

Understanding the possible risks

This factsheet discusses the risks that might arise when introducing an organics collection service and includes a risk matrix outlining the potential risks and possible mitigation measures, as well as lessons learnt from other councils on what and what not to do.

Circumstances that might impact negatively on a food and garden organics collection service may include the following (bold formatting indicates extreme and high risks):

- ✓ Inadequate project management
- ✓ Poor communication
- ✓ Bungled roll-out of service
- ✓ Difficult properties
- ✓ **Householders not participating**
- ✓ **Contamination**
- ✓ **Nuisance factors (vermin, pests, malodours)**
- ✓ Impact of home composting
- ✓ Contractual issues
- ✓ **Cost overruns**
- ✓ **Lack of demand for generated products.**

1 Inadequate project management

Planning and introducing an organics kerbside collection service, possibly in conjunction with other changes to waste management and recycling service delivery, requires proper project management. Once the decision is made to provide an organics collection service, a period of at least 12 to 18 months is generally needed for planning and introducing the scheme, possibly including the following tasks:

- ✓ Purchasing / leasing additional vehicles (if in-house service is provided) or negotiating a new collection contract
- ✓ Designing collection routes and calendars for organics and residual waste

- ✓ Selecting and purchasing collection bins, kitchen caddies and possible liners and education material
- ✓ Delivering bins, kitchen caddies and liners
- ✓ Developing and delivering a communications and education strategy, including design of print media, and establishment of feedback lines
- ✓ Establishing a licensed processing facility or negotiating a processing contract with skilled operational staff, ensuring adequate capacity for expected demand
- ✓ Developing a monitoring and evaluation plan including contamination management.

Project management includes resource planning (finance and staff) as well as the development and controlling of a detailed project management plan.

2 Poor communication

The success of source separation recycling schemes will largely depend on the active support of waste generators. Consequently, it is of utmost importance that residents are well informed about the new organics collection scheme, and motivated to actively participate. It can be difficult to rectify problems caused by lack of information or misinformation among residents.

The communications and community engagement strategy needs to be long-term, which means coming into effect well before the scheme starts and continuing throughout the scheme to maintain participation levels and the quality of collected materials.

Community Education and Engagement is further discussed in Factsheet 4 and Factsheet 11.

3 Bungled roll-out

It is important that the roll-out of the service (such as delivery of bins, caddies and information material) runs smoothly and legitimate grievances of residents are dealt with promptly. Major problems with the roll-out, or the first collections, can result in dissatisfied residents and negative press, putting at risk the success of the organics recycling scheme, at least in the short term.

4 Difficult properties

Flats, apartments and other multiunit dwellings (MUDs) need special consideration for organics recycling services. This concerns primarily collection of food organics.

Food organics collections in MUDs present a number of additional challenges including:

- ✓ Smaller kitchens – householders often have less space to sort and separately store food scraps and therefore may not want a bench top kitchen caddy for organics in the kitchen.
- ✓ Remote waste storage areas – residents usually have to carry recyclables downstairs to a room / area where shared bulk bins are located. A non-leaking and non-tearing, easy to carry container or compostable liner bag will be needed.
- ✓ Food organics dominate – organics collected from MUDs will be comprised primarily of food organics with little or no garden material
- ✓ No existing organics service – MUDs often have limited or no existing service for garden organics. If an existing garden organics service is expanded to include food scraps, additional bins have to be provided to MUDs and collection routes have to be modified to cater for the additional pick-ups.
- ✓ Matching bin numbers to generated waste and recycling volumes – occupants of MUDs often share bulk bins. While use of a food organics service will decrease the need for residual waste storage, balancing the numbers of different bins to maximise recovery and minimise contamination may be difficult.
- ✓ Excessive weight of organics bin – food organics have high bulk density and a full 240L bin containing food organics may be too heavy to easily manoeuvre within the shared waste storage area or wheel to the collection point.
- ✓ Shared bins – householders may feel discouraged from using the service if others within the building do not also use the service and take care with contamination and cleanliness of the shared bins.

It might also be particularly difficult to establish an organics collection service at properties with transient populations, such as holiday lettings or short term accommodation.

