Organic Material Collection and Composting

Activity Management Plan

Long Term Plan 2015–2025

1 September 2014

Christchurch City Council

Quality Assurance Statement

Christchurch City Council Civic Offices 53 Hereford Street PO Box 73015 Christchurch 8154 Tel: 03 941 8999	**Version**	**V 1 29 October 2014**
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1 Key Issues for the Organic Material Collection and Composting Activity

The Council provides organic collection and green waste drop off services to maximise the beneficial use of this resource and to minimise waste.

To meet our obligations in the Solid Waste Management Plan 2013, Sustainability Policy as approved by Council, and Waste Minimisation Bylaw.

To provide an economically sensible way to reuse organic material rather than disposal to landfill.

1.1 Community Outcomes

Everything that the Council does in its day-to-day work is focused on achieving community outcomes. All activities outlined in this plan aim to deliver the results required to achieve these outcomes, contribute to Council strategies and meet legislative requirements. Likewise, all Council capital and operating expenditure is directed towards a level of service that moves the community closer to these outcomes now or at some future point.

The main Community Outcome groups are:

- Liveable City
- Strong Communities
- Healthy Environment
- Prosperous Economy
- Good Governance.

The way the solid waste assets are used for refuse minimisation and disposal contributes to the Council's community outcomes is detailed in the Waste Management and Minimisation Plan (2013). The effective management of Organic Material Collection and Composting for Christchurch means achieving the community outcomes that:

- Result in a reduction in residual waste going to landfill. This will be achieved by:
    - Providing a convenient, reliable, safe and cost effective collection service
    - Operating an efficient Organics Processing Plant (OPP)
    - Producing compost which is primarily being used by the Canterbury farming community to improve productivity and reduce the need for the importation of artificial fertilizers.
- Extend the life of Kate Valley landfill by diverting organic waste from that facility.
- Injuries and risks to public health are minimised
    - Providing convenient, reliable and safe residual waste management services and facilities minimises the health and environmental risks of residual waste.
- Statutory obligations are met by the council.
- City assets, financial resources and infrastructure are well managed, now and in the future

Section 4 shows how these outcomes flow down into and influence the Council's activities and levels of service in relation to Organic Material Collection and Composting.

1.2 Effects of growth, demand and sustainability

Describe how our population growth and demand effects the decisions Council will make in delivering services to ensure that they are sustainable and will meet the needs of the people of Christchurch into the future.

Population Growth and Demand:

A forecast of population growth has been used to determine where and when Council infrastructure needs to be developed and at what capacity. Council has considered the influence of changing demographics,

community expectations, industrial/commercial demand, technology and legislation on the demand for this service. As a result of the 2010 / 2011 earthquakes Council has:

- seen a reduction in population from previous census and growth forecast models;
- has revised population growth figures based on the latest census and current rebuild influences
- carried out a major wheelie bin collection re-routing exercise to reflect the impact of the closure of the residential red zone, population shift and housing developments in the South-West and North-West of the city.

The change in growth projections has had no material impact on the collection of kerbside wheelie bins or the processing capability of the OPP. The original OPP design factored in the need for an additional three processing tunnels after the first seven years of operation (by 2016). However, lower than predicated growth and modified processing methodology means these are no longer needed. There are no major growth and asset renewal projects. Therefore no major works are required to be factored in and therefore no projects are listed in Table 10-1.

Sustainability:

The Local Government Act 2002 requires local authorities to take a sustainable development approach while conducting its business. Sustainable development is the fundamental philosophy that is embraced in Council's Vision, Mission and Objectives, and that shapes the community outcomes. The levels of service and the performance measures that flow from these inherently incorporate the achievement of sustainable outcomes.

1.3 Key Challenges and Opportunities for Organic Material Collection and Composting

In working towards the community outcomes and influenced by population growth and demand, Council faces the challenge of making decisions that prioritise resources to deliver the best mix of services at the right level and in a sustainable way. The key challenges and opportunities that have been priorities by Council are below in Table 1-1.

Table 1-1

Key Issue	Discussion
Organic material still being placed in the red bin	An audit of the red bins in 2011-2012 showed that there is still approx 3.8 kg per bin – or 32% of the contents of the red bins – which could be composted instead of going to landfill. We will continue to promote the use of the green and yellow bins correctly in order maximise diversion from landfill while keeping contamination at a minimum.
Use of biodegradable and compostable plastics	We continue to be concerned at the increased use and promotion of biodegradable and compostable plastic packaging by manufacturers and suppliers who do not consider the life cycle of the product. These products cannot be composted at the OPP due to the time cycle of the composting process. Also, if received at the MRF they result in downgrade of product and reduced sale price (see comment in Recyclables ActMP)
Organics bin contamination	Clopyralid and arsenic contaminate the final compost product which must achieve NZS Compost standard. Continuing education programme to increase public awareness is required.

2 Proposed changes to activity

Table 2-1 summarises the proposed changes for the management of the Organic Material Collection and Composting activity since the Three Year Plan 2013-16 Activity Management Plan.

Table 2-1 Proposed changes to activity

Key Change	Reason	Level of significance? What investigations are needed?	Options for consultation and engagement
No changes planned	The implementation of the new solid waste kerbside collection system was set up in 2009 with a 15 year timeframe in mind. The contracts are all 15 year performance contracts.	Cost effective solution is in place. Investigations were carried out and trials implemented prior to the introduction of the current service. Rate payer satisfaction remains high – therefore no further investigations required at this time.	Not applicable

3 Activity description

3.1 Focusing on what we want to achieve

Council undertakes activities in order to deliver on the community outcomes for Christchurch. The outcomes that relate most directly to the management of the city's Organic Material Collection and Composting network are that:

Compostable materials are diverted from landfill.

3.2 How we will know we are achieving the outcomes

We will know we are achieving the above outcomes when we see the following results:

- **Organic waste management services** and facilities are provided that **are convenient, reliable and safe**.
- **The beneficial use of** collected and composted **organic material is maximised** to encourage diversion of organic waste material from to landfill.
- The composting operation **continues to provide cost benefit to ratepayers** by diverting waste from landfill.
- The **diversion of waste** from landfill **extends the life of the Kate Valley landfill**
- The **reduction achieved in health and safety incidents** with the collection **contractors will be maintained** through the automated lifting/collection system.
- The **improved cleanliness of city streets** achieved through the introduction of the wheelie bin system will be **maintained**.

The activities that follow in section 4 and the levels of service within them are all linked to the above results to ensure Councils stays focused on moving towards the community outcomes. This link aims to confirm why we are doing the activities – that they will realistically move us closer to our goals – and that service delivery remains relevant to strategic direction.

