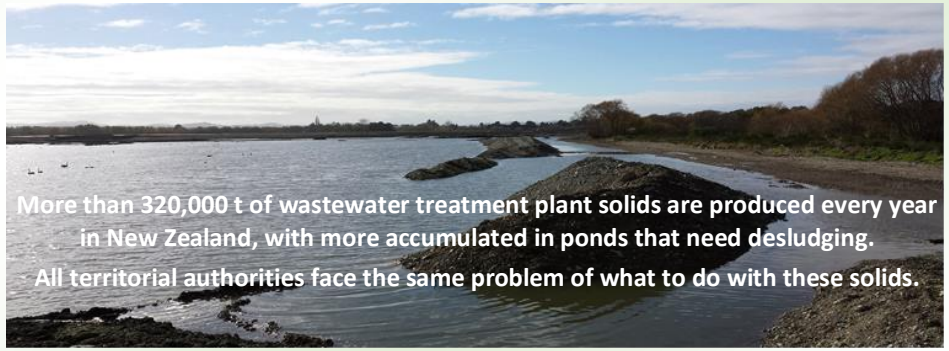
REGIONAL BIOSOLIDS STRATEGY
LOWER NORTH ISLAND

FACT SHEET 3:
BENEFICIAL USE OF BIOSOLIDS

CURRENT DISPOSAL PRACTICES

Disposal to landfill and monofill are the most common end-uses of sludge in the Lower North Island[1] and likely wider New Zealand.

Landfill disposal is not considered to be sustainable long-term. It is the focus of the Regional Biosolids Strategy to facilitate the diversion of sludge and biosolids away from landfill where feasible. Whilst many councils are keen to beneficially use biosolids, for many this has not been realised due to financial and other constraints.



POTENTIAL FOR BENEFICIAL USE

Biosolids are nutrient rich (N, P, trace elements) and can have fertiliser value when used as a soil amendment[2]. The availability of end-use options within a region is dependent on numerous factors including:

- The regulatory environment[3];
- The characteristics of the material for discharge (biosolids grading[4]);
- The availability of target land uses within transportable distance;
- Consideration of regional community and iwi concerns and aspirations[1,5]; and
- The costs incurred from beneficial use operations including:
    - Processing;
    - Transport;
    - Land application; and
    - Consenting costs.

The potential to beneficially use biosolids will differ between and within regions (between WWTPs) depending on these factors. In some instances, smaller communities may benefit from working together to manage biosolids[6].

The identification of suitable options for specific regions are dependent on the amount, and consistency of supply of sludge as well as the factors identified above.

> Biosolids can be used to improve low fertility or degraded land provided appropriate risk management is in place

BENEFICIAL USE OPTIONS

Numerous potential end-uses for biosolids exist in New Zealand including:

- Forestry;
- Dairy and drystock (sheep and beef) farms[7];
- Horticulturalists / orchardists / market gardeners;
- Municipal landscaping;
- Land rehabilitation;
- Road corridors;
- Landfill capping; and
- Commercial enterprises (compost[8], potting media[9], etc).

Discharge to land is well suited due to the large amount of potentially available land[1] in both forestry and agriculture as well as unproductive land (i.e. sandy, low fertility or erosion prone), where biosolids addition can improve moisture retention and organic matter content of soil.

To achieve safe application, meaning low risk to public health and the environment, guidelines for safe application should be followed[4] and the final end-use of the land must be considered.

IMPACTS OF SLUDGE PROCESSING ON END-USE OPTIONS

Potential use of biosolids is limited by the 'quality' of the product (Grade Bb-Aa) as defined by the biosolids guidelines[4] and regulated according to Regional Plans[1,3]. Not all end-use options are suited to all grades of biosolids, it is important to identify the intended end-use prior to treatment to avoid treating sludge to a higher grade than is necessary, or ending up with a product that is not suitable/safe for the intended use.

Suitable for:	Sludge (<Bb)	Restricted use biosolids (Ab, Ba, Bb)	Unrestricted use biosolids (Aa)
Forestry	×	✓	✓
Dairy and Drystock (sheep and beef) Farms	×	✓	✓
Horticulturalists / Orchardists / Market Gardeners	×	×	✓
Municipal Landscaping	×	✓	✓
Land Rehabilitation	×	✓	✓
Road Corridors	×	✓	✓
Commercial enterprise	×	×	✓
Landfill	✓	✓	✓

✓ Suitable
× Not Suitable

BACKGROUND

The Regional Biosolids Strategy – Lower North Island is a collaborative project funded by the Waste Minimisation Fund. Ten lower North Island Councils have worked in partnership with Lowe Environmental Impact and research partners to develop a biosolids strategy that includes the potential collective management of sludge, focussing on beneficial use.

This project was undertaken with the support of the Ministry for the Environment waste minimisation fund, however, the Ministry does not necessarily endorse or support the content of this publication in any way.

1. Report 14 of the Regional Biosolids Strategy: Potential End-Use Options for the Lower North Island
2. Fact Sheet 1 of the Regional Biosolids Strategy: What Are Biosolids?
3. Fact Sheet 7 of the Regional Biosolids Strategy: Regulation and Consenting
4. NZWWA. (2003). Guidelines for the safe application of biosolids to land in New Zealand. Ministry for the Environment (New Zealand Water and Wastes Association).
5. Fact sheet 9 of the Regional Biosolids Strategy: Iwi Engagement and Biosolids Use
6. Report 3 of the Regional Biosolids Strategy: Opportunities to Work Together
7. Report 10 of the Regional Biosolids Strategy: Biosolids Processing Trials; Biosolids field trial final report
8. Report 9 of the Regional Biosolids Strategy: Biosolids Processing Trials; Biosolids composting trial final report
9. Report 6 of the Regional Biosolids Strategy: Biosolids Processing Trials; Seedling trial report