Water Use

Regulatory Method (WAT-RM-21)

Allocation of Capacity and Protection of the Water Environment

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Update Summary

Version	Description
v1.0	First issue for Water Use reference using approved content from the following documents: *FINAL_DRAFT_RM_21-GD amendments.doc*
V2.0	New base template applied, links to docs revised for new SEPA website, Nov 2008
v3.0	Title revised, contents updated to describe key principles in allocating capacity for controlled activities including new Red/Amber/Green assessment.
v4.0	Revised to reflect the*Standards Directions (2014)*, plus note to highlight continued use of 2009 standards for RAG assessments.
v5.0	Clarifies application of principles, defines BAT & Basic, low cost, good practice measures, flowcharts revised.
v5.1	Section 4.1 updated to to clarify freshwater loch assessment

Notes

References: Linked references to other documents have been disabled in this web version of the document. See the References section for details of all referenced documents.

Printing the Document: This document is uncontrolled if printed and is only intended to be viewed online.
If you do need to print the document, the best results are achieved using Booklet printing or else double-sided, Duplex (2-on-1) A4 printing (both four pages per A4 sheet).

Always refer to the online document for accurate and up-to-date information.

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1. Purpose of this Method

A high proportion of Scotland's water environment is in a good or better condition. Many of our industries benefit from this. A high quality water environment is of obvious importance for the success of our whisky producers, bottled water manufacturers, tourism-related industries, fish farmers, commercial fisheries and many more. Our waters also make a substantial contribution to the quality of life of all our citizens. They are widely valued because of their role in providing drinking water, their significance for nature and wildlife[1] and because they represent some of our most important recreational resources. Our continued economic growth will also be aided by the resilience a high quality environment provides in a changing climate.

SEPA's statutory purpose is to contribute to:

a) improving the health and well being of people in Scotland, and

b) achieving sustainable economic growth.

Protecting our waters from deterioration and facilitating their sustainable use are therefore key objectives of river basin management planning. This method describes one of the ways in which SEPA will contribute to the achievement of these objectives.

Activities controlled under the Water Environment (Controlled Activities) (Scotland) Regulations 2011 ("CAR") have the potential to cause significant adverse impacts on surface waters and groundwater. In some cases, such impacts can be sufficiently extensive, individually or cumulatively, to affect the status of bodies of surface water or groundwater.

In certain, limited circumstances, SEPA may authorise an activity that it expects will result in significant impacts. These circumstances are described in SEPA's regulatory method, *WAT-RM-34: Derogation Determination - Adverse Impacts on the Water Environment*.

This regulatory method sets out how, in determining whether or not to determine all other proposed controlled activities, SEPA will seek to ensure that:

- significant adverse impacts on the water environment are prevented; and
- all reasonable steps are taken to secure efficient and sustainable water use.

[1] *Valuing the Water Environment: A Survey of Scottish Public Attitudes*

2. Principles: Protection of the Water Environment

The risks to the water environment posed by a controlled activity depend on a number of factors, including:

- the characteristics of the activity, particularly its scale; and
- the capacity of the water environment to accommodate (i.e. assimilate) the activity without significant adverse impacts.

SEPA uses environmental standards[2] to help it assess whether a proposed activity could exceed the capacity of the water environment to accommodate it. If a proposed activity is predicted to breach an environmental standard, environmental capacity is expected to be exceeded and significant adverse impacts are likely.

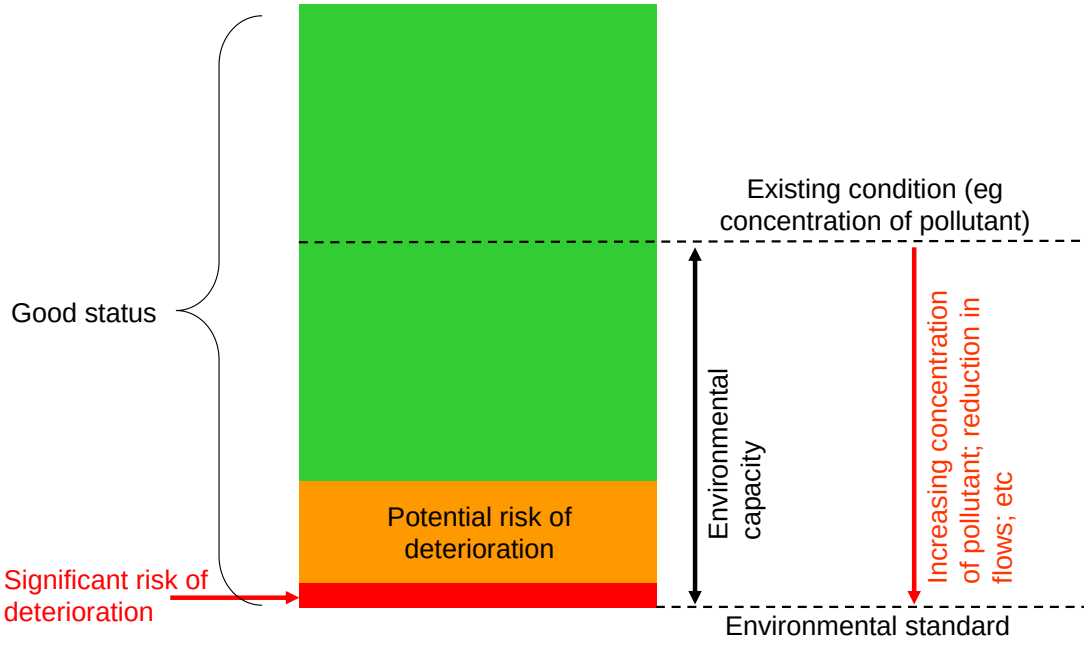
Environmental standards define the environmental conditions needed to support a particular ecological quality in surface water or maintain groundwater resources in good condition. Others are used to define the water quality necessary to safeguard water uses, such as drinking water supply, bathing and shellfish production.

Environmental standards are set for water quality, water flows, water levels and the structure and condition of the bed and banks of rivers and lochs.

Water resource standards for rivers

Water resource standards for rivers differ from other standards. They are specified in terms of "permitted abstraction per day" rather than actual abstraction per day. This means that risk assessments using the standards describe a worst case scenario of all abstractors abstracting the maximum permitted by their authorisation on the same day.

Figure 1 Overview of factors affecting Good status in water environment



[2] Where used in this regulatory method, the term "environmental standards" refers to both environmental standards and condition limits within the meaning of the *Standards Directions 2014*

A change in environmental conditions that causes a breach of an environmental standard is called "**deterioration**". Where deterioration or its wider consequences (e.g. for fish migration) is sufficiently extensive to affect the status of a water body, it is called "**deterioration of status**". Preventing deterioration contributes to preventing deterioration of status by avoiding concentrations of damage that could cumulatively adversely affect the status of a water body.

Assessing the risk to the water environment posed by a proposed activity involves:

- comparing the existing condition of the water environment with the applicable environmental standard to determine the environmental capacity - the difference between the current condition of the water environment and the applicable environmental standard; and
- assessing whether the proposed activity, given its scale, can be accommodated within that capacity and without a significant risk that an environmental standard will be breached.

Hazardous substances

Hazardous substances are persistent and liable to bioaccumulate. This makes it impracticable to manage environmental concentrations over the long term because quantities of the substances tend to progressively accumulate somewhere in the environment. Often this can be at a distant location from the point of discharge. For this reason, SEPA is required to seek to prevent and phase out inputs of hazardous substances into the environment. Details of SEPA's approach are provided in *WAT-SG-79*.

SEPA will seek to avoid deterioration of any environmental condition. For example, if water quality in a river is moderate but water flow conditions are good, SEPA will seek to maintain the good water flow conditions and prevent further deterioration of water quality. This ensures that additional stress on aquatic plants and animals is prevented and that the potential for restoration to a good condition is not further compromised.

