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Final report : Bellevue sustainable industry project

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Final Report

Bellevue Sustainable Industry Project

Small & Medium Enterprise Research Centre
Edith Cowan University

and

The Swan Catchment Council

August 2007

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Dr Janice Redmond
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Project Summary

This report is the result of a grant from the WA Waste Management Board's Waste Management and Recycling Fund to investigate the attitudes and practices of Bellevue^a business owner-managers to environmental issues and waste management since 2005. In 2005 data was collected to provide baseline information of the level of business interest in the environment and waste management practices in the Bellevue industrial area. After the analysis of that data was reported, an intervention program was implemented by the Swan Catchment Council. The intervention program included the following:

- Advice provided directly to the businesses on waste reduction strategies;
- The creation of a steering group with membership comprising of local small business owner-managers and SCC staff to monitor the progress of the project;
- The development and distribution of a regular newsletter to disseminate information about the project;
- The development and delivery of information fact sheets directly to the small businesses regarding pollution control and waste management;
- Links established between businesses and the waste recycling contractors;
- A communal cardboard and paper bin trial;
- A survey of waste management companies to ascertain their views on small business engagement in waste collection and reduction;
- The development of case studies;
- Lobbying of local government for allocation of more recycling bins and improvements to the local area, as suggested by the business residents.

The 2007 data replicates and extends the 2005 survey in order to gain comparative data after the intervention by Swan Catchment Council staff. The results of the second survey were used both for the comparative data analysis and to inform the Swan Catchment Council of opportunities for future engagement with the small and medium enterprise sector. This report focuses on the 2007 data, and makes comparisons where possible with the 2005 data.

^a Bellevue is a discrete industrial area in the Eastern suburbs of Metropolitan Perth.

The 2007 survey was taken to the original 120 businesses^b surveyed in 2005 and 85 responded^c, giving a response rate of 71%, which was less in percentage terms than the 2005 survey, but gives sufficient data in order to be representative. Twenty four of the original 120 businesses surveyed in 2005 have left the Bellevue area and the results must be read in the context of this change. Key topics covered in the 2007 survey were:

- basic business information,
- the business owner's attitudes to the environment,
- volume and type of waste produced by the business operation, and
- the disposal methods used for each of those products.

The results of the 2007 survey demonstrate that a greater percentage of the businesses in the area are now in owned rather than leased premises whereas previously an even split existed. Demographic changes in this sample include an increase in the age of the population of business owners. This age population shift was in line with the general trend in Australia. In relation to the business category, strongest growth was seen in motor vehicle servicing. The majority of businesses were still small businesses, that is, they employ less than 20 staff. Business expectations were still very positive, with 94% of all business expecting to stay in the area and 11% expecting to move into larger premises. Importantly, more of the businesses surveyed employ over 5 staff and this, with the increase in business premises owned, indicates that the businesses are not only becoming more stable but are also experiencing growth.

One of the key purposes of this project was to create interest and raise awareness in environmental issues among small businesses and the results support that this has been achieved. The 2007 survey has demonstrated that over the previous 18 months 61% of those surveyed have increased their level of interest in the environment. Nearly three quarters of the sample (71%) reported that the instigation and activity generated by the Bellevue Project had been the main reason for the increased interest. This was a significant result. Moreover, 52% have indicated that they are interested in more information on waste reduction and recycling and 29% are interested in having free energy and water assessments. These results indicate willingness by a reasonable

^b There were 120 businesses involved in the 2005 survey at 86% response rate.

^c 76 of these businesses took part in both the 2005 and 2007 surveys.

number of the businesses to continue to improve their environmental performance and participate in environmental management practices, when support is provided to do so.

Exploring the recycling behaviour in Bellevue by determining the type, volume and disposal methods for waste was another key purpose of this project. The volume of waste produced weekly in this industrial area has changed. Steel, oil, radiator coolant and cardboard volumes have reduced considerably. While overall, plastic and tyre volumes have increased. However, as was the case in 2005 the major waste products in Bellevue remain: steel, oil, cardboard and plastics. In the last 12 months 20% of the businesses have used a new or different recycling contractor and some of this change has been attributed to the positive impact that the intervention and advice given by Swan Catchment Council staff has had in the area. However, 33% of owner-managers still state that they need help to find appropriate recyclers particularly for specific waste items, and 16% want assistance to obtain additional bins.

The amount of waste disposal to landfill occurring within Bellevue was still relative to the type of waste, availability of recycling contractors and income to the business for the collected waste. For example, only 2% of steel goes to landfill compared with 12% of other metals and up to 100% of other materials. The reason for the high level of steel recycling is that a lot of waste steel is produced in Bellevue making it viable for contractors to collect and as a highly valued commodity there is a market for recycled steel.

Large quantities of other items such as plastics (up to 50%) and paper and cardboard (22%) that do not have the same value as a commodity such as steel, are still being sent to landfill rather than being recycled. Where a recycling cost was high, landfill was often the selected disposal method. As an example, wood usually cost the business to recycle and at best returned a neutral benefit, therefore was most often disposed of to landfill rather than recycled. Similarly, tyres are most often put to landfill (57%) and with a forty percent growth in the volume of tyres in the area this could have become a critical issue. In the future, as a consequence of the State Government's announcement of a total ban on dumping used tyres to landfill in Perth and larger regional centres by 2011¹ should see the practice of sending tyres to landfill change. Additional legislation will also assist here, as from January 2008; all tyres that are not recycled must be

compacted into tight bales and placed in monofills. In this instance, Government legislation will force action by business. However, as a general rule it is expected that the trend to use landfill will persist if businesses continue to think about waste disposal based upon their calculation of potential return on investment, in effect putting the business bottom line before anything else.

In 2007 the owner-managers were asked what, if any, positive and negative environmental impacts their business had and whether they saw these impacts as having a low, medium or high level of impact on the environment. Positive impacts were cited by 38% of the businesses and included recycling (58%) and the provision of environmentally friendly products or services (24%). Most business owner-managers saw these positive impacts as having a medium impact on the environment (39%). Negative impacts were cited by 39% of the business owner-managers and included production of waste (39%), pollution (27%) and energy and fuel use (21%). Most businesses saw these negative impacts as having a low environmental impact (73%). It was interesting that the owner-managers rated positive environmental practices as having greater impact overall than their equally negative environmental practices.

Additional 2007 questions reviewed business activities that produced wastewater and the details of treatment and disposal practices of this water. Of those that had wastewater (42%), its most common origin was from parts/equipment washing (68%). Forty eight percent of these businesses did not treat wastewater before disposal. When wastewater was treated the most common methods were below ground Petrol & Oil or sediment traps. Wastewater disposal methods in the area included: licensed contractors, the open ground and stormwater drains. Considering the high risk of mismanagement of wastewater its production, treatment and disposal needs further exploration so that specific information can be developed to improve businesses environmental performance regarding this resource.

An assessment of the level of energy and water efficiency awareness and activity was another addition in the 2007 survey. In regard to energy, most business owners kept a check on energy costs (70%) rather than energy use (33%), again emphasising the short term nature of business interests. This is because it is very easy to review costs, as energy bills require regular payments. Some business owners were able to articulate

ways to use energy efficiently and had some measures in place to do this. In regard to water, again the focus was on monitoring costs (40%) but there was less knowledge about water efficiency. This indicates that greater attention is required to assist businesses to be water efficient as well as energy efficient. Assistance is therefore needed in both areas to encourage businesses to monitor their usage rather than wait until they have to pay for any increase.

The 2007 results again show that the critical local environmental issue for most Bellevue businesses was the odours and smells that pervade the area. In 2007 installation of sewerage in the area was now seen as the highest priority (31%) rather than the need for aesthetic improvements. As improvements in major infrastructure, such as sewerage, are long term undertakings, it was acknowledged that ongoing advocacy for the changes to be considered are being made by the Swan Catchment Council to the City of Swan and other stakeholders, such as the Water Corporation.

As was the case in 2005, there was willingness from businesses to participate in this study and to look to employ better environmental business practices. This was reflected in the good response rates achieved in the surveys, interest in the project, increased use of recycling contractors, the number of businesses that have expressed an interest in obtaining more information and having assessments completed on their businesses. However the majority of the business owner-managers still rate Bellevue as an environmentally poor industrial area, demonstrating that there are still major issues to overcome and improvements to be made.

On a more positive note, during the life of the project closer relationships have been developed between businesses and recycling contractors and it is hoped that these will be on-going. These relationships have helped encourage participation and co-operation to bring about improved waste management practices in the area. To further this aim the Swan Catchment Council conducted a waste recycler's survey to establish the views and business practices of recyclers with regard to small and medium enterprise. A copy of the report is provided at Appendix B. In addition, in response to the preferences of the businesses to obtain information via written communication (rather than electronically), a newsletter was regularly published and distributed directly to businesses. This newsletter should continue to be well received by the businesses as

the 2007 results have verified that a newsletter remains their preferred method of receiving business and environmental management related information.

Many previous studies suggest that small and medium enterprise owner-managers were unable to articulate their business impacts on the environment, but this study shows that many of the Bellevue businesses were able to provide tangible examples of the impact their businesses has on the environment. This was important as it demonstrates an increasing awareness and understanding of what constitutes a business impact on the environment. With increased overall awareness and understanding, the opportunity exists to help businesses that are interested in their environmental impact, to continue to improve their environmental performance.

In an ideal world all businesses would be interested in decreasing any negative environmental impact, however the reality is that this is not always the case. The bottom line is the most pervasive and persuasive argument for many businesses. As is often the case with any behavioural change, small incremental steps are very important and if 'converts' can be found, then they can be turned into 'champions'. Bellevue is an excellent area to continue this work in, given its small size and proximity to complementary businesses, and the willingness within the business community to improve their environmental performances.

The 2007 results are an overview of waste management activities by businesses in the Bellevue industrial area and show a developing awareness of the impact of their business on the environment. The level of awareness has increased since the commencement of this project and this is largely due to the positive interaction between the Swan Catchment Council's staff and the local participating businesses. The SCC staff are to be congratulated on their dedication and commitment to the project. This project design has been extended into other Perth metropolitan areas and will continue to nurture small and medium enterprise engagement in regards to better environmental management practices, albeit in the short-term. A holistic whole of government, long term strategic plan is needed in order to continue this work. There are simply too many small businesses globally to continue to ignore their impact on the environment which is estimated to be 70% of all pollution^{5,6}.

Key Findings

In 2007 the majority (93%) of the businesses surveyed in Bellevue are independently owned small businesses. As would be expected in a dedicated industrial area, most of the businesses are classified light manufacturing or engaged in supplying services. Some key findings are as follows:

- Both the percentage of owned (rather than leased) business premises and those employing over 5 staff have risen over the previous 18 months, indicating that stability and growth is occurring in the area.
- The majority (61%) of those surveyed have increased their interest in environmental issues over the last 18 months and 71% of them advised that the reason for this increase was the actual project (the Bellevue Sustainable Industry Project) being undertaken, and the positive interaction between the businesses and the Swan Catchment Council staff.
- Although there was variation in the volume of waste produced in the area since the previous survey, the key types of waste produced have remained the same and are steel, oil, plastic and cardboard and paper.
- Landfill continues to be the predominant waste disposal method, even when other options are available, therefore more needs to be done to ensure that this practice is restricted as far as possible.
- Recycling behaviour was still relative to return on investment. That is, those items that have a market value, such as steel, are more likely to be recycled than those that do not, such as generic plastic, particularly where a business cost is incurred.
- The major reason for not recycling was the perception that the quantities the businesses have are too small to warrant any interest from a recycler.

