

A decorative graphic on the right side of the page consisting of a cluster of green hexagons of varying sizes and orientations, arranged in a pattern that resembles a stylized tree or a natural growth pattern. The hexagons are set against a white background with a diagonal white line separating them from the rest of the page.

Changing Behaviour Together

NSW *Waste Less, Recycle More*
education strategy 2016–21

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Overview

The *Waste Less, Recycle More* initiative

The NSW Government, through the Environment Protection Authority (EPA), is delivering *Waste Less, Recycle More*, an \$802.7-million package to transform waste and recycling in New South Wales over nine years (2012–21). This initiative aims to:

- boost recycling and resource recovery in both households and businesses
- support major and enhanced waste and recycling infrastructure
- establish a network of Community Recycling Centres (CRCs)
- encourage innovation in recycling
- target illegal dumping and littering
- build strong partnerships with councils and other stakeholders.



Figure 1: Household recycling is an important part of waste management in NSW. Photo credit: Evolving Images Pty Ltd.

Changing Behaviour Together is a key part of the *Waste Less, Recycle More* initiative.

This strategy

To meet the goals of *Waste Less, Recycle More* and the *Waste Avoidance and Resource Recovery Strategy 2014–21* (WARR Strategy), education is crucial. This education strategy is a framework for us, our partners and stakeholders to change community behaviour through targeted education. The strategy will deliver and support education to:

- help people use new resource recovery infrastructure
- encourage the adoption of positive waste behaviours
- build the capacity of the waste sector to deliver behaviour change programs.

Changing Behaviour Together is relevant for all organisations implementing programs under *Waste Less, Recycle More*.

We all have a role to inform, motivate and work with the community. This strategy explains:

1. What we want to achieve	Our vision and the principles that guide us
2. What we will do	Our action plan based on our strategic directions
3. How we will evaluate success	Our evaluation criteria based on our intended education outcomes

What we want to achieve

Our vision is to optimise the use and quality of education in all *Waste Less, Recycle More* programs so that they:

- increase knowledge and skills
- build positive attitudes
- promote positive behaviour change so the whole NSW community can improve the environment and community wellbeing.

What we will do

The EPA's role is twofold, with both direct and indirect actions: we aim to teach people about waste and help others to do so. We will work on our own and with councils, businesses, community organisations and other agencies.

The EPA will develop action plans that list current and planned education actions. Each action in our action plan links to at least one of our strategic directions:

- develop and use consistent messaging
- integrate education
- build capacity
- promote excellence
- provide resources and tools
- work with and support stakeholders.

See section 2 for more information.

The action plans for this strategy are separate documents so they can be updated as *Waste Less, Recycle More* progresses (www.epa.nsw.gov.au/wastestrategy/education.htm).

An action plan that lists current and planning activities for 2016–17 is already available. An updated *Waste Less, Recycle More* education action plan will be developed for 2017–21.

How we will evaluate success

We will evaluate our success against the six strategic directions of *Changing Behaviour Together* (see page 8) and individual program goals (see action plan). The EPA will publish a progress report on the implementation of this strategy in 2017–18. A full report will be published at the end of the *Waste Less, Recycle More* initiative in 2021–22. See section 3 for more information.

Who is this strategy for?

This strategy will guide the education activities of the EPA and its *Waste Less, Recycle More* partners and stakeholders. It is also designed to provide waste education leadership and inspiration across NSW.

The EPA will take responsibility for delivering and supporting this strategy.

1. What do we want to achieve?

Vision

Our vision is to optimise the use and quality of education in all *Waste Less, Recycle More* programs so that they:

- increase knowledge and skills
- build positive attitudes
- promote positive behaviour change so the whole NSW community can improve the environment and community wellbeing.

Ideally, education programs will use diverse methods and be carefully tailored to their audience. They should engage with the values and motivations of the groups they target.

Context

This strategy has been informed by NSW Government waste policy, and waste education theory as detailed below.

Premier's priorities for NSW

The Premier has committed to 12 key priorities (www.nsw.gov.au/premiers-priorities) that will make NSW a better place to live and work. One of these priorities is keeping our environment clean by taking action to reduce the volume of litter by 40 per cent, by 2020.