Similarly, if water quality is worse than good in relation to one pollutant but good in relation to others, SEPA will normally seek to maintain good water quality for those other pollutants. However, in some limited circumstances, a breach of an environmental standard for a pollutant may not result in further adverse impacts or compromise the potential for improvement. Typically, for this to be the case, the water environment would have to be in a badly polluted condition with little or no prospect of improvement in the foreseeable future. For example, this might be the case for waters badly affected by polluted minewater.

To ensure protection of the water environment, the maximum capacity that SEPA allocates to a proposed activity is less than the theoretically available capacity. This is because:

- environmental quality can fluctuate as a result of pressures that cannot be precisely controlled (e.g. diffuse sources of pollution; etc). This means that allocating all the estimated capacity would pose a significant risk of an environmental standard being breached as a result of such uncontrollable fluctuations; and

- there is always some uncertainty in any estimate of available capacity. A balanced approach is needed to ensure that over-estimates do not result in deterioration inadvertently resulting from authorisation decisions.

The Standards Directions

Scottish Ministers' policy statement *Assessing Scotland's water environment - use of environmental standards, condition limits and classification schemes* includes the following guiding principles on applying environmental standards in protecting the water environment:

> **SEPA and other regulators will normally be expected to use their powers to prevent a failure of an environmental standard or condition limit**
>
> This will include:
>
> - refusing to grant applications to undertake controlled activities that would (individually or cumulatively) result in failure of an environmental standard or condition limit;
> - granting authorisations subject to such conditions as they consider necessary to ensure controlled activities do not cause a failure of an environmental standard or condition limit; and
> - taking enforcement action where necessary to secure compliance with authorisation conditions that have been set to ensure an environmental standard or condition limit is met.
>
> Such action will help protect Scotland's water environment and the interests of other users of the water environment; and contribute to achieving the Water Framework Directive's objective of preventing deterioration of status of any water body."

The majority of the environmental standards used by SEPA in assessing risks to the water environment are set out in:

- The Scotland River Basin District (Standards) Directions 2014
- The Solway Tweed River Basin District (Standards) (Scotland) Directions 2014

These directions are collectively referred to as the "*Standards Directions 2014*". They apply to different parts of Scotland but the standards set out in them are identical. Updates to the Standards Directions may be made from time to time to take account of improvements in scientific understanding of the conditions needed to protect the water environment.

Other standards, such as those for designated Bathing Waters, are set out in EU Directives and their transposing legislation. Standards have not been set for every possible pollutant that SEPA may need to control to protect the water environment. Where a standard is not specified in the Standards Directions, SEPA will:

- apply a standard established elsewhere by a peer-reviewed process, if such a standard is available. This might be a standard that has been established by another country or an international body, such as the World Health Organisation; or
- where practicable, undertake the assessments needed to derive a suitable standard itself.

3. Principles: Efficient and Sustainable Water Use

When regulating controlled activities, SEPA is required to act in the way best calculated to contribute to the achievement of sustainable development[3]. Specifically, when determining applications under CAR, SEPA is required to assess what steps may be taken to ensure efficient and sustainable water use. CAR also places a duty on operators of controlled activities to take all reasonable steps to secure efficient and sustainable water use.

SEPA considers that a proposed controlled activity constitutes "**sustainable water use**" if it:

- will not result in a significant adverse impact on the water environment; and
- will not compromise achievement of an environmental improvement objective specified in the relevant river basin management plan;

or

- is reasonably likely to result in a significant adverse impact on the water environment or compromise the achievement of an environmental improvement objective **but**, in SEPA's judgement:
  - its benefits to human health, the maintenance of human safety or sustainable development would outweigh that impact and any resulting negative social, economic or environmental consequences[4] ; and
  - there are no significantly better environmental options that would not entail disproportionate cost.

SEPA considers that "**efficient water use**" is important to ensure controlled activities do not unnecessarily:

- increase the risk of deterioration (i.e. the risk of a breach of an environmental standard); or
- constrain opportunities for future development by using more environmental capacity than is needed.

A controlled activity represents an efficient water use if all reasonable and proportionate steps have been taken to minimise the demands it places on environmental capacity. The appropriate steps will depend on:

- whether or not pressure on capacity is placing the water environment at risk of deterioration; and
- the activity's demand on capacity relative to the available capacity.

[3] See Section 2, Chapter 1, Part 1, the *Water Environment and Water Services (Scotland) Act 2003*
[4] See *WAT-RM-34: Derogation Determination - Adverse Impacts on the Water Environment* for information on how SEPA makes such judgements.

Table 1 Expected steps to secure efficient water use

Circumstances	Steps
Pressure on capacity is negligible or sufficiently light that the water environment would not be placed at risk of deterioration	Basic, low cost, good practice measures to limit demand on capacity
An activity that meet the requirement above but by having numerous similar activities is liable to lead to a less sustainable/efficient use of the water environment	Connect to the existing local infrastructure to provide the protection to the water environment, unless such connection is technically infeasible or disproportionately expensive, in this instance mitigation must be to an equivalent level as if there were connected to an existing local infrastructure.
Pressure on capacity is placing the water environment at potential risk of deterioration	All practicable steps to minimise use of capacity, including: • application of best available techniques; and • use of reasonably practicable better environmental options to avoid the need for the activity or reduce its demand

A proposed activity will have a "**negligible**" effect on capacity where the demand it would place on capacity would:

- represent only a tiny fraction of the available capacity (e.g. such as a small discharge with large dilution); and
- be so much smaller than the uncertainty in SEPA's best estimate of the available capacity that its effect would not normally be discernable.

Where necessary to secure efficient water use, SEPA will include relevant conditions of authorisation when granting water use licences or registrations.

4. Allocation of Capacity: Discharges to Rivers

4.1 Scope: Discharges to Rivers

The approach described in this section should be used when considering proposals for discharges of biochemical oxygen demand, phosphorus or ammonia to rivers.

Training on modelling discharges to rivers is available from the ESIU Unit. Monitoring data for these determinands in rivers are widely available.

However, data for estuaries, coastal waters and groundwater and for other pollutants are not sufficiently widely available to enable adoption of the approach described at this time.

For freshwater lochs this approach can be applied to these waterbodies where sufficient chemistry data is already available. For further guidance on dealing with discharges containing phosphorus refer to *WAT-RM-37: Regulation of Phosphorus Discharges to Freshwater Lochs* and *WAT-SG-91: Decision Framework for addressing risks posed by excess inputs of nutrients*, and where appropriate contact EQ to run the relevant Plus + modelling.

Water resources

SEPA will not apply the red, amber and green risk of deterioration ("RAG") approach described in this section in relation to proposed abstractions. SEPA's assessments of river flow conditions are largely based on information on the maximum amount of water authorised to be abstracted per day rather than on how much is actually abstracted. Where abstractors are not abstracting to the maximum allowed by their authorisations, estimates of the capacity used by existing abstractions may be over-estimates. This makes it impossible to produce a reliable estimate of the RAG risk of deterioration.

SEPA's information on actual abstraction levels is expected to improve over time. As this happens, SEPA will review the potential to apply a RAG approach in relation to abstractions.