- Owner-managers that acknowledged that their business had a positive impact on the environment (38%) were able to explain these impacts. Further, 42% have suggested that the positive impacts from their business operations have increased over the last 12 months.
- Owner-managers that acknowledged that their business had a negative impact on the environment (39%) were able to explain these impacts. Only 12% stated that they had increased the negative impacts from their business operations in the last 12 months.
- 48% of businesses producing wastewater in Bellevue did not treat this wastewater before disposal.
- The top priority for improvement in the area was installation of sewerage.
- The top environmental issue in Bellevue remains the same, the odours and smells that pervade the area.
- Only a few of the owner-managers monitor business energy and water output (33% and 21% respectively). Owner-managers had more knowledge about energy than water efficiency and they had implemented more measures to benefit from energy efficiency rather than water efficiency.
- The owner-managers suggest that the best method to minimise environmental harm from business is through education via awareness raising and dissemination of relevant information. This finding needs to be seen in conjunction with the issue of business costs and the fact that the majority of businesses are interested in their bottom line first, and the environment second.

Issues and Opportunities

Since the 2005 Bellevue Sustainable Industry Project Survey staff at Swan Catchment Council have been a visible presence in the area and have built positive relationships with local businesses, recycling contractors, agencies and organisations. The 2007 survey highlighted both positive and negative issues that effect waste management in businesses in Bellevue. Importantly, many of the businesses that took part in both surveys will continue to operate in Bellevue and therefore provide an avenue for on-going consultation. Other key stakeholders in the area have used the findings from the Bellevue project as a catalyst to develop other projects. For example, the Swan Chamber of Commerce has launched a new 'Sustainability for SMEs' project which will also continue to create further interest within the broader Swan area.

Continuing to work with small businesses and other stakeholders provides the opportunity of ensuring that solutions to problems in Bellevue (and any other industrial area) are driven from the businesses, and therefore specific to the areas needs. A holistic whole of government long term strategic plan is therefore needed in order to continue this work. Environmental management for SMEs needs to be on all governments agendas and should be seen as an issue too important to be simply an election promise. This means continuing to emphasise the issue of the size of the SME sector and therefore its environmental impact.

The most important message from both surveys has been the overwhelming support for this project, with businesses having increased their interest in the environment through participation and many had indicated a desire for more information on how to improve their businesses environmental performance. Not only do these results support replication of the intervention but also offer the opportunity to extend the project through more awareness raising programs. This information can be offered to the businesses either through a newsletter, in a series of short workshops or on-line. Gaps in the owner-managers knowledge that had been highlighted, such as water efficiency and wastewater management, should be the key targets for the increased education. In order to do this, all relevant stakeholders need to be involved, such as Office of Energy, the Water Corporation, Western Power, relevant State agencies and local government.

Some small businesses are more proactive than others in their participation in implementing environmental management practices. Businesses that are doing the 'right thing' should be encouraged to share this information, one avenue being the Swan Catchment Council's newsletter. It may also be timely to develop an environmental award in the area for a small business that demonstrates proactive environmental behaviour. Good environmental businesses could also be canvassed to see if they would consider mentoring other local businesses to help them become more actively involved in implementing positive environmental practices.

The difficulties experienced by businesses with recycling small quantities of material was a re-occurring issue, more so than in the 2005 survey, highlighting a pressing need to address the issue. The use of 240 litre recycle bins that are provided by the City of Swan are considered a key strategy to collect small volumes of recyclable material. The Swan Catchment Council provided some links between the businesses and the City to provide these to the businesses. However, it became apparent during the project that those owner-managers that lease business premises are not able to request additional bins, only the property owner. This issue is seen as a key barrier to recycling small amounts of waste material and it is recommended that the legislation and policies which create this barrier are reviewed.

In an immediate response to the current situation the Swan Catchment Council implemented a strategy to offer 3 communal paper and cardboard recycling bins over a three month period and this had some success. However, despite considerable effort to create awareness among the businesses that the communal bins were available for use, many owner-managers reported that they were not aware of their existence. This strategy is worthy of a longer trial and may be useful with other key items such as plastics, but a higher level of resources will need to be allocated to increase publicity regarding the existence and location of the communal bins. An option to address this issue could be a partnership with key stakeholders such as the recyclers and the City of Swan. This is a particularly important strategy given that there is a large volume of recyclable material produced in Bellevue every week, and yet 22% of this cardboard and paper waste is still being sent to landfill. In 2005 there was also evidence that businesses would co-operate with each other to recycle small quantities if they were asked.

A similar but perhaps more important problem is the heavy reliance on landfill when other options are available to the businesses. Improving the environmental performance of small and medium enterprise will be assisted by making it a strategic priority to discontinue the 'cheap' option of landfill. In synchrony, more needs to be done to find cost effective strategies to encourage this behaviour change. Progress has been made with both the local businesses and recycling contractors to correctly organise waste management practices in the area. The implementation of a website that has a link to updated information on local recyclers that take the many different types of waste produced in the area will go some way to assisting this good work. In addition, the increased expertise and information that has been made available to the businesses during the project has been shown to be valuable and increased local interest in waste management.

With most Bellevue businesses having an increased interest in waste management strategies, the need to offer practical advice to ensure that all wastewater is treated before disposal is vital. This advice could be achieved by providing practical methods of treatment on the SCC website under construction or via the Swan Catchment Council newsletter. Greater focus on raising awareness on the issue of water management is needed as the owner-managers demonstrated less knowledge in this area than energy efficiency.

The provision of sewerage and removal of odours are not isolated to the Bellevue industrial area, therefore positive measures used elsewhere may need to be explored for relevance and implemented in the area if appropriate. Since the initial survey in 2005, the Swan Catchment Council has put these and other matters forward to the City of Swan on behalf of the Bellevue businesses. Most of the owner-managers in the 2007 survey are committed to staying and growing their businesses in Bellevue and with continued growth expected in the local area, ongoing consultation with State government and other stakeholders is required to ensure workable solutions to these problems are forthcoming. This will be particularly important as the area grows.

In discussing the issues and opportunities raised from the implementation of this project, legislation is rarely mentioned. It is acknowledged that legislation can achieve compliance and may even change behaviour. However, it is also known that legislation

without an effective monitoring regime will not have this effect. This was verified by the owner-managers, who stated that legislation is not the answer. As the outcome required is the participation of a critical mass of small and medium enterprise to reduce the negative impacts of their business operations, it is recommended that education and raising awareness is more effective. The owner-managers have shown that they too agree with this approach as they advocate that the best method to minimise environmental harm from businesses is through education. Education and awareness raising offer the opportunity to assist businesses to achieve better environmental performance by providing ongoing information including best practice and innovation, as it becomes available.

By providing this information directly to the businesses it may help to encourage a culture of continual improvement that will allow them to increase the positive impacts on the environment from their business operations, while reducing the negative impacts. If the ultimate aim is to have businesses implement better environmental practices then it is critical that they are given information that shows them how to do this, as this will be the catalyst to deliver results that promote participation and improved environmental management by small and medium enterprise.

Finally, perhaps the most critical issue is that recycling contractors are not available to small businesses in Bellevue (or many other parts of Western Australia), to remove all types of waste, thus preventing businesses from implementing better waste practices. This is a problem as there is a need to continue to reinforce the message to these businesses that recycling is very important and even small quantities need to be disposed of responsibly. It is incumbent on Government departments and other stakeholders to support cost effective solutions for recycling waste products produced by all businesses, and this may incorporate subsidies to increase licensed contractor involvement. An alternate solution is to continue to impose increased levies and to consider a tax on waste to landfill. This is certainly not a recommendation, however if businesses do not willingly embrace behaviour change, then it may be the ultimate sanction. Businesses and stakeholders need to continue to collaborate proactively to provide practical and workable solutions to environmental issues.

Background

The Small and Medium Enterprise Research Centre (SMERC) at Edith Cowan University was contracted by the Swan Catchment Council to conduct a short longitudinal research study. The aim was to provide baseline and comparative data regarding the environmental waste management practices and attitudes of owner-managers of businesses in the Bellevue industrial area. The timing of this research study is particularly relevant as the business community is currently responding to the new global world of commerce and as a consequence many pressures are being brought to bear upon them. One of these pressures is the requirement to address the environmental impact of their business operations.

The importance of small business

The existing worldwide literature would suggest that considerable effort has been made to determine the best way to engage small and medium enterprise in environmental management^{2,3}. There are four important facts about small business that need to be taken into consideration when researching this business sector. First is the economic importance of small business; second is that individually they are insignificant but collectively they make a huge impact. The third issue is that small businesses are heterogeneous and finally most small businesses are resource poor, both financially and in relation to time.

Small business is a vital component of Australia's economy. The definition of a small business in Australia is a business that employs less than 20 people and also includes micro businesses, that is, businesses that employ less than 5 people. The latest Australian Bureau of Statistics (ABS) data state that in June 2007 there were 1,800,000 small businesses in Australia, the vast majority of which (89%) are micro businesses⁴. These small businesses employ 3.3 million people, which is 47% of private sector non agricultural employment.

So even though there are literally tens of thousands of small businesses they are a disparate group and they do not think as a collective. They often work in isolation and are not necessarily connected to industry groups or associations, unless required to do so for registration purposes. This glorious isolation makes it easier for them to ignore

the individual impact they may be making on the environment, however, collectively they make an enormous impact on the ecological footprint of society, both on their immediate local environment as well as in a global sense^{5,6}. This individuality therefore makes them very hard to identify and then to work with, as they are often under the radar for many issues including waste management and disposal.

The diversity amongst small businesses is evident in their coverage of every industry sector and every type of business. They are owned and operated by sole traders, families, business partners of all ages, genders and ethnic background. Their business skills vary from poor to excellent with their one common trait being that most small business owner-managers are competent technicians in their area of expertise but often had limited managerial experience.

Most small businesses are resource poor, both financially and in the amount of spare time available to owner-managers and their staff. In a small business every minute away from conducting core business is a cost that then needs to be recovered at a later stage. Small businesses tend to function at an operational rather than strategic level and are reactive rather than proactive on most working issues. This is because they often do not have spare capacity to embrace new ideas, if they deflect attention away from their current way of operating their business and do not generate more income in a relatively short timeframe. To exacerbate these barriers, most small businesses view training of any sort as a cost and not an investment⁷.

All of these points of difference make small businesses a difficult sector to connect with and to work cooperatively with. It is however not impossible, but these four key factors do need to be borne in mind when trying to implement any changes to environmental management practices. A compounding issue is that small business is yet to be convinced of the 'business case' for changing current management practices regarding waste disposal therefore until they are convinced, they may continue to conduct poor practices, primarily because of expediency and also because they see no economic reason to change⁸.

Small businesses, environmental management and the bottom line

When good environmental management practices are implemented it can have a positive impact on the whole community. However, before businesses will implement positive strategies for environmental management they first assess the impact it will have on the bottom line. Unfortunately, while creating competitive advantage by adopting good environmental practices has been advocated, the general perception among small businesses is that there are no real cost savings from environmental improvements or competitive advantage to be gained⁹.

