



Government of **Western Australia**
Department of **Water and Environmental Regulation**

Western Australia's Stage 1 single-use plastic ban

Decision Regulatory Impact Statement and
National Impact Assessment

Department of Water and Environmental Regulation
September 2023

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Executive summary and recommendations

[Western Australia's Plan for Plastics](#) was first announced in November 2020 and fast-tracked in June 2021. The plan was released in response to strong community support for comprehensive action to address the impacts of single-use and disposable plastics. It is consistent with the waste hierarchy by prioritising avoidance of plastic and waste generation, and improving the recovery of alternative products. It includes two stages of regulations to ban the use of specified plastic products.

This Decision Regulatory Impact Statement (DRIS) assesses Stage 1 of the plan's regulations. It provides a summary of the costs and benefits of the ban on single-use plastics (disposable plastics) in Western Australia (WA) and summarises comments provided through the consultation process. This statement also provides a summary of the qualitative analysis undertaken on the potential impacts on national and Trans-Tasman markets arising from the Stage 1 ban on single-use plastics in WA.

The WA Stage 1 ban on single-use plastics required the amendment of the Environmental Protection (Plastic Bags) Regulations 2018, which were prescribed under the *Environmental Protection Act 1986* and then later amended to include the Stage 1 ban. Banned Stage 1 items include disposable plastic plates, straws, stirrers, cutlery, expanded polystyrene food containers, thick plastic shopping bags, unlidged bowls, cups and containers, and helium balloon releases.

Objectives

The WA Plan for Plastics builds on the vision of the [Waste Avoidance and Resource Recovery Strategy 2030](#) (waste strategy) for "Western Australia to become a sustainable, low-waste, circular economy in which human health and the environment are protected from the impacts of waste".

The plan promotes actions to reduce the impact of plastics that are consistent with the waste hierarchy which:

- prioritises avoiding single-use plastics
- replaces single-use items with reusable alternatives, wherever possible
- promotes non-plastic single-use alternatives that can be recovered, recycled or composted, if it is not possible to use reusable items
- minimises litter or contamination of waste treatment facilities by not using single-use plastics.

Options

As the Stage 1 ban has already been implemented and has a temporary exemption under the *Mutual Recognition Act 1992 (Cwlth)* (MR Act) and the *Trans-Tasman Mutual Recognition Act 1997 (Cwlth)* (TTMR Act) this DRIS considers two options in detail:

- Option 1 – No ban.
- Option 2 – Banning single-use plastics (Stage 1).

Cost-benefit analysis

A cost-benefit analysis (CBA) was conducted before the implementation of the ban on Stage 1 items. The analysis attempts to quantify the full range of financial, social and environmental impacts over an extended period (20 years). The environmental benefits are based on previous studies of society's willingness to pay for a reduction in litter, finding that:

- Option 2 (statewide ban) is expected to deliver a net benefit of \$14.5 million more than the base case (i.e. than Option 1)
- Option 2 is expected to deliver a benefit cost ratio of 1.13. This indicates that for every \$1 invested, the reform is expected to deliver a return of \$1.13.

National impact

The DRIS is required to assess the impact a statewide ban on disposable plastics may have on national and Trans-Tasman markets and industries in comparison with a base case of no ban. The analysis identified that the Stage 1 bans will have some impacts on retail and hospitality businesses operating across multiple jurisdictions – where there is currently differing regulatory requirements. However, this industry sector has not been able to quantify these costs. It is also anticipated that these costs will reduce as most states and territories have committed to introducing similar bans.

Previous consultation

The Government of Western Australia (State Government) has consulted with the community, industry and retailers on possible actions to reduce single-use plastics and support the move to a circular economy over an extended period.

Key earlier related actions that were consulted on include the WA ban on lightweight plastic shopping bags (implemented in 2018) and the container deposit scheme on beverage containers (which started in 2020).

Consultation on the ban on single-use plastics includes:

- Issues paper – [Let's not draw the short straw](#) (April, 2019)
- WA's Plan for Plastics (May, 2021)
- Stage 1 [Stakeholder information paper](#) (July, 2021)
- Stage 1 Stakeholder engagement workshops
- Stakeholder liaison via Ministerially appointed working groups for single-use plastic and plastic straws.

Recommendation

It is recommended that Option 2 (banning of single-use plastics) remains in place and is granted a permanent exemption under the MR Act and the TTMR Act.

1 Statement of the problem

Plastics have become part of everyday life. They are inexpensive, lightweight, convenient and are used in many applications across all business sectors. As a result, the consumption of plastics has been on the rise since their introduction. However, the single-use nature of many plastics can be inefficient and environmentally harmful. Single-use plastics are often used only once, away from home, frequently littered and mostly not recyclable. Plastic waste takes a long time to break down, if at all, and has a wide range of environmental, waste stream and human health impacts. Consequently, there is now global attention on interventions designed to prompt a rethink in the way we use and avoid single-use plastics. Previous action targeting plastic impacts has been introduced by the State Government, including lightweight plastic shopping bag ban regulations (2018), the release of a Premier's Circular to reduce plastic in government procurement (2019) and the launch of a container deposit scheme (2020).

Single-use plastics are difficult to collect, sort and recycle. They are often consumed away from the home where collection options are limited, are contaminated by food, made from multiple polymer types and mixed materials, include small items unable to be sorted at recycling facilities (such as straws) and are made from polymer types that have little or no value as recycled commodities. Furthermore, current packaging designs and collection, technical and commercial barriers substantially reduce the waste stream sorted for recycling in material recovery facilities.

The public consultation in 2019 identified several items with these single-use characteristics that the community was keen to see government take act upon. As a result, Stage 1 items targeted for banning included disposable plastic plates, straws, stirrers, cutlery, expanded polystyrene food containers, thick plastic shopping bags, unlidged cups, bowls and containers, and helium balloon releases.

1.1 SUP litter in Western Australia

The National Litter Index found takeaway food packaging and other packaging made up a significant proportion (14 per cent and 9 per cent) of litter volume in WA (Figure 1) from 2010–16. Single-use plastics included in the Stage 1 ban are predominantly used for takeaway food and other packaging.

While the data is historical, it is illustrative that the State Government has already acted on the largest litter sector (beverage containers) through the introduction of the container deposit scheme and the plastic shopping bag ban. Therefore it is critical to act on another large source of litter in the form of single-use plastics.

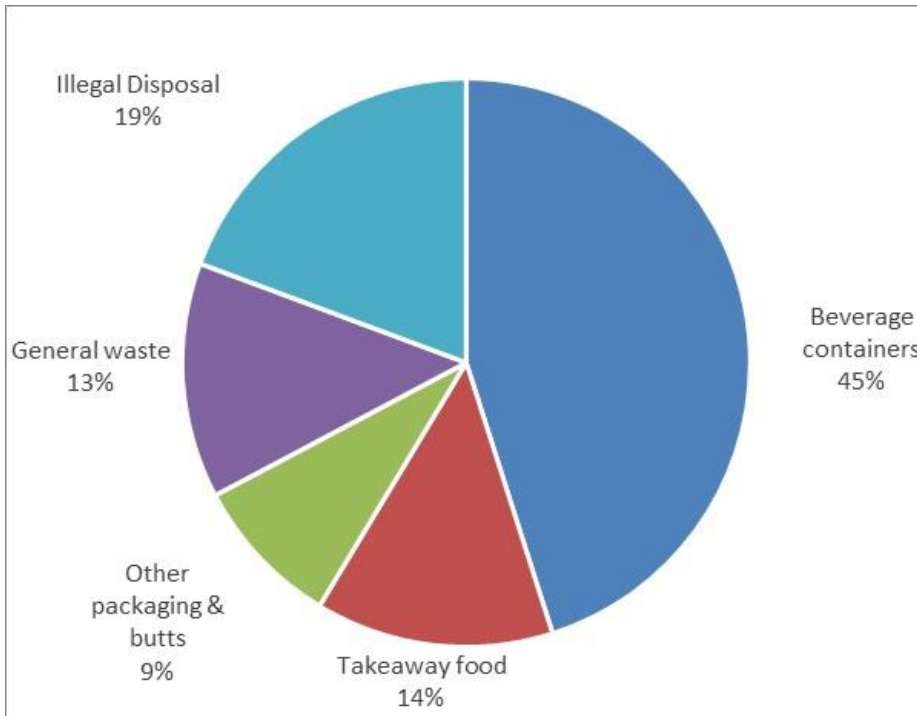


Figure 1 Historical volume of litter in WA, by category

Source: Analysis of National Litter Index data, November 2010–May 2016

The Department of Water and Environmental Regulation (the department) has commissioned data on the use of single-use plastics in WA. Figure 2 summarises the consumption data on single-use plastics in tonnes in WA.

