

Tackling plastic waste

Queensland's Plastic
Pollution Reduction Plan





Minister's foreword

Queensland is home to some of the most beautiful natural places in the world, and it is vital we ensure it is protected.

Sadly, plastic pollution can have a devastating impact on our environment, and it is deeply concerning that the predicted amount of plastic pollution we'll see in our environment will double by 2030.

But, if we work together and take action now, we can pave the way for long term change.

Everyone can play a part in tackling plastic pollution. Even just picking up a piece of plastic out of a creek or river could ultimately help save the life of a turtle, or other marine species.

The Queensland Government's Tackling Plastic Waste—the Plastic Pollution Reduction Plan sets the course for our State to be part of the solution and a leader in driving the necessary change.

We have already seen some great achievements in Queensland in reducing the impacts of plastic waste in our environment through the popular container refund scheme, Containers for Change, and the ban on the supply of lightweight, single-use plastic shopping bags.

The ban on single-use plastic bags has helped reduce the amount of plastic bag litter in the environment by 70%.

And the container refund scheme, implemented on November 1 2018, has helped reduce litter by about 35%.

These are amazing results, but we recognise there is more work to be done. Our Government's Waste Management and Resource Recovery Strategy is also providing a new, more-circular approach to waste, and sets ambitious recycling and resource recovery targets. The Queensland Government is providing \$100 million in funding to support infrastructure and markets that will see recovered plastics going into new products, creating new industries and jobs, instead of wasting away in landfill or being littered.

To help implement long-term change, we have set immediate actions around plastic, including banning the supply of single-use plastic products where necessary, increasing the uptake of recycled plastic materials in new products, and investing in plastic recovery and reprocessing.

We want a bright future for Queensland, and tackling plastic will help ensure we leave this state a better place for our future generations.

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Introduction

Plastic and the environmental damage caused by plastic pollution is attracting significant local, national and global attention.

Communities, environmental groups, businesses, industries and governments worldwide have called for action to avoid the use of plastic, encourage responsible consumption of plastic, increase recovery of plastic resources and reduce the impact of plastic on our environment.

Plastic as a material is extremely versatile and affordable. Our society has developed a strong dependency on it, particularly in our modern day ‘disposable’ culture.

On the other hand, when plastic is not disposed of correctly it can cause great harm to the environment and human health—along with the economic and social costs associated with wasting resources.

Given the complexity and enormity of plastic pollution worldwide, there is a need for concerted state, national and international action that is well targeted and phased over the short, medium and long-term.

To effectively tackle plastic pollution, we need to reduce plastic through the design, manufacturing and packaging of products and their ultimate disposal.

As part of Queensland’s transition to a circular economy, where waste is avoided, reused and recycled to the greatest possible extent, a fundamental shift in the way that we design, use, reuse and process plastics is needed.

The Plastic Pollution Reduction Plan (the plastics plan) takes a holistic approach to managing plastics.

The plan sets the direction for Queensland to be part of the global solution, driving the leadership necessary for long-term change and identifying actions at every step of the plastic supply chain.

This approach also creates new economic opportunities and jobs for our regions, through investment in plastic reprocessing, remanufacturing, and new products and markets for alternatives to plastic.

The Queensland Government will work with industry to design out unnecessary and problematic plastics and identify viable substitutes for single use plastic items. We will also identify and develop new businesses and markets to transform the way plastic is recovered, reused and recycled—creating new jobs and industries for Queensland.

The Queensland Government is committed to laying the foundations now, and driving the changes needed to make better use of our resources and protect our environment for future generations.

Fast facts



About 300 million tonnes of plastic waste is produced every year, almost equivalent to the weight of the entire human population.



Half of all plastic produced is designed to be used only once—and then thrown away. Less than one-fifth of all plastic is recycled globally.



At least 8 million tonnes of plastics leak into the ocean each year—which is equivalent to dumping more than 170 wheelie bins of plastic into the ocean every minute.



Around 800 species worldwide, including 77 Australian species, are impacted by marine debris.



Over 75% of rubbish that is removed from Australian beaches is made of plastic.



More than 85% of contamination in the Great Barrier Reef is from microfibres.



Turtles have a 20% chance of dying if they ingest just one piece of plastic, and over 70% of loggerhead turtles found dead in Queensland waters have ingested plastic.



Plastic in the marine environment is long-lived—for example, a 30–40 year old plastic bag was found in a Sunshine Coast waterway.



Research has shown that 7 in 10 Queenslanders are taking steps to reduce their consumption of single-use plastics when away from home.



Plastic waste in Queensland

Queensland has historically underperformed in recycling and resource recovery. More than half of our waste ends up in landfill and the amount of waste we produce is growing faster than our population and economic growth rate. In addition, Queensland has high rates of littering, most of which is plastic waste.

Although there are still limited plastic remanufacturing and reprocessing facilities in Queensland, several innovative plastic reprocessing businesses and industries across the state have established.

The plastic pollution problem

As a versatile, durable and affordable material, the production of plastic worldwide continues to grow exponentially—despite growing concerns about over-consumption and environmental impacts. Although plastic is mostly recyclable, a large proportion is neither recovered nor recycled.

Often, plastic is designed for single use and could be avoided. This represents wastefulness, a loss of valuable resources and unnecessary demand for plastic from virgin resources, and the fossil fuels used in its production.

Plastic enters our land and water environments intentionally, like litter, and unintentionally through things like the release of microfibres from washing clothes. Once in the environment, plastic persists, causing direct physical impacts, and less direct impacts as it breaks down into ‘microplastics’.

Plastic pollution on land

Plastic litter reduces the aesthetic value and visual amenity of a place, it makes an area look uncared for, unpleasant to be in and less likely to be enjoyed by the public.

The agricultural, fisheries, forestry and mining sectors use plastics on the land for mulches, crop tunnels, irrigation pipes, netting and other purposes.

Recovery and recycling can be difficult in regional, rural and remote areas, which can lead to inappropriate management and the potential for plastic and microplastics to remain in the environment—in the soil and waterways.

Similarly, some industrial and manufacturing processes can result in the escape of plastic which can contaminate land.

Marine plastic pollution

Plastic enters watercourses and coastal waterways through littering and maritime activities (e.g. shipping, fishing). Groundwater can also be impacted.