3.3 What services we provide

This activity includes the following services:

- Domestic kerbside collection is provided weekly for organic material (food and garden waste). The number of bins in service as at July 2014:
    - 150,483 - 80 litre bins in service
    - 4,306 - 240 litre enhanced service bins in service
    - 23 large bins
- Organics processing, including operation of the composting plant. In 2013/14:
    - 50,000 tonnes of kerbside wheelie bin material processed
    - 7,700 tonnes of greenwaste was dropped off at the facility. An additional 7,000 tonnes of greenwaste was dropped off at Styx and 8,400 tonnes at Parkhouse
    - 1,200 tonnes of commercial organic material processed at OPP
    - 200 tonnes of riverweed was also processed at OPP reducing costs to Land Drainage activity

As a result of 22 February 2011 earthquake and subsequent aftershocks, structural damage occurred at the Council's Organics Processing Plant.

The Organics Processing Plant's biofilter, composting tunnel structure, receivals hall, pavement area and site drainage facility were all damaged.

Temporary repairs enabled the plant to resume operations three months after the earthquake, but with only half of the plant's tunnel complex being fully operational. The building repairs are now complete and the plant is fully operational. Site works and drainage repairs are still to be completed, with work programmed to be undertaken in the second half of 2014.

3.4 Benefits and Funding Sources

3.4.1 Who Benefits?

Who benefits?	
Individual	
Identifiable part of the community	
Whole community	Full

Key:
Full
Majority
Some

Explanatory Comments:

The entire community benefits from this activity.

There are health and environmental benefits from an organised collection processing system for the whole community

3.4.2 Who pays?

Funding - Fees / User Charges	Other revenue Grants & Subsidies	General rate	Targeted rate
21%	4%	0	75%
Some	Some		Majority

Note, Funding Split % is derived from the 'Summary of Cost for Activity' (section 13).

Key:		Typically
Full	*All or almost all the cost is funded from that source. If the comment is made in the general or targeted rate columns it does not preclude making minor charges for the service but indicates that the charges are a negligible part of the fund.*	*95%+*
Majority	*The majority of the activity is funded from this source.*	*50%+*
Some	*Some revenue is derived from this source.*	*<50%*

Does this Activity generate surplus funds that can be applied to other areas? **No**

Explanatory Comments:

The cost of this activity is primarily funded from Targeted Rate. Individuals who receive kerbside collection pay 100% of that rate, while those on Banks Peninsula who only have access to drop off facilities pay 75%.

3.5 Key legislation and Council strategies

- CCC Waste Management and Minimisation Plan 2013
- Waste Management Bylaw 2008
- Waste Minimisation Act 2008
- Local Government Act 2002
- Hazardous Substances and New Organisms Act 1996
- Health Act 1956
- Resource Management Act 1991.
- Health & Safety in Employment Act 1992
- Other relevant Acts, Regulations, Bylaws and strategies are detailed in the Solid Waste Asset Management Plan

4 Levels of service and performance measures

Table 4-1 summarises the levels of service and performance measures for the Organic Material Collection and Composting activity. Shaded rows are the levels of service and performance measures to be included in the Long Term Plan. Non-shaded rows are non-LTP management level measures, agreed with and reported to Council but not included as part of the community consulted document.

Table 4-1

Performance Standards Levels of Service (we provide)		Results (Activities will contribute to these results, strategies and legislation)	Method of Measurement (We will know we are meeting the level of service if…..)	Current Performance	Benchmarks	Future Performance (targets)			Future Performance (targets) by Year 10
						Year 1	Year 2	Year 3	
						2015/16	2016/17	2017/18	2024/25
Domestic kerbside collection for organic material (food and garden waste)									
8.2.1	Amount of organic material collected at Council facilities and diverted for composting	*Organic material is collected for composting to minimise the landfilling of waste and encourage the beneficial use of the city's organic resources.*	*Measuring the organic material diverted from landfill by Council facilities and diverted for composting and used for beneficial purposes. Supports & delivers Council's Sustainability Policy and Solid Waste Management Plan 2013.* *Quantity of greenwaste received as reported and recorded in OP10 divided by population*	*2013/14* *193.70 kg / person* *2012/13* *184.51 kg / person* *2011/12* *180 kg / person / year (67,320 tonnes)*	*Timaru District Council reported 333 kg / person/ year organic waste composted* *Coffs Harbour Council, NSW, reported 177kg/ person /year* *Penrith City Council, NSW, reported 145 kg /person/ year*	Greater than 185 kg +30%- 10% organic material collected at Council facilities and diverted for composting facility / person / year	Greater than 185 kg +30%/- 10% organic material collected at Council facilities and diverted for composting facility / person / year	Greater than 185 kg +30%/- 10% organic material collected at Council facilities and diverted for composting facility / person / year	Greater than 186 kg +30%/- 10% organic material collected at Council facilities and diverted for composting facility / person / year

Performance Standards Levels of Service (we provide)		Results (Activities will contribute to these results, strategies and legislation)	Method of Measurement (We will know we are meeting the level of service if.....)	Current Performance	Benchmarks	Future Performance (targets)			Future Performance (targets) by Year 10
						Year 1	Year 2	Year 3	
						2015/16	2016/17	2017/18	2024/25
8.2.2	Kerbside wheelie bins for organic material emptied by Council	*Kerbside collection services encourage community participation helping to minimise waste*	*Measuring and managing collection performance for kerbside collection services and ensuring high quality organic feedstock for the Organics Processing Plants* *As reported monthly by contractor*	*2013/14: 99.80%* *2012/13: 99.80%* *2011/12: 99.75%* *2010/11: 99.76%* *2009/10: 99.89%*	*Timaru District Council only provided information on presentation rate not on % collection achieved.* *Coffs Harbour Council NSW only provided information on presentation rate not on % collection achieved.* *Penrith City Council, NSW 2013/2014 99.9%*	At least 99.5% kerbside wheelie bins for organic material, emptied when correctly placed at the kerbside each week	At least 99.5% kerbside wheelie bins for organic material, emptied when correctly placed at the kerbside each week	At least 99.5% kerbside wheelie bins for organic material, emptied when correctly placed at the kerbside each week	At least 99.5% kerbside wheelie bins for organic material, emptied when correctly placed at the kerbside each week

Performance Standards Levels of Service (we provide)		Results (Activities will contribute to these results, strategies and legislation)	Method of Measurement (We will know we are meeting the level of service if.....)	Current Performance	Benchmarks	Future Performance (targets) Year 1 2015/16	Year 2 2016/17	Year 3 2017/18	Future Performance (targets) by Year 10 2024/25
8.2.3	Customer satisfaction with kerbside collection service for organic material	*Kerbside collection services encourage community participation helping to minimise waste*	*Measuring and managing customer satisfaction with Council kerbside collection services* *Annual resident survey*	*2013/14: 82%* *2012/13: 83%* *2011/12: 82%* *2010/11: no survey* *2009/10: 77%*	*Timaru District Council Annual Report 2010/11* *90% satisfaction with waste management services* *Coffs Harbour Council's 2012 Community Survey indicated high satisfaction with the Waste and Recycling Service* *Penrith City Council 2013: 99%*	At least 80% of customers satisfied with Council's kerbside collection service for organic material each year	At least 80% of customers satisfied with Council's kerbside collection service for organic material each year	At least 80% of customers satisfied with Council's kerbside collection service for organic material each year	At least 80% of customers satisfied with Council's kerbside collection service for organic material each year
Organics processing, including operation of the composting plant									

