

Residual Waste Collection and Disposal

Activity Management Plan

Long Term Plan 2015–2025

1 September 2014

Note

The information in this activity management plan was prepared in conjunction with elected members as part of the development of the draft long term plan and its associated consultation document.

Key information has since been condensed into the statements of services provision in the Group of Activities section of the draft long-term plan.

Quality Assurance Statement

Christchurch City Council
Civic Offices
53 Hereford Street
PO Box 73015
Christchurch 8154
Tel: 03 941 8999

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Activity Manager: Tim Joyce

Chief / Director: Jane Parfitt

Asset Manager: Mark Johnson

Finance Manager: Michael Day

[Handwritten signatures]
Tim Joyce
Jane R. Parfitt
Mark Johnson
Michael Day

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1 Key Issues for the Residual Waste Collection and Disposal Activity

The Council provides for the safe collection and disposal of residual waste to minimise harm to people and the environment

To meet our obligations in the Solid Waste Management Plan 2013,

To meet our obligations under the legislation requirements

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 used for residual waste collection and disposal contributes to the Council's community outcomes is detailed in the Waste Management and Minimisation Plan (2013). The effective management of the residual waste collection and transfer station operations means achieving community outcomes that ensure:

- Injuries and risks to public health are minimised
- Convenient, reliable and safe residual waste collection services are provided
- Public have access to transfer stations and community collection points in the city and across Banks Peninsula for dropping off residual waste.
- Earthquake demolition waste is safely disposed of with minimal adverse effects
- Statutory obligations are met by the council.
- City assets, financial resources and infrastructure are well managed, now and in the future.
- Groundwater is safeguarded from the effects of land use.
- Christchurch's infrastructure supports sustainable economic growth.

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

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 handling capability of the Transfer Stations. The design and location of the city's three transfer stations factored in predicted city growth. There was a review of drop off facilities on Banks Peninsula in conjunction with the rollout of wheelie bins in 2008 / 2009. Upgrades / additional facilities were constructed then. A review of these indicates sufficient capacity for the next 10 years. 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 Residual Waste Collection and Disposal

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
Recyclables and organic material volumes in the red bin still exceeds targets	An audit of the red bins in 2011-2012 showed that there is still approx 3.8kg per bin – or 32% which could be composted and 1.6 kg per bin – or 14% which could be recycled instead of going to landfill. We will continue to promote the use of the green and yellow bins correctly in order to maximise diversion from landfill while keeping contamination at a minimum
Potential increase in collection costs due to roads requiring specialist servicing eg red zone, weight restricted roads in hill suburbs, restricted access	A few roads currently require specialist servicing with increased collection costs. There is the potential for this number to increase
Central City servicing as rebuild commences	CERA Central City Plan has minimal requirements for serviceability in developments. Mixed use sites are being signalled. Solid Waste team to review how this area will be serviced within next 3 years.
Solid Waste Management Plan Review 2018 – will involve a review of waste to landfill	Relocation for repairs/rebuilds is having a significant impact on waste volumes to landfill. The targets in the current plan will need to be reviewed in 2018 plan.
Uncertainty of Burwood gas field's expected life and the impact on Council facilities utilising this	Difficult to project the remaining life of the gasfield at Burwood Landfill. Currently the trigeneration plant at Civic Plant requires methane content of between 55% and 60%. This is becoming more difficult to achieve. Boiler systems work on lower levels of methane however are much more sensitive to Hydrogen Sulphides, even at low levels. (Currently H ₂ S levels at 80 p/million). If the methane level drops too much it will impact on costs of running Civic Offices. This may require more gas wells to be drilled on the Burwood Landfill than currently predicted.
Disposal of contaminated soils	11,000 properties in Christchurch have been identified as potentially containing contaminated land. When Burwood closes (September 2017) there will be no where except Kate Valley for this soil to go. This will add significant costs to property owners.

2 Proposed changes to activity

Table 2-1 summarises the proposed changes for the management of the Residual Waste Collection and Disposal 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 both in place until January 2024	Cost effective solution is in place. 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 Residual Waste Collection and Disposal network are that:

- Injuries and risks to public health are minimised
- Earthquake demolition waste is safely disposed of with minimal adverse effects

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:

- Services and facilities provided for receiving, collection and processing residual waste **are convenient, reliable and safe** in order to minimise the health and environmental risks of residual waste.
- 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 service for residual waste (refuse) for households and businesses (domestic quantities only) as at July 2014
 - 140,443 140 litre bins in service
 - 13,707 80 litre bins in service
 - 213 skips in service
- Refuse transfer stations receive and transfer residual waste. In 2013/14:
 - 39,335 tonnes collected at kerbside
 - A total of 130,472 tonnes of residual waste sent from Council transfer stations to Kate Valley
 - Process Waste Handling Facility Licence applications
 - Community Collection points on Banks Peninsula receive and transfer residual waste
- Processing, reuse and residual disposal of earthquake related construction and demolition waste through the Burwood Resource Recovery Park
- Operation and care of closed landfills
- Landfill gas capture, treatment, reticulation and destruction from the closed Burwood landfill site

Provision of additional bins for rubbish collections are provided by the contractor through the collection contract mechanism which automatically copes with growing 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 long term contract.

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
22%	0%	78%	0%
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 majority of the cost of this service is covered by General Rate.

