

Case Studies: purchasing recycled mixed plastic content products

Across Australia organisations are purchasing products with recycled mixed plastic content.

They do this because of the benefits associated with the products including their durability, cost and aesthetics but also as a key element of their waste management strategy.

Whether you are a local government, business or government organisation such as a hospital or school, you can 'close the loop' on mixed plastic that might normally be sent as waste to landfill. This can be done by collecting the waste and providing it to manufacturers who will then recycle it to create useful products for use by organisations and the local community.

By diverting waste to landfill, organisations not only support the environment, they also reduce their own costs associated with waste disposal.

Local government are also in a position to demonstrate to the community that waste can be turned into valuable community assets such as furniture or play equipment made from recycled mixed plastic.

Schools and kindergartens can provide children with a connection between what they learn in the class room about recycling and what this means in practice. Recycled mixed plastic products are also very durable, so they can withstand the rigors of the playground.

Businesses may enhance their reputation by increasing recycling efforts and having waste recycled in Australia, instead of sending it to landfill or overseas for processing. These good news stories help develop a stronger connection between business and the local community.

The following case studies demonstrate that strategies to buy recycled mixed plastic products and strategies for better waste management support each other, creating greater benefits than each strategy on its own.

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- Strong partnerships to generate jobs and financial savings in south east Queensland

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- Yesterday's barrel is tomorrow's bollard – the drumMUSTER program

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- Comparing costs over a product's lifetime in Cardinia Shire

Case Study 1

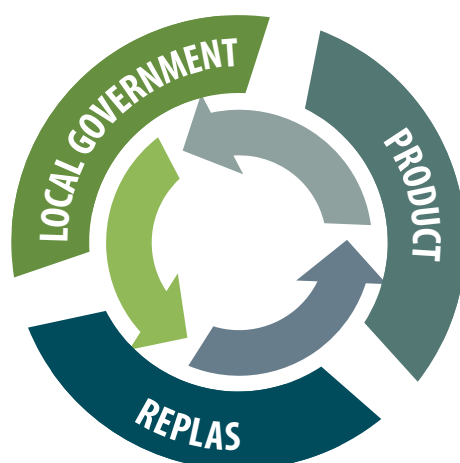
How recycled mixed plastic products are made

Key points:

- o partnership between local government and industry
- o creates a closed loop waste management solution with economic benefits
- o purchasing commitment supports new recycled product manufacturing plant
- o waste plastic no longer goes to landfill
- o local government buys back products

Commitment

In 2012 seven local councils in south east Queensland teamed together to form a buying group to purchase from Victorian reprocessing plastics company Replas. The councils were able to negotiate a deal to purchase recycled mixed plastic products made from their own plastic waste. In the past that waste would have been sent to landfill. The agreement guaranteed a supply of plastic to Replas and a commitment from the councils to buy it back as product at an agreed price. This gave Replas the confidence to establish a manufacturing plant in south east Queensland.



Investment

As a result of this commitment, Replas has been able to expand from three plants in Victoria to set up a fourth manufacturing plant in Queensland. This mutually beneficial initiative is being assisted with a \$600,000 grant from the Australian Packaging Covenant.

Replas Managing Director Mark Jacobsen said "We have been able to invest over \$1M in this new plant because these local councils and state government agencies have committed to buy product, and the APC support has minimised the risk. The councils have indicated their price, quantity and timeframe for product, and this should make it viable for us to reprocess their plastic waste and close the loop. We would like this to become a model for ways to end waste while creating local jobs and a sustainable product."

The new Replas facility will be the only operation in Queensland able to process a full range of soft and rigid waste plastic packaging materials. This will divert plastic packaging, such as shopping bags, shrink-wrap films and sterile wrap, from landfill. This plant will employ three people initially, build to seven, then increase to 10 as demand grows and as the plant expands its capacity. In stage one they will process 1,000 tonnes of waste and produce 1000 tonnes per annum of finished goods such as bollards.

Benefits

The benefits to the seven councils include:

- o guaranteed product and price
- o reduced cost of waste to landfill by making it easier for the community (including local business) to recycle more types of plastic
- o establishment of a new employer in the region and skilled manufacturing jobs for the long term
- o conservation of space in council landfill
- o development of new products from a stream of waste that previously went to landfill.

