Drain Nutrient Solution Management

Code of Practice: Key takeaways for growers

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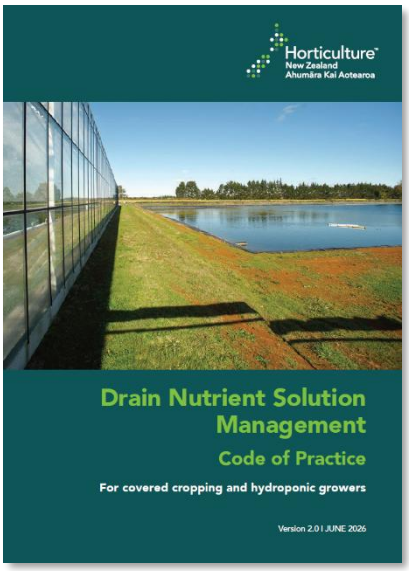
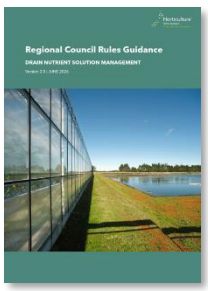
Purpose of this Code of Practice



- Drain nutrient solution / drain water / run-off solution is the leftover nutrient solution collected from your hydroponic or soilless growing system that requires further management.
- If discharged to ground or surface water, drain nutrient solution can negatively impact freshwater and freshwater ecosystems.
- This Code of Practice supports growers to utilise drain nutrient solution as a resource through the responsible application to land.

Following this Code of Practice will:

1. Reduce potential nutrient losses to freshwater and surrounding environments.
2. Turn drain nutrient solution into a useful resource by supporting the growth of an outdoor crop or ground cover (e.g. pasture).
3. Support compliance with regional council requirements.
4. Help you meet NZGAP EMS v2 and future freshwater farm planning requirements.



Supporting resources

This Code of Practice is supported by two key resources for growers:

❒ Drain Solution Management Plan (DSMP) Excel workbook

❒ Regional Council Rules Guidance

Drain solution management hierarchy

When considering the overall management of drain nutrient solution in soilless growing systems, work through the hierarchy below in Figure 1:

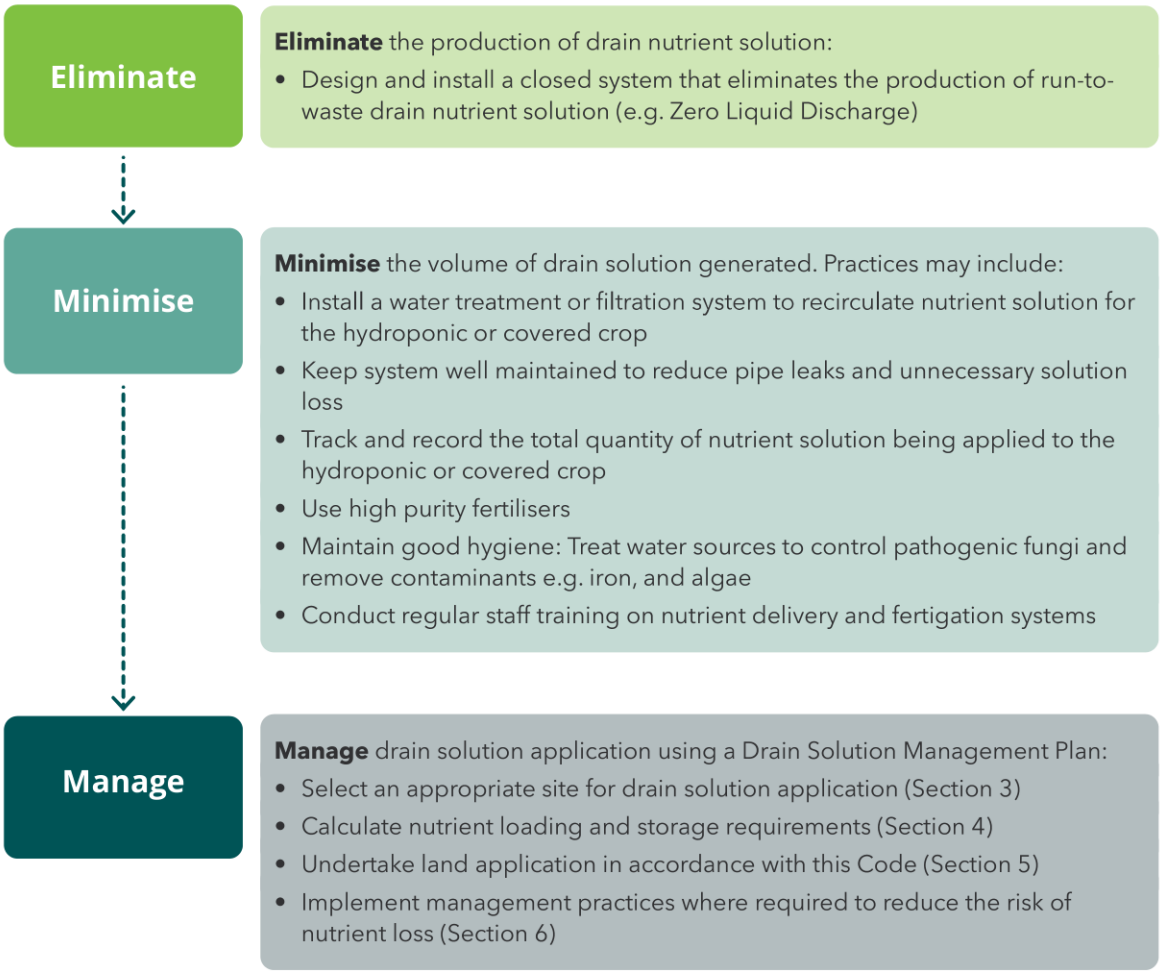
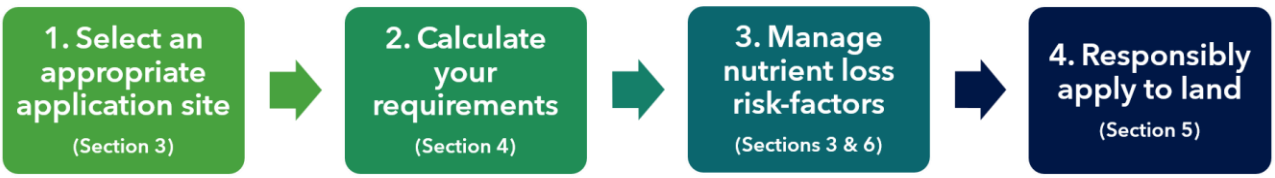