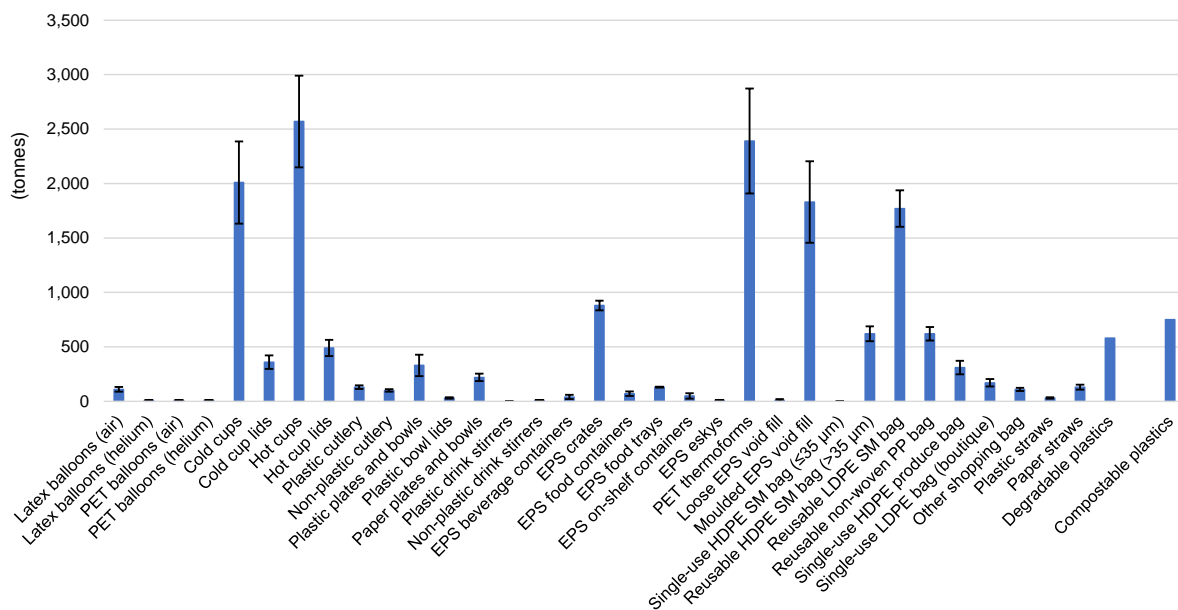


Figure 2 Single-use plastic consumption data by tonnes for WA

Source: Blue environment (unpublished) 2022

Single-use plastic litter in WA is a function of beverage container consumption and the rate at which used containers are not littered. While a move from single-use plastics to alternatives, such as paper-based products, does not ensure that the product is not littered, it does ensure that the litter will break down more rapidly and with lower toxicity in the environment. It also ensures that these products can be disposed to waste disposal options such as food organics and garden organics (FOGO) rather than to landfill, if certified to Australian composting standards (AS 4736:2006 for industrial composting and AS 5810:2010 for home composting).

On a weight basis, WA’s annual consumption of single-use plastics is over 50 kg/person, and ranked as the second highest of any country in the world (Figure 3).

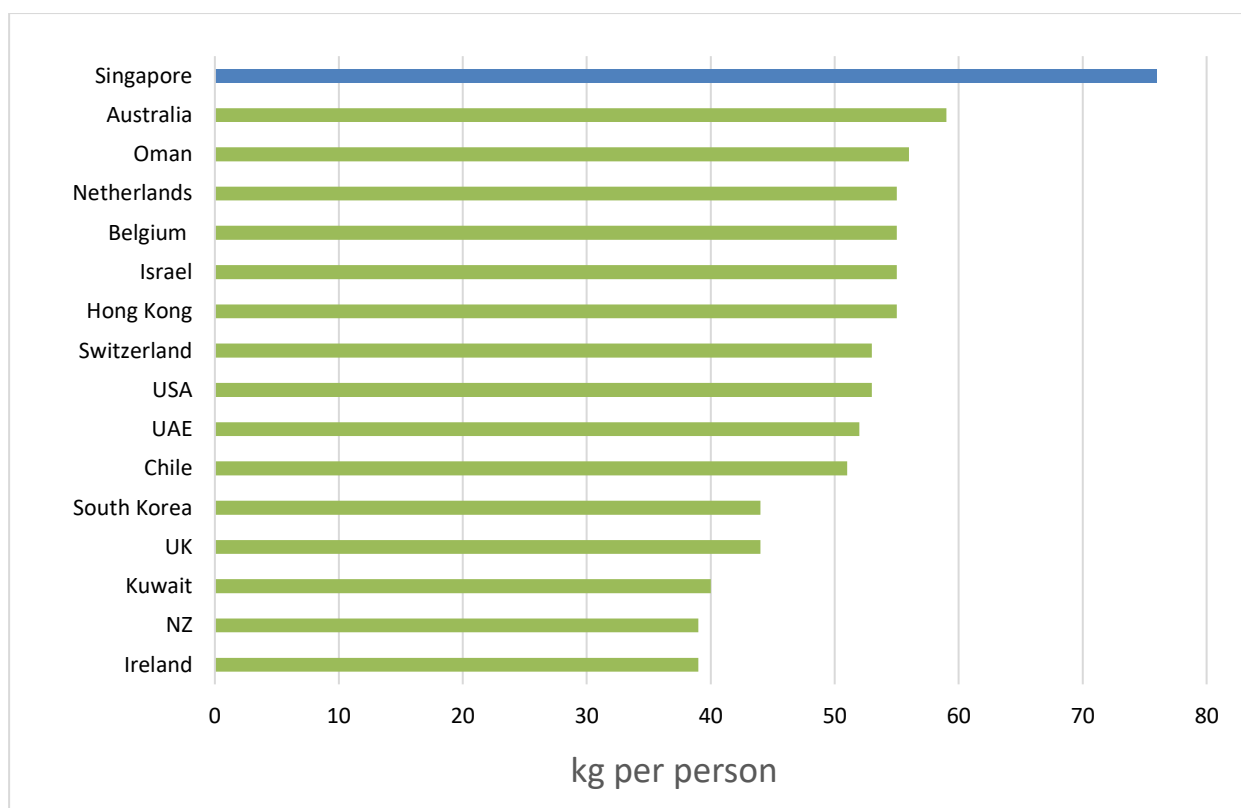


Figure 3 Single-use plastic waste generation per capita in 2019 (kg)

Source: Minderoo Foundation, [The Plastic Waste Makers Index](#) (Charles et al. 2021)

On a per item basis, WA consumption was 1,470 million items in 2020–21, with per capita consumption of 556 items/person (Blue environment, unpublished). While most single-use plastics are disposed of appropriately, a significant portion of it ends up as litter in the natural environment.

In 2006, the Productivity Commission’s Inquiry into Waste Management found that:

Regulation and enforcement for litter and illegal dumping are necessary but not sufficient to achieve the best result for the community. Accompanying measures, such as education,

community involvement and moral suasion, can make regulation more effective.

Littering is likely to continue to be an ongoing problem that is best addressed using a range of policy initiatives, such as changing the composition of the product at the source of the litter from plastic to less harmful materials.

1.2 Market failure

Market failures are an important consideration when assessing the case for government intervention. Markets take account of many of the costs and benefits of managing waste, providing incentives to reduce waste and recycle more.

Certain types of market failures in economic models can reduce the effectiveness of incentives, such as the complexity of environmental impacts (e.g. physical, chemical, biological), including the ingestion of plastics by wildlife and loss of amenity from litter.

The market failures associated with single-use plastics include:

Weak incentives to recycle

Consumers of plastic packaged products do not have a strong financial incentive to recycle their residual packaging or dispose of it through the regular disposal systems. Consumers rarely receive financial rewards for disposing of these products appropriately.

In addition, the producers of single-use plastic goods do not bear the whole cost of disposing of the goods nor do they benefit from the value that arises from recycling instead of disposing of materials to landfill. This means that they are often incentivised to increase their use of non-recyclable materials to enhance attractiveness and presentation, and to avoid business costs of alternative non-plastic or compostable packaging.

Externalities

Littering negatively affects social amenity, human health (e.g. through toxins and proliferation of microplastics) and the environment (e.g. through animals' ingestion of plastic).

The cost of cleaning up litter is mostly borne by governments, not the producers of packaged goods. As such, the producers do not have a financial incentive to minimise impacts when packaging is littered. Likewise, the incentives faced by consumers are mixed (externalities are weakly expressed through litter fines or social pressure).

