

Loch Leven Special Protection Area and Ramsar Site

Planning advice in relation to phosphorus and foul drainage in the catchment area

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1 Introduction

This guidance aims to assist anyone submitting planning applications which are:

- *within the catchment of Loch Leven Special Protection Area (SPA) and Ramsar site and*
- *which could affect the water quality of Loch Leven.*

The guidance provides advice on the types of appropriate information and safeguards to be provided in support of your planning application so that it can be properly and timeously assessed by Perth & Kinross Council, and includes:

- An explanation of planning authorities' obligations when evaluating planning applications;
- Advice on the nature of developments that may affect Loch Leven; and

Examples of information which you need to submit with your planning application and application for a foul water discharge licence under **The Water Environment (Controlled Activities) (Scotland) Regulations 2011 (as amended)** (CAR) – there is a flow chart on page 4 taking you through the key questions and answers/solutions.

This guidance relates specifically to impacts on the water quality of Loch Leven SPA from phosphorus in waste water entering the loch's catchment. There may be other qualifying features of the SPA which could be affected by development proposals such as water quality impacts from construction activity or disturbance to birds.

2 The Importance of Loch Leven

Loch Leven is the largest naturally nutrient rich freshwater loch in lowland Scotland and is internationally important for its wintering and breeding wildfowl. It has the highest wildlife accolade as it was designated as a SPA and is part of the Natura 2000 network – a series of internationally important wildlife sites throughout the European Union. It continues to receive protection as a European Site within the UK sites network. The site is also a Ramsar site designated under the Convention of Wetlands of International Importance.



3 The Nutrient Problem at Loch Leven

Nutrients such as phosphorus and nitrogen entering the loch catchment from manmade sources have caused problems with water quality for many years. This has resulted in a negative impact on the conservation, economic, and social interests of the loch and local area. Much work has been undertaken over the last 30 years to reduce the input of phosphorus into the loch including through upgrades to the public sewer system and improvements in private systems. Monitoring has shown that this has led to an improvement in the ecological quality of the loch. The vast majority of phosphorus entering the loch is now from diffuse sources in the catchment such as erosion and run-off, however it is important to continue to reduce the phosphorus and nitrogen inputs to the loch where that can be controlled.



The aim is therefore to ensure that there is no increase of phosphorus in the Loch Leven catchment arising from waste water associated with new developments. If there is an increase in phosphorus discharging to the loch, there could be a detrimental effect on water quality, and a knock-on effect for ecology.

4 Planning Authorities' Obligations

European sites were selected under the Habitats Directive, which sets out obligations on Member States to take appropriate steps to avoid “the deterioration of natural habitats and the habitats of species...” These obligations relate to “Competent Authorities” such as Planning Authorities.

Planning Authorities can only agree to development proposals after having ascertained that they will not adversely affect the integrity of the site. If the proposal would affect the site and there are no alternative solutions, it can only be allowed to proceed if there are imperative reasons of overriding public interest.

To inform this assessment, information will be requested for developments potentially affecting the loch. This includes details of measures to protect watercourses from surface water drainage and construction activity, and a **Phosphorus Mitigation Calculation** for private systems.

Proposals for developments connecting to private waste water systems must mitigate their impacts. To ensure no net increase in phosphorus from these developments, a precautionary approach recognises that the measurement of potential phosphorus output is not an exact science. Policy 46: Loch Leven Catchment Area of Local Development Plan 2 requires proposals for developments with private systems to provide 125% mitigation of the phosphorus they produce.