In the marine environment, plastic can affect marine fauna through direct physical impacts, such as strangulation and interference with digestion.

When plastics breakdown, they persist in the environment as microplastics and can accumulate in marine life through the food chain.

Plastic residues have been found in many species such as sea turtles, seals, whales, birds, fish and shellfish. As seafood, plastic can also enter the human food chain.

Some plastic pollution, such as ghost nets, can cause damage on a macro-scale. Abandoned and unattended fishing nets, traps, pots and lines end up ‘ghost fishing’ with the resulting catch often including threatened and protected species, as well as commercial fishing species.

When caught on a reef, nets not only catch fish, turtles, crustaceans, birds or marine mammals, but they also destroy hard and soft corals, damaging entire ecosystems. Worldwide, hundreds of kilometres of nets are lost each year. This is a global issue, with 95 per cent of the nets that wash ashore in Australia originating from surrounding countries.

Microplastics

Over time, plastic breaks down into smaller pieces.

Microplastics are difficult to remove and have been found in a wide range of locations across the globe: in groundwater, soil and the deepest parts of the ocean, as well as in the atmosphere—contributing to air pollution.

Microplastics have also been found in the human food chain, for example fish and seafood. More research is needed to understand how microplastics migrate through the food chain but the fact that they have been found in salt and beer indicates the problem is far reaching.

Plastic has been detected in human waste from people living in Europe, Russia and Japan, indicating the widespread presence of microplastics in our food chain.

Microplastics occur not only from the breakdown of larger pieces of plastic. Notably, the use of microbeads (small, solid, manufactured plastic particles that don’t degrade or dissolve) in products, including rinse-off cosmetics, personal care and cleaning products, will have long-lasting impacts even with international bans now in place.

Microfibres

Polyester, nylon, acrylic, and other synthetic fibres (which are all forms of plastic) make up over half of the world's clothing material. It is estimated that about 35 per cent of the microplastics that enter the ocean come from these synthetic materials.

These fibres contribute to ocean plastic pollution in a subtle but pervasive way.

The microfibres enter the environment when we wash our clothes but also just through wearing them. Estimates vary, but it's possible that a single load of laundry could release hundreds of thousands of fibres from our clothes into waterways.

Plastic textile fibres are becoming a dominant source of plastic pollution and have been found in the sediment surrounding beaches, in mangroves, in Arctic ice, marine life living in the deepest parts of the ocean—even in products we eat and drink.

Toxins

The harm caused by plastics is often due to what becomes attached to plastic particles. Plastic particles and fibres absorb toxic chemicals while travelling through the environment.

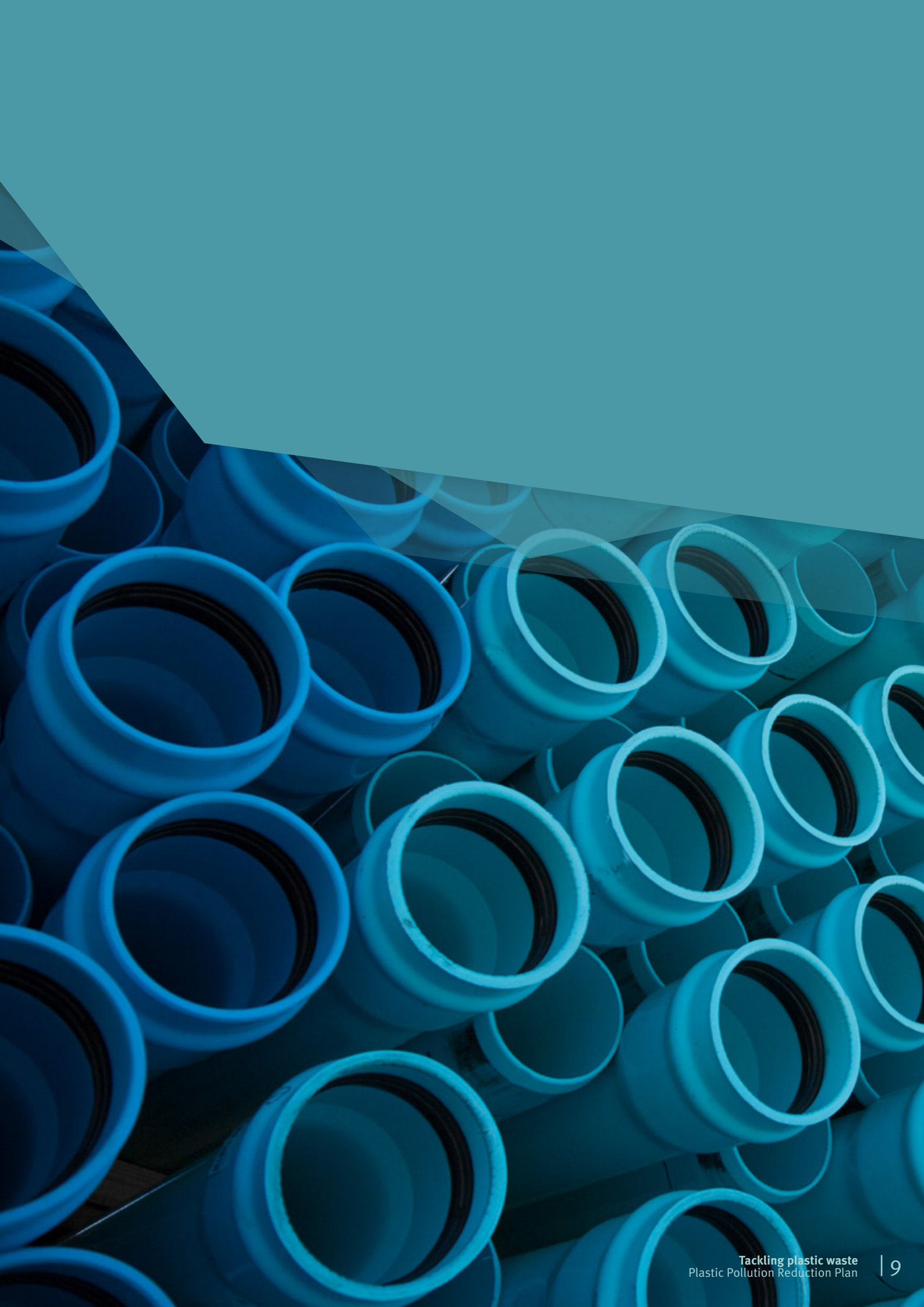
Microbial populations can also form on the surface of microplastics, carrying viruses, bacterial and micro-organisms into new environments.

