not been dewatered; dry solids content typically ranges from 1% to 3%.
Sludge Cake	Sludge which has been dewatered to the extent that it can be handled as a solid; dry solids content typically ranges from 15% to 25%.
Dried Sludge	Sludge from the wastewater treatment process that has undergone the thermal drying process; dried solids content typically ranges from 80% to 95%.

Further information on wastewater sludge treatment is provided in the NWSMP.

2.4 Sludge Hub Centres

The use of a Sludge Hub Centre and Satellite Dewatering Site network for the management of wastewater sludge has been implemented in a number of counties in Ireland. Such a system provides for wastewater sludge from outlying rural works to be directed via intermediate treatment plants (Satellite Dewatering Sites) where sludge is dewatered prior to transfer to a centralised treatment facility (the Sludge Hub Centre). The dewatering of sludge at the Satellite Dewatering Sites reduces onward transport costs and traffic movements. The Sludge Hub Centres facilitate the effective treatment of sludge and its storage prior to final reuse.

The ‘hub and satellite’ approach allows for economies of scale and greater flexibility in the selection of treatment processes, particularly energy recovery and also assists in the maintenance of quality control over the outputs from any selected treatment processes.

This system is commonly used internationally and is considered to be appropriate for use by Irish Water. As stated in the NWSMP, Irish Water intends to maximise energy recovery from anaerobic digestion by maximising use of Sludge Hub Centres with energy recovery and to provide energy recovery by upgrading existing Sludge Hub Centres where economically feasible.

3. Project Need

Nationally, there are over 100 wastewater treatment plants currently reporting imports of wastewater sludge. In most cases the facilities on the wastewater treatment plant sites are inadequate to properly manage and control these imports, particularly where they are discharged directly to the inlet works. As stated in Section 2.2.2, effective and safe management of wastewater sludge, utilising its potential for energy generation and/or reuse where feasible, is identified as a key objective in Irish Water's Water Services Strategic Plan.

Irish Water reviewed the existing sludge treatment facilities when preparing the NWSMP. Locations for sludge satellite and hub centres were identified in the county sludge management plans undertaken in the late 1990's and early 2000's. An outline of the recommended satellite and hub centres, from the county sludge management plans, is included in Section 3.7 of the NWSMP. There are 24 existing wastewater treatment plants where full sludge treatment to produce biosolids is provided. 20 of these plants currently act as Sludge Hub Centres, i.e. have full sludge treatment and the site accepts imports.

As part of the next phase of the Sludge Hub Centres project, Irish Water will assess existing wastewater treatment plants across the country which currently accept and treat sludge so that the capacity of sludge management facilities at these sites can be upgraded. This means Irish Water will be capable of treating sludge more effectively due to the efficiencies of the Sludge Hub Centres whilst ensuring that transport movements are reduced where possible by locating Sludge Hub Centres regionally and at an optimal to where the largest volumes of sludge are generated.

4. Study Area

4.1 South Region

Jacobs has been appointed by Irish Water to undertake the assessment of the South Region, which has been further split into 3 sub-regions as illustrated in Table 1, and to identify the preferred SHC site(s) per sub-region. Irish Water has proposed a number of existing WwTPs in each sub-region for consideration to become sub-regional hubs as indicated in Table 2.

Table 2 | Sub-regions and respective WwTPs proposed for development into SHCs

Region	South		
Sub-Region	South-West	South-East	Cork/Kerry
Counties Included:	Clare, Limerick, Tipperary	Carlow, Kilkenny, Waterford, Wexford	Cork, Kerry
WwTPs proposed as potential SHCs:	Limerick City WwTP, Clonmel WwTP.	Kilkenny WwTP, Waterford City WwTP, Dungarvan WwTP, Wexford WwTP.	Carrigrennan WwTP, Shanbally WwTP, Tralee WwTP.

These sub-regions and the WwTPs proposed as potential SHCs are indicated in Figure 1 below.

4.2 Screening Process

The NWSMP includes the existing WWTPs in the south region that could potentially be upgraded to operate as Sludge Hub Centres. A screening process has already been undertaken by Irish Water which has identified the 9 sites shown on Figure 1 that are the subject of this assessment.