Performance Standards Levels of Service (we provide)		Results (Activities will contribute to these results, strategies and legislation)	Method of Measurement (We will know we are meeting the level of service if.....)	Current Performance	Benchmarks	Future Performance (targets)			Future Performance (targets) by Year 10
						Year 1	Year 2	Year 3	
						2015/16	2016/17	2017/18	2024/25
8.2.4	Proportion of incoming organic material that is contaminated and sent to landfill	*Community understanding and behaviour along with decontamination systems produce compost that meets national standards which enables the beneficial use of organic resources and minimises waste*	*Measuring the level of contamination of incoming organic material to be processed by the Organics Processing Plant.* *Also measures the effectiveness of public education initiatives to achieve the right kerbside behaviour.* *Note there has been a change from decontamination at the front-end of process to end-of-process decontamination. This has meant waste recirculation onsite which has resulted in less waste to landfill.* *Weight of waste to landfill as a percentage of organic material received*	*Contamination levels:* *2013/14: 0.12%* *2012/13: 0.16%* *2011/12: 0.07%*	*Timaru District Council reported the following contamination % : 2013/14: <0.01%* *Penrith City Council – contamination: 2013 7.16% (2,127 tonne sent to landfill).* *Coffs Harbour Council – contamination 2.07% by weight*	Less than 2.5% (by weight) contamination of incoming organic material	Less than 2.5% (by weight) contamination of incoming organic material	Less than 2.5% (by weight) contamination of incoming organic material	Less than 2.5% (by weight) contamination of incoming organic material

Performance Standards Levels of Service (we provide)		Results (Activities will contribute to these results, strategies and legislation)	Method of Measurement (We will know we are meeting the level of service if.....)	Current Performance	Benchmarks	Future Performance (targets)			Future Performance (targets) by Year 10
						Year 1	Year 2	Year 3	
						2015/16	2016/17	2017/18	2024/25
8.2.5	Consent compliance for operation of Council's Organics Processing Plant	*Council provides environmentally sound organic processing and meets legal obligations*	*Measuring compliance with Resource Consent conditions and City Plan regulations as reported by Environment Canterbury and Christchurch City Council. Note the Organics Processing Plant is operated and maintained under long-term contract.*	*Zero breaches of resource consents by Council's solid waste facilities* *No abatement notices served.*	*Timaru District Council* *100% compliance with resource consents for Council waste management facilities* *Coffs Harbour Council* *2 non compliances in 2013 (last reporting year)*	*No major or persistent breaches of consents set for the Council's Organics Processing Plant each year, as reported by Environment Canterbury or Christchurch City Council*	*No significant and/or repeated minor breaches of consents set for the Council's Organics Processing Plant each year, as reported by Environment Canterbury or Christchurch City Council*	*No significant and/or repeated minor breaches of consents set for the Council's Organics Processing Plant each year, as reported by Environment Canterbury or Christchurch City Council*	*No significant and/or repeated minor breaches of consents set for the Council's Organics Processing Plant each year, as reported by Environment Canterbury or Christchurch City Council*
8.2.6	Quality of compost produced by Council's Organics Processing Plant	*Compost meets national quality standards supporting the beneficial use organic material*	*Measuring the quality of compost being produced by Council's Organics Processing Plant.* *The quality standard provides Council with confidence when applying this material to Council owned open spaces.* *Quality also aids the sale of the product*	*Compost meets New Zealand Compost Standard 4454:2005*	*New Zealand Compost Standard NZCS 4454:2005* *Timaru District Council Compost meets NZCS 4454:2005* *Coffs Harbour Council meets the Australian Compost Standard 4454* *Penrith City Council – used for mine rehabilitation.*	100% compost sold by Council's Organics Processing Plant meets requirements of New Zealand Compost Standard 4454:2005 each year	100% compost sold by Council's Organics Processing Plant meets requirements of New Zealand Compost Standard 4454:2005 each year	100% compost sold by Council's Organics Processing Plant meets requirements of New Zealand Compost Standard 4454:2005 each year	100% compost sold by Council's Organics Processing Plant meets requirements of New Zealand Compost Standard 4454:2005 each year

5 Review of cost effectiveness - regulatory functions and service delivery

The Local Government Act requires local authorities to review the cost effectiveness of current arrangements for delivering its services and regulatory functions

A review need not be undertaken if

- Delivery is governed by legislation, contract or other binding agreement that cannot be reasonably altered in the next two years.
- The benefits to be gained do not justify the cost of the review.

A review must be undertaken

- In conjunction with the consideration of any significant change to service levels
- Within two years before the expiry of any legislation, contract or other binding agreement affecting the service
- Not later than 6 years after any previous review.

A review must consider each of options 1 to 9 in the table below. Option 10 is discretionary.

Governance	Funding	Delivery	Option
CCC	CCC	CCC	1
CCC	CCC	CCO (CCC sole shareholder)	2
		CCO (CCC one of several shareholders)	3
		Other local authority	4
		Other person or agency	5
Joint Committee / Shared Governance	Joint Committee / Shared Governance	CCO (CCC sole shareholder)	6
		CCO (CCC one of several shareholders)	7
		Other local authority	8
		Other person or agency	9
Other arrangement	Other arrangement	CCC or other arrangement	10

This section considers reviews for regulatory functions and service delivery.

The provision of both the collection and processing components of this service are being carried out under 15 year contracts awarded in 2008, with commencement date in 2009 and completion date of 31 January 2024.

These contracts were awarded following an interactive, international tender process. This process identified fifteen year contracts to be most cost effective. These contracts cannot be reasonably altered without cost penalty.