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
- Canterbury Earthquake Recovery Act 2011
- 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 Residual Waste Collection and Disposal 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 2024/25
						Year 1	Year 2	Year 3	
						2015/16	2016/17	2017/18	
Domestic kerbside collection service or community collection points for residual waste (refuse) for households and businesses (domestic quantities only)									
8.1.2	Tonnage of residual waste collected by Council services	Residual waste is collected and disposed of in a safe, convenient and efficient way protecting the health of the community and environment	Key business driver Measuring and managing kerbside waste sent to landfill by Council services. Is also an indicator of community behaviour towards reducing waste to landfill. Council receives monthly reports from collection contractor Note this LOS needs to read in conjunction with 8.1.1.	2013/14 109.50 kg / person 2012/13 106.43 kg / person 2011/12 119.13 kg / person 2010/11* 126.02 kg / person 2009/10 101.11 kg / person * EQ affected tonnage	Timaru District Council reported for 2013/14 year an average of 168kg/person Coffs Harbour: 189kg/person	No more than 120 kg / person / year from collection services disposed to Kate Valley	No more than 120 kg / person / year from collection services disposed to Kate Valley "	No more than 120 kg / person / year from collection services disposed to Kate Valley	No more than 120 kg / person / year from collection services disposed to Kate Valley Targets to 2017/18 still reflect EQ impact. New WMMP in 2018 will establish new targets

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 2024/25
						Year 1	Year 2	Year 3	
						2015/16	2016/17	2017/18	
8.1.3	Kerbside residual waste collection – emptied by Council services	<i>Residual waste is collected and disposed of in a safe, convenient and efficient way that protects the health of the community and environment</i>	<i>Measuring and managing the collection performance of the kerbside collection services. Monthly reports are received from Council's contractor</i>	2013/14: 99.88% 2012/13: 99.87% 2011/12: 99.80%	<i>Timaru District Council reported an average of 99.8% collection rate TDC only provided information on presentation rate not on %collection achieved Coffs Harbour Don't measure this specifically. Collect any missed services within 24 hours</i>	At least 99.5% collection achieved when items correctly presented for collection	At least 99.5% collection achieved when items correctly presented for collection	At least 99.5% collection achieved when items correctly presented for collection	At least 99.5% collection achieved when items correctly presented for collection
8.1.4	Customer satisfaction with kerbside collection service for residual waste	<i>Residual waste is collected and disposed of in a safe, convenient and efficient way that protects the health of the community and environment</i>	<i>Measuring customer satisfaction with Council kerbside collection services. This is provided through the Annual Residents Survey.</i>	2013/14: 90% 2012/13: 93% 2011/12: 95% 2010/11: no survey 2009/10: 92%	<i>2013/14 Timaru District Council achieved 90% customer satisfaction with waste services Coffs Harbour: 2012 Community survey indicated high customer satisfaction</i>	At least 90% customers satisfied with Council's kerbside collection service for residual waste each year	At least 90% customers satisfied with Council's kerbside collection service for residual waste each year	At least 90% customers satisfied with Council's kerbside collection service for residual waste each year	At least 90% customers satisfied with Council's kerbside collection service for residual waste each year
Refuse transfer stations receipt and processing of residual waste									

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 2024/25
						Year 1	Year 2	Year 3	
						2015/16	2016/17	2017/18	
8.1.5	Consent compliance for Council refuse transfer stations	<i>Council provides environmentally sound waste recovery and disposal services and meets legal obligations</i>	<i>Measuring and managing compliance with Resource Consent conditions and City Plan regulations as reported by Environment Canterbury and Christchurch City Council</i>	<p><i>Zero significant breaches of resource consents by Council owned transfer stations</i></p> <p><i>Resource consents obtained and kept current</i></p>	<p><i>Coffs Harbour:</i></p> <p><i>100% compliance with resource consents</i></p> <p><i>Full compliance with consents</i></p> <p><i>Timaru District Council:</i></p> <p><i>Zero breaches of resource consents</i></p>	<p>8.1.5.1 Resource consents are obtained and kept current for refuse transfer stations.</p> <p>8.1.5.2 No major or persistent breaches of consents for transfer stations per year, as reported by Environment Canterbury or Christchurch City Council</p>	<p>8.1.5.1 Resource consents are obtained and kept current for refuse transfer stations.</p> <p>8.1.5.2 No major or persistent breaches of consents for transfer stations per year, as reported by Environment Canterbury or Christchurch City Council</p>	<p>8.1.5.1 Resource consents are obtained and kept current for refuse transfer stations.</p> <p>8.1.5.2 No major or persistent breaches of consents for transfer stations per year, as reported by Environment Canterbury or Christchurch City Council</p>	<p>8.1.5.1 Resource consents are obtained and kept current for refuse transfer stations.</p> <p>8.1.5.2 No major or persistent breaches of consents for transfer stations per year, as reported by Environment Canterbury or Christchurch City Council</p>
Processing, reuse and residual disposal of construction and demolition waste from earthquakes through the Burwood Resource Recovery Park									

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 2024/25
						Year 1	Year 2	Year 3	
						2015/16	2016/17	2017/18	
8.1.8	Consent compliance for operations at Burwood Resource Recovery Park (BRRP)	<i>Council provides environmentally sound waste recovery and disposal services and meets legal obligations</i>	<i>Measuring and Managing BRRP management of operations at Burwood Resource Recovery Park.</i>	<i>2013/14: No major or persistent breaches of consents</i>	<i>To be advised</i>	No major or persistent breaches of consents associated with BRRP per year as reported by Environment Canterbury or Christchurch City Council	No major or persistent breaches of consents associated with BRRP per year as reported by Environment Canterbury or Christchurch City Council	No major or persistent breaches of consents associated with BRRP per year as reported by Environment Canterbury or Christchurch City Council	No major or persistent breaches of consents associated with BRRP per year as reported by Environment Canterbury or Christchurch City Council
Residual waste transportation to landfill									