Considerations regarding collection efficiencies (kg of collected material per driven km) forces non-metropolitan councils to decide how far out of town they want to extend the organics collection service. Some rural properties do not receive any kind of waste and recycling collection service, but there is also a view that people living on acreage do not need an organics collection service, as they can utilise most or all organic residues on site. However, there might be occasions when householders that are excluded from receiving the organics collection service complain about this fact, particularly if they feel they are paying for this service through their council rates.

Councils may be able counter potential criticism by actively supporting home composting and on-site organics recycling, particularly for those properties that do not have access to the organics collection service. This could be done for example by providing free kitchen tidies and/or subsidised compost bins, encouraging conservation gardening, or facilitating the hiring of garden shredders at reduced rates.



Multiunit dwellings (Hyder)

5 Householders not participating

As with any source separation recycling system, the success of an organics collection scheme depends on the support and active participation of residents. Participation rates and impurity levels often reflect the level of community support a recycling scheme has. The level of support for organics recycling can be boosted by:

- ✓ No additional direct charges for organics collection service
- ✓ Convenient collection service
- ✓ Supply of kitchen caddy and compostable bags
- ✓ Long-term communication with the community
- ✓ Helping the community understand the need for and benefits of an organics collection scheme.

Voluntary organics recycling schemes naturally have lower participation rates than schemes where bins are delivered to every household. Several councils in South East Queensland offer voluntary garden organics collection schemes under a user-pays scheme, with participation rates between 5–40%. Voluntary schemes usually have higher collection yields per participating household, but overall diversion of organics from landfill is lower and efficiency of collection is lower.

Even when participation is compulsory (therefore every household has to have an organics bin), very few councils have a bylaw prohibiting residents from putting organics in their residual rubbish. In other words, organics diversion is voluntary at the household level, and probably with good reason, as it cannot be 'policed'.

Socio economic and other factors also impact on participation levels. For example, residents living in semi-rural areas or on acreage often do not see the need for an organics collection service. If such households accept an organics bin, they might use it only infrequently. Hence, there are two aspects to householder participation, and both need to be high for satisfactory outcomes:

- ✓ Delivery of organics bins and kitchen caddies
- ✓ Use of the delivered kitchen caddies and bins (set out rate).

Many kerbside organics collection schemes and trials in Australia have been characterised by average levels of participation of approximately 60%. This is similar to data from Germany, which shows 55% to 60% of all residents in local government areas with compulsory garden and kitchen organics collection schemes actually participate in these schemes.

6 Contamination

Collection of source separated organics was pioneered in Europe in the early to mid-1980s to enable production of high quality soil amendments. When going through the trouble and expense of establishing an organics collection service for this purpose, it is important that the collected material contains low levels of physical impurities, such as plastic, glass, metals, or rocks. The level of physical contamination is often mirrored by the level of chemical contamination. Collecting material with low impurity levels helps to decrease processing costs associated with decontamination efforts, ensures the product meets regulatory requirements, and aids the marketability and use of compost products without causing detrimental effects to the user or the environment.



Contamination tag for kerbside bin (WRAP UK)

Contamination is less of a problem in garden organics collection schemes, with impurity levels generally being below 1% by weight. Combined garden and food organics usually harbour more impurities, possibly up to 10% or more. However, there are also examples where co-collected garden and food organics are very clean with less than 1% impurities.

Various types of plastic are usually the main contaminants in source segregated organics, with plastic bags being dominant in material that contains food residues. Plastic bags may sometimes be used by residents to line bench top kitchen caddies and the organics bin. Residents may not use compostable bags for reasons including they:

- ✓ Received inadequate information about which bags they should use
- ✓ Are unable to identify compostable bags and/or differentiate between compostable, degradable and biodegradable bags
- ✓ Are unable to get compostable bags at their local shops
- ✓ Do not want to pay extra for compostable bags.



Contamination (WRAP UK)

Contamination management is further discussed in the risk matrix at the end of this section and in Factsheet 12 – *Contamination Management* (part of the *Implementing Your Scheme* section).

7 Nuisance factors (vermin, pests and odours)

Residents' negative experience with malodours, seepage, flies and maggots are probably the most important issues undermining the long-term support for organics collection schemes. Although grass clippings can become smelly and create seepage if they sit in the organics bin for too long, most nuisance problems are associated with collecting food organics. In a food and garden organics collection scheme, common complaints are about flies (they are usually small fruit flies or vinegar flies), odours and seepage.

