

Gayle Seddon
Senior Program Coordinator, Metropolitan Waste and Resource Recovery Group





#### MILDURA Mildura Swan Hill Yarriambiack Gannawarra Buloke Moira LODDON MALLEE Hindmarsh Loddon Campaspe WANGARATTA SHEPPARTON Towong ■ WEDDERBURN Creater Shepparton Wangaratta **GRAMPIANS** BENDIGO **NORTH EAST** West Wimmera **CENTRAL WEST GOULBURN** Greater Bendigo VALLEY Mansfield Macedon Murrindindi WOODEND East Gippsland Southern Grampians BALLARAT **GIPPSLAND METROPOLITAN** HAMILTON Golden Plains MELBOURNE Wellington Glenelg Baw Baw **BARWON SOUTH WEST** GEELONG TRAFALGAR Corangamite Latrobe Colac Otway South Gippsland

#### Who we work with

Portfolio partners





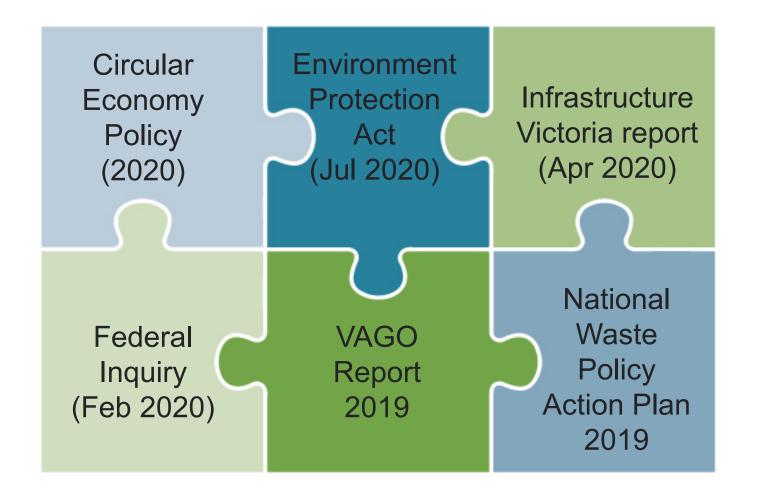


- 6 Regional Waste & Resource Recovery Groups
- 31 metropolitan Melbourne councils





#### Operating context







#### **OUTLINE OF A CIRCULAR ECONOMY**

## The circular economy

PRINCIPLE

1

Preserve and enhance natural capital by controlling finite stocks and balancing renewable resource flows ReSOLVE levers: regenerate, virtualise, exchange



Regenerate Substitute materials Virtualise Restore

Source: Ellen MacArthur Foundation, SUN, and McKinsey Center for

Business and Environment; Drawing from Braungart & McDonough,

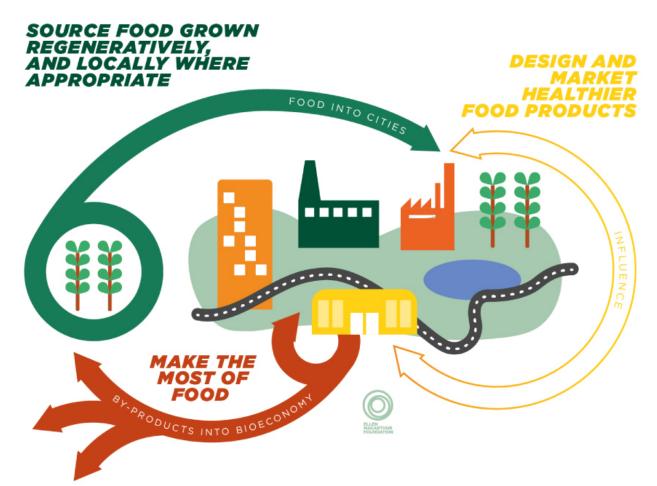
Cradle to Cradle (C2C).

virtualise, exchange Renewables flow management Stock management Farming/collection1 Parts manufacturer Biochemical PRINCIPLE feedstock Product manufacturer Recycle Regeneration Biosphere Optimise resource yields Service provider by circulating products, Refurbish/ components and materials Share remanufacture in use at the highest utility at all times in both technical Reuse/redistribute and biological cycles ReSOLVE levers: regenerate, Biogas share, optimise, loop Maintain/prolong Cascades Collection Collection Extraction of biochemical feedstock<sup>2</sup> PRINCIPLE Minimise systematic Foster system effectiveness leakage and negative by revealing and designing externalities out negative externalities All ReSOLVE levers 2. Can take both post-harvest and post-consumer waste as an input