In the South West sub-region two existing WwTPs, i.e. Limerick City WwTP and Clonmel WwTP have been shortlisted for further assessment

In the South East sub-region four existing WwTPs, i.e. Kilkenny WwTP, Waterford City WwTP, Dungarvan WwTP and Wexford WwTP have been shortlisted for further assessment.

In the Cork/Kerry sub-region three existing WwTPs, i.e. Carrigrennan WwTP, Shanbally WwTP and Tralee WwTP have been shortlisted for further assessment.

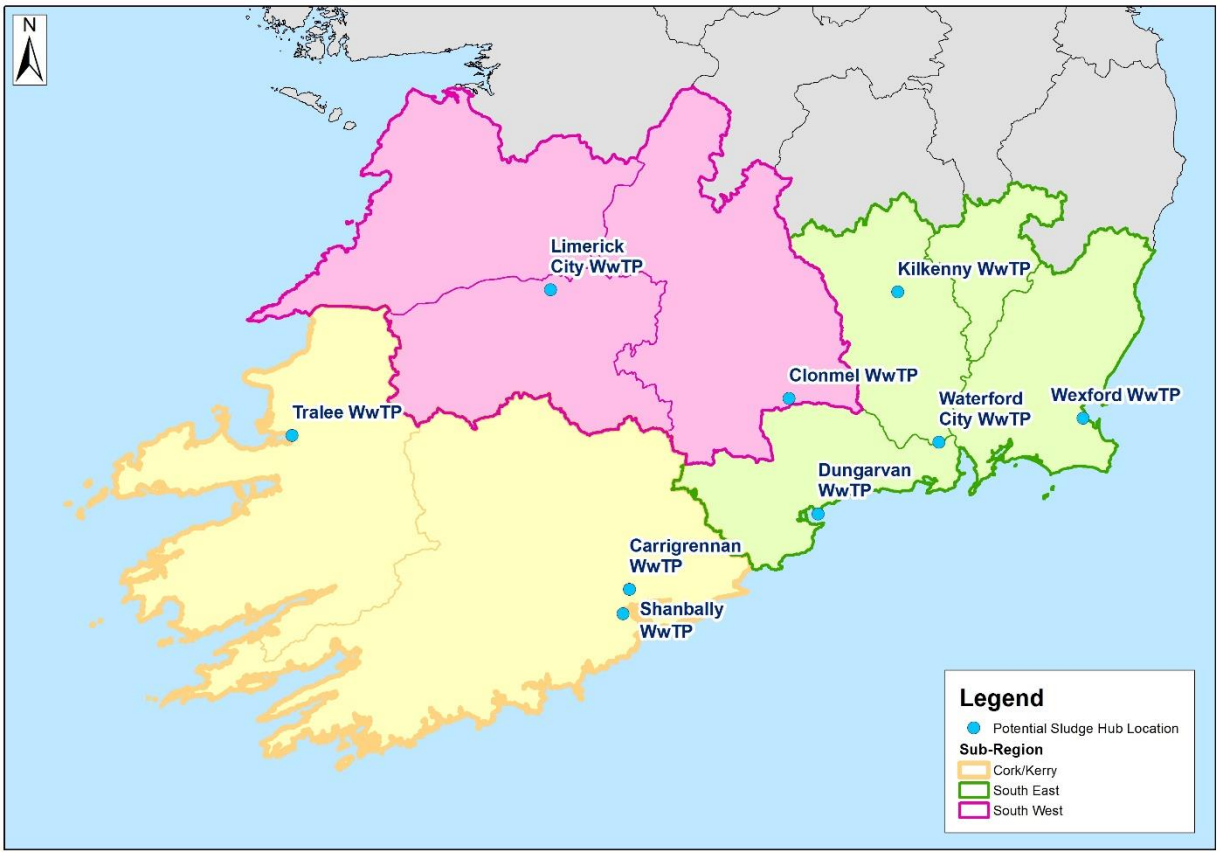

Figure 1 | Map of South Region SHC Assessment area

5. Site Selection Methodology

5.1 General

The sites proposed by Irish Water will be assessed according to criteria proposed by both technical and environmental specialists. An iterative process will be used to eliminate unfavourable sites from a matrix compiled using these criteria. The desired outcome of the application of this site selection methodology is to identify the preferred SHC site(s) per sub-region.