Waste Avoidance and Resource Recovery Strategy 2014–21

The *Waste Avoidance and Resource Recovery Strategy 2014–21* (WARR Strategy) (www.epa.nsw.gov.au/resources/wastestrategy/140876-WARR-strategy-14-21.pdf) is a key part of the NSW Government's vision for the state's environmental and economic future. It sets the following long-term targets for waste avoidance, recycling, litter and illegal dumping.

Avoid and reduce waste generation

By 2021–22, reduce the rate of waste generation per capita.

Increase recycling

By 2021–22, increase recycling rates for:

- municipal solid waste from 52 per cent (in 2010–11) to 70 per cent
- commercial and industrial waste from 57 per cent (in 2010–11) to 70 per cent
- construction and demolition waste from 75 per cent (in 2010–11) to 80 per cent.

Divert more waste from landfill

By 2021–22, increase the waste diverted from landfill from 63 per cent (in 2010–11) to 75 per cent.

Manage problem wastes better

By 2021–22, establish or upgrade 86 drop-off facilities or services for managing household problem wastes statewide.

Reduce illegal dumping

From 2013–14, implement the *NSW Strategy to Combat Illegal Dumping* to reduce the incidence of illegal dumping statewide. As part of this strategy, by 2016–17:

- reduce the incidence of illegal dumping in Sydney and the Illawarra, Hunter and Central Coast regions by 30 per cent compared with 2010–11
- establish baseline data to allow target-setting in other parts of the state.

The WARR Strategy follows the waste hierarchy model. Figure 3 outlines where this education strategy will have the most influence in this hierarchy.

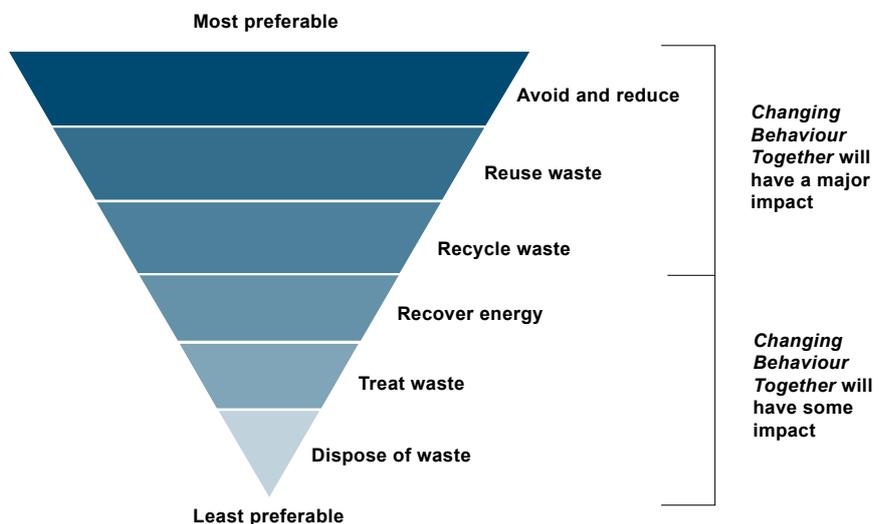


Figure 3: Waste hierarchy and the impact of *Changing Behaviour Together*

Education as a tool for change

We have based our structure for education on UNESCO’s Education for Sustainable Development approach (www.unesco.org/new/en/education/themes/leading-the-international-agenda/education-for-sustainable-development). This best practice approach paves the way for everyone to obtain the knowledge, skills, attitudes and values necessary to create a sustainable future. To change behaviour, education can take many forms.

Education form	Examples
Face-to-face delivery	Workshops
Printed materials	Signs, posters, flyers, stickers, brochures
Tangible infrastructure	Bins, kitchen caddies, bin caps
Electronic tools	Websites, web applications, social media
Mass media	Print, television, radio
Formal training	Vocational education certificates and diplomas
Informal training	Guided walks, tours
Community events	Promotions, displays
Community-based social marketing	Commitments, prompts, reminder messages

As a tool for changing behaviour, education is supported by:

- policy and price signals
- regulation and enforcement
- infrastructure
- research (scientific and social)
- incentives and disincentives
- social norms
- networking and partnerships.