As previously stated the majority of small businesses operate on a survival management culture rather than a strategic management culture, making long term operational changes difficult to action as they require a level of forward thinking. The absence of a strategic management approach, which is known to be rare in most small businesses^{10,11}, is unfortunate as this approach may help to counter the need, perceived or otherwise, for immediate economic benefit from these strategies. Therefore what is needed is a more proactive model of holistic community engagement and one that demonstrates the economic argument for all parties.

Arguments for adoption had been made from many different standpoints including:

- successful market niches
- the development of strong consumer loyalty from so-called 'green consumers'^{12,13};
- operational cost savings;
- enhanced staff loyalty;
- improved government relations;
- innovation and learning;
- enhanced reputation and
- consumer response¹⁴.

Therefore a business case can be made and it could be argued that as more people appear to be interested in the environmental overall, it may well be the case that a cost neutral solution is a sufficient business case, as opposed to one that has to have a big financial benefit.

Small business and waste management

Among environmental management issues waste reduction and effective waste management is critical, particularly how waste is disposed of by businesses and consumers, due to the impact they had on both the environment and the community^{5,15,16,17}. At a local level, Australia currently consumes more resources and "produces more waste than at any time in its history" and "is in the top 10 solid waste generators in the OECD"¹⁸. "In 1996–97, landfills in Australia received 21.2 million tonnes of solid waste, equating to a disposal rate of around 1,146 tonnes per person, or 3.14 kg per person per day."¹⁸ The various costs associated with managing this amount of waste exacerbates the issue and supports the need for waste reduction.

Australia's national expenditure on solid waste and wastewater management and associated activities is considerable and "without changes to consumption patterns and other behavioural changes, these trends [generated volume and costs] look set to continue into the future."¹⁸ Therefore, the full co-operation and engagement of the Australian community, including the business community, is needed to implement better waste management practices which will lead to both behavioural and operational changes. This will take a considerable amount of resources to achieve.

The level of managerial and financial resources of small businesses is related to the size of the business and this can have both positive and negative influences on the capacity of the business to implement environmental strategies. A positive influence of business size is that small businesses in the main have flatter management structures and are 'closer to the action' therefore they can react and act much quicker than larger businesses in regard to changing behaviours.

Another positive for small businesses is that once an environmental strategy is decided upon, because of their relatively small staff numbers, the costs of learning the new routine and renegotiating responsibilities will be less than for a large bureaucratic organisation¹⁹. This does presume that small businesses are willing to engage in change which may involve participation in training. Unfortunately, unless the training is proven to be financially beneficial and operationally imperative it is not always the case^{20,21,,22}.

The size of the business may also have negative consequences for the implementation of environmental practices. In micro businesses the owner-manager is often the sole decision maker, therefore, environmental responsibility rests with them, as does making a profit. Small business owner-managers have many diverse demands on their time and finances and this will mean that having the opportunity and resources to evaluate environmental practice options will potentially be more difficult than it would for larger businesses¹⁹. To compound this problem the owner-managers often lack the managerial skills required to implement practices outside of their technical expertise⁷. When small businesses lack either managerial or financial resources, it can be very difficult for them to implement new procedures even if they want to do so.

A UK report that sought to demonstrate SME response to environmental issues confirms many of the difficulties for implementation for businesses³. Moreover, when formal systems for certification are the goal of SMEs the problems are exacerbated by bureaucracy²³. Fortunately, implementing better waste management practices have been successfully achieved by some businesses.

A study by Simpson, Taylor and Barker⁹ found that 73% of the UK based small and medium sized businesses that responded to their survey were using or had used environmental services for waste management. This figure was much higher than for all other environmental practices (e.g., water management - 35%; energy efficiency - 49%). While this result may be due to support in the community for this practice, it does indicate that this is an area where some practical gain has already been achieved among small business. In fact, the study found that the majority of the small and medium businesses "believed that 'waste was money' and had a good housekeeping approach to its management", particularly those in the manufacturing sector as they had an interest in the cost savings to be gained from waste reduction.

An Australian study by McKeiver and Gadenne²⁴ identified formal and informal environmental practices among a limited sample of small businesses by examining the various factors that influenced the implementation of environmental management. In their study a business was considered to have a formal environmental management system when it engaged in a formal certification process. Unfortunately, 61% of their sample had failed to do anything to reduce the environmental impact of their business

and there was no evidence of a sustainable/ecological strategy being used by any of the firms. Age, customers and employees' concerns were found to be significantly associated with informal implementation of environmental management whereas formal implementation was enhanced through education, legislation, and awareness.

Summary

There is strong support for small businesses to implement effective environmental management practices in order to sustain both the business and the community and to gain competitive advantage. It is important therefore to provide longitudinal data to increase the understanding of owner-managers attitudes to implementation of these practices and actual behaviour practiced by small businesses.

Methodology

Aim

This exploratory investigation was undertaken at 2 points in time (2005 & 2007) over an 18 month period. An intervention program was conducted after the initial data collection to see if the attitudes and waste management behaviours of small business owner-managers in Bellevue highlighted in the initial survey could be changed. Bellevue is geographically located in the Eastern side of Perth and is within the City of Swan local government boundaries (see Figure 1). The industrial area was selected as an appropriate location for this study for several reasons. Due to its small size, its typicality as an industrial area that has evolved over time rather than being purposely planned, its close proximity to a major waterway and because of recent significant pollution incidents in the area.

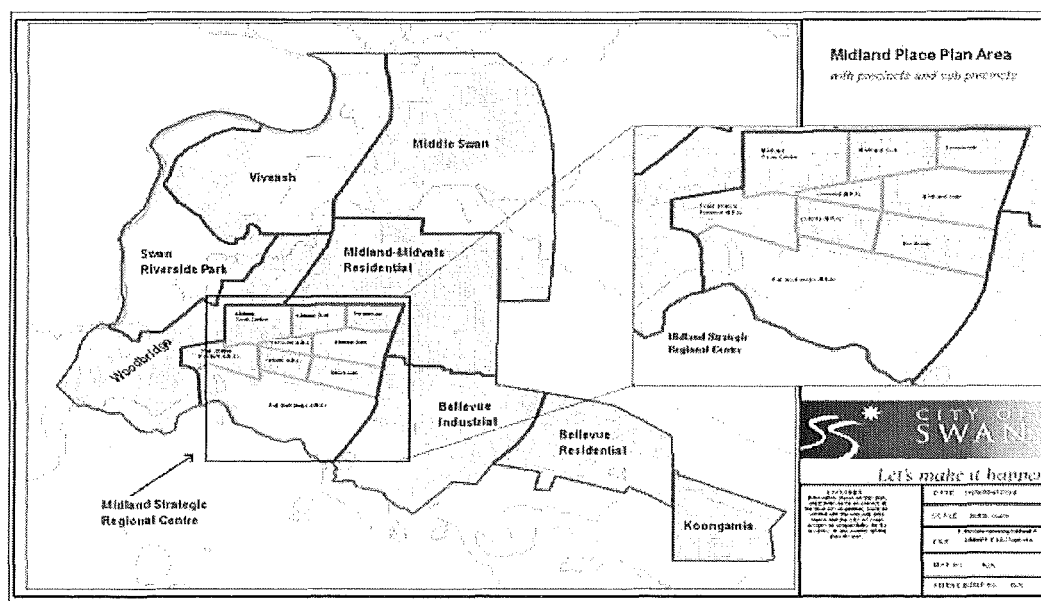


Figure 1. Map of Bellevue Industrial area.

Research design and questions

The research design incorporated survey data collection and an intervention program. The survey utilised both quantitative and qualitative methodologies to collect statistical as well as more in-depth responses from the small business owner-managers. The survey data was collected directly with the small business owner-manager by staff

from the Swan Catchment Council at 2 points in time over 18 months. The broad research questions were:

1. What are the owner-managers' current attitudes toward the environment?
2. What waste, energy and water management behaviours are being practiced by the owner-managers?
3. Are the owner-managers willing to participate in a waste reduction program, and water and energy assessments?
4. If owner-managers are willing to participate what are the best method of delivery and program design for this business sector?

Survey Instrument

Pre Intervention Survey Instrument 2005

Preliminary meetings were held with stakeholders that led to the development of a survey instrument which was piloted and refined. The final 30 item instrument consisted of a mixture of qualitative and quantitative questions which related to the business (e.g., What is your business?), the environment (e.g., Are you interested in the environment?), waste management (e.g., What type(s) and approximate volume of waste is produced and disposed of during your business operations each week?) and the local environment (e.g., What would you rate as the top environmental issue currently in this location?). Where likert scales were used the response options ranged from 1 (Not Important or Very Poor) to 7 (Very Important or Very Good). Prior to conducting the main survey checks of the instrument for both face and content validity were made.

Post Intervention Survey Instrument 2007

The survey data collected by the Swan Catchment Council staff in 2007 used Personal Digital Assistant (PDA) instruments. The survey was modified in 2007 both to reflect changes in the timing of the survey and to extend the questionnaire to elicit more in-depth information. For example, in 2005 the business owner-managers were asked whether they were interested in the environment and why. These questions were extended in the 2007 survey by asking if their level of interest had changed over the previous 18 months and a list of reasons why this might be the case were offered for them to choose from, so that the cause of any change could be determined. In 2007 the

level of sophistication and accuracy in data collection was improved with the use of PDA technology which enabled the survey questions and responses to be entered in a more precise manner.

Prior to both survey data collections the business owner-managers were given details regarding the purpose of the study, advised that participation was voluntary, that information provided by them would remain confidential and that they could withdraw at any time. The owner-managers were then asked if they agreed to participate.

Intervention

Between the data collection periods an intervention program was implemented by the Swan Catchment Council. The intervention program was carried out by specially trained Swan Catchment Council staff and was often delivered one-on-one. The personal contact was thought to be extremely important as over the time of the program good relationships were developed between the businesses and the Swan Catchment Council staff. The interventions included the following:

- Advice on waste reduction strategies directly to the individual businesses;
- Creation of a steering group consisting of Bellevue businesses and key stakeholders;
- Advocacy with local authorities/stakeholders on behalf of the Bellevue businesses;
- Development and distribution of a regular paper based newsletter;
- Media coverage to create awareness and inform others of the project;
- Development and delivery of information fact sheets;
- Establishment of links between businesses and the waste recycling contractors;
- A communal cardboard and paper bin trial; and
- Development of case studies.

Data analysis

The quantitative data was analysed using SPSS version 14. Where volumes of waste products are reported the data has been collected in four categories dependent upon the type of waste. These categories are kilograms, cubic metres, units and litres. Where

necessary the Australian Government national metric conversion tables²⁵ were utilised to reduce the data. Qualitative data was collated into useful categories and is reported in this manner.

2007 Results

An interim report containing all of the pre intervention 2005 baseline data was submitted to the Swan Catchment Council in May 2006. The results reported here are from the intervention program and the data collected approximately 18 months after the first survey. Comparative data, from 2005 and 2007 is shown in Appendix A. Tables shown here are from the 2007 data collection and as such represent a smaller number of businesses overall ($n=85$) than the number that participated in 2005 ($n=120$). This reduction in response rate is largely attributed to the fact that 24 of the businesses that were originally surveyed in 2005 no longer operate in Bellevue. Nevertheless the results presented here are still a good insight into the 2007 status of small businesses in the area, including their characteristics and attitudes towards waste management, after the intervention strategies were put in place.