These market failures can result in two undesirable outcomes:

1. Single-use plastics more often become litter.
2. Plastic utensils, packaging and containers that could be designed and reused or recycled instead go to landfill.

Australian governments often intervene in markets to improve their efficiency and to achieve economic, social and environmental benefits.

Bans on single-use plastics are in effect in most states with a varying range of plastics being banned across different states.

The cost of litter

Litter is waste that is improperly disposed of outside of the regular disposal system. In an economic context, it is best described as a side-effect of producing goods and services.

The need for policy intervention to prevent littering arises because several social costs associated with littering are inadequately priced by the producers and consumers of single-use plastic utensils and takeaway containers; that is, they are an externality. Consequently, those costs are borne by society and the clean-up costs are borne by ratepayers.

The costs of littering that are imposed on the economy and community include:

- **Economic costs:** In 2001 in WA the State Government and local governments spent about \$16 million a year on cleaning up litter. It is estimated that clean-up costs have significantly increased since 2001 (Keep Australia Beautiful Council WA, undated, p10)
- **Environmental damage:** Litter damages natural environments and harms terrestrial and riverine wildlife as well as the marine environment
- **Visual costs:** Litter is unsightly and attracts more litter, adversely affecting amenity and the environment
- **Resource costs:** Easily recyclable and valuable resources are lost to further useful applications when people litter. Even if littered items are subsequently collected, they are often too contaminated to be recycled.

The single-use plastic items included in the ban are some of the most common items found littered in the WA environment.

The cost of litter removal to minimise harm is borne largely by the State Government, as well as volunteer community groups. Importantly, the costs of littering are not borne by producers of packaged goods, except to a limited extent, and those producers do not have a direct incentive to design their packaging to minimise its impact when littered. This is an example of a market failure.

1.3 Requirements for a RIS

The Stage 1 ban will require an exemption under the MR Act and the TTMR Act, as set out below. For that to occur, a Decision Regulatory Impact Statement (DRIS) is

required for consideration by the Office of Best Practice and Regulation (OBPR) as set out in the relevant guideline documents.¹

This DRIS aims to fulfil the requirements of the MR Act and TTMR Act.

This DRIS also provides the necessary information to meet the [Office of Best Practice Regulation RIS questions](#).

Mutual recognition principles

The MR Act and the TTMR Act apply as laws of WA by virtue of the *Mutual Recognition (WA) Act 2010* and the *Trans-Tasman Mutual Recognition (WA) Act 2007*, respectively.

In relation to goods, the MR Act and TTMR Act apply the ‘mutual recognition principle’. The principle, as explained in section 9 of the MR Act, provides that goods produced in or imported into one state, that may be lawfully sold in that state, may, by virtue of the MR Act, be sold in another state.

The Trans-Tasman mutual recognition principle, as explained in section 10 of the TTMR Act, is that goods produced in or imported into New Zealand, that may be lawfully sold in New Zealand, may by virtue of the TTMR Act be lawfully sold in an Australian jurisdiction.

These Acts provide that sales of goods to which the principle applies are entitled to be sold and do not require compliance with ‘further requirements’ of a type set out in the Acts that might otherwise be required under the laws of the importing jurisdiction.² Those requirements include quality or performance standards, inspection requirements and labelling standards.

The Environmental Protection (Prohibited Plastics and Balloons) Regulations 2018 prohibits the supply of the prescribed plastic items.

This prohibition on supply may be considered to not align with the ‘Entitlement to sell goods’ under the MR Act or TTMR Act. For this reason, an exemption is required under the MR Act and TTMR Act.

The MR Act and TTMR Act provide for specific goods or laws to be permanently exempted from their scope by their inclusion in schedules to the MR Act or TTMR Act. The process for adding permanent exemptions requires the relevant ministerial council to seek the unanimous agreement of the COAG to the exemption, the making of regulations by the Commonwealth to amend the relevant schedules to the MR Act and the TTMR Act, and the prior signification of consent to the amendments by all jurisdictions by gazette notice.

¹ obpr.pmc.gov.au/resources/guidance-impact-analysis/regulatory-impact-analysis-guide-ministers-meetings-and-national

² See section 9 of the Commonwealth Mutual Recognition Act, 1992 www.legislation.gov.au/Details/C2021C00272/Download

The permanent exemption of the Stage 1 ban under the MR Act would follow the precedent set by the container deposit scheme which was exempted in 2019.

Scope of the proposed mutual recognition exemption

The exemption would apply to the Stage 1 ban included in the Environmental Protection (Prohibited Plastics and Balloons) Regulations 2018, and includes disposable plastic plates, straws, stirrers, cutlery, expanded polystyrene food containers, thick plastic shopping bags, unlined cups, bowls and containers, and helium balloon releases.

2 Objectives of government action

The WA Plan for Plastics builds on the vision of the waste strategy for “Western Australia to become a sustainable, low-waste, circular economy in which human health and the environment are protected from the impacts of waste”.

The plan promotes actions to reduce the impact of plastics that are consistent with the waste hierarchy which:

- prioritises avoiding single-use plastics
- replaces single-use items with reusable alternatives, wherever possible
- promotes non-plastic single-use alternatives that can be recovered, recycled or composted, if it is not possible to use reusable items
- minimises litter or contamination of waste treatment facilities by not using single-use plastics.

Stage 1 of the plan aims to address the environmental, health and waste impacts of a range of common single-use plastics through reducing their use and supply in WA and encouraging reusable and certified compostable alternatives. In so doing, the plan aims to achieve positive, innovative outcomes for consumers, businesses and industry for our collective long-term future.

To achieve this, it is recognised that not only does the sale and supply of single-use plastics need to be addressed but reuse pathways and waste management of plastics and alternative materials should also be examined. This ties in with the State Government’s goal to transition all local governments in the Perth and Peel regions to FOGO collections by 2025. While current composting facilities cannot take compostable fibre-based packaging, for this to be achieved in the future, waste streams need to be ‘cleaned’ of contaminating plastics to enable cost and technically effective treatments.

3 Options to address the problem

Two options are considered in detail in this DRIS:

3.1 Option 1 - No ban

Option 1 considers the situation where the ban on single-use plastics is repealed, and we have assumed that businesses would return to using single-use plastics as if the ban had never been in place. Ideally, this option would result in no additional costs or benefits to any of the identified stakeholder groups. However, repealing the ban would have additional and long-term consequences and costs to some of the stakeholder groups. These costs would mainly be incurred by the public, who are the direct consumers of these products, and the natural environment. Continued production and consumption of these plastic products will inevitably lead to the products ending up in the environment as litter or in landfill. This leads to long-term damage of the environment and loss of amenity through visible littering. There is also health damage associated with single-use plastics because of the presence of microplastics in the food chain and in our bodies.

3.2 Option 2 - Banning single-use plastics (Stage 1)

The Stage 1 ban on single-use plastics was implemented on 1 January 2022 and includes a ban on plastic plates, unlined cups, bowls and takeaway food containers, cutlery, stirrers, straws, thick plastic shopping bags, expanded polystyrene takeaway food containers and helium balloon releases. Under this option the ban would remain in place.

3.3 Other options that were previously considered

While only two options are considered in detail here, the earlier phases of consultation considered a range of policy options. The consultation undertaken is set out in detail in section 5. Other options that were assessed were:

- education and behaviour change campaign
- incentivise sustainable alternatives
- introduction of levy on distributors
- voluntary agreements with retailers.

Results of community consultation

Community consultation identified that three policy approaches (out of seven provided) were preferred for action on single-use plastics. These were:

1. designing single-use plastics from sustainable materials (54 per cent)
2. banning the supply, sale or use of single-use plastics (47 per cent)
3. educating the community about single-use plastic impacts and where to find and use reusable alternatives (37 per cent).

The most popular option selected by the community was ‘designing single-use plastics from sustainable materials’. This outcome is supported by the regulations for Stage 1 bans allowing the use of more environmentally sustainable and recoverable materials, such as paper, for bowls, cups, and containers. These alternatives have been preferred alternatives by businesses.

Of the policy options considered to achieve this outcome, the banning of single-use plastics was identified as the most popular.

Assessment of other policy options

Through the policy development, the full range of policy options were considered in detail and it was identified that a ban on single-use plastics was expected to be the most effective.

The policy options were also assessed through a CBA undertaken before the implementation of a statewide ban on disposable plastics. The CBA results are summarised in section 4.2 which found that the statewide ban was the only option that delivered a net benefit compared with the base case (no ban). It was then decided to combine education and behaviour change campaigns and a statewide ban as the preferred policy option to reflect community consultation feedback and enhance the probability of positive outcomes.

National packaging recovery scheme

A nationally harmonised approach to packaging would be an alternative to state-by-state bans on single-use plastics.