Our approach to education has a number of key themes.

Waste education is more than providing information	This strategy aims to shift the behaviour of the NSW community to reduce the environmental impact of waste and use resources more efficiently. Providing information or increasing knowledge is not enough.
Waste education focuses on more than individuals	People are influenced by cultural and social practices, the media, ads, product choices and physical infrastructure. Education shapes these sources of influence so people adopt behaviours that reduce their environmental impact.
Waste education can be challenging, but is important	Education about waste is strongly linked with consumption and lifestyle choice, making it challenging. Producing more waste puts pressure on our environment. Although NSW has a proud history of recycling, we need to work together to find ways to reduce waste and recover resources in all areas of our lives.
Waste education is part of a movement towards sustainability	Sustainability is the goal of meeting the community's needs within the planet's ecological limits (Brundtland Commission 1987). Sustainability education can create a more sustainable world, where the environment is protected and conserved, and social equity and economic sustainability are encouraged. This strategy drives education for more sustainable choices and behaviours.

2. What will we do?

Our approach

The EPA will work with internal teams and external stakeholders to deliver the action plan developed under this strategy (www.epa.nsw.gov.au/wastestrategy/education.htm).

To be successful, we know that we need various approaches, particularly for those actions involving education campaigns.

We will:

- develop campaigns with stakeholders, particularly local councils, that will help deliver outcomes
- ensure campaigns can be adapted locally and regionally
- work to ensure materials are culturally appropriate and are in community languages.

Principles

The following key principles will bring quality and consistency to our programs and guide how we develop and deliver education across NSW. We have developed these from local and international resources (see Appendix A) and they are all equally important.

We will encourage our partners and stakeholders to incorporate some or all of these principles into their *Waste Less, Recycle More* education activities.

Education about waste avoidance, resource recovery and safe disposal:

1. fosters a spirit of active citizenship in caring for the environment
2. addresses and responds to the needs, values and motivations of target audiences
3. reinforces key messages over time and engages with new issues
4. helps people connect their actions with outcomes
5. has a positive 'call to action' and expects behaviour to change
6. aims to generate positive social norms about the value of resources
7. respects and reflects cultural and linguistic diversity, and local Aboriginal culture
8. shows its effectiveness by being well researched, evaluated and reported.



Figure 2: The ‘Hey Tosser!’ litter campaign has been adapted for multiple community languages. Photo credit: EPA.

Strategic directions

Six strategic directions show where we will focus our efforts to make a difference. Each action that aims to change behaviour links to at least one strategic direction.

Develop and use consistent messaging	Better coordinate waste education messages and programs in New South Wales so they are consistent
Integrate education	Use education to support waste infrastructure, compliance, and resource reuse and recovery programs, in line with the waste hierarchy (see Figure 3)
Build capacity	Give councils, businesses, community partners, stakeholders and state government agencies the tools and skills to design, run and evaluate effective education programs through <i>Waste Less, Recycle More</i>
Promote excellence	Identify and promote best practice and innovation
Provide resources and tools	Improve access to education resources and tools for waste avoidance and resource recovery
Work with and support stakeholders	Create strong partnerships with and between relevant organisations to deliver effective education programs

The action plans for this strategy are separate documents so they can be updated as *Waste Less, Recycle More* progresses (www.epa.nsw.gov.au/wastestrategy/education.htm).

An action plan that lists current and planning activities for 2016–17 is already available. An updated *Waste Less, Recycle More* education action plan will be developed for 2017–21.

3. How will we evaluate success?

Outcomes

This section sets out how we plan to evaluate this strategy’s implementation. The EPA will publish a progress report on the implementation of this strategy in 2017–18. A full report will be published at the end of the *Waste Less, Recycle More* initiative in 2021–22.