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 2024/25
						Year 1	Year 2	Year 3	
						2015/16	2016/17	2017/18	
8.1.1	Tonnage of residual waste (excluding EQ related contaminated waste) sent to Kate Valley from Christchurch	<i>Waste is managed and minimised following the goals, principles and targets established in the 2013 Waste Management Plan</i>	<i>Monitoring waste sent to landfill from Christchurch waste handled by both Council services and private organisations. Is also an indicator of household and business behaviour towards reducing waste to landfill, and supports Councils Sustainability Policy and Solid Waste Management Plan.</i> <i>Canterbury Waste Services provide CCC with monthly reports on tonnage received</i> <i>Links to Commercial & Industrial Waste Minimisation 8.3.</i>	2013/14 698.80 kg / person 2012/13 598.30 kg / person 2011/12 580 kg / person 2010/11 574 kg / person 2009/10 461 kg / person	<i>Timaru District Council reported in 2013/14 financial year 452 kg / person sent to landfill</i> <i>Hamilton City Council 2012 Waste Management Plan 630 kg / person/ year</i>	8.1.1.1 Reduction of refuse disposed of to Kate Valley Landfill measured in kg / person / year: 850 kg/person 8.1.1.2 Operative Waste Management & Minimisation Plan target 320 kg / person / year by 2020 Note: This tonnage reflects increase in commercial waste as a result of rebuild going to Kate Valley	8.1.1.1 Reduction of refuse disposed of to Kate Valley Landfill measured in kg / person / year: 850 kg/person 8.1.1.2 Operative Waste Management & Minimisation Plan target 320 kg / person / year by 2020 Note: This tonnage reflects increase in commercial waste as a result of rebuild going to Kate Valley	8.1.1.1 Reduction of refuse disposed of to Kate Valley Landfill measured in kg / person / year: 850 kg/ person 8.1.1.2 Operative Waste Management & Minimisation Plan target 320 kg / person / year by 2020 Note: This tonnage reflects increase in commercial waste as a result of rebuild going to Kate Valley	8.1.1.1 Reduction of refuse disposed of to Kate Valley Landfill measured in kg / person / year: 8.1.1.2 Targets to 2017/18 still reflect EQ impact. New WMMP in 2018 will establish new targets
Operation and care of closed landfills									

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 2024/25
						Year 1	Year 2	Year 3	
						2015/16	2016/17	2017/18	
8.1.6	Consent compliance for closed Council landfills	<i>Council provides environmentally sound waste disposal services and meets legal obligations</i>	<i>Measuring and managing compliance with Resource Consent conditions and City Plan regulations as reported by Environment Canterbury and Christchurch City Council</i>	<i>No major or persistent breaches of consents</i>	<i>Auckland RC LTCCP: 97% consent compliance with landfill aftercare</i> <i>Timaru District Council: Some minor non-compliance</i>	No major or persistent breaches of consents for closed Council landfills per year, as reported by Environment Canterbury and Christchurch City Council	No major or persistent breaches of consents for closed Council landfills per year, as reported by Environment Canterbury and Christchurch City Council	No major or persistent breaches of consents for closed Council landfills per year, as reported by Environment Canterbury and Christchurch City Council	No major or persistent breaches of consents for closed Council landfills per year, as reported by Environment Canterbury and Christchurch City Council
Landfill gas capture, treatment, reticulation and destruction from the closed Burwood landfill site									

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 2024/25
						Year 1	Year 2	Year 3	
						2015/16	2016/17	2017/18	
8.1.7	Maximise beneficial use of landfill gas collected from Burwood landfill	<i>Council increases the use of renewable energy and reduces greenhouse gas emissions from the Burwood Landfill</i>	<i>Gas is currently used for heat in the biosolids drying plant, Civic Offices and Art Gallery.</i>	2013/14: 98% 2012/13: 69% 2011/12: 95.9% 2010/11: 87.5% 2009/10: 97.5% 2008/09: 94.8% 2007/08: 98.8%	<i>Wellington City Council Southern Landfill – gas extraction system available for power generation 90-95% of time.</i> <i>TransPacific Industries - Redvale Landfill Auckland – gas extraction system available 99.9% of time in 2011.</i> <i>TransPacific Industries – Whitford Landfill – gas extraction system available 95% of the time in 2011.</i>	Landfill gas to be available to facilities that utilise the gas at least 95% of the time	Landfill gas to be available to facilities that utilise the gas at least 95% of the time	Landfill gas to be available to facilities that utilise the gas at least 95% of the time	Landfill gas to be available to facilities that utilise the gas at least 95% of the time Note: Quantity and quality of gas extracted may impact targets

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. Reviews for infrastructure delivery are considered in Section 7

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: Residual waste collection, transfer and disposal

Current Arrangements			
Governance	Funding	Delivery	Estimated Cost
CCC	CCC	CCC Contractors	\$17.3m 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 EcoCentral Ltd for management and operations of the three city transfer stations 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	Both contracts are long term – until January 2024. No review required	Not cost-effective to pursue

6 Long Term Infrastructure Strategy

6.1 Issues, principles and implications

Changes in community expectations will have implications for the solid 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.