Service: Organic Material Collection & Processing

Current Arrangements			
Governance	**Funding**	**Delivery**	Estimated Cost
CCC	CCC	CCC Contractor	$18.6m pa

Arrangements that cannot reasonably be changed in next two years			
Governed by Legislation	**Contract or binding agreement**	**Not cost effective to review**	**Option**
	Contract with Waste Management NZ Ltd for collection of wheelie bins until 31 January 2024		No review necessary at this time
	Contract with Living Earth Ltd for processing organic material until 31 January 2024		No review necessary at this time

Review of options			
Option	**Date of Last Review**	**Findings**	**Estimated Cost**
1	30/8/2014	To consider the option of a fortnightly organic kerbside collection. This may be an option at mid-term of the collection contract before the fleet replacement programme is locked in however the following needs to be taken in to consideration: i. Ratepayer satisfaction for this service currently sits around 10% lower than for the other two bins. Size of bin is the current drawback ii. Organic material sitting in bins in the summer will create odour issues and provide a healthy environment for breeding of maggots iii. The saving in green truck movements will be off-set by additional red truck capacity required iv. Material which will not fit in the green bin is likely to be disposed of via the red bin incurring double the disposal costs. v. Moving in this direction is contrary to the Waste Management Plan 2013 and targets set. vi. MfE funding in excess of $1m per year could be at risk as we back track on a service they assist with funding vii. Additional material to Kate Valley will shorten its life viii. Additional truck movements to Kate Valley increases CCC carbon footprint ix. Over 4306 ratepayers pay for the enhanced service (a weekly 240 litre collection). This service would have to be altered (and may be subject to challenge) and refunds issued. x. Contractor claim for significant contract variation xi. Reduced volume of material to OPP will reduce cost effectiveness of the operation resulting in higher gate fees xii. Negative impact on education programme as set out in the AMP	Not cost-effective to pursue

		xiii. Every tonne of material which goes back in to red bin due to 50% reduction in capacity of green bin will cost Council approx $100 / tonne	
2	30/8/2014	Review of spend on promotions and education budget has been undertaken however: i. Additional contamination at the OPP will result in higher landfill disposal costs ii. Additional cost of removing contamination from the compost iii. Every tonne of organic waste removed from the red bin currently achieves a saving in disposal costs of approx $100 per tonne Agreed that wise spend of the promotion and education budget is cost neutral	$Nil

6 Long Term Infrastructure Strategy

6.1 Issues, principles and implications

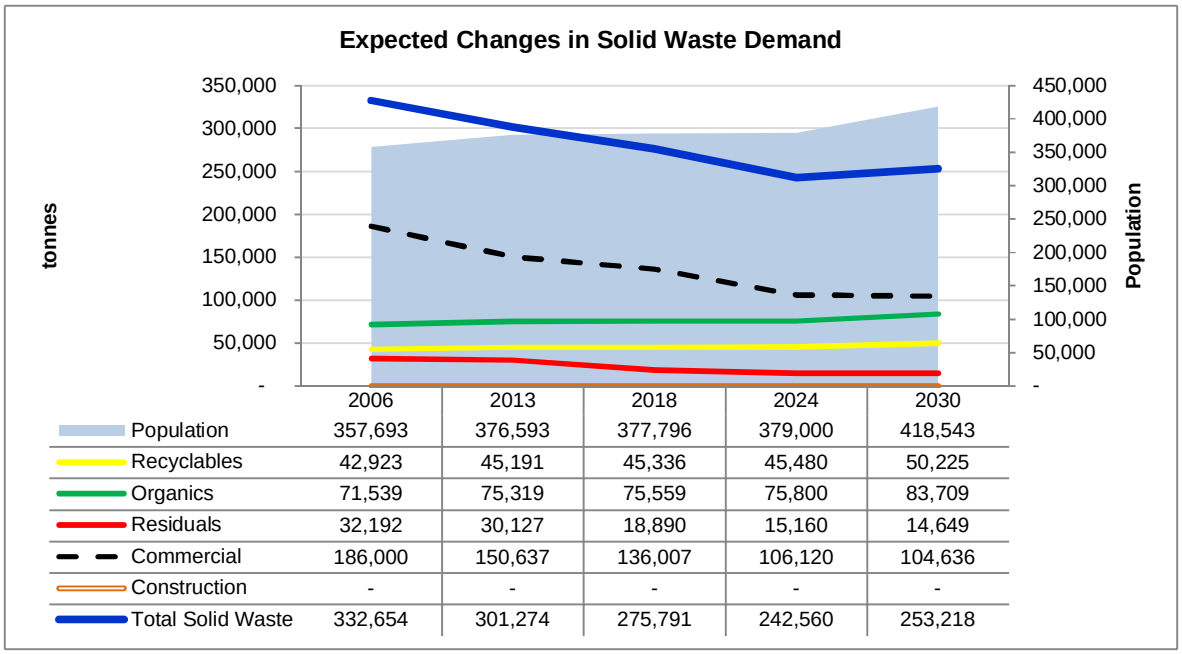
Changes in community expectations will have implications for the soild waste management streams. These changing expectations imply lower tolerances for residual waste going to landfill and options to increase the ease and options for recycling e.g. recycling bins on city streets.

Technological changes have the ability to impact the demand for solid waste services. These changes can reduce or increase the demand for solid waste infrastructure. Most technological changes will generally be around improved recycling and the effect of these on service delivery will be the minimisation of waste to landfill.

Predicted capacity required to meet future demand was addressed in existing contracts for infrastructure based services including transfer stations, the organics processing plant, the materials recovery facility, kerbside collection trucks, wheelie bins and Kate Valley landfill.

Most of the previously forecast demand will, therefore, be met by continuing to manage existing long-term contracts for infrastructure provision, as well as funding of support services for business and industry through Target Sustainability services, and raising awareness/education projects for the wider community.

These changes along with predicted growth in demand produce the “demand curves” below.



	2006	2013	2018	2024	2030
Population	357,693	376,593	377,796	379,000	418,543
Recyclables	42,923	45,191	45,336	45,480	50,225
Organics	71,539	75,319	75,559	75,800	83,709
Residuals	32,192	30,127	18,890	15,160	14,649
Commercial	186,000	150,637	136,007	106,120	104,636
Construction	-	-	-	-	-
Total Solid Waste	332,654	301,274	275,791	242,560	253,218

Table 6.2 Predicted Solid Waste Demand Curves

The ultimate objective is to reduce the amount of waste sent to landfill with the view to achieving the following Waste Management and Minimisation (2013) targets summarised in table 6.2 below.

Waste Targets				
Type of Waste	**No more than: (kg/person/year)**	**Target Year**	**Current (kg/person/year)**	**Reduction from Current**
Green and kitchen waste sent to landfill	30	2020	87[a]	66%
Paper and cardboard sent to landfill	30	2020	38[b]	21%
Plastic waste sent to landfill	5[d]	-	5	0%

Waste Targets				
Type of Waste	**No more than: (kg/person/year)**	**Target Year**	**Current (kg/person/year)**	**Reduction from Current**
Kerbside waste collected by The Council	80	2020	110[c]	27%
Total waste to landfill	320[e]	2020	524	39%

Table 6.2 Waste Targets in WWMMP 2013

Waste Collection

There are no planned asset creations or disposals in the next 30 years.

Receipt, Handling and Processing

The assets in this grouping are the Organics Processing Plant (OPP), MFR and following transfer stations:

- Metro Place
- Parkhouse Road
- Styx

The Council has budgeted $600K in FY15/16 for work required to the EcoDepots to achieve compliance with the new Health & Safety requirements. The renewals budget includes annual allocations for the work required on assets to meet Council's obligations.