A national packaging strategy was previously considered by COAG and was the subject of a consultation RIS³ and a DRIS⁴. The DRIS was considered by Environment Ministers in April and December 2014 but no consensus was reached on suitable reforms. In the absence of any agreement on the need for additional national level regulation, existing state-based arrangements and regulatory development continued.⁵

As a result, a national scheme for regulating single-use plastics will not be introduced in the foreseeable future. This alternative is considered unviable and will not meet the intended objectives of the Stage 1 regulations (see section 2). It is therefore not considered quantitatively in this DRIS.

In principle, the State Government supports a national approach to single-use plastics and has sought to align the design of the proposed scheme with existing Australian schemes, including banned products. The plan reflects the WA public interest and the capability of the state to instigate and test regulations ahead of other states that are intending to do the same. The effect is a ‘lead-and-follow’ approach to

³ National Environment Protection Council, 2011, *Packaging Impacts Consultation Regulation Impact Statement*, prepared for COAG Standing Council on Environment and Water (NEPC Service Corporation, Canberra).

⁴ National Environment Protection Council, 2014, *Packaging Impacts Decision Regulation Impact Statement*, prepared for the former COAG Standing Council on Environment and Water (NEPC Service Corporation, Canberra).

⁵ www.nepc.gov.au/projects/packaging-impacts

the development of national regulations, which achieves momentum for change across Australian government, industry and public.

3.4 The context and scope of the ban

Items covered under the Stage 1 ban

- Plates – disposable plastic plates made from plastic (whether wholly, partly, or lined by plastic) designed for consuming food.
- Cutlery – disposable plastic implements for consuming food (e.g. knives, forks, spoons, sporks, laksa spoons and chopsticks).
- Drink stirrers – drink stirrers for hot and cold drinks, either individually or in packs.
- Drinking straws – disposable drinking straws either individually or in packs.
- Cups – disposable plastic cups used for cold drinks and foods of any temperature.
- Thick plastic shopping bags with handles – includes bags made from plastic-laminated paper or plastic-laminated cardboard and classified as degradable, biodegradable and compostable.
- Expanded polystyrene (EPS) takeaway food containers – all EPS takeaway food containers including trays, bowls and clam-shell containers.
- Helium balloon releases – the release of one or more helium-filled balloons outside will be banned. Balloons include any inflatable device made of any combination of plastic, latex or plastic/metal foil.
- Unlidded cups, bowls and containers – including unlidded takeaway food containers.

Exemptions under the Stage 1 ban

- Use of Stage 1 items is exempted on aircrafts, and these regulations do not apply to inter-state trade.
- Amendments to the regulations were made to exempt ‘grape bags’ (as a bag used to transport pre-packaged perishable food from the retailer’s shelf to checkout) and permitted exemptions to be considered before 1 July 2022.
- Plates and bowls – where the plates and bowls form part of the packaging of another product (e.g. a plastic plate/tray containing a frozen ready meal, or pre-packaged noodle bowls) will not be included in the ban.
- Polymer-lined paperboard cups, bowls and containers include a plastic lining to hold liquids. These products are exempt from the ban if they are certified to Australian Standard (AS) 4736:2006 (Biodegradable Plastic – Biodegradable Plastics Suitable for Composting and other Microbial Treatment) or AS 5810:2010 (home composting).
- Bowls supplied with lids are not included in the ban (considered a lidded container and out of scope of Stage 1 regulation).

- Cutlery – where the cutlery forms part of the packaging of another product (e.g. a spoon included inside the packaging of yoghurt) will not be included in the ban.
- Drinking straws – people who require a drinking straw to meet their individual life needs (because of a disability, medical or other reason) will be able to access packs of drink straws from authorised businesses and organisations. Hospitality businesses and other organisations who provide food and drink services will be able to provide an individual plastic drinking straw on request to a person with a specific need that requires a straw. No other proof of identification or need is required. Plastic straws incorporated into or attached to the packaging of another product (such as juice boxes) will not be included in the ban.
- Thick plastic bags which are not included in the ban must have handles and include:
 - fabric plastic shopping bags designed for ongoing use, made from woven polypropylene, nylon or polyethylene terephthalate (PET)
 - fabric plastic shopping bags designed for ongoing use, made from non-woven polypropylene (with a minimum weight of 90 gsm, and with sewn and not heat-welded seams)
 - bags that are an integral part of the packaging in which goods are sealed for sale.

Many of these exceptions are the outcome of the Plastic Straws Working Group and ongoing industry consultation and feedback.

4 Impact analysis

4.1 Stakeholder identification

Items in Stage 1 of the ban are widely available convenience items. Therefore, the ban will impact the following types of businesses and organisations (and their suppliers):

- Hospitality businesses, including takeaway food and drink businesses and event venues (e.g. stadiums).
- Retailers.
- Government.
- Education institutions, including (public and private) schools, colleges, TAFEs, universities, student accommodation and childcare facilities.
- Medical and care facilities, including (public and private) hospitals, clinics, aged care and disability services.
- Other government services, including custodial services, community and housing.
- Not-for-profit clubs and associations (e.g. charities).
- Public and private event coordination businesses (e.g. festivals).

4.2 Cost-benefit analysis

A CBA was conducted before the implementation of the ban on Stage 1 items (Creational Consulting, unpublished). The analysis quantifies the full range of financial, social and environmental impacts over an extended period (20 years). The environmental benefits of the ban are based on previous studies aimed at determining society's willingness to pay for a reduction in litter. As these studies are historical and pre-date current understanding of marine litter and the creation of microplastics, the values are likely to be low estimates of environmental damage that would be avoided by reducing plastic litter.

Methodology

The CBA modelled six policy options provided by DWER. These options were:

1. status quo – do nothing
2. education and behaviour change campaign
3. incentivise sustainable alternatives
4. introduction of levy on distributors
5. statewide ban
6. voluntary agreements with retailers.

The CBA assumes that consumer reactions to the ban on single-use plastics would be to reduce usage where possible; however, a shift to sustainable single-use alternatives is incorporated in the first five years of assessment.

For each of the banned items the cost-benefit analysis models the consumption of the product under each option and then estimates the costs and benefits arising from the change in consumption. The analysis included a broad range of costs and benefits as provided in Table 1.

Table 1 Cost and benefits considered

Description	Cost	Benefit	Impacted group
Purchase price of disposable plastic items and plastic-free or low-plastic alternatives	✓		Individuals or groups of individuals
Cost recovery of disposable plastic items and plastic-free or low-plastic alternatives		✓	Retailers
Profit margins for sale of disposable plastic items and their alternatives		✓	Distributors/retailers
Goods and services tax (GST) on overall sales		✓	State Government
Waste disposal costs	✓		Local government
Implementing legislative change	✓		State Government
Monitoring and compliance costs	✓		State Government/ distributors/retailers
Implementing education campaigns	✓		State Government
Levy imposed on disposable plastic items	✓		Distributors
Cost of market shift to plastic-free or low-plastic alternatives	✓		Distributors
Income from payment of levy on disposable plastic items		✓	State Government
Social cost of plastic	✓		Environment
Willingness to pay for reduced litter		✓	Environment

Core assumptions in the CBA common to all Stage 1 items were:

- quantified figures do not include interstate or overseas impacts
- all figures are scaled to 2021 monetary value
- the assessment does not include second-order impacts such as water use or emissions.

Further information on base case assumptions is provided in Appendix B.

Cost-benefit analysis results

The CBA results are presented as a Net Present Value (NPV) over a 20-year period. The results of this CBA are summarised in the following table and further details on individual single-use plastic items are set out in Appendix A.

Table 2 summarises the projected costs and benefits of a statewide ban on single-use plastics over a 20-year period.

Table 2 Summary of CBA results

Policy option	Cost Impact (\$millions)	Benefit impact (\$millions)	Net impact (\$millions)	NPV – 20 years (\$millions)	NPV Difference to base case (\$millions)
Option 1 No ban (base case)	-774.60	836.90	62.30	47.00	-
Option 2 Statewide ban	-665.80	750.20	84.40	61.50	14.50

Source: Creational Consulting, unpublished

Option 2 (statewide ban on SUP) is expected to deliver a net benefit of \$14.5 million more than the base case (Option 1 which equates to no ban).

Table 3 Benefit-Cost Ratio of the two policy options

Policy option	Benefit-cost ratio
Option 1 No ban	1.08
Option 2 Statewide ban	1.13

Source: Marsden Jacob analysis of Creational Consulting data

Option 2 is expected to deliver a benefit cost ratio (BCR) of 1.13 (Table 3). This indicates that for every one dollar invested, the reform is expected to deliver a return of \$1.13.