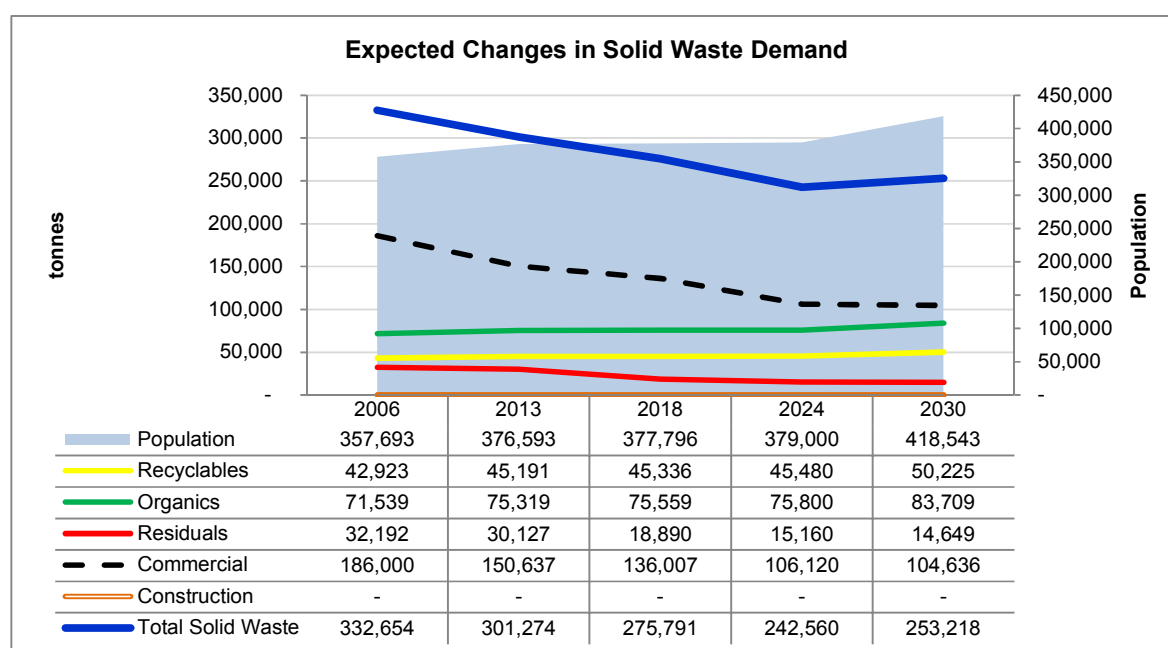


Table 6.2 Predicted Solid Waste Demand Curves

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%
Kerbside waste collected by The Council	80	2020	110 ^c	27%

Waste Targets				
Type of Waste	No more than: (kg/person/year)	Target Year	Current (kg/person/year)	Reduction from Current
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. Capital works at Kate Valley and Burwood Resource Recovery Park are the responsibility of Transwaste Canterbury. No disposals are currently planned at any of the assets within this group.

Management of Closed Landfills

This asset group comprises 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. The Council drills new gas wells on the landfill to maintain gas volumes and methane quality.

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

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*).

Transfer Station maintenance

Current Arrangements			
Governance	Funding	Delivery	Estimated Cost
CCC	CCC	CCC in conjunction with EcoCentral has developed a 10 year maintenance plan with an annual maintenance programme in place by August of each year. This is for the maintenance of the three city transfer stations including compactors	\$330k pa

Arrangements that cannot reasonably be changed in next two years			
Governed by Legislation	Contract or binding agreement	Not cost effective to review	Option
CCC		Nil	No review necessary

Banks Peninsula Transfer Stations and Community Collection Points maintenance

Current Arrangements			
Governance	Funding	Delivery	Estimated Cost
CCC	CCC	Various contractors – maintenance and upgrades as identified	\$25k pa

Arrangements that cannot reasonably be changed in next two years			
Governed by Legislation	Contract or binding agreement	Not cost effective to review	Option
CCC	Nil		N/A

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
Continued use of red bins to dispose of recyclable and organic material	<p>An audit of the red bins in 2011-2012 showed that there is still approx 3.8kg per bin – or 32% which could be composted and 1.6 kg per bin – or 14% which could be recycled instead of going to landfill.</p> <p>We will continue to promote the use of the green and yellow bins correctly in order to maximise diversion from landfill while keeping contamination at a minimum. Council continues to fund promotions and education programme in order to further reduce waste going to Kate Valley. This will in turn reduce disposal costs.</p>

Table 8-2 Significant Positive Effects

Effect	Description
Reduction in waste to landfill	<p>Diversion of waste at the transfer stations via the recycling and EcoShop drop-offs reduces waste to landfill Council. This will result in:</p> <ul style="list-style-type: none"> • Extending the useful life of Kate Valley • Saving on disposal cost of waste • Reduction in truck movements to Kate Valley
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 recyclables	<p>Waste product is recycled for reuse in new products. This will result in:</p> <ul style="list-style-type: none"> • Extending the useful life of Kate Valley • Saving on disposal cost of waste • Reduction in truck movements to Kate Valley
Beneficial reuse of reusable products	<p>Reusable products are diverted from landfill on sold via the EcoShop. This results in:</p> <ul style="list-style-type: none"> • Extending the useful life of Kate Valley • Saving on disposal cost of waste • Reduction in truck movements to Kate Valley • Increasing employment and operational profitability
Public health.	Council's management of the promotion, collection and disposal of residual waste encourages safe and hygienic waste disposal and beneficial reuse where possible 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.	<p>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).</p> <p>The fuel cost index applied to the collection contract is subject to high fluctuations and is difficult to predict and manage.</p>
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

Assumption Type	Assumption	Discussion
Asset capacity.	That Council's knowledge of network capacity is sufficient enough to accurately programme capital works.	Sufficient capacity exists
Timing of capital projects.	That capital projects will be undertaken when planned.	Review need for a 4th transfer station post 2024
Funding of capital projects.	No capital projects planned	N/A
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.