Water quality

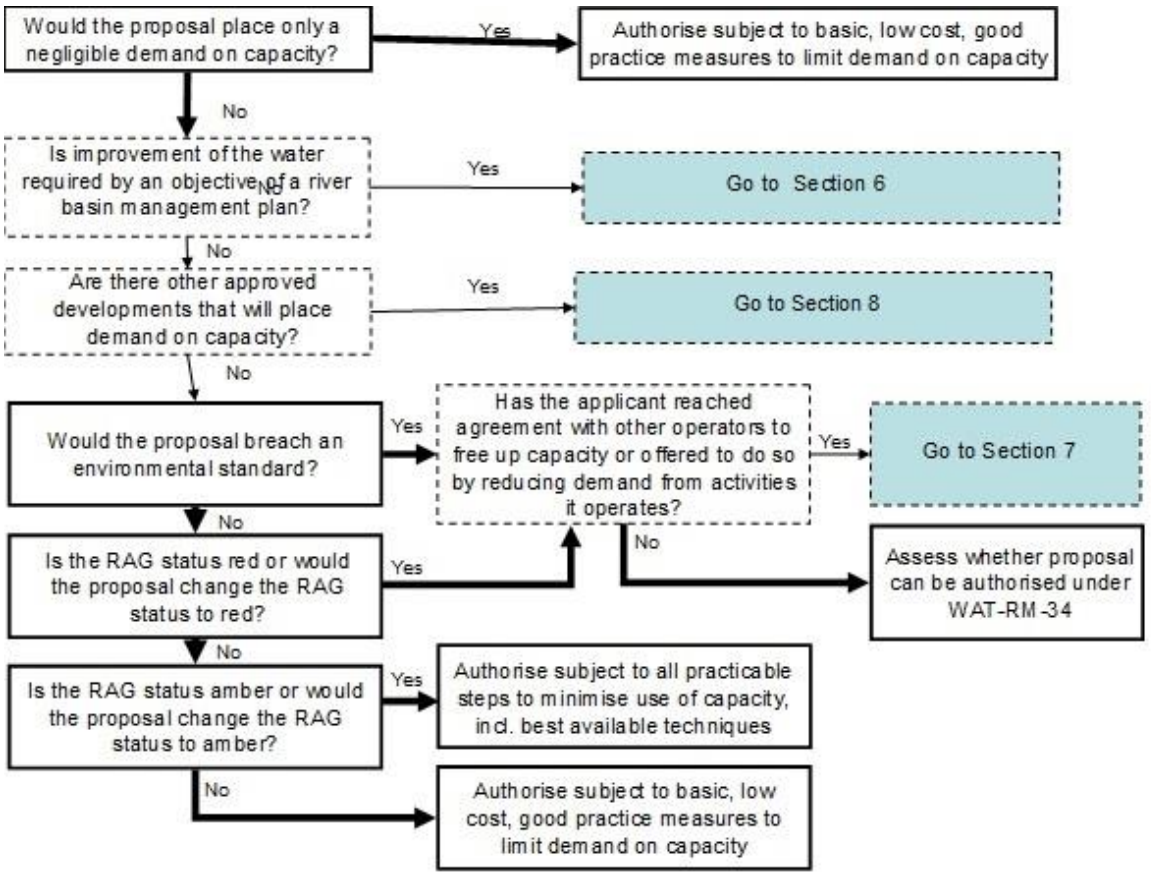
The most reliable river water quality information should be used which means the following hierarchy should be used.

1. Use river sampling data, if an appropriate dataset exists.
   Water quality in a river can differ spatially. In determining whether monitoring data are representative of water quality in the part of the river where the discharge is proposed, SEPA will take account of:
   - the distance of the monitoring point from the location of interest. The closer the monitoring point is to the point of interest the more likely it is that the water quality data from that monitoring point is appropriate;
   - the presence of other pressures and influences on water quality between the monitoring point and the location of interest. This includes presence of discharges, tributaries and other possible pressures, such as diffuse source pollution.

2. If there is no river sampling data but the discharge location is on a water body, an estimate of water quality can be made using Spotfire Source Apportionment GIS (SAGIS). SAGIS allows an estimate to be made of water quality (BOD, ammonia and phosphorus) in any location in any water body. An assessment of water quality on smaller tributaries may be possible by assuming water quality is similar to that in the main stem water body (which has SAGIS water quality information). Care should be taken not to use main stem SAGIS water quality impacted by discharges into that water body which may not be relevant to the smaller tributary. Contact ESIU for more details if required.

3. If no river sampling data is available and no estimate is possible using SAGIS then it should be assumed that water quality is at 60% of the way through the class. i.e slightly worse than previous mid-point 50% assumption. This slightly precautionary assumption is needed because it is just as likely that water quality is worse than 50% and therefore water quality may breach a standard when the new discharge is allowed.

4.2 Approach Summary: Discharge to Rivers



Notes:
"RAG status" means the risk of deterioration as classified as red, amber or green in accordance with Table 2 below.
The circumstances under which discharges causing a significant risk of deterioration can be authorised under *WAT-RM-34* are extremely limited and the norm in such circumstances will be refusal.
Negligible demand – refer to Section 3

4.3 Description of Approach: Discharges to Rivers

Waters that are close to a class boundary may be vulnerable to fluctuations in pressures that cannot be precisely controlled. Waters may also be at risk of deterioration because of an existing upward trend in the concentrations of pollutants.

SEPA uses its monitoring and modelling data to assess existing water quality and available capacity. On the basis of these assessments, SEPA can categorise the existing risk of deterioration. The risk is categorised as "red", "amber" or "green" as described in Table 2. This is known as the "**RAG status**"

Table 2 Categorisation of the risk of deterioration

RAG status	Remaining capacity	Trends in quality
GREEN - not at significant risk	More than 20 % of the environmental capacity remaining	No trend, positive trend or minor adverse trend (i.e. no adverse impact anticipated for > 12 years)
AMBER - potentially at risk of deterioration	Between 3 % and 20 % of the environmental capacity remaining	Significant adverse trend expected to breach an environmental standard within 6 to 12 years
RED - at significant risk of deterioration	Less than 3 % of the environmental capacity remaining	Significant adverse trend expected to breach an environmental standard within 6 years

Capacity for phosphorus in rivers

When estimating the available capacity for phosphorus in rivers, SEPA will take account of monitoring information on the condition of bottom-living algae called diatoms as well as the concentration of reactive phosphorus.

There is considerable variability in the sensitivity of sites to nutrient enrichment. Damage resulting from nutrient enrichment can be present at sites where concentrations of reactive phosphorus are consistent with the environmental standards for good or even high status. Relying on information on phosphorus concentrations alone could over- or under- estimate capacity.

The **coordinating officer** may wish to request assistance from the ESIU Unit.

In order to undertake modelling, the dataset should be examined using a tool such as the *MCMB Tool* (Monte-Carlo Mass Balance Tool) to produce a relevant dataset – refer to *WAT-SG-02: Modelling Continuous Discharges to Rivers*.

The information provided should be interpreted and applied as follows:

Red RAG status

A "red" risk of deterioration (a "red" RAG status) indicates that there is a high likelihood that an environmental standard could be breached in the near future because:

- there is so little environmental capacity remaining that even small fluctuations in environmental quality could lead to the breach of a standard. For example, these fluctuations may result from diffuse source inputs that are not possible to control with any precision; or
- downward trends in quality are occurring that, if unaddressed, are predicted to lead to a breach of a standard in the near future.

Proposed activities should normally be refused authorisation if:

- the part of the water environment (e.g. a stretch of a river) they would affect is already at significant risk of deterioration (i.e. its RAG status is red); or
- the activity would result in the part of the water environment becoming at significant risk of deterioration (i.e. changing from a green or amber RAG status to a red RAG status).

SEPA may make exceptions to the above where:

- the proposed activity would place negligible additional demand on environmental capacity and all basic, low cost, good practice measures will be taken to limit demand on capacity;
- the applicant reaches agreement with other operators to sufficiently reduce existing demand (i.e. "free up capacity"), or offers to do so with respect to activities for which the applicant is the operator, such that, should the proposal be authorised, the RAG status would be green or amber (See Section 7); or
- SEPA considers that the proposed activity meets the conditions detailed in WAT-RM-34 for authorising activities likely to have significant adverse impacts on the water environment. The circumstances under which discharges causing a significant risk of deterioration can be authorised under WAT-RM-34 are extremely limited and the norm in such circumstances will be refusal.

