

Regional waste avoidance and resource recovery strategy guidance



This guideline will be updated when the *NSW Waste Avoidance and Resource Recovery Strategy 2014–21* is finalised (to include the final targets). The Draft WARR Strategy is the current publication and it has been referred to in this guideline.

Send any comments on this guideline to: wasteless.recyclemore@epa.nsw.gov.au

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1. Background

The NSW Government's plan, *NSW 2021: A plan to make NSW number one*, sets ambitious targets to increase recycling and reduce litter and illegal dumping across NSW. Regional action plans, supporting NSW 2021, were developed in collaboration with local communities to highlight priorities and actions for each region. Many of the action plans encourage groups of councils to develop regional waste avoidance and resource recovery strategies (from here on called 'regional waste strategies').

There are some key challenges to making NSW more resource efficient, including the need to invest in waste and recycling infrastructure. The NSW Government has responded to this critical infrastructure need by refocusing waste levy funding on long-term strategic programs under the \$465.7 million Waste Less, Recycle More initiative, including a \$250 million waste and recycling infrastructure package to drive investment in NSW.

Regional collaboration will be critical to delivering the NSW Government's Waste Less, Recycle More initiative. Regional waste strategies will assist regions assess their current situation, work out where they want to get to and how they will get there. The strategies will determine the priorities for the region and identify current and future infrastructure needs.

This guide assists groups of councils, regional organisations of councils (ROCs) and voluntary regional waste groups to develop a regional waste strategy. It suggests how to structure their strategies so they maintain a consistent approach and are comparable to other regional waste strategies.

These strategies focus on:

- increasing dry recycling and targeting organics
- reducing waste to landfill
- combatting illegal dumping and littering.

While this guide focuses on the municipal solid waste stream, commercial and industrial (C&I) waste and construction and demolition (C&D) waste should also be addressed within the strategy, at least to a limited extent.

1.1 Key drivers and policy context

The policy context and key targets driving a change in waste and recycling practices in NSW are summarised in Table 1. It is vital to consider these plans, policies and targets as part of the regional waste strategy development process.

Definitions

Municipal solid waste (MSW)

Solid waste from households and local government operations, including waste placed at the kerbside for council collection and waste collected by councils from municipal parks and gardens, street sweepings, council engineering works and public council bins.

Construction and demolition (C&D) waste

Solid waste sourced from construction and demolition works, including building and demolition waste, asphalt waste and excavated natural material.

Commercial and industrial (C&I) waste

Solid waste generated by businesses, industries (including shopping centres, restaurants and offices) and institutions (such as schools, hospitals and government offices) but not C&D waste or MSW.

Table 1: Key policies, plans and targets to consider

Key policy/ plan	Summary of relevant detail	Key targets/action/notes for councils
<p>NSW 2021: A plan to make NSW number one (NSW Government, 2012)</p>	<p>The NSW Government has identified waste management as a priority area under its NSW 2021 Plan. Goal 22: 'Protect our natural environment' and goal 23: 'Increase opportunities for people to look after their own neighbourhoods and environments' set out specific targets relating to tackling illegal dumping, littering and to increase recycling to meet the NSW recycling targets.</p>	<p>Goal 22: Protect our natural environment.</p> <p>Targets illegal dumping:</p> <ul style="list-style-type: none"> • reduce the incidence of large-scale (greater than 200 m³ of waste) illegal dumping detected in Sydney, the Illawarra, Hunter and Central Coast by 30% by 2016. <p>Goal 23: Increase opportunities for people to look after their own neighbourhoods and environments.</p> <p>Targets litter and recycling:</p> <ul style="list-style-type: none"> • by 2016, NSW will have the lowest litter count per capita in Australia. • increase recycling to meet the NSW waste recycling targets.
	<p>NSW 2021 regional action plans have been developed in consultation with local communities to highlight regional priorities and actions.</p>	<p>Regional action plans under NSW 2021 encourage councils to develop regional waste strategies. Table 2 lists the regions encouraged to develop a regional waste strategy.</p>
<p>Draft NSW Waste Avoidance and Resource Recovery Strategy 2013–2021 (Draft WARR Strategy) NSW Government, 2013</p> <p>Waste Avoidance and Resource Recovery Strategy 2007 NSW Government, 2007</p>	<p>The draft WARR Strategy includes long-term targets for the following five key result areas:</p> <ul style="list-style-type: none"> • avoid and reduce waste generation • increase recycling and divert more waste from landfill • manage problem wastes better • reduce litter • reduce illegal dumping. 	<p>Councils need to contribute to meeting WARR strategy targets and strive to meet the longer term targets in the draft WARR Strategy. The new WARR Strategy is expected to be released mid-2014. Key targets are:</p> <ul style="list-style-type: none"> • reduce the rate of waste generation per capita • increase recycling rates for: <ul style="list-style-type: none"> – MSW 66% (in Draft WARR Strategy this target is increased to 70% by 2021–22) – C&I 63% (in Draft WARR Strategy this target is increased to 70% by 2021–22) – C&D 76% (in Draft WARR strategy this target is increased to 80% by 2021–22) • establish or upgrade 86 drop-off facilities or services for managing household problem wastes statewide.

		<p>From 2013–14:</p> <ul style="list-style-type: none"> implement the NSW Strategy to Combat Illegal Dumping to reduce the incidence of illegal dumping statewide. <p>As part of this strategy, by 2016–17:</p> <ul style="list-style-type: none"> reduce the incidence of illegal dumping of waste detected in Sydney and the Illawarra, Hunter and Central Coast regions by 30% compared with 2010–11 establish baseline data to allow target-setting in other parts of the state. <p>By 2016–17:</p> <ul style="list-style-type: none"> reduce the number of litter items by 40% compared with 2011–12 levels and then continue to reduce litter items to 2021–22.
<p>Waste Less, Recycle More initiative</p>	<p>The NSW Government unveiled the new waste and recycling initiative in early 2013, in response to the 2012 waste levy review.</p> <p>The initiative includes \$465.7 million to transform waste and recycling in NSW over five years, including a \$250 million waste and recycling infrastructure package.</p> <p>A timetable of the anticipated release dates for grants and programs under the Waste Less, Recycle More initiative has been released by the EPA and the Environmental Trust and is available on the EPA website, epa.nsw.gov.au</p>	<p>Regional collaboration of councils is critical in delivering this \$465.7 million initiative. Funding has been allocated over five years to ensure councils, regional organisations of councils and voluntary regional waste groups are well resourced to deliver their strategies and maximise the funding opportunities this initiative offers.</p> <p>Grants totalling \$6.6 million have been awarded to seven Regional Organisations of Councils and council groups to support the development of regional waste strategies, fund regional coordinators and to maximise funding opportunities for local communities under the Waste Less, Recycle More initiative. The grants will benefit 54 councils in the waste levy-paying region and more than 5.1 million residents. Council groups are outlined in Table 16 in Appendix A.</p> <p>Voluntary Regional Waste Groups across regional and rural NSW will be supported with \$13 million of funding as part of the Waste Less, Recycle More initiative over five years. The constituent councils are outlined in Table 16 in Appendix A.</p> <p>A strategy action plan for four years up to 30 June 2017, identifying waste and recycling programs and infrastructure that align with the funding opportunities in the Waste, Less Recycle More initiative should be developed as part of a regional waste strategy.</p>

1.2 Regions encouraged to develop regional waste strategies

Table 2 shows a list of regions encouraged to develop regional waste strategies. Appendix A has a list of all NSW 2021 regions. A listing of all the existing council groups working on regional waste strategies is also included in Appendix A (Table 16).

Table 2: Regions encouraged to develop regional waste strategies

All regions within Sydney:	Hunter
Northern Sydney	Central Coast
Northern Beaches	Illawarra
Southern Sydney	Northern Rivers
Eastern and Inner Sydney	Mid North Coast
Western Sydney	Southern Highlands and Tablelands
South Western Sydney	South East NSW

1.3 Timetable for delivery and reporting

Regional waste strategies must be submitted to the Environment Protection Authority (EPA) by 30 June 2014.

For the regions encouraged to develop regional waste strategies, an updated annual action plan and waste strategy progress report needs to be provided annually to the EPA by 30 June each year, commencing in 2015.

Under the regional waste coordination funding agreements the EPA requires a brief project report to be submitted by 31 May each year. The 31 May date was chosen to ensure that the EPA funding is provided to the regions at the start of the financial year – in July each year.

From 2015, regions may want to streamline the reporting process and provide the combined package of the project report, updated action plan and progress report to the EPA by 31 May.

The EPA will work with the voluntary regional waste groups to streamline the reporting processes.

Table 3: Key target dates

Requirement	Submission date
Final regional waste strategy	30 June 2014
Annual updated action plan and progress report	30 June annually up to 2017, commencing in 2015

Table 4: Indicative timescales for each stage of strategy development process

Activity	Description	Indicative timescales
Baseline regional profile	Where are we today? Review current services, performance and contractual commitments	1–2 months
Defining vision, themes, strategic objectives and targets	Where do we want to get to? Develop the vision for the strategy Establish targets and performance measures Need to allow time for stakeholder workshops	2–4 weeks
Develop and appraise options	How are we going to get there? Develop list of delivery options. Narrow down list of delivery options to a short list. Consider assessing options using multi-criteria analysis. Need to allow time for stakeholder engagement	1–2 months
Developing action plan	The action plan should detail the actions/required changes to waste services/infrastructure, timescales/deadlines and who has ownership/responsibility for the actions Need to allow time for meetings/workshops to agree on actions and ownership	2–4 weeks
Headline strategy	Public-facing strategy document bringing together outputs of the above activities	3–4 weeks

1.4 Structure of this guide

The remainder of this guide is structured in a systematic way to help councils develop their regional waste strategies. It recommends councils follow a similar process.

- Section 1 – Background to guidance
- Section 2 – Overview
- Section 3 – Where are we today?
- Section 4 – Where do we want to go to?
- Section 5 – How will we get there?
- Section 6 – How will the strategy be implemented?
- Section 7 – How to measure success

Many other useful templates are included in the appendices to help support the strategy development process. These include a headline waste strategy template (Appendix B) which sets out how the final headline strategy document could be structured, strategy action plan template (Appendix D) and progress report template (Appendix E).

A regional waste strategy document (Figure 1) would normally comprise:

1. A public-facing headline regional strategy document. This document combines the strategy with an action plan outlining how the strategy will be delivered. This should be around 30 pages long and contain key information supported by a range of graphics. This document will be publicly available.
2. Various supporting technical documents and supporting cross-referenced documents such as existing environmental policies, policy and legislation, and governance reports. Councils may wish to make some or all of these documents publicly available.

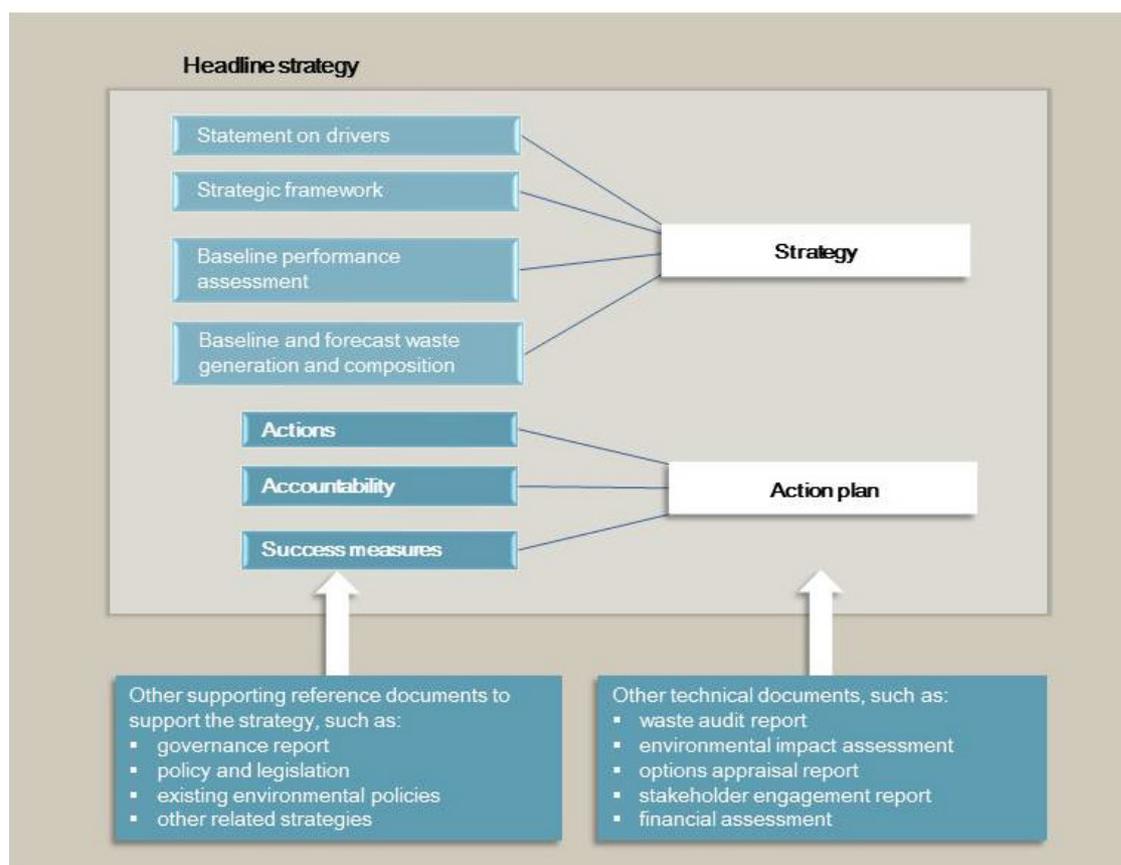


Figure 1: Regional waste strategy structure

The headline strategy document should be an easy-to-read document which highlights the vision for the region, the main priority areas (or themes), objectives and targets needed to meet this vision. As a public-facing document, the tone, language and style should be set accordingly. It needs to easily inform the public where the region is now regarding waste management, where it wants to get to and why, and set out what measures will be put in place to achieve this.