Sensitivity analysis

A sensitivity analysis was undertaken on the results of the CBA, to determine if the positive BCR was sensitive to any of the inputs or assumptions. A summary of the assumptions used in the base case is shown in *Table 4*, while a complete list of assumptions is in Appendix B.

Table 4 Summary of base case assumptions

Assumptions	
Distributor levy	Ranging from 2 cents to 50 cents, depending on the item
Distributor margin	6% where applicable
Retailer margin	4% where applicable
Cost of capital	3%
Reduction of unit cost over time	5% where applicable

Source: Creational Consulting, unpublished

The sensitivity analysis was undertaken by varying any of these base assumptions. The results from these analyses indicated that the policy option of statewide ban was robust to changes in the base assumption and the best viable economical option.

Therefore, the sensitivity analysis reinforced that the policy option of a statewide ban was found to be the most economically viable option.

Sensitivity of NPV to different rates were analysed as part of the sensitivity analysis. The base case analysis considered a discount rate of 3 per cent. Sensitivity analysis was undertaken on standard discounting rates of 7 per cent and 10 per cent. The analysis revealed the NPV generated by a statewide ban to be robust to different discount rates. These results are summarised in *Table 5*.

Table 5 Summary of sensitivity analysis of NPV using different discount rates

Policy Option	Discount rate 3%	Discount rate 7%	Discount rate 10%
Status quo	-	-	-
Education and behaviour change campaign	-20.6	-17.9	-16.6
Incentivise alternatives	-33.0	-28.5	-26.3
Introduction of levy on distributors	-216.2	-170.2	-147.0
Statewide ban	14.5	7.8	4.4
Voluntary agreement	-87.9	-65.7	-55.0

Source: Marsden Jacob analysis of Creational Consulting data

Based on National Litter Index data, the litter propensities for the in-scope items are found to be very similar between WA, Victoria and NSW. Based on Marsden Jacob (2022), adjusting for number of households and propensity to litter for WA, the willingness to pay to reduce litter is \$26,182 per tonne in 2021–22 dollars. This figure differs from a more conservative value of \$2,025 used in the CBA. This indicates further confidence that the proposed Stage 1 regulatory changes are absorbable and supported by community.

Distributional impacts

In addition to performing CBA and sensitivity analysis, it is useful to summarise the distribution of costs and benefits among the identified stakeholder groups.

Table 6 summarises the distribution of costs and benefits of all the options considered under the CBA, relative to the base case.

Table 6 Summary of distributional impacts relative to the base case (\$millions)

	Base case No ban	Education & behaviour change campaign	Incentivise sustainable alternatives	Introduction of levy on distributors	Statewide ban	Voluntary agreements with retailers
State Govt	0.0	-12.2	-17.9	1087.1	-34.8	8.2
Local Govt	0.0	-0.5	-1.0	-0.5	1.2	-0.1
Distributors/Manufacturers	0.0	14.5	-2.0	-1285.1	-4.3	17.8
Retail, hospitality, hospital	0.0	233.4	271.2	-28.8	-73.1	183.6
WA community	0.0	-250.9	-285.5	11.0	74.4	-309.4
Environment	0.0	-4.8	2.2	0.1	51.2	12.1
Overall	0.0	-20.6	-33.0	-216.2	14.5	-87.9

Source: Marsden Jacob analysis of Creational Consulting data

The distribution analysis shows that the WA community and environment are the largest beneficiaries of the introduction of a statewide ban on SUP. The sector represented by retail, hospitality and hospitals bear the most significant costs of the ban, while State Government also bears some costs. The most likely market response is that commercial businesses will pass on the costs to end customers.

4.3 Regulatory burden

While it is not mandatory to use the regulatory burden framework for DRIS, it remains a useful tool to understand the regulatory burden and costs on businesses,

community organisations and individuals. The analysis follows the OBPR's published guidance (Office of Best Practice Regulation, 2022) and considers the administrative and substantive compliance costs as well as any delay costs that would arise in the next 10 years.

Costs included in regulatory burden are mainly borne by businesses and individuals. These costs include levy on single-use plastic items, purchase price of alternatives, and compliance costs.

Table 7 Regulatory burden estimate (RBE) table

Average annual regulatory costs (from business as usual) (\$ millions)				
Change in costs	Business	Community organisations	Individuals	Total change
Total, by sector	27.8	0	-26.7	1.07

Source: Marsden Jacob analysis

The analysis shows an average annual cost of \$27.8 million falling to businesses and a similar-sized benefit falling to individuals (Table 7). As noted above, it appears likely that costs to businesses will be passed on to consumers, resulting in the costs being effectively 'netted off'. The breakdown of the total cost for each product type grouped by business costs and community benefits is set out in Appendix C.

4.4 National impact assessment

This DRIS is required to assess the impact that a statewide ban on single-use plastics may have on national and Trans-Tasman markets. This section provides a qualitative assessment of the costs and benefits to the key stakeholder groups on a national scale.

Stakeholder impacts

The impact analysis of the Stage 1 ban on single-use plastics on stakeholder groups considered where the impact was most likely to be felt in geographic terms (i.e. within WA or within other Australian states, territories or New Zealand). The impacts identified are shown in Table 8.

Table 8 Stakeholder identification for national impact analysis

Stakeholders	Within WA	Other Australian states and territories or New Zealand
State, Commonwealth and New Zealand governments	Costs to State Government from education campaigns and enforcement	Negligible impacts on other governments
Local government	Reduced waste disposal costs relating to plastic bags	Negligible impacts on other local governments
Manufacturers	Zero – no local manufacturers of single-use plastics	Some (limited) benefit as all manufacturers of single-use plastics appear to be international Some alternatives may be manufactured locally (e.g. paper bags)
Distributers	Some transitional costs Some costs to hold multiple product lines	Limited transitional costs beyond those captured in the CBA
Retailers, hospitality, hospitals	Some transitional costs for all businesses Larger businesses (that operate across multiple states) may have larger impacts from differing requirements in different jurisdictions	Negligible impacts on small interstate business Some impact on larger businesses from differing requirements in different jurisdictions
Community	'Feel good' benefit from reduced plastic littering Some increased costs	Some benefit where retailers move to new highest standard. Potentially a small 'feel good' benefit from reduced litter in WA
Environment	Benefit from reduced plastic litter	Potentially a small benefit from reduced plastic litter movement in oceans

Source: Marsden Jacob analysis

The impacts on stakeholders from within WA were captured and accounted for in the CBA. As it was determined that there is negligible impact on small interstate retailers and distributers, the national impact analysis primarily focuses on a small number of stakeholder groups.

Impacts on key stakeholder groups

The stakeholder groups that require further consideration of the impact of the statewide ban on single-use plastics WA are:

- State, Commonwealth and New Zealand governments
- larger retailers, hospitality, hospitals – such as national and international businesses operating across the country and in New Zealand
- community and the environment.

Table 9 summarises the costs and benefits or opportunities associated with the statewide ban for each of the identified stakeholders.

Table 9 Summary of costs, benefits and opportunities to the key stakeholders

Stakeholder	Costs	Benefits/opportunities
State, Commonwealth, and New Zealand governments	Costs are negligible or non-existent	Opportunity to harmonise their respective plastic bans with WA Opportunity to support industry in helping to transition to sustainable alternatives Opportunity to help ease the regulatory burden on industry
Larger retailers, hospitality, hospitals operating across multiple jurisdictions	Transitional costs Operational costs Costs relating to infrastructural changes	Consumer demand for sustainable alternatives to plastics Consumer willingness to pay means costs can be passed on through to consumer
Community and the environment	Increased costs of products because of the alternatives being more expensive	Evidence of willingness to pay to avoid littering, and to move away from single-use plastics Reduced litter, preservation of natural environment

State, Commonwealth and New Zealand governments

Costs attributed to the New Zealand and Australian governments as well as other state or territory governments appears to be negligible. While there will be some costs attributed to the State Government (such as monitoring and enforcement, and an education strategy), these are accounted for in the CBA.

Similarly, there are limited benefits expected to fall to the State, Commonwealth and New Zealand governments. A successful implementation of a statewide ban in WA can lead to other jurisdictional bodies following suit by harmonising their strategy towards banning plastics to the approach taken by WA. This would lead to a reduction in transitional costs and operational costs on national and international businesses operating in these jurisdictions, thus easing regulatory burden. This approach can lead to greater support from industry in banning disposable plastics.

Potential impacts on New Zealand

Market research indicates that the items covered under the single-use plastic ban are not manufactured in New Zealand. Hence, there will be minimal direct impacts on manufacturers located in New Zealand. Like Australia, impacts will be mainly felt by larger retailers operating in the region. The impacts faced by larger retailers and the potential path forward are described in the following section.