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 7 high risks. Council has planned controls for the remaining 7 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	<ul style="list-style-type: none"> • 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 a transfer station for significant period of time and increased pressure on remaining transfer stations	Increased volume through remaining transfer stations. Increased travel costs to collection contractor	High	Accept	Ensure risk of fire response plan Contractors' Risk and Contingency Plan
Failure of gas extraction and treatment process	Landfill fire.	High	Mitigate	Prepare Risk and Contingency Plan.
Landfill fire.	Damage to infrastructure and assets and risk to private properties around the site	High	Mitigate	Create fire breaks and have adequate fire equipment on hand
Risk of fire at the Burwood Resource Recovery Park with potential to spread	Damage to infrastructure and assets and risk to private properties around the site	High	Accept	Continue to monitor risk

to Bottle Lake Forest used by the public				
Financial risk due to increased levies imposed by central government.	Rates increase for residual waste and 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 their innovations, improved work practices and application of technology.

11 Operations, Maintenance and Renewals Strategy

11.1 Operations and Maintenance

The provision of the collection component of this service is being carried out under a 15 year contract awarded in 2008, with commencement date in 2009 and completion date of 31 January 2024.

The operations and maintenance of the three city transfer stations is also under a long term contract which has just been extended following the contractor exercising their right of renewal. This also expires on 31 January 2024.

The collection contract was awarded following an interactive, international tender process. This process identified fifteen year contracts to be most cost effective.

The BRRP operations have been established by and are operated by an independent contractor. All operational and maintenance expenses are covered by gate fees and sale of recovered products,

11.2 Renewals

Provision of additional bins for collections is provided by the contractor through the collection contract mechanism and automatically copes with growing 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 long term contract.

Study in 2009 of Transfer Station capacity illustrated that all Transfer Stations had sufficient capacity for foreseeable future demand. At the time of the review demand had dropped on the stations due to increased commercial competition from private sector providers. Design versus actual demand is reviewed periodically through updates to the solid waste asset management plan.

Council renews assets in the Transfer Station facilities in line with Asset Management Plans and renewal programmes. Programmes are adjusted annually to take account of actual versus predicted condition.

The BRRP operations have been established by and are operated by an independent contractor. All renewal and disestablishment costs are the responsibility of the contractor.

12 Key Projects

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

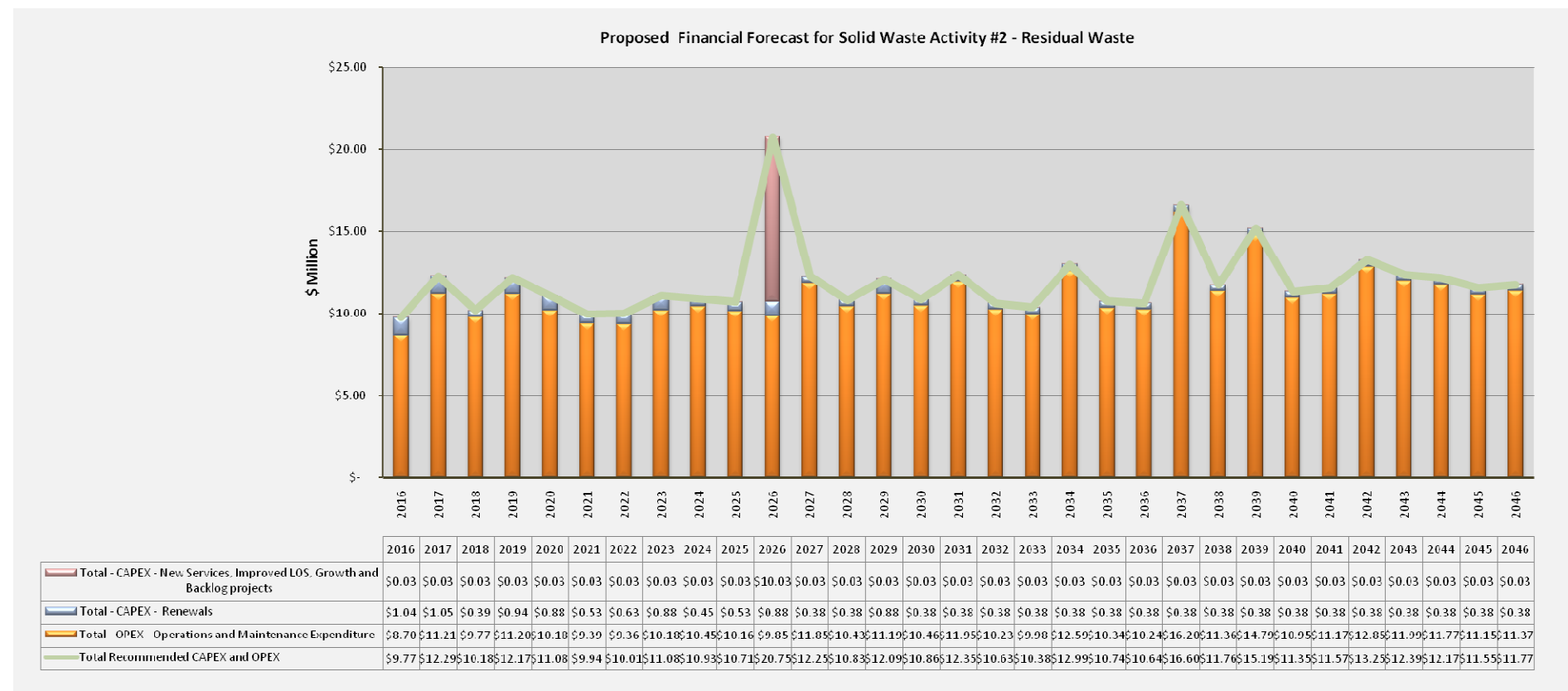
Note: G = Growth, LoS = Levels of Service, R = Renewal

