Acknowledgement

Bass Coast Shire Council wishes to acknowledge the community’s generous contribution of their time to the development of this report.
EXECUTIVE SUMMARY

Background

Bass Coast Shire is the fastest growing local government area in Gippsland with the resident population of about 30,000, increasing to over 70,000 during peak holiday periods (www.forecast.id.com.au). The area also attracts visitors to Philip Island Nature Parks and the Motor Cycle Grand Prix and is well renowned for its special natural environment, with eco-tourism opportunities and major motorsports events attracting millions of visitors every year. The generation of waste is expected to increase in the future in line with projected population increases, which has been predicted to rise to approximately 45,000 by 2031, an increase of approximately 42%. This, coupled with a number of identified waste management challenges and issues provides significant drivers for consideration of a new waste management strategic direction and sustainability initiatives across the Shire.

Purpose

The Waste Management Strategy (WMS) has been developed as part of the commitment Bass Coast Shire Council has made to provide sustainable solutions for the collection, disposal and resource recovery from waste generated within the community.

The Strategy's main purpose is to guide the management of waste over the next 10 years, 2015 - 2025. The WMS will form the basis of waste management planning, including waste technologies, infrastructure, education programs, and collection and recovery services, i.e. whole of waste cycle.

The strategy has been developed in consideration of the needs of the municipality as well as regional and Victorian waste policy objectives as a whole.

This is not a Waste Management Plan whereby specific actions to be undertaken are documented, rather the WMS identifies strategic outcomes to be achieved and suggested options to work towards achieving those outcomes.
WMS Development

The development of the WMS was a collaborative approach between Bass Coast Shire Council and the community, with support from specialist waste management consultancy Environmental Resources Management Australia Pty Ltd (ERM). It has been undertaken in the following stages with a strong focus on community engagement:

<table>
<thead>
<tr>
<th>Process Stage</th>
<th>Details</th>
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<tbody>
<tr>
<td>1. Project scope</td>
<td>Proposed scope of works, roles and responsibilities and data requirements were finalised. Preliminary key waste management issues were identified to be considered in the development of the WMS.</td>
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<tr>
<td>2. Develop Community Consultation Plan.</td>
<td>A Community Consultation Plan was developed to provide the opportunity for identified key stakeholders as well as general community representatives to participate in the development of the WMS, prior to its drafting, as well as post draft development. This approach is consistent with the Metropolitan Waste Management Group WMS template. It is considered that early community involvement is more meaningful as it allows for the identification of issues early in the project so that they are addressed in the development of the WMS.</td>
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<td>3. Develop Long Term Vision and Objectives.</td>
<td>Consistent with current federal, state, regional and municipal strategies and policies, a position paper articulating Council’s long term waste management vision and objectives was developed. These formed the basis of the WMS as the strategic outcomes and suggested options were tailored to the proposed objectives.</td>
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<tr>
<td>4. Review Current Waste Information.</td>
<td>Available current waste data was reviewed and tabulated to assist with its interrogation to provide a profile of waste management across the municipality and highlight data gaps, potential areas of concern or issues, as well as areas of potential opportunities. Comparisons with similar municipalities and state information were undertaken to identify similarities or otherwise, and to assist with identifying areas where waste management services/facilities is considered to be adequate and where potential improvements can be made. The review included an assessment of the Bass Coast Shire Council provision of services and facilities in consideration of the recently implemented Victorian waste policy “hub and spoke” model (Sustainability Victoria, 2013).</td>
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<tr>
<td>5. Develop preliminary options document.</td>
<td>The Preliminary Strategic options document was developed after a review of current waste information completed in Stage 4. It documented current waste management practices, services, facilities and performance, considering waste generation, diversion, and contamination rates, trends, and comparisons to similar municipalities. It highlighted identified issues and data gaps. Preliminary strategic outcomes and suggested options were developed in consideration of the Victorian government strategy, Council long term vision and objectives, as well as potential economic, social and environmental implications. This document was used as a basis for community consultation.</td>
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</table>
6. Community Consultation.  
Public consultation was undertaken by Bass Coast Shire Council consultant, ERM, with support from Bass Coast Shire Council representatives in consideration of the agreed consultation plan. It is noted that there were divergences from the agreed plan, such as increased number of information sessions and continued liaison with community members past the agreed timeframe for consultation to ensure that the community concerns and ideas for improvement were included for consideration in the draft WMS. Information was sought from identified stakeholders, including residents, local organisations, government agencies and private waste contractors, on their key waste management issues and their thoughts on the vision/objectives and strategic outcomes/suggested options.

The draft WMS was developed in consideration of the works that were conducted to date, importantly the feedback provided by the community. Updates to the vision and objectives, key issues, strategic outcomes and suggested options were made.

8. Draft Waste Management Strategy Review  
Formal presentations provided to Internal Reference Group and Council prior to their approval to finalise and present for adoption at Council. The Community was provided the opportunity to view the draft WMS on Council’s website four weeks prior to the Ordinary Meeting of Council. It is noted that this is a divergence from the agreed plan by not going out to the community for a full second round of community consultation. It is considered all strategic issues have been identified.

9. Waste Management Strategy  
Finalised and presented to Council for adoption, and to commence implementation.

In an endeavour to develop a Strategy that addresses the expectations of the local community with respect to the waste management strategic vision, input from the local community and key stakeholders was considered essential. Community consultation was undertaken prior to the development of the draft WMS to identify waste management key issues important to the Shire community; businesses and community organisations. The final draft document was then placed on Council’s website and sent to targeted stakeholders prior to adoption by Bass Coast Shire Council.
Vision and Objectives

The Council’s long term waste management vision and objectives have been informed by relevant federal, state, regional and municipal policies, strategies and plans and the overarching waste hierarchy.

The vision and objectives provide the long term direction of waste management for Council and form the basis for the development of the 10 year WMS. Strategic outcomes and options (suggested) were developed in consideration of, and to work towards, these objectives. The outcomes and options provide a framework and strong, clear direction for Bass Coast Shire Council and the community to strive for best practice waste management.

The vision is:

To reduce the impact of waste generation on Bass Coast Shire by using innovative approaches to: reduce waste generation; increase reuse of waste; increase resource recovery from waste; and, dispose of residual waste such that environmental, social and economic impacts are not to the detriment of future generations.