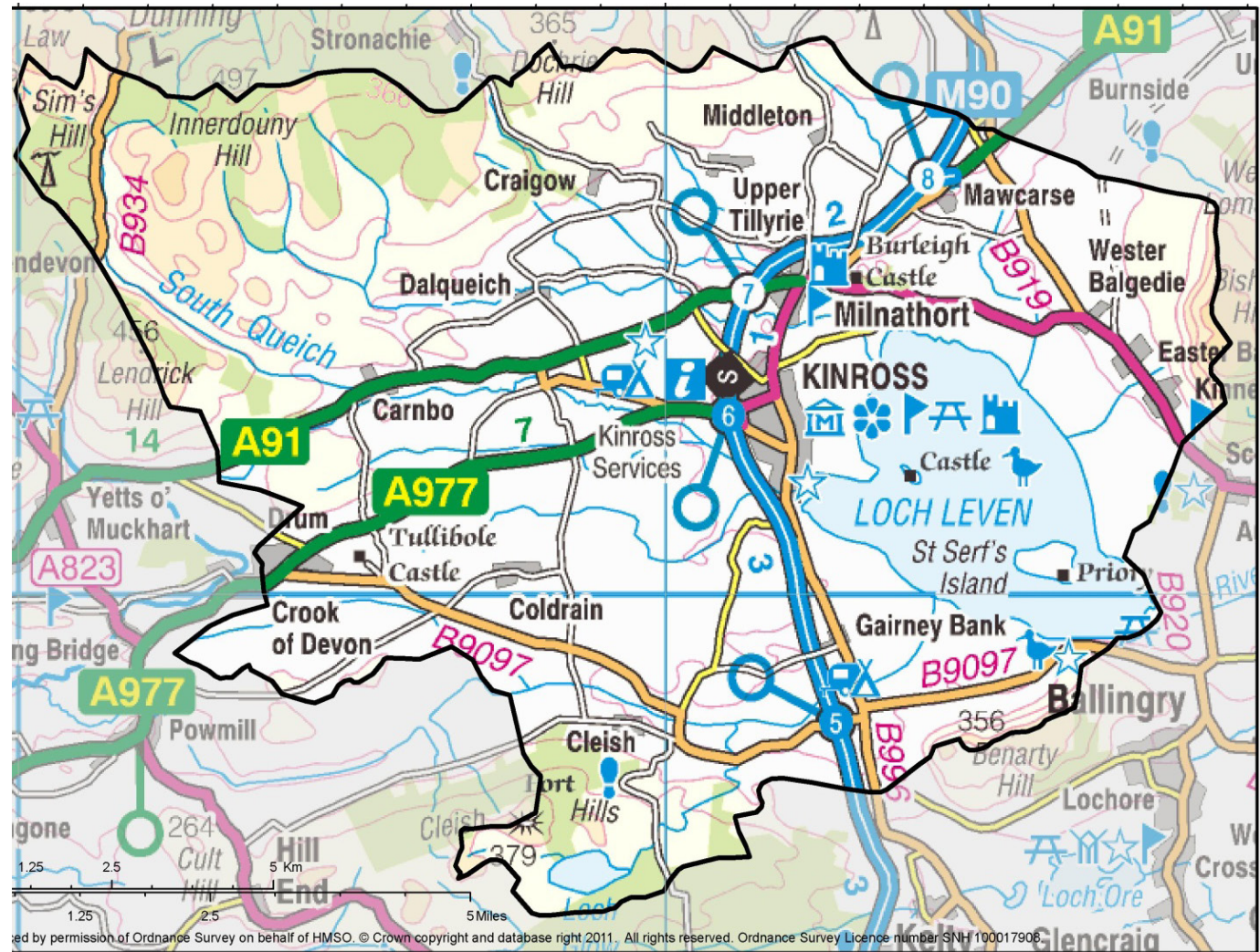
Developments which connect to public systems have been facilitated by past upgrades and mitigation of phosphorus is carried out at the works. These systems operate under a SEPA licence which takes population growth and impacts on the loch into account.