Chemical and biological contaminants may then pass into and through the food chain.

Economic impact and opportunity

The disposal of plastic represents a lost economic opportunity.

Adopting a more circular economy approach to waste would see these valuable materials recovered for further use, reducing the demand for virgin plastic materials and for the fossil fuels needed to produce them. This will grow demand for recycled content in new products and build new industries and markets. Developing options to avoid the use of plastic, such as the manufacture of alternative products, will create new jobs, new industries, and conserve finite natural resources.





Queensland action on plastic pollution so far

The Queensland Government's Waste Management and Resource Recovery Strategy has set the course for Queensland to become a zero-waste society, where waste is avoided, reused and recycled to the greatest possible extent.

This will be achieved by moving toward a circular economy approach for waste, in which products and materials keep circulating within the economy at their highest value for as long as possible.

The Resource Recovery Industry Development Program provides major investment in the growth of the recycling and resource recovery sector (which incorporates plastics), while reducing the amount of waste produced and ultimately disposed of.

Already, the Queensland Government has delivered significant policy initiatives to address plastic pollution, as described below.



Plastic shopping bags

Lightweight

The ban on the supply of single-use, lightweight plastic shopping bags which started on 1 July 2018 has seen at least a 70 per cent drop in plastic bag litter since the introduction of the ban. Before the ban, Queensland used an estimated one billion of these bags each year. Most ended up in landfill after a single-use, but up to 16 million ended up in our environment each year.

Heavyweight

Queensland is leading national work with the National Retail Association (NRA), the Australian Packaging Covenant Organisation (APCO) and retailers to develop a voluntary sustainable shopping bag code of practice. The key principle of the code is to avoid the supply of plastic bags in the first instance, and where a plastic bag is unavoidable, to use products that are more sustainable (e.g. made from recycled content).

Container refund scheme

Queensland's container refund scheme, Containers for Change, introduced on 1 November 2018 has been embraced by Queenslanders and is tremendously successful—creating more jobs for Queenslanders.

As a result of the scheme, there has been at least a 35 per cent reduction in beverage container litter on average across Queensland. The scheme also provides a supply of clean source-separated plastic materials for reprocessing. Every container for which a refund has been paid must be recycled.

Plastic Free Places

As a community-based program aimed at phasing-out single-use plastics in community precincts, the Plastic Free Places program aims to work directly with food retailers, events and market organisers, and other organisations—assisting them to switch from single-use plastics to alternatives. It also aims to inspire communities to make changes at home and support businesses that go plastic-free.

The first participant in the program since late 2018, Plastic Free Noosa, has had great success through the collaborative efforts of 141 businesses, cafés and restaurants participating in the program.

An economic analysis of Plastic Free Noosa showed the program delivered significant economic benefits to the local community—demonstrating a strong economic case for supporting the delivery of Plastic Free Places throughout the state.

Litter and illegal dumping

As plastics are prevalent in litter and illegally dumped rubbish, the Queensland Government is committed to delivering on goals and initiatives in its Litter and Illegal Dumping Plan targeting behaviours and incidents.

Funding for new field officers to focus on the investigation and prevention of illegal dumping and grants to reduce incidents in hotspot areas are assisting to reduce plastic in our environment.

The Queensland Government is also investing in behaviour change programs in regional areas that seek to reduce litter and illegal dumping over the long-term.

Industry development

The Queensland Government is helping to develop the industries we need for a more circular economy.

It has committed to expanding the waste (including plastics) recovery, recycling and remanufacturing industry in Queensland, and increasing regional resource recovery options through Queensland's:

- Waste Management and Resource Recovery Strategy
- Resource Recovery Industry Development Program, and
- Resource Recovery Industries 10-year Roadmap and action plan (Roadmap).

The Queensland Government has already supported three projects under the Roadmap—to recover and recycle soft plastics (6,300 tonnes per year), increase processing of high-density polyethylene plastic (3,700 tonnes per year), and boost the recovery of kerbside plastic recyclables (1,274 tonnes per year).

Other efforts to develop a more circular economy include:

- Investing in Australia's first Circular Economy Lab with 25 industry partners collaborating to create commercially viable solutions, driven by economic and environmental sustainability. For example, by trialling new ways of packaging to eliminate soft plastic film.
- Convening the 'Challenging Plastics' forum series for key stakeholders to identify opportunities and barriers to reducing plastic pollution and developing new end markets.
- Establishing the 'Plastics Network' to facilitate connections between plastic collectors, recyclers and other stakeholders to ensure there is an active market that buys products containing plastic recycle.

Related actions

In addition, the Queensland Government has:

- Collaborated with other jurisdictions on the phase-out of plastic microbeads in personal care and cleaning products.
- Funded research to develop a methodology to measure the levels of micro-plastics in soils, biosolids and effluent to guide effective action.
- Established a stewardship program for the collection of plastic sugar cane fertiliser bags in North Queensland, which has matured into a commercial and sustainable program leading to:
 - ▶ continuation and expansion of the program nationally
 - ▶ development of a new stewardship program for the collection and recycling of bulk plastic packaging (big bags)
 - ▶ worked with APCO to promote more sustainable packaging.
- Taken action to ensure that people are aware that the release of balloons is a littering offence under the *Waste Reduction and Recycling Act 2011*.
- Commitment to ensuring best practice sustainable events in Queensland by providing advice in the Tourism and Events Queensland events guide and the DPC Events in Qld handbook to help event organisers demonstrate environmental stewardship by not using single-use and disposable items including helium balloons.



What's next?

The plastics plan highlights short-term actions for immediate implementation, complemented by a range of future actions to be developed and implemented. This reflects the complex and long-term nature of plastic pollution problems. Among the short-term actions are the following 'headline actions' that the Queensland Government will proceed with immediately.