Amber RAG status

In the following circumstances, SEPA will normally require applicants to demonstrate that they have taken all practicable steps to minimise demand on environmental capacity, including use of best available techniques:

- the part of the water environment (e.g. a stretch of a river) the activity would affect is considered by SEPA to be potentially at risk of deterioration (i.e. its RAG status is amber); or
- the activity is likely to result in a part of the water environment becoming potentially at risk of deterioration (i.e. changing from green RAG status to amber RAG status).

The aim of SEPA's regulatory discussions with the applicant in the latter case will be to find ways, wherever reasonably possible, of avoiding the water moving to amber RAG status

The steps to be demonstrated will include application of best available techniques and, where relevant, consideration of better environmental options. Where appropriate, SEPA will specify the taking of such steps as conditions of authorisation.

SEPA may make exceptions to the above requirement where:

- the proposed activity would place negligible additional demand on environmental capacity and all basic, low cost, good practice measures will be taken to limit demand on capacity; or

- the applicant reaches agreement with other operators to sufficiently reduce existing demand (i.e. "free up capacity"), or offers to do so with respect to activities for which the applicant is the operator, such that, should the proposal be authorised, the RAG status would be green (See Section 7).

Methodology

If existing quality is amber -

Model discharge assuming BAT standards

- If downstream quality is still amber, then authorise at BAT
- If downstream quality is predicted to be red or status is downgraded, then refuse*
  (* unless treatment standards tighter than BAT can keep the discharge in amber)

Basic, low cost, good practice measures

This may include septic tank discharges where there is very large dilution – refer to WAT-RM-03).

Normally, secondary treatment is required and for unsampled secondary treated discharges, an effluent standard of a mean BOD of 20mg/l would be acceptable.

For sampled 2 tier discharges, use a BOD 95%ile standard of no more than 30mg/l.

BAT

For unsampled secondary treated discharges, an effluent standard would be expected to be tighter than a mean ammonia of 3mg/l.

BAT 95%ile standards of 1/1/5mg/l SRP/ammonia/BOD are applicable at most Scottish Water treatment works (including large sampled private discharges), but they may not be realistic for smaller scale sewage discharges.

Green RAG status

A green RAG status means that the part of the water environment is not at any significant risk of deterioration. SEPA will authorise activities that are consistent with the maintenance of a green RAG status provided all basic, low cost, good practice measures are taken to avoid unnecessary or excessive use of capacity.

SEPA will aim in doing so to ensure that the water is maintained in a condition well within its green RAG status so as to retain capacity for future sustainable development.

Methodology

- If existing quality is green - Since we don't want to move from green to amber, then the discharge should be modelled with the green/amber boundary as the target i.e. 80% of class width.
  This sets the discharge standards required.
  These effluent standards should be no more relaxed than the 'basic, low cost, good practice measures' outlined above, i.e these are minimum standards.

- If remaining in green is not possible using 'basic, low cost, good practice measures', then water quality can be allowed to move into amber, as long as BAT standards are used. NB The amber / red boundary must not be breached.

Table 3 Summary of SEPA's approach to using information on risk of deterioration when allocating environmental capacity

RAG status taking account of the proposal	Implications for determination of application
Red	Only authorise if: • activity would place a negligible additional demand on capacity; or • the proposal can be authorised using WAT-RM-34.
Amber	Authorise subject to: • all practicable steps, including best available techniques, to ensure efficient water use; or • the activity placing only a negligible additional demand on capacity.
Green	Authorise, subject to all basic, low cost, good practice measures being taken to minimise unnecessary demand on capacity

5. Allocation of Capacity: Abstractions

5.1 Scope: Abstractions

The approach described in this section should be used when considering proposals for:

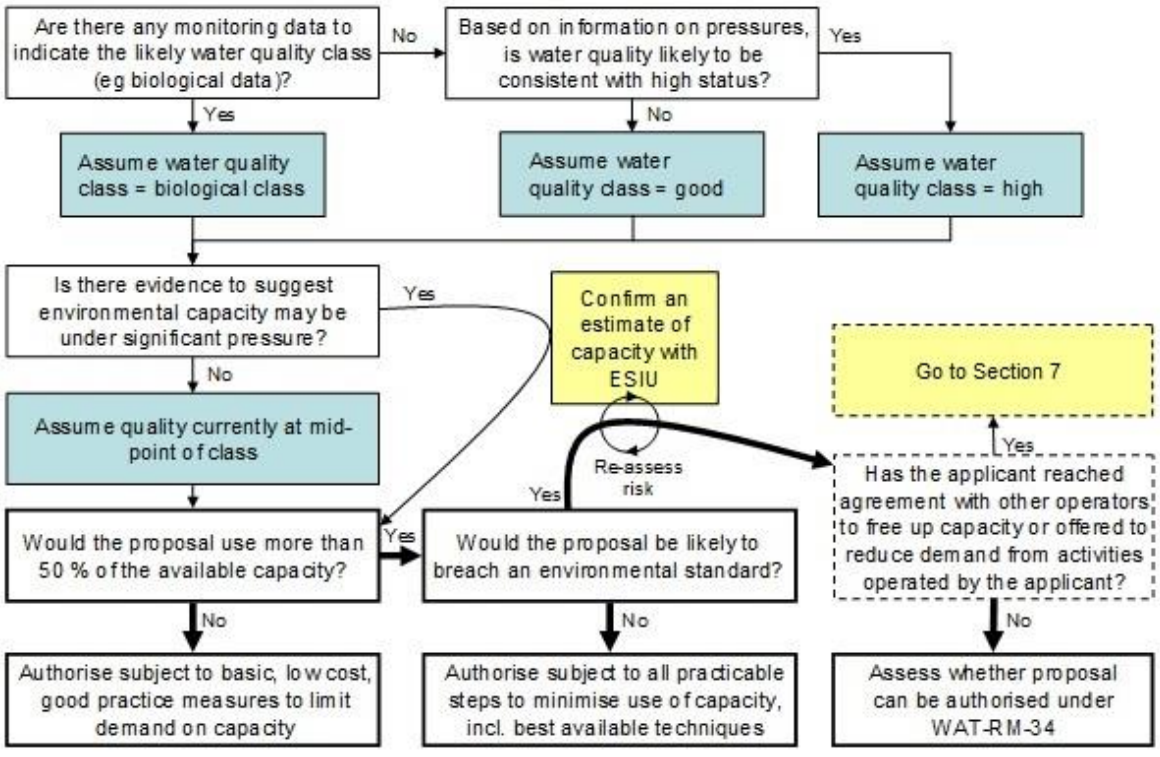
- abstractions of water

Water resources

SEPA will apply the principles described in this section when considering proposed abstractions. When doing so, SEPA will take account of the potential for its estimate of available capacity for abstraction to be an underestimate when deciding what is reasonable and proportionate to require in terms of water use efficiency measures to minimise demand on capacity.

SEPA estimates the capacity available for abstraction using water resource modelling. SEPA's estimates may be underestimates because they are based on authorised abstraction rates rather than actual abstraction rates.

5.2 Approach Summary: Abstractions



Notes:
The first part of the approach summary applies to waters in which the pollutant or pollutants concerned are not monitored.
For pollutants that are monitored, the available monitoring data should be used to estimate the available capacity.
For water abstractions, the estimate of available capacity will be produced using water resource modelling (e.g. river flow modelling). SEPA Hydrology should be contacted for advice on deriving capacity estimates.

5.3 Description of Approach: Abstractions

Where SEPA does not already have sufficient monitoring data or modelling capability to calculate the available capacity and the associated RAG status, its priority will be to use all the information it can gather at the time of the application (including from the applicant) to reach a judgement on whether or not the activity would result in an environmental standard being breached. SEPA will not attempt to categorise the RAG status and apply the approach to allocating environmental capacity described in Section **Error! Reference source not found.** above.

Step 1: Estimating the likely available capacity

For **water resources**, SEPA will use water resource monitoring to estimate the available capacity for water abstractions. The Coordinating Officer should seek advice on available capacity from SEPA Hydrology.