Larger retailers (including hospitality businesses and hospitals) operating across multiple jurisdictions

Businesses operating across multiple jurisdictions will incur some transitional and operational costs to ensure their products align with the new WA requirements. However, these businesses have not been able to quantify the projected impacts.

Research has shown there is a high demand from consumers for sustainable alternatives to single-use plastics. The ban in WA, and the requirement to look for alternatives to single-use plastics, will provide some benefits (as consumers are willing to pay for sustainable alternatives) as those multinational corporations make the required changes.

While a consensus on a national approach was not reached, most of the items identified in Stages 1 and 2 of the WA ban are already subject to partial or total ban or have been considered for a future ban in other Australian jurisdictions (Figure 4).

WA (Current)	Single-use plastic item	VIC	SA	QLD	ACT	NSW	TAS	NT	Commonwealth All voluntary & industry led
Stage 1 End of 2021	Bowls		2023-25	Sep 2021	from 2023	Nov 2022	identified	2025	
	Cups for cold drinks & food		2023-25	2024	from 2023	identified			
	Cutlery	Feb 2023	Mar 2021	Sep 2021	July 2021	Nov 2022	identified	2025	
	Helium balloon releases	July 2021	2023-25	2011				2025	
	Plates	Feb 2023	2023-25	Sep 2021	from 2023	Nov 2022	identified	2025	
	EPS food containers	Feb 2023	Mar 2022	Sep 2021	Jul 2021	Nov 2022	identified	2025	Dec 2022
	Stirrers	Feb 2023	Mar 2021	Sep 2021	Jul 2021	Nov 2022		2025	
	Straws	Feb 2023	Mar 2021	Sep 2021	Jul 2022	Nov 2022	identified	2025	
Stage 2 End of 2022	Thick plastic bags		2023-25	identified	from 2023	identified		2025	
	Barrier/produce bags		2023	2024		identified			
	Microbeads			Sep 2023		Nov-2022		2025	Voluntary ban from 2016
	Oxo-degradable plastics	Feb 2023	Mar 2022	Sep 2024	Jul 2022	identified			APCO roadmap by July 2022
	EPS cups		Mar 2022	Sep 2021		Nov 2022			
	Takeaway coffee cups/lids		2024	identified	identified				
	Cold cup lids		2024	identified	identified	identified			
	Takeaway bowl & container lids		2024	identified	identified	identified			
Cotton buds with plastic shafts	Feb 2023	2023	Sep 2023	Jul 2022	Nov 2022				
EPS packaging		Identified	Sep 2023-24					2025	APCO roadmap by July 2022

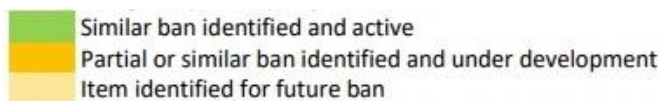


Figure 4 Jurisdictional summary of bans on plastics (as at September 2022)

Source: DWER, unpublished

Large businesses may adopt one of two different strategies to align with the WA ban.

The first strategy could be to consider the bans which are proposed for the future in other jurisdictions and adapt to the prospective changes in other states based on WA.

The second strategy would be to treat WA as an outlier and make localised changes. This would mean businesses would require making individual changes based on the jurisdiction as and when bans come into place.

The costs imposed on the business as a result of changes would probably be passed on to consumers, noting that consumers have shown a willingness to pay to reduce litter and to see less plastic in the environment (BCG, 2021).

Community and the environment

Any additional costs incurred by industry as they are required to use alternative, more sustainable produces will be passed on to the community through increased prices. However, the community has shown it is willing to pay the increased price if it results in preservation of the natural environment.

The community and the environment benefit from there being less littering, less plastics finding their way into landfill, and the natural environment being protected from increasing local plastic impacts.

Summary of national impact assessment

- There is an impact to businesses operating across the country and in New Zealand as they incur operational and transitional costs because of a lack harmonisation between jurisdictions.
- There is a proven demand in the market from consumers for more sustainably sourced products and brands with a focus on sustainability, and consumers are willing to pay extra for these products. The additional costs incurred by these businesses therefore can be passed on to consumers.
- Industries can follow the precedent set by WA and adopt the same approach across the country voluntarily, which may help smooth the transition process from disposable plastics to sustainable alternatives.

Limitations of the analysis

- Because of a lack of current and consistent nationwide data on various market information, this analysis is primarily qualitative.
- Based on consultation from the department, it is understood that retailers and businesses have not been able to quantify the projected impacts.

5 Consultation

The State Government has consulted with the community, industry and retailers on possible actions to reduce single-use plastics and support the move to a circular economy over an extended period.

Key earlier related actions that were consulted on include the WA ban on lightweight plastic bags (implemented in 2018) and the container deposit scheme on beverage containers (which commenced in 2020).

Consultation on the ban on single-use plastics is summarised below.

5.1 Issues paper

Consultation on possible bans to single-use plastics commenced with the release in April 2019 of an issues paper titled [Let's not draw the short straw](#) (DWER, 2019). Consultation with the community and stakeholders was carried out through a combination of an online survey, written submissions, community workshops and stakeholder workshops.

The consultation attracted 9,464 submissions, including:

- 8,378 responses to an online survey
- 55 individually written submissions
- 702 pro forma submissions from an online petition
- 329 people attending community workshops held across WA.

Feedback from the consultation identified strong community support for government regulation, alongside sustainable product design and education campaigns, with 98 per cent of respondents indicating support for extensive action to reduce single-use plastic.

Submissions and a summary of the online survey responses were then made publicly available on the consultation website. A [consultation report](#) (DWER, 2020) summarised the outcome of the consultation on the issues paper.

A key finding of this consultation was:

Community support to reduce single-use plastic is high and building over time. The community would like to see actions taken by the Government to mitigate the impacts of single-use plastics.

Of the single-use plastic items included in the issues paper, there was strong support to reduce the impact of several items. The department provided an overview of how each single-use plastic was prioritised across each information stream, noting that the priorities changed as more information was provided and discussed (Figure 5).

Single-use plastic items	Survey	Written	Workshop
Balloon releases	Low	High	High
Balloons	Low	Low	Medium
Barrier/produce bags	Medium	Medium	Medium
Cigarette butts/filters	Low	Medium	High
Cotton buds with plastic shafts	Low	Low	Low
Cutlery, plates, stirrers	Medium	High	Medium
Drinking straws	High	High	High
Fishing gear	Low	Medium	High
Lightweight plastic bags	High	Low	Medium
Lightweight plastic bags combined*	High	High	High
Microbeads	High	Medium	Medium
Plastic beverage containers	High	Medium	Medium
Plastic packaging	High	High	High
Polystyrene	Medium	Low	Low
Prepacked fruit and vegetable	High	Medium	High
Takeaway coffee cups/lids	High	Medium	Low
Takeaway food containers	Medium	Medium	Low
Thicker plastic bags	Low	High	Low
Wet or baby wipes	Low	Low	Low

■ High
 ■ Medium
 ■ Low

*Data for barrier/produce bags and lightweight plastic bags have been combined

Figure 5 Single-use plastic priority rating for each information stream

Source: DWER, 2020

5.2 RIS consultation

It was considered that consultation undertaken before and during Stage 1 regulation was sufficient to satisfy the requirements of a consultation RIS as set out in the OBPR RIS [guide](#). OBPR provided confirmation of this approach on 28 January 2022.

5.3 Plan for Plastics

Informed by this community input, WA’s Plan for Plastics (DWER, 2021a) was developed and released in 2020, announcing a staged approach with four core strategies identified. These strategies included ‘introducing regulation to support the phase-out of targeted single-use plastics’.

Actions for the short term (2020–21) and medium term (2021–22) were outlined in Table 10.

Table 10 Summary of actions on identified single-use plastic items which required regulatory actions

Single-use plastic item	Action
Short-term actions	
Plates	Develop new plastics regulations – statewide phase-out by late 2021 Develop a targeted education campaign and behaviour change program to support the implementation of regulations Implement a Plastic Free Places Program
Bowls	
Stirrers	
Takeaway polystyrene food containers	
Cutlery	
Cups	
Thick plastic bags	
Plastic straws	Establish a Plastic Straws Working Group in February 2021 to inform future actions, including regulatory action and exemptions by late 2021
Helium balloon releases	Develop new plastics regulations – statewide phase-out by late 2021 Develop a targeted education campaign and behaviour change program to support the implementation of regulatory actions
Medium-term actions	
Microbeads	Amend plastics regulations – statewide phase-out by late 2022
Coffee cups/lids	
Polystyrene cups	
Cotton buds with plastic shafts	
Barrier/produce bags	Amend plastics regulations – statewide phase-out by late 2022 Develop a targeted education campaign and behaviour change program to support the implementation of regulatory actions. Implement a Plastic Free Places Program
Polystyrene packaging	Amend plastics regulations – statewide phase-out by late 2022
Oxo-degradable plastics	Amend plastics regulations – statewide phase-out by late 2022

Source: Adapted from DWER 2021

A timeline overview was also provided, from the initial banning of lightweight plastic bags in July 2018 to the proposed Stage 2 ban in late 2022 (Figure 6).

