



Centre for
Organic &
Resource
Enterprises

PLAN TO

DEPARTMENT OF ENVIRONMENT
AND CONSERVATION (DEC)

Increasing Market Demand for
Stormwater Treatment Products
Containing Recycled Organics:

Market Research Proposal

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1. Introduction

1.1. Background

“ Unless we increase the market for organic products we just end up back in the cycle of stockpiling large quantities of recycled organics. A key challenge over the next ten years is, as much as anything, growing markets for organics....”

Tim Rogers, cited in WMAA News, 2003, p4.

As a result of the recycled organics stockpiling situation in NSW and the need to develop leading edge stormwater treatment systems, CORE is conducting a grant project in collaboration with Resource NSW (now part of the Department of Environment and Conservation (DEC)) entitled:

“Increasing Market Demand for Stormwater Treatment Products Containing Recycled Organics”.

This project is designed to research, develop, evaluate and enhance the use of filtration media for stormwater treatment containing recycled organic materials in combination with a range of other inputs. The project has two major dimensions: a technical research aspect; and a market research aspect. This research proposal, details the plan for the market research component.

1.2. Key Issues

The Organics Expert Reference Group established by the NSW EPA in 2001 (Recycled Organics Unit (2002) identified market potential for recycled organics products in stormwater applications as one of the highest potential market sectors in terms of environmental benefit and demand volume (80,000 to 100,000 cubic metres per annum). The outcomes of this project are designed to realise this market demand.

However, the report also identifies the main obstacles hampering the achievement of the potential demand:

- The absence of a performance-based product standard to increase user confidence and enable appropriate product selection and specification;



- The absence of cost/benefit data relating both to installations and ongoing maintenance (including the need for information on call back period for replacement of media); and
- The absence of documented design guidelines for installations.

Additionally, there is a general lack of awareness outside the core organisations regarding the nature of stormwater and the range of possible Stormwater Treatment Measures (STM's). Where organic filtration treatment options are known about, there is a distinct lack of knowledge regarding their efficacy and longevity.

The knowledge and perceptions of the key stakeholder groups of Local Government stormwater managers (who often decide upon the STM to be used) and engineers (who design and install systems) need to be addressed so these products will be used more widely. Inevitably, these groups require evidence and guarantees that the STM will be successful. In other words, the perceived risk involved must be removed and any real risks identified. The technical research deals with the scientific efficacy and longevity issues, but this market research will determine the performance and cost expectations and requirements of users so products and marketing can be targeted to meet their needs.

The market research will also incorporate not only actual economic issues (such as product costs, maintenance requirements, replacement periods and so on), but also social and environmental parameters. For example, the installation of an STM using enviro-media may relate to factors such as:

Table 1 – Initial Key Environmental and Social Issues

| Environmental | Social |
|--|--|
| The ability to permanently remove certain types of contaminants | The perception of using recycled “waste” to treat stormwater |
| The proximity of the site to residential areas, waterways or other areas of environmental/ social importance | |
| The longevity of the environmental performance | The perceived costs |
| The effects of the organic media on water quality such as Biological Oxygen Demand (BOD) | The best perceived/ most favoured STM method by certain sectors of the community |



Finally, since the regulation of stormwater quality is in its infancy, there appear to be opportunities to shape future policy requirements. Currently, few Councils have specified treatment requirements and where they are available they tend to be in percentage reduction terms. This says little about the overall quality of the Stormwater and CORE believes that absolute contaminant limits would be preferable for the environment. CORE believes that the dissemination of the technical research results within the market research (and the associated likely increase in the use of recycled organic filtration systems), may be able to lead towards setting these absolute contaminants thresholds in stormwater. These limits could be based on the known performance abilities of the enviro-media as well as other systems where available.

2. Developing this Market Research Plan

CORE drafted an initial market research plan and technical research plan based on the grant proposal submitted to the DEC. The grant proposal was prepared based on a range of stakeholder consultation.

The draft plans were emailed to a range of stakeholders for feedback who had been consulted regarding the initial preparation of the draft plan. The stakeholders involved in the draft document review as well as their comments are shown within Appendix 1.

3. Research Plan

3.1. Purpose

The purpose of this marketing aspect of the project is to stimulate demand for stormwater treatment products containing recycled organics. While opportunities exist to improve the treatment of stormwater using this material, the demand potential for the products is still significantly unrealised.

The key result from the work will be the creation of marketing kits that can be used collaboratively by the DEC, product manufacturers and stormwater management organisations to actively disseminate and promote the information to key decision-makers through marketing programs including direct distribution, workshops, conferences, web-sites and field days attended by the



target decision makers. These marketing kits will contain a range of market and technical information including fact sheets, case studies, excerpts from previously published studies, editorials and other materials.