Objectives are:

- Provision of waste management services and infrastructure to community, residents and businesses to meet their needs as efficiently and equitably as possible, in a financially, socially and environmentally responsible manner;
- Support the provision of waste management services and infrastructure by private companies to meet the needs of the community;
- To reduce the carbon footprint of Council’s waste management facilities and services;
- To engage, educate and support the community to responsibly, sustainably and innovatively manage waste generated, recognising that waste management is a shared responsibility between government, industry and the community;
- To be compliant with applicable legislation and guidelines such that best practice is achieved at all waste disposal facilities and aspired to at other waste management facilities and waste management services in the Shire;
- To continually improve the performance of waste facilities and services to reduce the potential environmental, social and financial costs to the community;
- Partner with state and regional organisations, adjacent councils and community on waste management projects including services, infrastructure and market development.
Identified Key Issues

The following provides details of the key issues that have been identified across the Shire:

**Municipality**

- The growth in population is predicted to continue at a higher rate than the Victorian average;
- Swell of residents during holiday and event periods will continue to grow requiring consideration in waste management over those periods;
- Ratio of residents over 65 will grow and remain a significant portion of the current population;
- Holiday home owners may have a level of service expectations equal to their area of permanent residence. Expectations include being charged on a pro rata basis against usage, i.e. only in holiday period when they are there – an opt in/out ability, or opt out completely;
- Pockets of high risk of bushfire areas requiring mitigation works; and
- Population disbursed across a wide area.

**Council Plans, Policies and Strategies**

- Insufficient interaction between Council departments to address waste management, including:
  - Planning approvals - to ensure that waste management aspects of planning approvals are considered to protect waste real estate, current and future, (buffer distances maintained) and allow provision of waste services (waste collection); and
  - Site Inspections - to regularly inspect and improve recycling and waste management practices at food premises in conjunction with meeting Food Safety Standards.

**Stakeholder Consultation**

- A facility to dispose of materials, comparable to that provided in Wonthaggi, is required in Phillip Island, the Cowes Recycling Bank does not adequately meet the needs of the community. The majority of the community is willing to travel 10-15 minutes to a waste disposal facility;
- Green waste - Collection service, especially for the ageing population, should be considered. The inclusion of kitchen organics into any green waste collection service to divert from Municipal Solid Waste bins and minimise greenhouse gas generation at landfill;
- Hard waste collection service currently provided does not adequately meet the needs of the community;
- Potential collaboration with adjacent Council, in particular South Gippsland Shire Council, share facilities/costs now and in the future, potentially for organic waste;
- WMS should align with regional strategy;
- Contamination rates, majority of which reflect lost opportunity to recycle and to divert from landfill; and
- Education of the community is required.
### Community Satisfaction
- State-wide Local Government Community Satisfaction Survey (2014) – Bass Coast Shire Council results were significantly below state-wide and large rural shire averages, with Phillip Island residents score being lower than the average Bass Coast Shire score. Surf Coast Shire (a comparable Shire) results were very high in comparison; and
- In general, residents of Phillip Island have rated Council’s performance the lowest across the municipality, with waste management scoring only 38. This may be due to the closure of the Rhyll Transfer Station in 2013.

### Kerbside Collection
- Smaller bin sizes, i.e. 80L waste and 120L commingled recycling, have been shown to reduce waste material being disposed. These may also be sizes more manageable for those in the >65 age bracket as well as for lone person households;
- Areas with high proportions of holiday houses are likely to need larger than 80L bins due to potential high waste generation rates by visitor groups at peak periods;
- Insufficient internal consultation between Statutory Planning and Waste Services teams to assist with the management of waste generated by large Multi-Unit Developments, in terms of storage and collection, either by Bass Coast Shire Council or private waste contractors; and,
- Insufficient data capture of waste services provided to non-residential properties.

### Green Waste
- Residents are currently required to travel to dispose of larger green waste materials, which for many, in particular the elderly, is difficult;
- Kerbside collection trial had a poor take up rate, however, residents require an equitable service for managing this material, especially at high fire risk areas and times;
- Evidence that green waste kerbside collection may not minimise the amount of waste disposed to landfill, i.e. placed in the garbage bin, and deposition of woody waste to landfill generates minor quantities of methane;
- Organics market currently limited for processed products; and
- Bass Coast Shire Council and South Gippsland Shire Council have insufficient throughput to develop a composting facility, collaboration with region/adjacent councils required.
Hard Waste

- Hard waste collected Victoria wide has a small proportion of recovery value, approximately 8%. Although it is understood that a considerable volume of steel is currently recouped from the Bass Coast Shire Council hard waste collections, an understanding of the total recovery value in the Shire is not understood.
- Hard waste collection is a service desired by the community to collect large garbage items for those residents who are unable to transport the items to the Transfer Station, such as older residents, rather than a waste recovery operation.
- Feedback from the community has suggested that they are not satisfied with the current On Call collection service, subsidised once a year.

Current Council Contracts

- Contracts are due for renewal in February 2016 with notification of extension by 30 November 2015 for up to 3 years;
- Collection contractors and facility operators have the opportunity to assist with identification of inappropriate disposal practices, provide education to facility and service users, and to improve diversion rates;
- Collaboration with adjacent council, i.e. South Gippsland Shire, there may be an opportunity to potentially align contracts in the future; and
- Contracts cover large components of the Shire’s waste management requirements, minimising the opportunities for those contractors that may only be able/want to bid on one or two elements.

Waste Composition and Quantities

- Reporting of broken glass as contamination is incorrect and not allowing reliable comparisons;
- High reported rates of material unable to be processed is likely to be reflective of broken glass and glass fines in the waste stream due to technology upgrades required by the local Material Recycling Facility;
- Compaction rates of Kerbside recycling trucks may need to be adjusted to minimise breakages;
- Need to improve the data collected. Public Place Recycling to be separated from other kerbside recycling, likewise commercial recycling and rubbish collection to be separated from residential;
- No separate event information has been provided – need to detail whether there are special bins in place and then the collected waste from these that are managed;
- It is noted that the quantity of Municipal Solid Waste received at the Grantville Recycling and Waste Transfer Centre doubled for the 2013/14 year, compared to the previous two years. It is understood that this is due to the closure of the Rhyll Transfer Station on Phillip Island. The Cowes Recycling Bank has only been open since 1 July 2013 and its impact is not reflected in the current waste figures;
- Co-mingled recyclables (not including green waste) collected are less per household than other comparable Shire; and,
- Data collected by Bass Coast Shire Council does not separate residential and commercial, nor clearly detail contamination rates separated by collection services and locations.
Waste Management Facilities