The headline strategy will contain an action plan with detailed objectives and SMART (specific, measurable, allocated, realistic and timely) actions. The action plan articulates how the waste strategy will be delivered. It is important to clearly demonstrate how the actions directly relate to achieving the strategic objectives.

Also, the council may choose to develop an implementation plan. This is an internal document which sets out a series of interdependent tasks with responsibilities allocated to a range of individuals or councils to deliver the strategy. For example:

- **The objective could be:** to increase the quantity of glass and plastic diverted from the general waste bin into the yellow-top bin by 20 per cent from 2012 levels within two years.

- **One of the actions could be:** the regional partnership councils will develop and implement a public education and information campaign to promote kerbside recycling glass and plastic within the next 12 months. Therefore, implementing this action may require some of the following tasks:
 - outline the program
 - set up the graphic design and marketing team
 - define the target area
 - design the monitoring and evaluation program
 - develop a detailed communications plan
 - gather the baseline data.

The resources required to implement the regional waste strategy need to be determined and outlined in the implementation plan, including staff, resources, financial and operational.

2. Overview

2.1 Strategic framework for regional waste strategy and terminology

This section includes guidance on how to develop a strategic framework for each regional waste strategy. Section 4, 'Where do we want to get to?', provides detailed information on how to work through the strategic framework and define the vision, themes, strategic objectives and targets.

The strategic framework is based around the series of key elements, which are used throughout this document:

- **Vision** – The vision is an aspirational statement of the desired outcomes for the strategy. For example, at a regional level this could be to 'enable the community to improve environmental and community wellbeing by reducing the environmental impact of waste and using resources more efficiently.'
- **Theme** – To provide focus within the strategy, it helps to identify a series of priorities or themes under which future plans can be developed. Identifying the key themes can also help when developing the strategic objectives. Using the key themes in the Draft WARR Strategy is recommended as a starting point, namely:
 - avoiding and reducing waste
 - increasing recycling and diverting waste from landfill
 - managing problem wastes
 - reducing litter
 - reducing illegal dumping.
- **Strategic objective** – Under each theme there needs to be a series of objectives that clearly set out the outcomes the strategy aims to achieve in a particular area. For example, under the 'avoiding and reducing waste' theme, an objective could include, 'to reduce waste generation per capita in the residential areas'.
- **Targets** – Targets are deliverables within set timeframes that aim to achieve the objectives and ultimately the vision through planned actions. The targets should be SMART. For example, to achieve a waste generation level of 500 kg per capita by 2017.

Figure 2 illustrates this strategic framework.

The purpose of a regional waste strategy is to provide a high-level assessment of waste management in the region; it also sets the strategy vision and strategic objectives for future waste management to reduce waste and keep materials circulating in the economy. The strategy then develops the approach and delivery mechanisms to achieve the vision. Section 4 gives more detail.

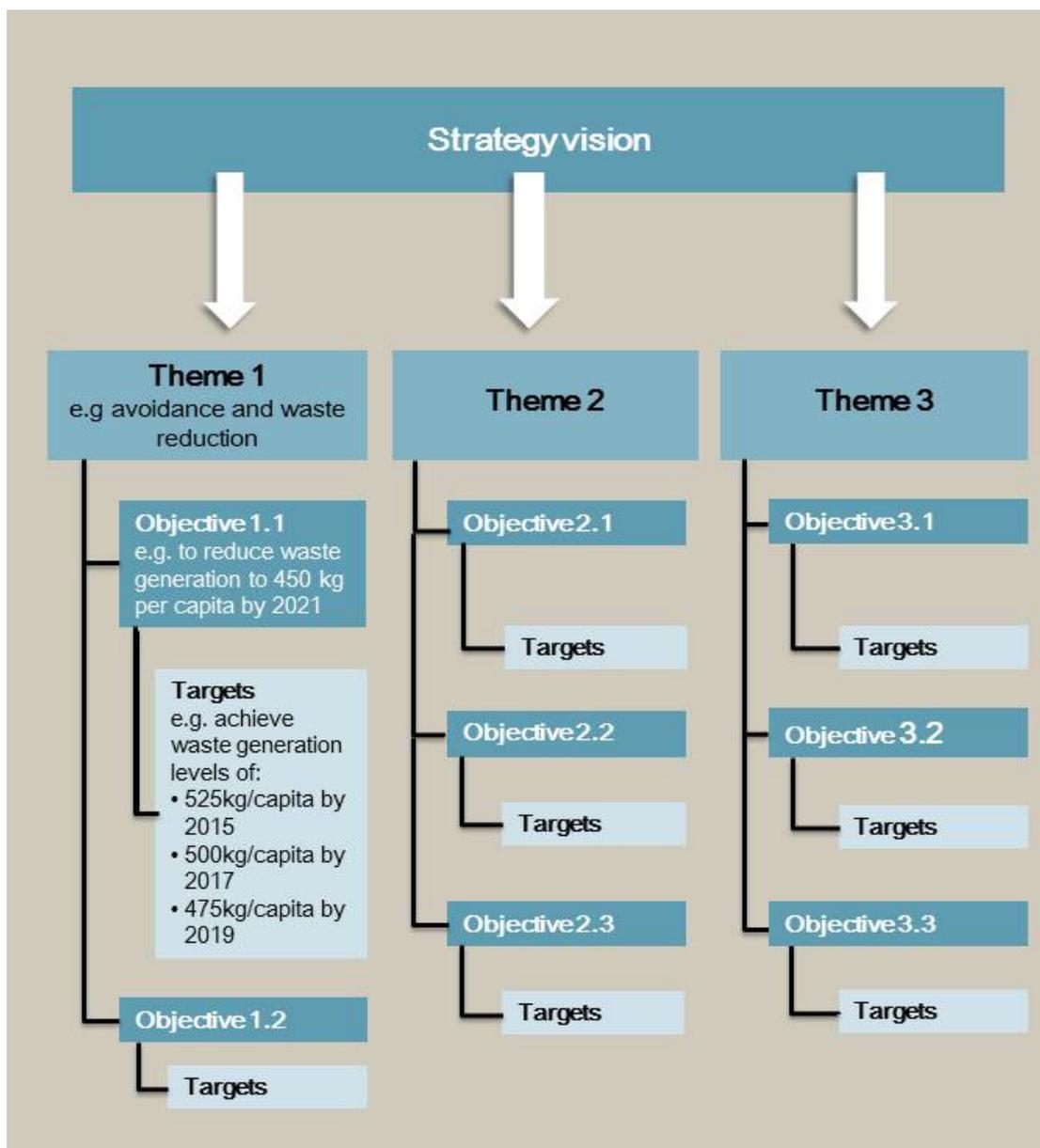


Figure 2: Strategic framework

2.2 Overview of the regional waste strategy process

The NSW Environment Protection Authority (EPA) understands that some councils have recently developed their regional waste strategy documents, often incurring significant investment of time and finances. In these circumstances, they may consider one of two options:

- complete minimum requirement forms
- produce a public-facing headline strategy document.

Appendix H sets out the minimum requirements approach.

Some councils may already have completed plans for their local areas (e.g. waste management plans and/or strategic waste action plans). The regional waste strategy should draw on this work, along with any other relevant documents to assist with the regional strategy development.

The strategy process includes the following stages:

- **Introduction**

Provide a short summary covering the background of the councils in the regional grouping, the policy context and how the strategy has developed and evolved.

- **Where are we today?**

Provide a regional waste profile and review of current services, performance and contractual commitments. This is also an opportunity to review local waste programs and initiatives as well as community values. The purpose is to establish the baseline position on which to base any decisions regarding target setting, infrastructure needs and future options.

- **Where do we want to get to?**

Develop the vision for the strategy and take account of key legislative and policy drivers. A key part of this stage is to define the themes, strategic objectives and supporting targets that underpin the strategy vision. This section should consider the NSW WARR strategy targets along with developing regional targets and timelines to drive the strategy forward.

- **How will we get there?**

This stage considers the different options for achieving the objectives. As part of the strategy development process, undertaking an options appraisal is recommended if you have similar options that are very closely aligned, and are of high financial value; for example,

infrastructure projects and major service improvements. The options

appraisal can be carried out using tools, such as multi-criteria analysis, to support decision-making. This enables multiple options to be assessed from a technical, financial, environmental and social perspective. Each option is evaluated against a defined set of criteria, which are developed with the strategy's key stakeholders. Once the options have been narrowed down to a range of delivery mechanisms, these can be used to inform the action plan along with the financial and infrastructure requirements.

- **How will the strategy be implemented?**

Consider how the objectives and supporting delivery mechanisms identified through the options appraisal will be delivered. A key part of this stage is developing an action plan, which details the actions or required changes to services and infrastructure, timescales and deadlines, along with who has ownership of each action.



Figure 3: Regional waste strategy process

The process used in the guide and shown in Figure 3 is adapted from the Waste Management Association of Australia's strategic waste planning industry training (2013).

When producing the headline strategy document, consider the strategy to be a 'live' document which requires regular monitoring, reviewing and updating as circumstances change. As a public-facing document, it should use non-technical language so it can easily be understood.

2.3 Consulting with stakeholders

Identify internal and external stakeholders early in the strategy development process and consult them at key stages to ensure their views are captured. The benefits of community and stakeholder consultation include:

- considering stakeholders' views in evaluating options for large infrastructure decisions, giving decision-makers better confidence in their preferred options
- improving the delivery of the main programs and infrastructure by reducing the risk of objections from residents and other stakeholders
- allowing industry to comment on its ability to deliver key infrastructure within the timeframes identified
- raising awareness of the waste strategy within the community, obtaining feedback from the community to help shape the strategy to make it both politically acceptable and practically deliverable.

It is useful to carry out a stakeholder mapping exercise early in the process to help identify key stakeholders who need to be consulted and find the best way to communicate with them. This helps recognise who the stakeholders are and their relative level of interest and ability to influence the decision process and outcomes.

2.4 Partnerships

Collaborative arrangements with neighbouring regional waste groups are strongly encouraged. They help identify opportunities outside each regional group's borders for using existing sites or recognise new sites to establish infrastructure or markets for materials and products generated. This can create economies of scale to achieve better value for money when purchasing goods and services.

New regional waste strategies should state which neighbouring regional waste groups were consulted during their development.

Regional waste coordinators will meet with their counterparts in neighbouring regions at least quarterly to discuss planned programs and infrastructure options and needs. Outcomes from these meetings should be included in progress reports.

2.5 Supporting research

The basic information councils are encouraged to review as part of developing a regional waste strategy is provided in Section 3. However, some regions may decide further research is needed to inform the development of their strategy and examples are included in Table 5. The Waste Less, Recycle More initiative includes financial support from the EPA for regional coordinators and to help develop the regional waste strategy, including the research highlighted in Table 5.

Table 5: Areas of additional support research that may be included

Additional research	Summary description
Cost-benefit analysis of infrastructure options	An assessment that compares the total expected cost of the strategy options against the total expected benefits. Benefits could include social and environmental benefits as well as cost.
Multi-criteria analysis, infrastructure and program options	<p>A systematic approach to assessing a range of options based on a list of criteria which are important to the end results and/or outcome (e.g. how much does it cost; is it reliable?). A relative weighting then needs to be applied to this criteria (e.g. how important is one criterion in relation to the others). A score is applied to each criterion.</p> <p>The different options are then listed in a framework and scored against the evaluation criteria. Once scoring is complete, the weighted score is calculated by multiplying the score by the criteria weighting. The sum of all the scores for each option is calculated to derive a weighted score for each option. The options are then ranked based on their score. This ranking then lists the preferred option based on evaluation criteria.</p> <p>An example is provided in Appendix G.</p>
SWOT (strengths, weaknesses, opportunities and threats) analysis	The SWOT analysis framework is a tool commonly used to assess the regions' current position. The framework is populated under each of the four headings to help highlight the current context and guide future strategic directions. The outcome can direct where to focus resources for a quick return, where risks need to be mitigated and where alternatives need to be explored.