In many cases councils try to minimise these problems by providing aerated caddies and compostable bags that allow gas exchange.

Aerated caddies and adequate emptying intervals (1–3 times per week) should minimise unpleasant odours in the kitchen. If flies (and maggots) are the main problem, this can be alleviated by using a non-perforated kitchen container with a close fitting lid. In that case residents can be given the choice of using newspaper in the base of the container, or to purchasing compostable bags (or both). Newspaper absorbs liquids and seepage, and makes it easier to keep the kitchen container clean.

Odour from the kerbside collection bin is generally less of a problem, except for when no garden material is collected, for example in MUDs and during winter. Councils have the option of using aerated kerbside collection bins to reduce odour risks. Seepage can escape from aerated bins when emptied, especially if they contain only wet kitchen organics. Tying the top of compostable bags, or wrapping food scraps in newspaper, will help prevent this from occurring. Venting systems can often be retrofitted to existing bins or incorporated at the time of manufacture. There are also bin odour/moisture control products available on the market.

Kerbside collection bins can, over time, become soiled and smelly, particularly when food residues are not contained in compostable bags or rolled in newspaper. Compostable bin liners can be used to keep the bin clean. Local bin cleaning services and information on how to clean bins without causing stormwater pollution should be made available.

Lids that fit the kerbside bin body and are kept closed decrease the opportunities for pests and vermin. Not all householders, or waste collection staff, ensure bin lids are kept closed, so education and change of behaviour may be required. Maintenance staff may also be needed to ensure damaged bin lids and ill-fitting lids are quickly replaced. Products such as gravity locks may be of use in areas where possums or dogs are adept at scavenging from bins. However, vermin (mice, rats) are not a common problem with organics collection schemes, where materials are held in plastic containers until collected.



Maggots in compost bin (Hyder)

The frequency of emptying containers (both the kitchen caddy and the kerbside collection bin) is the key to managing many nuisance factors. Most householders empty their caddy between 1–3 times per week, depending on what goes into it. Kerbside organics bins are emptied either weekly or fortnightly, also depending on what goes into it. Garden organics collection schemes commonly employ a fortnightly collection routine, while schemes that co-collect food organics usually have weekly collection intervals. To reduce collection costs, while still managing nuisance factors, councils may possibly opt for weekly collection of garden and food organics in summer, and fortnightly collection in winter.

The decision to have a proactive or reactive strategy for vermin, pests and smells, and whether to initiate local government wide actions or address issues on a house by house basis, will depend on factors including community support for the service, as well as the available budget and resources. These decisions should be considered in the early planning stages of a new organics service.

8 Home composting

On-site management and use of organic garden and kitchen residues through home composting, worm farming or using a 'Bokashi bucket' system (jointly referred to as home composting) can be economically and environmentally superior to a centralised organics collection service. Council support for on-site management and use of organics should continue even after introducing an organics collection service.

Well supported home composting schemes, which are widely adopted in a community, offer an important means for reducing organics going to landfill, and to reduce organics quantities that need to be collected, processed and marketed.

Waste minimisation through on-site management and use is notoriously difficult to quantify, and the impacts are usually not accounted for when council-wide organics diversion rates represent a key performance indicator (KPI). The impact may be important when KPIs are expressed in absolute (tonnes organics to landfill) or relative (per cent organics in landfilled waste) terms.

Compared to home composting, many households find a kerbside organics collection service a more convenient and easier option to manage organics. Therefore, a certain proportion of households will give up home composting when a kerbside organics collection service is introduced. Consequently, quantities of organics collected through a kerbside scheme are usually higher than what waste analyses prior to system introduction may suggest.

9 Contractual issues

Depending on the extent to which councils outsource the establishment and operation of an organics collection scheme, the following goods and services might be sourced externally:

- ✓ Project management and introduction of the scheme, including public education, media management, hot line staffing, bin delivery and database management
- ✓ Supply of equipment including organics collection bins, kitchen caddies and possibly compostable bags
- ✓ Provision of organics collection services
- ✓ Provision of organics processing and marketing services.