A qualitative rating system will be used to assess each site against certain criterion, as indicated in Table 3. The criteria will not be weighed against each other in terms of importance; rather the WwTPs/SHCs will be compared to each other under each criterion.

Table 3 | Table indicating the Qualitative Rating System used to compare the proposed WwTPs

Qualitative Rating System	
Green	Preferred
Amber	Potential Constraint
No colour	No disparity between the sites in relation to that particular criteria i.e. it is not preferred or does not have potential constraints

5.2 Criteria

It is proposed to assess the WwTPs which have been shortlisted for potential development into a SHC according to the technical, economic and environmental criteria outlined in Tables 4, 5 and 6.

Table 4 | Technical Criteria to be used in the WwTP assessment for the selection of a SHC

Technical Criteria	
Criteria	**Assessment**
Land use (including agronomy and agriculture)	The location of the SHC will be selected ensuring the existing land use adjacent to the site is protected. The assessment will examine the impact of the sub-criteria on each proposed SHC option.
Planning Policy	The proposed site will be assessed having regard to the planning policies and objectives, as specified in the County Development Plan. The assessment will consider compatibility with current planning policy. It will also take into consideration zoning objectives. The assessment will examine the impact of the sub-criteria on each proposed SHC option.
Engineering and Design constraints	The location of the SHC will be assessed according to the utilities and land on the site available for the proposed SHC. The assessment will examine the impact of the sub-criteria on each proposed SHC option.
Existing Assets (technical sub criteria)	The location of the SHC will be assessed based on: headroom in existing assets, age and condition of existing assets, and avoided OPEX/CAPEX cost. The assessment of each option will include examination of: old inefficient assets to be decommissioned, headroom in liquor treatment, economies of scale, and safety. The assessment will examine the impact of the sub-criteria on each proposed SHC option.
Access/ Traffic Criteria	The proposed sites will be assessed to avoid significant traffic impacts during the construction and operational phases of the development. The assessment will take into consideration: adequacy and capacity of existing road network. The assessment will examine the impact of the sub-criteria on each proposed SHC option.

Table 5 | Economic Criteria to be used in the WwTP assessment for the selection of a SHC

Environmental Criteria	
Criteria	**Assessment**
Capital and Operational Costs	The sites will be assessed having regard to both Capital and Operational costs. The assessment will consider: estimated capital cost for any new plant required, the estimated operational and maintenance cost including transport, and the additional mitigation costs including land and visual assessment. It will also consider the improvement costs associated with access to site including transportation. The assessment will take into consideration the transport distance to the proposed SHC, the transport distance to the storage facility from the site. The assessment will examine the impact of the sub-criteria on each proposed SHC option.

Table 6 | Environmental Criteria to be used in the WwTP assessment for the selection of a SHC

Environmental Criteria	
Criteria	**Assessment**
Ecology	The site of the Sludge Hub will be assessed to avoid significant direct and indirect impacts on designated nature conservation areas and sites with potential to harbour protected habitats and species, based on sub-criteria to be identified by the relevant specialists. It will be considered if the site overlaps, is immediately adjacent or in the vicinity of any European or other Designated Sites. The assessment will examine the impact from each proposed SHC option on the ecology.
Cultural Heritage	The assessment will consider the distance to and the impact on the closest Recorded Monuments and Places, as well as National Monuments. Potential archaeological constraints will be considered in this assessment also. The assessment will examine the impact on the sub-criteria due to each proposed SHC option.