<p>Community and stakeholder consultation</p>	<p>Stakeholders play an important role in developing and implementing a regional waste strategy. Without adequate communication throughout the infrastructure planning and implementation stages, there is a risk of designing an excellent and expensive system that fails to attract ongoing commitment from the stakeholders or the community the system is intended to serve.</p> <p>Part of good communications is listening to what people say, not just telling them what they should do. Taking account of their views and opinions can also make them feel they can make a difference; that is, be empowered.</p> <p>A range of passive and interactive consultation approaches can be adopted.</p>
<p>Technology appraisals (e.g. energy-from-waste and other alternative waste technologies (AWT) technologies)</p>	<p>Undertake a literature review of the different potential waste technology solutions to manage different types of waste. Such a review considers a range of different technical, financial and environmental considerations and uses these to inform an options appraisal. Consider the outcome within a local context when referring to projects set up in other regions or internationally.</p>
<p>Availability and viability of market outlets (e.g. for organic or recyclable materials)</p>	<p>A market assessment is very useful to investigate and document current and future markets available and the feasibility of these markets. The scope, scale and geographies considered will depend on the strategy and infrastructure options.</p>
<p>Waste audit/scheme performance assessment</p>	<p>A waste audit will identify the type and quantity of materials within each of the waste streams assessed. This provides useful information in which to inform strategic decisions on material recovery and system design.</p> <p>While a waste audit will determine the quantities of material within the waste, the results will not necessarily show how a particular scheme, such as kerbside recycling, is performing or identify areas for improvement. For this, it is best to assess the performance of the service, such as the participation and set-out rates on the scheme and 'effectiveness' of participation (e.g. recycling rate and contamination rates).</p>

3. Where are we today?

This section helps councils provide a regional waste profile and review of current services, performance and contractual commitments. The objective is to establish a baseline against which decisions regarding target setting and infrastructure needs can be made.

Setting a clear baseline regional profile at the start of the strategy will provide the evidence base to inform future decision-making. This also provides a baseline to compare progress when monitoring and updating the strategy.

The range of information to inform the ‘Where are we today?’ section of your strategy includes:

- population and demographic information
- waste and resource recovery collection and processing systems
- waste tonnage data, including:
 - historical waste trends and projections
 - key performance indicators
 - waste composition
- waste and resource recovery collection, processing and disposal contracts
- current and planned waste and recycling infrastructure within the region
- review of programs, initiatives and community expectations
- service compliance.

To provide a standard, consistent baseline across regions, the EPA has provided the council-reported waste and recycling data to each regional waste grouping. This will reduce the time required for councils to amalgamate regional data and it will also help them write the regional profile. The baseline data for the regional waste strategy should be the data submitted by councils to the EPA for the 2011–12 waste and resource recovery data return. The EPA will also include current Australian Bureau of Statistics (ABS) population data. Examples of tables that could be used are in Appendix C. Councils are, however, not required to use the tables provided as long as all the key data outlined is included in the regional waste strategy.

3.1 Population and demographic information

The EPA will provide information for each council as well as totals for the region covering the current population, with household numbers and socio-economic information.

Population, household numbers and demographics are key factors influencing the levels and trends in waste generation within each region. These details for each region – and how they have changed over time (e.g. major growth centres, changes in dwelling type, increases in transient populations), along with population forecasts – can help set the scene and provide a reference point for sections dealing with waste trends and infrastructure requirements. The demographics of an area can also help explain factors such as how well a collection system performs (e.g. levels of recycling).

When developing the headline strategy document, consider presenting information in a visual format, such as tables and graphs, to help readers see trends in data (an example is in Figure 4).

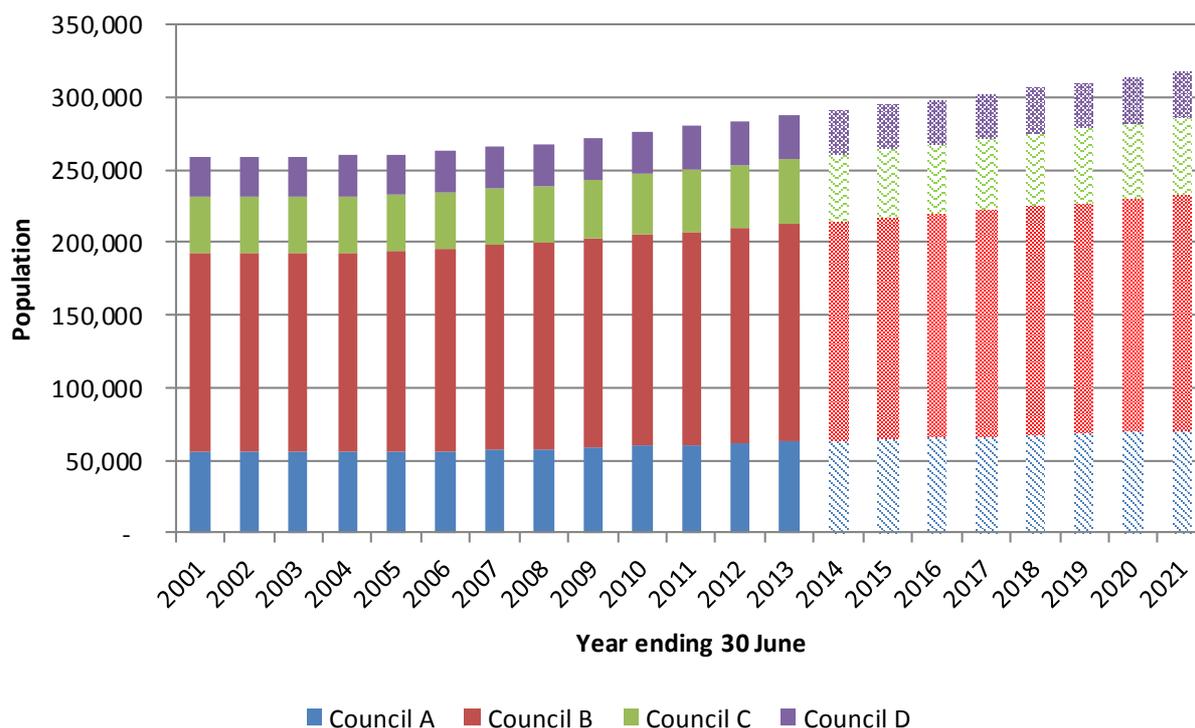


Figure 4: Example of an annual population graph

3.2 Waste and resource recovery collection and processing systems

This information, provided by the EPA, is on the current waste and resource recovery systems. It allows the nature of existing systems to be understood and provides the reference point when looking at future options to deliver the strategic vision. To establish the baseline regional profile, information on each council's current waste and recycling collection systems at the kerbside and drop-off points needs to be gathered and include (but not be limited to):

- kerbside residual waste collections
- kerbside dry recycling collections
- kerbside garden organics collections
- kerbside combined food and garden organics collections
- kerbside clean-up collections
- domestic self-haul and drop off.

For each system, provide information such as predominant mobile bin size, use of standard bin-lid colours, material collected and collection frequency. The discussion may include information on both recent and planned changes to collection services; for example, plans to move towards standard bin-lid colours. The purpose of standardised bin-lid colours is to help residents use the waste and recycling systems correctly. It allows standard messages in waste and recycling education materials to be developed. The standard bin-lid colours are covered by the Australian Standard 4123.7-2006 mobile waste containers – Part 7: colours, markings and designation requirements.

Since 2007, the Waste and Sustainability Improvement Payment program for waste levy-paying councils has required adopting standard bin-lid colours when councils enter into new collection contracts. The new program for waste levy-paying councils that commenced

in 2013–14 (the Better Waste and Recycling Fund) requires that standard bin-lid colours continue to be rolled out across NSW.

3.3 Waste and resource recovery tonnage data

Data on the quantity of waste is fundamental in understanding the amount and nature of waste generated. Reviewing this data is a critical element of strategy development as it can:

- provide an understanding of how different systems are performing (e.g. recycling and recovery levels)
- show how waste generation levels have changed and help identify potential reasons for changes and indicate areas to target within the strategy (e.g. to reduce waste growth)
- highlight the need for new or adapted collection systems and infrastructure
- identify when new collection systems or facilities need to be operational along with their associated capacity.

3.3.1 Waste trends and projections

Estimating the amount of waste needing to be managed into the future is a key step in planning collection and treatment infrastructure. Numerous factors will affect waste-generation levels on an annual basis, including:

- changing population and/or household numbers
- levels of waste generated at both household (kilograms per household per year) and population (kilograms per capita per year) levels
- the impact of introducing different collection systems (e.g. constraining residual capacity)
- education and promotion campaigns encouraging behaviour change and waste prevention
- weather (e.g. particularly cold or dry periods impacting on the levels of green waste generated).

Across the year, waste-generation levels can also vary month-to-month. Reasons include:

- weather (e.g. different levels of waste generated due to drought or seasonal variations summer–winter period)
- migration into and out of an area (e.g. tourism, students, holiday periods)
- public holiday periods such as Easter and Christmas
- school holidays
- disaster events (e.g. floods or cyclones significantly increase the amount of waste generated over short periods).

As part of the baseline regional profile, it is recommended councils carry out a waste forecasting exercise: look at historical waste trends for the key waste streams, seek to explain potential reasons for changing trends, then prepare a range of forecasts for waste generation levels up to 2021. Figure 5 summarises the key steps in this process.

When developing the headline strategy, discuss the baseline and historical waste generation levels along with future waste forecasts. Using tables and graphs helps illustrate the potential trends in waste generation (see the example in Figure 6). Where appropriate, this should reference aspects such as population and household changes to provide evidence to support the waste-generation forecasts (see Section 3.1). Waste-generation levels may change owing to the options adopted to deliver the strategy vision. It is important that action plans include measures to regularly update waste forecasts.

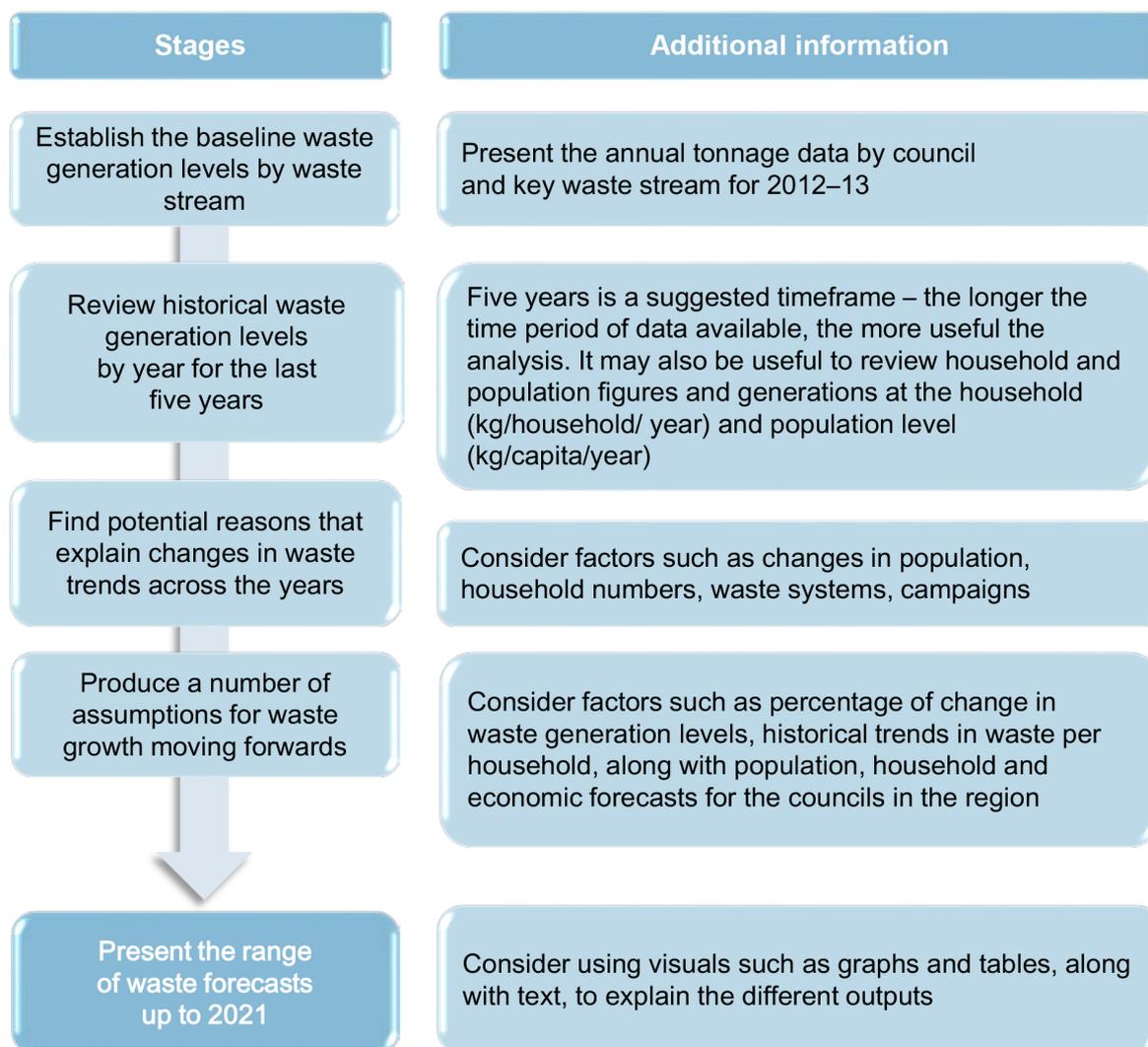


Figure 5: Stages in reviewing waste trends and forecasting waste-generation levels