5 Proposed Projects that May Affect Loch Leven SPA

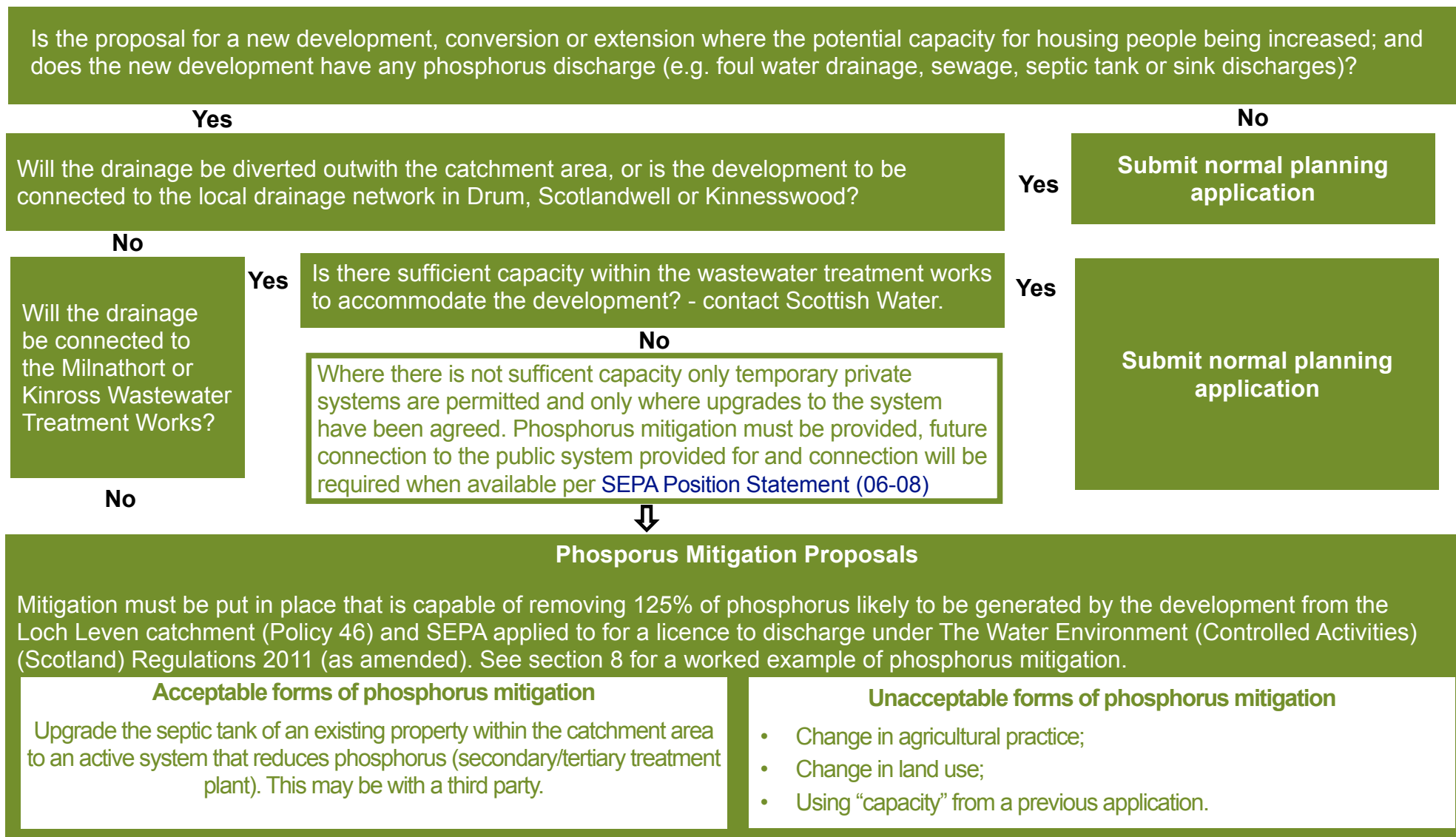
New developments, conversions or extensions where the potential capacity to house people is being increased may impact on the Loch Leven SPA.

If the proposed development lies in the catchment as shown by the black line on the map, you may be required to provide phosphorus mitigation for your development, as detailed in the sections below.

The map is a guide – if a development is near the border confirmation should be sought as to whether it is within the Loch Leven catchment.



