



Celebrating new ideas

2008 New Zealand Post Group
Local Government Excellence Awards

Project Submission Template

Name of Project

The Sustainable Land Use Initiative (SLUI)

Name of entering council/s

Manawatu-Wanganui Regional Council trading as Horizons Regional Council

Category

Joined Up Local Government

1. The Rationale for the Project and Expected Benefits

The rationale for the SLUI programme is based on the numerous adverse impacts on our regional communities as a result of accelerated erosion in the Region's dominant hill country landscape. SLUI benefits are numerous.

The Rationale

The Sustainable Land Use Initiative (SLUI) has been developed to reduce hill country erosion in Horizons Regional Council catchment areas, and to curb its impacts on the regional economy, water quality, and the safety of downstream communities. It aims to encourage and incentivise land use change on land that is already eroding or has potential for accelerated erosion.

Central Government support for this initiative has been vital, as the scale of the erosion problem and the cost of implementing a meaningful solution within an acceptable timeframe is beyond the means of the Region.

The SLUI programme is the culmination of approximately two years of concerted effort by Horizons Regional Council, community leaders, Crown Research Agencies, farmers and various government ministries and officials.

Background

The Manawatu-Wanganui Region has the greatest area and proportion of farmed hill country of any region in New Zealand. Approximately 60% (1.3 million hectares) is hill country, and a high proportion of this is subject to accelerated erosion. The bulk of this erosion occurs during major storm events which have struck with increasing frequency over the last 100 years.

The extreme severity of the February 2004 storm event, and its devastating impacts over much of Region, was the catalyst for a chain of events that eventually led to the development of the Sustainable Land Use Initiative. Whereas storm events had generally impacted on relatively small parts of the region at a time, February 2004 brought record or near-record floods to the Whanganui, Whangaehu, Turakina, Rangitikei, and Manawatu catchments. The impacts on the region were catastrophic – there was significant hill country erosion and slippage across more than 100,000 hectares, roads and rail corridors were blocked, bridges were washed out, and lowland communities were flooded and isolated for weeks. The immediate financial impacts and repair bill were approximately \$300 million. More than four years later, the effects of are still affecting the way our communities live. The legacy includes scarred hillsides, dirty rivers, damaged roads and missing bridges, and reduced flood protection to lowland communities due to river siltation reducing the capacity of our streams and rivers to deal with unusual volumes of water. The hill country land remains very fragile, with slipping and erosion still occurring on a large scale. In summary, the Region is far from recovered from the 2004 storm event!

Much of the hill country soils in the Manawatu-Wanganui Region are particularly vulnerable as they are underlain by mud, silt or sandstones that are naturally prone to slipping, slumping and other forms of erosion. The rate of soil loss varies greatly with slope, storm intensity and vegetation cover or grazing intensity, with the worst erosion rates recorded in areas of highest storm intensity, steepest slopes and areas with little or no woody vegetation.

The erosion issue in the Manawatu-Wanganui Region can be summarised as follows:

- 2,200,000 ha – total area of the Region
- 1,500,000 ha – total area of hill country in the Region
- 450,000ha – total area of land in the Region with potential for moderate to severe erosion
- 273,000ha – area of highly erodible land in the Region. This is land with the potential to experience severe erosion, and which does not have woody vegetation cover
- 110,000ha – total area suffering moderate to severe erosion during the February 2004 storm event
- 29,000ha – total area of land suffering severe erosion during the February 2004 storm event

2. Linkage to Council's Strategic Direction

The linkage to Council strategy is strong, and organisational priorities relating to water quality, flood protection and hill country erosion were further endorsed during the 2006-6 LTCCP process.

The LTCCP

Soil erosion and water quality degradation were two of the biggest issues identified by the regional community during the community consultation process prior to production of the 2006 LTCCP. The SLUI project received widespread support through the LTCCP process. Further, several key organisations have signed the SLUI Accord, including Regional Chiefs, Federated Farmers, Department of Conservation, Fish and Game, and Local Territorial Authorities. This Accord sets out the key objectives and underlying principles of SLUI.

The community agreed that change was needed in light of the impacts of the 2004 storm event. Nor could the community or the country afford the financial impact of damage and recovery from similar events in the future. The community demanded that soil conservation efforts and priority be increased. Accordingly, SLUI represents a shift back to the kind of large-scale works carried out under Catchment Board aegis, while integrating the benefits of the last 30-40 years of research, experience and technological advances.