Intervention outcomes

This section provides an overview of the level of consultation and how the outcomes of this project were achieved through a brief review of each of the intervention strategies.

Waste reduction strategies

After the initial 2005 data collection was presented and reviewed, the Swan Catchment Council staff re-visited those businesses with the most significant waste issues (approximately 75%) business to verify results and determine a strategy with the business owner to reduce waste from the business operations. The Swan Catchment Council staff members then assisted where appropriate to help implement the strategy.

Steering Group

The task of the steering group was to monitor and provide input as the project unfolded. A strategic membership plan for the steering group was created and membership from small business owner-managers in the industrial area under scrutiny and local stakeholders. These included: Swan Catchment Council, City of Swan, Bellevue Residents and Ratepayers Association, East Metropolitan Reference Council, Swan Chamber of Commerce and Industry and Edith Cowan University. The steering group met every 3 months.

Advocacy

Swan Catchment Council staff presented the findings from the 2005 survey to the executive management team and counsellors at the City of Swan to create awareness of the project outcomes and to ask the City to consider the changes raised by the Bellevue business residents. In addition, over the duration of the project several other meetings were held and letters were written to the City to formalise the transfer of information.

Newsletter

A newsletter was developed to inform the businesses, stakeholders and wider community of the project and key outcomes being achieved. Three editions of the newsletter have been disseminated to date: June and October 2006 and February 2007. Copies of these are available at Appendix C.

Media Coverage

A number of media articles were released through various local media sources and included:

- Article in City of Swan newsletter (June 05)
- Articles in Midland Reporter (Aug 05) & Echo Newspaper (Aug 05)
- Article in Hills Gazette (Oct 05)
- Article in Western Australia Local Government Association Newsletter (Dec 05, Mar 06)
- Article in Midland Reporter (Dec 05)
- Article in Western Australia Local Government Association Newsletter (March 2006)
- Articles in Swan Catchment Council Newsletter, 'The Swan' (March and June 2006)
- Article in East Metropolitan Regional Council Newsletter (June 2006)
- Article in the Bellevue Residents and Ratepayer's Association Newsletter (Oct 05, June 2006, Sept 06, Mar 07)

Fact Sheets

Ten fact sheets that advise small businesses about pollution control and waste management were developed and delivered directly to the small businesses involved in

the project. Copies of these are available through the Swan Catchment Council website (www.swancatchmentcouncil.org/pages/council.html).

Linking recycling contractors and Bellevue businesses

With the consent of all parties, considerable effort was made to establish links between recyclers and Bellevue businesses that allowed them to liaise about specific waste issues that were affecting their ability to recycle waste products. During this process it became apparent to Swan Catchment Council staff that recyclers were not promoting their services to small and medium enterprise and this was contributing to the use of landfill by the owner-managers. In response to this, Swan Catchment Council staff instigated their own survey of recycling contractors to determine their views and business practices with small and medium enterprise (see Appendix B).

From the results of the Recyclers survey, the Swan Catchment Council made the following recommendations:

1. To seek more support by local and State government to educate and raise awareness among SMEs of issues such as pollution and to:
 - provide local recycling facilities,
 - form partnerships with recycling contractors,
 - review landfill levies,
 - foster the development of product stewardship,
 - consider the introduction of a levy based on the recyclable potential of the waste streams being disposed to landfill.
2. To seek co-operation between all tiers of government to work together to:
 - provide a clear direction for the recycling industry, and
 - to introduce legislation which effectively prohibits the disposal of certain hazardous and/or recyclable material in landfill,
3. To encourage recycling companies to establish a formal recycling industry organisation which represents their views.

Communal Bins

In an attempt to co-ordinate the collection of small quantities of paper and cardboard from the businesses three communal bins were trialled in different locations in Bellevue industrial area with the consent of the owner-managers. The location of the communal bins was advertised in the project newsletter and letters were sent to surrounding businesses in each location. The Swan Catchment Council paid for the use of two of the bins and the third was provided at no cost. One bin usually was full and the other two were well utilised. The final survey showed that the bins had 12% usage. One of the reasons for the limited use of the bins was that 41% of the owner-managers surveyed were unaware of their existence.

The Swan Catchment Council staff acknowledged that communal bins were a worthwhile strategy but provision can be difficult to manage. They are currently reviewing how to improve the process for everyone concerned. It is suggested that for the strategy to be more successful a higher level of resources will be necessary to ensure that the businesses are aware of the existence of the bins.

Case Studies

Case studies are currently being developed to promote good practice in small business and to inform others of outcomes achieved in the project.

Characteristics of the business and operator

The characteristics of the businesses in Bellevue show that the gender distribution still favours male owner-managers, and there was a slight increase in both the 41-50 and over 60 year age groups and a drop in those 51-60 years since the previous survey. Education demographics have also changed and indicate less academic background among the sample.

Table 1. Profile of respondents.

	Gender (%)	Age (%)	Highest Education (%)
Male	85		
Female	15		
Under 30		4	
30-40		18	
41-50		35	
51-60		26	
61 and over		18	
High School			39
TAFE			8
Trade			39
University			13

Note: figures are rounded to nearest whole number; no response cases are omitted; totals may not add up to 100% due to rounding.

The sample indicates a slight change in the types of business operated in the Bellevue area as a greater number are providing motor vehicle service than previously found and there was a slight drop in diversity of industry sectors being offered (see Table 2). While there are no head office business in this sample, both the number of independently owned businesses and the number of businesses employing over 5 employees has risen indicating that stability and growth is occurring in the area.

Table 2. Profile of businesses.

	<i>WASLUC</i> (%)	<i>Structure</i> (%)	<i>Ownership</i> (%)	<i>FT</i> <i>Employee</i> (%)	<i>PT</i> <i>Employee</i> (%)*
Mining	1				
Manufacturing	40				
Wholesale Trade	1				
Retail	18				
Transport & Utilities	1				
Motor Vehicle Servicing	29				
Other services	9				
Independently owned		93			
Subsidiary or branch		5			
Franchise		2			
Owned			54		
Leased			46		
1 only				12	
2-5				47	
6-19				33	
20 and over				8	
1 only					13
2-5					11
6-19					1
20 and over					0

Note: figures are rounded to nearest whole number; no response cases are omitted; *= % of all businesses - only 25% has part time staff.

Environmental perceptions and issues

Most of the owner-managers had increased their interest in the environment over the last 18 months (61%) and stated that the Bellevue Sustainable Industry project (71%) has had the greatest impact on this increase. The media is the other single major contributor to this change (8%). Table 3 indicates what the main concern of owner-managers is about the environment and indicates that they are mostly concerned about the impact on future generations (40%) followed by harm to the global environment (30%). The impact on the business was giving them least concern (3%).

Table 3. Main concern about the environment.

Main Concern	Frequency (<i>n</i>)	Percentage (%)
Harm to local environment	11	14
Impact on your business	2	3
Harm to Australian environment	10	12
Impact on future generations	32	40
Harm to global environment	24	30
Other	1	1

Indications are that the owner-managers' still had a negative view of Bellevue industrial area environmentally as 55% rated the area from poor to very poor. Regardless of this most are planning to stay in the area (94%) and some are planning to move into larger premises locally in the next 12 months (11%) indicating that despite some environmental and aesthetic issues, they still feel it is a good place to have a business. Table 4 shows that the top environmental issues in Bellevue were similar in 2007 to the previous data with the smells and odours in the area being of prime concern (61%).

Table 4. Top environmental issue in Bellevue.

Environmental Issue	Frequency (<i>n</i>)	Percentage (%)
Odour from brickworks	26	31
Odour from saleyards	25	30
Sewer	21	26
Local contaminated site	12	15

Note: figures are rounded to nearest whole number; no response cases are omitted; total does not add up to 100% due to rounding.

When asked to prioritise improvements for Bellevue (see Table 5) the owner-managers indicated a shift in preference from the aesthetic changes asked for in the previous data collection to practical changes related to sewerage (31%), roads (30%) and security (16%).

Table 5. Highest level of improvement for Bellevue.

Improvement	Frequency (n)	Percentage (%)
Sewer	26	31
Roads/traffic	25	30
Aesthetic	20	24
Security	13	16

Note: figures are rounded to nearest whole number; no response cases are omitted.

In 2007 owner-managers in Bellevue still considered responsibility for the environment should be with the individual (44%) but less so than in 2005 (55%) (see Table 6). This may be due to increased media attention to global climate change since they were last surveyed or it may be that they now see a need for further government assistance to be able to extend their involvement.

Table 6. Responsibility for the environment.

Responsibility	Frequency (n)	Percentage (%)
Individual	37	44
Community	23	27
Business	3	4
Government	22	26

Note: figures are rounded to nearest whole number; no response cases are omitted.

When asked again what level of government should be managing the environmental issues in Bellevue the owner-managers remained convinced that local government should be primarily involved (72%) with some charging State government with responsibility (26%).

Waste Generated

The volume of waste generated in the Bellevue area has changed quite significantly since the last survey (see Table 7). It is impossible to assess what may have caused all the changes, however, the exclusion of the 24 businesses that left the area will have contributed to the changes. In addition, a significant contributor to the oil volume in 2005 did not participating in the 2007 data set (oil decreased from 3288 litres to 1843 litres per week) and a contributing factor to the increase in the number of tyres (from

420 to 713 per week) is the growth in motor vehicle servicing in the area. Overall, the key types of waste produced in the area had remained the same and are steel, oil, plastic and cardboard and paper.

Table 7. Type and total volume of waste produced by the businesses in one week.

Material	m ³	Kg	Units	Litres	Landfill* %	Cost %	Income %	Neutral %
Steel		8321			2	3	79	18
Other metals		399			12	19	81	0
Polystyrene	1				50	100	0	0
Plastic containers	15				33	60	20	20
Shrink wrap	6				44	73	0	27
Car bumpers			27		0	0	0	100
Other plastics	8				50	33	0	67
Cardboard & paper	49				22	84	4	12
Wood products								
Solid timber	11				57	71	0	29
Pallets			20		58	83	0	17
Dust	18				56	63	0	37
Particle board	1				100	100	0	0
MDF	1				100	100	0	0
Waste oil				1843	0	70	0	30
Oil filters			52		23	78	0	22
Liquids								
Radiator coolant				45	0	67	0	33
Thinners				75	0	67	0	33
Tyres			713		57	86	0	14
Glass	0.3				50	100	0	0
Vehicle batteries			35		0	22	45	33
Road sweep waste	100				100	100	0	0
Other waste	14				70	70	10	20

Note: figures are rounded to nearest whole number; no responses are omitted. m³ = cubic metres. * Remaining percentage was recycled.

Recycling Behaviour and Competitive Advantage

Table 7 also indicated that large percentages of plastics, wood, tyres and general waste are still being sent to landfill. Care must be taken in analysing this statistic as in some cases a small number of businesses may be responsible for the data. There has also been an increase in income for those recycling vehicle batteries and for plastic containers. The increased income in vehicle batteries is difficult to clarify as usually contractors will only pay for these if there are large quantities or the price of lead increases to make payment viable. On several items there is evidence that a different result is achieved from recycling with variations between items costing, bringing an income or being a cost neutral result for the business.