Planning and implementing a new organics collection scheme represents a significant temporary additional workload for council staff, which may be eased by outsourcing some or all of the associated tasks.

The supply of organics bins and kitchen caddies (and possibly compostable bags) can be combined into one contract. The supply contract has to allow for some degree of flexibility, as the final number of bins and caddies needed depends on the number of households participating in the scheme. This number is particularly difficult to estimate when a voluntary scheme is introduced. If delivery of bins to the premises of participating households is part of the supply contract, clarification is required if kitchen caddies and information brochures can be delivered at the same time.

Alternatively, if a council opts for an intensive public education campaign with door step visits to each household, kitchen caddies and information brochures can be delivered at this occasion.

In either case, provisions have to be made for picking up bins and caddies that were delivered but are not wanted by residents as well as for the replacement of lost, stolen or damaged bins.

Contractual arrangements governing the collection of source segregated organics in a local government area may be part of a wider contract that covers the collection of all waste and recycling materials from residential properties. The organics collection contract may therefore be subject to all standard KPIs related to the collection of recycling materials. Additional contractor costs associated with introducing organics collection, such as vehicle modifications, would have to be considered and addressed.

Unpredictable participation and growth rates in voluntary collection schemes make planning, resource allocation and contractual arrangements difficult. As far as possible, the contract needs to facilitate co-operation between the contractor, council and the organics processor to identify and rectify collection related problems, particularly contamination of organic materials. Minimisation of impurities needs to be a shared responsibility between council, the contractor and the organics processor.

A simple supply contract that specifies type of material supplied, quality characteristics including maximum impurity levels (optional), estimated quantities, unit costs (\$ per tonne or cubic metre) and duration of contract may suffice, if the collected organic materials can be delivered to an existing processing facility. Supply contracts become more complicated when a facility is built specifically for processing material from a kerbside organics collection scheme that has yet to be introduced. Such contracts are usually long-term (10+ years) and specify minimum quantities that have to be supplied. If several councils join to build a processing facility, contracts often become much more complex again.

It is usually the responsibility of the processor to ensure the generated recycled organic products are sold and/or utilised beneficially. Sales and marketing arrangements for recycled organic products are therefore usually not subject to a separate contract. However, the processing contract might specify minimum annual quantities and qualities of compost products council will use internally. There might also be a general requirement that all generated products meet at least Australian Standard AS 4454-2012 quality specifications. If specific cooperative marketing arrangements are pursued, for example exclusive supply of pasteurised compost to farmers, a council may want to benefit from lower processing costs. Such arrangements need to be agreed contractually. On the other hand, where the processor carries the risk of not being able to sell the generated products (or at least not at the desired price) these risks need to be compensated, usually via a higher contract price for the council.

10 Cost Overruns

Careful planning with good contingency plans and flexible contracts can help prevent costs exceeding budget forecasts. However, unexpected additional costs may still be incurred, for example in the following instances:

- ✓ Need for additional community information and education
- ✓ Higher than expected participation resulting in increased purchase of bins and kitchen caddies, and also higher collection costs
- ✓ Higher than expected collection yields resulting in higher processing costs, and possibly also in higher collection costs
- ✓ Lower than expected collection yields might result in contract penalties
- ✓ Higher than expected contamination levels may require extra information and education measures, and may also result in higher processing costs and/or contract penalties
- ✓ Slow sales of generated recycled organic products may require support measures, such as increased use by council, market development aid, or higher processing fees
- ✓ Failure of the selected processing technology could certainly result in a cost blow-out, even if the liability is not directly with council.



Compost (Hyder)

11 Lack of demand for generated products

Many operators would attest that it is easy to make compost, but not so easy to sell it. The key determinants for the sale of recycled organic products are price, quality, product knowledge, and market access to competing products. High quality products have a wider range of potential uses than lower quality products, increasing the chance of developing strong market demand. However, manufacturing of high quality products alone is not a guarantee for the sale and use of all generated material. Considerable marketing efforts are usually required to develop potential markets.

As market development is a long-term undertaking, a council may want to consider preventing the build-up of stockpiles by using large, but declining compost and mulch quantities over the first two or three years of operation, until viable local markets are established.