Central Government Policy

Central Government has developed, or is in the development phase of, many initiatives that are aimed at achieving sustainable land use management within New Zealand. The Government's desired sustainable land management outcomes are:

1. Maintenance of the potential of the nation's soil resources to achieve viable land use options for present and future generations
2. Adoption of management skills and application of appropriate technology to enable people and their communities to provide for their social and economic wellbeing
3. Adoption of management practices that maintain or enhance the quality of waterways, groundwater resources and coastal waters, with respect to suspended sediments, nutrients, harmful micro-organisms and other contaminants
4. Avoidance, mitigation and remedying of the impacts of land-related hazards including flooding, subsidence and erosion
5. Maintenance of catchments to provide high quality water resources for downstream users and users of coastal spaces (sea-bed, water, inter-tidal areas)
6. Maintenance of cultural values associated with land and water, including the relationship of Maori and their culture and traditions with their ancestral lands, water, sites, waahi tapu; and other taonga;
7. Maintenance of aesthetic, ecological and conservation values related to land and water.

SLUI is closely aligned and/or gives effect to each of these outcomes as follows:

- SLUI Whole Farm Business Plans (WFBP) are prepared for individual farms. The plans entail a detailed assessment of the farming system to identify opportunities for improving the environmental and economic outcomes of the property. This may include recommendations for retiring land from pastoral or other uses, changing the land use to a more sustainable system, or identify opportunities for sustainable intensification. (Outcomes 1 & 2).
- On-farm works programmes will centre on management of areas in accordance with the Land Use Capability Handbook produced as part of SLUI. This approach is designed to reduce erosion rates and sediment discharge to rivers. All properties receiving a WFBP also have nutrient use analysis completed (using Overseer or an equivalent) and nutrient loss reduction measures recommended, e.g. riparian retirement. Water quality (surface, ground water and coastal) and in-stream habitat values will improve in response to the reduction in sediment, nutrient and bacteria levels (Outcome 3).

- A comprehensive research and monitoring programme has been developed to refine /improve the tools, advice and techniques used, and to monitor the effectiveness of the programme and tools used in creating change (Outcome 3).
- It is anticipated that the reduction in slipping and slumping will contribute significantly to a reduction in impacts on the Region’s road and rail networks. With reduced debris entering waterways, the risks to in-stream structures such as bridges and water supply intakes will be reduced also. (Outcome 4)
- Reduced sedimentation rates within the Region’s flood and erosion control schemes will allow levels of flood protection provided by the Regional Council to lowland communities, property and infrastructure to be maintained for longer without the risk of failure or the need for expensive upgrade works (Outcome 4)
- SLUI is a “mountains to the sea” approach that gives effect to Horizons’ integrated catchment management (ICM) approach, as proposed in the One Plan (Horizons’ integrated suite of policies and rules that sets out how the environment will be managed into the future). This approach is based on defined water management zones within the Region’s catchments. Within these zones, the management of water quality, land management, water allocation, gravel allocation and river engineering are managed in accordance with the values associated with each particular waterway or zone. Improved water quality and reduced erosion will go a considerable way towards the protection of iwi-held values associated with whenua, awa and moana (Outcome 6).
- Reduced scarring of the hillsides and debris/sediment in waterways will improve the aesthetic qualities of these two significant landscape features (Outcome 7).
- Significant habitat areas (forest fragments, wetlands etc.) are identified and mapped as part of the WFBP process. Recommendations are made as to the protection and ongoing maintenance of these sites e.g. fencing and pest control. (Outcome 7).

Funding

After the establishment of the Government’s Sustainable Land Management (SLM) – Hill Country Erosion package Horizons were the first recipient of funding. Under this arrangement, Horizons have entered into a 1:1:1 funding arrangement between the Government, Horizons and landowners who request Whole Farm Business Plans. Horizons manages and administers SLUI, and reports back to Government on progress at regular intervals. Horizons sought a \$45 million contribution from Central Government over 10 years – either as a lump sum, regular payments, or payment on achievement of targets. To date the Government has funded the first four years of SLUI with a total \$5.7 million. This arrangement recognises the contribution of past government policies to hill country erosion, and the willingness of the regional community and landowners to contribute.