13 Summary of Cost for Activity

Figure 13-1

REFUSE MINIMISATION & DISPOSAL - RESIDUAL WASTE COLLECTION & DISPOSAL	Funding Caps in 2015/16 Dollars				Funding splits exclude EQ Costs from all calculations				Period of Benefit (years)	Comments
	2014/15 Annual Plan	2015/16	2016/17	2017/18	Funding - User Charges	Other revenue	General rate	Targeted rate		
	000's									
Operational Budget										
Domestic Kerbside Collection	5,633	5,762	5,769	5,858						
Inorganic Rubbish Collection	-	-	-	-						
Refuse Transfer Stations	965	966	915	874						
Residual Waste Transport to Landfill	7,879	8,021	8,095	8,170						
Operation & Care of Closed Landfills	1,251	1,248	1,217	1,195						
Landfill Gas Capture & Treatment	(450)	(440)	(430)	(419)						
Burwood Resource Recovery Park	-	-	-	-						
Activity Costs before Overheads	15,277	15,556	15,565	15,677						
Earthquake Response Costs	-	-	-	-						
Corporate Overhead	863	852	848	813						
Depreciation	922	1,016	990	1,033						
Interest	176	261	324	396						
Total Activity Cost	17,238	17,684	17,728	17,920	22% Some	0%	78% Majority	0%		
Funded By:										
Fees and Charges	3,777	3,885	3,885	3,837						
Grants and Subsidies	-	-	-	-						
Earthquake Recoveries	-	-	-	-						
Total Operational Revenue	3,777	3,885	3,885	3,837						
Net Cost of Service	13,462	13,798	13,842	14,082						
Funded by:										
Rates	13,462	13,798	13,842	14,082						
Earthquake Borrowing	-	-	-	-						
	13,462	13,798	13,842	14,082						
Capital Expenditure										
Earthquake Rebuild										
Renewals and Replacements										
Improved Levels of Service										
Additional Demand										

Figure 13-2 30yr Projected Expenditure



Commentary to be added.