Headline actions

Introduce enabling legislation in 2020—subject to a Regulatory Impact Statement, introduce legislation to ban the supply of specific plastic products, starting with straws (taking into account the disability needs of people), stirrers, plates and cutlery and, following further analysis, extend legislation to include coffee cups, other plastic cups and heavyweight plastic shopping bags.

Expand and build on the Plastic Free Places in Queensland program in 2019/20—partner with selected communities to expand the Queensland program, and partner with APCO and Boomerang Alliance to promote and deliver it nationally, based on knowledge and experience gained in Queensland.

Focus further investment on developing plastic recovery and processing infrastructure in Queensland in 2020/21—prioritise grants and incentives to expand plastic recovery and reprocessing facilities and infrastructure, including in regional areas.

Exclude the use of specific single-use plastic items from Queensland Government sponsored events from 2020 onwards—identify opportunities to eliminate unnecessary plastic items or transition to alternative products and processes.

Use government purchasing power to reduce plastic use, require recycled plastic content, and transform the supply market from 2020 onwards—identify the reduction of plastic pollution as a government priority through the Queensland Procurement Policy and set targets for recycled plastic content.

Build community capacity and engagement to reduce plastic pollution in 2020/21—provide up to \$3 million under the community grants program for projects to create positive long-term behaviour change in relation to plastic pollution in Queensland's communities, focusing on: research and development on priority plastics, marine plastic pollution, and place-based community action.



Global action on plastic pollution

Plastic pollution is widely accepted as a significant environmental issue of global concern.

Through international forums, such as the World Economic Forum, plastics have been placed at the forefront of discussions that encourage broader thinking about the use and disposal of valuable resources.

There is a global push to start moving away from the traditional ‘take-make-use-dispose’ approach, and creating a new, more circular system that keeps materials in use for longer, extracting the maximum value from them.

Many of the world’s largest manufacturers and suppliers are looking at more sustainable alternatives and resource recovery opportunities for plastic products and packaging.

Among the priorities agreed by the United Nations Environment Assembly in 2019 were a suite of actions dealing with waste management, including addressing damage caused to ecosystems by unsustainable use and disposal of plastics, significantly reducing single-use plastic products by 2030, and improving full lifecycle approaches to resource management strategies.

The analyses undertaken by the Ellen MacArthur Foundation, the European Commission and the G7 have been influential in redirecting efforts towards a more circular, systems approach to plastics and waste.

In addition, Australia and many other countries around the world have adopted the United Nations Sustainable Development Goals, which are helping focus international efforts on the major global challenges including responsible consumption and production patterns.



The Basel Convention is also an internationally binding agreement which classifies plastic as ‘Waste requiring special consideration’, which significantly increases the regulation of plastics and facilitates transparency of the flows of plastics around the world—including new rules around exporting contaminated and mixed plastic wastes.

In the global arena, key considerations for the Queensland Government are to encourage:

- better packaging outcomes by working with the Australian Government and the Australian Packaging Covenant Organisation to explore and identify opportunities for Queensland Government leadership in the Asia-Pacific region, focusing on improved plastic packaging design, collection and processing systems and innovation; and
- the Australian Government to sign on to and help drive an international agreement to eliminate plastic leakage into the oceans.



National action on plastic pollution

Waste derived from plastic packaging is a complex and major problem, requiring cohesive and coordinated action across all levels of government, nationally and internationally.

Globally, plastic packaging represents more than a quarter of the total volume of plastics used around the world and is often used once and then discarded.

Food packaging is also a commonly littered item in Australia, across all states and territories.

As a result of changing global standards for plastic waste imports, the Council of Australian Governments (COAG) has agreed to ban the export of certain waste products, which includes plastics, and to build Australia's domestic recycling and reprocessing capacity.

The immense scale of plastic packaging provides equally great opportunities for improvement, which Australian governments are committed to taking action on. The APCO co-regulatory body has been set up to reduce the environmental impact of packaging in Australian communities.

The Queensland Government is committed to supporting APCO to meet the 2050 National Packaging Targets, and has played an important national leadership role in areas including work on more sustainable options for heavyweight plastic shopping bags and stewardship for agricultural plastic packaging.

Through Australia's Meeting of Environment Ministers forum, firm commitments are in place at the national level to deal with packaging waste, providing a strong driver for action at the state and territory level.

These commitments include an agreement to make **100 per cent of packaging in Australia reusable, recyclable or compostable by 2025 or earlier**, and for governments to work with APCO to deliver this target.

APCO has worked with Australian governments and industry to develop three additional targets designed to support the overarching target that (100 per cent of packaging in Australia is reusable, recyclable or compostable by 2025 or earlier):

- 70 per cent of plastic packaging will be recycled or composted
- 30 per cent average recycled content will be included across all packaging
- problematic and unnecessary single-use plastic packaging will be phased out through redesign, innovation or alternative delivery methods.

The Queensland Government supports these targets and will work with Queensland industry and stakeholders and across jurisdictions to achieve them. The Queensland Government also embraces its leadership role in dealing with packaging waste, along with developing a strong domestic market for recycled materials.

Queensland's Plastic Pollution Reduction Plan

Goal To reduce plastic waste and pollution in Queensland, through evidenced-based action and collaboration on plastic consumption and disposal.

As a first in Australia, the Queensland plastics plan looks at potential pathways for reducing plastic waste and pollution throughout the entire product lifecycle. It does so across five outcome areas, identified through involvement of industry stakeholders—at home, away from home, commercial and industrial, marine and agriculture.

Through this approach, circular economy principles will be applied to plastic product design, collection, reprocessing and development of end markets, applying the latest science and evidence to ensure the best possible outcomes.

Reducing the amount of plastic waste and pollution is a long-term challenge that requires fundamental behavioural change by society and industry. The actions adopted must be rounded in science and evidence and provide solutions for the short-term as well as over the longer-term. Actions that can be taken immediately have the advantage of responding to community priorities and expectations, building on current engagement and allowing community ownership of successes.

Applying science and evidence

The complexity of the plastic pollution problem—with multiple causes, effects and stakeholders—demands a science and evidence-based approach to identify priorities and solutions. The plastics plan therefore needs to be informed by the best available evidence, analysis and scientific research.

To provide an enduring guide to inform policy, a robust analytical process—the plastics decision support tool—has been developed. This tool collates the latest science, data and research on plastic and plastic pollution, across the full product lifecycle.