Council Facilities

- Phillip Island – Closure of Rhyll Transfer Station – Community consider there is a need for a Transfer Station to service the area. The Cowes Recycling Bank was set up to meet the current community’s need, however, this is not considered to be a long term solution by both Bass Coast Shire Council nor the community;
- Owning and maintaining a landfill for a small Shire, such as Bass Coast Shire Council, may not be the most viable option financially and environmentally for the community;
- Facility at Cowes is a temporary facility, i.e. recycling bank. The travel times for a Cowes resident are in excess of 30 minutes if they had to rely on either the Wonthaggi or Grantville locations to dispose of their waste/recyclables. While the travel time for an Inverloch resident is 10 minutes to Wonthaggi or 16 minutes to Koonwarra or 24 minutes to Venus Bay; and
- Higher waste management requirements during holiday period;

Material Recycling Facility (MRF)

- Access to a modern MRF in the region to manage collected waste materials. Current MRF utilised for the majority of the collected recyclable materials requires investment to process more recyclable material, volume and type. As recycled materials are ultimately transported from Bass Coast Shire there is no transportation saving in processing material in the Shire compared to transporting to a larger more efficient processor in Melbourne; and
- A syringe problem in Public Place Recycling bins.

Resale Shops

- The community is interested in having a Resale shop provided as part of Bass Coast Shire Council waste services. Based on experience, not all Resale Shops are viable and do not provide the community with the incentive to dispose of their reusable items thoughtfully rather than to landfill, however, organisations, such as Outlook Environmental and Renew, are viable and are supported by the community.

Private Waste Facilities and Services

- An understanding of the quantity and type of material being managed privately is not understood, nor the capacity of these facilities. However, this information is unlikely to be forthcoming in a competitive environment;
- During the green waste no charge period, private waste contractors utilised by residents do not get the benefit of this amnesty, that is, they have to pay for the green waste that they dispose;
- A greater number of diversion options would be beneficial, such as gypsum/plasterboard; and
- Large private trucks are unable to utilise the Waste Transfer/Recycling Centres, requiring transportation to Grantville.
**Best Practice Review**

- Inverloch Recycling and Waste Transfer Centre – Rezoning of the land to Rural Residential has caused a number of unverified complaints regarding odours and green waste mulching. If the facility is no longer able to accept such waste, the facility may no longer be required;
- Current Recycling and Waste Transfer Centres – refer to Best Practice Review, Section 6.8.5.

**Old or Closed Waste Management Facilities**

- Closed/Old landfill liabilities - Wonthaggi, Rhyll, Inverloch (closed landfills), Lang Lang, and the high management cost for rehabilitation and aftercare costs to BCSC

**Waste Management Facilities in Neighbouring Municipalities/Regional Facilities**

- South Gippsland Shire, adjacent to Bass Coast Shire, operates a landfill (Koonwarra Landfill), located in close proximity to Bass Coast Shire. The cost, financial, environmental and social, of running two landfills simultaneously for two small shires is likely to be high. Closing or mothballing (temporarily ceasing filling) one site and placing all waste in the remaining site would provide the potential for significant cost savings and potential for improved environmental performance; and
- Understanding of facilities in the region to gain an appreciation of all facilities available to the community.

**Travel Times**

- Travel times during the holiday period were noted by stakeholders as being considerably higher than those during other periods; and
- Holiday residents on Phillip Island need to dispose of waste at peak times driving to Grantville or Wonthaggi at Christmas period when roads are clogged with traffic.

**Alternative Waste Treatment (AWT)**

- AWT consideration to encompass feasibility assessment for smaller scale source separated waste streams (e.g. organics); and
- Current large scale commingled waste AWT technologies are not economically viable in Victoria however collaboration across the region on large scale waste management facilities is encouraged over the next ten years as the AWT market develops.

**Data Collection**

- Current data collection practices not consistent with preferred data collection standard; and
- Minimal understanding of Shire specific garbage and recyclables stream.
### Education and Community Engagement

- *Further education, directly to the residents, businesses and schools is required; and*
- *Positive reinforcement required.*

### Litter Management

- *Litter continues to be an issue; and*
- *Need to understand where this is occurring and assess possible reasons.*

### Council Internal Waste Management

- *No clear internal waste management guidance incorporating specific Bass Coast Shire Council procedures and strategic outcomes to achieve; and*
- *Reliance on Council Planners to consider waste management rather than procedures to ensure.*
### Strategic Outcomes and Suggested Options

The following strategic outcomes and suggested options have been developed to address identified key issues and meet objectives of the Waste Management Strategy.