The urban amenity market is currently absorbing by far the most recycled organic product in Australia. This is the case as most organic recycling schemes are established in urban centres, but also because this market has much higher propensity to pay for products, than say agricultural or rehabilitation markets. Rural and regional composting operations may have to focus more on agricultural and horticultural markets.

Considerable efforts have been made across Australia to demonstrate the efficacy of various recycled organic products in agricultural and horticultural applications. Many scientific and demonstration trials in vegetables, floriculture and perennial crops have shown that compost products provide tangible agronomic and economic benefits compared to standard farming practices. Nevertheless, many farmers are still reluctant to use recycled organic products, which can be for reasons such as:

- ✓ Lack of (independent) information about the costs and benefits of using recycled organic products at farm level
- ✓ Poor image / poor quality of compost products
- ✓ Lack of spreading equipment
- ✓ High purchase, transport and application costs
- ✓ Lack of adequate agronomic advice regarding the capabilities and limitations of various products
- ✓ Unwillingness to change farming system to include regular use of recycled organic products.

To prevent marketing problems and stockpiles, but also to integrate and support the farming sector, many different schemes in Europe were developed in which farmers guaranteed the use of some or all generated compost products. In some cases farmers receive a gate fee when they also compost the collected material, while in other cases they receive the quality assured compost at low or no charges in return for providing guaranteed demand.

NB: Information in this factsheet is taken from the *Food and Garden Organics Best Practice Collection Manual* (2012) published by the Department of Sustainability, Environment, Water, Population and Communities. The full document is available on the department's website www.environment.gov.au/wastepolicy/publications/organics-collection-manual

Risk matrix - identification and management of risks



Risk	Mitigation	Examples of Risk Minimisation	More information is available in:
Inadequate project management	<ul style="list-style-type: none"> ✓ Once a decision is made to provide an organics collection service, a period of 12-18 months is required for planning – establishment and construction of any new facility will take a minimum of 3 years ✓ A detailed project management plan should be developed, adhered to and maintained ✓ Project management includes resource planning – both finance and staff ✓ Audits of waste streams and surveys of community attitudes should be conducted. 	<p>The 'Groundswell Project' first began in 2004 with a pilot program called 'City to Soil' for collection and composting of food and garden organics in Queanbeyan (NSW). Following initial success, the approach was expanded to other rural areas and received funding over a three year period, from late 2007 to early 2011.</p> <p>A full-time project manager was appointed to coordinate the planning and implementation process across the region, while internal council staff managed day-to-day operations related to both collection and processing. Strong relationships were established with a range of professionals throughout the project, including suppliers, farmers, academics, consultants and government agencies, contributing to planning, implementation and evaluation and ensuring councils could offset service costs through the sale of quality compost. The project provided a model for rural councils in the region to provide significant organics diversion from landfill and achieve cost savings.</p> <p>Extensive information about the composting system, service roll-out, project management and evaluation is published online through the project website and through the Southern Regional Resource Recovery Organisation of Councils.</p>	Factsheet 10 – Scheme Design and Roll-Out
Poor communication	<ul style="list-style-type: none"> ✓ Residents must be kept informed and motivated ✓ Communications and community engagement must be long-term (established well before the scheme starts, and ongoing) 	<p>Shoalhaven City Council conducted an innovative organics collection trial in 2009 using a two-bin 'wet and dry' system to determine whether organics recovery could be achieved without further investment in collection infrastructure. Because the trial used such a novel approach, the council consulted extensively with the participating community of Greenwell Point and maintained a visible presence and high level of communication during the trial period.</p>	Factsheet 4 – Understanding Community Education and Engagement Factsheet 11 –