3. Project Planning

Effective project planning, resourcing, governance and evaluation culminated in endorsement of the 2006 SLUI Implementation Plan by the SLUI Advisory Group, Central Government and Horizons Regional Council.

The Development of SLUI

Shortly after the initial 2004 storm clean-up, community leaders met with Horizons to discuss the storm and its impacts on the Region. They resolved to develop a plan which would reduce the impact of similar future events. The Sustainable Land Use Initiative (SLUI) was born. SLUI recognises that to solve the water quality and lowland flood and siltation issues, the hill country erosion issue must be addressed; that is, a whole of catchment or “mountains to the sea” approach is required.

The Whole Farm Business Plan

The key tool we have chosen to use is the Whole Farm Business Plan, which highlights to farmers the environmental and financial implications of poor farming practices. This has been done in the context of a wider advice, education, financial assistance, and regulation package. The progress and success of SLUI will be tracked and assessed using monitoring and research programmes.

The WFBP process involves suitably trained catchment and farm business specialists working with landowners to:

- map the farm (land types, soils, vegetation cover and infrastructure);
- analyse the current farm business and processes;
- carry out an economic/environmental assessment to determine the ‘best’ farming practices in terms of environmental sustainability and economic return; and
- develop and roll out a programme of works to address erosion and other issues.

Implementation of WFBPs is supported through financial assistance (e.g. grants) and incentives (e.g. forestry grants) to offset the cost of the recommended works, while the wider SLUI programme is supported through advice, financial assistance, research, education and publicity, and tighter controls over hill country land use via the Proposed One Plan regulatory suite.

Targets

SLUI is now in its third year of implementation and has clear milestones set out as annual targets and 10-year targets relating to WFBP production and hill country land under sustainable management. The 10-year targets, as they appear in Horizons’ 2006-2016 LTCCP, are:

- 1500 farms with WFBPs
- 120,000 ha of highly erodible land under sustainable management

Some areas are eroding at a much greater rate than others. Such erosion “hot-spots” are contributing a disproportionate amount of sediment to the Region’s rivers. These hot-spots do not form a contiguous area, but rather appear as isolated areas scattered across the 1.5 million hectares of hill country.

Eroded land can take up to 100 years to regain pre-erosion fertility and production rates. It can take up to 30 years for 50 percent of pre-erosion production rates to be regained. Some soil types will never regain full productive potential.

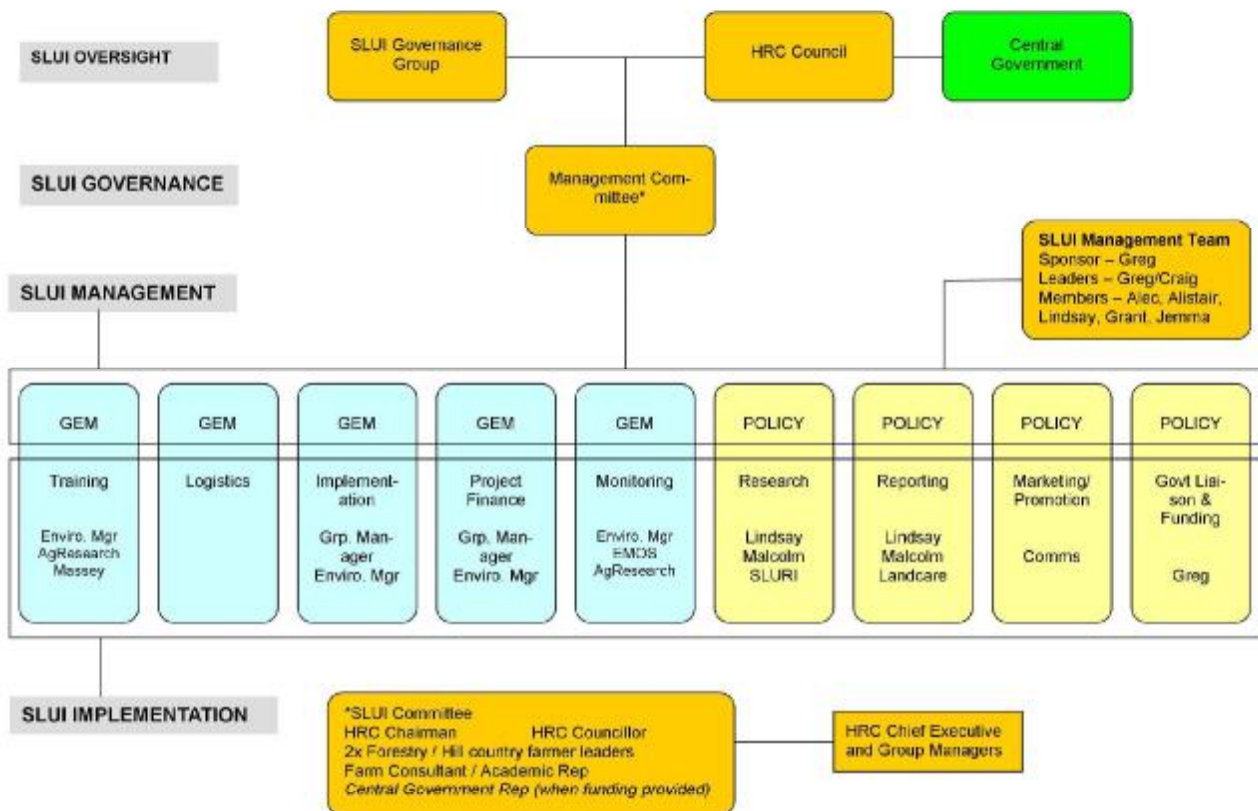
The area and proportion of highly erodible land within each of the major river catchments in the Region varies greatly:

Catchment	Catchment area (hectares)	Area of HEL (hectares)	Percentage of catchment that is HEL
Wanganui	712,185	95,000	13.4
Whangaehu	196,561	42,000	21.4
Turakina	96,606	26,808	27.7
Rangitikei	397,931	34,633	8.7
Manawatu	596,861	39,356	6.6
Region	2,220,890	273,527	12.3

When the SLUI targets are achieved, approximately half of the properties in the Region with highly erodible land will either have received, or will be operating under, a WFBP. These targets have been developed on the assumption that Central Government will be a 1:1:1 funding partner throughout the life of the project, with the Horizons Regional Council and landowners. The landowner share can be an in-kind contribution of labour, land retirement, or funds.

4. Project Management

An Advisory Group structure is in place to oversee progress on SLUI and offer ongoing support for the programme as it grows.



5. Relationship Management and Communication with Stakeholders

In the early stages and now during implementation, relationship management and communication with stakeholders has been vital.

Relationships and Support

As a programme, SLUI has a high level of support from the regional community (including financial backing), and the wider rural community through publicity e.g. Rural Delivery television programme. It is an initiative that has been developed to address the very real issue of hill country erosion and the consequent downstream social, economic and environmental impacts. It recognises that while the issue is occurring on a region-wide scale, the solution must be delivered at a property or paddock scale.

The initiative has been developed using the input of past soil conservation experience, the latest research, thinking, techniques and tools from Crown Research Institutes, and the experience and knowledge of farmers and key agencies. It is driven on the ground by agricultural sector experts and well-trained Horizons staff.

The SLUI programme is either aligned with, gives effect to, or is attempting to reduce the reliance on a range of Central Government initiatives (e.g. Climate Change Policy, Water Programme of Action, and Adverse Events Policy).

The region is committed to this project and proceeded with it, even without an undertaking of support from Central Government, in the initial phases.

6. Innovation and Originality

To fund its share, Horizons introduced a \$5 uniform annual charge per property in 2006-07. As SLUI has expanded, as explained in the LTCCP and implementation plan, this charge has increased to \$15 in 2007-08 and \$19.88 in 2008-09. In addition to these rated charges, any landowner receiving a WFBP is expected to make a considerable in-kind contribution (time, land, materials, funding) at least equivalent to the community share. The willingness of the entire regional community (105,000 ratepayers) to contribute to this programme is a significant innovation and recognises that no one is immune from the impacts of accelerated erosion.

The WFBP approach has resulted in innovative and original solutions to the problem at a paddock scale. The paddock-by-paddock approach in itself is of primary importance but the solutions agreed to date by affected landowners have been impressive.

New or original interventions include:

- 'Carbon farming' and
- Capital release joint venture forestry
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7. Evaluation Framework

Monitoring SLUI effectiveness

As part of its integrated catchment management approach and State of the Environment monitoring, Horizons has made a number of changes to its water quality monitoring programme. Water quality is now measured at flow recording sites in the Region's streams and rivers, to allow water quality-flow relationships to be developed. In terms of sediment loads, Horizons uses continuous turbidity sensors, where turbidity and flow are measured every 15 minutes. The information gathered from this monitoring has greatly increased the ability to determine sediment loadings and to calibrate sediment/flow models more accurately. This monitoring network can also be used to measure the overall impact of SLUI on water clarity and sedimentation.