#### Cities & the Circular Economy of Food



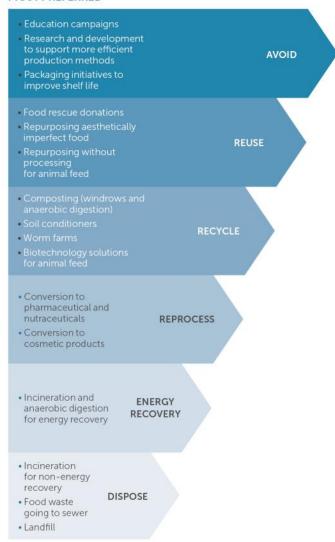
Cities play a crucial role in keeping food at its highest value and eliminating waste. They can become hubs for the redistribution of surplus foods and a thriving bioeconomy where food by-products are transformed into organic fertilisers, biomaterials, medicines, and bioenergy.

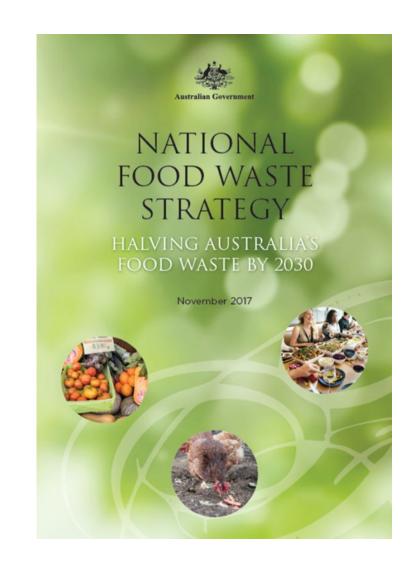
https://www.ellenmacarthurfo undation.org/ourwork/activities/cities-andcircular-economy-for-food



#### Food Waste Hierarchy

#### MOST PREFERRED









# Recycling Victoria A new economy



### New strategies and policies

- Victorian Government's Recycling Victoria - Circular Economy Policy
- Review of the Metropolitan Waste and Resource Recovery Implementation Plan
- New Environment Protection Act 2018 comes into force on 1 July 2021

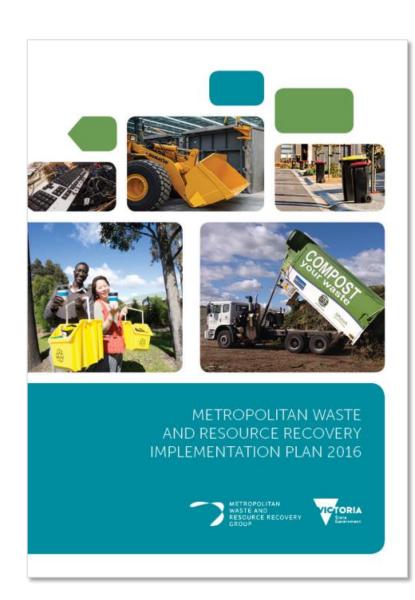




# Four bin waste and recycling system

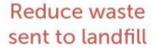
- Four bin waste and recycling system to be rolled out with councils by 2030
- All households have access to:
  - Food and green waste recycling
  - Glass recycling
  - Plastics, paper, cardboard and metals recycling
  - Household waste.





#### Metropolitan Implementation Plan







Increase organic waste recovered



Deliver community, environmental & economic benefits



Plan for Melbourne's growing population





#### MWRRG's value add

- Collaborative procurement
- Contract management
- Stakeholder engagement
- Communications expertise and support
- Capacity building, training and education
- Research, resources e.g. guides, toolkits



# DREAM DESIGN DECIDE DO Just Think.

# FOGO Guide Journey



# How we support councils to recycle food and green waste

- Social research into the best way to encourage high participation, compliance and satisfaction
- Training, resources and support for implementation, service delivery, education and behaviour change.
- Marketing and communications support through the Back to Earth Initiative

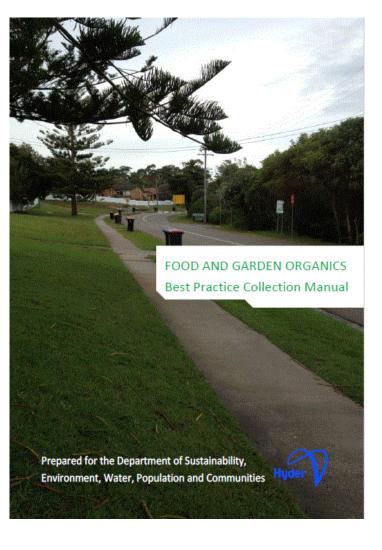
Introducing a kerbside food and garden organics collection service

A guide for local government









#### **Municipal FOGO Services:**

**Success factors** 



Report prepared for Metropolitan Waste and Resource Recovery Group

by Jess Hand and Dr Vivienne Waller,

Swinburne University of Technology

Revised in April 2017 by Metropolitan Waste and Resource Recovery Group



#### Research



















# Components of designing, introducing and maintaining a FOGO service

#### Six Stages



Stage 1: The case for change Why recover food waste?