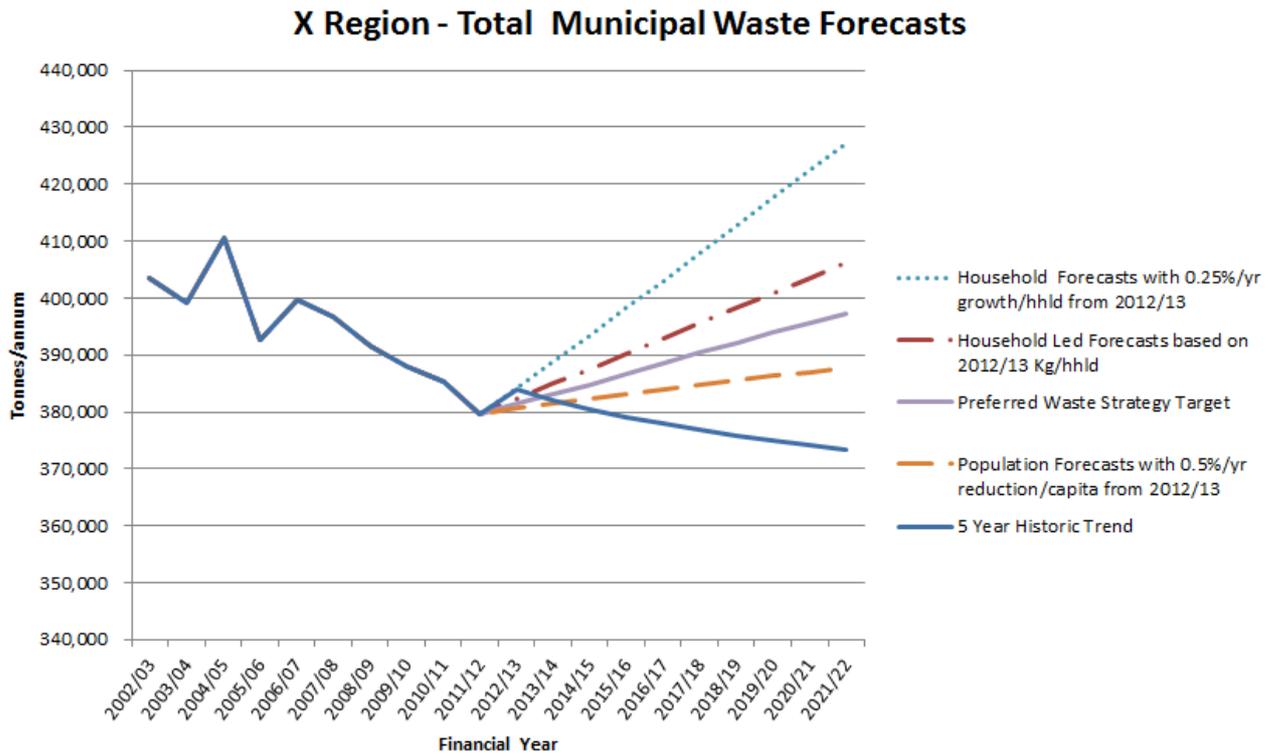


Figure 6: Example of a presentation of a range of municipal waste forecasts to 2020–21

3.3.2 Waste composition

The EPA will provide compositional data for each local council area and for the region where recent waste, recycling and organics audit data is available.

It is important to obtain data on the composition of waste to comprehend how best to manage it. Understanding the composition of different waste streams is a vital key to the strategy development process for many reasons, including:

- **Understanding how existing schemes are performing** – Base this on recycling and residual waste compositional data and where additional efforts may be required to increase recycling performance (e.g. poor participation rates, low yields or high contamination levels, see Section 3.3.3).
- **Planning for residual treatment facilities** – Residual waste compositional data makes it possible to estimate the potential recyclables in the residual waste and predict how this may change (e.g. if new recycling schemes are introduced or additional materials added to existing recycling collections).

Question

What will a waste audit reveal?

Answer

A waste audit will provide information on the type and amount of waste in each waste stream. It allows informed decisions to be made, based on the performance of existing infrastructure and the suitability of new options.

- Planning for future recycling or organic delivery options** – Know what recyclable or compostable material to target, based on residual compositional data and where there is sufficient quantities in the residual stream to justify a separate collection (e.g. food waste).

As part of the baseline assessment, gather information on the composition of residual waste and recycling collection systems. It is recommended capturing and presenting this information in a tabular format. When reporting in the headline strategy, presenting information in a visual format by using tables and pie charts (see an example in Figure 7) helps the reader see the different quantities of material in the waste stream relative to other material and what to target for future waste planning.

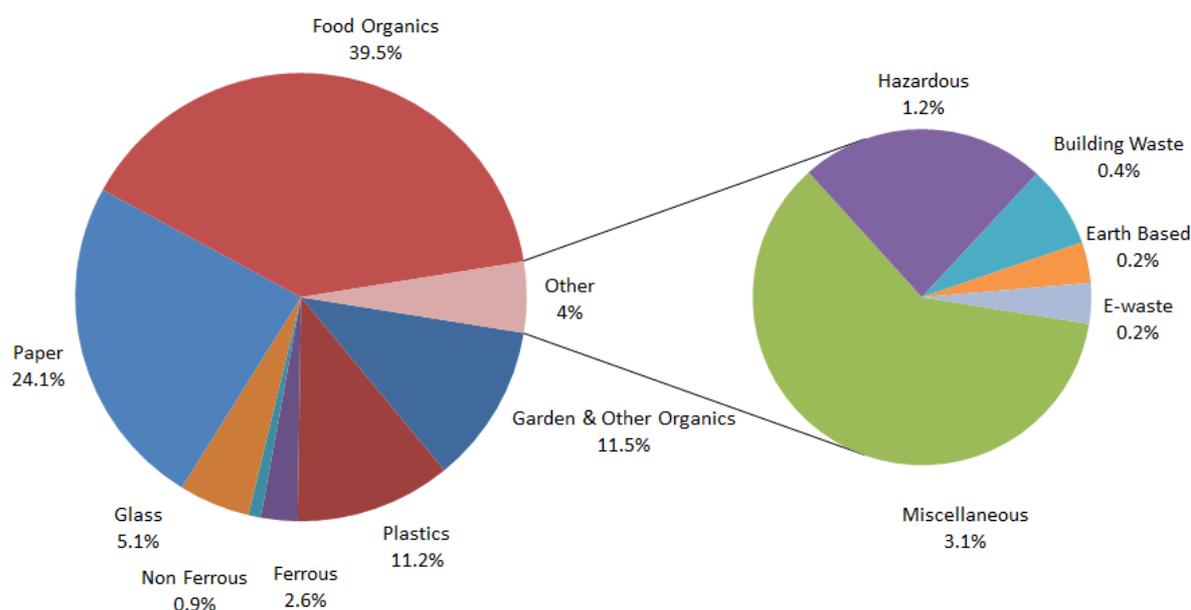


Figure 7: Example of a presentation of residual waste compositional data

3.3.3 Scheme performance assessment (SPA)

The EPA will provide key performance indicators such as kilograms per household per week for residual waste, dry recycling and organics on a council and regional basis (based on information submitted by councils to the EPA in the Local Government Data Return 2011–2012). This will ensure calculations are consistent and comparable between councils and across regions.

Reviewing the performance of different waste collection systems helps understand how existing schemes are performing and where there is potential for improvement. Using KPIs enables a council to monitor the recycling performance of the region as well as benchmark performance against other similar councils and regions. KPIs that provide a useful indicator of the performance of individual collection systems and the whole waste service are summarised in Table 6.

Table 6: Indicators for measuring performance

Key performance indicator	How it is measured	What it reveals
Recycling rate	The percentage of material recycled relative to the total waste generated	How much of the overall waste stream that is collected for recycling
Landfill diversion rate	The amount of material not sent to landfill as a percentage of the total waste generated	How much of the overall waste stream is being diverted away from landfill
Dry recycling contamination rate	The amount of material collected for recycling which is subsequently rejected (e.g. due to incorrect material type as a percentage of total recyclable material collected)	How well residents using the scheme understand it and potential opportunities to improve instructions for residents
Participation rate	The number of households who participate in the scheme (recommend measuring over three collection cycles) divided by the total number of households covered by the scheme	The percentage of households using a recycling or organic service where the service is offered
Yield (kilogram per household per week or year) of recycling or residual waste	The weight of material collected per household on a weekly or annual basis.	The amount of relevant material collected per household can be used to benchmark performance against other councils to target improvements to collection services

3.4 Waste and resource recovery collection, processing and disposal contracts

It is important to understand the detail of existing contracts. They can help identify the timing of new initiatives and the implications on existing contracts. This will allow sufficient time to plan future procurement processes for waste and recycling infrastructure and collection services.

In developing the baseline regional profile, performance assessment should include a review of each council's waste and recycling collection, processing and disposal contracts including:

- details of the service provider
- minimum and maximum tonnage
- contract commencement and expiry dates
- quality and contamination requirements
- performance standards (where appropriate).

It is recommended this information is captured and presented in a standard tabular format for key contracts.

3.5 Current and planned waste and recycling infrastructure within the region

Councils can access information on licensed waste and recycling facilities on the public register on the EPA website, epa.nsw.gov.au. An example infrastructure plan template for presenting information is provided in Appendix F.

The number, type, capacity and location of key existing waste and recycling infrastructure is needed to help understand the future need for different facility types and timings.

A summary of existing waste and recycling processing and/or disposal infrastructure and their existing capacities within the region should be collated, where possible, including the:

- name and location of the facility
- type of facility
- range of material accepted
- capacity of facility, including void space for landfills
- anticipated closure dates (e.g. for landfill).

When producing the headline strategy document, it is recommended capturing this information and presenting it in a standard tabular format along with information on any future facilities that are currently under planning consideration. Also consider adding a map of the region.

3.6 Review of programs, initiatives and community expectations

A large emphasis of understanding the baseline position is to collect quantifiable data and information on waste volumes, composition, service infrastructure and performance. However, there are numerous existing waste initiatives, programs and systems where it is important to evaluate their effectiveness and understand the opinions of the community served. The review would focus on waste education programs and campaigns along with the quality and effectiveness of the waste services and infrastructure provided; for example, kerbside recycling or drop-off centres.

A review can involve a high-level qualitative reflection exercise with interested parties to understand what has worked and what has not worked; the outcomes would inform any actions required for change. Alternatively a more comprehensive evaluation could be undertaken on key initiatives, especially where there is potential for regional delivery of local programs. In this instance, seek guidance from industry professionals on program evaluation to ensure the evaluation is well designed.

Following the stakeholder mapping exercise identified in Section 2.3, it could be beneficial to canvass the views of relevant stakeholders. This could include surveys, such as interviews and questionnaires with residents who are offered recycling services, to understand their opinions on how services are currently delivered and what improvements they would like to see made in the future.

Collecting feedback on service provision and understanding what has worked and not worked with existing services, programs and initiatives is an important part of the baseline review process.

3.7 Service compliance

A range of waste infrastructure is used to deliver waste management services, such as vehicles, collection, transfer and disposal points. There is a legal requirement for these services to comply with the relevant licence conditions and regulations. There is also an obligation for these services to be delivered safely and in line with the agreed contract conditions.

When documenting and reviewing the current waste infrastructure, this is an opportune time to check the services provided are compliant, and to review existing reporting, communication and document control procedures.

Within waste contracts, the performance frameworks and schedules will set out the conditions under which the contract should be delivered. When assessing the current baseline position, it is recommended understanding how these contracts are performing; for example, reducing the number of missed services, and to identify where there are any opportunities for review or renegotiation.

3.8 Summary

This section provides a summary of the baseline information needed at the start of the strategy development process. It will ultimately inform decision making regarding which options are suitable to select to deliver the overall strategy objectives. It will also provide a baseline position for councils to compare progress when monitoring and updating their strategies.

Table 7: Checklist for key information

Subsection	Details to include	<input checked="" type="checkbox"/>
Population and demographic information	Details of the population, households and demographics of the region and how these have changed over time. Include the EPA's pre-populated table.	<input type="checkbox"/>
Waste and resource recovery collection and processing systems	Information on the each council's current waste and recycling collection systems at the kerbside and drop-off points should be included. Include the EPA's pre-populated table.	<input type="checkbox"/>
Waste trends and projections	Review of current and historical waste generation levels along with a range of future waste forecasts up to 2021.	<input type="checkbox"/>
Waste composition	Gather and present information on the composition of different waste streams (including, as a minimum, residual waste and recycling collection systems).	<input type="checkbox"/>
Performance analysis	Review of the performance of different waste collection, treatment and disposal systems and performance measures. Include the EPA's pre-populated table.	<input type="checkbox"/>

Waste and resource recovery collection, processing and disposal contracts	Review of each council's waste and recycling collection, processing and disposal contracts.	<input type="checkbox"/>
Current and planned waste and recycling infrastructure within the region	Include the number, type, capacity and location of existing waste and recycling infrastructure. This is needed to help understand the future requirement for different facility types and timings. Include the waste infrastructure plan.	<input type="checkbox"/>
Review of programs, initiatives and community expectations	Review of waste initiatives, education and community programs. Canvass residents' opinions on the quality of waste service provision.	<input type="checkbox"/>
Compliant services	Ensure waste services are compliant with licence conditions and regulations.	<input type="checkbox"/>

4. Where do we want to get to?

This stage considers the development of the strategy's vision, taking into account the key legislative and policy drivers. This is the time to consider any government targets, along with their timescales, which will help drive the strategy's vision.