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| Provision of waste management services and infrastructure to community, residents and businesses to meet their needs as efficiently and equitably as possible, in a financially, socially and environmentally responsible manner. | • Residents and households within the Shire have accessibility to waste management infrastructure acceptable to Council and residents.  
• Provision of waste services to the commercial sector is to be funded by the commercial users of the services.  
• Provision of kerbside waste collection options to reflect needs of household.  
• Holiday makers and visitors to the Shire have access to adequate and convenient waste management infrastructure.  
• Kerbside waste services fees imposed to be proportional to total waste generation. (i.e. polluter pays principle).  
• Landfill gate fees to be based on full recovery of all costs for operations, rehabilitation and aftercare. (i.e. whole of life costs). | • Feasibility studies to be undertaken for the:  
  o Provision of appropriate waste infrastructure/services for all Shire residents.  
    Consideration to be given to all current Council waste disposal facilities. The consideration of the Cowes Recycling Bank is considered a high priority as it is currently not considered a long term solution to meet the needs of the community (High Priority);  
  o Provision of 3 bin kerbside collection, i.e. addition of green organics bin collection, including feasibility of inclusion of kitchen organics. This study is to consider the green waste trial conducted and the potential for green waste to be collected on a mandatory regular collection, optional collection service, an at call basis, as detailed below as an interim option, or maintain current status quo. The assessment should include, among other factors, what the cost is to collect and transport the material, how the material is to be managed and disposed, i.e. the processing facility and the end market for the material. Changes to the current garbage and commingled recyclables collections, bin sizes and collection frequency will also need to be considered in light of any additional green waste collection services. The study, especially consideration of kitchen organics collection, should seek the collaboration of the region and adjacent councils (Hold pending the completion of state and regional strategies and plans, as discussed in section 8);  
  o Provision of waste management infrastructure in areas that experience high levels of population change over the holiday and event periods that allows flexibility for disposal of garbage, commingled recyclables and green waste at times that are out of sync with kerbside services;  
• Collaboration with South Gippsland Shire regarding service sharing and/or consolidation of Shire landfills (Grantville and Koonwarra), including whole of life costs (capital, operation, rehabilitation and aftercare). This is suggested to involve sharing their landfills across both shires, running one landfill at a time rather than two to minimise the financial, environmental and social costs of currently running two. Proposed measures would be a joint venture between the two shires. The Joint Venture will be responsible for the management of the two landfill sites. They will cover all costs using tipping fees. Council’s to pro-rata for any needed extra funding (Landfills have fixed costs and so tipping fees not always cover). The Joint Venture would cover whole of life scenarios |
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<td>and all liabilities (High priority).</td>
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<td>• Contract dates should be aligned with adjacent shires to enable synergies (High Priority);</td>
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<td>• Undertake discussions with Melbourne based recyclers to determine if they will collect recyclables from a depot in Bass Coast. If not, other options may be considered such as establishing a shared commingled depot with surrounding Shires;</td>
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<td>• Green waste Interim Measure – Pending completion of the 3 bin kerbside collection feasibility study, option for Council to manage an At Call bundled green waste collection service. This service will provide for the collection of larger green waste that is too large to be managed on the resident property. The collection would need to be booked by the resident with Council arranging the collection. Such collections should be co-ordinated on a regular day of the fortnight/month (depending on demand) with the bundled branches (say maximum 3m3) chipped onsite by Council chipper. The resident could have the option of keeping the chipped product for use onsite or Council to remove (High priority);</td>
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<td>• Consider increasing hard waste at call service incorporating option for green waste collection subsidised by Council from 1 per year to 4 per year. This service will also be included in the Feasibility Study for ongoing waste management facilities/ services provided (High priority);</td>
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<td>• Community engagement on provision of waste management services to be undertaken every 12-24 months, including regular surveys and communications;</td>
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<td>• Implement consistent and comprehensive data capture for kerbside and waste management facilities, including private facilities, in consideration of best practice guidelines. Need to have regular visual checks of kerbside and litter bins to identify residents/area where waste is not being disposal of appropriately. Suggested measures include continuing the visual check of resident bins by the kerbside collector and implementing the visual checks of litter bins with cameras/ GPS on vehicles to readily identify the areas of concern;</td>
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<td>• Regular review of waste management services and infrastructure provided by Council, private contractors or regionally to assess capacity (meet current and projected waste to be managed), viability (in consideration of the cost model detailed below), and standard (meet or exceed current best practice standards such as bin types and sizes, landfill and transfer station, data capture) to meet community need;</td>
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|            |                   | • Develop and maintain a waste management cost model (or utilise and build on the model already developed by the region) to understand actual waste management costs currently or to be incurred by the Shire, including rehabilitation and aftercare costs, and charge ratepayers/ users reflecting such costs, noting that full cost recovery may not be realisable due to inherent fixed costs. Model to allow flexibility in charging for different
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| Support the provision of waste management services and infrastructure by private companies to meet the needs of the community. | Increased resource recovery, waste reuse or recycling rates by private waste companies.  | • Undertake a feasibility assessment of an Encouragement program for businesses by developing program objectives, types of support/assistance, likely take up and likely impact. Such assessment should include whether this program would be limited to the Bass Coast Shire Council or across the region;  
• Maintain an understanding of waste generation and waste profile, such as by way of regular waste audits of bins (conducted every 3 years as per best practice guidelines), or utilising available regional or metropolitan waste profile information, to be reflected in the Encouragement program;  
• Consider flexible charging for private waste contractors depending on the source of the material, e.g. no charge for green waste disposal during green waste ‘no charge’ period if material sourced from residents;  
• Split contracts into small components to ensure that contractors who can only bid on one or two elements are not disadvantaged. (This does not preclude tenderer from offering a discount if they win more than one component). It is recommended that separate contracts be provided for:  
  o Collection of kerbside waste and recyclables;  
  o Street litter bins and events;  
  o Operation of transfer stations (Grantville to be costed separately);  
  o Operation of landfill (Grantville transfer station to have separate cost from landfill);  
  o Processing of recyclables; and  
  o Hard waste collection.  
• Kerbside collection days allowed to be varied at Shire’s consent to allow for better fleet utilisation. |
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<td>To reduce the carbon footprint of Council's waste management facilities</td>
<td>Methane emissions from Council’s landfill be managed within EPA Victoria Best Practice Environmental Management guidelines (BPEM)</td>
<td>Carbon emissions associated with the provision of Council's waste facilities and services is to be calculated and reported as required by Council’s statutory obligations;</td>
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<td>and services.</td>
<td>Carbon emissions per household to reduce over the strategy period.</td>
<td>Feasibility assessment of the diversion of kitchen organics, from the waste to landfill stream via kerbside collections, including a full cost benefit analysis. (i.e. 3 bin system Shire wide) – refer to 3 bin collection service detailed above (Hold);</td>
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<td>Assess and implement best practice landfill gas management measures at the Shire landfill. Landfill gas collection at the landfill is suggested as the best method for collection of methane and reducing the Shire’s carbon footprint. The method used will be dependent on the volume of methane being currently and to be generated at the landfill. If sufficient methane is available, this can be converted into energy and used on site to generate power. If Grantville landfill is unable to capture gas, it may be more beneficial to send material to another landfill that can. Suggest collaboration between South Gippsland and Bass Coast Shire Council to assess options (High priority); and</td>
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<td>Potential to convert the landfill to a solid inert landfill so no methane generation with all organics sent to a regional facility, such as Hyland Highway, where landfill gas capture infrastructure is currently installed.</td>
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<td>Waste generation rates per household to reduce over the strategy period.</td>
<td>Review waste management contracts to incorporate measures to improve diversion rates (High priority). Suggestions include:</td>
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<td>Landfill diversion rates per household to increase over the strategy period.</td>
<td>o Operation of Landfill Contract provides incentives and penalties for waste diversion, landfill compaction, airspace consumption and use of daily cover. These are all critical elements and will impact on future costs at the site;</td>
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<td>o Transfer Stations contracts - provide incentives and penalties for waste diversion, and improvements to green waste processing specification, in particular with regard to minimising impacts to the community. An assessment of the ongoing acceptability of green waste processing is required prior to next tender;</td>
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<td>o Potential measures including identification of bins that have inappropriate material in them, as current undertaken by current waste contractor. Potentially align contracts to match up in the future with other Councils, such as South Gippsland Shire, to assist with future collaboration;</td>
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<td>o Recyclables collection contract - specify maximum compaction rate to avoid glass crushing, also vehicle to have camera to record all loads to assist with identification of houses that place non-conforming wastes in bin;</td>
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<td>o Events contract - Contractor to provide recycling bins with recyclables only bin caps for events and sporting facilities where contamination can be managed. Recycling bins and waste bins to be placed in pairs at all events. Contractor to work with event coordinators to manage contamination in recycling bins.</td>
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To engage, educate and support the community to responsibly, sustainably and innovatively manage waste generated recognising that waste management is a shared responsibility between government, industry and the community.
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|            |                   | Diversion rates for events targets to be set with events meeting targets charged lower waste fees;  
|            |                   | • Contract dates should be aligned with adjacent shires to enable synergies;  
|            |                   | • Undertake discussions with Melbourne based recyclers to determine if they will collect recyclables from a depot in Bass Coast. If not, other options may be considered such as establishing a shared commingled depot with surrounding Shires;  
|            |                   | • Undertake an assessment of alternative waste bin collection options, i.e. smaller garbage and larger recycling bins, and collection frequencies with costs reflected, to provide incentive to reduce waste to landfill;  
|            |                   | • Encourage home composting, pending the provision of kerbside collection feasibility or organics. Council to consider subsidising such bins to the community for onsite use to assist with diversion of organics from landfill. Council to proactively assist residents to be more self-sufficient in this regard. It is suggested that the provision of organic bins would require the concurrent provision of bundled periodical collection service and resident education. This may include bin delivery and onsite training, ability for the resident to contact Council if they have any questions and active follow up. (High priority);  
|            |                   | • Consider a trial of Aerobin style composting bins to gather data on merits of use of these bins together with a bundled green waste collection compared to a three bin system (High priority);  
|            |                   | • Community engagement on provision of waste management services to be undertaken every 12-24 months, including regular surveys and communications. Information to include waste management performance, how the community can assist and provide feedback;  
|            |                   | • Develop a recognition and awards program recognising innovative waste management by members of the community. Waste collectors can assist by way of inspection of bins at collection time; and  
|            |                   | • Maintain an understanding of waste generation and waste profile, such as by way of regular waste audits of bins (or utilise available region audit information for waste profile), litter and illegal dumping activities, to be reflected in community engagement and education. The continued review of kerbside bins and litter bins, inclusion of cameras and GPS on collection vehicles, to assist with maintaining an understanding and communicating with the community. |
### Objectives