Design the service Opt-in vs universal, service frequency, bin configuration

Stage 2:



Stage 3: Develop a business case

Preferred service options and specifications, performance measures, implementation plan



Stage 4: Procurement

Contract including agreed specifications, pricing schedules and service delivery plans



Stage 5: Rolling out the service

Project planning, communications and education, container deliveries, monitoring and evaluation



Stage 6: Monitoring and improvement

Expanding the service, ongoing communications, supporting food organics markets





#### Stage 1: Understand the case for change

#### **Organic waste**

35% of total waste sent to landfill

**Nearly half of garbage bins** 

**Significant opportunity to:** 

- reduce landfill reliance
- improve recovery rates

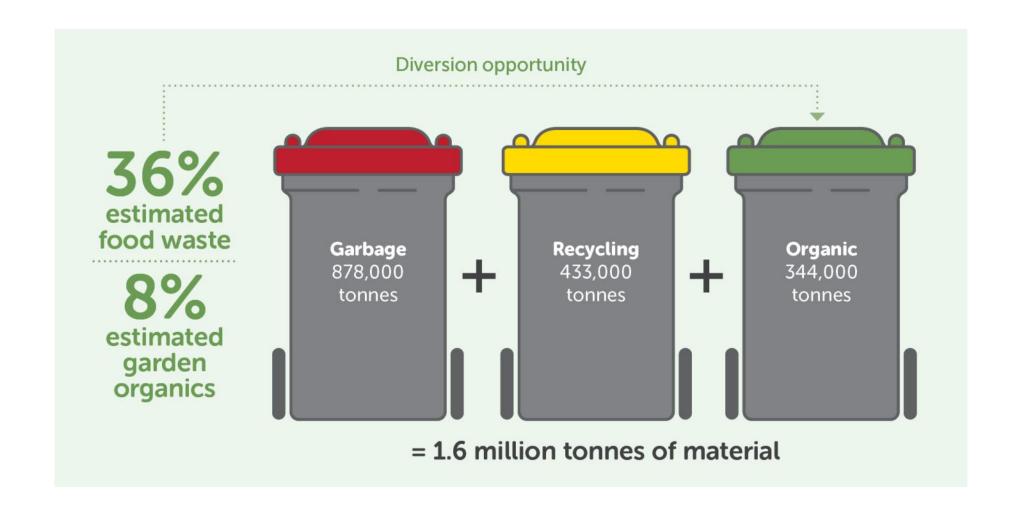


Source: Banyule Council's Towards Zero Waste Management Plan.