A key part of this stage is identifying the key strategy priorities (or themes) and developing a range of associated strategic objectives and targets. This is an important part of the strategy development process and defines the framework for 'Where do we want to get to?' as a regional group. The strategic framework also sets the building blocks for an options appraisal process (Section 5) and developing the action plan (Section 6).

4.1 Importance of the strategic framework

This covers setting a vision, themes, strategic objectives and targets. These are important building blocks for any strategy and will provide a clear framework for the actions a region plans to undertake during the strategy's duration. The terminology used for the strategic framework is defined in Section 2.1. When the final action plan is developed (see Section 6) it sets out the detailed statement of, and commitment to, how this strategic framework will be delivered regionally. Further detail on how to define the vision, themes and strategic objectives and targets is in the following sections.

4.2 Defining a vision, themes, strategic objectives and targets

4.2.1 Strategy vision

The key question to answer when developing the vision is: 'what do you want to achieve with regard to waste management across the region?' Once this is clear, this can be formed into a regional vision statement. This is an aspirational statement of the desired outcomes for the strategy. For example, this could be to: 'enable the community to improve environmental and community wellbeing by reducing the environmental impact of waste and using resources more efficiently at a regional level'.

4.2.2 Themes

The themes are the priority areas the strategy will address to achieve the region's vision. Using the key themes in the draft WARR strategy is recommended as a starting point, namely:

- avoiding and reducing waste
- increasing recycling and diverting waste from landfill
- managing problem wastes
- reducing litter
- reducing illegal dumping.

Definition

E-waste

End-of-life electronic equipment, such as televisions, mobile phones, computers, stereos and small electrical appliances (but not whitegoods)

A region can add to, reduce or adjust these themes to meet its own requirements, but using the Draft WARR Strategy themes as a basis provides consistency across regional waste strategies. It also aligns the strategies to the funding opportunities and programs under the Waste Less, Recycle More initiative.

4.2.3 Strategic objectives

Once the themes have been defined and agreed, objectives must then be developed, clarifying the outcomes the strategy is aiming to achieve under each theme. For example, under the 'avoiding and reducing waste' theme, an objective could include: 'to reduce waste generation per capita in the residential areas'. Each theme will be supported by at least one objective and multiple objectives are more likely to be required.

The number and level of detail within the objectives will depend on the baseline regional profile and how prescriptive the councils wish to be within the headline strategy. However, the objectives should take account of the policy context and key targets in the Draft WARR Strategy.

4.2.4 Targets

Targets are deliverables within set timeframes that aim to achieve the objectives and, ultimately, the vision, through planned actions. The targets should be SMART.

Each objective should have at least one target; it may include a series of incremental targets to drive progress towards the objective.

Developing the targets will also help identify the key performance indicators (KPIs) for the strategy that will measure progress towards the targets and help measure success. For example, if an interim target was to achieve a waste generation level of 500 kg per capita by 2017, then one of the strategy KPIs would be kilograms per capita per year, and this could be measured using weighbridge data. Always consider how to measure success in achieving the target (e.g. audits, data collection, community surveys) and that it is measurable and cost-effective.

Each region can set its own targets to reflect local circumstances. However, it is important these targets show clear progression over time to meet or exceed the Draft WARR Strategy targets (see Section 1.1). In setting regional waste strategy targets, each region should consider key themes in the WARR Strategy and the Waste Less, Recycle More initiative. Also, a region should consider the baseline position as this may provide the starting point for initial targets, help identify what is achievable, and determine the rate of changes required to achieve a final target.

4.2.5 Stakeholder engagement

Consulting key stakeholders is recommended during the process of developing a vision and setting the strategic objectives.

Stakeholders should be consulted on the scope and wording of the vision and strategic objectives, including the extent of targets.

The methods of consultation used will depend on the range of stakeholders and be the most appropriate way to engage the particular audience. This is likely to include both internal council consultation with officers and political leaders along with external public consultation with the local community and industry.

Question

What should the targets be based on?

Answer

Targets can reflect local circumstances and priorities but should also consider key themes and targets in the WARR Strategy.

Definition

Problem waste

Certain household products and materials in the waste and recycling stream that pose potential harm to the environment and human health and/or make the recovery and recycling of other materials more difficult or uneconomic.

4.2.6 Other considerations

As part of the process of setting a vision, themes and objectives, it is also good practice to refer to other strategic documents produced in the region; for example, economic plans, infrastructure plans, planning policy and others that may impact on the future direction of waste management services and infrastructure. It is vital to do this as these other plans may refer to waste management or something else they cover may impact on the way in which the waste management service is delivered. For example, policies on land use may impact on the ability to develop new and different infrastructure in some locations; the wider policies on climate change and carbon reduction may be important for the overall approach to waste and resources management. The extent to which other plans and policies need to be taken into account should be considered through the consultation process.

4.3 Summary

Table 8 is a simple checklist to make sure all key information is included in the regional strategic framework.

Table 8: Checklist for key information

Subsection	Details to include	<input checked="" type="checkbox"/>
Vision and themes	Provide a vision for the strategy.	<input type="checkbox"/>
	Define the themes that support the vision.	<input type="checkbox"/>
Strategic objectives	Develop a set of strategic objectives under each theme to achieve the vision.	<input type="checkbox"/>
Targets and performance measures	Identify SMART targets the regional waste strategy seeks to achieve.	<input type="checkbox"/>
	Set KPIs for measuring performance against the targets and work out how and when the KPIs will be monitored.	<input type="checkbox"/>
	Check the targets will show clear progress over time to meet or exceed the Draft WARR Strategy targets.	<input type="checkbox"/>
	Set key performance indicators for measuring and monitoring performance against the targets.	<input type="checkbox"/>
Consultation	Consult with key stakeholders on setting the vision, themes, objectives and targets.	<input type="checkbox"/>

5. How will we get there?

This stage considers the options required to help meet strategic objectives. Carrying out an options appraisal is recommended if there are similar, closely aligned options of a high financial cost as it allows options to be appraised from cost, environmental, social and performance perspectives.

Once the strategic objectives have been defined, it is important to consider the different methods of achieving them. This could include a range of different methods of waste collection, treatment and disposal as well as approaches to reduce waste generation, litter and illegal dumping.

Carrying out an options appraisal is recommended at this stage of the strategy development process, particularly if there are similar options, closely aligned, that are of high financial value; for example, infrastructure projects and major service improvements. The options appraisal can assess to what extent the different options available will help meet the strategic objectives. Several options can be appraised from cost, environmental, social and performance perspectives and the outputs evaluated against a defined set of evaluation criteria.

An options appraisal is a structured, transparent process which allows the options to be assessed in a manner robust enough to stand up to scrutiny and reduces the risk of challenge. Figure 8 sets out the process for an options appraisal, while Appendix G provides an example of the structure for an options appraisal report.

5.1 Identifying options

The first element of this stage is to identify the full range of potential options that could contribute to the delivery of the strategy objectives. Carrying out a 'gap analysis' is recommended to inform the options development process. It helps show the actions required to take the region from the 'Where are we today?' stage (Section 3) to the stage 'Where do we want to get to?' (Section 4).

When developing potential options, ensure the process considers the full range by consulting with stakeholders, then make sure their views are included. This will reduce potential challenges further down the line.

This process should consider waste and activities at different levels of the waste hierarchy. This may include new infrastructure and proposed upgrades to existing infrastructure as well as other programs or options, such as litter prevention. Key areas to focus on may include the program areas summarised in Table 9. In practice, the options list may need to be refined to a short list for the detailed options appraisal (see Section 5.3).

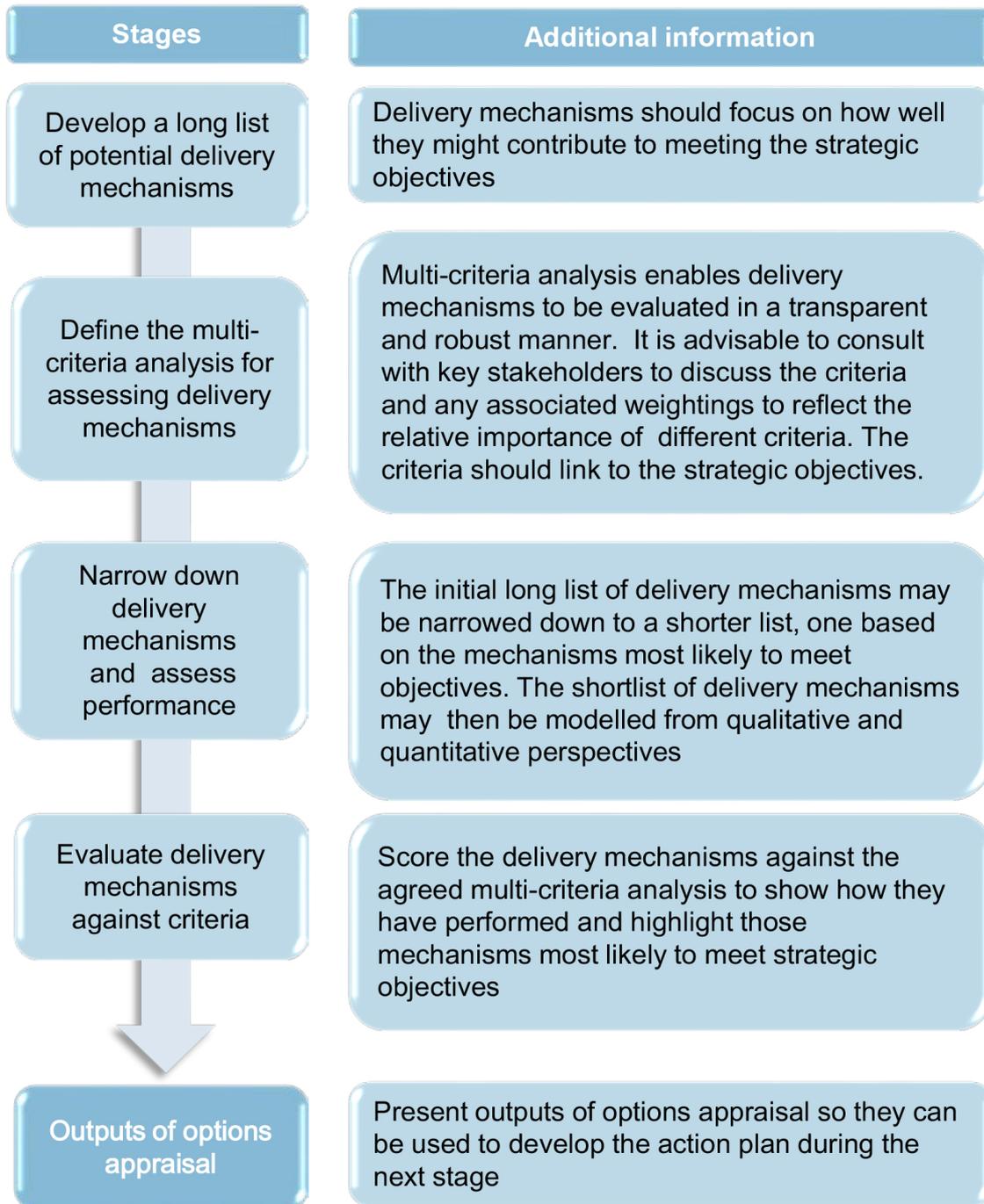


Figure 8: Options appraisal process

Table 9: Different program areas for identifying delivery options

Program area	Delivery options to address
Waste avoidance and waste minimisation programs	<p>According to the principles of the waste hierarchy, waste avoidance, followed by waste reduction (or minimisation), is the first priority in managing waste. Options should identify waste avoidance, and reuse and waste minimisation programs or infrastructure that can be introduced on a regional scale. These programs should link in with the Waste Less, Recycle More initiative areas and potential funding opportunities, such as:</p> <ul style="list-style-type: none"> • food waste avoidance education grants under the Love Food Hate Waste program • organics infrastructure grants to facilitate the collection and redistribution of food waste from businesses to people in need. <p>Reuse schemes involving infrastructure development could also consider funding opportunities under the Major Resource Recovery Infrastructure Grants program.</p>
Resource recovery infrastructure needs and program priorities	<p>Identify infrastructure needs and program priorities that maximise resource recovery from municipal solid waste. Options may identify proposed sites, prospective technology or facility types, how many are required and an infrastructure procurement strategy. They should focus on the main waste streams the region will be tackling, such as kerbside dry recycling, garden organics, food organics or combined garden and food organics, processing and recovery from residual municipal solid waste, clean-up materials and/or problem wastes. Potential options may consider collection and transport efficiencies and energy-from-waste projects where appropriate.</p> <p>These options should consider opportunities provided through the Waste Less, Recycle More initiative areas such as local government organics collection grants and organics infrastructure grants. The resource recovery expansion and enhancement grants, and major resource recovery infrastructure grants, are also available for waste levy paying-communities.</p>
Residual waste disposal infrastructure needs	<p>Identify infrastructure needs for the final disposal of the residual waste stream (the red-lid bin and other waste destined for final disposal). It could include landfill capacity and associated timeframes for landfill sites.</p>
Litter prevention	<p>Include litter-prevention initiatives that can be implemented on a regional scale. These may include helping communities understand their litter problem using the EPA Local Litter Check, developing litter-prevention projects and rolling out litter-prevention campaigns such as 'Hey Tosser'. Identify options for managing litter infrastructure such as public place litter and recycling bins.</p>

<p>Illegal dumping programs</p>	<p>Include illegal dumping reduction initiatives that can be implemented on a regional scale. This may include:</p> <ul style="list-style-type: none"> • establishing a regional illegal dumping squad • education campaigns • applications for grants to clean up and prevent illegal dumping at hot spots and/or on charitable recyclers • establishing a regional database which captures baseline data on dumping and measures trends • regional involvement in trials or pilot schemes such as the Householders' Asbestos Disposal Scheme.
<p>Household problem waste programs</p>	<p>Include household problem-waste programs that can be implemented on a regional scale. Identify infrastructure and service requirements to enable householders to deposit their problem wastes.</p> <p>Consider upgrading an existing facility, building a new facility or introducing a sustainable service so that householders can manage these wastes appropriately.</p> <p>If not managed correctly, problem wastes impact on the quality of recycling materials if inappropriately placed in the kerbside bins system or illegally dumped damage the local environment.</p> <p>Partner with the EPA to support and promote the scheduled Household Chemical CleanOut events.</p>

5.2 Defining evaluation criteria and multi-criteria analysis

Developing evaluation criteria ensures the short list of options is evaluated in a transparent and robust manner. These criteria should relate to the strategic objectives as this allows different options to be assessed in a way that reveals which options offer the greatest potential to meet the desired outcomes and vision for the strategy. The criteria may include a range of environmental, economic and social areas. Table 10 provides an example of evaluation criteria. The evaluation criteria will be assessed using both quantitative and qualitative measures of performance; for example, cost per tonne or impact on levels of self-sufficiency.