In the plastics decision support tool, the source of a given plastic product is identified and evaluated against six metrics to determine its level of risk to the environment (risk analysis) and to identify actions that are achievable, measurable and supported by scientific evidence (achievability analysis).

This tool was developed and applied during the industry and community consultation undertaken by the Department of Environment and Science.

It will also be used to provide a holistic and comprehensive assessment of environmental, social and economic risk associated with proposed actions, or inaction.

Continuous engagement

The plastics plan has been designed to evolve over time in response to global environmental action and emerging technologies, products and markets, as well as new research findings on effective management of plastics.

It also responds to community expectations and priorities, garnered through continued collaboration of a network of technical experts, and community and other relevant stakeholder groups.

To ensure Queensland can be responsive to emerging issues, the plastics plan will be reviewed every three years.

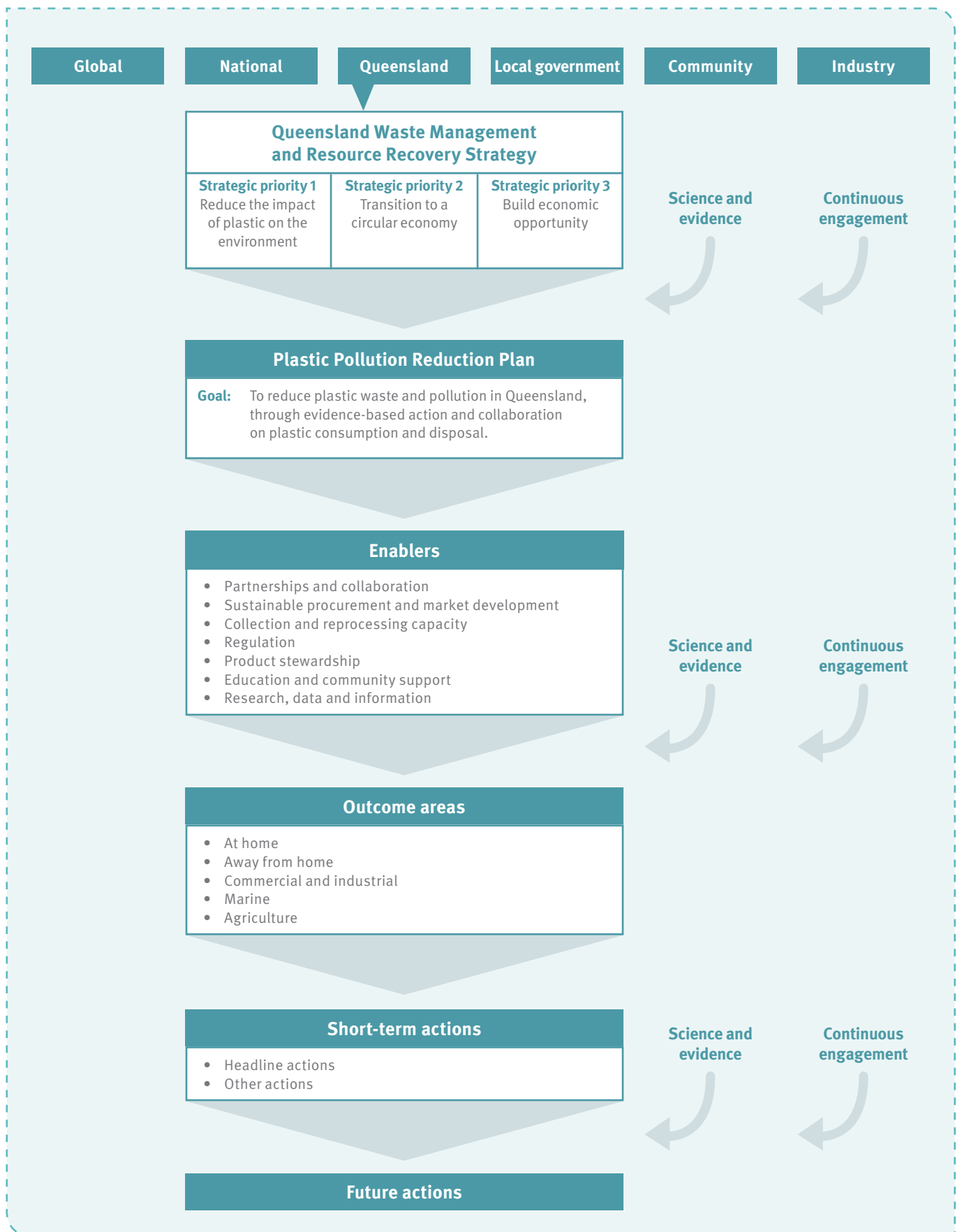
Partnerships and collaboration

Many of the short-term and future actions presented in this plan rely on partnerships and collaboration with industry and community groups, which this plan will continue to build on.

Businesses, industries and manufacturers—including those who collect, reprocess and remanufacture plastics—are critical to the successful establishment of a circular economy. Community groups, environmental groups and local governments are also well-positioned to collaborate on the shared goal of reducing plastic pollution.

The Queensland Government is committed to partnering and collaborating to deliver plastic pollution and waste reduction outcomes. The way this plan has been developed, closely involving industry, community and technical experts, demonstrates this.

How the plastics plan has been developed



Strategic priorities

All actions are aligned with the strategic priorities set out in the Waste Management and Resource Recovery Strategy, which sets the course for a new, circular economy approach to waste.

STRATEGIC PRIORITY 1

Reduce the impact of plastic on the environment

A healthy environment supports our economy and contributes to our general health and wellbeing—which is why it is so important that we protect it for future generations.

Reducing the prevalence of high-risk plastic, and the amount of plastic that enters the environment, will reduce pressure on wildlife, ecosystems, human health and amenity.

STRATEGIC PRIORITY 2

Transition to a circular economy for waste

As part of the transition to a circular economy, a fundamental shift in the way we design, use, reuse and process plastics is needed. It will help stem the flow of plastics to the environment, recovering valuable materials and reducing the demand for virgin plastics.

STRATEGIC PRIORITY 3

Build economic opportunity

The application of circular economy principles to plastics product design, collection, reprocessing and development of end markets will build economic opportunity and stimulate investment and jobs growth. This includes opportunities for plastics remanufacturing and reprocessing, and new products and markets for plastic alternatives.