#### Organics diversion opportunity



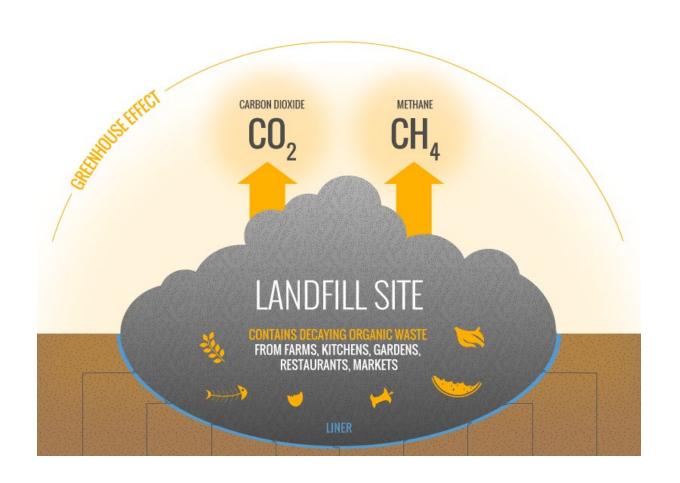




#### Emissions from food waste

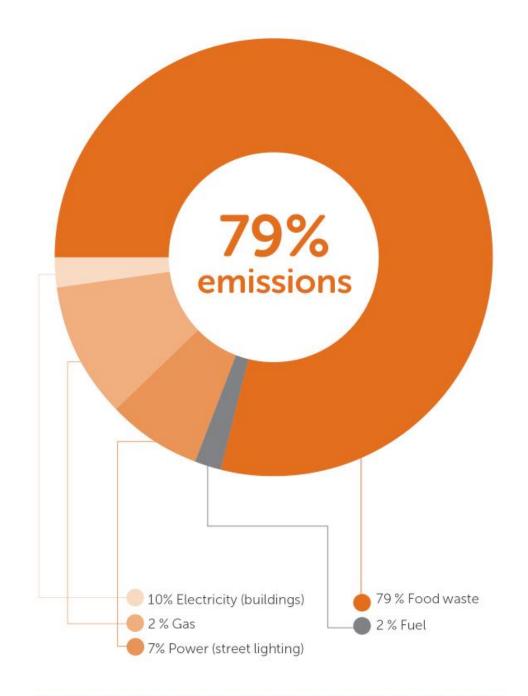
- 250,000 tonnes of avoidable food waste sent to landfill each year from Victorian households
- (1 in 5 shopping bags)
- Potential to generate up to 400,000 tonnes of carbon dioxide equivalent (CO2-e) per year

(Sustainability Victoria, 2014)