Results

In a recently completed Envirolink-funded project, Landcare Research modelled the effectiveness of various erosion management scenarios in the Manawatu catchment. This study showed that the production and implementation of 500 WFBP on the highest priority properties will reduce the average sediment load in the Manawatu River by almost 50 percent (Schierlitz et al. 2006).

Table 1: Impact of different management options on average sediment load in the Manawatu River.

Management options	Average sediment discharge (millions of tonnes/year)	Percentage improvement compared to the do nothing option
1. Do nothing	3.8	0
2. 50 randomly selected whole farm plans	3.8	0
3. 500 randomly selected whole farm plans	3.5	8
4. 250 randomly selected whole farm plans plus 250 of the highest priority farms	2.4	37
5. 500 of the highest priority farms	2.0	47
6. All farms	1.5	60

8. Category Specific Criteria – Joined Up Local Government

The Sustainable Land Use Initiative is an effective solution to a significant regional and national issue:

1. It contains an appropriate selection or mix of educational, research, regulatory and financial tools;
2. It contributes to sustainable land management within specific catchments, recognising the physical, land use, community and infrastructure characteristics of each catchment;
3. It has financial backing from the community to indicate their support of the benefits of the proposal;
4. It has community and political support through incorporation of the outcomes and processes in regional council policy statements and the LTCCP;
5. It will produce the best outcomes when compared with alternative options; and
6. It is consistent with all the other Central Government policies and measures directly or indirectly affected by SLUI, for example, CDEM, Adverse Events.

SLUI has been developed with the input of current and past soil conservators, farmers, agricultural consultants, and scientists from a number of Crown Research Institutes and Massey University. The programme is based on combining the best available information about the regional land resource with the latest tools, techniques, and farm-specific information via a Whole Farm Business Plan, to present a clear, well-founded land-use change programme to landowners. This process involves landowners in a non-threatening way, and then offers a variety of incentives to make the recommended changes.

Research indicates that the techniques selected are best practice, and that not every area needs to be targeted. Instead, targeting the worst affected properties in each of the major catchments will have a significant impact on erosion, sediment discharges and other environmental/social impacts.

A variety of tools are used to engage with landowners and the wider community around SLUI, to encourage landowners to make the necessary changes, and to monitor effectiveness and revise techniques. In terms of engagement, a promotion and marketing component is ongoing to ensure media and community interest is maintained. In terms of education, SLUI makes use of Horizons' Green RIG – a mobile travelling classroom – to raise awareness of the erosion issue and its impacts among school children and community groups. Funding has been secured through the Central Government's Sustainable Management Fund to assist with development of the erosion module and its delivery.

Research and monitoring are critical to the success of SLUI in terms of development of new tools and techniques, refinement of existing tools, and assessing the effectiveness of the programme.

Through the Proposed One Plan, Horizons is proposing to introduce a more stringent regulatory regime with respect to vegetation clearance and soil disturbance in areas of highly erodible land. This is entirely consistent with the 'carrot and stick' approach adopted by Horizons in the Proposed One Plan. Most works undertaken in accordance with a WFBP will have permitted activity status.

A number of financial incentives are provided as part of SLUI. Central to these is the provision of WFBPs for landowners. Once the WFBP has been completed, the landowner becomes eligible for free advice, project management input, financial assistance, and rates relief to assist in implementing the plan's recommendations. In select circumstances Horizons may enter into joint venture forestry partnerships and land purchase negotiations with landowners. Horizons' is working with industry representatives to establish a carbon credits scheme in the Region.

SLUI is aligned with, gives effect to, or is attempting to reduce the Region's reliance on a number of operative or proposed government policies. For example, planting of trees, reduction in erosion, improved water quality, and reduced sedimentation and flooding of lowland communities are some of the key outcomes sought from the CDEM Policy, Climate Change Policy, Water Programme of Action, and Flood Risk Review Policy. Further, opportunities to create jobs, business opportunities and wealth through SLUI, combined with the increased resilience of the Region to future storm events, is closely aligned with the Government's Regional Economic Development objectives and the Adverse Events Policy.