Enabling the change

The Waste Management and Resource Recovery Strategy identified several enablers to deliver the above priorities.

The following seven enablers are relevant to developing and implementing the actions proposed in the plastics plan:

- Partnerships and collaborations
- Sustainable procurement and market development
- Collection and reprocessing capacity
- Regulation
- Product stewardship
- Education and community action
- Research, data and information.

Outcome areas

Through the application of the plastic decision support tool and stakeholder engagement, a categorisation of plastic pollution into five key sources has been applied to allow for a pragmatic and solution-based approach to plastic pollution in Queensland.

At home

'At home' sources include common plastic items used at home like containers, bags, films, electrical equipment, clothing and toys. Household plastic items are either single-use, such as food wrapping, nappies and hygiene products or are reusable for a period of time such as product packaging, garden hoses or refillable water bottles.

Away from home

'Away from home' sources include plastics generated or used away from the home. Away from home sources of plastic pollution include the use of avoidable single-use plastic items such as straws, sachets, coffee stirrers and coffee cups. Locations include retail and café precincts, take away outlets, institutions such as hospitals and schools, and events such as festivals and spectator sports.

Commercial and industrial

'Commercial and industrial' sources include the activities of businesses or the manufacture of goods. Plastics can 'leak' into the environment across the supply chain, up to the point of sale (e.g. from manufacturing, handling and collection, or recycling and recovery processes). Further impacts may arise from over-packaging, unclear labelling or the non-recyclability of plastic products used.

Marine

'Marine' sources include the plastic generated by industries utilising marine and other water environments, but also the plastic that ends up in these environments from land-based sources. Plastic pollution can occur directly from maritime industries, but also from land-based plastic wastes that are littered, escape from landfill or are illegally dumped in coastal environments. Marine-based sources include shipping, commercial fishing and aquaculture, recreational fishing and large passenger vessels such as cruise ships.

Agriculture

'Agriculture' sources cover plastics used in agricultural settings. The agriculture industry uses a wide variety of plastic products including mulches, crop tunnels, protection netting and irrigation pipes, and other plastic items to improve crop yield, suppress weeds and reduce the use of chemicals, water and labour. Plastics are also used for convenient delivery, storage and application of fertiliser, chemicals, feed and grain.

Short-term actions

The following actions, led by the Queensland Government, will address immediate plastic pollution issues at the source, and lay the foundation for long-term system changes—helping create a circular economy approach for plastics and waste in Queensland.

Shaded-in below are 'headline actions' flagged for immediate action.

Partnerships and collaborations

ACTION

01	Expand and build on the Plastic Free Places in Queensland program —partner with selected communities to expand the Queensland program, and partner with APCO and Boomerang Alliance to promote and deliver it nationally, based on knowledge and experience gained in Queensland. Outcome area: away from home
02	Pilot solutions to single-use plastics in fast-food restaurants in partnership with the industry —partner with Australian Food and Grocery Council to pilot solutions to replace single-use plastic items (e.g. straws, cutlery, plates, take-away containers and coffee cups) in major fast-food restaurants in Queensland. Incorporate learnings from Plastic Free Places. Outcome areas: away from home, at home
03	Lead the development of a code of practice to reduce the supply of heavyweight plastic shopping bags —partnering with the NRA, retailers and APCO, Queensland is leading development of a voluntary national retailer code of practice for sustainable shopping bags, targeting the supply of heavyweight shopping bags. This is reinforced by a Queensland Government commitment to regulate if appropriate reductions are not achieved within a reasonable timeframe. Outcome areas: away from home, at home
04	Enhance the partnership with the Local Government Association of Queensland (LGAQ) on plastic pollution —develop a Memorandum of Understanding with the LGAQ on reducing plastic pollution reduction to focus local governments' influence in areas such as local infrastructure development, procurement, waste collection and litter control. Outcome areas: away from home, marine, commercial and industrial
05	Extend the partnership with the Chamber of Commerce and Industry Queensland to help businesses avoid and reduce plastic waste —add-on to the free, tailored advice that ecoBiz provides for small to medium businesses with its existing waste audit and coaching programs to cover how to reduce the purchase and disposal of plastic. Outcome area: commercial and industrial

Sustainable procurement and market development

ACTION

06	<p>Exclude the use of specific single-use plastic items from Queensland Government sponsored events—identify opportunities to eliminate unnecessary plastic items or transition to alternative products and processes.</p> <p>Outcome areas: away from home, commercial and industrial</p>
07	<p>Use government purchasing power to reduce plastic use, require recycled plastic content, and transform the supply market—identify the reduction of plastic pollution as a government priority through the Queensland Procurement Policy. This will influence the supply chain to make environmentally preferred products more widely available for Queensland businesses and consumers.</p> <p>Outcome areas: away from home, commercial and industrial</p>
08	<p>Increase the uptake of recycled plastic content in infrastructure projects—the Department of Transport and Main Roads and Queensland Rail will develop standards for plastic waste content in road and rail construction materials (e.g. asphalt, concrete and sleepers).</p> <p>Outcome area: commercial and industrial</p>
09	<p>Drive uptake of recycled content and materials—work with key industry, manufacturing and government stakeholders to develop and implement a verification process for recycled content to increase uptake of recycled content in products.</p> <p>Outcome areas: at home, commercial and industrial</p>

Collection and reprocessing capacity

ACTION

10	<p>Focus further investment on developing plastic recovery and processing infrastructure in Queensland—prioritise grants and incentives to expand plastic recovery and reprocessing facilities and infrastructure, including in regional areas.</p> <p>Outcome area: commercial and industrial</p>
11	<p>Increase the availability of plastic waste collection from recreational fishing locations—partner with local governments, community groups, and businesses involved in boating and fishing, to trial and roll-out collection infrastructure and to monitor and report on collected material.</p> <p>Outcome areas: marine, away from home</p>
12	<p>Build on successful collection schemes to create new markets for soft plastics—work with partners to extend successful plastic collection services (e.g. Redcycle) and soft plastics programs (e.g. Plastic Police) including into regional areas and identify opportunities to expand end markets for the processed materials.</p> <p>Outcome areas: at home, commercial and industrial, agriculture</p>