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Risk	Mitigation	Examples of Risk Minimisation	More information is available in:
	<ul style="list-style-type: none"> ✓ Monitor and evaluate to measure success of communication, and to provide feedback to stakeholders. 	<p>Council collaborated with the local community action group to ensure the roll-out process was successful and education activities included printed materials, provision of trial updates at the community group's monthly meetings and publishing news and educational articles in the local newsletter. In addition, the council set up a local shop-front which ran three times a week in the community hall to distribute additional supplies of compostable bags and address any questions or concerns. Home visits were also arranged from the shop-front for residents unable to attend or with specific difficulties and concerns.</p>	<p>Conducting Community Education and Engagement</p>
Bungled roll-out of service	<ul style="list-style-type: none"> ✓ Trial an organics service on a proportion of the local government area ✓ Ensure access to appropriate equipment ✓ Have a well-designed public communication and education program ✓ Design efficient rounds that match the capacity of the collection vehicles and collection crew ✓ Measure performance over time ✓ Ensure additional staff during roll out to deliver equipment, answer enquiries, and respond to complaints and issues. 	<p>Ballina Shire Council, on the NSW north coast, rolled out a third bin for urban residents in July 2011 to co-collect food and garden organics. The 240L MGB is collected weekly while residual waste collection was reduced to fortnightly, alternating with recyclables.</p> <p>Council allocated funding from the NSW Waste and Sustainability Performance Improvement Payment (WASIP) scheme to develop a comprehensive public consultation and education program on waste avoidance and organics recovery for 6 months prior to service commencement. The program included print advertisements, media releases, community service announcements on radio, brochures, presentations to community groups and a major 'launch' event through the North East Waste Forum Green House. Through this process the council determined the community was willing to wrap food waste in newspaper or purchase their own compostable liners, which helped reduce the roll-out cost of the service to households. The service has been extremely successful so far, resulting in a 43% reduction in waste sent to landfill in the first two-months of its introduction.</p>	<p>Factsheet 10 – Scheme Design and Roll-Out</p>
Difficult properties	<ul style="list-style-type: none"> ✓ Provide a reasonably priced collection method that is convenient and secure ✓ Consider convenience, storage space constraints, pressures on available space, vehicle access, existing garbage collection arrangements, and acceptability to residents ✓ Ensure container choices are appropriate for the number of households served, the organics segregation arrangements, space availability and collection vehicles ✓ Identify range of properties and identify 	<p>Leichhardt Council (in the inner west of Sydney) introduced a food organics collection service specifically for multi-unit dwellings (MUDs). The system was based on thorough research of different collection options, including a trial that compared several systems in 2007. Food waste is now collected from MUDs in 240L MGBs that are shared between groups of units and collected on a weekly basis. Council simply replaced approximately one in every 10 garbage bins with an aerated green-lidded bin, a system which was designed to prevent the need for additional bin storage, improve collection efficiency, and prevent odour problems. Participating households are also provided with an aerated kitchen caddy and supplies of biodegradable bags as the trial indicated that this resulted in higher recovery rates.</p>	<p>Factsheet 4 – Understanding Community Education and Engagement</p> <p>Factsheet 11 – Conducting Community Education and Engagement</p>

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Risk	Mitigation	Examples of Risk Minimisation	More information is available in:
	solutions.	The trial results indicate an average of 1.2 kg of food per week is being recovered per MUD household.	
Householders not participating	<ul style="list-style-type: none"> ✓ Implement well-defined communication plans, including through local community networks, schools, community boards, residents and ratepayers groups ✓ Ensure convenience by minimising the effort required to separate organics, supplying kitchen caddies and liners to all or some households ✓ No direct additional cost for participating households ✓ Ensure the kitchen caddy and collection bin are easy to keep clean ✓ Make the community understand the need and benefits. 	<p>Gippsland Regional Waste Management Group (GRWVG) in northern Victoria conducted organics collection trials in two communities during 2011 and improved community engagement by partnering with local community groups and involving local composters in the material processing. During planning, GRWVG consulted with key stakeholders in the relevant communities. During the roll-out, the council employed the local Rotary Club, Lions Club and Friends of Mallacoota groups to conduct door-to-door distribution of kitchen tidy bins and education packages. This approach was mutually beneficial as it improved community interest in the objectives of the project while providing some financial support to the local groups. A local cattle farmer contributed to the project by accepting food and garden material collected from the Mallacoota area and composting this in-kind during the trial.</p> <p>Local involvement through many aspects of the project contributed to improved participant understanding of the benefits of organics diversion and high recovery rates during the trial, which resulted in its continuation as a permanent service by the local council.</p>	<p>Factsheet 4 – Understanding Community Education and Engagement</p> <p>Factsheet 10 – Scheme Design and Roll-Out</p> <p>Factsheet 11 – Conducting Community Education and Engagement</p>
Contamination	<ul style="list-style-type: none"> ✓ Conduct thorough community education, including a visit by waste and recycling educators and leaving a ‘contamination tag’ if required ✓ Make sure collection and education staff identify contaminated bins, and report them appropriately ✓ Withdraw organics collection bin and service from non-complying households ✓ Separate contaminants at the processing facility ✓ Develop a contamination management plan considering a range of responses for initial, periodic and entrenched 	<p>Canterbury City Council in Sydney’s inner west has a very culturally diverse population. It has achieved unexpectedly low levels of contamination since the introduction of the garden organics service, with the high quality of the organics recovered attributed to a range of factors.</p> <p>Prior to roll-out the council undertook extensive consultation with the community and thoroughly tested education materials and messages, establishing among other things that ‘Garden Vegetation’ (as opposed to ‘green waste’ or ‘garden organics’) was the most widely understood term to prevent contamination. Effective contamination management procedures were developed, involving visual inspection, collection refusal, contamination stickers, warning letters and visits by education staff for repeat offenders.</p> <p>The council found that one of the most important factors in maintaining negligible contamination levels was the vigilance of collection drivers in reporting contamination incidents and the cooperation between council and its collection contractor in managing this issue.</p>	<p>Factsheet 12 – Contamination Management and Compliance Planning</p> <p>Factsheet 11 – Conducting Community Education and Engagement</p>