6 Phosphorus Mitigation Checklist



7 Submitting a Planning Application

Where mitigation is required full planning applications or AMM (approval of matters specified in conditions) must provide details of:

- a. the proposed development;
- b. an existing property to be upgraded – which has not already been identified as mitigation for another planning application;
- c. phosphorus mitigation calculations – include numbers of bedrooms of all properties, and methods of drainage (primary/secondary/tertiary treatment plant).¹ You will need to demonstrate that the total phosphorus loading from the existing property can be reduced by at least 125% of the phosphorus loading likely to be generated by the new development. See worked example overleaf

Any treatment plant should conform to BS EN 12566:3 and have demonstrated its phosphorus reduction capabilities in accordance with this standard. To obtain certification to EN12566,3 plants must undergo rigorous independent testing which results in a documented mean discharge standard. The mean standard in the EN12566:3 certificate is a clear and unambiguous assessment of the performance of the plants, and is used in CAR licences for unsampled licenced sewage discharges (i.e. discharges of less than 200 PE). EN12566:3 is normally used to assess performance against BOD and ammonia, but can also be used to assess performance against total phosphorus.

1. The latest version of **British Water Code of Practice - Flows and Loads** has details of loadings from a variety of sources

- Discharge from all the properties will require authorisation by SEPA under The Water Environment (Controlled Activities) (Scotland) Regulations 2011 (as amended) (CAR) who will set discharge limits through licensing. The licensing process has a 4 month determination period from the date of application. Progressing the CAR applications at the same time as the planning application will ensure an applicant is aware of whether a proposed scheme is capable of being consented under CAR. (see section 11 below).
- The discharge limits set by SEPA must be complied with at all times.
- Foul water treatment plants need to be frequently maintained to work properly and discharge within the licensed limits. Evidence of regular maintenance contracts must be provided as part of the SEPA water use licence.
- Sites which will not connect to the Scottish Water Network which have >50p.e. should contact SEPA at the earliest opportunity as additional investigatory work will be required prior to a discharge licence application being submitted.
- In cases of great complexity or uncertainty the Precautionary Principle will be adopted. The assumption being that where there are real threats of damage to the environment, lack of scientific information should not be used as a justification for postponing measures to prevent such damage occurring.

8 Phosphorus Mitigation Calculation: worked example²

Background	
Average amount of water per person per day	150 L
Primary treatment: septic tank, standard discharge of phosphorus as a mean	10mgP/L
Daily discharge of phosphorus per person	1500mgP
Secondary treatment: package treatment plan as a mean	5mgP/L
Daily discharge of phosphorus per person	750mgP
Proposed Development	
3 bedroom house in Person Equivalent (PE) Secondary treatment to be installed	5 PE 5mgP/L
Daily Discharge of phosphorus (750mgP x 5PE)	3750mgP/day
Phosphorus Mitigation	
Mitigation required is 125% of P discharged from new development: 125% x 3750mgP/day	4688mgP/day
Proposed mitigation to upgrade septic tank for named 5 bedroom house (7PE) to secondary treatment plant	
Existing discharge 150L x 10mgP/L x 7PE	10,500mgP/day
Discharge after upgrade@5mgP/L: 750mgP x 7PE	5,250mgP/day
Mitigation offered: 10,500mgP/day - 5250mgP/day Mitigation in excess of requirement	5250mgP/day

2. Calculations based on British Water Code of Practice "Flows & Loads - Sizing Criteria, Treatment Capacity for Small Wastewater Treatment Systems"

9 Additional Points for Phosphorus Mitigation Proposals

Existing properties should not be removed from a larger foul drainage treatment system to provide mitigation for a new development. The applicant should seek to upgrade the larger system in its entirety, regardless of how much in excess of 125% mitigation value this provides. Wherever possible, applicants should seek to use a single treatment system for a proposed multi-property development, rather than separate individual systems.

Any novel proposals where mitigation is not from a single existing property, should be discussed with SEPA at the earliest stage possible, in order to ensure the proposal is acceptable.

For the purposes of mitigation, ascribed values will be used for calculations, where a septic tank is assumed to discharge 10mg/l of phosphorus, and an existing secondary treatment system 5mg/l. New treatment system discharge standards will be based on the system being installed. Alternatives to the ascribed values may be considered where there is adequate historical data which meets approved quality standards. In these cases contact should be made with SEPA at the earliest opportunity. We do not accept calculations with a discharge quality standard below 2mg/l at present.