Consider also applying weightings to the criteria to reflect the relative importance of different criteria, a process known as multi-criteria analysis. The scores used could be high, medium and low with scores of 3, 2 and 1, respectively. The weighted score is calculated by multiplying the score by the criteria weighting. The sum of all the scores for each option is then calculated to derive a weighted score for each option. An example of multi-criteria analysis framework is in Appendix G.

It is advisable to consult with key stakeholders to discuss the criteria and any associated weightings to reflect the relative importance of different criteria and reduce the potential for opposition to any options identified.

5.3 Narrowing down options and assessing performance

Depending on the number of options on the long list, it may be appropriate to narrow them down to a short list before the detailed options appraisal stage. This may include a high-level assessment of the ability of the long list to meet the strategic objectives. Or it may mean testing the level of deliverability risk associated with the different options, considering such factors as political context, affordability, ease of delivery and alignment with existing operations.

Table 10: Example of evaluation criteria

Criterion	Evaluation criteria	Unweighted score
Reduced waste generation	Significant reduction in waste generation (> 2%)	5
	High reduction (1.1–2%)	4
	Medium reduction (0.26–1%)	3
	Minor reduction (< 0.25%)	2
	No change in waste generation levels	1
	Increase in waste generation levels	0
Increased reuse, recycling and composting of waste	Significant increase in reuse/recycling/composting rate (> 13%)	5
	High increase in reuse/recycling/composting rate (10–12.9%)	4
	Medium increase in reuse/recycling/composting rate (7–9.9%)	3
	Reasonable increase in reuse/recycling/composting rate (3–6.9%)	2
	Minor increase in reuse/recycling/composting rate (0.1–2.9%)	1
	No change in reuse/recycling/composting rate (or a fall in performance)	0
Reduced waste to landfill and gaining greater value from waste that is left over for disposal	Significant decrease in waste-to-landfill (> 5%)	5
	High decrease in waste-to-landfill (3–4.9%)	4
	Medium decrease in waste-to-landfill (1.1–2.9%)	3
	Reasonable decrease in waste-to-landfill (0.5–1%)	2
	Minor decrease in waste-to-landfill (< 0.5%)	1
	No change in landfill diversion	0

Waste regions that have already identified their preferred infrastructure options should review the decision-making process used to make sure it is still valid and meets their current needs. Any past studies and supporting documentation that demonstrate how the group arrived at their preferred options can be submitted as part of the regional waste strategy.

The options appraisal will include qualitative and quantitative evaluation components. The qualitative components should focus on the performance aspects such as public satisfaction and the range and types of services offered. The quantitative aspects may include an assessment of the environmental, waste data and financial aspects (see the example in Table 11).

Table 11: Example methods for assessing options

Ideal outcomes		Proposed assessment/appraisal
Technical	Recycling rate contribution	Quantitative assessment using waste-flow model
	Percentage of waste diverted from landfill	Quantitative assessment using waste-flow model
	Increase in participation	Evidence-based qualitative assessment
	Increase in public satisfaction	Evidence-based qualitative assessment
Cost	Long-term financial sustainability	Cost up to 2021

It is important to first establish a baseline ‘do nothing’ position against which to compare the options and assess both the relative change in performance and cost from the baseline regional profile. It is also important to set out a clear methodology for how the options were defined and the associated assumptions (e.g. relative performance of different recycling and recovery systems).

5.3.1 Costing and funding allocations

If possible, assign indicative costings for the preferred regional options. Initially costs can be based on best estimates. These can be reviewed later and updated when more detailed costing research is carried out or the region calls for quotations or expressions of interest. This section should also start identifying the potential funding sources from the Waste Less, Recycle More initiative and when grants will be applied for (taking into account eligibility of levy-paying and non-levy-paying areas).

5.3.2 Potential diversion rates

For each of the infrastructure and program initiatives identified, the strategy should show the potential waste-diversion and resource-recovery rates. The potential diversion rate can be used to identify the effectiveness of the infrastructure in meeting stated targets and how it will impact on resource-recovery rates for the region. It will also help determine if new residual waste treatment or disposal facilities will be required to manage future waste within the region.

5.4 Outputs of options appraisal

An options appraisal will demonstrate how the different potential options perform against the strategic objectives and identify the preferred combination of options and key priorities. For example, achieving a strategic objective of 'X% landfill diversion by 20XX' may involve a combination of option A (waste prevention mechanism), C (enhanced recycling collection scheme mechanism) and D (AWT infrastructure mechanism). Appendix G provides a recommended structure for an options appraisal report. The outputs of the options appraisal will provide the evidence base to support the strategic planning and inform the actions in the action plan for 'How will the strategy be implemented?' (Section 6).

5.5 Summary

This section considers options that help achieve the strategic objectives. An options appraisal allows for numerous options to be appraised from cost, environmental, social and performance perspectives, and the outputs to be evaluated against a defined set of criteria. These evaluation criteria should relate to the strategic objectives so different options can be assessed to show which options offer the greatest potential to meet the desired outcomes and vision for the strategy. Use the list in Table 12 to check key information is provided.

Table 12: Checklist for key information

Subsection	Details to include	<input checked="" type="checkbox"/>
Identify the long list of potential options	Carry out a gap analysis to understand the options required to help deliver the strategic objectives.	<input type="checkbox"/>
	Define the long list of options.	<input type="checkbox"/>
	Consult with key stakeholders on potential options.	<input type="checkbox"/>
Develop multi-criteria analysis	Define multi-criteria analysis and ensure they relate to the strategic objectives.	<input type="checkbox"/>
Narrow down the options	Depending on how many options have been identified, consider narrowing them down to a short list using high-level assessment against ability to meet strategic objectives.	<input type="checkbox"/>
Assess performance	Assess each of the short listed options using relevant qualitative and quantitative evaluation methods and assess them using multi-criteria analysis.	<input type="checkbox"/>
Identify preferred combination of options	Highlight the preferred combination of options based on weighted multi-criteria analysis and key priorities to achieve strategic objectives.	<input type="checkbox"/>

6. How will the strategy be implemented?

This section considers how the strategic objectives and supporting options will be delivered. A key part of this stage is developing an action plan, detailing the actions and required changes to waste services and infrastructure, timescales and deadlines, and who has ownership and responsibility for the actions.

This stage addresses how the regional waste strategy will be implemented. The preferred options identified in 'How are we going to get there?' (Section 5) will highlight many of the actions required to deliver the strategy and associated objectives. Developing an action plan which describes how the strategy will be delivered will also allow it to be effectively monitored. The actions are a list of specific activities required to meet the strategy objectives. Responsibility and timeframe should be assigned for accountability so it is possible to know when the actions have been achieved.

The action plan should include:

- re-emphasis of the strategic framework
- key actions required to deliver the strategic framework and identify the relationship of this framework with the actions so it is clear:
 - which objective each action is contributing to
 - what the action will contribute to the objective
- who is going to implement the actions
- when the action will be implemented.

As discussed in Section 1, an internal implementation plan could be produced to provide a structure for implementing the action plan.

Appendix D provides a sample action plan and Appendix E provides an example of a progress report. The action plans are working documents requiring ongoing revision and updating. For the regions encouraged to prepare a regional waste strategy (see Table 2), the EPA requires an updated annual action plan and progress report, which allows both the regional waste group and the EPA to track and monitor progress against the previous year's action plan. It will also help assess performance against the regions' stated vision, objectives and targets and keep the group moving forward.

The updated action plan and progress reports must be submitted to the EPA by 30 June each year, starting from 2015. See Section 1.3 for more information. Regions in Sydney, Illawarra and the Hunter that have regional waste coordination funding agreements with the EPA may want to streamline the reporting process and provide the combined package of the funding project report, updated action plan and progress report to the EPA by 31 May, commencing in 2015.

6.1 Summary

The list in Table 13 is to check key information is provided.

Table 13: Checklist for key information

Subsection	Detail	☑
Develop action plans	Define key actions required to meet the strategic objectives and implement the identified options.	☐
	Agree who is going to implement each action.	☐
	Consult with key stakeholders on assigning actions.	☐
	Agree when each action will be implemented and completed.	☐

7. How to measure success

The EPA requires annual action plans and progress reports to be submitted from 2015. This can be a summary action plan, preferably in a table format. The action plans are working documents that will require ongoing revision and annual updating. The role of the regional coordinator will be to review progress on the strategy and update key actions to keep the group moving forward. As well as reporting progress against key performance indicators and targets, it is important to review performance and take action to promote continuous improvement.

A successful regional waste strategy is one where the vision and objectives for the region are met within the timeframes identified. The key is ensuring the vision, objectives and targets are achievable and there is clear ownership of the actions to be completed.

A progress report on implementing the action plan is due to the EPA annually from mid-2015. This is a useful tool for communicating the results of monitoring and evaluation and for sharing information on achievements and lessons learnt.

The action plan will set out what needs to be monitored; that is, the KPIs, how often they are measured and by whom. Actions critical to the strategy's success should be given the most scrutiny and monitored more frequently.

7.1 Monitor

Monitoring is about collecting data and information so progress against the objectives and targets can be measured and issues identified early and addressed.

KPIs are discussed in Sections 3 and 4. Data for each KPI needs to be collated on a regular basis and the trends considered.

Baseline data for each KPI will be required so progress can be tracked.

The project coordinator will be responsible for identifying data needs and gathering the appropriate baseline and monitoring data.

7.2 Evaluate

It is important that any information gathered on KPIs is analysed and interpreted. The level of evaluation does not have to be detailed but must be appropriate to the objective. Based on the evaluation, informed judgements can be made about the success of a program or an action and its level of contribution towards meeting the objective. Evaluation will also identify areas for improvement.

Ask questions such as:

- Is the recycling rate increasing at the required level?
- Are waste generation levels decreasing or increasing?

As well as KPIs, it is also important to review progress against specific actions within the plan – have they been completed by the specified timeframe? If not, is there a knock-on effect for other elements of the action plan? For example, if the new kerbside organics scheme is not rolled out on time, does this have an impact on the achievement of recycling rates?

7.3 Update

Regular monitoring and evaluation may show performance is falling short of what is required in some areas. It is important to identify why this is (e.g. there may be an operational issue that can be easily resolved). Changes to the action plan may be needed to improve performance (e.g. alternative kerbside schemes or waste-reduction programs introduced, or changes made to communication campaigns). However, if performance falls completely out of step with the overarching strategy and the action plans are not contributing to the strategy's vision, the whole strategy may need to be reviewed.

To minimise the potential for such a review, include trigger points in the monitoring that identify which KPIs are critical to the strategy's delivery and when performance reaches a critical level. Alternative actions can then be planned sufficiently in advance to prevent problems with delivery.

The overall strategy document is intended to be a living document and is expected to need to be revised and updated every five years. Other reasons that may necessitate an update include:

- changes in policy, legislation or regulatory frameworks, including changes to the WARR Strategy
- significant changes in the quantity and composition of waste relative to what has been projected.

7.4 Summary

This section considered the importance of monitoring and evaluating the performance of the strategy against the vision, objectives and targets that have been set. Without regular evaluation, the progress and success of the strategy remains unknown. Action plans and progress reports are tools to support the reporting and delivery of change.