From an environmental perspective thousands of tonnes of packaging waste are being diverted from landfill to be made into useful products. This also saves the use of virgin materials such as timber or oil derived plastic.

Supporting materials

Support materials have been developed to help inform decisions regarding the purchase of recycled mixed plastic products. For example, the Sunshine Coast Council has recently released an Open Space Landscape Infrastructure Manual that includes:

- o a stated preference for using recycled materials and those that can be easily recycled
- o criteria for bollards (including life expectancy of 25 years for recycled plastic bollards)
- o product examples and installation specifications.

While the manual covers all materials, not only recycled mixed plastic, the inclusion of clear specifications regarding their selection and use is likely to lead to greater uptake of recycled plastic products such as bollards, once the benefits are realised.

In addition, the Sunshine Coast Council is promoting the benefits of products made from recycled materials being put back into community use.

Case Study 2

Solving a flexible problem at lululemon!

Key points:

- o yoga company lululemon wanted to recycle its flexible film packaging
- o only mixed plastic waste recyclers can accept flexible film packaging for recycling
- o the recycler was able to use the waste to create products that lululemon can buy back and use in store
- o solves a problem and creates value at the same time.

The problem

lululemon is a specialist manufacturer and retailer of yoga, athletics and gym wear, with outlets across Australia. Since its foundation in Vancouver, Canada in 1998 it has shown a strong environmental conscience.

The company was concerned that its flexible plastic waste, such as the packaging used to protect products during transport, was all going to landfill. Unfortunately, flexible packaging is not accepted in standard recycling processes as it may get caught in the processing machines. As a result, most of this waste was being sent to landfill.

The solution

The solution was spear-headed by two employees from the Victorian lululemon team. Replas, a mixed plastic recycler, was able to accept the material and the result was an innovative solution that closed the loop on plastics recycling and provided multiple in-store benefits.

- o flexible waste from lululemon's stores is now sent to Replas
- o Replas uses the waste to produce 100% recycled mixed plastic seats, bollards and materials
- o lululemon utilise the products made from the plastic waste in store and office layouts

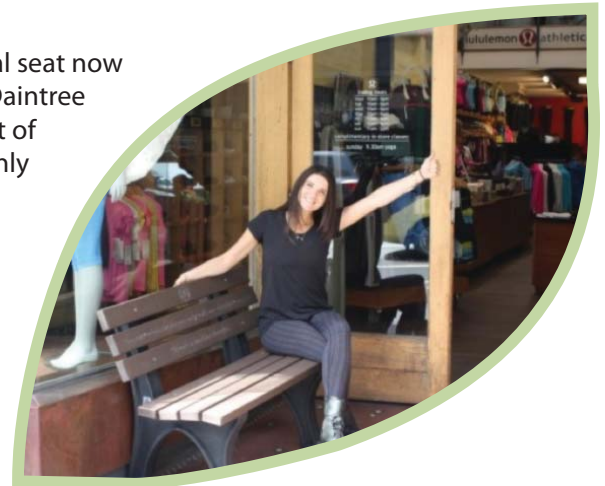


Results

One of the first products made from the waste was a communal seat now located outside lululemon's Chapel Street store. It is a Replas Daintree seat and within the slats of the back support there is an imprint of the lululemon logo and its mantra - 'The conscious brain can only hold one thought at a time. Make it a positive thought'.

The benefits

This seat has saved the equivalent of over 10,000 plastic bags from being sent landfill. In doing so it helps lululemon spread the message that it is a good environmental citizen. It also provides a place for people to sit and chat.



Your ideas

If you think your organisation may be able to benefit from partnering with the plastic recycling industry to close the loop on plastic recycling, contact one of the following organisations:

- Ø Australian Packaging Covenant
- Ø Sustainability Victoria
- Ø Zero Waste SA
- Ø Office of Environment and Heritage (NSW)
- Ø Redcycle
- Ø ECO-Buy
- Ø recycled plastic product suppliers in your state.
- Ø drumMUSTER

Links to these contacts can be found on our Recycled Mixed Plastic Purchasing Toolkit page
<http://ecobuy.org.au/recycled-plastics-toolkit>

Case Study **3**

Yesterday's barrel is tomorrow's bollard

Key points:

- used plastic chemical containers commonly go to landfill
- drumMUSTER* product stewardship scheme
- local government in South Australia is leading through ecoprocurement.