Mitigation of an existing system can only be linked to a development at full planning stage. SEPA will only comment on phosphorus mitigation proposals at full planning stage.



10 SEPA Authorisation

SEPA regulates discharges to water and land under The Water Environment (Controlled Activities) (Scotland) Regulations 2011 (as amended) (CAR). All CAR Registration level private sewage discharges in the Loch Leven catchment area will be escalated to simple licence level, to allow adequate assessment of the discharge. Progressing the CAR applications at the same time as the planning application will ensure the applicant is aware of whether a proposed scheme is capable of being consented under CAR.

Please note that additional authorisation for development activities adjacent to, and in the vicinity of watercourses may be required under the Controlled Activities Regulations. A higher level of licence protection may also be required for activities that may impact on the loch SPA, such as engineering works in inland waters, water abstraction, impoundment or discharge to land and water. Any such authorisation will also need to first consider the effects on the SPA.

For details on these activities including CAR requirements see www.sepa.org.uk/regulations/water/

Activities should also comply with:

- **SEPA's Pollution Prevention Guidance including: GPP4 Treatment and disposal of wastewater where there is no connection to the public foul sewer;** and
- **SEPA's Policy and Supporting Guidance on Provision of Waste Water Drainage in Settlements**

11 Before Development Can Commence

Before development can commence you must:

- have obtained planning permission; and
- have obtained a CAR licence(s) under the Water Environment (Controlled Activities)(Scotland) Regulations 2011 (as amended) for the foul water discharge of the development; including for any remote mitigation property.
- submit copies of the CAR licence(s) to the Planning Authority;
- have a receipt for the above documentation from the Planning Authority.

Where phosphorus mitigation measures are to be delivered at a location separate from the development site then before the development can commence:

- the phosphorus mitigation measures must be installed using a treatment system which delivers the discharge quality standards specified in the mitigation calculations – and approved by Building Standards where a building warrant has been required; and
- evidence of the installation of the phosphorus mitigation measures must be provided to the Planning Authority such as installation invoices and photos of the treatment plant in place.

Before the completion certificate will be accepted and the new development can be occupied:

- The new drainage infrastructure installation at the development site must be approved by Building Standards as part of building warrant process.

12 Further Considerations

Other Impacts on Loch Leven Designations

Although this guidance is specifically for the water quality of Loch Leven SPA and Ramsar site arising from waste water, further information may be required of the impact of the development on the qualifying features and conservation objectives of the Loch. This may include a Construction Method Statement to address construction impacts or other measures to protect wildlife. See:

- [NatureScot Guidance on Protection of Natura Sites](#)
- [NatureScot Sitelink](#) for further details on Loch Leven designations including conservation objectives.
- [PKC \(2021\) Planning for Nature](#)

Protected Habitats and Species

There may be other natural heritage interests including protected species such as water voles, bats, otters and beavers affected by development proposals which also need to be considered. See Perth & Kinross Council's [Planning for Nature](#) guidance for more information on surveys that may be required.

Building Warrant

In addition to any planning consents that may be required, any development which includes an element of drainage will require building warrant approval. This process includes a requirement to submit detailed plans and specifications for the entire drainage system to show compliance with the Building (Scotland) Regulations 2004. See www.pkc.gov.uk/Buildingstandards

13 Contacts

NatureScot, SEPA and Perth and Kinross Council are working closely to protect the interests of Loch Leven SPA and Ramsar site by reducing phosphorus loading on the loch. Perth & Kinross Council are happy to assist you where required in submitting your application, including [pre-application discussion](#).

Perth and Kinross Council

For planning enquiries:

- DevelopmentManagement@pkc.gov.uk
- www.pkc.gov.uk/makingaplanningapplication

For building warrant enquiries:

- BuildingStandards@pkc.gov.uk
- www.pkc.gov.uk/buildingstandards

NatureScot

- www.nature.scot
- tayside_grampian@nature.scot

Scottish Environment Protection Agency

- 0800 807060
- www.sepa.org.uk
- planning.se@sepa.org.uk

Scottish Water

- 0845 600 8855
- www.scottishwater.co.uk

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