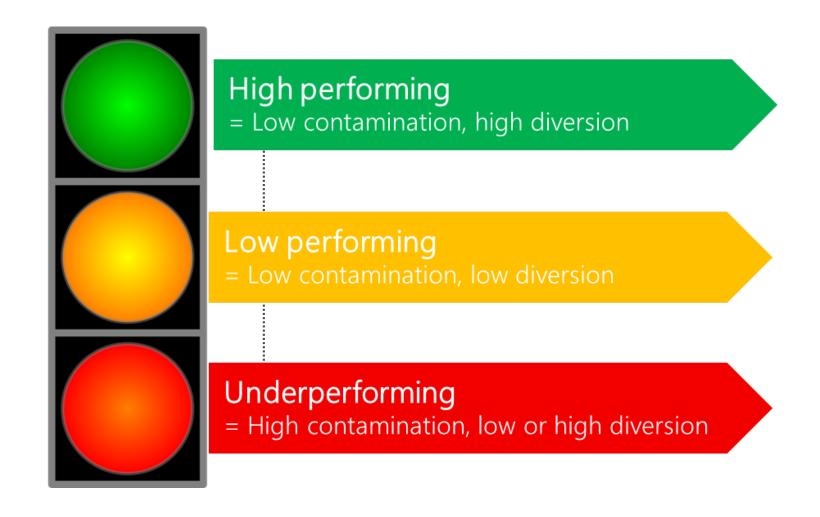




# Community greenhouse emissions



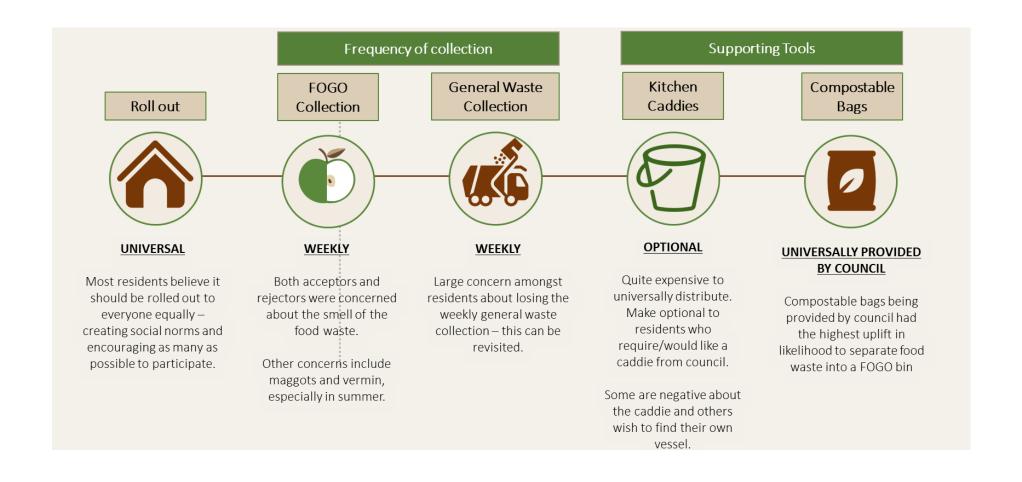
#### Stage 2: Design for success







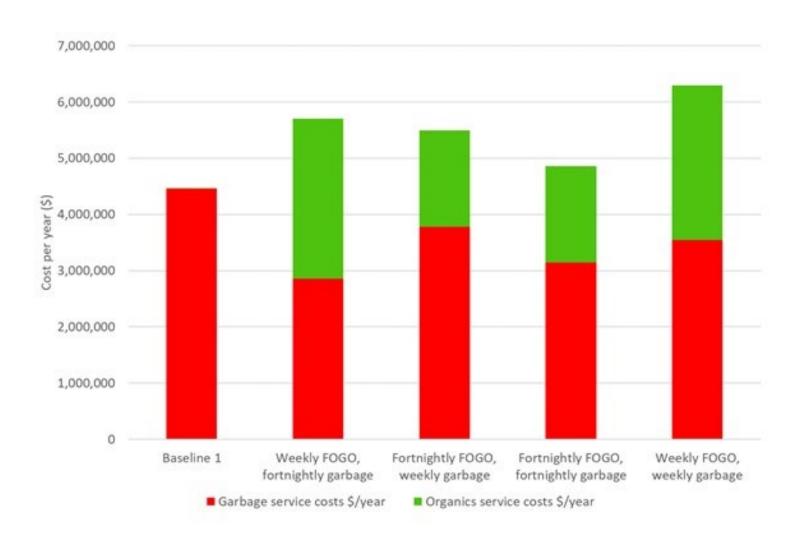
#### FOGO social research findings







## Stage 3: Develop a business case





# Stage 4: Procurement



# Stage 5: Rolling out the service

#### Appendix 3:

#### Project plan schedule example based on City of Glen Eira FOGO service roll out

Action	Responsibility	Status	Notes
Establish residual waste baseline aggregated data - seasonal variation			
Establish organics baseline aggregated data - including seasonal variation			
Assess greenhouse gas emissions from community waste			
Conduct demographic analysis to determine FOGO acceptance			
MWRRG collective organics contract liaision: Identify waste and organics contract timeframes for introduction of FOGO			
Assess performance of opt-in or universal organics collection service			
Trial - Identify trial community			
Full Service - plan a phased roll out across the community			
Conduct community survey to determine FOGO acceptance			
Set targets for FOGO diversion			
Use the FOGO Guide model to assess FOGO performance options			
Develop business case for FOGO			
Develop RFQ for feasibility study for FOGO service to inform council about the options to introduce FOGO			
Complete MWRRG FOGO Implementation Plan			
Establish cross functional FOGO project team with roles and responsibilities - e.g. waste management, operations, education, communications, research, customer service, contractors			
Appoint project coordinator			
Determine project structure			
Develop detailed project plan including: communication and education plan, risk management plan - contamination management, monitoring and evaluation plan			
Plan bin inspection program: visual bin inspections, face to face engagement with residents, truck audits			





### Social research: 71% accept FOGO

The FOGO Concept has very broad overall appeal. 71% of respondents were FOGO Acceptors (rated appeal 7 to 10).



F1. On a scale of 0-10 where 0 is "not at all appealing" and 10 is "very appealing, how appealing do you find this new bin concept?

BASE – all respondents n=1004





# Understand your community

Based on their behaviours and attitudes survey respondents broadly fell within four segments:

#### FOGO lovers - 28%

- Love the FOGO concept
- Very likely to use the FOGO bin
- High food recycling
- Very unlikely to contaminate

This segment loved the FOGO concept, would be likely to use a FOGO service and appeared unlikely to contaminate it.

This group would be the easiest to manage and could become advocates for the FOGO service.



#### FOGO's OK - 40%

- Like the FOGO concept
- Likely to use the FOGO bin
- Average food recycling
- May contaminate

The biggest segment, this group liked the concept and were likely to use the service. This group is a key demographic as they are less likely to already use some kind of home based solution compared to the FOGO lovers. However, this segment may contaminate based on their current reported experiences with the recycling bin.

Engagement, education and support would be critical for appealing to this group to ensure success of the service.



#### Non food recyclers - 22%

- Dislike the FOGO concept
- Unlikely to use the FOGO bin
- No food recycling
- Likely to contaminate

This group disliked the FOGO concept and said they would be unlikely to use the service.

This is the segment most likely to resist the concept of a FOGO service and respond negatively. Education and enforcement would be required to manage this segment of the community.

#### Composters - 10%

- Dislike the FOGO concept
- Unlikely to use the FOGO bin
- Very high food recycling
- Unlikely to contaminate

This group reported being unlikely to use the service because they were happy with the food recycling systems they had in place. This segment would be unlikely to contaminate the FOGO bin.

Although this segment reported they were unlikely to participate, there are opportunities to promote FOGO as a service that will allow them to recycle the food scraps they would be unlikely to place in a worm farm or compost heap such as citrus, meat scraps etc.