To be compliant with applicable legislation and guidelines such that best practice is achieved at all waste disposal facilities and aspired to at other waste management facilities and waste management services in the Shire.

### Strategic Outcomes

- Complete all statutory reporting and respond to EPA requirements within required timeframes.
- Comply with planning permit requirements for waste facilities.
- Design, operate and rehabilitate the residual waste management infrastructure (Grantville Landfill) in consideration of EPA Victoria Best Practice Environmental Management guidelines.
- Design and operate resource recovery facilities and waste services in consideration of current best practice guidelines.
- Locate and rehabilitate, where required, all former waste facilities within the Shire.

### Suggested Options

- Regular review of waste management services and infrastructure provided by Council against current best practice standards, such as bin types and sizes, landfill and transfer station, and data capture; and.
- Undertake a study to locate previous waste facilities closed in the last 10-15 years based on Council records, prioritise their rehabilitation and after care, in consideration of EPA requirements and potential Council liabilities.
<table>
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<th>Objectives</th>
<th>Strategic Outcomes</th>
<th>Suggested Options</th>
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</thead>
</table>
| To continually improve the performance of waste facilities and services to reduce the potential environmental, social and financial costs to the community. | - Reduction in environmental incidents related to the provision of waste services and infrastructure over the strategy period.  
- Waste disposal facilities meet current legislative requirements.  
- Waste management facilities and services to aspire to current best practice guidelines.  
- Community satisfaction increase over the strategy period.  
- Financial cost of the provision of waste management services and facilities per household is clearly understood, transparent and includes whole of life costs over the strategy period.  
- Litter and illegal dumping rates reduction per household over the strategy period. | - Develop and maintain a template (potentially utilise the region developed template) to allow for annual assessment of performance of the waste management services and facilities and identification of areas for improvement. The template will include information related to incidents, best practice standards, costs, waste generation and diversion rates, contamination rates, litter rates and the like to allow assessment of performance.  
- Review waste management contracts to incorporate measures to improve diversion rates (High priority). Suggestions include:  
  - Operation of Landfill Contract provides incentives and penalties for waste diversion, landfill compaction, airspace consumption and use of daily cover. These are all critical elements and will impact on future costs at the site;  
  - Transfer Stations contracts - provide incentives and penalties for waste diversion, and improvements to green waste processing specification, in particular with regard to minimising impacts to the community. An assessment of the ongoing acceptability of green waste processing is required prior to next tender;  
  - Potential measures including identification of bins that have inappropriate material in them, as current undertaken by current waste contractor. Potentially align contracts to match up in the future with other Councils, such as South Gippsland Shire, to assist with future collaboration;  
  - Recyclables collection contract - specify maximum compaction rate to avoid glass crushing, also vehicle to have camera to record all loads to assist with identification of houses that place non-conforming wastes in bin. Include identification of recycling bins and rubbish bins that have inappropriate material in them as is currently undertaken by current contractor but formalising this; consider including such measures as a camera with GPS attached to collection vehicles to understand areas of litter problems; consider inclusion of the cost of new bins in the updated contracts to allow for current bin replacements over the next contract period (High priority);  
  - Events contract - Contractor to provide recycling bins with recyclables only bin caps for events and sporting facilities where contamination can be managed. Recycling bins and waste bins to be placed in pairs at all events. Contractor to work with event coordinators to manage contamination in recycling bins. Diversion rates for events targets to be set with events meeting targets charged lower waste fees;  
  - Contract dates should be aligned with adjacent shires to enable synergies; |
<table>
<thead>
<tr>
<th>Objectives</th>
<th>Strategic Outcomes</th>
<th>Suggested Options</th>
</tr>
</thead>
</table>
| Partner with state and regional organisations, adjacent councils and community on waste management projects, including services, infrastructure and market development. | • Proactive regular consultation with Gippsland Waste and Resource Recovery Group, Sustainability Victoria, EPA Victoria and key stakeholders.  
• Encourage the development of a market for recycled products by preferentially procuring products made from recycled materials (market development).  
• Increase the demand for recycled products in the Shire. | • Record environmental incidents related to the provision of waste services and infrastructure over the strategy period;  
• Maintain understanding of the litter and illegal dumping activities, such as where occurring and when (is there a link between dumping sites and location of facilities) and develop Waste Education Action Plan, including litter reduction activities. Publicise good news stories to encourage the community; and  
• Develop and maintain a waste management cost model as detailed above.  
• Engage with state and regional organisations, adjacent councils and community on waste management projects biannually to be abreast of waste management projects and to assess where and how collaboration can occur (High Priority)  
• Identify opportunities for Shire to swap from products made of virgin materials to recycled materials (e.g. road side mulch, recycled paper, etc.);  
• Collaborate with region and adjacent shires in the investigation and assessment of feasible Alternative Waste Treatment options for the region; and  
• Develop an engagement program with Council departments to ensure that waste management is being considered. It is suggested that this include education across all departments; development of internal policies and procedures and strategic outcomes for internal council waste management; development of an internal referral process for such departments as planning, health and events; as well as consideration of long term policy development to incorporate waste management in department procedures. |
WMS Implementation