The problem

Used chemical containers such as those used on farms and by vets were being sent to landfill rather than being recycled.

The solution

In order to address this problem an innovative national program *drumMUSTER* was developed that converts the used plastic drums into recycled content products.

drumMUSTER is a national product stewardship program which organises the collection and recycling of eligible, pre-cleaned agricultural and veterinary chemical containers. It is supported by manufacturers of agricultural and veterinary chemicals; farming associations, and state and local governments.

drumMUSTER has established collection facilities all over Australia thanks to the partnership with local governments and other collection agencies. Over 350 local councils are participating in the program, providing collection and drop off facilities.

How purchasing is the key

Of course, recycling is not cost effective without markets for the finished products. Local governments have played a key role in driving those markets by buying products made from recycled chemical containers. This creates the market pull required to make the *drumMUSTER* a success.

Port Pirie Council, Salisbury Council and the City of Tea Tree Gully in South Australia have been major supporters of *drumMUSTER*. They buy recycled plastic stakes and bollards for use in their parks and gardens. Other councils, including Stirling in Western Australia, have also bought bollards made from recycled plastic collected through the *drumMUSTER* program.

The use of recycled plastic has meant councils have been able to move away from traditional timber post and rail construction. They value the longer life and reduced maintenance offered by recycled plastic.



More information:

Learn more about *drumMUSTER* here www.drummuster.com.au/our-story

Your ideas

Contact one of the following organizations, to find out how your organisation may benefit from partnering with the plastic recycling industry to close the loop on plastics recycling:

- Ø Australian Packaging Covenant
- Ø Sustainability Victoria
- Ø Zero Waste SA
- Ø Office of Environment and Heritage (NSW)
- Ø Redcycle
- Ø *drumMUSTER*
- Ø ECO-Buy

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drumMUSTER will only accept containers for recycling that have been triple rinsed or pressure rinsed to ensure there is no chemical residue left behind.



Case Study 4

Playground Furniture – Cardinia Shire

Comparing the cost of a product over its entire life cycle is vital. Some products have a lower upfront cost but are less durable and therefore more expensive over a longer period of time. This is especially true when comparing recycled plastic to other materials.

Procurement example

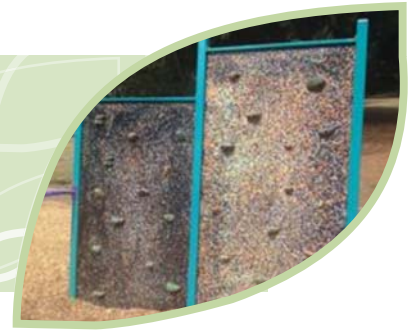
Cardinia Shire Council, on the eastern outskirts of Melbourne, was faced with replacing a plywood climbing wall in one of its playgrounds.

One dilemma they faced was that the plywood climbing wall has a life of just five years. However replacing it with recycled plastic, which has an expected life of 20 years, was three times the cost.

By comparing prices over the expected 20 year life of the playground, Cardinia were able to justify the use of recycled plastic on cost grounds. The ECO-Buy Recycled Mixed Plastic Costing Tool illustrates how this decision could be justified.

Procurement tip

When obtaining quotes on outdoor products set a life expectancy or project life. You can ask the supplier to guarantee the product over the life of the product, or quote based on how many products will be required over that period.



Total lifetime cost over 20 year project life

Plywood option costs **\$555 more** than **recycled plastic** alternative

(per unit)	Plywood sheet		RMP sheet	(per unit)
Price per unit	\$100		\$300	Price per unit
Life expectancy	5 yrs		20 yrs	Life expectancy
Installation cost	\$100		\$100	Installation cost
Annual maintenance costs	\$0		\$0	Annual maintenance costs
Disposal cost	\$10		\$0	Disposal cost
	\$1,355		\$800	

This decision made sense even without taking in the additional cost savings of reduced maintenance (recycled plastic never needs painting), and reduced down time caused by recommissioning the playground at regular intervals.

These resources have been developed by ECO-Buy with the support of the Australian Packaging Covenant, Zero-Waste South Australia, and Sustainability Victoria in consultation with users and suppliers of recycled mixed plastic products.

For further information contact ECO-Buy <http://ecobuy.org.au/contact/>