3.2. Objectives

The key objectives of this marketing aspect of the project are to:

- Identify the existing products used.
- Identify water quality requirements for the range of suitable end-use applications.
- Identify indicative total product demand if all possible users purchased the products and the total realistic market demand potential for the finished stormwater products and the recycled organics input component.
- Identify and interpret known and unknown market barriers and sensitivities that are inhibiting market uptake.
- Identify and assess marketing factors and the competitive environment.
- Identify marketing channels and structures.
- Identify a field site for a new enviro-media installation to conduct long-term technical efficacy and longevity studies (not part of the grant project, but a future follow-on objective).

3.3. Research Questions

A range of research questions has been developed from information and feedback provided by the key stakeholders (as detailed in Section 2). The following research questions have been designed to identify the market profiles for enviro-media:

- What is the estimated current total market demand for each of the markets?
- What is the estimated existing and potential market demand for each of the markets?
- What are the barriers and sensitivities (environmental, social and economic) within the market and how are these presently inhibiting market uptake?
- What are the main marketing factors?
- Who comprise the potential markets?
- What are the existing applicable policy framework including legislation and regulation?



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- What are the applicable product types for identified target markets based on the product type, composition and specifications of each existing and potential user?
 - What is the market value of enviro-media versus alternatives and the cost-benefits for users?
 - What are the competitive profiles?
 - What are the key potential market types?
 - Where are the key potential markets located?
 - What are the long-term prospects for the products?

3.4. Research Users and Stakeholders

The marketing kits will be made available for key stakeholder use. Information regarding this and other materials will be disseminated by media releases through publications and presentations at seminars and conferences (see Section 4.4).

The primary target audiences for use of the results are stormwater managers and engineers throughout NSW. In particular, within this group, Local Council stormwater managers and the Roads and Traffic Authority (RTA) stormwater personnel appear to be key users as they are often the decision makers for authorising the use of the products in the primary target markets of road and sports field applications.

Additionally, CORE has existing relationships or is developing relationships with key industry organisations including:

- Stormwater Industry Association;
- Water Sensitive Urban Design in Sydney (including Sydney Coastal Councils Group (SCCG), Western Sydney Regional Organisation of Councils (WSROC) and the Upper Parramatta River Catchment Trust (UPRCT));
- Institute of Public Works Engineers Australia; and
- Institution of Engineers Australia (IEAUST).

These industry organisations are key influencers on the type of STM's used and affect the types of feedback and knowledge passed on to users regarding the performance and successes of STM's adopted.



Other potential stakeholder users of the project include:

- The technical researchers and experts (including representatives from the University of Technology, Sydney (UTS) and the Recycled Organics Unit (ROU) at the University of New South Wales (UNSW));
- Non-Government interest groups (including Coastal Council of NSW and Coastcare); and
- The present and future manufacturers of the products.

Section 4.3 (Data Collection) details how each of these stakeholder groups will be involved within the market research study. The sample plan of exact contacts within each of these stakeholder groups for each data collection method (structured survey, interview, focus group and so on) will be submitted subsequently to this market research plan.

4. Research Design

4.1. Approach

Besides on-going reporting and administration, a six-stage approach has been adopted for this market aspect of the project:

Table 2 – Six Stage Research Design Approach

| Component | Timeframe |
|--|------------------|
| 1.1. Research design | 1-4 |
| 1.2. Develop Sampling Plan | 5-7 |
| 1.3. Develop Survey Instruments | 4-7 |
| 1.4. Conduct Research | 8-16 |
| 1.5. Analysis | 16-18 |
| 1.6. Draft and Final Report and Administration | 18-20 |



4.2. Boundaries

4.2.1. Product Category

Broadly, there is only one product category to be analysed within this project, stormwater treatment products containing recycled organics. For the purpose of the market research study, enviro-media is described as:

“a high performance engineered infiltration treatment medium containing either selected organic matter or a blend of organics, minerals, specialised aggregates, soil and scientifically developed proprietary ingredients using physical filtration, chemical binding and biological remediation of contaminants to purify stormwater”.

4.2.2. Geographical Scope

The scope of the research will be focused upon NSW-wide markets. The greatest product use will likely be in those areas of intense human settlement to treat road, sports field and potentially industrial run-off. Although, there may also be some use in rural areas to treat agricultural and acid site run-off (particularly Acid Mine Drainage (AMD) and to deal with real and potential acid sulphate soils).

4.2.3. Timeframe

The duration of the market study dimension of the project will be approximately 20 weeks. Starting from the date of the recent final sign-off from the DEC, this component of the project is therefore due to be completed by 21 April 2003.

4.2.4. Sample Plan

It is proposed to develop the sample plan based on the key stakeholders from the following primary and secondary product applications. This market classification is based on the current designed uses of the products (primary applications) and future potential applications (secondary applications).