The 2006 interim report noted that the variation between a waste product being a cost to the business rather than a potential income stream, was an area that some businesses could exploit. This does not yet appear to be the case so is still an area that does need more work.

Commitment to Continual Improvement

In 2007 a key indicator of commitment was whether the businesses remained interested in obtaining more information about waste reduction. The number of businesses seeking knowledge has reduced by 8% from the 2005 figure and some of this reduction may be attributed to the intervention program which should have increased their level of knowledge. Perhaps more importantly there is still interest among 52% of the businesses to seek more knowledge on waste reduction, demonstrating that many are willing to continue to be educated about how to improve their environmental performance. This provides an opportunity for further engagement with these businesses to help them achieve improvements in their waste management activities.

A lower percentage of the businesses (29%) were interested in a free energy or water efficiency assessment than receiving recycling information. The results also show (see Table 8) that only a few of the owner-managers monitor their business energy and water output (33% and 21% respectively). This data suggests that greater education may be required to demonstrate the need for assistance to help reduce unnecessary usage. These tables also demonstrate that the owner-managers had more knowledge about energy than water efficiency and they had implemented more measures to

benefit from energy efficiency than water efficiency. While it is acknowledged that energy use and cost is more of an issue for most small businesses than water, this is a valuable resource that should not be wasted or polluted. It is therefore suggested that greater focus is needed on water management in education programs.

Table 8. Energy and water efficiency awareness and activities of businesses in Bellevue.

<i>Current Practice and knowledge</i>	<i>Energy Strategy</i>	<i>(n)</i>	<i>(%)</i>	<i>Water Strategy</i>	<i>(n)</i>	<i>(%)</i>
Check usage		28	33		12	21
Track cost		59	70		33	40
Ways to use efficiently		51	61		26	31
	Efficient lights	40	47	Regular leak checks	7	8
	Thermal insulation	5	6	Triggered hose	2	2
	Change processes	12	14	Devices/ processes	13	15
	Efficient machinery	8	9	Wastewater recycle	5	6
				Use rain water	1	1
	Other	9	11	Other	5	6
Efficiency measures in place		42	50		19	23
	Efficient lights	34	40	Regular leak checks	6	7
	Thermal insulation	4	5	Triggered hose	2	2
	Change processes	14	17	Devices/ processes	10	12
	Efficient machinery	6	7	Wastewater recycle	3	4
				Use rain water	2	2
	Other	5	6	Other	2	2

Note: * = multiple answers were possible so numbers do not add up to total result; figures are rounded to nearest whole number; no response cases are omitted.

Barriers to recycling waste

In 2005 the survey asked the owner-managers to list barriers to recycling and in 2007 the survey listed those items for selection and gave them the option to add new items in an 'other' column. This change made it possible to provide a clearer picture of what barriers were causing the greatest concern. Table 9 shows that the main barriers to recycling in 2007 were that the owner-managers felt the amount of waste they had was

too small; that they already recycled most or all of their waste or there was no contractor available to recycle the items they did have. Interestingly one of the most often cited small business reasons for not engaging, that being time, which was evident in the 2005 survey was no longer cited as an issue. In addition, the impact of cost, which is another often cited reason for not engaging in environmental behaviour had minimal acknowledgement (2%).

Table 9. Barriers to recycling.

Barrier	Frequency (n)	Percentage (%)
Cost	1	2
Amount too small	24	36
No Council bin	4	6
Not enough space	13	6
No contractor	5	8
Did not know you could & too small an amount	3	5
Too small amount & other reasons	6	3
No contractor & other	4	2
Other	20	30
Nothing else to recycle	2	
All/ mostly recycled	17	
Room limitation	1	
Contaminated waste; oil filters	2	
No system to recycle wastewater	1	

Note: figures are rounded to nearest whole number; no response cases are omitted. Some businesses may have offered more than one reason.

Businesses reported that over the previous 18 month period 20% had used a new or different recycling contractor, indicating that the intervention and contractor advice given by Swan Catchment Council staff has had a positive impact. However, the owner-managers advise that their greatest need is still to be given help to find appropriate recyclers (33%), followed by additional bins (16%). A website link to local contractors and advice to the businesses of how to locate this information is currently being developed by Swan Catchment Council and Edith Cowan University. In addition, as the use of 240 litre recycling bins are considered a key strategy for collection of small amounts of waste material assistance to obtain additional bins

particularly from the City of Swan has been given to the business owner-managers by Swan Catchment Council staff.

Wastewater management behaviour and impact

While 58% percent of the businesses surveyed advised they did not produce wastewater there was a negative shift in the number of businesses that had prevention measures in place. This result may be due to the change in survey questions which 'drilled down' on this issue. That is, rather than just ask the owner-manager if they had a prevention measure in place and rely on their knowledge of what constituted a prevention measure as was the case in 2005, in the 2007 survey they were asked to specify among several types which measure they had in place. Consequently, some of the businesses acknowledged that they did not have any conventional measure in place and therefore it is suggested that in this instance the 2007 data is more reliable.

When the owner-managers were asked where storm water flowed in 2007 there was also a check completed on the correctness of their knowledge. The results show that 38% were able to give the correct response. This result is slightly less than the previous result, perhaps due to the extra check made on correctness. This figure indicates that there still needs to be education on this issue as part of the overall strategy to inform businesses of their environmental impact. It may also show that a once only effort is insufficient to bring about a long term change in behaviour change.

In 2007 it was found that twenty three percent of all the businesses in Bellevue did not treat their wastewater before disposal. Table 10 shows wastewater activities, disposal and treatment methods in Bellevue. The most common activity generating the wastewater was parts/equipment washing (68%). Various disposal methods were used including licensed contractors (23%), the open ground (20%) and stormwater drains (6%). Of those Bellevue businesses that had wastewater (42%) nearly half had not treated this wastewater before disposal (48%). Due to the low priority wastewater appears to have among the businesses, best practice methods of treatment and disposal should be incorporated into any awareness raising or education program.

Table 10. Production, disposal and treatment of wastewater.

	Frequency (n)	Percentage (%)
Wastewater Production (n=84)		
Yes	35	42
No	49	58
Wastewater origin	34	40
Degreasing	1	3
Cooling baths/systems	2	6
Part/equipment washing	23	68
Floor washing	1	3
Degreasing & part washing	4	12
Part washing & floor washing	1	3
Other	2	6
Disposal practice	35	41
Stormwater/leach drain/soakwell	6	17
Stormwater drain	2	6
Septic tank system	2	6
Licensed contractor	8	23
Open ground	7	20
Sewer	5	14
Septic tank & licensed operator	1	3
Licensed operator & open ground	1	3
Other	2	6
Treatment	31	37
Above ground oil/water separator	2	7
Below ground P & O trap	8	26
Sediment trap only	4	13
Not treated	15	48
Chemical	0	0
Other	2	7

Note. multiple answers were possible resulting in differences in total percentages; figures are rounded to nearest whole number; no response cases are omitted. Percent of those that had wastewater only.

Overall Environmental Impact

In the 2007 survey exploration of both positive and negative impacts from the business on the environment was undertaken. In both categories a minority (38% and 39%) of owner-manager's acknowledged that their business had an environmental impact (see Table 11). Of those that acknowledged a business impact, the positive impacts were more often rated as having a higher level of impact than negative impacts, which were

more likely to be considered as having a low impact on the environment. Of importance is that 42% state that the positive impacts from their business had increased and 21% suggest that the negative impacts have decreased in the last 12 months. While only a few had a reason for explaining these changes, positive impact were stated as being due to an increase in business interest and by staff, while changes in negative impacts were associated with better management/more care, better equipment, not producing shopping bags, use of biodiesel fuel and more work. The reasons provided are encouraging and suggest that further improvements may be made in the future within the capacity of these businesses.

Table 11. Business impact on the environment.

Environmental Impact	Response	%
<i>Nature of Impact Positive</i>		38
Rating of Impact	High Medium Low	30 40 30
Type of Impact	Recycling Preventative measures/ management Provision of environmentally friendly products / services Use of environmentally friendly products / processes	58 12 24 6
Impact changed over last 12 months	Increased Decreased Same	42 0 58
<i>Nature of impact Negative</i>		39
Rating of Impact	High Medium Low	9 18 73
Type of Impact	Energy and fuel use Pollution, dust noise, emissions Waste Material and resource use	21 27 39 12
Impact changed over last 12 months	Increased Decreased Same	12 21 67

Engaging Small Business

Opinion differs on how best to approach small businesses to improve their environmental performance. Some suggest these improvements would be best driven from the businesses while others advocate increased legislation, education and/or support. This question was put to the business owner-managers to find out what method they thought was best and Table 12 shows that the majority (40%) felt that education is the best method to minimise environmental harm by business. Interestingly, they felt that self management/industry driven methods were least likely to work.

Table 12. Best method to minimise environmental harm from businesses.

Method	Frequency (n)	Percentage (%)
Self management/ industry driven	13	15
Education	34	40
Laws and enforcement	24	28
Support for small business	14	17

Note: figures are rounded to nearest whole number; no response cases are omitted.

To add support to the dual use of education and support Table 13 clearly demonstrates that support offered during this project to the small businesses had the greatest impact on increasing their level of interest in environmental issues over the past 18 months (71%). Considering the high level of global mass media attention the environment has had during this period this result is encouraging and it endorses the approach used to gain their interest through participation with 'expert advisors' to achieve improved environmental performance.

Table 13. Factors that increased SME interest in environmental issues over the last 18 months.

Increased interest	Frequency (n)	Percentage (%)
Yes	51	61
No	33	39
Reason		
Bellevue SIP	34	71
Media	4	8
Other	10	21

Note. Data is based on whole sample data not just those who had increased their interest.

It could be argued that this personal attention is very costly and that the environmental management behavioural changes that result may have a minimal effect overall, given the small size of most businesses and the relatively small amount of waste they produce. The counter argument is that many small businesses are simply unaware of their environmental impact, so by working with them their overall awareness should increase and result in a behaviour change, and a difference will be brought about. And if this is linked to bottom line activity, then 'champions' are developed and those business operators themselves will become advocates amongst their peers. It should also be stressed that any work that has a positive effect is a good result and that any strategy has to be long term and not just a quick fix. What is needed is not a solution to the current problem, rather intervention and behaviour change strategies to stop the problem in the first place.

Conclusion

The Bellevue Sustainable Industry Project has achieved positive results for the environment via a co-ordinated intervention program with small businesses in the area. The results have also provided the first clear idea of what waste volume and type of materials are being produced in an industrial area in Western Australia. Previous studies by international researchers state that collectively small and medium enterprises contribute up to 70% of pollution^{5,6}, confirming the necessity for intervention with businesses to ensure better environmental outcomes in Australia and elsewhere.

The collection techniques used to collect volume data have been improved during the period of the project and will continue to be the basis for assisting those businesses in this area for some time to come. In addition, the intervention process used during this project has been commenced in other metropolitan areas and the interim results of this project have stimulated other similar sustainability programs to be developed elsewhere. Continual consultation by key stakeholders with small and medium enterprise is essential to ensuring that current and future problems are resolved within the capacity of the businesses to respond.