Figure 1. Hierarchy of management approaches for drain nutrient solution. Available on page 6 of the Code of Practice.

Creating a drain solution management plan

Follow through the different sections within the Code of Practice to develop a Drain Solution Management Plan to manage drain nutrient solution from your production system.



Select an appropriate application site and manage nutrient loss risk factors (Sections 3 & 6)

Your application site influences the risk of nitrogen (N) and phosphorus (P) loss, so select a site where nutrients can be taken up by the crop growing on the site.

- **Actively growing crop or ground cover**: Consider winter growth and N uptake.
- **Good drainage:** Avoid excessively free-draining and poorly drained soils.
- **Flat to gently topography:** Minimise run-off risk.
- **Setback from waterbodies:** Or, have a border control (e.g. riparian strip) in place.
- **Delivery system:** Irrigation system setup to apply the drain solution.
- **Presence of stock:** Have a nutrient budget in place to manage extra nutrients.

Use the Code of Practice to manage nutrient loss factors identified, based on biophysical (site) and management (your practices) risks. Implement mitigations in Section 6 where required, to manage the risk of nutrient loss to freshwater.

Calculate your requirements (Section 4)

Use the supporting Excel workbook to complete the calculations in the Code of Practice, to:

- ❒ Calculate how much drain nutrient solution is generated by your production system requiring management (if not already known).
- ❒ Calculate the potential nutrient load that you could be applying to your application site (nitrogen and phosphorus).
- ❒ Estimate how much storage you may need to hold drain solution when conditions are unsuitable for irrigation.

Responsibly apply to land (Section 5)

Use these questions as a decision framework to determine when conditions are appropriate to apply to land (irrigate).

Table 5.1 in the Code of Practice (page 20).	GO	NO-GO
Are weather conditions suitable for land application today and later this week?	Yes	No
Do soil moisture levels indicate irrigation demand?	Yes	No
Does my crop growth indicate a demand for nutrients?	Yes	No
Will this land application comply with consent conditions or permitted activity rules that apply to my operation?	Yes	No
Is the delivery or irrigation system set up to apply the volume of drain solution planned to the application site?	Yes	No

Key requirements when applying to land

This checklist is based on Section 5.2 of the Code of Practice (page 21).	YES	NO
All applications are undertaken in accordance with permitted activity standards or consent conditions.		
Drain nutrient solution is not applied to saturated soils.		
There is an actively growing crop or ground cover on the application site.		
Drain nutrient solution is not applied to water or other environmentally sensitive areas.		
There is no runoff or ponding from the site.		
The application system (e.g. irrigation system) is well-maintained to ensure drain solution is applied evenly over the site.		
Nutrients supplied via drain solution, along with other nutrient sources (e.g. stock), match nutrient demand on the application site.		
If stock are present on the site: • There is a nutrient budget to account for additional nutrients into the system. • Soil tests are available to monitor potassium levels for stock health.		
All employees carrying out drain solution applications are trained and competent to do so.		
There are application records, including volume applied and nitrogen loadings.		
Drain solution is sampled and sent off for lab testing at least once a season, or with every major crop change.		

Where to find more information:

For detailed guidance, worked examples, technical information, and supporting resources, refer to the Drain Nutrient Solution Management Code of Practice 2026 available from Horticulture New Zealand's website:
www.hortnz.co.nz/compliance/grower-resources/codes-of-practice