Each suggested option is to be reviewed by Bass Coast Shire Council and prioritised for implementation. For each option an Action Plan will be developed, with calculated costs, to address how, by whom and by when each option is to be implemented. The Action Plans will then be subject to review and approval by the Internal Reference Group prior to Council approval for implementation of each option.

The suggested options identified relating to high priority key issues are to have a Priority Action Plan developed within six months and be implemented within twelve months of the WMS completion, subject to Council allocation of resources, (e.g. budget). All other options should be prioritised into medium (such as Action Plan developed within 12 months) and low (such as Action Plan developed within 2 years), with timeframes developed accordingly, prior to implementation. All Action Plans to be developed and implementation commenced within 3 years of WMS completion.

The approved Action Plans will form a subset of this WMS and will be reviewed on an annual basis.

WMS Review

The WMS is intended to have currency for 10 years to allow time for the implementation of long term actions, however it is expected that this WMS will need to be periodically reviewed for currency against state and national waste policies. The initial review of the WMS has been set for 2 years’ time, at which time the WMS will be reviewed from a legislative perspective, that is, the potential impact of the completed state and regional resource recovery/waste management policies and plans can be assessed and any required changes made to reflect those plans. The next date for review will be set at that time.
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List of Acronyms used

ABS  Australian Bureau of Statistics
APC  Australian Packaging Covenant
AWT  Alternative Waste Treatment
C&D  Construction and Demolition (waste)
C&I  Commercial and Industrial (waste)
DEPI Department of Environment and Primary Industries (Victoria)
DELWP Department of Environment, Land, Water & Planning
EPA  Environment Protection Authority Victoria
ERF  Emissions Reduction Fund
FSC  Foods Standards Code
Hh   Household (as in per Household)
LGA  Local Government Authority
MGB  Mobile Garbage Bin (i.e. wheelie bin)
MRF  Materials Recovery Facility
MSW  Municipal Solid Waste
MUD  Multi-Unit Development
NESS Natural Environment Sustainability Strategy
PPR  Public Place Recycling
pp   per Person or Resident
Ps   Per service
RWRRIP Regional Waste and Resource Recovery Implementation Plan
SWRRIP State Waste and Resource Recovery Implementation Plan
WMS  Waste Management Strategy
WRRG Waste and Resource Recovery Groups
FOGO Food, organics, green organics
1 INTRODUCTION

1.1 PURPOSE

Bass Coast Shire Council’s Waste Management Strategy (WMS) has been developed as part of the commitment Bass Coast Shire Council has made to provide sustainable solutions for the collection, disposal and resource recovery from waste generated within the community.

The Strategy’s main purpose is to guide the management of waste over the next 10 years, 2015 - 2025. The WMS will form the basis of waste management planning, including waste technologies, infrastructure, education programs, and collection and recovery services, i.e. whole of waste cycle.

The strategy has been developed in consideration of the needs of the municipality as well as regional and Victorian waste policy objectives as a whole.

This is not a Waste Management Plan whereby specific actions to be undertaken are documented rather the WMS identifies strategic outcomes to be achieved and suggested options to work towards achieving those outcomes.

1.2 BACKGROUND

Bass Coast Shire is the fastest growing local government area in Gippsland with the resident population of about 30,000, increasing to over 70,000 during peak holiday periods (www.forecast.id.com.au). The area is famous for its special environment and wildlife, with eco-tourism and major events on Phillip Island attracting around 3.4 million visitors each year. The generation of waste is expected to increase in the future in line with projected population increases, which has been predicted to rise to approximately 45,000 by 2031, an increase of approximately 42%. This, coupled with a number of identified waste management challenges and issues, provides significant drivers for consideration of a new waste management strategic direction and sustainability initiatives across the Shire.

The Victorian State Government’s 30 year waste and resource recovery policy “Getting full Value: the Victorian Waste and Resource Recovery Policy (2013)” details that across Victoria over the past 10 years, there has been a 29% increase in the average amount of waste attributable to each Victorian. It predicts that Victoria’s waste generation is expected to continue to increase by around 4% per year. It also notes that the composition of waste going to landfill is changing, with more than 60% of all materials in landfill being biologically active, i.e. organic waste (plant and animal materials). With regard to recycling, Victorians improved their recycling rates across all waste streams from the mid-2000s, however, improvements have recently slowed, suggesting that the most accessible and affordable recycling options have already been acted on.
Within the State of Victoria waste management strategic direction is provided by the Department of Environment, Land, Water & Planning (DELWP). Utilising the 30 year policy, *Getting full Value: the Victorian Waste and Resource Recovery Policy* (DEPI, 2013) which sets a vision for waste and resource recovery in Victoria. The Environment Protection Authority Victoria (EPA) supports the strategic direction through legislation and by facilitation of government policy initiatives. Regional Waste and Resource Recovery Groups (WRRG) are then responsible for translating these state based strategies through regional programs and local councils. Bass Coast Shire Council is a member of the WRRG (Gippsland) and as such is bound by state legislation.

The implementation of the Victorian Waste and Resource Recovery Policy (DEPI, 2013) commenced over 12 months ago. Sustainability Victoria has prepared a Statewide Waste and Resource Recovery Infrastructure Plan (SWRRIP). The SWRRIP is intended to provide the framework to inform and guide planning and investment that supports the mix of infrastructure that will effectively manage our waste through maximising resource recovery. It will provide the basis for regional planning processes by documenting long-term trends in waste generation, resource recovery, population and waste infrastructure at a state-wide scale. The SWRRIP was finalised in June 2015. The development of Regional Waste and Resource Recovery Implementation Plans (RWRRIP) are now to be developed over the next 18 months and will be based on the SWRRIP.