Step 2: Determining the application

The coordinating officer should assess whether the proposal would use more than 50 % of the estimated available capacity. Where it would not, SEPA will authorise the proposal subject to being satisfied that all basic, low cost, good practice measures will be taken to limit demand on capacity.

Where the proposal would use more than 50 % of the estimated available capacity but not breach an environmental standard, SEPA will authorise the proposal subject to being satisfied that all proportionate and practicable steps will be taken to minimise demand on environmental capacity, including use of best available techniques. In considering what is proportionate, SEPA will take account of the proportion of capacity being sought and the uncertainty in its estimate of available capacity.

Where the proposal is considered likely to cause deterioration, the coordinating officer will seek assistance from ESIU (if this has not already been provided) to ensure that SEPA's estimate of available capacity is as robust as possible given the available data.

Where, after any refinement of its assessment of available capacity, SEPA still considers deterioration likely, the coordinating officer should work with the applicant to identify and agree further steps that could be taken to reduce demand on capacity, including taking account of any agreement that the applicant may reach with existing operators to reduce current demands on capacity (See Section 7).

SEPA will normally refuse to authorise the proposed discharge where:

- no further steps can be identified or those that can be would be insufficient to avoid deterioration;
- it considers there to be a reasonable likelihood that deterioration would result if the proposed activity were to be carried on, taking account of the uncertainty in its estimate of available capacity; and

- the proposal would not satisfy the conditions detailed in WAT-RM-34 for authorising activities likely to have significant adverse impacts on the water environment. The circumstances under which these conditions would apply to proposals that would cause pollution are very limited.

6. Allocation of Capacity: Improvement Objective Applies

6.1 Scope: Improvement Objective

The approach described is this section should be used when considering proposed discharges or abstractions where:

- in the case of proposed discharges, the existing water quality in the part of the water environment that would have to accommodate the proposed activity is currently less than good; and
- an improvement objective is applicable to those conditions; and
- in the case of proposed abstractions, the water resource (flows and levels) conditions in the part of the water environment that would have to accommodate the proposed activity are currently less than good; and
- an improvement objective is applicable to those conditions.

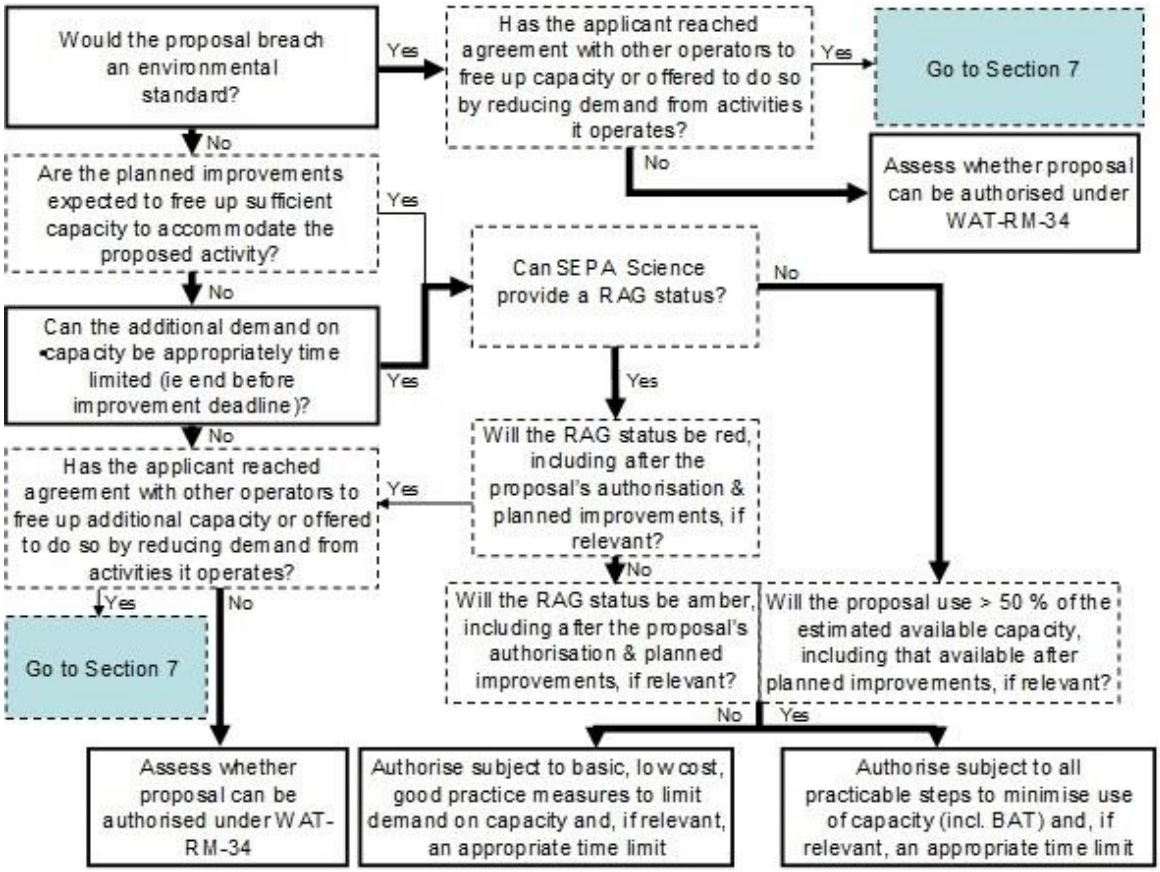
Improvement objectives are set out in the river basin management plans. They apply to those parts of the water environment where:

- existing breaches of environmental standards are sufficiently extensive to result in the status of a water body being less than good; or
- the achievement of an environmental objective for a protected area is being compromised (by inadequate water quality or water resource conditions).

Water resources

SEPA will apply the principles described in this section when considering proposed abstractions. In doing so, it will take account of the potential for its estimate of available capacity to be a significant underestimate when deciding what is reasonable and proportionate to require in terms of water use efficiency measures to minimise demand on capacity. Estimates may be underestimates because they are based on authorised abstraction rates rather than actual abstraction rates.

6.2 Approach Summary: Improvement Objective



6.3 Description of Approach: Improvement Objective

Typically, the achievement of an improvement objective will require a reduction in demand on capacity from those controlled activities contributing to the breach of the relevant environmental standard or standards.

The principal improvement objective for Scotland's water environment is the achievement of good status. To secure the achievement of this objective, SEPA will ensure that, as a minimum, demand on capacity is sufficiently reduced for water quality and water resource conditions:

- to comply with the environmental standards for good status; and
- where relevant, for the RAG status of the affected part of the water environment to be better than red for good status (see Figure 2).

However, SEPA also has a duty to act in the way best calculated to contribute to the achievement of sustainable development. Delivery of the minimum improvement target described above will not provide capacity for sustainable development. Where reasonable and proportionate, taking account of the likelihood of future demand for capacity, SEPA will aim to secure improvements that achieve a green RAG status towards the mid point of the class.