Environmental Criteria (continued)	
Criteria	**Assessment**
Landscape and visual impact	The sites will be assessed based on their impact on landscape character type and their potential impacts on views and prospects. The assessment will examine the Landscape and visual impact due to each proposed SHC option.
Hydrology and Hydrogeology	The assessment will consider the potential impact on water courses identified. It will consider if the site is associated with an area at risk of flooding. The assessment will assess if the site is on a Groundwater Protection Zone and aquifer category. The assessment will examine the impact of the sub-criteria on each proposed SHC option.
Soils and Geology	The impact of soil/geology on the cost of construction will be considered for each site. The assessment will examine the impact of the sub-criteria on each proposed SHC option.
Noise and Odour	The site will be assessed on their distance to the closest sensitive receptor. The assessment will examine the impact from the proposed SHC options on the sub-criteria.
People and communities	The site will be assessed on their distance to the closest sensitive receptor. The assessment will examine the impact on the people and communities affected by each proposed SHC option.

5.3 Selection Methodology

The preferred SHC site(s) will be identified within each sub-region, according to the flow chart in Figure 2, and as described in the following steps.

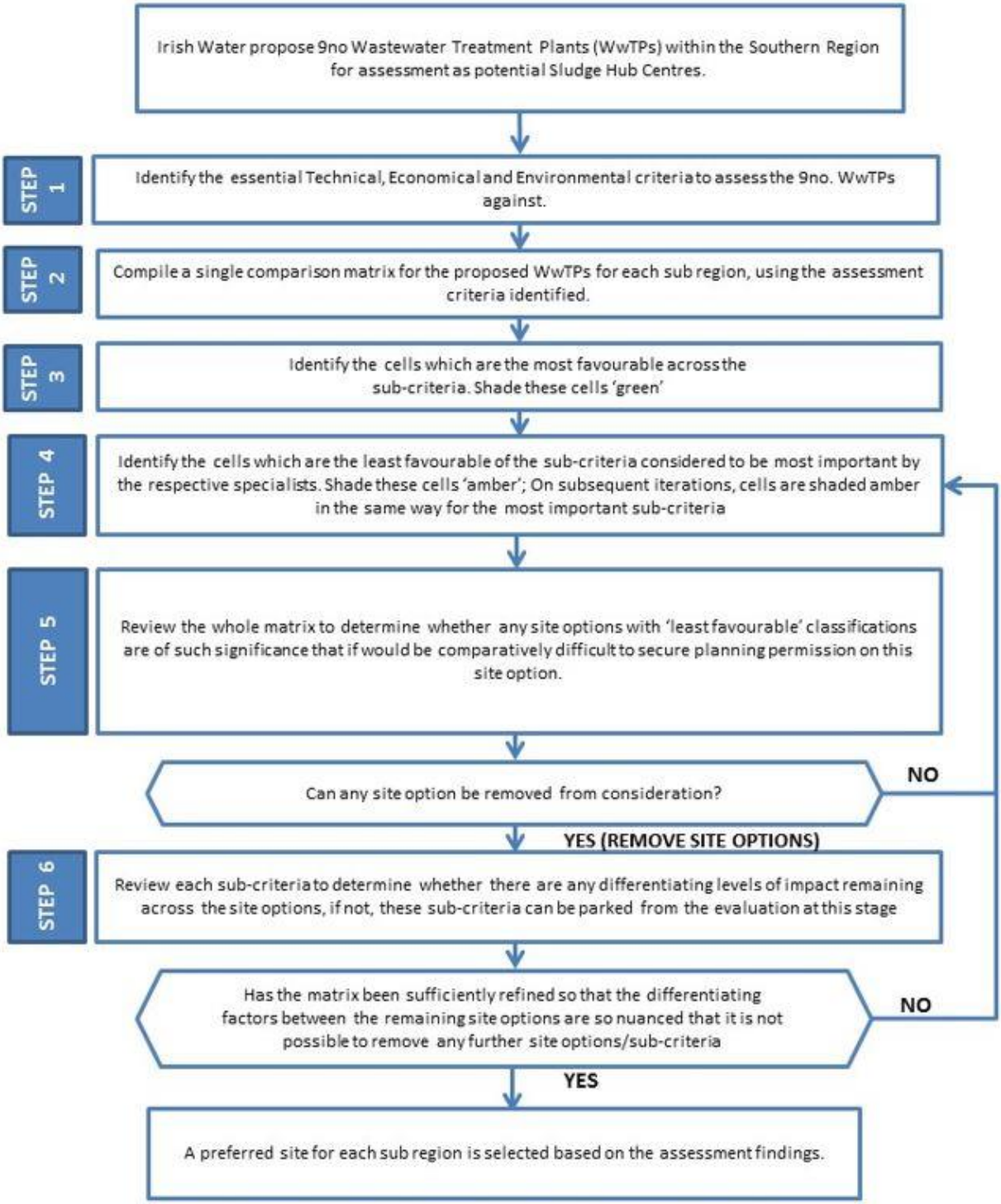

Figure 2 | Flowchart indicating the iterative process of the SHC assessment

Step 1 - Identify the essential Technical, Economical and Environmental sub-criteria to assess the 9no. WwTPs against.

Each environmental and technical Specialist contributes sub criteria required to compare all 9 no sites. They list the criteria and describe how each criterion is to be assessed against all sites.

The **output of Step 1** is:

a) A list and description of criteria required to assess all sites against.

Step 2 - Compile a single comparison matrix for the proposed WwTPs for each sub-region, using the assessment criteria identified.

The criteria described by the specialists is consolidated into a single matrix along with the proposed WwTPs for each sub-region. There will be one matrix for each sub-region. The Limerick City WwTP and Clonmel WwTP will be assessed under the South West matrix. The Kilkenny WwTP, Waterford City WwTP, Dungarvan WwTP and Wexford WwTP will be assessed under the South East sub-region matrix. The Carrigrennan WwTP, Shanbally WwTP, and Tralee WwTP. will be assessed under the Cork/Kerry sub-region matrix.