Evaluation of broad education outcomes

We have identified the following broad outcomes under our strategic directions and developed evaluation questions for each one.

Outcome	Key evaluation questions	Example evidence sources
1. Develop and use consistent messaging		
<p>Effective and consistent education will lead to the community:</p> <ul style="list-style-type: none"> knowing more about waste avoidance, recycling, organics, litter and illegal dumping having better skills to manage organics, reuse and recycling having better attitudes to waste. 	<p>How have knowledge, skills and attitudes in these areas changed?</p> <p>Have targeted behaviours changed?</p>	<ul style="list-style-type: none"> Evaluation of specific projects, and grant and funding programs Comparison with the 2014 Waste and Recycling Benchmark Study
<p>The community shows more positive behaviour towards waste.</p>	<p>How much has behaviour changed?</p> <p>Is the community sustaining the new behaviour(s)?</p>	<ul style="list-style-type: none"> Evaluation of specific campaigns over time Comparison with the 2014 Waste and Recycling Benchmark Study Program-specific social research Social research: ‘Who Cares about the Environment?’
2. Integrate education		
<p>There is enhanced delivery of waste education through various <i>Waste Less, Recycle More</i> projects and grant/funding programs.</p>	<p>Have effective education initiatives been delivered?</p> <p>Are education initiatives more effective because of this strategy?</p>	<ul style="list-style-type: none"> Evaluation of programs Extent to which strategy has been adopted

(Continued)

Outcome	Key evaluation questions	Example evidence sources
3. Build capacity		
There is increased capacity to deliver education that supports the WARR Strategy 2014–21 and <i>Waste Less, Recycle More</i> .	<p>How involved are our stakeholders and partners in capacity-building programs?</p> <p>What self-reported outcomes have programs led to?</p> <p>What are the motivations, challenges and barriers?</p>	<ul style="list-style-type: none"> • Number and location of capacity-building programs • Take-up rates among targeted participants • Evaluation of all capacity building programs
4. Promote excellence		
There is improved sharing of best practice in waste education among all stakeholders.	<p>Have partnerships and collaborative projects been delivered?</p> <p>Have educators shared more research and information on successful programs?</p>	<ul style="list-style-type: none"> • Delivery, support, and use of new ways to share best practice and access to them • Delivery of professional development where sharing best practice is an output
5. Provide resources and tools		
The community, business and industry have extended access to education resources and tools about waste avoidance, reuse and resource recovery.	<p>Have targeted resources been made available to meet the needs of each audience?</p> <p>How much are these audiences accessing the resources?</p>	<ul style="list-style-type: none"> • Evaluation of, and demand for, specific resources (where information is available) • Delivery, support, and use of new online waste education resources • Evaluation reports and data from campaigns and funding programs
6. Work with and support stakeholders		
There is enhanced collaboration between the EPA and its partners and stakeholders to deliver effective waste education and behaviour change programs.	Have partnerships improved between all providers of education about waste?	<p>Evaluation reports from:</p> <ul style="list-style-type: none"> • regional waste strategies. • campaigns and funding programs (where collaboration is key).



Figure 4: Partnerships between the EPA, local councils and waste service providers help the community to responsibly dispose of household chemicals. Photo credit: Evolving Images Pty Ltd.

Appendix A: Setting the strategy's principles

Our key principles

Education about waste avoidance, resource recovery and safe disposal:

1. fosters a spirit of active citizenship in caring for the environment
2. addresses and responds to the needs, values and motivations of target audiences
3. reinforces key messages over time and engages with new issues
4. helps people connect their actions with outcomes
5. has a positive 'call to action' and expects behaviour to change
6. aims to generate positive social norms about the value of resources
7. respects and reflects cultural and linguistic diversity, and local Aboriginal culture
8. shows its effectiveness by being well researched, evaluated and reported.

1. Fosters a spirit of active citizenship in caring for the environment

This principle is about engaging people in education, behaviours and decision-making about wise resource use.

According to Albert Bandura's 'Social Cognitive Theory', change will only happen when an audience has a high level of self-efficacy. They must believe that:

- they can bring about the change they seek
- what they are doing is making a difference
- they can maintain the change.