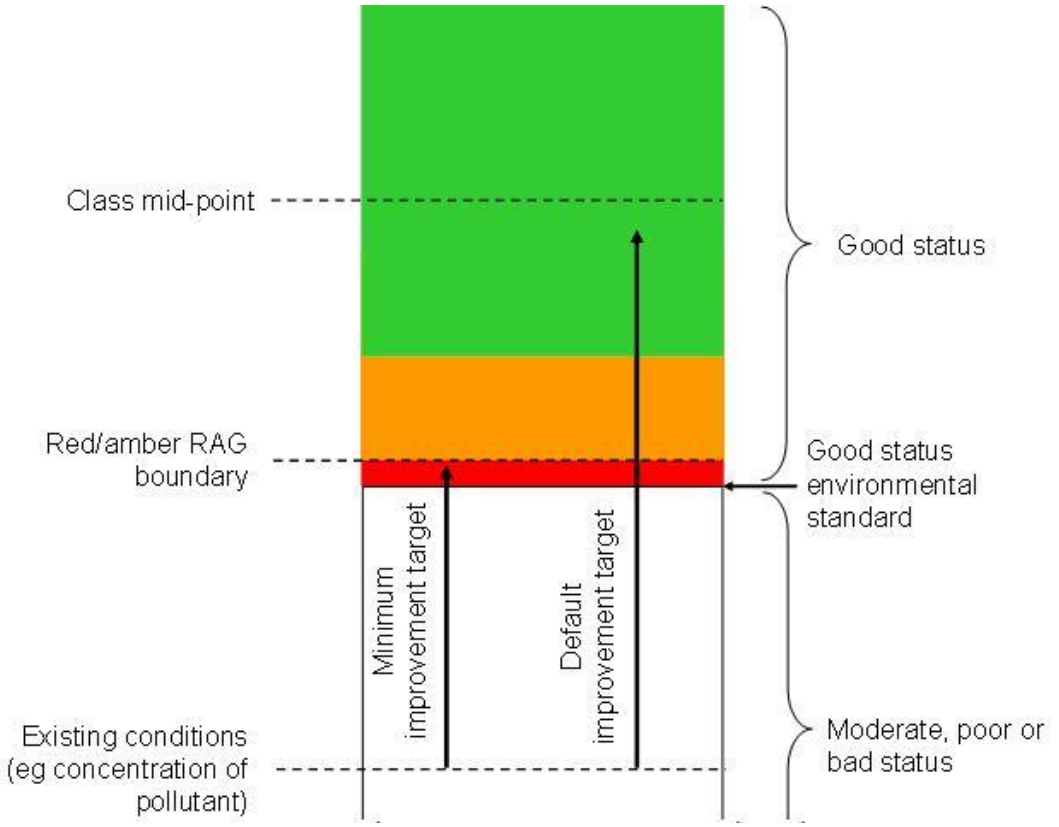
When requiring improvements, SEPA will expect the operators of the relevant activities to demonstrate that, as a minimum, they are taking all basic, good practice measures to limit their demand on capacity. In some cases, such measures may sufficiently reduce existing demand on capacity to achieve good status and deliver a green RAG status.

Where basic, good practice measures are insufficient to deliver a green RAG status, SEPA will consider whether requiring all practicable steps to minimise demand on capacity should be required, including best available techniques. In doing so, SEPA will take account of:

- the likely future demand on capacity, considering the location, etc of the affected waters (e.g. in remote areas, future demand may be unlikely);
- the confidence in its estimate of capacity. For water resources, this estimate may be an underestimate where it is calculated on the basis of authorised abstraction rates rather than actual abstractions rates; and
- the likely cost to the operators.

SEPA will not require improvement to a green RAG good status unless it considers that the potential benefits to sustainable development are likely to outweigh the additional costs to the operators.

Figure 2 SEPA aims to secure improvements that achieve a green RAG status towards the mid point of the class



This section describes the approach SEPA will apply when considering applications for activities that would place additional demands on environmental capacity in waters subject to an improvement objective.

Authorising further activities could mean greater reductions in existing uses of capacity being required to achieve the improvement objective than would otherwise be the case. A proposed activity would not have to cause a breach of an environmental standard for this to be so. For example, authorising an activity could change existing water quality or water resource conditions from the upper end of moderate status to the lower end of moderate status. This might mean that measures that would previously have improved water quality or water resource conditions to good status would no longer be sufficient to do so.

SEPA may only authorise a proposed activity that would compromise the timely achievement of an improvement objective if it judges that the requirements for derogating from that objective's achievement are satisfied. This includes assessing whether the benefits of the proposed activity would justify derogation using WAT-RM-34.

6.3.1 Deciding if there would be sufficient capacity to achieve the improvement and accommodate the proposal

SEPA will not consider a proposal as likely to compromise an improvement objective where:

a) the proposed activity would place only a negligible additional demand on capacity; or

b) the work of identifying and agreeing measures to improve the water environment (e.g. reviews of water use licences; Scottish Water investment planning aimed specifically at freeing up sufficient capacity to accommodate sustainable economic growth) is sufficiently advanced that it is clear and demonstrable that the improvement that will be delivered will exceed the minimum improvement target and free up sufficient capacity to accommodate the proposed activity.

Where (b) applies, SEPA may authorise the activity provided that:

(i) doing so before the improvement measures are implemented will not cause, or pose a significant risk of, further deterioration (i.e. breach environmental standards or change the RAG status to red); and

(ii) it is satisfied that appropriate steps to secure efficient water use will be taken by the applicant.

The steps referred to in point (ii) above should be determined according to the principles set out in Section **Error! Reference source not found.** or 5, as applicable. For example, the RAG status of the water environment will be treated as being amber if:

- the improvement measures are only expected to improve existing conditions into the amber RAG status zone of the target status class (normally good status); or

- in the interim prior to the improvement measures being taken, the RAG status in the current class is amber or would change to amber as a result of the proposal.

Where either of the above applies, and taking account of the interim nature of the risk if only the second applies, the applicant would be expected to take all practicable and proportionate steps to minimise demand on capacity, including best available techniques.

6.3.2 Options where there is insufficient capacity to achieve the improvement objective and accommodate the proposal

This section applies where planned improvement measures are not expected to free up sufficient capacity to accommodate the proposal. In such cases, the coordinating officer should work with the applicant to determine whether:

a) further steps could be taken by the applicant in time to sufficiently reduce the proposed activity's demand on capacity, or the demands on the capacity concerned of other activities operated by the applicant (if any), before the deadline for achieving the improvement objective (e.g. by upgrading the proposed level of treatment before the improvement deadline, etc);

b) the proposed activity could be time-limited to cease before the deadline for achieving the improvement objective (e.g. by connecting to a regional treatment system, obtaining water from another source; etc); or

c) the applicant has reached agreement with other operators to make sufficient additional reductions in their existing demand for the proposal to be accommodated. Where such an agreement has been made, the coordinating officer should take account of it in accordance with Section 7.

Where the applicant makes a proposal satisfying the requirements of point (a) or (b) above, SEPA will normally grant authorisation, subject to:

(i) appropriately time-limited conditions of authorisation; and

(ii) being satisfied that the appropriate steps to ensure efficient water use will be taken by the applicant.

The steps referred to in point (ii) above should be determined according to the principles set out in Section **Error! Reference source not found.** or 5, as applicable.

Where the options described at (a), (b) and (c) above do not apply, SEPA will consider whether the proposal could be authorised using *WAT-RM-34*.

Summary for new discharges to water bodies of less than good status

- If no relevant improvement objective
  Refuse application for new discharge unless negligible additional demand
- If relevant improvement objective
  If we are confident that the water body will be improved in the future (i.e. within good status) and will be able to accommodate the new discharge, then the discharge may be allowed in the interim. This is providing the methodology in section 4 is followed. This effectively allows a worsening of quality within class..