Table 14: Checklist for key information

Subsection	Detail	<input checked="" type="checkbox"/>
Roles and responsibilities	Check the regional coordinator is in place and is aware of their role in reviewing the progress on the strategy and reporting progress to the EPA	<input type="checkbox"/>
	Check plans and meetings are in place to monitor progress against actions and adjust and update action plans accordingly	<input type="checkbox"/>
Monitor, review, update	Identify KPIs	<input type="checkbox"/>
	Identify data needs for each indicator, along with reporting frequency	<input type="checkbox"/>
	Trigger points identified	<input type="checkbox"/>
	Progress report format identified	<input type="checkbox"/>
	Annual and overall strategy review dates identified	<input type="checkbox"/>

Appendix A: Council and regional groupings

Table 15: NSW 2021 regions and constituent council areas

NSW 2021 region	Councils within each region
Northern Sydney	Hornsby, Hunters Hill, Ku-ring-gai, Lane Cove, North Sydney, Ryde, Willoughby
Northern Beaches	Manly, Mosman, Pittwater, Warringah
Southern Sydney	Hurstville, Kogarah, Rockdale, Sutherland
Eastern and Inner Sydney	Ashfield, Botany Bay, Burwood, Canada Bay, Canterbury, Sydney, Leichhardt, Marrickville, Randwick, Strathfield, Waverley, Woollahra
Western Sydney	Auburn, Blacktown, Blue Mountains, Hawkesbury, Holroyd, Parramatta, Penrith, The Hills
South Western Sydney	Bankstown, Camden, Campbelltown, Fairfield, Liverpool, Wollondilly
Northern Rivers	Ballina, Byron Bay, Clarence Valley, Kyogle, Lismore, Richmond Valley, Tweed
New England and North West	Armidale–Dumaresq, Glen Innes–Severn, Gunnedah, Guyra, Gwydir, Inverell, Liverpool Plains, Moree Plains, Narrabri, Tamworth Regional, Tenterfield, Uralla, Walcha
Mid North Coast	Coffs Harbour, Bellingen, Greater Taree, Kempsey, Lord Howe Island, Nambucca, Port Macquarie/Hastings
Hunter	Cessnock, Dungog, Gloucester, Lake Macquarie, Muswellbrook, Newcastle, Port Stephens, Singleton, Upper Hunter
Central Coast	Gosford, Wyong
Central West	Lithgow, Mid Western, Oberon, Bathurst, Blayney, Orange, Cabonne, Cowra, Weddin, Lachlan, Parkes, Forbes
Illawarra	Kiama, Shellharbour, Shoalhaven, Wollongong
Southern Highlands and Tablelands	Goulburn–Mulwaree, Upper Lachlan, Wingecarribee
South East NSW	Bega Valley, Bombala, Boorowa, Cooma–Monaro, Eurobodalla, Harden, Palerang, Queanbeyan, Snowy River, Yass Valley, Young
Orana	Bourke, Bogan, Brewarrina, Cobar, Coonamble, Dubbo, Gilgandra, Narromine, Walgett, Warren, Warrumbungle, Wellington

NSW 2021 region	Councils within each region
Riverina	Bland, Carrathool, Coolamon, Cootamundra, Griffith, Gundagai, Hay, Junee, Leeton, Lockhart, Murrumbidgee, Narrandera, Temora, Tumbarumba, Tumut, Wagga Wagga
Murray and Lower Darling	Albury, Balranald, Berrigan, Conargo, Corowa, Deniliquin, Greater Hume, Jerilderie, Murray, Urana, Wakool, Wentworth
Far West	Broken Hill, Central Darling, the Unincorporated Area

Table 16: Regional groupings of councils and voluntary regional waste groups

Regional group	Local councils involved
Southern Sydney Regional Organisation of Councils (SSROC)	Ashfield, Bankstown, Botany Bay, Burwood, Canada Bay, Canterbury, Hurstville, Kogarah, Leichhardt, Marrickville, Randwick, Rockdale, Sutherland, Sydney, Waverley, Woollahra
Western Sydney Regional Organisation of Councils (WSROC)	Auburn, Blacktown, Blue Mountains, Fairfield, Hawkesbury, Holroyd, Liverpool, Parramatta, Penrith, The Hills
Macarthur Regional Organisation of Councils (MACROC)	Camden, Campbelltown, Wollondilly
Northern Sydney Regional Organisation of Councils (NSROC)	Hornsby, Hunters Hill, Ku-ring-gai, Lane Cove, North Sydney, Ryde, Willoughby
The Shore Regional Organisation of Councils (SHOROC)	Manly, Mosman, Pittwater, Warringah
Southern Councils Group	Kiama, Shellharbour, Shoalhaven, Wingecarribee, Wollongong
Hunter Councils Inc.	Cessnock, Dungog, Lake Macquarie, Maitland, Muswellbrook, Newcastle, Port Stephens, Singleton, Upper Hunter
North East Waste (NEWaste)	Ballina, Byron, Clarence Valley, Kyogle, Lismore, Richmond Valley, Tweed
Northern Inland Regional Waste (NIRW)	Armidale–Dumaresq, Glen Innes–Severn, Gunnedah, Guyra, Gwydir, Inverell, Liverpool Plains, Moree Plains, Narrabri, Tamworth, Tenterfield, Uralla, Walcha
MIDWASTE	Bellingen, Coffs Harbour, Gloucester, Great Lakes, Greater Taree, Hastings, Kempsey, Nambucca, Port Macquarie
NetWaste	Bathurst, Blayney, Blue Mountains, Bogan, Bourke, Brewarrina, Broken Hill, Cabonne, Central Darling, Cobar, Coonamble, Cowra, Dubbo, Forbes, Gilgandra, Lachlan, Lithgow, MidWestern, Narromine, Oberon, Orange, Parkes, Walgett, Warren, Warrumbungle, Weddin, Wellington

Regional group	Local councils involved
Riverina East Regional Organisation of Councils (REROC)	Bland, Coolamon, Cootamundra, Corowa, Greater Hume, Gundagai, Junee, Lockhart, Temora, Tumbarumba, Tumut, Urana, Wagga Wagga
Riverina and Murray Regional Organisation of Councils (RAMROC), Murray Waste Group	Albury City, Balranald, Berrigan, Conargo, Corowa, Deniliquin, Greater Hume, Murray, Urana, Wakool, Wentworth
RAMROC Riverina Waste Group	Carrathool, Griffith, Hay, Jerilderie, Leeton, Murrumbidgee, Narrandera
South East Resource Recovery Network	Bega Valley, Bombala, Boorowa, Cooma–Monaro, Eurobodalla, Goulburn–Mulwaree, Harden, Palerang, Queanbeyan City, Snowy River, Upper Lachlan, Yass Valley, Young

Appendix B: Headline regional waste strategy template

Suggested structure for the headline strategy document

1. Introduction

The introduction includes a statement on the key drivers for the strategy.

2. Where are we today?

This section contains an assessment of the current position in terms of waste management provision and performance. This will include:

- a summary of the baseline performance assessment
- the baseline data for the 2011–12 financial year – based on the amount of waste that is generated, recycled, composted, recovered and disposed (where available, also include 2012–13 financial year data)
- brief details on the range of services and infrastructure currently provided
- a summary of the current and forecast waste generation and composition
- an overview of the local government programs and initiatives.

3. Where do we want to get to?

Section 3 includes an outline of the strategic framework for the strategy; that is, the vision for the strategy, objectives and targets.

4. How will the strategy be implemented?

Section 4 includes the action plan developed to achieve the objectives set.

5. How to measure success?

Section 5 covers how the success of the strategy will be assessed, what measures will be set up to monitor, review and update the strategy and action plan, and outline the program showing when this will be delivered and by whom.

Appendices

Glossary

Supporting documents

Include references to other relevant documents that support the headline strategy document

Appendix C: Example data tables

The following are examples of tables that could be used to inform the 'Where are we today?' section of the strategy.

Councils are, however, not required to use the tables provided as long as all the key data outlined is included in the regional waste strategy.

Table 17: Population and household forecasts

Council name		Actual 2011–12	Forecast			
			2015–16	2020–21	2025–26	2030–31
Council A	Population ^a					
	Socio-economic index					
	Households ^b – Single-unit dwellings					
	Households ^b – Multi-unit dwellings					
	Households ^b – Total					
Council B	Population ^a					
	Socio-economic index					
	Households ^b – single-unit dwellings					
	Households ^b – Multi-unit dwellings					
	Households ^b – Total					

Council C	Population ^a					
	Socio-economic index					
	Households ^b – Single-unit dwellings					
	Households ^b – Multi-unit dwellings					
	Households ^b – Total					
Region	Population ^a					
	Socio-economic index					
	Households ^b – Single-unit dwellings					
	Households ^b – Multi-unit dwellings					
	Households ^b – total					
Sources: (a) ABS (b) Local Government Data Return 2011–12						

Table 18: Waste and resource recovery collection and processing systems

Council name	Service	Tonnes collected (2011–12)	Bin (types and sizes)	Bin-lid colour	Contamination rates	Collection frequency	Operator
Council A	Residual						
	Recycling						
	Garden organic						
	Food organic						
	Clean-up						
	Total						
Council B	Residual						
	Recycling						
	Garden organic						
	Food organic						
	Clean-up						
	Total						
Council C	Residual						
	Recycling						
	Garden organic						
	Food organic						
	Clean-up						
	Total						

Council name	Service	Tonnes collected (2011–12)	Bin (types and sizes)	Bin-lid colour	Contamination rates	Collection frequency	Operator
Region	Residual						
	Recycling						
	Garden organic						
	Food organic						
	Clean-up						
	Total						

Table 19: Waste trends and projections

	Year	Tonnes collected dry recycling	Tonnes collected organics	Tonnes collected for AWT treatment	Tonnes disposed to landfill	Total domestic generated	% change from previous year	Population	Number of households	Tonnes per capita per year	Tonnes per household per year
Council A	2006–07										
	2007–08										
	2008–09										
	2009–10										
	2010–11										
	2011–12										
Council B	2006–07										
	2007–08										
	2008–09										
	2009–10										
	2010–11										
	2011–12										

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Council C	2006–07										
	2007–08										
	2008–09										
	2009–10										
	2010–11										
	2011–12										
Region	2006–07										
	2007–08										
	2008–09										
	2009–10										
	2010–11										
	2011–12										

Table 20: Waste generation forecasts

	Council name	Actual tonnage 2011–12	Waste generation forecast in tonnes			
			2015–16	2020–21	2025–26	2030–31
Forecast scenario 1	Council A					
	Council B					
	Council C					
	Region total					
Forecast scenario 2	Council A					
	Council B					
	Council C					
	Region total					
Forecast scenario 3	Council A					
	Council B					
	Council C					
	Region total					

Table 21: Residual waste bin data

Year:	Council					Region	SMA, ERA, RRA or NRA	NSW
	Council A	Council B	Council C	Council D	Council E			
Yield per household (kg per household per week)								
Per capita (kg per capita per week)								
Waste composition								
Total paper								
Food organics								
Garden and other organics								
Total plastics								
Percentage of potential dry recycling								
Potential dry recycling (kg per household per week)								

Note: Table could be adapted for other streams such as dry recyclables

Table 22: System performance analysis

Year		Yield (kilograms per household per week)					Total	Recycling rate
		Residual waste to treatment	Residual waste to landfill	Recycling	Garden organics	Food organics		
Council A	2006–07							
	2007–08							
	2008–09							
	2009–10							
	2010–11							
	2011–12							
Council B	2006–07							
	2007–08							
	2008–09							
	2009–10							
	2010–11							
	2011–12							
Council C	2006–07							
	2007–08							
	2008–09							
	2009–10							
	2010–11							
	2011–12							
Region	2006–07							
	2007–08							
	2008–09							
	2009–10							
	2010–11							
	2011–12							

Table 23: Diversion rate from landfill in percentage

Council	Domestic diversion rate percentage			
	Total domestic	Total kerbside	Total drop-off	Total clean-up
Council A				
Council B				
Council C				
etc.				
Region				
SMA, ERA, RRA or NRA				

Table 24: Waste and resource recovery collection, processing and disposal to landfill contracts

Council	Collection contract details						
	Services covered	Service provider	Material collected	Contract duration	Contract expiry date	Min./max. tonnages per year	Specific conditions
Council A							
Council B							
Council C							
Region							

Appendix D: Example of regional waste strategy action plan template

[insert name] Regional waste strategy (2013–17)		Version / date:		Approved by:	
Vision:					
Theme		1			
Objective and target		Action	Detail of action	Who is responsible?	Timescale for delivery
1.1		A			
		B			
1.2					
Theme		2			
Objective and target		Action	Detail of action	Who is responsible?	Timescale for delivery
2.1					
Theme		3			
Objective and target		Action	Detail of action	Who is responsible?	Timescale for delivery
3.1					
Theme		[x]			
Objective and target		Action	Detail of action	Who is responsible?	Timescale for delivery

Appendix E: Progress reporting table

[insert name] Progress report					Version / date:		Approved by:	
Headline progress and achievement statement:								
Objective		Target	Target achieved or on track to achieve?	Actions	Detail of action	Complete?	Discussion of achievement to date	New / subsequent actions required based on achievement
1.1		1.1.1		A				
		1.1.2		B				
		1.1.3						
		1.1.4						
1.2								
1.3								
2.1								
2.2								
[x]								

Appendix F: Example – waste infrastructure template

Table 25: Waste infrastructure

Facility type	Name	Location	Type of material sent	Capacity (tonnes per annum)	Contract/ facility end date
Vehicle depots					
Transfer / bulking station					
Material recovery facility					
Alternative waste treatment facility					
Landfill					

Appendix G: Example of an options appraisal

Example of a contents page for an options appraisal

Contents

1. Introduction
2. Waste strategy objectives
 - a. Vision and strategic objectives
 - b. Priorities and targets
 - c. Identify key options to deliver strategy objectives
3. Overview of options
4. Short listing of options
 - a. Long list of options
 - b. Short list of options
5. Options appraisal methodology
 - a. Evaluation criteria/multi-criteria analysis
 - b. Technical assessment
 - c. Financial assessment
6. Assessment results
7. Discussion

Appendices

- Long list of options' scores
- Waste flow modelling assumptions and performance
- Environmental assessment
- Financial assessment

Unweighted assessment scores

Multi-criteria analysis

Section 5 details the approach to developing evaluation criteria so the short list of options can be evaluated. A process known as multi-criteria analysis applies weightings to the criteria to reflect the relative importance of each. The scores used could be high, medium and low with scores of 3, 2 and 1, respectively. The weighted score is calculated by multiplying the evaluation criteria score (0 to 5) by the criteria weighting (1 to 3).