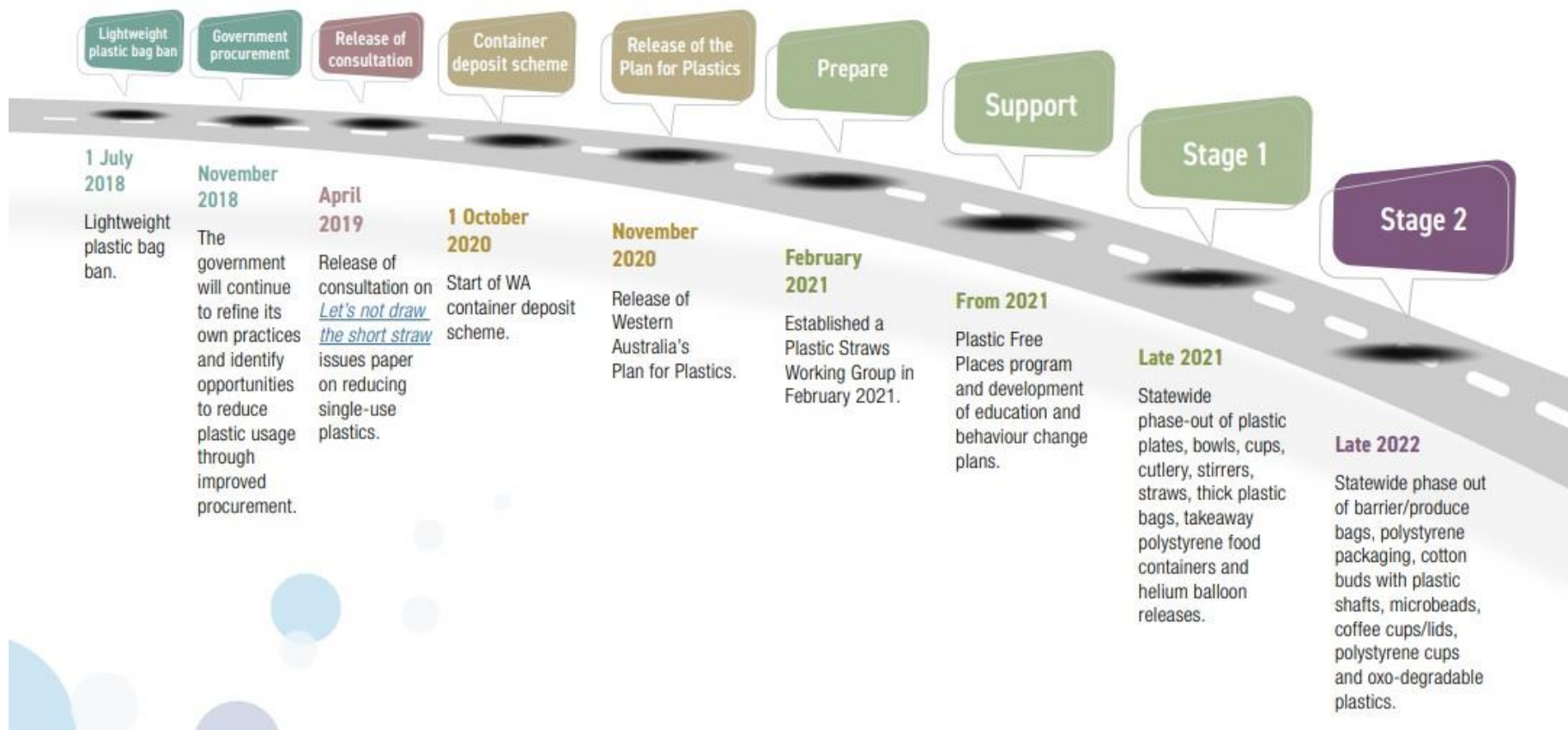


Figure 6 Timeline overview of single-use plastics ban

Source: DWER, 2021a

5.4 Stakeholder workshops on implementation of Stage 1 ban

In July 2021, to support consultation with stakeholders following the release of Plan for Plastics, the department released a stakeholder information paper (DWER, 2021b). The department then undertook Stakeholder Engagement Workshops (both face-to-face and online) with key stakeholder groups such as:

- industry bodies
- local government
- retail and business sector
- State Government
- suppliers and manufacturers
- waste sector organisations
- environmental groups and non-government organisations
- consultants.

It was noted that, at that time, the document and discussions focused on the Stage 1 bans. Feedback for the single-use plastic ban under Stage 2 would occur later in 2022.

The key focus of workshops was to provide stakeholders with a clearer understanding of the items to be banned, the implementation actions and the proposed timeline. It was also to ensure stakeholder concerns were understood and areas for support were identified.

Thirteen workshops were held (10 face-to-face and three online) covering the Perth metropolitan area and major regional centres. There were 308 participants over the range of stakeholder groups (Andrew Huffer and Associates, 2021), of which:

- 143 attended online
- 82 attended metropolitan workshops
- 83 attended regional workshops.

The workshops resulted in several key concerns and barriers being raised by stakeholders, and identified the perceived support required from government to ensure a successful transition to the ban on single-use plastics. These are summarised in the following table. In response to feedback, some implementation timings were altered. Specifically, the enforcement of the ban on plastic cups (cold beverages and foods of all temperatures) was delayed to 1 October 2022 and the proposed ban on lids for cups, bowls and containers was moved to the proposed Stage 2 bans.

Summary of consultation findings

A summary of the findings from the stakeholder workshops is provided in Table 11.

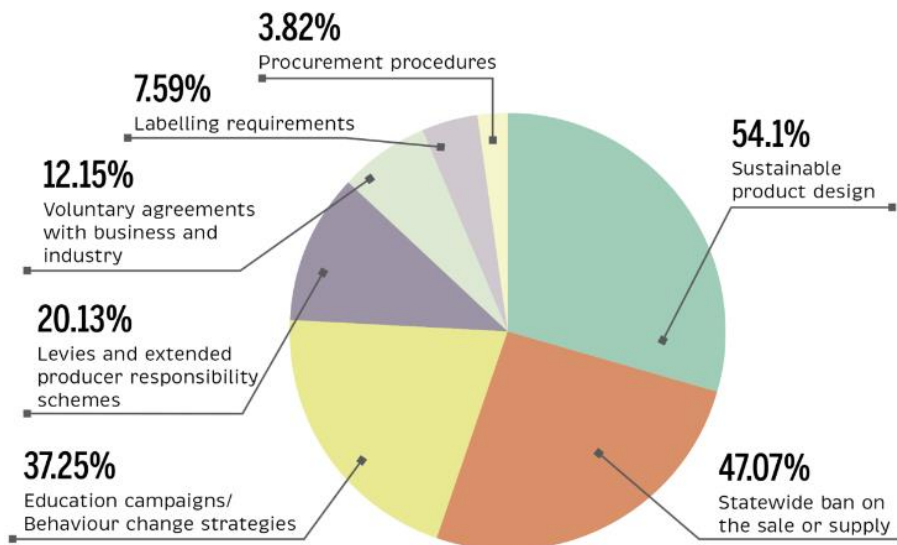
Table 11 Summary of consultation findings

Areas of concern	Key barriers	Support required
Waste management	Messaging and education	Education and marketing
Clarity and consistency of information relating to the plan	Appropriateness of alternatives	Practical and system support including waste management
Environmental, economic, enforcement, and health concerns	Timeframe	Financial support
Limited timeframe	Supply and logistics	Timeframe and engagement support
Engagement and consultation methods	Economic barriers	Legislative and certification changes
	Waste management	Clarification of information
	Legal requirements, inter-state inconsistency, and scale of the issue	

The key insights and consensus from all the workshops were:

- industry and retail businesses were generally supportive of the move away from disposable plastics
- greater focus on waste management policies was required
- revision of the timeframe was sought
- suppliers and manufacturers required in-depth and specific information to aid in transition
- importance and support for a unified approach to the issue was identified
- additional support was required to protect smaller businesses from harsher impacts
- regional suppliers understand the community attitudes
- the consultation process was satisfactory.