If not, Bandura says you are wasting your time promoting ways to change behaviour (Bandura 1997). So waste education must make people believe that they can change the behaviours we seek.

Change will not happen unless people are engaged, so this is the first step in successful education. Generally, the larger the program, the more extensive the engagement process must be. Without community ownership, the program is unlikely to run smoothly. The lack of engagement will become more important than the issue at the program's heart.

Engagement in decision-making happens along a spectrum. See, for example, the International Association for Public Participation (IAP2) model (www.iap2.org.au/Tenant/C0000004/00000001/files/IAP2_Public_Participation_Spectrum.pdf), as adopted for this education strategy.

Inform	Consult	Involve	Collaborate	Empower
To give the public balanced and objective information so they understand a problem, options, opportunities and solutions	To get public feedback on options and decisions	To work directly with the public to ensure concerns and aspirations are understood and considered	To partner with the public throughout the decision-making process, including developing options and finding the best solution	To put final decision-making in the hands of the public

2. Addresses and responds to the needs, values and motivations of target audiences

This principle is about tailoring programs so they are relevant to target audiences and their local area. Education to change behaviour is most effective when it is needs-based.

Successful adult education programs:

- are oriented to goals and relevance
- are internally motivated and self-directed
- include life experiences and existing knowledge
- are practical
- respect learners (Knowles et al 2012).

Successful change programs also focus education on behaviours that people believe they have control over. For example, people can control what they put into their recycling bins. This is called ‘internal locus of control’.

Rosenstock’s ‘Health Belief Model’ identifies ‘locus of control’ as the most important concept for those promoting change (Rosenstock et al 1988). Programs focused on what people cannot change easily or on target groups that have no control over a behaviour – ‘external locus of control’ – are unlikely to be successful. Lack of accessible services or materials is a major issue here.

Like Bandura, Rosenstock says that the behaviour must be:

- ‘do-able’ by that person
- seen as making a difference
- seen to address a serious issue or problem.

If not, most people will not make the shift even when they have control.

3. Reinforces key messages over time and engages with new issues

This principle is about readiness and willingness to change, and the need to reinforce messages to encourage people as they start to engage.

The ‘Stages of Change’ model states that not everyone is ready to change behaviour. For any issue, each person will be at one of five

stages: pre-contemplation, contemplation, preparation, action or maintenance (Prochaska et al 1992).

The premise is that change happens in small steps. You cannot move someone from pre-contemplation (not thinking about changing) to action, without encouraging them to take the middle steps. Educators must work out what stage their target audience is at, and design activities that move them on.

However, movement through the stages might not be steady or in one direction. People might move back and forward, or go through the stages a few times, before the action becomes a regular behaviour. So continuing programs will maintain achievements and help people progress.

Meanwhile, Rogers' 'Diffusion of Innovations' model sees change as a wave moving through society. Adoption of changed behaviour (an innovation) follows a fairly predictable pattern (see figure A1). An innovator has a 'new' idea. It spreads slowly at first, usually through 'change agents' who actively promote it. It then picks up speed as more people adopt it. Eventually the innovation reaches a saturation level, where virtually everyone who will adopt the innovation has done so (Rogers 1995).

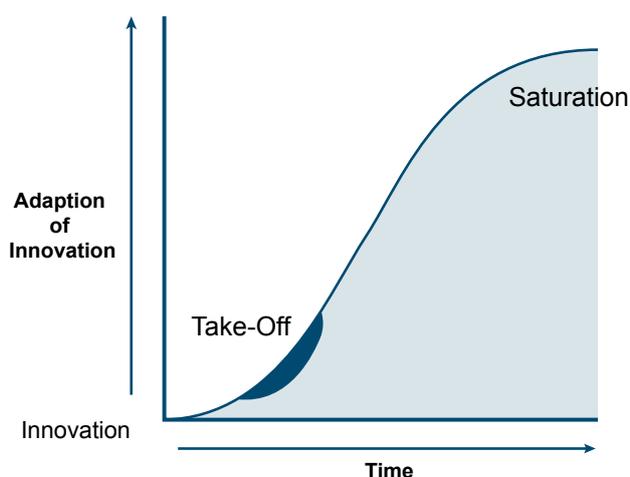


Figure A1: Innovation adoption curve. (Adapted from *Diffusion of Innovations* by E Rogers, 1995.)