Sustainability Victoria is also completing the following strategies/frameworks:

- Investment Facilitation Framework;
- Collaborative Procurement Framework;
- Victorian Market Development Strategy for Recovered Resources;
- Victorian Community and Business Waste Education Strategy; and

The development of these plans/strategies/frameworks will influence the Regional Waste and Resource Recovery Implementation Plan and, in turn, Bass Coast Shire Council’s WMS, triggering the need for their impact to be reviewed once they are completed.

The vision for waste management in Victoria is:

*Victoria has an integrated, statewide waste management and resource recovery system that provides an essential community service by protecting the environment and public health, maximising the productive value of resources, and minimising long term costs to households, industry and government.* (Source: DEPI, 2013, Getting Full Value: the Victorian Waste and Resource Recovery Policy).

The policy sets objectives and goals that build on the vision.

With the change in Victoria’s government in November 2014, the current government has signalled that it will be reviewing the current state waste policy. One of the key principles of the *Environment Protection Act 1970* [Vic] is the waste hierarchy. Victoria’s principle of ‘shared responsibility’ is also relevant.
The previous policy “Towards Zero Waste” and current policy “Getting full Value: the Victorian Waste and Resource Recovery Policy” also have the waste hierarchy as a key principle. As the waste hierarchy is a key principle in Victorian legislation, it is reasonable to expect that any future policy will incorporate the waste hierarchy principle, that is will focus on minimising waste generation; improving reuse and recycling opportunities; and minimising disposal of waste to landfill.

The vision and objectives of waste management in the Shire will encompass the same waste hierarchy principle and thus will remain consistent with the policy of the government of the day.

1.3 WASTE MANAGEMENT STRATEGY DEVELOPMENT

The development of the WMS was a collaborative approach between Bass Coast Shire Council, its consultant (Environmental Resources Management Australia Pty Ltd (ERM)) and the community. It has been undertaken in the following stages with a strong focus on community engagement:

Table 1 Waste Management Strategy Development

<table>
<thead>
<tr>
<th>Process Stage</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Project Scope/Outline</td>
<td>Proposed scope of works, roles and responsibilities and data requirements were finalised. Preliminary key waste management issues were identified to be considered in the development of the WMS.</td>
</tr>
<tr>
<td>2. Develop Community Consultation Plan</td>
<td>A Community Consultation Plan was developed to provide the opportunity for identified key stakeholders as well as general community representatives to participate in the development of the WMS, prior to its drafting, as well as post draft development. This approach is consistent with the Metropolitan Waste Management Group WMS template. It is considered that early community involvement is more meaningful as it allows for the identification of issues early in the project so that they are addressed in the development of the WMS. Refer to Section 5 and Annex B for further details of the plan.</td>
</tr>
<tr>
<td>3. Develop Long Term Vision and Objectives</td>
<td>Consistent with current federal, state, regional and municipal strategies and policies, a position paper articulating Council’s long term waste management vision and objectives was developed. These formed the basis of the WMS as the strategic outcomes and suggested options were tailored to the proposed objectives.</td>
</tr>
<tr>
<td>4. Review Current Waste Information</td>
<td>Available current waste data was reviewed and tabulated to assist with its interrogation to provide a profile of waste management across the municipality and highlight data gaps, potential areas of concern or issues, as well as areas of potential opportunities. Comparisons with similar municipalities and state information were undertaken to identify similarities or otherwise, and to assist with identifying areas where waste management services/facilities is considered.</td>
</tr>
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To be adequate and where potential improvements can be made.

The review included an assessment of the Bass Coast Shire Council provision of services and facilities in consideration of the recently implemented Victorian waste policy “hub and spoke” model (Sustainability Victoria, 2013).

<table>
<thead>
<tr>
<th>Process Stage</th>
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<tbody>
<tr>
<td>5. Develop preliminary options document.</td>
<td>The Preliminary Strategic options document was developed after a review of current waste information completed in Stage 4. It documented current waste management practices, services, facilities and performance, considering waste generation, diversion, and contamination rates, trends, and comparisons to similar municipalities. It highlighted identified issues and data gaps. Preliminary strategic outcomes and suggested options were developed in consideration of the Victorian government strategy, Council long term vision and objectives, as well as potential economic, social and environmental implications. This document was used as a basis for community consultation.</td>
</tr>
<tr>
<td>6. Community Consultation.</td>
<td>Public consultation was undertaken by Bass Coast Shire Council consultant, ERM, with support from Bass Coast Shire Council representatives in consideration of the agreed consultation plan. It is noted that there were divergences from the agreed plan, such as increased number of information sessions and continued liaison with community members past the agreed timeframe for consultation to ensure that the community concerns and ideas for improvement were included for consideration in the draft WMS. Information was sought from identified stakeholders, including residents, local organisations, government agencies and private waste contractors, on their key waste management issues and their thoughts on the vision/objectives and strategic outcomes/suggested options. Refer to Section 5 for details of Community Consultation, with feedback included throughout the document.</td>
</tr>
<tr>
<td>7. Draft Waste Management Strategy development.</td>
<td>The draft WMS was developed in consideration of the works that were conducted to date, importantly the feedback provided by the community. Updates to the vision and objectives, key issues, strategic outcomes and suggested options were made.</td>
</tr>
<tr>
<td>8. Draft Waste Management Strategy Review</td>
<td>Formal presentations provided to Internal Reference Group and Council prior to their approval to finalise and present for adoption at Council. The Community was provided the opportunity to view the draft WMS on Council’s website four weeks prior to the Ordinary Meeting of Council. It is noted that this is a divergences from the agreed plan by not going out to the community for a full second round of community consultation. It is considered all strategic issues have been identified.</td>
</tr>
</tbody>
</table>
1.4 WMS LIMITATIONS

The WMS does not consider:

- Resource recovery markets;
- Logistics of the provision of kerbside waste management collection services;
- Detailed logistics modelling;
- Logistical, contractual or other environmental implications (such as air pollution) of the provision of such services. Strategic outcomes and suggested options developed relate to the management of wastes, such as reducing Municipal Solid Waste (MSW) standard bin size or collection frequency; and.
- Specific applicability and detailed assessment of potential Alternative Waste Technologies (AWTs). Reference to AWTs was limited to a broad discussion of the types of technologies available.
2 VISION AND OBJECTIVES

Council’s long term waste management vision and objectives have been informed by relevant federal, state, regional and municipal policies, strategies and plans and the overarching waste hierarchy.