At this point there is no colouring or differentiating of cells. The precise wording of each sub-criterion is tested for rigour, any terminological differences, or differences in geographic naming, and any issues of this kind arising between Specialists are resolved.

The Specialists are also requested to reconfirm their prioritisation of sub-criteria, within their area of specialism, for the project team in the context of the sites, explaining their reasons.

The **output of Step 2** is:

b) A matrix per sub-region, cross referenced and worded unambiguously, without duplication of sub-criteria.
c) An indication of the relative importance by each specialist of the sub-criteria developed by them, within their own specialism.

Step 3 - Identification of 'most favourable' cells – assignment of green colour

Each Specialist colours in **green** those cells in their sub-matrix, which are 'most favourable' across each sub-criteria. It is expected that on a first pass, it will be appropriate to accept sub-criteria with either 'no impact' or 'imperceptible impact' as automatically being coded green. Such a green cell will always remain 'at least green' in any subsequent iteration of this process.

The **output of Step 3** is:

d) A matrix per sub-region, with either uncoloured or green cells, as an interim position.

Step 4:- Identification of 'least favourable' cells – assignment of amber colour

In the previous Step 2, specialists have confirmed the priorities they have identified in their sub-criteria.

Each Specialist is invited to identify his (or her) worst or 'least favourable' cell, or cells, and declare whether they wish to designate it 'amber' at this point in the process. Note that such a declaration is not mandatory (the worst cell might merely be 'moderately negative' in terms of impact). Any cell awarded an amber colour in this earliest pass, has a significant effect. Assigning the colour amber to a cell, assigns it a 'least preferred' category based on potential adverse impacts that can be identified and the relative importance of the sub-criteria in question. This is proposed and justified by the relevant specialist and discussed and confirmed by the project team in a workshop format.

The **output of Step 4** is:-

e) A matrix per sub-region, with uncoloured, amber and green cells.

Step 5 – Removal of sites from consideration

As a Project Team, in a workshop forum, each of the columns are reviewed to determine whether the amber cells, which at this stage are important amber classifications, are impediments which are of such significance that it would be comparatively difficult to secure planning permission on this site;

The **output of Step 5** is:-

f) A refined matrix for each sub-region, whereby sites which are no longer suitable for consideration are removed.