7. Taking Account of Proposals to Free up Capacity

7.1 Scope: Increased Capacity Proposals

The approach described in this section should be used when considering proposed discharges or abstractions where:

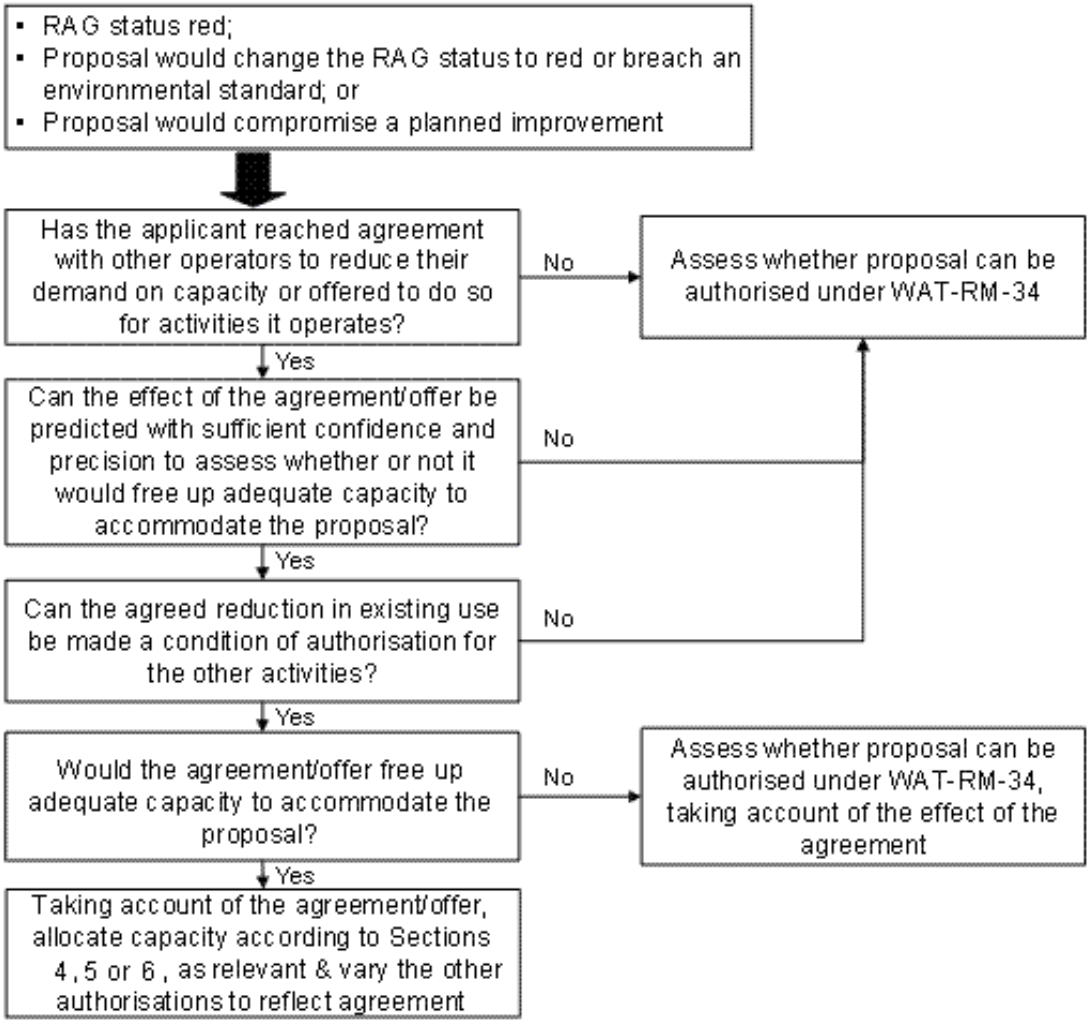
- the applicant has reached an agreement with one or more other operators to reduce existing demand on capacity; or
- the applicant is offering to reduce demand on capacity from one or more other activities affecting the part of the water environment concerned and for which the applicant is the operator;

and

- without implementing the reduction, there would be insufficient capacity to accommodate the proposal without deterioration, or without a significant risk of deterioration; or
- without implementing the reduction, the proposal would compromise the achievement of an improvement objective.

CAR provides that, when determining applications, SEPA may have regard to any agreement reached between different persons concerning controlled activities carried on in the relevant area of the water environment. This section explains how SEPA will apply this provision in practice.

7.2 Approach Summary: Increased Capacity Proposals



7.3 Description of Approach: Increased Capacity Proposals

When determining an application, SEPA may take account of agreements or offers meeting the following criteria:

- the agreement or offer must relate to other authorised **point source discharges** or **abstractions**, as relevant, that are placing demand on capacity in the same part of the water environment that would have to accommodate the proposed activity;
- the agreement or offer must not be to improve compliance with existing conditions of authorisation. However, where there is evidence that non-compliance is the reason why there is insufficient capacity to accommodate a proposed activity, SEPA will programme appropriate enforcement action to secure compliance;

- the information in the agreement or offer must be sufficient in conjunction with data held by SEPA about the relevant part of the water environment to allow SEPA to determine the effect of the agreement on capacity;
- where an improvement objective applies, the agreement or offer must be to make bigger reductions in demand (i.e. by taking additional measures) than would be required to achieve the improvement target; and
- the agreement or offer must be capable of being given legal effect by variation to the conditions of authorisation for the other activities (e.g. revised emission limits or abstraction limits; restrictions on the timing of activities; etc) or revocation/surrender of the authorisations for the other activities.

SEPA will not take account of agreements or offers relating to activities likely to be contributing to diffuse source pollution. This is because SEPA cannot reliably predict the effects of such agreements or offers and separate them from the effect of compliance with existing authorisation conditions (i.e. CAR general binding rules).

Where an agreement or offer meets the above criteria, SEPA will determine whether it would free up sufficient capacity to accommodate the proposed activity. The coordinating officer should normally consult ESIU or Hydrology, as relevant, for assistance in making this assessment.

Where SEPA considers that an agreement or offer would free up sufficient capacity, it will normally:

- vary the authorisations for the other activities in accordance with the terms of the agreement; and
- once the time period allowed for appeal against those variations has expired, authorise the proposed activity, subject to being satisfied that appropriate steps will be taken by the applicant to ensure efficient water use.

Where an agreement or offer would not free up sufficient capacity to accommodate the proposed activity, SEPA will apply *WAT-RM-34* to determine whether the proposal can be authorised. In making this determination, it will take account of any effect that the agreement or offer would have on, as applicable, reducing: (i) the adverse impact of the activity; or (ii) the extent by which achievement of the improvement objective would be compromised.

8. Taking Account of Likely Future Development

8.1 Scope: Future Development

The approach described in this section should be used where:

- other activities that will require use of capacity are likely to be proposed in due course as a result of the following approved developments:

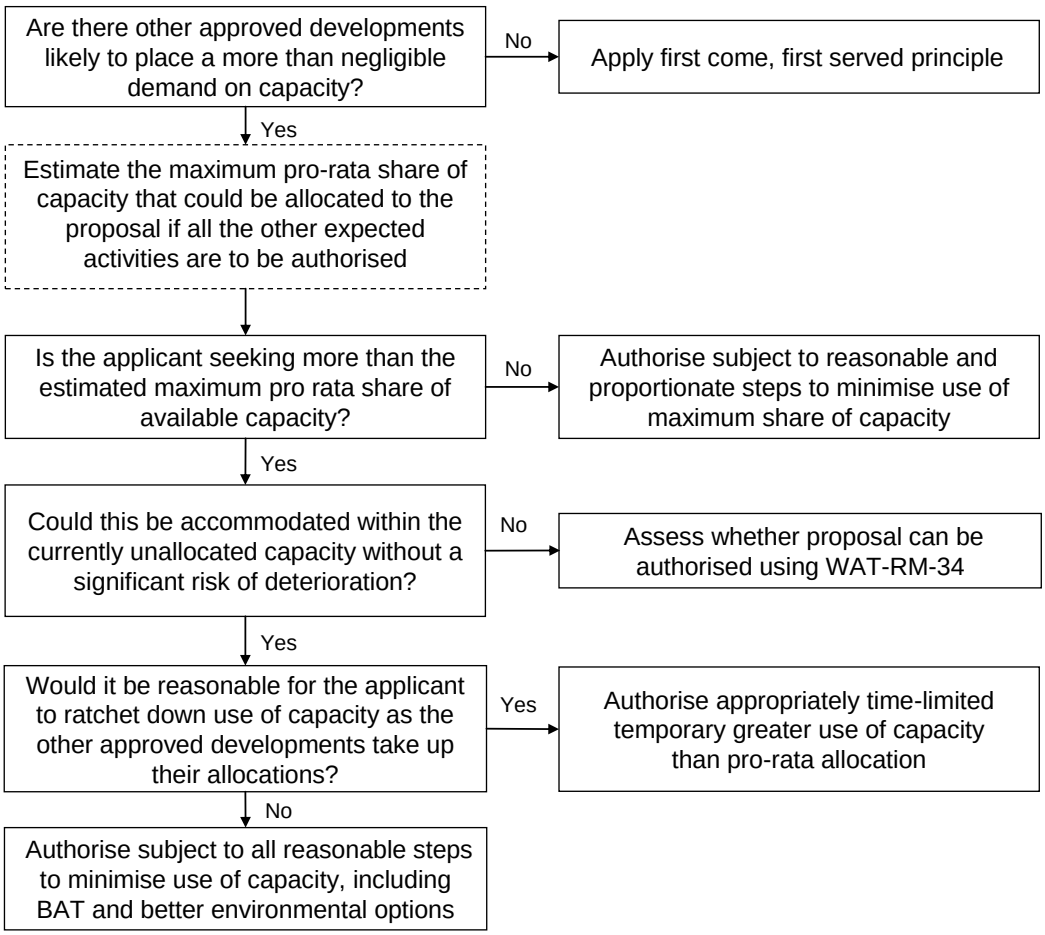
(i) an area being zoned for development by a planning authority in a finalised local plan; and