During the project it has been obvious that telling small business about key issues, such as where storm water flows, once is insufficient to establish knowledge. As a consequence, a more consistent approach is necessary to achieve long term changes. Awareness raising and education are recommended as the key tenets of efforts to create this kind of long term knowledge and minimise harm to the environment from small businesses. It has been shown here that the education programs must be delivered directly to the business owner-manager with information that fills the gaps in their knowledge and offers opportunities for them to develop a culture of continual environmental improvement from their business operations.

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APPENDIX A

BELLEVUE SUSTAINABLE INDUSTRY SURVEY

2005-2007 COMPARATIVE RESULTS

This section of the report provides comparative results of the responses from the 76 participants who completed both the 2005 and the 2007 BSIP surveys. This data is important as it provides a closer measurement of differences that have occurred during the research period and also the impact of the intervention that was implemented by the Swan Catchment Council.

In reading these tables it is important to be aware that some of the questions were modified in 2007 and therefore attention to the notes placed at the end of each table will provide details of when this occurs.

Results

Table 1. Comparative Business Owner-Manager Profile 2005 and 2007.

	<i>2005 (%)</i>	<i>2007 (%)</i>
Gender		
Male	85	84
Female	15	16
Age		
Under 30	4	4
30-40	18	20
41-50	31	36
51-60	34	22
61 and over	14	18
Highest Education		
High School	40	42
TAFE	10	9
Trade	30	41
University	21	8

Note. Figures are rounded to nearest whole amount and exclude cases where no response was given. Percentages may not add up to 100 due to rounding.

Table 2. Comparative Business Profile 2005 and 2007.

	<i>2005 (%)</i>	<i>2007 (%)</i>
WASLUC		
Mining	4	2
Manufacturing	40	35
Wholesale Trade	1	2
Retail	17	21
Transport & Utilities	3	2
Motor Vehicle Servicing	25	29
Business Services	3	0
Other services	7	10
Structure		
Independently owned	91	92
Subsidiary or branch	8	3
Franchise	2	1
Other	0	4
Ownership		
Owned	58	53
Leased	42	47
FT Employee		
1 only	15	13
2-5	86	49
6-19	0	33
20 and over	0	5

Note. Figures are rounded to nearest whole amount and exclude cases where no response was given. Percentages may not add up to 100 due to rounding.

Table 3. Comparative top environmental issue in Bellevue 2005 and 2007.

<i>Environmental Issue</i>	<i>2005 (%)</i>	<i>2007 (%)</i>
Smell/ Odour	33	60 (46 odour from brickworks 14 odour from saleyards)
Sewerage, waterways, ground pollution	27	27 (sewer only)*
None/ Do not know	19	n/a^
Contaminated sites/ hazardous waste	15	14 (waste control site only)*
Traffic	3	n/a^
Other	3	n/a^

Note. Figures are rounded to nearest whole amount and exclude cases where no response was given.

- possible answers were narrowed to these options; ^ not a possible answer any longer.

Table 4. Comparative highest level of improvement for Bellevue 2005 and 2007.

<i>Improvement</i>	<i>2005 (%)</i>	<i>2007(%)</i>
Aesthetics (Trees, Greenery, streetscape)	30	22
Sewerage/ Drainage	18	32
Roads	3	30
Security	3	16
Major Business Pollution	15	n/a
None/don't know	26	n/a

Note. Figures are rounded to nearest whole amount and exclude cases where no response was given.

Table 5. Comparative Responsibility for the environment 2005 and 2007.

<i>Responsibility</i>	<i>2005 (%)</i>	<i>2007 (%)</i>
Individual	50	46
Community	11	26
Business	4	3
Government	23	25
Everyone	13	n/a

Note. Figures are rounded to nearest whole amount and exclude cases where no response was given.

Table 6. Comparative view of Government responsibility for the environment 2005 and 2007.

<i>Responsibility</i>	<i>2005 (%)</i>	<i>2007 (%)</i>
Local	53	72
State	27	25
Federal	4	3
All levels	11	n/a
Local and State	4	n/a
Unsure	1	n/a

Note. Figures are rounded to nearest whole amount and exclude cases where no response was given.

Table 7. Comparative type and total volume of waste produced by the businesses in one week 2005 and 2007.

<i>Material</i>	<i>2005 m³</i>	<i>2005 Kg</i>	<i>2005 Units</i>	<i>2005 Litres</i>	<i>2007 m³</i>	<i>2007 Kg</i>	<i>2007 Units</i>	<i>2007 Litres</i>
Steel	20 plus 114 tons (or 251 t → vol to wt)					8276		
Other metals	0.8 and 2 tons					369		
Plastics (total)	10	155			16			
Polystyrene					1			
Plastic containers					3			
Shrink wrap					5			
Other plastics					7			
Car bumpers			24		27			
Card & paper	28	13				40		
Wood products (Total)	7		12		10		17	
Solid timber					2			
Particle board					0.4			
MDF					0.6			
Pallets			12				17	
Dust					7			
Waste oil				1701				1643
Other liquids (Total)				152				95
Oil filters								
Liquids								
Radiator coolant								30
Thinners								65
Tyres			419				711	
Glass								
Vehicle batteries			30 plus 1 ton				34	

Note. Amounts have been rounded off to nearest full number. In 2005 for steel we have shown the individual volume and weight of cubic metres and tons. The sum of the two measures therefore equals the total quantity of steel.

Table 8. Comparative interest in assistance 2005 and 2007.

Factor	Response	2005 (%)	2007 (%)
Waste reduction program participation	Yes	70	n/a^
	No	27	
More information on waste reduction*	Yes	57	52
	No	41	48
Interest in free business energy and water efficiency assessment	Yes	n/a**	25
	No		75

Note. Figures are rounded to nearest whole amount and exclude cases where no response was given. ^question was not asked in 2007. *the question in 2007 was extended to include recycling. **question was not asked in 2005.

Table 9. Comparative barriers to recycling 2005 and 2007.

Barrier	2005 (%)	2007 (%)
Cost	✓	2
Amount too small	✓	37
No Council bin	✓	7
Not enough space	✓	0
No contractor	✓	7
Did not know you could recycle	✓	5
Too small amount & other reasons	✓	3
No contractor & other	✓	2
Time	✓	0
Other		28
Nothing else to recycle		1
All/ all possible recycled		15
Recycle most		4
Room limitation		1
Contaminated waste; oil filters		1
No system to recycle wastewater		1
Not specified		5

Note. Figures are rounded to nearest whole amount and exclude cases where no response was given.

Table 10. Comparison of wastewater management and knowledge 2005 and 2007.

<i>Factor</i>	<i>2005</i>	<i>2007</i>
	Prevention measure in	Wastewater treated
Yes	place	20
No	30	21
No wastewater	16	59
	54	
Storm water flow		
Yes	37*	36**
No	61	65

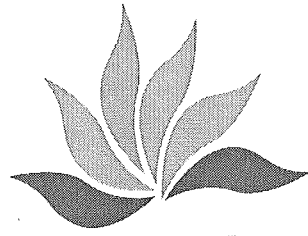
Note. Figures are rounded to nearest whole amount and exclude cases where no response was given.

*answers checked for correctness; one each incorrect and missing. **answers checked for correctness: one missing.

APPENDIX B

WASTE RECYCLERS SURVEY REPORT 2007

SWAN CATCHMENT COUNCIL



swan catchment
c o u n c i l

Promoting industry
sustainability

WASTE RECYCLERS SURVEY

July 2007

1.0 Introduction

This survey is a snapshot of ten waste management and recycling businesses operating in the Perth Metropolitan area. The survey was conducted following an initial survey of small to medium sized industrial premises in the Bellevue...area which identified that many smaller industrial operators have difficulties finding or justifying the use of recycling service providers for waste generated from their business.

The on site survey of waste management contractors was conducted in order to gain a clearer picture of their business rationale in either engaging/disengaging with SME's in terms of their waste disposal practices. The survey also gathered their views on what could be done to increase recycling from the small to medium industrial enterprise sector (SMEs).

The Sustainable Production Program is committed to working with SME's to encourage and assist them becoming more sustainable in their business operations.

2.0 Method

Eleven recycling and waste management companies were initially approached and asked to participate in a brief, on site survey. The businesses selected provided a range of services and included companies that provided complete waste removal services, companies that provided recycling services, companies that provided recycling services for specific materials (e.g. plastic), companies that specialised in providing recycling services for specific sectors (e.g. building industry) and companies that specialised in hazardous liquid and solid waste removal. Some of the companies selected contracted their services to local governments and one provided a waste collection service in a regional area.

The companies chosen were selected as they are fairly well known operators in the Perth metropolitan area. Of the eleven approached, ten agreed to

provide their views for the survey. No reason was given by the one business that declined to participate. In the majority of instances, persons holding managerial positions were interviewed as they had sufficient knowledge and a good understanding of how their business operated.

The survey was conducted at a face to face site visit and consisted of 20 questions which sought to gather information of the type of waste services provided, factors that influenced service provision and their views on waste management issues for SME's. A copy of the survey questions and a brief interpretation of the findings from the survey are provided in the following section

3.0 Results & comments

The survey questions and a brief summary of the answers are provided in this section.

1. Does your company provide a collection service for recyclable materials?

All ten companies provided a recycling service as part of their business. The purpose of the survey was to engage with recycling service providers and this question served to confirm that the businesses participating in the survey did offer recycling services.

1(i) What is the approximate proportion of material collected and recycled?

The average response for this answer was 80% recycled vs 20% landfill/other.

Two operators could not provide an approximate breakdown and six operators recycled 90% or more of the waste they collected.

The incineration of certain liquid wastes is another method of treating and disposing of business waste.

1(ii) If yes, what types of recyclable materials are collected?

Seven of the businesses provided a recycling service for a range of materials. Most commonly, paper and cardboard, plastics and metal recycling services were offered in this regard.

Three businesses specialised in liquid waste disposal (often hazardous waste) and endeavoured to recycle this waste wherever appropriate.

Two respondents advised that they specialised in recycling one specific material with one primarily offering paper and cardboard services and the other specialising in plastic recycling.

Other materials that can be recycled include fluorescent tubes (after having the Mercury component extracted), wood, glass, ink cartridges, biowaste and electronic waste.

2. How are recyclable materials collected?

The manner in which waste material is stored and discarded has quite a significant influence on service providers and customers. SME's often lack the space, the economies of scale and staff willing to segregate waste material into different types. Recycling companies that provide co-mingled bins, which allows for different materials to be placed into the one bin, often charged their customers more for this service.

Six of the companies surveyed required the recyclable waste to be separated from other material and placed into a dedicated bin or container. Four of the companies provided co-mingled bins to their customers.

All of the businesses offered a pick up service whilst some provided free or low cost drop off points for certain recyclables.

3. What type of bins does your company provide?

a) front lift b) skips c) rear lift d) other _____

The larger recycling companies all provided different bin types depending on their customer's requirements.

Liquid waste contractors provided specialised containers for certain waste streams.

4. What size bins are offered:

For general waste?

Most waste companies are able to offer a range of bin sizes commensurate with their customer's requirements. These bin sizes range from smaller bottles for hazardous material to 35 m³ skip bins for construction waste. The most widely available bin sizes were 3 – 4.5 m³.

For recyclable material?