Figure 13-3 Total Expenditure

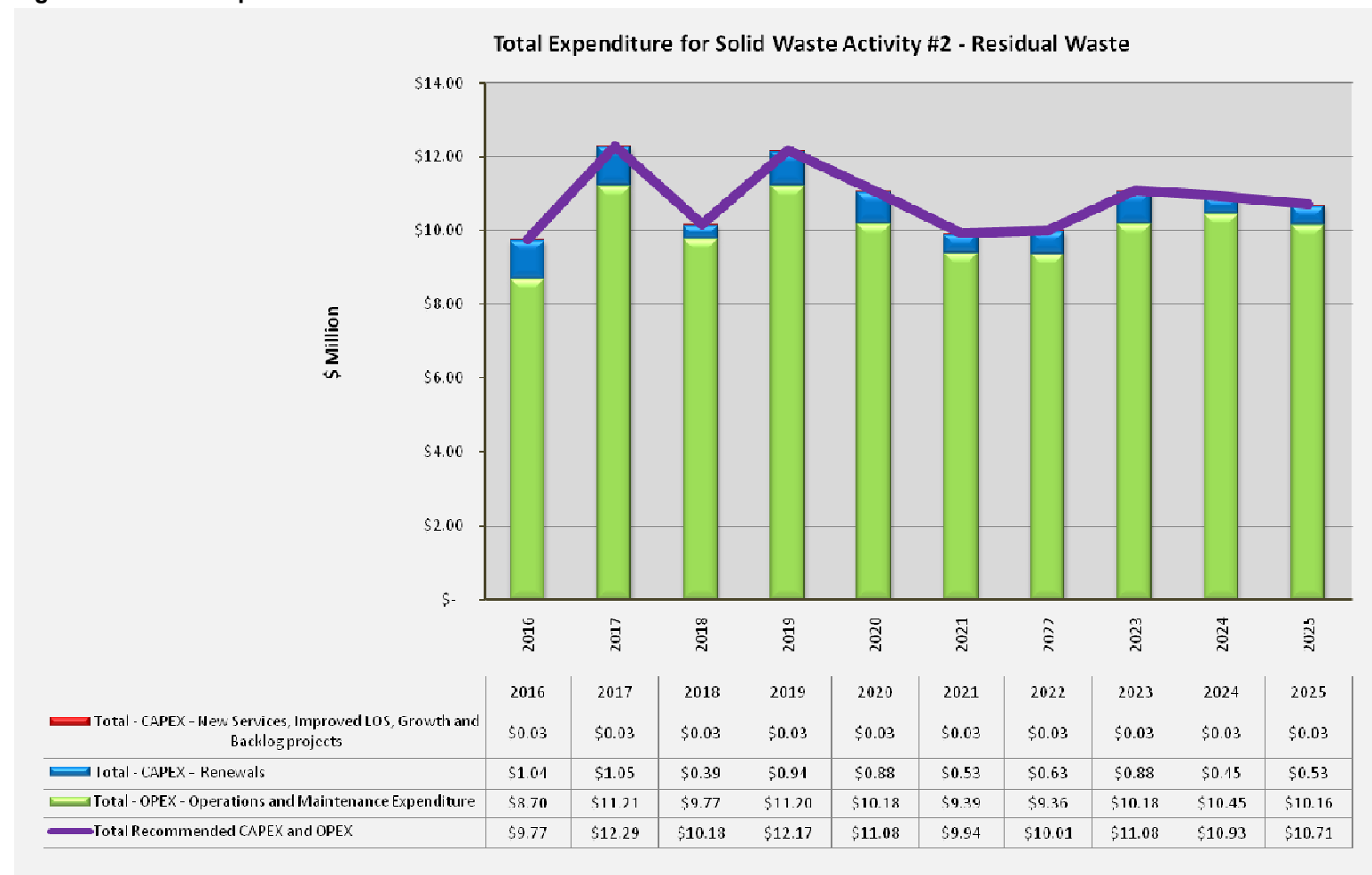


Figure 13-3 shows the overall expenditure for the Residual Waste activity to be steady overall for the 10yr period with minor spikes in years 2017 and 2019 due to the additional expenditures in both renewals and maintenance to match the asset life schedules. For example, the increase in O&M expenditure, to \$11.2M, in 2017

and 2019 is due to the additional maintenance work required on the buildings and plant equipment and road surfaces at the Metro Place, Parkhouse and Styx Transfer Stations.