(ii) planning permissions granted by a planning authority;

and

- these other activities would be expected to place more than a negligible demand on capacity in the same part of the water environment as an activity in respect of which an application for authorisation has been made.

8.2 Approach Summary: Future Development



8.3 Description of Approach: Future Development

SEPA will normally allocate capacity in relation to the available capacity at the time an application is made. This approach is sometimes known as allocation on a "**first come, first served**" basis. Capacity is allocated in sequence according to the order in which applications are received.

Where other development has been approved by a planning authority, determination of water use licence applications on a first come, first served basis could result in:

- too much capacity being allocated to the first received applications to enable activities associated with the other developments to be accommodated; or
- later applicants having to bear much greater costs (e.g. of treatment) to operate within the remaining capacity.

To help secure sustainable development in such circumstances, SEPA will take account of the combined demand from the proposed activity and those activities it judges likely to be required as a result of the approved development.

To do this, SEPA will seek to:

a) identify, before determining the application, whether or not there are approved developments that are likely to place demands on capacity in the same part of the water environment. To do this, the coordinating officer should seek advice from SEPA's Planning Service;

b) estimate the likely demand on capacity of the combination of the activity to which the application relates and any controlled activities SEPA expects to be proposed because of the identified approved developments. Unless contrary information is available, for the purpose of producing this estimate SEPA will assume that only basic, good practice measures will be used to limit the demand of those other activities on capacity; and

c) compare the cumulative demand with the available capacity and apply the relevant principles described below:

8.3.1 Where the applicant is not seeking more than the maximum pro-rata share estimated for the proposed activity

SEPA will authorise the proposal, subject to it using no more than its maximum pro rata share of the available capacity. Where a RAG status is available, the available capacity excludes "capacity" in the red RAG status band.

For example, if the expected total population equivalent of all of an approved development is 1,000 and the application under consideration serves a population equivalent of 200 (20 %), the **maximum** capacity allocated to it would be limited as follows:

(i) where SEPA has calculated a RAG status, 20 % of the remaining capacity to the amber/red RAG status boundary; or

(ii) where a RAG status has not been calculated, 20 % of the total estimated available capacity.

However, in so far as reasonable and proportionate, SEPA will require the applicant to minimise the proposed activity's use of its maximum pro rata share. This will help safeguard capacity for future growth. Wherever possible, SEPA will aim to maintain a green RAG status with all the expected activities in operation.

8.3.2 Where an applicant is seeking more than the maximum pro rata share of capacity

Where the applicant is seeking more than the estimated maximum pro rata share of capacity, SEPA will:

(a) authorise a temporary greater use of capacity where it judges it reasonable and proportionate for the applicant to ratchet down the use of capacity in time to provide the necessary share of capacity for the further controlled activities. For example, in the case of a discharge, the applicant may be able to comply with progressively tightening of authorisation conditions by enhancing the performance of an existing treatment system or connecting into a regional treatment system; or

(b) where it judges that providing for only a temporary greater use would not be reasonable or proportionate, authorise the proposal subject to all reasonably practicable steps being taken to minimise demand on capacity, including the use of best available techniques and consideration of better environmental options.

Where point (b) above applies, SEPA will conclude that it is unlikely to be possible to accommodate all the other expected controlled activities within the available capacity. If all the other expected activities were to be authorised, this would be likely to cause deterioration.

SEPA will advise the planning authority of the conclusions it has drawn after having considered every reasonable means of accommodating all the activities expected to result from the approved developments. This will include explaining that SEPA will refuse a proposal likely to result in deterioration, unless that proposal would meet the derogation requirements described in *WAT-RM-34*. Which activity or activities might have to be refused would depend on the sequencing of the applications to SEPA from the approved developments.

During the processing of each application, including the initial application, SEPA will seek to obtain such information as it judges reasonably likely to be needed in the event that it has to undertake an assessment of whether the derogation tests set out in WAT-RM-34 could be met. SEPA will not seek to obtain such information unless it considers there is at least a potential for the activity to satisfy the tests.

Where, because of the amount of capacity progressively allocated through application of the first come, first served approach, SEPA determines that a proposed activity would be likely to result in deterioration (i.e. breach a standard) or a significant risk of deterioration (i.e. a red RAG status), it will refuse authorisation unless:

- it determines that the proposed activity meets the conditions detailed in WAT-RM-34 for authorising activities likely to have significant adverse impacts on the water environment; or
- it determines those conditions are met by one or more of the activities it has already authorised and which were activities considered in reaching the conclusions it communicated to the planning authority. In making such a determination, SEPA may consider the collective benefit of the activities in so far as the activities serve component parts of a discrete but wider development.

References

NOTE: Linked references to other documents have been disabled in this web version of the document.

See the Water >Guidance pages of the SEPA website for Guidance and other documentation (*www.sepa.org.uk/regulations/water/guidance/*).
All references to external documents are listed on this page along with an indicative URL to help locate the document. The full path is not provided as SEPA can not guarantee its future location.

Key Documents

- *WAT-RM-28: Modelling for Water Use Activities*
- *WAT-RM-34: Derogation Determination - Adverse Impacts on the Water Environment*
- *WAT-RM-37: Regulation of Phosphorus Discharges to Freshwater Lochs*
- *WAT-SG-02: Modelling Continuous Discharges to Rivers*
- *WAT-SG-79: Priority Hazardous Substances Licence Reviews - Guidance*
- *WAT-SG-91: Decision Framework for addressing risks posed by excess inputs of nutrients*
- Implementing WEWS (Scotland) Act 2003: *Assessing Scotland's water environment - use of environmental standards, condition limits and classification schemes* Policy Statement, Mar 2010 (www.scotland.gov.uk/Publications/)
- *MCMB Tool* (Monte-Carlo Mass Balance Tool) Spotfire Application
- *Standards Directions*
  - The Scotland River Basin District (Surface Water Typology, Environmental Standards, Condition Limits and Groundwater Threshold Values) Directions 2014
  - The Solway Tweed River Basin District (Surface Water Typology, Environmental Standards, Condition Limits and Groundwater Threshold Values) (Scotland) Directions 2014

    NOTE: This link provides access to the documents via a managed SEPA intranet page.The full set of Standards Directions for each river basin district in Scotland can also be found via the Publications page of the Scottish Government website (www.scotland.gov.uk/Publications/)
- *Valuing the Water Environment: A Survey of Scottish Public Attitudes* Oct 2006 (http://www.scotland.gov.uk/Publications)
- *Water Environment and Water Services (Scotland) Act 2003* (http://www.legislation.gov.uk/)

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