Generally recycle bins are more limited in size than general waste bins. The most common recycling bin for solid material is a 3.5 m³ front lift bin. Liquid waste recycling container sizes start at 50L.

5. What are your company's preferred bin size (most economically viable)?

Liquid waste contractors will generally take waste in secure drums and bulk containers in larger volumes preferably.

Solid waste bins in the size range of 3 – 6 m³ are the preferred size for solid waste contractors and recyclers of specific and segregated materials.

One company specialised in transporting recycling material and preferred larger bin sizes of 30 m³.

6. Most popular bin size?

The most popular bin size for solid material was a 3 m³ bin. There was a strong correlation between the company's preferred bin size and the most popular bin.

Liquid waste is usually collected in containers ranging from 50L to 200L or pumped directly from storage tanks on site.

7. Does the company sort recyclable materials after collection or are customers required to segregate waste prior to disposal?

Liquid waste recyclers generally prefer the waste to be separated by the customer. Similarly, most of the solid waste recyclers preferred the material to be segregated first. Four of the businesses provided a separation service for recyclable materials and this separation was mostly conducted in house.

8. What happens to recyclable materials collected by company?

One liquid waste recycler processed the product mechanically and was the only business that recovered most of the recycled resource internally so that it could be on-sold and reused. Other businesses generally used a third, mechanical recycler or transported the material interstate/overseas for processing prior to distribution to end user markets. The destination for certain liquid waste (used oil) is often dependant on the market.

Paper and cardboard is typically baled and sent to the eastern states or overseas (depending on the market) for reprocessing by paper recyclers. Other solid recyclable material is sent to local materials recover facilities (MRFs) or mechanical recyclers. Plastic is sent to local processors before being transported overseas/interstate for processing prior to distribution to end user markets.

9. Do you believe there is an economically viable market for recyclable material?

The recycling of metals, paper and cardboard were considered economically viable by respondents and one business operator stated that these were the only economically viable materials to recycle.

A liquid waste recycler suggested that the recycling of most materials was not economically viable and that the government should introduce a landfill ban to prevent recyclable material from being discarded at landfill sites.

Plastic was considered economically viable by two respondents and another two stated that it was generally viable if it didn't require exportation for processing and another advised that only High Density Polyethylene (HDPE) plastic was economically viable. Two other businesses listed the economic viability of recycling plastic as marginal and dependant on the type of plastic.

Three businesses stated that electronic waste was not economically viable whilst another two listed e waste as being marginal.

Because of the weight and nature of the material and lack of local markets, glass was generally considered as being uneconomically or marginally viable. One company stated that the recycling of certain types of glass was economically viable.

Two companies listed wood as being marginally economically viable. One business suggested that co-mingle recycling services were not viable and another listed construction and demolition recycling as marginally viable.

10. How does your company find new customers?

a) Company actively visits/contacts new potential customers

b) Customer approach your company

c) Both - % a - %b

Four businesses found new customers predominantly by actively pursuing potential customers. Two of the companies that specialised in liquid and hazardous waste recycling did not source new customers to a great extent and relied on customers contacting them. Three businesses felt that new customers were found equally by the company actively approaching new customers and by customers approaching them.

11. Does your company actively seek business from smaller industrial premises?

A survey of small to medium sized Bellevue industrial premises indicated that they often cannot find recycling service providers for the smaller volumes of waste they generate from their business operations.

One business did not seek business from smaller industrial premises and suggested that government regulation would be necessary to recover recyclable material discarded to landfill by this sector.

All the other nine businesses advised that they did seek business from smaller enterprises

12. Does your company have the capacity to collect/empty standard wheelie bins?

Most recycling companies could service wheelie bins with the exception of a large paper recycler and a liquid waste removalist. Whilst the recycling service providers have the infrastructure to do this, it is often not economically viable to collect wheelie bin volumes unless it is part of a dedicated run e.g. contracted Council collection.

13. What can be done to improve recycling amongst small business?

Responses to this open question were mixed but many common themes and suggestions were raised.

Improving recycling infrastructure and more support for recycling industries from the government was raised by many of the operators surveyed. As economic viability for certain materials can be marginal, many businesses feel that the state and/or local governments could take a more proactive and supportive role in this area. Suggestions for improvements made by the recycling operators include:

- a) Developing central or localised MRFs that recycling companies could utilise. Assistance with transitional costs from waste to recycling services would also help businesses to expand their recycling services.
- b) Assistance with local recycling schemes such as providing suitable community bin sites, managing or assisting with the management of localised drop off centres and improved bin sharing opportunities could also be provided.
- c) Improving planning policy to ensure adequate space is provided for recycling bins in industrial premises. Planning policy could also include provisions for larger, communal bins (which offer more incentives for recycling service providers) rather than requiring all premises to have a small refuse bin.
- d) More education and awareness raising of waste management issues and legislative requirements. Support for GreenStamp businesses and for business that ensure their wastes are legally disposed of will create a level playing field. All businesses should be supplied with a Council recycling bin and consideration should be given towards increasing the size of recycling bins while reducing landfill bins.
- e) More enforcement action particularly for business operators who do not legally dispose of waste. The development of compatible data bases by the DoE and Water Corporation to help track hazardous waste could also be considered.
- f) Introducing bans on certain wastes entering landfill sites and increasing the landfill levy to support recycling collection systems. Promote the economic benefit of recycling and not having to pay a landfill levy.

- g) Introducing product stewardship requirements for new product suppliers and/or including a levy for recycling disposal.

14. Does your company prefer contracts with customers?
If yes, what is the usual contract duration?

Most of the recycling companies preferred contracts with their customers with the exception being liquid waste and hazardous waste recyclers. The preferred contract time was between 12 months and three years.

15. Does your company charge for:
15(i) Bin hire

Most recycling companies charge bin hire rates but this is dependant on the frequency at which these bins are serviced. "On call" bin arrangements usually attract a bin hire rate.

15(ii) Bin delivery

Only one recycler charged a bin delivery fee although three others also stated that these fees may be payable depending on the frequency of bin emptying and on the length of contract signed.

15(iii) Bin emptying

Most recycling companies charge for bin emptying. Some businesses that recycle specific waste streams (paper and plastic) did not charge to collect material from their customers depending on volumes.

15(iv) Other fees (contaminated or hazardous)

One business charged a processing fee while others may charge depending on the composition of the waste. Contaminated loads and the disposal of hazardous waste material will often cost the recycling company more and these costs are likely to be passed onto the customer.

15 (v) How are bin emptying fees set (e.g. by type of waste, weight)?

Emptying fees are generally set by weight or volume or a combination of both. One contractor also set fees after considering the transport distance involved and the volumes of waste being removed.

16. Does company offer recycling bins at cheaper than landfill rates and are customers informed of this?

The surveys conducted of Bellevue businesses indicated that some industrial business owners were unaware of the availability of cheaper, recycling options. Waste management businesses that offered both recycling and waste

to landfill services all advised that they charged less for recycling services and their customers were advised of this.

One liquid and hazardous waste recycler charged a flat rate for removing waste but endeavoured to recycle this wherever possible. Disposal and treatment options often cost the same but recycling certain liquid wastes allows some cost recovery to be realised.

17. Does the company have access to sufficient bins to meet demand?

This question was asked as there was some anecdotal evidence suggesting that the lack of bins was currently an issue for some recycling service providers. Only one business which specialised in the recycling of plastic indicated that they had a supply issue with bins.

18. With landfill levies set to rise over the next few years, will your company look to increase recycling services to reduce reliance on landfill as a disposal option?

Waste management businesses that offered both recycling and waste to landfill services all advised that they would look to increase the level of recycling services and reduce their reliance on landfill as a disposal option.

19. The Swan Catchment Council is currently looking at programs that increase recycling rates, is your company interested in receiving referrals from any waste reductions programs we run?

All respondents indicated that they would like to receive customer referrals from any programs run by the SCC. Finding businesses that generate sufficient recyclable material and who are willing to sort, store and pay for recycling services will be more difficult.

20. Any further comments?

The following comments were received from the recycling business operators:

- Government needs to look at the big picture (there are plenty of suitable uses for certain waste streams but the lack of organisation and/or bureaucracy often prevented this material from being used which resulted in disposal landfill e.g. crushed concrete waste which could be use for road base), co-mingle support, positive imaging (for recycled products and for recycling), realistic targets, lack of government authority and direction.
- Recycled waste oil market creation is necessary
- Make the public aware of where the increase in the landfill levy is spent, motivated customers will find space for separate bins, Karratha and

regional issues also need to be considered as recycling rates in regional areas are poor, a national database for difficult waste streams needs to be developed

- Not much competition for recycling, increasing the landfill levy will promote recycling, there is often good SME interest in recycling when cost savings are shown and explained to SME operators
- Government departments need to provide a clear outline and strategic direction for waste management. Ideas include power generation from the incineration of combustible waste and a central recycling facility (MRF) being developed to assist the local recycling industry.
- More education for the SME business sector is required, door to door delivery of recycling pamphlets to educate industry and households.
- The recycling industry needs an industry body to represent members (currently waste management body representation only).
- A market for local recycled paper needs to be developed.
- Waste Management Association – young, professional group has a good mix of members that could promote recycling issues, develop a local market for recycled products.

The ten companies that participated in the surveys were all very interested in having the opportunity to provide input into SME recycling practices and for participation in any ongoing programs arising from the findings or from further projects organised through the Swan Catchment Council.

It is also worth noting that these companies are not necessarily in direct competition with each other and often found or developed niche markets that worked in a partnering or complementary fashion within the recycling section of the waste management industry.

Whilst the recycling of some materials is considered to be economically viable, other materials are not and issues for the recycling industry include the

low cost of disposal to landfill, the lack of incentives and support from government and the lack of local markets for recycled products

The recycling component of the waste industry, though market driven, is very much self-managed although proposed legislation changes with the Waste Avoidance and Resource Recovery Bill may mandate for improved recycling for some materials.

Local waste is either recycled or disposed to landfill (incineration in some instances) and recycling operations must be economically viable. Many of the operators surveyed called for more government intervention and support for recycling in Western Australia.

4.0 Recommendations.

The comments and suggestions listed in the previous section are received from waste management and recycling business operators and do not necessarily represent the views of the Swan Catchment Council.

After considering the comments received from recycling and waste service providers, the following key recommendations are offered:

4.1 Key Recommendations.

- That local government take a more pro active approach to dealing with SME's. More education and awareness raising of pollution should occur in the first instance followed by enforcement activity to ensure a level playing field amongst SME's.
- That local government provide localised recycling facilities (ie MRFs). Investigate partnerships between local councils and recycling contractors to increase the range and amount of recycling services provided.
- That local and state government investigate alternative means and types of information dissemination to SMEs and the recycling industry in general. The

reliance on web based information is not appropriate for many SME's who lack access to this.