Additional asset capacity is met through new works. An annual allocation of approximately $25K is set aside to meet Council's obligations at the transfer stations. A new transfer station has been budgeted for in FY 2025/26. This is expected to cost approximately $10M. No capital development is forecast at the MRF and the OPP over the next 30 years. No disposals are currently planned at any of the assets within this group.

Management of Closed Landfills

This asset group compromises the Closed Landfills and the Burwood Landfill Gas Recovery Scheme. The Council has continuing responsibility for 56 closed landfills, including the Burwood Landfill, which was closed in 2005, and 8 closed landfills on Banks Peninsula.

The gas-field at Burwood has an expect life of 35 years. The reticulation is currently considered to have no value beyond that time so its life is linked to that on the gas, rather than the life of the reticulation itself. As the expected life of the treatment plant is much shorter than that of the gas-field it is not affected by it. However, future renewals will need to consider the economics of replacement when the plant life exceeds the expected remaining gas-field life.

There are no new Closed Landfills assets planned for creation over the next 30 years.

Resilience and Levels of Service Issues	Principal options for response	Implications
Current contracts expire in January 2024	This is potential for an increase in disposal fees at the OPP for Council	Council needs to factor in additional costs in budget
Capacity as city growth occurs	Processing capacity will need to be reviewed	Design capacity of the plant needs to allow for the construction of an additional 3 tunnels in 2024/25 and at future intervals as identified in the AMP

7 Review of cost-effectiveness - infrastructure delivery

The Local Government Act requires local authorities to review the cost effectiveness of current arrangements for delivering infrastructure. The same criteria and options as defined in section 5 above apply (*Review of cost effectiveness - regulatory functions and service delivery*).

Organics Processing Plant

Current Arrangements			
Governance	**Funding**	**Delivery**	Estimated Cost
CCC	CCC	Contract with Living Earth Ltd for processing organic material until 31 January 2024. This contract includes the maintenance of all assets to Grade 3.0 or better, to be handed back to CCC in 2024	No review necessary
CCC	CCC	Contract with Waste Management includes the supply and maintenance of the wheelie bins and requirement for a mid term collection fleet replacement. City growth is also factored in to their contract model	No review necessary

Arrangements that cannot reasonably be changed in next two years			
Governed by Legislation	**Contract or binding agreement**	**Not cost effective to review**	**Option**
CCC	Contract with Living Earth Ltd for asset maintenance until 2024	This contract was competitively tendered on the international market.	No review necessary
CCC	Contract with Waste Management until January 2024	Contract in place. Contract was awarded following an interactive, international tender process which identified 15 years to be most cost effective model	No review necessary

8 Significant Effects

The significant negative and significant positive effects are listed below in Tables 8-1 and 8-2 respectively.

Table 8-1 Significant Negative Effects

Effect	Council's Mitigation Measure
Organic material still being placed in the red bin	An audit of the red bins in 2011-2012 showed that there is still approx 3.8 kg per bin – or 32% of the contents of the red bins – which could be composted instead of going to landfill. We will continue to promote the use of the green and yellow bins correctly in order maximise diversion from landfill while keeping contamination at a minimum.
Use of biodegradable and compostable plastics	We continue to be concerned at the increased use and promotion of biodegradable and compostable plastic packaging by manufacturers and suppliers who do not consider the life cycle of the product. These products cannot be composted at the OPP due to the time cycle of the composting process. Also, if received at the MRF they result in downgrade of product and reduced sale price (see comment in Recyclables ActMP)
Organics bin contamination	Clopyralid and arsenic contaminate the final compost product which must achieve NZS Compost standard. Continuing education programme to increase public awareness is required.

`Table 8-2 Significant Positive Effects

Effect	Council's Mitigation Measure
Reduction in waste to landfill	By diverting organic waste material from landfill Council is: · Extending the useful life of Kate Valley · Saving on disposal cost of waste · Reduction in truck movements to Kate Valley · Improving the City's carbon footprint · Returning valuable organic material to agricultural soils in Canterbury
Safety and personal security	Council aims to improve the safety of contracts awarded by Council and the reduction in first aid, medical treatment and lost time incidents have been significant
Beneficial reuse of organic waste – sale of compost	Waste product turned in to compost to revitalise the land and reduce need for artificial fertilisers.
Tidier streets and less rubbish in waterways	The implementation of the wheelie bin system has had the side benefit of tidier streets – less wind blown litter, and less rubbish being cleared out of waterways
Public health	Council's management of the promotion, collection and composting of organic waste encourages hygienic organic waste disposal and beneficial reuse which can enhance people's health and well-being.

8.1 Assumptions

Council has made a number of assumptions in preparing the Activity Management Plan. Table 8-3 lists the most significant assumptions and uncertainties that underline the approach taken for this activity.

Table 8-3 Major Assumptions

Assumption Type	Assumption	Discussion
Financial assumptions	That all expenditure has been stated in 1 July 2014 dollar values and no allowance has been made for inflation.	The LTP will incorporate inflation factors. This could have a significant impact on the affordability of the plans if inflation is higher than allowed for, but Council is using the best information practically available from Business and Economic Research Limited (BERL). The fuel cost index applied to the collection contract is subject to high fluctuations and is difficult to predict and manage.
Asset data knowledge	That Council has adequate knowledge of the assets and their condition so that the planned renewal works will allow Council to meet the proposed levels of service.	There are several areas where Council needs to improve its knowledge and assessments but there is a low risk that the improved knowledge will cause a significant change to the level of expenditure required.
Growth forecasts	That the district will grow as forecast in the Growth Demand and Supply Model	Current contracts in place have the capacity to deal with population growth forecasts plus minor variances.
Asset capacity	That Council's knowledge of network capacity is sufficient enough to accurately programme capital works. The contractor does not take on additional processing requirements without discussing impact on spare capacity allowed for future growth of the city.	Current capacity exists for the contract term.
Changes in legislation and policy, and financial assistance	That there will be no major changes in legislation or policy.	The risk of major change is high due to the changing nature of the government and politics. Such changes would include an increase in Waste Levy and Carbon Tax calculations. If major changes occur it is likely to have an impact on the required expenditure. Council has not mitigated the effect of this. Carbon tax and waste levy increases will increase cost of disposal to Council but will substantially improve the viability of composting

9 Risk Management

Council's risk management approach is described in detail elsewhere

This approach includes risk management at an organisational level (Level 1). The treatment measures and outcomes of the organisational level risk management are included within the LTP.

At an asset group level (Level 2), Council has identified high risks but will be undertaking risk workshops to review all aspects of the Solid Waste activities. The table below identifies 4 high risks. Council has planned controls for the remaining 4 high risks but even with the controls, they remain high. Council has decided to accept these risks, which are listed in Table 9-1.