Rogers identifies five categories in the diffusion of new ideas or behaviours:

- innovators – the global visionaries with imagination and a mission
- early adopters – private visionaries looking for strategic personal advantage of specific innovations
- early majority – pragmatic individuals influenced by fashion and proof
- late majority – conservative pragmatists who avoid risks but also avoid being left behind
- laggards – sceptics who often react negatively to real problems that need solutions.

When the number of early adopters reaches a critical mass (between 5 per cent and 15 per cent), the process is probably irreversible. The innovation has a life of its own, as more and more people share it.

4. Helps people connect their actions with outcomes

This principle is about focusing education initiatives on the consequences of behaviours.

Waste education activity is largely based on information. While knowledge can prompt change and is often a precursor to it, a gap in knowledge might not be the key factor preventing the desired change in the target audience.

This principle acknowledges that an understanding of consequences can drive change. Woodward identifies that a logical conclusion or inference will drive change for many people. If people cannot see or do not believe that the consequence is real, they will not change. Often various education methods are needed for entrenched or highly valued behaviours (Woodward 2003).

5. Has a positive ‘call to action’ and expects behaviour to change

This principle is about the expectation that behaviour will change because of education.

McKenzie-Mohr’s ‘Community Based Social Marketing’ model identifies that the challenge in changing behaviour is in translating knowledge and attitudes into action. Educators must create behaviour norms that will improve social outcomes, such as improving the environment or health. The aim is to deliver programs that improve people’s quality of life and the life of the planet (McKenzie-Mohr 1999).

To bring about change under this model, an education program must:

Action	Description	Example
Seek commitment from the target audience.	Programs need to seek written (if possible) commitment from participants about what they will do.	Take the pledge not to litter.
Prompt appropriate behaviour continuously.	Signs and other prompts are important to reinforce behaviour.	Sign on bin: ‘In this house all our food scraps are recycled to make compost’.

(Continued)

Action	Description	Example
Build acceptable practices into normative behaviour.	The more people who practise a behaviour often, the more it becomes a social norm. Note: We cannot really make something a norm. It is an outcome of what happens over time.	It's now a social norm to clean up after your dog in the park's leash-free area.
Provide incentives to reinforce appropriate behaviour.	Incentives, such as social events, subsidies, compliments and rewards, can help make the behaviour enticing.	Sign on fridge: Fabulous Recycler. Bin sticker: Smiley face.
Remove external barriers.	Anything that restricts the behaviour should be removed before the program starts.	To recycle our food scraps, we need a kitchen caddy.
Run ongoing evaluation.	Choose direct measurements (like tonnes recycled or energy saved) over less direct ones (like self-reported behaviour or increases in awareness) where possible.	

6. Aims to generate positive social norms about the value of resources

This principle is about the influence of social norms and how behaviour change programs can shift them.

Gladwell's 'Tipping Point' model offers another way of understanding how norms motivate change. It observes that ideas, behaviours and messages sometimes copy processes seen in outbreaks of infections. They are 'social epidemics' rather than medical ones. Gladwell cites the example of measles in a kindergarten class: one child brings in the virus and it spreads to every child in the class within days (Gladwell 2000).

The model argues that if people are at the tipping point, things can happen all at once and little changes can spark a big difference. People expect everyday change to happen slowly and steadily, and that there is some relationship between cause and effect. However, Gladwell suggests that ideas, behaviours and product trends move through a population very much like a disease does.

Educators need to find the lever to move people over the tipping point to create a social norm. Ongoing peer influence, often supported by infrastructure and compliance activity, leads to more and more people adopting the behaviour.

7. Respects and reflects cultural and linguistic diversity, and local Aboriginal culture

This principle is about ensuring that we develop and deliver programs within local cultural contexts.