Figure 13-4 Operating Expenditure

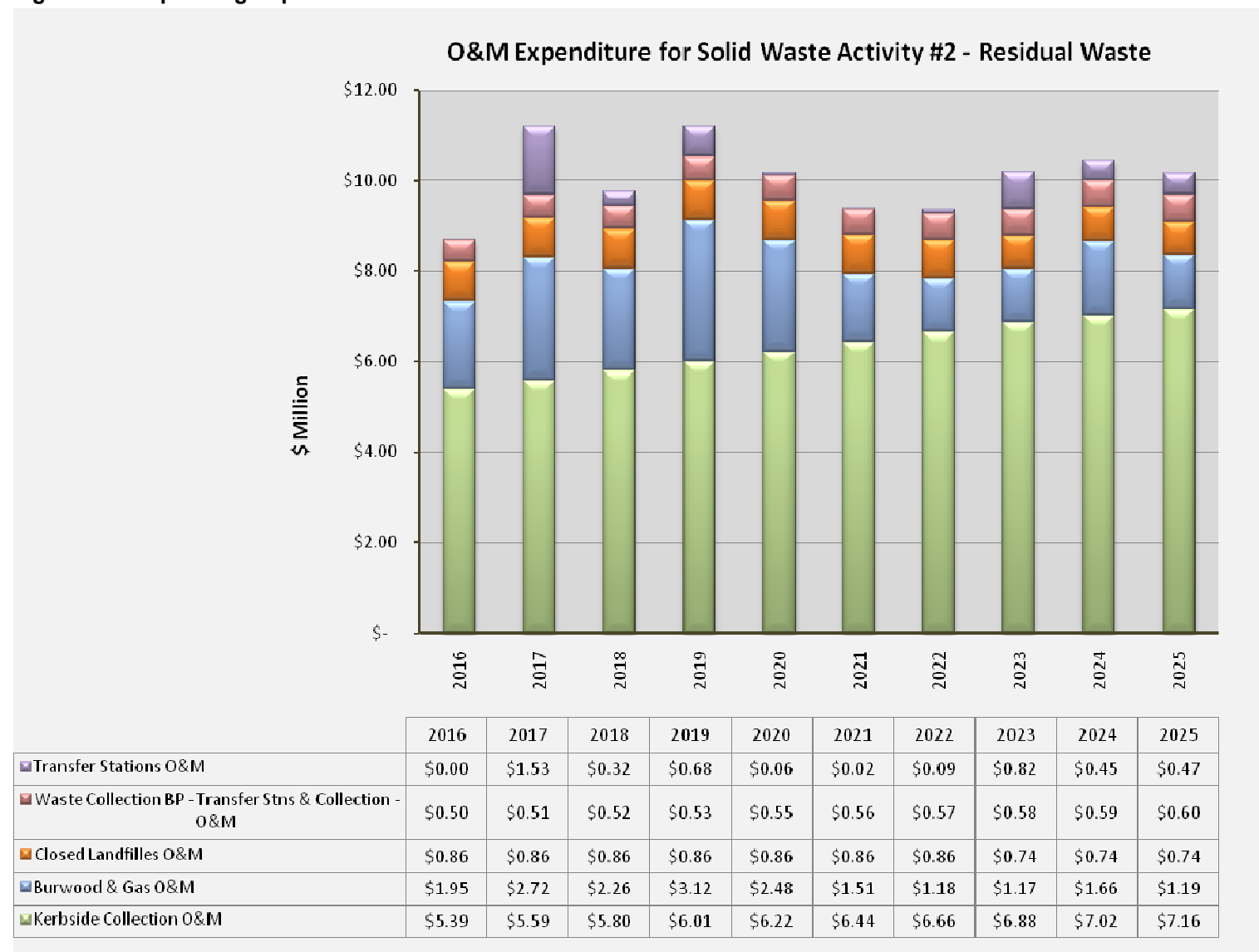


Figure 13-4 above illustrates the total operating expenditure for the residual waste activity rising from \$8.7 million in 2016 to \$10.1 million in 2025. This gradual increase in the total expenditure is a consequence of inflation for the Kerbside Collection O&M costs and the expenditure required to maintain the other assets in Condition 3 or better as determined by the asset schedules.

Figure 13-5 Capital Improvements Expenditure



From Figure 13-6 above it follows that capital improvements remain constant for the 10yr period at \$30k per year which covers major maintenance of buildings including painting, repair of structural defects, alterations, including plumbing and electrical alterations. However, although it retains responsibility for these works the Council may require the contractor to contribute all or part of the cost of such works.

Figure 13-6 Capital Renewals Expenditure

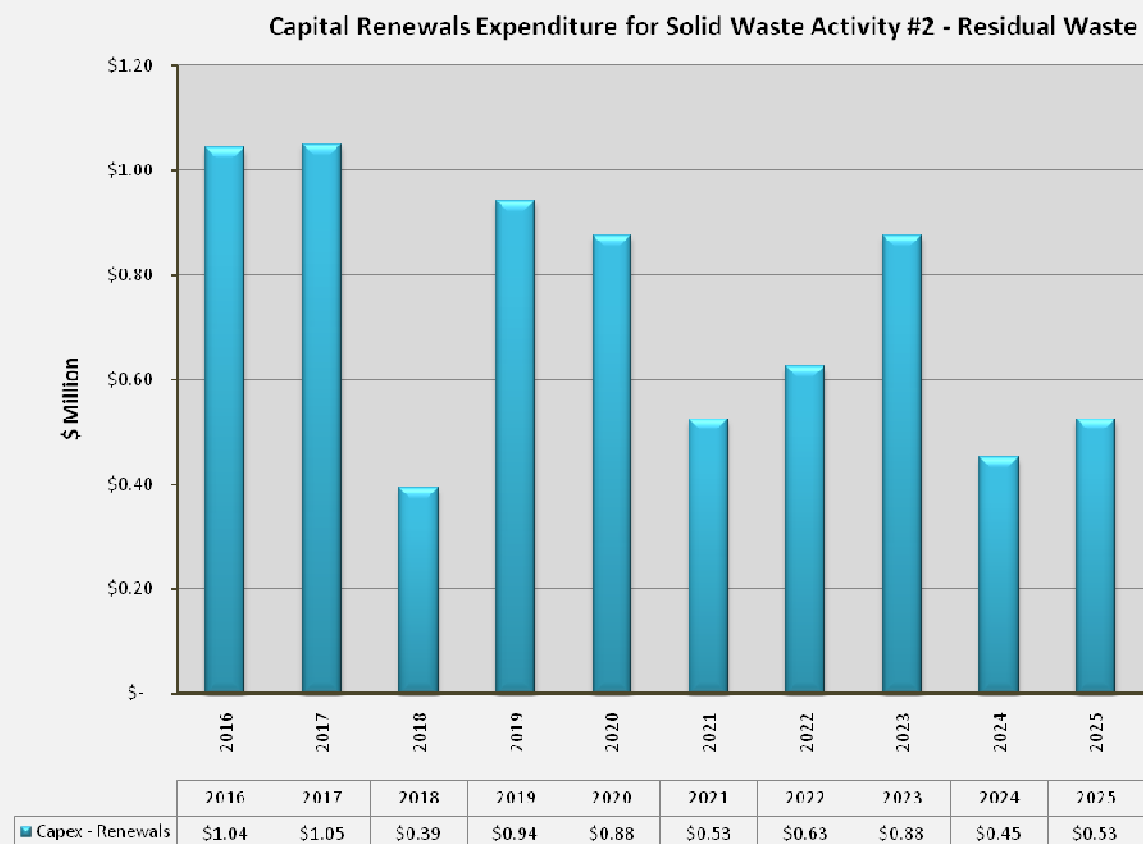


Figure 13-7 above shows that the renewals expenditure for the residual waste activity for the period 2016-2025. The renewals budget includes expenditure on closed landfills, new Burwood Gas Wells, the transfer stations in Christchurch, Banks Peninsula and the Community Collection Points in Bank Peninsula. The commitments for the kerbside collection and community collections points are generally constant over the period at approximately \$390K per year. The variations from year to year in Figure 13-7 are generally attributable to the expenditure required at the closed landfills and the Burwood Gas Wells. For example, \$150K for

new wells has been budgeted for in 2016, 2018 and 2020. \$0.5M has been allowed for the rehabilitation of the Christchurch closed landfills in Years 2016, 2019 and 2022 and \$0.25M for the closed landfills in Banks Peninsula in Years 2018 and 2021.