Table 3 – Primary and Secondary Product Uses

| Primary Applications | Secondary Applications |
|--|-------------------------------|
| ▪ Pavement (Structural and Non-structural) | ▪ Agricultural |
| ▪ Sports Field and Golf Courses | ▪ Acid Site Drainage |
| ▪ Landscape Garden | ▪ Industrial |
| ▪ Retaining Wall | |
| ▪ Roof Garden | |
| ▪ Planter Box | |
| ▪ Race Track | |
| ▪ Leach Drain | |

The key stakeholders will comprise a mixture of:

- a) Industry organisations (including the Stormwater Industry Association; Water Sensitive Urban Design in Sydney, Institute of Public Works Engineers Australia; and Institution of Engineers Australia (IEAUST));
- b) Technical experts (primarily representatives of the product manufacturers and research organisations such as the Faculty of Engineering at the University of Technology, Sydney (UTS) and the Recycled Organics Unit (ROU));
- c) State Government Authorities (including Department of Environment and Conservation (DEC), NSW Agriculture, RTA and Department of Mineral Resources, NSW);
- d) Non-Government interest groups (including Coastal Council of NSW and Coastcare).
- e) Local Government Stormwater Managers (based in each NSW Council); and
- f) Private sector engineering/ development/ construction/ landscaping companies as those who may require/ install the systems.

4.3. Data Collection Method

It is proposed to use a combination of qualitative and quantitative data collection methods in order to answer the research questions. Qualitative mechanisms can be utilised up front in order to provide a guide to the most suitable questions and coding frames for quantitative research that will be applied to a larger sample frame.



The qualitative mechanisms will revolve around interviews, a bus trip, and focus groups with key expert stakeholders to frame the key issues. CORE is currently determining the participant list for the qualitative research from the key stakeholder groups (a – d) listed in section 3.2.4.

The quantitative research methods will encompass structured questionnaires followed by some open-ended questions to allow the broader sample frame some qualitative input. The sample frame for these questionnaires will encompass the key stakeholder groups (e - f).

4.4. Information Dissemination

In order to allow the results of the study to be used by as many stakeholders as possible, the results of the study will be disseminated in the following ways:

- CORE will send out a summary of the results of the marketing and technical research to all stakeholders (although the optimal method will be identified during the research).
- CORE may make some material available on the internet based on stakeholder recommendations.
- CORE will make the marketing kits available to all stakeholders who are interested.
- CORE will submit an abstract for the both the marketing and technical aspects of the research to the WSUD 2004 Conference: Cities as Catchments, the International Conference on Water Sensitive Urban Design to be held on 21 to 25 November 2004 at the Hilton Hotel in Adelaide.
- CORE will conduct a bus trip for the purposes of stakeholder education as well as to conduct further market research.
- CORE will also include relevant information in its regular feature section in Waste Management and Environment (WME) Magazine.
- UTS will write a publication(s) on the technical findings.

Due acknowledgement of the Government's contribution will always be provided in the form required by the Deed of Grant.



5. Results

The results of this marketing project will be presented in the following ways:

- A list of current competitive products;
- An assessment of quality requirements;
- Charts of indicative total product demand and total realistic market potential in each application;
- A table and analysis of known and unknown market barriers and sensitivities that are inhibiting market uptake;
- An assessment of marketing factors and the competitive environment;
- A database of marketing channels and structures; and
- Marketing kits for key stakeholder use to enhance product penetration into markets.

These results are designed to enable a detailed understanding of the market for the key stakeholders to develop strategic marketing mixes. Typically a marketing mix is comprised of a composition of the standard marketing variables shown in Table 4 to maximise product penetration into the marketplace.

Table 4 – The Marketing Variables

| Product/ Customer Value | Price/ Cost to the Customer | Place/ Convenience for the Buyer | Promotion/ Communication |
|--------------------------------|------------------------------------|---|---------------------------------|
| Technical Specifications | List Price | Channels | Advertising |
| Quality | Discounts | Coverage | Personal Selling |
| Features and Style | Allowances | Locations | Sales Promotion |
| Development Options | Payment Method | Inventory | Publicity |
| Alternatives | Credit Terms | Transport | Budget size |
| Brand Name | Competitor's Prices | | Public Relations |
| Packaging | Profit Margins | | Merchandising Displays |
| Sizes | | | Trade Fairs |
| Services | | | Visits to Customers |
| Warranties and Returns | | | Sponsorship |

However, in addition to these standard economic marketing variables, as Section 2 illustrated for this product there are many social and environmental marketing factors to be considered that influence the decision-making process. These issues involve social and environmental judgements, ethics and personal values rather than simply economic rationality. This highlights the



importance of the of the stakeholder involvement and engagement as well as education regarding the benefits of these products within the tri-partite nature of ESD (social, environmental and economic).

Additionally, the policy and legal framework is also an essential aspect to be considered within the marketing mixes in two key ways: the use of a recycled material in the environment (in terms of the perceptions involved with waste); and the treatment of polluted water using organics or otherwise to an improved standard. An understanding of these issues within the marketing kits will allow a greater ability for larger volumes of these products to be placed.

References

Recycled Organics Unit (2002). *Recycled Organics Products in Stormwater Treatment Applications*. Project Report for Resource NSW. Printed by the Recycled Organics Unit, The University of New South Wales, Sydney.

WMAA (Waste Management Association of Australia) News, (2003), "Thinking Big in NSW", *Newsletter of the Waste Management Association of Australia*, Winter 2003, pp4-5.