

# Plastics recycling in the Shoalhaven - Q & A

## *Q. What are plastics?*

Plastics can be broadly defined as a range of synthetic and non-synthetic materials that use polymers as their main ingredient.

Polymers can be both man-made (eg nylon, polyester and polypropylene) and natural (eg silk, hair and DNA)

## *Q. Why do we use so much plastic?*

Plastics are highly adaptive, making them very attractive across a wide range of applications. Plastics can be lightweight, durable and relatively inexpensive to produce.

Plastics may be mixed with other materials to improve their performance, for example fire retardant, dyes and elastomers. Plastics can be used in bottles, furniture, mouldings and plastic bags. They can also be spun into fibres that are used to make fabrics (such as polyester, nylon, rayon, acrylic, and spandex), string, ropes, cables. They are used in coatings, adhesives, elastomers and rubbers.

Essentially plastics are used in everything from the space shuttle exterior to canned vegetables.

## *Q. How are plastics recycled in the Shoalhaven?*

The current circular plastic recycling programs include:

**Expanded Polystyrene** – clean “Styrofoam” is accepted for recycling at all of Council’s 10 recycling and waste depots. The foam is shredded, heated and extruded into marketable pellets of polystyrene. Polystyrene foam is not accepted in the yellow top recycling bin as, during transportation it gets crushed and contaminated with glass shards, dirt and grime. This renders it unrecyclable.

**PVC (polyvinyl chloride)** – these plastics contain chlorinated compounds, so it is important to separate them from other plastic polymers. There are limited opportunities for recycling PVC which comes in many different forms. One opportunity is the shredding and chipping of PVC pipes, with the chips returned to the manufacturer to produce non-pressure pipes. Pipes are accepted at Council’s Recycling and Waste Depots.

**HDPE (high density polyethylene) in a commercial setting, presents as** rigid fractions such as bins, tanks and pipes – these hard HDPE items are shredded and sold into the market. The cleanliness of this shredded HDPE can hamper its on-sale. To combat this and to increase opportunities for HDPE recycling and

sales potential, Council has applied for grant funding to install a plastic washing and flaking plant at the West Nowra Depot.

**HDPE in a domestic setting, mostly presents as** milk bottles. These and similar plastic containers are recycled through the kerbside (yellow top bin) system.

**PET (polyethylene terephthalate)** – used typically for fizzy drink bottles, which are recycled through the kerbside (yellow top bin) system.

**PP (polypropylene)** – is used for a wide variety of products. In its food container form, it is recycled through the kerbside (yellow top bin) system. In its fabric form, it is recycled through Council's newly commissioned MICROfactorie™ into either "green" ceramic tiles or 3D printer filament.

**Flexible PE (polyethylene) or Film** comes in many and varied forms –

- Clean post-industrial film, for example large clear plastic sheets used to wrap mattresses and other furniture, is currently baled at the Depots and sent on to a plastics recycler.
- Agricultural film such as silage wrap is currently baled at the Depots and sent on to a plastics recycler, with an agreement in place for Council to purchase some of their remanufactured plastic products.
- Mixed soft plastic film – ie: material previously collected in the RedCycle scheme. With the commissioning of Council's own Materials Recycling Facility (MRF) (or recycling sorting facility) at West Nowra in early 2024, there is an opportunity to take advantage of the [Curby](#) collection system. Curby allows soft plastics to be collected separately in the recycling bin and recovered prior to entering the MRF. By 2024 it is anticipated that the capacity of remanufacturers to process soft plastics in NSW will have improved sufficiently to accept the collected soft plastics from Council.
- The UNSW SMaRT Centre team have partnered with Council in ongoing research and development of novel mechanical recycling solutions for the recovered plastics.
- Council is also researching a modular scalable chemical recycling option to complement the overall approach. This has the potential to process mixed contaminated plastics down to its base oil and to use that oil to manufacture new plastic material.

*Q. What of the future?*

All levels of Government are working behind the scenes to develop and maintain viable recycling and recyclable processes.

Read [here](#) what the Australian Food & Grocery Council (AFGC) are working to towards.

Shoalhaven City Council will continue to collaborate with research partners to actively pursue recycling solutions that are implementable in the Shoalhaven.