Table 9-1 Significant Risks and Control Measures

Risk	Impact	Priority	Risk Strategy	Risk Response / Mitigation
Fatal explosion caused by (inadvertent) collection of explosive prohibited waste, e.g. gas bottle.	Health and safety concerns with possible fatal consequences if not addressed	High	Mitigate	• Prohibited waste stated or shown on all wheelie-bins. • Unacceptable waste in kerbside bins, the Council's website, and advertised in newspapers • Contractors' compliance with HSEA 2002 • Contractors' implementation of H&S management system • Incidence notifications to the Council • Contractors' Emergency and Incident Plans • Contractors' Temporary Traffic Management Plans • Continual advertising re gas bottle disposal and notice delivery to all households • Vehicle hopper camera with feed to driver
Natural event or fire resulting in loss of the Organics Plant for six months and disposal of green bin organics to Kate Valley Landfill.	Loss of the organics plant and increased costs of sending material to Kate Valley	High	Accept	Ensure risk of fire response plan Contractors' Risk and Contingency Plan
Financial risk due to increased levies imposed by central government.	Rates increase for kerbside collection services	High	Accept	Continue to monitor risk

Resource consents breach resulting in abatement notice.	Budget blowout requiring additional Capex	High	Mitigate	Mitigated through contracts.

Council has also identified and assessed critical assets (Level 3), the physical risks to these assets and the measures in place to address the risks to the asset.

10 Improvement Plan

City Water and Waste have developed a Contract Management Improvement Plan. Version 1.0 dated May 2014 is saved in TRIM – reference 14/995771.

Appendix A of the plan – Actions Table - sets out the actions, responsibilities, expected benefits and owner of the various actions identified. It is a snapshot as at May 2014. It is intended that the Improvement Plan is continually updated and monitored as a live document.

Contractors report innovations in work practises and application of technology in their businesses associated with this contract.

11 Operations, Maintenance and Renewals Strategy

11.1 Operations and Maintenance

The provision of both the collection and processing components of this service are being carried out under 15 year performance contracts awarded in 2008, with commencement date in 2009 and completion date of 31 January 2024.

These performance contracts were awarded following an interactive, international tender process. This process identified fifteen year contracts as being the most suitable to provide cost effectiveness through the contract life cost.. .

11.2 Renewals

Assets are considered for renewal as they near the end of their effective working life or where the cost of maintenance becomes uneconomical and when the risk of failure of critical assets is sufficiently high.

The OPP is designed to handle the predicated growth in residential population in Christchurch until the end of the current contract in 2024. The renewal of assets in the plant is the responsibility of the OPP operator.

Provision of additional bins for the organics collections are provided by the contractor through the collection contract which automatically copes with growth demand. The collection fleet is adjusted to match growth in collection numbers. Wheelie bins and replacement vehicles for the collection fleet are the responsibility of the contractor. Bulk replacement of the collection fleet is detailed in the collection contract for the mid point of the contract term to ensure a safe and efficient collection fleet is available throughout the contract term.

12 Key Projects

Key projects required

Table 12-1 details the key capital and renewal work programmed for years 2015 to 2025.

Table 12-1

Project Name	Description	Year 1 ($)	Year 2($)	Year 3 ($)	Years 4-10 ($)	Project Driver
	For details of the capital works relating to this activity refer to the draft Capital Programme, draft Long Term Plan, volume 1					

Note: G = Growth, LoS = Levels of Service, R = Renewal

13 Summary of Cost for Activity

Figure 13-1

REFUSE MINIMISATION & DISPOSAL - ORGANIC MATERIAL COLLECTION & COMPOSTING		Funding Caps in 2015/16 Dollars				*Funding splits exclude EQ Costs from all calculations*					
	2014/15 Annual Plan	2015/16	2016/17	2017/18		Funding - User Charges	Other revenue	General rate	Targeted rate	Period of Benefit (years)	Comments
	000's					%	%	%	%		
Operational Budget											
Organics Kerbside Collection	8,327	8,293	8,388	8,529							
Organics Processing incl Compost Plant	8,509	8,507	8,456	8,417							
Activity Costs before Overheads	16,836	16,800	16,844	16,945							
Earthquake Response Costs	-	-	-	-							
Corporate Overhead	931	898	897	858							
Depreciation	646	672	672	672							
Interest	124	172	220	258							
Total Activity Cost	**18,538**	**18,542**	**18,633**	**18,733**	% splits:	21%	4%	0%	75%		
					Description:	Some	Some		Majority		
Funded By:											
Fees and Charges	3,708	3,835	3,835	3,835							
Grants and Subsidies	680	680	680	680							
Earthquake Recoveries	-	-	-	-							
Total Operational Revenue	**4,388**	**4,515**	**4,515**	**4,515**							
Net Cost of Service	**14,149**	**14,028**	**14,118**	**14,218**							
Funded by:											
Rates	**14,149**	**14,028**	**14,118**	**14,218**							
Earthquake Borrowing	**-**	**-**	**-**	**-**							
	14,149	**14,028**	**14,118**	**14,218**							
Capital Expenditure											
Earthquake Rebuild											
Renewals and Replacements											
Improved Levels of Service											
Additional Demand											