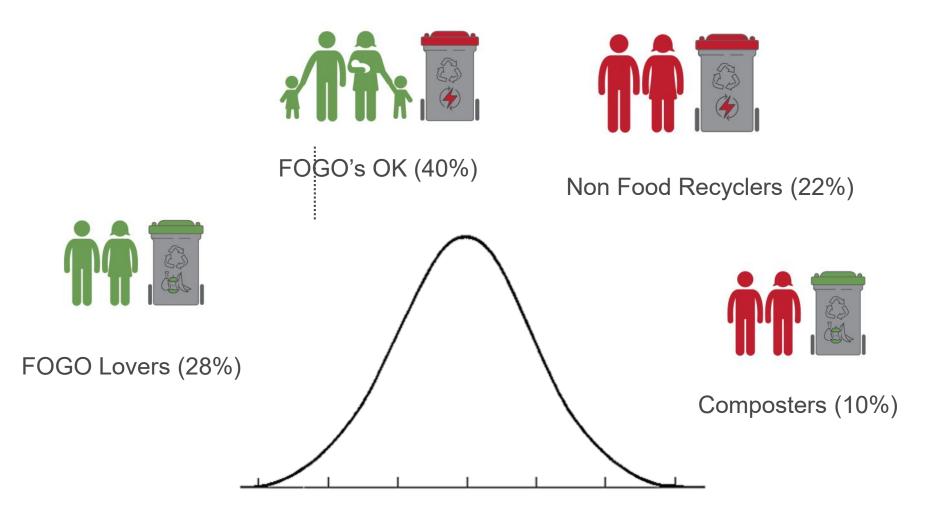








#### Community attitudes towards FOGO





















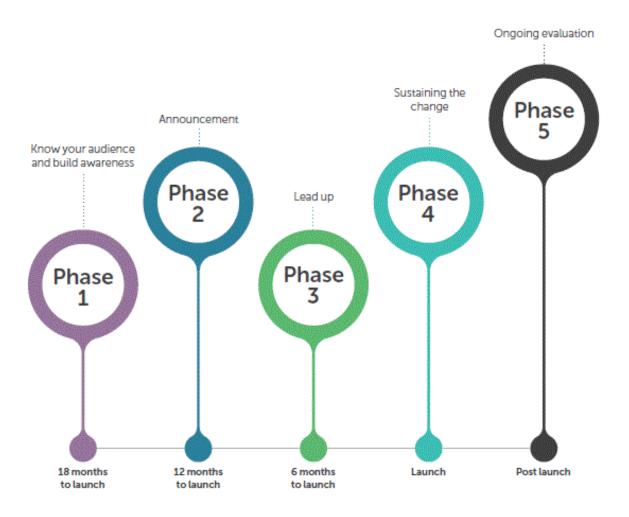




#### Communications timeline

#### Communications and community education plan timeline

The plan has been designed in five phases.





# Stage 6: Monitoring and improvement

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#### Challenges: Multi unit developments





# Section 6: Post implementation













Councils use compost on parks and gardens



#### Resources for councils

- Introducing a kerbside food and garden organics collection service A guide for local government
- Evidence based guidelines for communicating food waste recycling
- Back to Earth Initiative
- Behaviour change training/workshops
- Monitoring & Evaluation Program logic training







#### Back to Earth Initiative















#### What is the Back to Earth Initiative?

- The Back to Earth Initiative is a communications and social marketing campaign to get residents to use their council food and/or green waste collection service correctly.
- The Back to Earth Initiative was launched in 2013 to support the launch of green waste recycling contracts.
- Refreshed last year in conjunction with councils, AORA and Sustainability Victoria to incorporate food waste recycling.



### Resources for councils

- dedicated website
- Facebook page
- Victorian Garden Competition
- compost donations
- events toolkit
- print collateral
- digital collateral

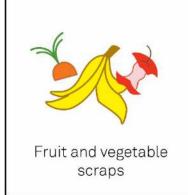
- graphic design support
- do and don't icons
- image library.

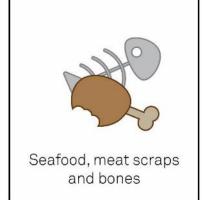
### Back to Earth Initiative

MWRRG provides a package of communications/marketing resources and support for councils. Councils must commit to:

- the Victorian Garden Competition
- one social media post each month (Dec June)
- three other actions e.g. inclusion in an enewsletter, promoting it at an event, providing compost donation to a community group
- adhering to Back to Earth Initiative style guide.









## Back to Earth Initiative

- 29 councils joined
- Councils are using social media, print collateral, events toolkit and providing compost donations to community groups.
- Winners receive \$5,000 for gardening project



# Challenges: kerbside bin contamination









# Correct use of bags/wrapping











## Nillumbik Shire Council

- Since 2003, universal three-bin system
  - Weekly food and garden waste
  - —Fortnightly recycling
  - —Fortnightly landfill
- Composting facility closed, organics had to be sent to landfill for 5 years
- Since April 2014 organics composted again, but contamination became a problem