PLANNING YOUR SCHEME – **FACTSHEET 6** – UNDERSTANDING THE POSSIBLE RISKS

Risk	Mitigation	Examples of Risk Minimisation	More information is available in:
	contamination by identified households.		
Nuisance factors	<ul style="list-style-type: none"> ✓ Consider providing liners and aerated kitchen caddies to some households ✓ Encourage householders to line their caddies ✓ Encourage householders to empty the caddy regularly ✓ Encourage the use of deodorising spray/pads ✓ Provide local bin cleaning services and replace damaged bins ✓ Ensure that lids fit the kerbside bin properly ✓ Consider seasonality, and possible provision of weekly collections in summer and fortnightly collections in winter (for a combined service or garden organics only). 	<p>In 2009, Penrith City Council implemented a 3-bin collection service to urban single dwellings which consisted of a 240L organics bin collected weekly (the existing garbage bin fitted with a new lid), the existing 240L recycling bin collected fortnightly and a new smaller 140L residual bin collected fortnightly. Residents were also provided with an enclosed kitchen caddy to assist collection of food waste.</p> <p>The council encountered a number of issues during the first year of the service, including negative media coverage, organics bin lids which did not fit the older bin bodies, and a large number of complaints from residents about odour, pests and insufficient residual waste collection capacity and frequency.</p> <p>In 2010, the council resolved to introduce a number of modifications to the new waste service to address residents' complaints. These measures included provision of biodegradable bags in accordance with AS 4736, optional larger and/or weekly residual waste services to residents at an additional charge, optional additional yellow lid recycling bins (at reduced cost) to manage excess recyclables, optional smaller organics bins, use of odour control measures for bins, the option of additional services at Christmas time, and an enhanced community waste reduction education program.</p>	<p>Factsheet 3 – Understanding the Collection Options</p> <p>Factsheet 10 – Scheme Design and Roll-Out</p>
Impact of home composting	<ul style="list-style-type: none"> ✓ Continue to encourage home composting. 	<p>Three councils in the Eastern Suburbs of Sydney received funding in 2009 for a regional education project called 'Compost Revolution' which aimed to promote the reduction of food waste sent to landfill. Woollahra Council already provided a food and garden organics collection service for residents; however a trial was undertaken in neighbouring Waverly and Randwick to measure the effectiveness of an intensive home composting education program.</p> <p>During the 12-month trial program waste audits indicated participants diverted between 1.8 kg and 2.3 kg/hh/week to home compost systems. Since the completion of the trial, an online version of the education program has been developed for full roll-out across the Eastern Suburbs Councils. At least 750 residents have already used the online version and 95% of respondents state that the web resource was sufficient for their needs.</p>	-