Regulation

ACTION

13	<p>Introduce enabling legislation in 2020—subject to a Regulatory Impact Statement, introduce legislation to ban the supply of specific plastic products, starting with straws (taking into account the disability needs of people), stirrers, plates and cutlery and, following further analysis, extend legislation to include coffee cups, other plastic cups and heavyweight plastic shopping bags.</p>
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Product stewardship

ACTION

14	<p>Prepare and publish a draft 'priority statement' for oxo-degradable plastics and polyvinyl chloride (PVC)—apply the power in legislation to have the product stewardship principle applied to these plastics (i.e. effective management of the products throughout their life cycles). The Queensland Government will work through the steps required by the legislation, beginning with developing a priority product statement.</p> <p>Outcome area: commercial and industrial</p>
15	<p>Implement stewardship programs for agricultural plastics—building on the successful fertiliser bags scheme and the Queensland Government led work on developing a national scheme for flexible bulk product packaging, partner with the Queensland Farmers' Federation to further develop and implement product stewardship programs and new recycling opportunities. Begin with bulk flexible plastic packaging (e.g. feed bags, grain bags) and trickle tape.</p> <p>Outcome area: agriculture</p>

Education and community action

ACTION

16	<p>Build community capacity and engagement to reduce plastic pollution—provide up to \$3 million under the community grants program for projects to create positive long-term behaviour change in relation to plastic pollution in Queensland's communities focusing on: research and development on priority plastics, marine plastic pollution, and place-based community action.</p> <p>Outcome areas: at home, commercial and industrial, agriculture</p>
17	<p>Help Queenslanders recycle and dispose of plastic correctly and make informed purchasing decisions—partner with Planet Ark to promote and raise awareness of programs such as Recycling Near You and the Australasian Recycling Label to help householders make informed purchasing and recycling decisions.</p> <p>Outcome area: at home</p>

Research, data and information

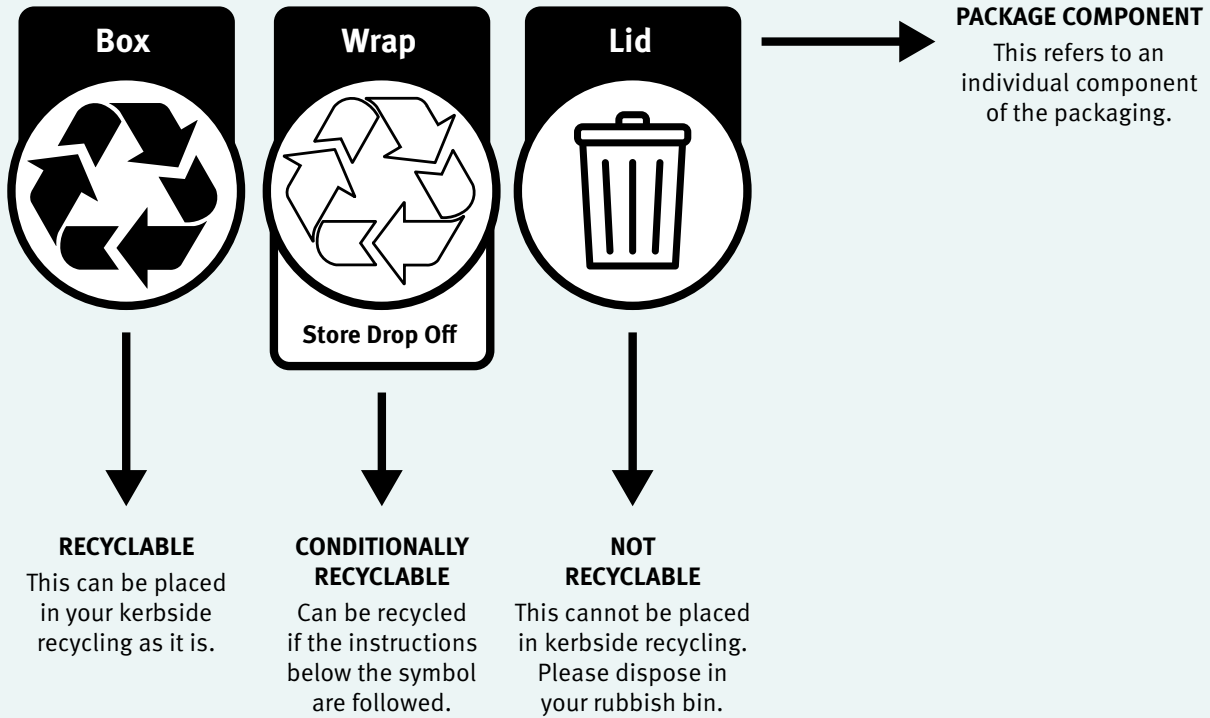
ACTION

18	<p>Continue funding targeted research and development on priority plastic waste and pollution issues for Queensland—continue to apply innovative methods, such as the research into methodologies to measure microplastics in soils, to develop solutions and technologies for complex plastic pollution issues.</p> <p>Outcome areas: at home, away from home, commercial and industrial, marine, agriculture</p>
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Australasian Recycling Label

Queenslanders care about the environment and want to do the right thing, but recycling labels can be confusing or hard to read, and the treatment of recyclables may vary between local government areas. The Australasian Recycling Label is a national program that provides easy to understand instructions about how to correctly dispose of every part of a product's packaging. Changes will not happen immediately, but the Queensland Government supports a move to standardised and clear labelling for recycling.

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Future actions

The Queensland Government is committed to a long-term response to plastic pollution.

Many worthwhile actions need further, detailed evaluation to ensure they are well designed and implemented. As part of the Queensland Government's ongoing process to develop, review and update plastic pollution actions, it will consider the following future actions.

STRATEGIC PRIORITY 1—Reduce the impact of plastic on the environment

- Work with the Commonwealth Government and partner with community groups to recommence ghost net programs (i.e. for fishing nets lost or abandoned at sea).
- Bring into force the ban on heavyweight plastic shopping bags if voluntary schemes prove ineffective.
- Support collaborative research on priority plastic pollution issues for Queensland (e.g. CRC, ARC Linkage grants or Advance Queensland grants).
- Investigate the material flow of plastic products containing hazardous additives such as lead, cadmium, BPA, BPS and phthalates.
- Monitor environmental and behavioural changes across Queensland relating to plastic pollution.
- Identify and monitor plastic pollution hotspots across Queensland.