This strategy supports commitment, collaboration and consultation with diverse communities. For example, it seeks to align and integrate Aboriginal perspectives and knowledge as part of education for better waste outcomes.

Where relevant, we will:

- involve Aboriginal communities in designing sustainability projects and programs
- engage these communities in culturally appropriate ways
- address their environmental needs and issues
- work with them to deliver projects that will increase the environmental knowledge and sustainable living practices of the broader community
- integrate Caring for Country values in environmental projects
- link to local and statewide Caring for Country projects
- work across agencies to advocate an Aboriginal perspective in mainstream programs.

This strategy also acknowledges the state's culturally and linguistically diverse communities. In NSW:

- 31 per cent of people were born overseas
- 27.5 per cent speak a language other than English at home
- 4 per cent do not speak English at all.

The top 10 languages other than English are Arabic, Mandarin, Cantonese, Vietnamese, Greek, Hindi, Italian, Spanish, Korean and Tagalog (Filipino). (www.abs.gov.au/websitedbs/censushome.nsf/home/Census?opendocument#from-banner=GT)

Our program developers will:

- develop initiatives consistent with the multiculturalism principles of NSW (see www.legislation.nsw.gov.au/inforce/a6ac573d-70ec-61e7-c63e-9e43748c3306/2000-77.pdf)
- strive to ensure that these diverse communities can access education programs, information and services (see guidelines at www.eccq.com.au/wp-content/uploads/2012/01/cald_good_practice_guide-nsw.pdf).

8. Shows its effectiveness by being well researched, evaluated and reported

This principle is about the importance of basing programs on solid research and ensuring they are fully evaluated.

Social research informs effective education planning and delivery. Thus, effective education about waste uses or commissions social research that informs and benchmarks programs.

We have based our approach to monitoring, evaluation and reporting on the 'Program Logic' model. It provides a:

- tool to guide planning at the conceptual stage of a program
- tool for evaluating the strengths and weaknesses of a program, often when it is in the development or re-development phase
- framework from which to develop monitoring and evaluation criteria (Rogers 2008).

Effective evaluation makes both summative and formative assessments. Summative evaluation analyses the successes and failings of a program. Formative evaluation points to future changes that will make it more effective.

References

Bandura, A 1997, *Self-efficacy: The exercise of control*, Worth Publishers.

Brundtland Commission 1987, 'Chapter 2: Towards Sustainable Development', *Our Common Future: Report of the World Commission on Environment and Development* <www.un-documents.net/ocf-02.htm>.

Gladwell, M 2000, *The Tipping Point: How little things can make a big difference*, Little, Brown and Company, Boston.

Knowles, M, Holton, E and Swanson, R 2012, *The Adult Learner: The definitive classic in adult education and human resource development*, 7th edn, Routledge, Abingdon.

IAP2 International Federation, *IAP2's Public Participation Spectrum*, 2014.

McKenzie-Mohr, D and Smith, W 1999, *Fostering Sustainable Behaviour: An introduction to community based marketing*, New Society Publishers, Gabriola Island.

NSW Department of Community Services, *Good Practice Guide: Working with culturally and linguistically diverse (CALD) people and communities*, 2015, Sydney.

NSW Environment Protection Authority, *Waste Avoidance and Resource Recovery Strategy 2014–21*, 2014, Sydney.

Prochaska, J, Diclemente, C and Norcross, J 1992, 'In search of how people change: Applications to addictive behaviours', *American Psychologist*, vol 47, pp 1102 to 1114.

Rogers, E 1995, *Diffusion of Innovations*, The Free Press, New York.

Rogers, P 2008, 'Using Program Theory to Evaluate Complicated and Complex Aspects of Interventions', *Evaluation*, vol 14(1), pp 29–34.

Rosenstock, I, Strecher, V & Becker, M 1988, 'Social Health Learning and the Health Belief Model', *Health Education Quarterly*, vol 15, pp 175 to 183.

Woodward, J 2003, *Making Things Happen: A theory of causal explanation*, Oxford University Press, Oxford.