PLANNING YOUR SCHEME – **FACTSHEET 6** – UNDERSTANDING THE POSSIBLE RISKS

Risk	Mitigation	Examples of Risk Minimisation	More information is available in:
<p>Contractual issues</p>	<ul style="list-style-type: none"> ✓ Ensure contracts are flexible ✓ Ensure contract is subject to all standard KPIs related to the collection of recycling materials ✓ Facilitate cooperation between the contractor and council regarding collection related problems ✓ Share responsibility of contamination problems. 	<p>Nillumbik Shire Council, in the northern suburbs of Melbourne, introduced the ‘GRO 3-bin system’ (Green, Recycle, Other) in July 2003. The commencement of the weekly combined food and garden organics collection service was accompanied by a reduction in residual waste bin size and collection frequency.</p> <p>The community took time to adjust to the new collection system and a fortnightly residual collection, so there were difficulties in managing contamination. Residents used either biodegradable bags or newspaper, however both of these liners were problematic at first because the original processor had difficulty in dealing with large quantities of newspaper and the biodegradable bags were difficult and expensive to source at the time.</p> <p>Changing to a different processor meant that the new company, ‘Green Planet’, could sort contamination mechanically, reduce the reject rate and improve the composting process, resulting in better resource recovery. However this was short-lived, as circumstances beyond the control of the council led to Green Planet closing down in late 2008, leaving the council searching for an alternative processor that could accept the food content and contamination rate of its organic material.</p> <p>Negotiation with 11 other councils in the region has resulted in the development of the Northern and Western Organics Processing Contract so that a new organics processing facility is expected to be built in the near future. However for several years in the meantime, all organic waste from Nillumbik Shire has been diverted to Hanson Landfill at Wollert, a situation that has not only had an impact on the council’s waste diversion targets, but also the commitment of its residents to resource recovery.</p> <p>At present, the council continues to encourage residents to separate garden organics from residual waste; however there is limited focus on contamination or active promotion of food separation. Unfortunately, when composting of the organics stream eventually recommences, there is a high risk that resident’s disillusion with the local resource recovery system may lead to either low participation or high contamination rates for the future processor to deal with.</p>	<p>Factsheet 10 – Scheme Design and Roll-Out</p>

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Risk	Mitigation	Examples of Risk Minimisation	More information is available in:
<p>Cost overruns</p>	<ul style="list-style-type: none"> ✓ Plan carefully ✓ Implement sufficient and appropriate contingency plans ✓ Ensure contracts are flexible. 	<p>The Northern Tasmanian Waste Management Group and Dulverton Waste Management (involving 12 member councils in the north and north-west of Tasmania) undertook a preliminary business case assessment of various organics collection options in 2010–11 to determine the most efficient and cost-effective approach for organics diversion in the region. The project resulted in comprehensive financial projections and led to an implementation plan for establishing a pilot trial of the preferred collection scenario. Since that time, a 12-month pilot trial involving 1,000 households has been implemented in collaboration with the Cradle Coast Authority (involving additional member councils in the north-west). The trial is due to be complete in mid-2012 and is providing detailed information on community acceptance, recovery rates, seasonal variations, processing requirements and operational costs. The trial is primarily funded by the regional waste levy; however other costs associated with ongoing planning for future organics collections are able to be distributed among the 17 member councils of Tasmania’s north and north-west regions.</p> <p>The thorough long-term planning process undertaken on a regional basis will help ensure future organics collection and processing contracts are robust, with unexpected costs minimised.</p>	<p>Factsheet 7 – Understanding the Costs and Savings</p> <p>Factsheet 10 – Scheme Design and Roll-Out</p>
<p>Lack of demand for generated products</p>	<ul style="list-style-type: none"> ✓ Ensure council departments use generated recycled organic products ✓ Support market development efforts ✓ Control contamination. 	<p>The Groundswell project, conducted in southern NSW and funded by the NSW Environmental Trust, found the sale prices for compost varied over time and between different geographical locations. An economic analysis undertaken during the project indicated the market value of the compost product averaged \$45/m³ across the region, although prices were as high as \$400/m³ (for 25L bags in Condobolin) and as low as \$15/m³ cubic metre. The analysis found that, even at the lowest compost sale price, the payback period for a council investing in the ‘City to Soil’ organics collection system was 5 years, with a Net Present Value at Year 5 of \$8.63 per household.</p>	<p>Factsheet 5 – Understanding the Processing Options</p>