- That the state government introduce a substantial increase to landfill levy for future years. Whilst this levy increase has been determined for the immediate future, substantial increases to raise revenue that can support recycling initiatives and infrastructure should be considered.
- That state and local governments foster the development of product stewardship. This could be by introducing legal requirements for certain waste streams, by assisting the recycling industry to increase recycling rates in the business community or by introducing procurement policies which incorporate environmental considerations.
- That state and local government consider the introduction of a levy based on the recyclable potential of the waste streams being disposed to landfill. A levy could be introduced for any recyclable waste disposed of to landfill.
- That all tiers of government work together to provide a clear direction for the recycling industry. A proactive role by government will provide businesses with more confidence in their decision making process and assist investment in long term recycling infrastructure.
- That the state government introduce legislation which effectively prohibits the disposal of certain hazardous and/or recyclable material in landfill.
- That recycling companies establish a formal recycling industry organisation which represents their views. Links to waste management associations can be maintained but a recycling industry representative body will be able to advise and lobby governments on matters that promote recycling initiatives (such as pushing for a rise in the landfill levy which many waste to landfill operators would oppose).

APPENDIX C

SWAN CATCHMENT COUNCIL PROJECT NEWSLETTERS

ZERO WASTE

live the vision

Bellevue Sustainable Industry Project Update No. 03 - February 2007

This update has been developed to inform the industrial businesses in Bellevue of the project's progress. The Bellevue Sustainable Industry Project is a Swan Catchment Council project aimed at improving waste management practices in the Bellevue industrial area.

FREE TO USE CARDBOARD/PAPER BINS IN BELLEVUE

A three month trial for Bellevue businesses to use communal cardboard and paper bins for free has started. With high volumes of cardboard waste not being recycled, the Swan Catchment Council has funded two cardboard/paper recycling bins in two separate locations in Bellevue.

Thank you to Frank and Peter at **SFM Engineering** for agreeing to locate a COMMUNAL PAPER AND CARDBOARD recycling bin at their facility at 45 Elgee Road.

Thanks also to Peter at the **Farm Shop**, 32 Clayton St, for agreeing to host a similar COMMUNAL PAPER AND CARDBOARD recycling bin.

Any business in the Bellevue industrial area can take their cardboard and paper to the locations outlined until 16 May 2007. Cardboard and paper must be clean and boxes broken down prior to being placed in the bins.

Your business is encouraged to use these bins for **free** as part of a trial to see if the use of central recycling station can be successful in the Bellevue area.



Frank from SFM Engineering next to one of the communal paper & cardboard bins.

BUYING RECYCLED

The Waste Management Board is currently reviewing a contact list of recycled product suppliers. This should be completed in about 6 weeks. Anyone interested should visit www.zerowastewa.com.au and click on "Recycling".

NEW FACES

You may notice two new faces from the Swan Catchment Council (SCC) working on waste matters in Bellevue. Scott Favacho and Keith Pekin have recently joined the team and will be working with Bellevue businesses to assist you with your waste and recycling.

The Bellevue Project has provided valuable information on the way small-medium businesses operate and the barriers they face and must overcome. Agencies such as the SCC can help promote better environmental practices. The information we receive from business operators will form part of a larger national project specifically tailored for small to medium industry.

Should you have any waste or recycling issues or require any advice about these matters, please contact Scott on 9374 3323 (0434 143 688) or Keith (0413 844 413).



(l-r) Keith Pekin and Scott Favacho from the Swan Catchment Council will be visiting Bellevue businesses soon to commence re-surveying during April 2007 to help promote better environmental practices.

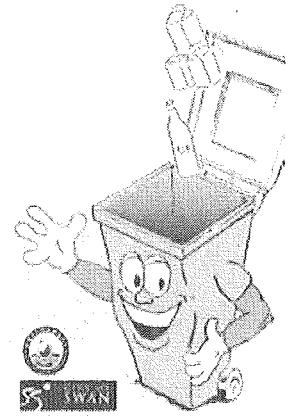
WASTE MANAGEMENT IN WA

Many major waste companies in Western Australia have seen that with rising landfill levy costs, investing in recycling makes good economic sense.

Most waste companies now offer paper and cardboard recycling bins at cheaper than landfill bin rates (No landfill levies to pay).

Rather than getting a large bin to throw your cardboard boxes and paper in, speak to your waste contractor about getting a separate recycling bulk bin and reducing the size of your existing landfill bin...it might just be cheaper.

The City of Swan still provide a fortnightly recycling bin for smaller waste volumes for a one-off delivery fee. Filling this bin with aluminium, paper, cardboard and glass will reduce the amount of waste that ends up in landfill and reduce greenhouse gas emissions at the same time.



CONTACT THE SWAN CATCHMENT COUNCIL

Swan Catchment Council
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(Corner Bishop Road)
MIDDLE SWAN WA 6056

Swan Catchment Council
PO Box 2206
MIDLAND WA 6936

Phone: (08) 9374 3333; Fax: (08) 9374 0685
Email: <mailto:saicc@environment.wa.gov.au>
Website: www.swancatchmentcouncil.org

Bellevue Industry Project Officers:

Scott Favacho; Tel: 9374 3323 Mobile: 0434 143 688 Email: scott.favacho@dec.wa.gov.au
Keith Pekin Tel: 9271 7922 Mobile: 0413 844 413 Email: keith.p@nmcg.com.au

ZERO WASTE

live the vision

Bellevue Sustainable Industry Project Update No. 01 - June 2006

This update has been developed to inform the industrial businesses in Bellevue of the project's progress. The Bellevue Sustainable Industry Project is a Swan Catchment Council project aimed at improving waste management practices in the Bellevue industrial zone.

THE WASTE SURVEY

You may recall a 'Waste Survey' that was conducted by Peter Male and Mick Pattison from the Swan Catchment Council between December 2005 and February 2006. All industrial businesses in Bellevue were visited and 120 (86%) completed the survey. A big THANKYOU to all those who participated.

The results of the survey have provided some valuable information and will now be used by the Swan Catchment Council to assist businesses improve waste practices.

Some important findings from the survey were:

- 96% of businesses are interested in the environment;
- 61% know that their business has an impact on environment health;
- 73% are interested in participating in a Waste Reduction program.

A full report on survey results has been developed by Edith Cowan University and is available to any interested business owner. Please phone Peter or Mick on 9374 3333 if you would like a copy sent to you.

WHAT WASTE

It has been interesting to find out how much waste is being disposed of from the Bellevue industrial area each week:

• Steel	26m ³
• Cardboard/paper	65m ³
• Plastics	19m ³
• Wood	12m ³
• Tyres	420 units
• Oil	3288 litres

A very positive finding is that almost all **oil and steel** is currently being recycled. Our goal will be to boost the recycling rate of other waste, particularly cardboard/paper, plastics and wood.

WHAT NEXT

Mick and Peter have been visiting various waste recycling contractors over the past months to find out what collection services are available and which would most suit businesses in Bellevue.

Several companies in particular have shown a keen interest in providing bins and a collection service at very competitive rates – "definitely cheaper than the cost to dispose to landfill".

With this information Mick and Peter will be revisiting all businesses that have shown an interest in recycling to discuss ways on how to make recycling an easy, effective and cost saving exercise.

If your business has not been revisited in the next month or two and you are interested in recycling your waste please phone Peter or Mick.

In a statement last month regarding increasing the cost of waste to landfill, Environment Minister, Mr Mark McGowan mentioned:

"...if we want to create a sustainable future for our children, we need to act now to change the way we deal with our waste." "What we need to do is change the way we think about waste; it is a resource like any other material and can be recycled into new products with real value."

Did you know...

Stormwater drains in the Bellevue Industrial Precinct flow directly into the Helena River.

Did you know...

Recycling 1 aluminium can saves enough energy to run a TV for 3 hours.

MORE INFO

- If you would like to know more about this project, or what benefits are in it for you, please do not hesitate to contact Peter or Mick on the numbers mentioned below.
- Information Sheets
The Swan Catchment Council has recently developed a set of Industry Information Sheets. They provide clear and simple information to help light industrial businesses comply with environmental regulations. The sheets are freely available through Peter or Mick or can be downloaded from our website at www.swancatchmentcouncil.org.
- Web Sites
If you want to look for further information on the web, the following sites are a good place to start:
www.wastewa.com
www.wastenet.net.au

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ZERO WASTE

live the vision

Bellevue Sustainable Industry Project Update No. 02 - October 2006

This update has been developed to inform the industrial businesses in Bellevue of the project's progress. The Bellevue Sustainable Industry Project is a Swan Catchment Council project aimed at improving waste management practices in the Bellevue industrial area.

RECYCLER'S ARE IN BELLEVUE

The two main types of waste that are currently being targeted for recycling in the Bellevue Industrial area are paper/cardboard and plastics. If you produce these types of waste, you may have already had a visit from AMCOR (for paper/cardboard) or Recycla-plas (for plastics).

These recycling companies are keen to help businesses in Bellevue recycle their waste where possible. The cost to your business of using these services should be cheaper than disposing waste to skip bins which go to landfill.

If you only produce a small amount of cardboard/paper, the cheapest option may be to use a City of Swan recycling bin (yellow lid wheelie bin). These bins can also be used for a limited range of plastics, such as drink/juice/milk bottles (with 1, 2 or 3 printed on the bottom), but generally not industrial type waste.

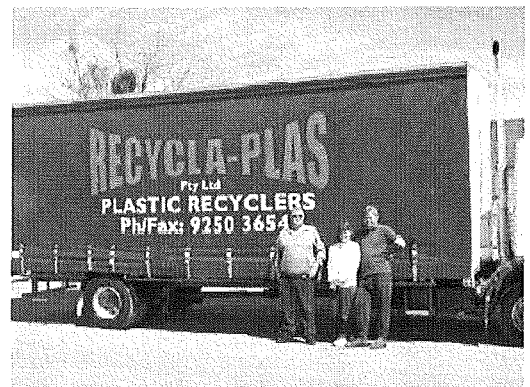
If you would like to save some money by using a recycling service give Peter or Mick a call at the Swan Catchment Council on 9374 3333 to help organise this.

PLASTIC IS RECYCLABLE

After discussions with businesses in Bellevue, a plastic recycler was found that can collect and process just about any sort of waste plastic. Recycla-plas, based in Midvale, is a useful business that can provide bins (or bags) and a collection service free of charge. They are interested in collecting consistent types of plastic, eg. offcuts, wrapping material.

Using this service could save you money (and the environment) if this waste is currently going to landfill.

If you have not already received a call or been visited by Recycla-plas, and regularly have plastic to dispose of, phone Recycla-plas on 9250 3654 to see how they can help.



(l-r) Mick Pattison from the Swan Catchment Council together with Nilla and Steve Kuklinski from Recycla-plas.

WHAT NEXT

We will be revisiting businesses in the area from early October to see how recycling practices are working. We will try and make sure your business is benefiting (saving money) where possible from better waste practices.

We will also be delivering some of our Industry Information Sheets that provide general information on the following:

- What is Stormwater?
- Stormwater Pollution Prevention
- Trade Wastewater
- Waste Management
- Hazardous Materials
- Air Quality Management
- Noise Management

The achievements of the Bellevue project (so far) were presented to the Minister for the Environment, the Hon Mark McGowan, along with more than 100 representatives from across government, businesses, industry and community groups at a forum in August to share the 'Toward Zero Waste in WA' vision. This presentation highlighted our efforts in Bellevue and was well received.

Did you know... Paper can usually be recycled up to 8 times.

Did you know... Australians consume over 1.3 million tonnes of plastic every year – more than 71kg for every person.

MORE INFO

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- Web Sites
If you want to look for further information on the web, the following sites are a good place to start:

www.zerowastewa.com.au
www.wastenet.net.au

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