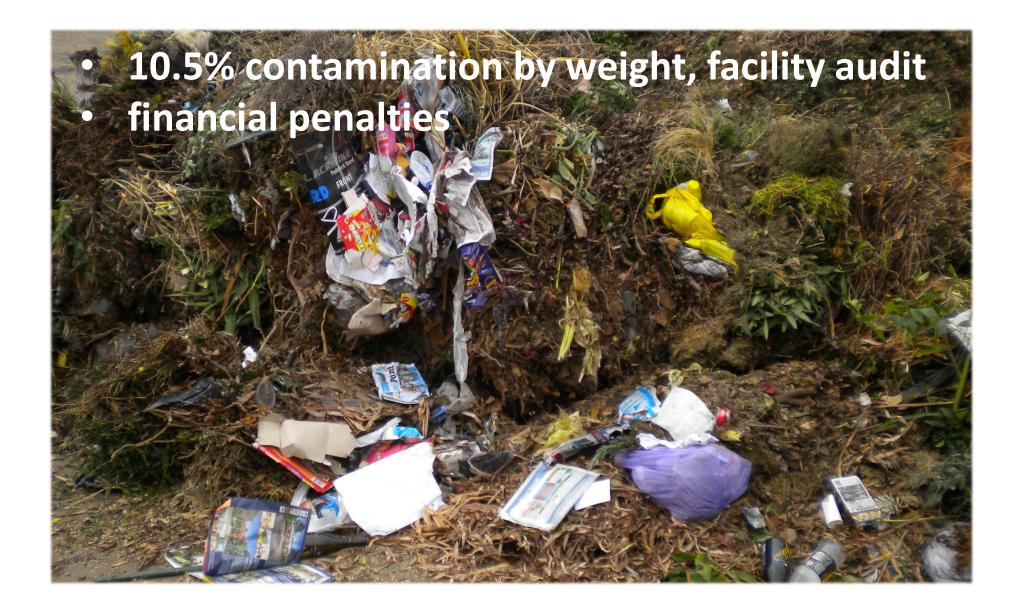








## Problem: too contaminated to compost









Ten-year-old Hayley and eight-year-old Arry commit to a conternination-free green bin.

### From your green bin back to earth

Food scraps and garden waste recycled in your green bin creates compost and mulch for Victoria's farms, parks and gardens.

Like Jonny and her daughters eight-yearold Arry and 10-year-old Hayloy, please check you're using your bins correctly.

"Wo've always wondered what happens once the truck empties our birs. Knowing that garden materials and food scraps are turned into compost and mulch cortainly makes us want to recycle our organic wasto correctly," John said.



Gardon waste includes things like olippings. small branches, grass and woods, and food scraps include fruit, vegetable, dairy, meet and bones.

The incorrect items most commonly found in groon bins in Nillumbik are:

- plastic bags (loose and containing food scraps or garden materials)
- food packaging
- glass nappias

"One of the important things we've learned is plastic bags that say they're biodogradable or compostable are not diay for our green bin. But it's good to know that we can wrap our food scraps in a small amount of newspaper or paper towol," Janny said.

Committed to using their bins correctly and ancouraging others to do the same, Janny, Army and Hayloy are proud to display a "We put our green waste to good use' sticker on their green bin.

Receive your sticker by pledging your commitment to a contamination-tree

groon bin at www.nitlumblk.vic.gov.au/ myplodge.

Council is doing a number of things to remind residents about what goes in each bin and reduce confamination. As part of a broader campaign, all residents should have received a green waste brochure and 2014-2015 kartside waste collection calendar in the mail. Please contact Council If you have not received your calendar.

Some residents may find an orange raminder sticker on their bin on collection day, which alorts them about incorrect floms in their bin or other problems, for example, if the bin is too heavy or too overfilled to be picked up.

A bin inspection program featuring thank you and reminder stokers is helping residents identify and remove incorrect florrs, as wall as halping Council datarmine problem floms, morifor contamination levels and provide feedback to the community.

Learn more about Nillumbik's waste services at www.nillumblk.vic.gov.au/ waste and discover more about the journey green waste takes beyond the kortisklo at backtoearth.vic.gov.au.





WHAT YOU CAN RECYCLE IN YOUR GREEN BIN

and flowers



### **EVER WONDERED WHAT** HAPPENS TO YOUR **GREEN WASTE AFTER** IT'S PICKED UP?

More than 8,000 tonnes of kerbside groon wasto is collected in Nillumbik. each year. Council now sends it to a now purpose-built organics recycling facility in Bulla. The facility uses In-vessel composting technology and can process 85,000 tornes of organic wasto a year, making it the largest of its kind in Victoria.

it's important to put only garden and food waste in your green bin.

Bocause not everyone recycles correctly, the green waste must be decontaminated once it arrives at the processing plant. This costly and time consuming task involves manual removal of the non-organic waste, things like plastic bags, napples, glass, plant pots, bricks and building materials.

