



The “Mackenzie Model” of Solid Waste Management

INTRODUCTION

The Mackenzie District has embarked on exciting times, in the implementation of its Waste Management Strategy. The launching of its Zero Waste Strategy at the end of May 2002, has seen the district move from disposing of all refuse into landfills, to a comprehensive system encouraging waste separation at source, and resource recovery.

The Mackenzie District Council is one of many Council's in New Zealand to have adopted a “Zero Waste Strategy” with the focus on one clear goal – that of Zero Waste being disposed of to landfill by the year 2014.

UNIQUE ASPECTS OF THE MACKENZIE DISTRICT

The Mackenzie District Council comprises an area of some 746,000 hectares consisting of a large area of mountain ranges and basins in the centre of the South Island. The base population of the district is 4,000 permanent residents and 2,800 rateable properties. The Mackenzie District is the second smallest populated Council in New Zealand. For six months of the year, the population soars with tourist attractions such as Mount Cook National Park, Lake Tekapo and the opportunity to explore the challenging outdoors.

The District is truly a unique environment, and for these reasons, we needed equally unique systems for waste management, that were:

- Cost effective, and
- Tailored to the small communities and their needs, while still delivering on basic waste minimisation goals.

MODELLING OF WASTE MANAGEMENT OPTIONS

When the Mackenzie District Council (MDC) started its final planning to implement its Waste Management Plan, Council spent time running financial models, to assess its options and the financial impact of each option. Each option was also compared to how well it would deliver on

the goals in the Waste Management Plan, i.e. for each option, what would be the maximum waste that could be diverted from disposal to a landfill.

The outcome of this planning was to see MDC implement new waste management systems, including:

- A new 3-bag Kerbside Collection system for household residents
- The construction and in-house operation of three new Resource Recovery Parks (RRP's)
- A comprehensive education programme
- The use of a Vertical Composting Unit (VCU) to process organic materials
- Financial incentives to separate waste
- Residual waste transported and disposed of at Redruth landfill

THE NEW SOLID WASTE MANAGEMENT SYSTEMS – A TEAM APPROACH

Once the planning had been completed, we had to “make it happen”. To do this, a new team was formed and included: Stan Scoringe (Mayor); John O’Neill (Chairman of the Operations Committee); Justin Riley (Chief Executive Officer); Rachael Harrison (Waste Implementation Manager); Ray Smith (RRP Project Manager) and two newly employed staff Geoff Hemm and Andy Carpenter (Solid Waste Supervisors). We also involved Sheryl Stivens from Waste Busters to help us through some of the decisions and the development of our Education Programme.

The new team met on a regular basis (usually weekly). The first meeting involved identifying the key tasks to be delivered, their priorities, and who was the person with the necessary skills to deliver each task. Each meeting involved discussing the issues and making decisions on how to proceed further; reporting back to the group on particular tasks; and ensuring we were on target to meet the overall deadline of commissioning the new waste management systems.

The group worked extremely well together, with the sharing of ideas and views, and pulled together the resources to ensure deadlines were met.

Overall, the project required a significant investment in resources to plan and implement the new waste systems.

The New Solid Waste Management Systems:

3 Bag Kerbside Collection System

The new residential collection system is an important part of the new waste management systems. It allows residents to separate waste into three main categories (organic, recyclable and residual), and have it picked up from the kerbside every Monday morning. A clear bag is used for recyclables, a green bag for compostables, and a black bag for residual. The green and black bags are the same size, and the clear bag is twice the size of the green and black bags. The

collection contractors then pick up three colours of bags, keep them separated on the trucks, and drop off at the appropriate spots around the RRP's. The RRP operators then sort the recyclables into wool packs ready for pressing.

Resource Recovery Parks

Council has constructed an RRP at each of the main townships of Fairlie, Lake Tekapo and Twizel. The design of these parks requires visitors to drive past all of the separated waste areas, before lastly reaching the residual skips. There are no tip over walls at any of the parks. The staff at the parks are employed by Council, and are the front people encouraging all visitors to get involved in the separation of their waste. With bringing the operation of the parks in-house, we have been able to choose the right people for the job; that carried our message to the people; as well as providing Council the feedback on how the new systems were operating.

Education Programme

Council recognised that educating the public would be paramount to the success of any waste systems. For the Education Programme, we looked to Sheryl Stivens from Waste Busters in Ashburton. Sheryl and her team at WasteBusters were a valuable source of information, inspiration, and sharing their ideas and practical knowledge on how to make it work. Sheryl developed a programme for the Mackenzie District, and interviewed on our behalf, for the education officers. Council now has a contract with a local organisation, which employs two education officers with the necessary skills and personality to go out and sell our systems for us.

The Processing of Organic Materials

The organic material in the waste stream had been estimated at around 47% of the total waste stream. The receipt of organic waste is seasonal, with 6 months of the year being the tourism influx, and large amounts of kitchen waste requiring processing in a short space of time.

Council chose the Vertical Composting Unit developed by VCU Technology Ltd to process the large volumes of putrescible and green waste, into a valuable resource - compost. The VCU was installed at the Twizel RRP, as it is central to the major producers of kitchen waste. The collection and transport of putrescibles from Fairlie and Tekapo to the Twizel RRP has been built into the contractors round trip to pick up and transport residual waste to Redruth landfill. The truck picks up putrescibles from Fairlie and Tekapo on the way to Twizel, drops the putrescibles off, and picks up residual waste on the way out of the district.

Financial Incentives to Separate Waste

A new charging regime has been put in place, to provide incentives for the public to separate their waste at source, and encourage waste minimisation practices.

The collection of the 3-bags from the kerbside is charged for by a separate rate, and each household received an introductory number of 30 of each of the 3 new bags. Once these bags have been used, it will cost the residents \$0.25 for each clear (recycling) bag, \$0.50 for each green (compostable) bag, and \$1.00 for each black (residual waste) bag. Gate charges at the RRP's also reflect the difference between each type of material, and the cost to dispose.

Publicity Campaign – How We Introduced the New Systems to the Ratepayers

While we announced important decisions in the media, such as the resolution to purchase the VCU, and various updates put out to the residents, the main part of the publicity did not take place until we were far enough through the implementation, to know the specifics of the systems.

Once we had set our final dates for the opening of the RRP's, the new system of Kerbside collection, and the gate charges, we set about developing a new "No Time to Waste" brochure. To do this, we asked Waste Busters to carry out the publicity campaign on our behalf. The "No Time to Waste" brochure was developed first. The remainder of the publicity campaign was driven through the radio stations, the papers and also filming and developing educational videos of our new systems; putting our message out to the public in a user friendly way.