Figure 13-2 10yr Projected Operational Expenditure

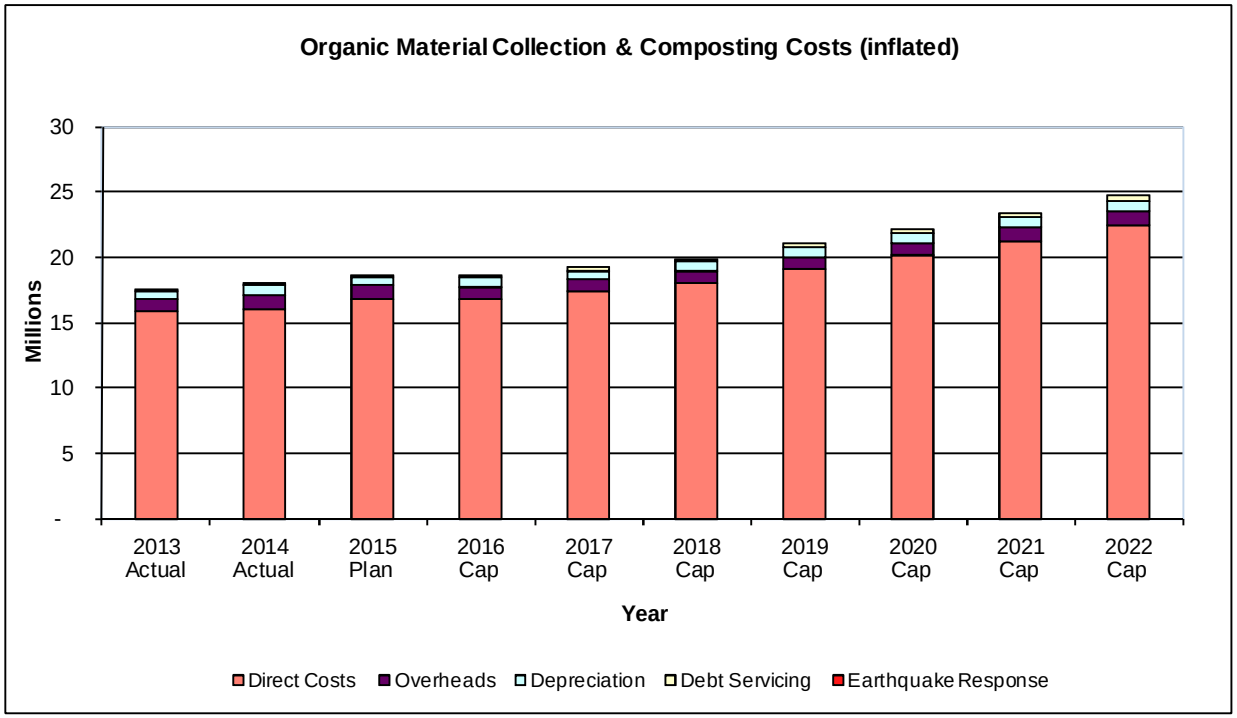
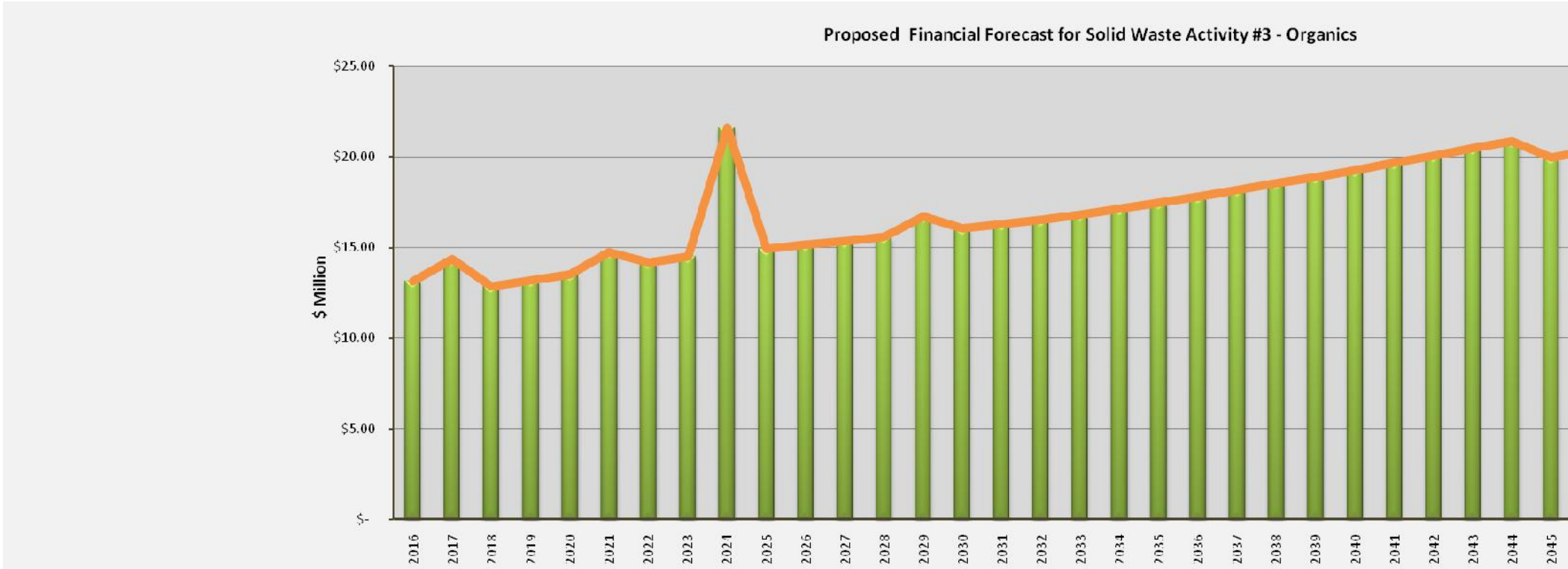


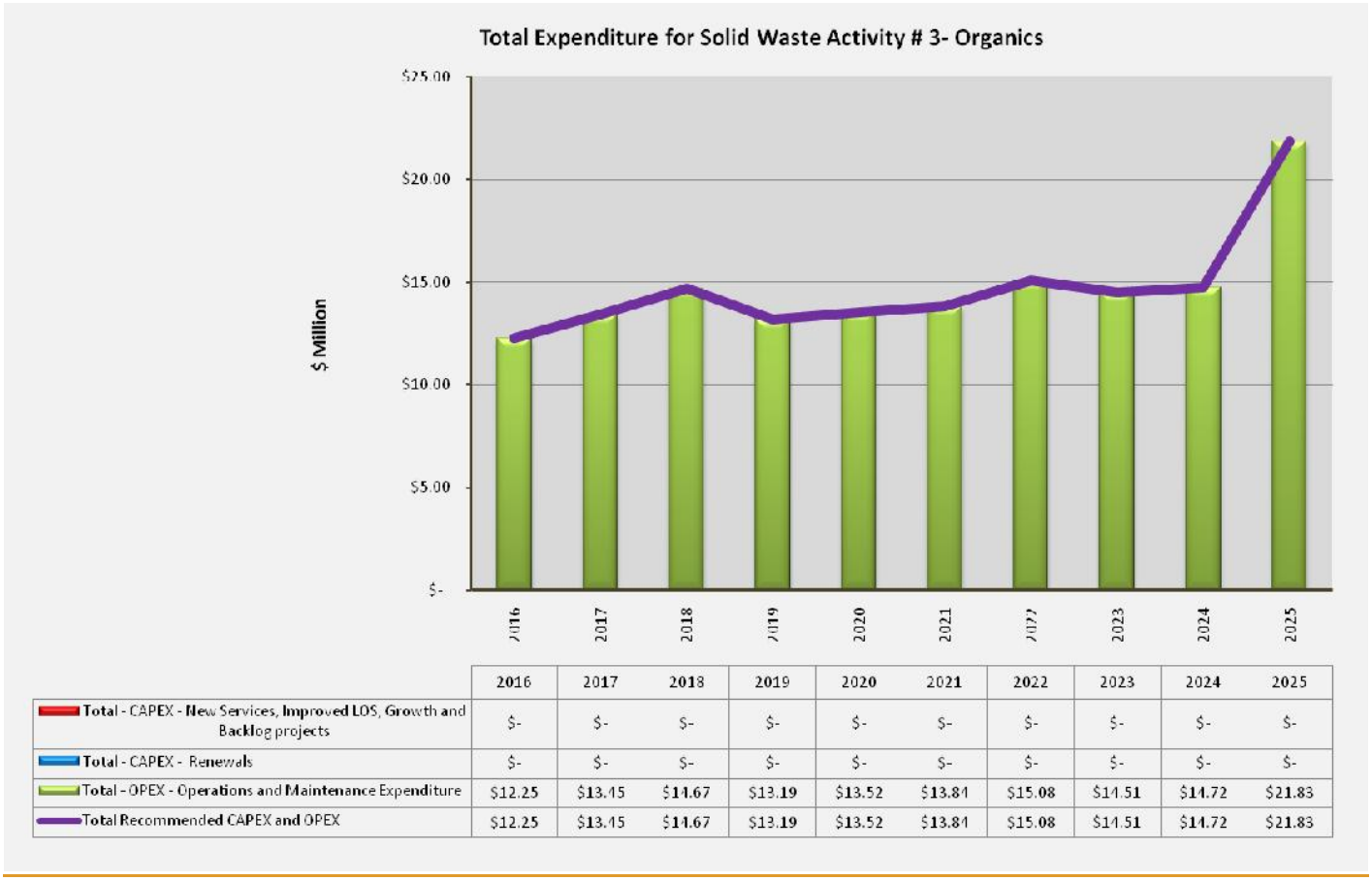
Figure 13-3 30yr Projected Total Expenditure