A screening process separates smaller from larger pieces of green waste. Smaller places go straight into the composting vassels. The large places are shredded to reduce their size before being moved into the composting vassals.

The vessels work like a compost bin at home where microorganisms break It down. In-vessel composting takes place over 10-14 days and generates temperatures up to 60°C. This process klls any woods, soods, harmful bactoria and other pathogens, to meet Australian compost standards. A loader removes the compost and takes it to be screened for the final time.

Two grades of compost are produced, one coarsor and one finer. Some of the product is stored on site for maturation. Most of the product is loaded into large trucks and transported for use on Victoria's farms, parks and gardons. it enriches the soil, grows healthy loods for the community and keeps our gardens and public spaces blooming.

# **Positive** campaign

Nillumbik News, 2014 Winter edition





## Bin inspections

- Targeted every household
- 12 % of bins contaminated
- Biggest problems:
  - Food packaging
  - Plastic bags
  - Household rubbish

### Please use your bins correctly



Help us reduce contamination in Nillumbik's waste and recycling bins. As part of an ongoing program, your bin was inspected today and found to contain incorrect items.

#### THIS STICKER:

reminds you that the below items are not suitable for this bin

RECYCLE BIN

Bags of rubbish

soft plastics)

Polystyrene/foam

Nappies

Other

soft plastic packaging/wrappers

Bagged recycling (other than

Garden materials or food scraps

lets you know why your bin has not been emptied

### This bin is contaminated with:

#### GREEN BIN Loose plastic bags or

- Plastic bags or bin liners including those labelled 'biodegradable' or 'compostable')
- Food packaging
- Glass Bags of rubbish
- Nappies
- Rocks and soil

Please remove the items before your next collection.



Food scraps - fruit, vegetables,

dairy, broad, pasta, rico, most,

small bones, tea bags and coffee

leaves, flowers, grass, small

### RECYCLING % Collected fortnightly















Collected fortnightly

To speak with a council officer for recycling advice or about the bin inspection program, call 9433 3111. For more information about what to put in each of your bins, visit www.nillumbik.vic.gov.au/waste

Thank you for helping us reduce contamination in Nillumbik's recycling and green waste.



### Well done and thank you



As part of an ongoing program to help residents identify and remove incorrect items, your bin was inspected today.

#### It was free of contamination - thank you.

Please help us improve the recycling and composting process by continuing to use your bin correctly and encouraging your friends, family, neighbours and colleagues to do the same.



Collected weekly and turned into compost



Food scraps - fruit, vegetables, dairy, bread, pasta, rice, meat, small bones, tea bags and coffee grounds (loose or wrapped in newspaper or paper towel)



Garden materials - clippings. leaves, flowers, grass, small branches and weeds



#### RECYCLING \* (YELLOW LID)

Collected fortnightly and recycled



glass bottles and jars. aluminium/steel cans and trays, foil, pots and pans, plastic toys and plant pots



and cartons



Bundled plastic bags and other flexible/soft plastics



Collected fortnightly and goes to landfill



Broken pyrex, crockery, window glass, drinking alasses and mirror



Loose cardboard, paper





Household rubbish. nappies, polystyrene and foam



To speak with a council officer for recycling advice or about the bin inspection program, call 9433 3111. For more information about what to put in each of your bins visit www.nillumbik.vic.gov.au/waste

Thank you for helping us reduce contamination in Nillumbik's recycling and green waste.

f www.facebook.com/nillumbikcouncil @nillumbikshire www.nillumbik.vic.gov.au











## Outcome



















On a recent, typically tropical, 38° day in early December, Hume City Council and its Business Efficiency Network was delighted to welcome MWRRG (Metropolitan Waste Resource Recovery Group) and its council members, along with local businesses to a Paddock to Plate to Park event at the Craigieburn GLC and thereafter to view recent tree plantings at nearby Anzac Park using food waste derived organic fertilisers developed by Hume business Circular

6 December 2018

Declan McDonald, Soil Scientist with SESL Australia traversed widely on bacteria, fungi, and the science of soil and was followed by a series of experienced

presenters in the fields of organics recycling including Steve Morriss of Circular Food and Vanessa Lenihan from Biomix, Jack Ahern from West Packaging Services described some innovative work that his company and

Anzac Park

Hume business Futamura are doing in compostable films.



Hume City Council's Manager Parks, Jason Summers explained council's greening programs and led the tour of Anzac Park













# Food waste recovery solutions





Sharing food waste solutions business networking breakfast



# Food waste recovery solutions



Networking events 'Paddock to Plate' tour – Oct 2018





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https://www.mwrrg.vic.gov.au/waste/organics/food-organics-and-garden-organics-fogo/

Thank you and questions