Step 6 – Removal of non-differentiating sub-criteria

If one or more sites are removed from consideration, sub-criteria with no colour coding across the remaining sites will then be reviewed to re-evaluate whether there are any differentiating levels of impact across the remaining sites. If the re-evaluation concludes there are no differentiating factors, then the sub-criteria can be 'parked'.

Parking of any sub-criteria from the matrix, i.e. designating it as not being a differentiating factor, will only be undertaken in full consultation and agreement with all the relevant technical and environmental specialists and with input from the project team.

The **output of Step 6** is:-

g) A further refined matrix per sub-region, with sites which are no longer suitable for consideration and sub-criteria which no longer provide differentiating factors across the sites removed.

Iteration – Repeat Steps 4, 5 and 6

Step 4, 5 and 6 will be repeated, involving several iterative passes which will be developed and debated in the Workshop forum, in order to successively reduce the number of sites remaining, in a process of convergence on the best site(s).

Each Specialist is requested, in each subsequent pass, to review the remaining sites, and identify the remaining worst or 'least favourable' cell, or cells, on each pass, and again declare whether such cells should be coloured 'amber' at this point in the process. Note that again such a declaration is still not mandatory, and some Specialists might conceivably not want to declare any site as 'amber' under their criteria, if the degree of impact did not warrant it.

It should be noted that any cell awarded an amber colour in these later passes, does so for a successively more nuanced degree of impact. As previously noted, it means that cell, or cells, has emerged from the background field of green or uncoloured cells, to assume a significantly differentiating importance for that particular site, with respect to the remaining sites. It must be expected, and understood, that such later-pass amber designations will be for ever more nuanced reasons, which are nevertheless reasonable, having regard to the degree of choice remaining.

As a Project Team, in a workshop forum, each column will be examined, on each pass even though these are now more nuanced and ever finer amber classifications, and determinations as to whether the number of sites can be reduced will be made, working towards a point where sites with no or limited differentiating factors remain.

The iterative qualitative evaluation process will be repeated until the overall matrix is sufficiently refined to facilitate the clear identification of emerging preferred sites as those having the least number of potential constraints from the original WwTPs in each sub-region.

Every decision made, on each site, for each sub-criterion, and associated impact, will be noted and documented to ensure that a full audit trail of evidence and justification for each decision made is available

The **output of these iterations** is:

h) A fully refined matrix per sub-region, whereby the differentiating factors between the remaining sites are so nuanced it is not possible to remove and further sites/sub-criteria.

5.4 Non-Statutory Consultation

Prior to the site selection iterative process, this methodology will be brought forward for public consultation. The public consultation is a key milestone prior to the final decision on the number and location of sites.

Following a four-week period of non-statutory public consultation, the project team will review and consider all feedback from members of the public and stakeholders. This feedback will be incorporated into technical studies and assessment that will be used to determine which of the potential sites best meets the criteria. Following this non-statutory public consultation, the Sludge Hub Centres Site Selection Report will be published. As the Sludge Hub Centres Project develops, there will be further opportunities for stakeholders and the public to contribute to the project.

At this stage, Irish Water is inviting feedback on the following:

a) Is there any additional information on the potential sites identified that we should be aware of?
b) In addition to the criteria set out to select a preferred site, are there any other factors you think should be considered in choosing the preferred site?
c) How would you like Irish Water to communicate with you as the project progresses?

Public consultation will be undertaken from **Tuesday 24 September 2019** to **Tuesday 22 October 2019.** During this time, this Site Selection Methodology Report can be viewed and downloaded at www.water.ie/Sludgehubs and viewed at Local Authority planning counters and public libraries within the region.

If you would like to make a submission, please send it by email or post by Tuesday 22 October 2019.

- By email: sludgehubssouth@water.ie

- By post: Sludge Hub Centres – South Region
  C/O Jacobs Engineering Ireland Ltd
  Merrion House, Merrion Road
  Dublin 4
  D04 R2C5

ervia

Aurora TELECOM

Gas Networks Ireland

UISCE WATER