	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045
Total - CAPEX - New Services, Improved LOS, Growth and Backlog projects	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
Total - CAPEX - Renewals	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
Total - OPEX - Operations and Maintenance Expenditure	$13.15	$14.35	$12.87	$13.19	$13.52	$14.74	$14.18	$14.51	$21.62	$14.93	$15.15	$15.37	$15.60	$16.73	$16.06	$16.30	$16.55	$16.79	$17.13	$17.47	$17.82	$18.18	$18.54	$18.91	$19.29	$19.68	$20.07	$20.47	$20.88	$19.97
Total Recommended CAPEX and OPEX	$13.15	$14.35	$12.87	$13.19	$13.52	$14.74	$14.18	$14.51	$21.62	$14.93	$15.15	$15.37	$15.60	$16.73	$16.06	$16.30	$16.55	$16.79	$17.13	$17.47	$17.82	$18.18	$18.54	$18.91	$19.29	$19.68	$20.07	$20.47	$20.88	$19.97

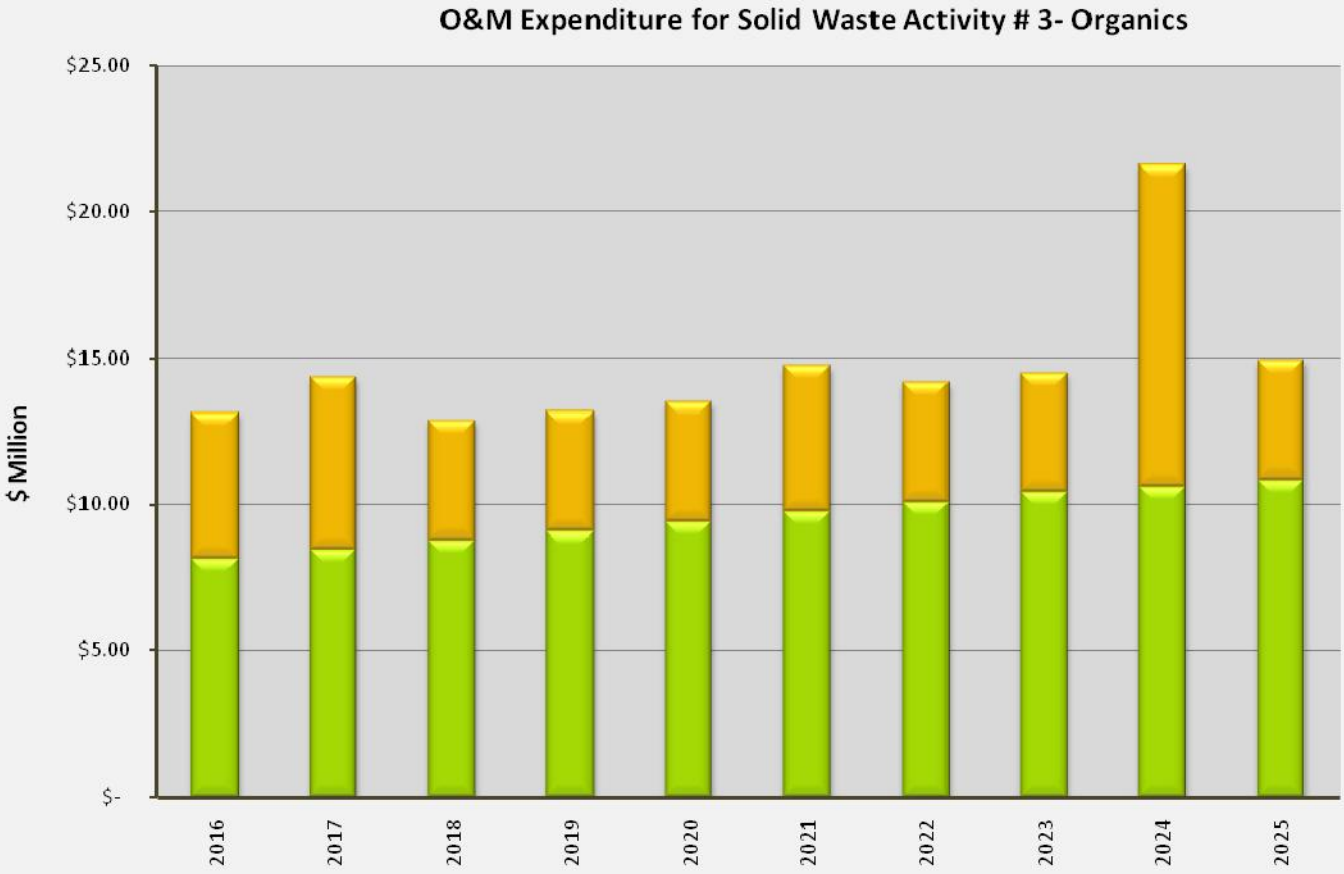
Commentary to be added.

Figure 13-4 Total Expenditure



	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Total - CAPEX - New Services, Improved LOS, Growth and Backlog projects	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
Total - CAPEX - Renewals	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
Total - OPEX - Operations and Maintenance Expenditure	$12.25	$13.15	$11.67	$13.19	$13.52	$13.84	$15.08	$14.51	$14.72	$21.83
Total Recommended CAPEX and OPEX	$12.25	$13.15	$11.67	$13.19	$13.52	$13.84	$15.08	$14.51	$14.72	$21.83

Figure 13-5 Operating Expenditure



	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Organics Processing Plant O&M	$5.00	$5.90	$4.10	$4.10	$4.10	$5.00	$4.10	$4.10	$11.00	$4.10
Kerbside Collection O&M	$8.15	$8.45	$8.77	$9.09	$9.42	$9.74	$10.08	$10.41	$10.62	$10.83