Figure 7 shows the preferred actions by the respondents to addressing the impacts of single-use plastics.



*As respondents could select multiple options, the final total is greater than 100 per cent.

Figure 7 Participant preferences on actions towards single-use plastic impacts

Source: DWER, 2020

5.5 Consultation with other states/territories and New Zealand

Throughout the development of the Stage 1 regulations in WA, there have been regular meetings of relevant officers from across the Australian states and territories as well as New Zealand. These meetings have ensured that all jurisdictions are aware of proposed reforms that are currently being implemented as well as others that are proposed.

Public and business-focused consultation has included attendees, and gained feedback from stakeholders operating interstate and overseas.

6 Implementation and review

6.1 Implementation

The Environmental Protection (Prohibited Plastics and Balloons) Regulations 2018 have been passed by the WA Parliament and the Stage 1 single-use plastics ban started on 1 January 2022 for:

- plastic plates
- bowls
- cups
- cutlery
- stirrers
- straws
- thick plastic bags
- takeaway polystyrene food containers
- helium balloon releases.

Following a six-month soft transition period, the enforcement of Stage 1 regulations started on 1 July 2022 for all items except cups, which started on 1 October 2022.

Education and assistance approach

Stage 1 is being supported through a [Plastic Free Places](#) program delivered by the Boomerang Alliance, and a comprehensive [supplier and retailer education and engagement program](#) (delivered by the National Retail Association), as well as community education programs coordinated by the department.

6.2 Evaluation and review

The *Environmental Protection Act 1986* includes a provision for a review every five years. In addition, the Minister can review and/or amend the regulations at any time. This allows alignment with any multi-jurisdictional review of restrictions on single-use plastics.

The department has indicated it plans to undertake a full review of the Stage 1 single-use plastic ban within the next five years. The review would evaluate the ban and consider the need for adjustments or amendments to the scope of the ban based on feedback from a full range of stakeholders. The review would consider:

- the effectiveness of the ban – whether the proposed objectives are being achieved, if there have been any unintended consequences and/or the status of monitoring compliance
- potentially a formal economic review to better understand the full range of economic impacts (in many cases, this would be a preferred option as it helps

quantify many of the unknowns in terms of the impacts described in the above sections)

- lessons learnt from the implementation processes to help with efficiency of any future bans relating to plastics or other products.

Evaluation and review of the Stage 1 regulation implementation will include continued monitoring of consumption and litter generation. This information will inform if the ban is having the desired effect. Data will reveal community trends and attitudes towards purchases and consumption of sustainable single-use alternatives. Monitoring can also include national usage and the effects on distributors and retailers, as well as market behaviour to inform understanding of market impacts.

Appendix A – Cost-benefit analysis

Straws, Stirrers, and Cutlery					
Policy options considered (\$ millions)					
	Cost impact	Benefit impact	Net impact	NPV - 20 years	NPV difference to base case
Base case	-247.58	272.01	24.43	18.27	
Education and behaviour change campaign	-624.58	665.03	40.45	30.36	12.09
Incentivise sustainable alternatives	-754.31	805.63	51.32	38.37	20.10
Introduction of levy on distributors	-844.68	791.45	-53.24	-44.35	-62.62
Statewide ban	-507.02	576.07	69.05	52.25	33.98
Voluntary agreements with retailers	-850.96	873.09	22.13	16.97	-1.29

Bags, Balloons, EPS cups* and containers, plates, cups					
Policy options considered (\$ millions)					
	Cost impact	Benefit impact	Net impact	NPV - 20 years	NPV difference to base case
Base case	-527.00	564.90	37.90	28.71	
Education and behaviour change campaign	-509.05	507.12	-1.93	-3.94	-32.65
Incentivise sustainable alternatives	-446.34	419.12	-27.22	-24.40	-53.11
Introduction of levy on distributors	-1776.62	1622.90	-153.73	-124.90	-153.61
Statewide ban	-158.76	174.08	15.33	9.28	-19.43
Voluntary agreements with retailers	-472.68	398.57	-74.11	-57.86	-86.57

*Action on EPS cups assessed however deferred to Stage 2 to align with other “hot” cup action

Appendix B – Sensitivity analysis

The table below summarises all the base case assumptions used in CBA and the sensitivity analysis.

Assumptions	Straws	Stirrers	Cutlery	Plates	Cups	EPS food containers	Thick plastic bags	Release of helium balloons	EPS Cups
Consumption per person p.a	117.9	4.4	20.2	3.2	12.5	1.7	44.5	0.18	6.9
Distributor levy	5 cents	2 cents	20 cents	10 cents	10 cents	50 cents	50 cents	n/a	20 cents
Distributor margin	6%	6%	6%	6%	6%	6%	6%	n/a	6%
Retailer margin	4%	4%	4%	4%	4%	4%	4%	n/a	4%
Small beverage straws	Exclude - 1.7% or 2 straws per person p.a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Cost of capital	3%	3%	3%	3%	3%	3%	3%	3%	3%
Reduction of unit cost over time	n/a	n/a	n/a	5%	5%	5%	5%	5%	5%

Appendix C – Regulatory burden estimate – calculation

Regulatory burden (millions) for each product type across 10-year period.

	Year	2022/23	2023/24	2024/25	2025/26	2026/27	2027/28	2028/29	2029/30	2030/31	2031/32
	Project year	1	2	3	4	5	6	7	8	9	10
Plates	Business	\$0.68	\$0.65	\$0.67	\$0.64	\$0.61	\$0.59	\$0.56	\$0.54	\$0.52	\$0.49
Plates	Community	-\$0.66	-\$0.63	-\$0.64	-\$0.61	-\$0.59	-\$0.56	-\$0.54	-\$0.52	-\$0.50	-\$0.48
Plastic cups	Business	\$2.71	\$2.60	\$2.49	\$2.39	\$2.29	\$2.19	\$2.10	\$2.01	\$1.93	\$1.85
Plastic cups	Community	-\$2.61	-\$2.50	-\$2.40	-\$2.30	-\$2.20	-\$2.11	-\$2.02	-\$1.93	-\$1.85	-\$1.78
EPS cups	Business	\$1.36	\$1.30	\$1.24	\$1.19	\$1.14	\$1.09	\$1.05	\$1.00	\$0.96	\$0.92
EPS cups	Community	-\$1.30	-\$1.25	-\$1.20	-\$1.15	-\$1.10	-\$1.05	-\$1.01	-\$0.97	-\$0.93	-\$0.89
Bags	Business	\$4.75	\$4.55	\$4.16	\$3.79	\$3.46	\$3.16	\$2.88	\$2.63	\$2.40	\$2.19
Bags	Community	-\$4.57	-\$4.38	-\$4.00	-\$3.65	-\$3.33	-\$3.04	-\$2.77	-\$2.53	-\$2.31	-\$2.11
Food containers	Business	\$0.50	\$0.49	\$0.48	\$0.47	\$0.50	\$0.48	\$0.46	\$0.44	\$0.42	\$0.40
Food containers	Community	-\$0.48	-\$0.47	-\$0.46	-\$0.46	-\$0.48	-\$0.46	-\$0.44	-\$0.42	-\$0.40	-\$0.39
Balloons	Business	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Balloons	Community	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Straws	Business	\$15.29	\$15.29	\$15.29	\$15.29	\$15.29	\$15.29	\$15.29	\$15.29	\$15.29	\$15.29
Straws	Community	-\$14.70	-\$14.70	-\$14.70	-\$14.70	-\$14.70	-\$14.70	-\$14.70	-\$14.70	-\$14.70	-\$14.70
Stirrers	Business	\$0.12	\$0.12	\$0.12	\$0.12	\$0.12	\$0.12	\$0.12	\$0.12	\$0.12	\$0.12
Stirrers	Community	-\$0.11	-\$0.11	-\$0.11	-\$0.11	-\$0.11	-\$0.11	-\$0.11	-\$0.11	-\$0.11	-\$0.11
Cutlery	Business	\$4.56	\$4.56	\$4.56	\$4.56	\$4.56	\$4.56	\$4.56	\$4.56	\$4.56	\$4.56
Cutlery	Community	-\$4.38	-\$4.38	-\$4.38	-\$4.38	-\$4.38	-\$4.38	-\$4.38	-\$4.38	-\$4.38	-\$4.38
Total	Business	\$29.96	\$29.56	\$29.00	\$28.45	\$27.96	\$27.47	\$27.01	\$26.59	\$26.19	\$25.82
Total	Community	-\$28.81	-\$28.42	-\$27.89	-\$27.35	-\$26.89	-\$26.41	-\$25.97	-\$25.56	-\$25.18	-\$24.83

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