For example, if an option performed well against a specific set of evaluation criteria and received a score of 5 and the evaluation had a high weighting of 3, the resulting weighted score for that option against that specific criteria would be 15.

The sum of all the scores for each option is then calculated to derive its weighted score. This helps to highlight the preferred combination of options.

Figure 9: Example of a multi-criteria analysis framework

		Evaluation criterion 1		Evaluation criterion 2		Evaluation criterion 3		Evaluation criterion 4		TOTAL	
		Weighting 'R'		Weighting 'X'		Weighting 'Y'		Weighting 'Z'			
Option number	Option description	Score	Weighted score	Weighted score	Rank						
1	Option 1	A	= score (A) x weighting 'R'	C	= score (C) x weighting 'X'	A	= score (A) x weighting 'Y'	F	= score (F) x weighting 'Z'	Sum of weighted scores	< List in order of scores
2	Option 2	A	= score (A) x weighting 'R'	C	= score (C) x weighting 'X'	A	= score (A) x weighting 'Y'	D	= score (D) x weighting 'Z'	Sum of weighted scores	< List in order of scores
3	Option 3	C	= score (C) x weighting 'R'	F	= score (F) x weighting 'X'	D	= score (D) x weighting 'Y'	A	= score (A) x weighting 'Z'	Sum of weighted scores	< List in order of scores
4	Option 4	F	= score (F) x weighting 'R'	D	= score (D) x weighting 'X'	E	= score (E) x weighting 'Y'	A	= score (A) x weighting 'Z'	Sum of weighted scores	< List in order of scores
5	Option 5	D	= score (D) x weighting 'R'	A	= score (A) x weighting 'X'	E	= score (E) x weighting 'Y'	C	= score (C) x weighting 'Z'	Sum of weighted scores	< List in order of scores

SKM/WMAA 2013, WMAA industry training strategic waste planning module 1: waste strategy planning, *Published by Waste Management Association of Australia (WMAA) Sydney.*

Appendix H: Supplementary guidance note – strategy checklist

This appendix is for those regions that have already developed a regional waste strategy. It needs to be used in conjunction with the rest of this document.

The EPA understands that some councils have recently developed their strategy documents, often incurring significant investment. In these circumstances, they may consider one of two options:

- complete minimum requirements outlined below
- produce a public-facing headline strategy document.

Option one: minimum requirements forms

Each council must demonstrate it has addressed the minimum requirements set out within this guidance note in developing its own regional strategy document. This will allow the EPA to compare different regional strategies and extract the relevant information.

As an absolute minimum, the following needs to be submitted with the region's main strategy document:

- **Summary of strategic framework** (Figure 10): sets out the key strategic framework summarising what the strategy seeks to achieve and how it will be delivered
- **Checklist of strategy minimum requirements**: cross references the minimum waste strategy information required within the existing strategy document
- **Action plan** (Figure 11): lists the council's SMART actions (specific, measurable, achievable, realistic, timely) to deliver the strategy.

Strategic framework summary

The summary encompasses the strategy vision, themes, objectives and targets.

These are important building blocks for any strategy and will provide a clear framework for the actions a region plans to undertake during the strategy's duration. The terminology used for the strategic framework is defined in Section 2.1. Further detail on how to define the vision, themes and strategic objectives and targets is included in Section 4 of this document.

The strategic framework should consider the NSW WARR Strategy (and the Draft WARR Strategy) when developing regional targets and timelines to drive the strategy forward. The themes included in the Draft WARR Strategy should be used as a starting point for each regional strategy.

Checklist of strategy minimum requirements

The strategy guidance document sets out many factors to consider when producing a waste strategy document. These include establishing a baseline regional profile, develop a strategic framework, assessing options to align with the strategy vision, objectives and targets, and setting up a clear plan for future action.

If these steps were not undertaken in this way during the existing strategy's development, regions need to provide a statement demonstrating if and how the following aspects were considered (refer to any relevant sections of the existing strategy document):

- services currently provided and how well they have performed in terms of the amount of waste recycled
- the waste generation data used in the strategy for the 2011–12 year (although 2012–13 waste data can also be included in addition to the 2011–12 baseline year) – this allows the EPA to collate a common baseline position on waste generation
- evidence showing the amount and composition of waste produced, both now and estimated into the future, has been considered and included
- evidence the stakeholders were consulted during the strategy’s development.

Action plan

The strategy must be supported by an action plan containing detailed SMART actions. This is a list of specific activities required to meet the strategy objectives and achieve the targets set. Responsibility and timeframes should be assigned to identify accountability.

Figure 12 gives an example of an action plan. Alternative formats can be used as long as there is a clear set of SMART actions to deliver the strategy. Timescales and responsibilities also need to be identified. The action plan should be reviewed and updated annually as outlined in the guidance document.

Figure 10: Summary of strategic framework

[insert name] Regional waste strategy (2013–21)			Version/Date:	
			Approved by:	
[insert vision statement]				
Theme	Objective		Target	
Theme 1 e.g. Avoidance and waste reduction	1.1	e.g. To reduce waste generation to 450 kg per capita by 2021	1.1.1	e.g. achieve waste generation levels of 525 kg per capita by 2015
			1.1.2	e.g. achieve waste generation levels of 500 kg per capita by 2017
			1.1.3	e.g. achieve waste generation levels of 475 kg per capita by 2019
	1.2	[insert rows for as many objectives as required]	1.2.1	[insert rows for as many targets as required]
			1.2.2	
	1.3		1.3.1	
Theme 2	2.1		2.1.1	
	2.2		2.2.1	
Theme 3	3.1		3.1.1	
Theme 4	4.1		3.4.1	
Theme [x] [insert rows for as many themes as required]	[x]		[x]	

Checklist of strategy minimum requirements

The strategy guidance document sets out many factors to consider when producing a waste strategy document. These include establishing a baseline regional profile, develop a strategic framework, assessing options to align with the strategy vision, objectives and targets, and setting up a clear plan for future action.

If these steps were not undertaken in this way during the existing strategy's development, regions need to provide a statement demonstrating if and how the following aspects were considered (refer to any relevant sections of the existing strategy document):

- services currently provided and how well they have performed in terms of the amount of waste recycled
- the waste generation data used in the strategy for the 2011–12 year (although 2012–13 waste data can also be included in addition to the 2011–12 baseline year) – this allows the EPA to collate a common baseline position on waste generation
- evidence showing the amount and composition of waste produced, both now and estimated into the future, has been considered and included
- evidence the stakeholders were consulted during the strategy's development.

Action plan

The strategy must be supported by an action plan containing detailed SMART actions. This is a list of specific activities required to meet the strategy objectives and achieve the targets set. Responsibility and timeframes should be assigned to identify accountability.

Figure 11 gives an example of an action plan. Alternative formats can be used as long as there is a clear set of SMART actions to deliver the strategy. Timescales and responsibilities also need to be identified. The action plan should be reviewed and updated annually as outlined in the guidance document.

Figure 11: Action plan template

[insert name] Regional waste strategy (2013–17)		Version/Date:		Approved by:		
Theme		1	e.g. avoidance and waste reduction			
Objective and target		Action	Detail of action		Who is responsible?	Timescale for delivery
1.1	e.g. to reduce waste generation to 450 kg per capita by 2021					
1.2						
Theme		2				
Objective and target		Action	Detail of action		Who is responsible?	Timescale for delivery
Theme		3				
Objective and target		Action	Detail of action		Who is responsible?	Timescale for delivery
Theme		[x]				
Objective and target		Action	Detail of action		Who is responsible?	Timescale for delivery

Option two: headline strategy document

There are many existing examples showing how to present a waste strategy document. The final content, page length, structure and layout will differ in each situation, depending on various local factors. These documents can sometimes exceed 80 pages, often because they contain a significant amount of technical information that is more appropriate for an internal audience. One might include, for example, a detailed description and review of policy and legislation, details of an options appraisal or technical service specification details.

While such technical information may be a useful source of reference in an internal document, including it in a public-facing document is not the best way to communicate the region's strategy to manage waste now and in the future. For this, a headline strategy is more suitable.

The headline strategy should be an easy-to-read, accessible document which highlights the vision for the region along with the main priorities (themes), objectives and targets it has set out to meet this vision. As a public-facing document, the tone, language and style should be set accordingly. Length is generally around 30 pages and it must contain key information that is supported with a range of graphics. The document should easily articulate to the public where the region now stands regarding waste management, where it wants to get to and why, and set out what measures will be put in place to achieve this.

The headline strategy contains an action plan (Figure 11) with detailed SMART actions. The action plan articulates how the waste strategy will be delivered. It is therefore important for each objective to clearly demonstrate how the actions relate to achieving the objective, clearly allocating accountability and a timeframe to achieve success. The regional waste strategy document structure is outlined in Figure 1 in Section 1.4.

The main part of this document states that a regional waste strategy document would normally comprise:

1. A public-facing headline strategy document. This document combines the strategy with an action plan on how the waste strategy will be delivered.
2. Various supporting technical documents (such as an options appraisal report) along with any supporting cross-referenced documents, such as existing environmental policies, policy and legislation, governance reports.

Existing local and regional strategy documents may already contain all the information set out in Figure 1 in Section 1. However, it is usually contained within the same document. The requirement for option 2, therefore, is to distil the existing information in the current strategy document into a public-facing, easily accessible headline strategy. This document can exist in conjunction with the main waste strategy technical document.

When summarising an existing strategy into a headline strategy, you should follow a similar process to developing a new strategy document, as set out in the main guidance document:

- where are we today?
- where do we want to go to?
- how do we get there?
- how will the strategy be implemented?
- how to measure success

Glossary

Alternative waste treatment (AWT)	Generally a facility that applies a combination of mechanical, biological and (sometimes) thermal processes to separate organic materials from a mixed residual waste stream (usually household waste)
Commercial and industrial waste (C&I waste)	Solid waste generated by businesses, industries (including shopping centres, restaurants and offices) and institutions (such as schools, hospitals and government offices) but not C&D waste or MSW
Construction and demolition waste (C&D waste)	Solid waste sourced from construction and demolition works, including building and demolition waste, asphalt waste and excavated natural material
Diversion rate	The proportion of all recycled materials or those otherwise recovered (through an energy-from-waste facility) compared with total amount of waste generated
Energy from waste	The process of recovering energy from waste materials: the energy is used to produce useable heat, steam, electricity or a combination of these
E-waste	End-of-life electronic equipment, such as televisions, computers, mobile phones, stereos and small electrical appliances (but not whitegoods)
Gap analysis	An assessment of current performance against required performance (targets) and quantification of the shortfall. As part of gap analysis, there is an identification of what measures need to be implemented to address the gap in performance.
Industrial ecology	Using the byproducts from the production process of one company as a resource in another
Materials recovery facility (MRF)	A materials recovery facility handles a range of recyclables which typically have already been separated from other waste streams (e.g. by householders or businesses at the collection stage). At the MRF the materials are sorted into individual streams before being sent for recycling. Any components of the incoming material not suitable for recycling will be separated as 'contaminants' at the MRF.
Municipal solid waste (MSW)	Solid waste from households and local government operations, including waste placed at the kerbside for council collection and waste collected by councils from municipal parks and gardens, street sweepings, council engineering works and public council bins
Problem wastes	Household products and materials in the waste and recycling stream that pose potential harm to the environment and human health and/or make the recovery and recycling of other materials more difficult or uneconomic
Recycling rate	Proportion of an overall waste stream which is reprocessed, recycled and put back into the economy

Red-lid bin	Refers to the Australian Standard (AS 4123.7-2006 mobile waste containers – Part 7: colours, markings and designation requirements), bin-lid colours for household kerbside waste and recycling bins. The red-lid bin is for residual waste.
Reducing waste	Reducing waste generation by avoiding or preventing the creation of waste, where possible, along the various parts of the supply chain. The aim is to use less material to achieve the same or equivalent outcome.
Resource recovery	Recycling waste material. Recovery may also include extracting embodied energy from waste through thermal processes.
Solid waste	Unwanted solid materials and does not include liquid waste
Waste avoidance	Waste that does not enter the waste-management system
Waste management system	Waste materials from MSW, C&I and C&D sectors that are collected kerbside, recovered from the waste stream for recycling or energy recovery or disposed to landfill
Yellow-lid bin	Refers to the Australian Standard (AS 4123.7-2006 mobile waste containers – Part 7: colours, markings and designation requirements): bin-lid colours for household kerbside waste and recycling bins. The yellow-lid bin is for dry recyclable materials. These generally include paper, cardboard, glass, some hard plastics and ferrous and non-ferrous metals. The type of recyclable materials collected in the yellow-lid bin can vary depending on the facility where the materials are taken for further separation and the availability of downstream markets for the materials.