STRATEGIC PRIORITY 2—Transition to a circular economy for waste

- Encourage Queensland businesses and institutions to sign the Ellen MacArthur Foundation's New Plastics Economy Global Commitment.
- Deliver 'Challenging Plastics' stakeholder events for EPS and polystyrene, soft plastics, and compostable, biodegradable plastics and bioplastics
- Investigate where improvements in collection infrastructure for clean-stream collections are required for EPS, PVC and soft plastics.
- Consider opportunities presented by the Container Refund Scheme to collect soft plastic waste for recycling.
- Develop case studies, guidelines and fact sheets on utilising EPS, PVC and soft plastics within a circular economy.

STRATEGIC PRIORITY 3—Build economic opportunity

- Further develop the 'Plastics Network' to connect industry through a marketplace for demand and supply of plastic recycled products and alternatives and deliver training and retraining in plastics remanufacturing.
- Help develop end markets for remanufactured PVC, EPS and soft plastics.
- Attract new plastic remanufacturers and plastic alternative manufacturers to Queensland, including in regional areas.
- Support Vocational Education and Training programs in schools (e.g. Cert II training) to encourage careers in the resource recovery and advanced manufacturing sectors.
- Advocate for national action on product stewardship schemes for PVC, EPS and soft plastics.
- Support expansion of PVC take-back schemes in Queensland.

Sources

- Australian Marine Conservation Society, 2019. *Ocean Plastic Pollution*. [Online] Available at: <http://www.marineconservation.org.au/ocean-plastic-pollution/>
- Boucher, J. & Friot, D., 2017. *Primary Microplastics in the Oceans: A Global Evaluation of Sources*, Gland: International Union for Conservation of Nature.
- Cole, M. et al., 2013. Microplastic Ingestion by Zooplankton. *Environmental Science & Technology*, 47(12), pp. 6646-6655.
- Dehghani, S., Moore, F. & Akhbarizadeh, R., 2017. Microplastic pollution in deposited urban dust, Tehran metropolis, Iran.. *Environmental Science and Pollution Research*, 24(25), pp. 20360-20371.
- Ellen MacArthur Foundation, 2016. *The New Plastics Economy: Rethinking the future of plastics*. [Online] Available at: <https://www.ellenmacarthurfoundation.org/publications/the-new-plastics-economy-rethinking-the-future-of-plastics>
- Galloway, T. S., 2015. Micro- and Nano-plastics and Human Health. *Marine Anthropogenic Litter*, pp. 343-366.
- Green Industries SA, 2018. *Turning the Tide on Single-Use Plastic Products*, Adelaide: Green Industries SA.
- Jensen, L. H. et al., 2019. Sources, distribution and fate of microfibrils on the Great Barrier Reef, Australia. *Scientific Reports*, 9(9021).
- Kirstein, I. V. et al., 2016. Dangerous hitchhikers? Evidence for potentially pathogenic *Vibrio* spp. on microplastic particles. *Marine Environmental Research*, Volume 120, pp. 1-8.
- Kosuth, M., Mason, S. A. & Wattenberg, E. V., 2018. Anthropogenic contamination of tap water, beer, and sea salt. *PLOS One*.
- Miralles, L., Gomez-Agenjo, M., Rayon-Vina, F. & Garcia-Vazquez, E., 2018. Alert calling in port areas: Marine litter as possible secondary dispersal vector for hitchhiking invasive species. *Journal for Nature Conservation*, Volume 42, pp. 12-18.
- Napper, I. E. & Thompson, R. C., 2016. Release of synthetic microplastic plastic fibres from domestic washing machines: Effects of fabric type and washing conditions. *Marine Pollution Bulletin*, 112(1-2), pp. 39-45.
- National Geographic, 2019. *Planet or Plastic?*. [Online] Available at: <https://www.nationalgeographic.com.au/planet-or-plastic/>
- National Geographic, 2019. *We made plastic. We depend on it. Now we're drowning in it*. [Online] Available at: <https://www.nationalgeographic.com/magazine/2018/06/plastic-planet-waste-pollution-trash-crisis/>
- Obbard, R. W. et al., 2014. Global warming releases microplastic legacy frozen in Arctic Sea ice. *Earth's Future*, 2(6), pp. 315-320.
- Panno, S. V. et al., 2019. Microplastic Contamination in Karst Groundwater Systems. *Groundwater*, 57(2), pp. 189-196.
- Rillig, M. C., Ziersch, L. & Hempel, S., 2017. Microplastic transport in soil by earthworms. *Scientific Reports*, 7(1362).
- Smith, M., Love, D. C., Rochman, C. M. & Neff, R. A., 2018. Microplastics in Seafood and the Implications for Human Health. *Current Environmental Health Reports*, 5(3), pp. 375-386. Tangaroa Blue, 2018. *Marine Debris*. [Online] Available at: <https://www.tangaroablue.org/about-us/marine-debris/>
- United European Gastroenterology, 2018. *UEG Week: Microplastics discovered in human stools across the globe in 'first study of its kind'*. [Online] Available at: <https://www.ueg.eu/press/releases/ueg-press-release/article/ueg-week-microplastics-discovered-in-human-stools-across-the-globe-in-first-study-of-its-kind/>
- United Nations Environment Programme, 2019. *Draft Ministerial Declaration of the 2019 United Nations Environment Assembly*. [Online] Available at: <https://web.unep.org/environmentalassembly/inputs-ministerial-declaration>
- Van Cauwenberghe, L., Vanreusel, A., Mees, J. & Janssen, C. R., 2013. Microplastic pollution in deep-sea sediments. *Environmental Pollution*, Volume 182, pp. 495-499.
- Wilcox, C. et al., 2018. A quantitative analysis linking sea turtle mortality and plastic debris ingestion. *Scientific Reports*, 8(12536).
- Xanthos, D. & Walker, T. R., 2017. International policies to reduce plastic marine pollution from single-use plastics (plastic bags and microbeads): A review. *Marine Pollution Bulletin*, 118(1-2), pp. 17-26.