The vision and objectives provide the long term direction of waste management for Council and form the basis for the development of the 10 year WMS. Strategic outcomes and options (suggested) were developed in consideration of, and to work towards, these objectives. The outcomes and options provide a framework and strong, clear direction for Bass Coast Shire Council and its community to strive for best practice waste management.

2.1 VISION

To reduce the impact of waste generation on Bass Coast Shire by using innovative approaches to: reduce waste generation; increase reuse of waste; increase resource recovery from waste; and, dispose of residual waste such that environmental, social and economic impacts are not to the detriment of future generations.

2.2 OBJECTIVES

- Provision of waste management services and infrastructure to community, residents and businesses to meet their needs as efficiently and equitably as possible, in a financially, socially and environmentally responsible manner;
- Support the provision of waste management services and infrastructure by private companies to meet the needs of the community;
- To reduce the carbon footprint of Council’s waste management facilities and services;
- To engage, educate and support the community to responsibly, sustainably and innovatively manage waste generated, recognising that waste management is a shared responsibility between government, industry and the community;
- To be compliant with applicable legislation and guidelines such that best practice is achieved at all waste disposal facilities and aspired to at other waste management facilities and waste management services in the Shire;
- To continually improve the performance of waste facilities and services to reduce the potential environmental, social and financial costs to the community;
- Partner with state and regional organisations, adjacent councils and community on waste management projects including services, infrastructure and market development.
3 OVERVIEW OF MUNICIPALITY

3.1 THE ORIGIN OF THE SHIRE

The traditional owners of the Shire are the Bunurong people. The area takes its name from George Bass who sighted the area during an expedition to prove the existence of Bass Strait in 1796. Bass Coast has a rich history that is central to the establishment of the state of Victoria. In 1826 Corinella was established as a permanent settlement, the second in the state. Victoria’s third permanent settlement was established on the Bass River shortly after the founding of Melbourne in 1835. In the early 1800s timber was the primary industry of the area. Timber was shipped to Melbourne and beyond from several ports along the coastline. Once the land was cleared, it was used for agriculture including dairying, beef farming and raising crops. The first coal discovered in Victoria was found at Cape Paterson. Coal mines were later established in Wonthaggi and Kilcunda, but ceased operation in the mid to late 1900s. Bass Coast was adopted as the official name of the municipality when local governments were amalgamated in 1994 (Bass Coast Shire Council, 2013).
3.2 LOCATION

Bass Coast Shire is a 90 minute drive from Melbourne’s CBD and encompasses 865 square kilometres of land. Its unique coastline is complemented by a beautiful hinterland. The major centres of the Shire are Wonthaggi, Cowes, Inverloch, San Remo and Grantville. Bass Coast Shire’s two major industries are tourism and agriculture. The Shire boasts many beautiful beaches and unique nature reserves and attracts over 3.4 million visitors, including 35% of Melbourne’s international visitors, each year. Tourism is estimated to generate around $620 million in direct expenditure, over $1 billion in value added and supports around 1,400 jobs annually. Bass Coast Shire’s proximity to Melbourne makes it a sea change choice and holiday destination for people wanting to escape the city. Local volunteer groups contribute significantly to maintaining and caring for the natural environment. A thriving arts community has developed, drawn to the area for its natural beauty and accessibility to major centres (Bass Coast Shire Council, 2013).

3.3 ECONOMY

Bass Coast Shire is one of the few municipal areas in Australia which boast attractive coastline, productive farmlands, thriving townships and tranquil hinterland. The corner stones of the Bass Coast economy have, for many years, been agriculture and tourism. Farming continues to be an important component of the local economy, supported by good land use planning and a commitment to retaining good quality farm land in the Shire for agricultural purposes. Tourism is also thriving with a range of new attractions and activities, complementing wonderful nature based experiences on offer across the Shire including the Phillip Island Nature Parks, Bunurong Marine Park, Wonthaggi State Coal Mine and vast rail trails. There are many commercial and community/public events held year round throughout the Shire, providing opportunities to enjoy the relaxed lifestyle and build strong communities. Business sectors such as construction, retail and health care continue to be stable industries. Recent years have seen the development of small boutique farming enterprises including venison, free range eggs, olives, horses and wineries. These agricultural ventures are becoming an integral part of the tourism appeal of Bass Coast. (Bass Coast Shire Council, 2013) The wonderful produce of Bass Coast can be found at a number of farmers markets that are hosted across the Shire and Gippsland region making Bass Coast a diverse and robust economy. Agriculture is an important part of the local economy generating around 7% of total economic output. The largest commodity groups by value or production are dairy ($52 million) and meat ($28 million). Bass Coast is emerging as a knowledge-based economy, supporting business innovation and creativity (Bass Coast Shire Council, 2013).

3.4 ENVIRONMENT

The unique Bass Coast environment is one of the Shire’s most valuable assets. It is the reason so many people live across Bass Coast, and why so many people visit. Bass Coast is a parkland for Melbourne, a place people come to see and enjoy the coast, native birds and animals and indigenous plants and trees. Bass Coast has environmental and landscape values of regional and national significance, including Ramsar listed wetlands, marine parks and remnant native vegetation. Climate change, population growth and economic development all need to be managed in a way that achieves a sustainable relationship with the environment. Bass Coast Shire Council is working to get this balance right (Bass Coast Shire Council, 2013).
The Bass Coast Municipal Fire Management Plan (Bass Coast Municipal Fire Management Planning Committee, 2012) has been developed to provide information on bushfire risk and identifies work that takes place to reduce these fire risks. It details that "while the overall likelihood of bushfire in Bass Coast is lower than most other Gippsland municipalities there are some pockets of community at high risk of bushfire that, without prudent mitigation works and education programs, have the potential for loss of life and property".

3.5 LOCAL RESIDENTIAL PROPERTIES (HOUSEHOLDS) AND POPULATION CHARACTERISTICS

A review of the Department of Transport, Planning and Local Infrastructure population and household projections “Victoria In Future 2014” website, tables and reports has been undertaken to gain an appreciation of the current local population characteristics and the projected changes to 2051. A review of the Australian Bureau of Statistics (ABS) website has also been completed for this purpose. Refer to Table 2 for current and projected Bass Coast Shire population and households.

According to the Australian Bureau of Statistics 2011 Census data the resident population is 30,233.

In 2014, Bass Coast Shire was the fifth fastest growing Local Government Authority (LGA), growing at 3.7% per annum since 2006. Its population is projected to continue to grow at a rate of 2.4% per annum to 2021 and then 2.5% per annum until 2025. Based on these growth rates, the population has been calculated to rise to 42,092 by 2025. The rate of population growth in the Shire is higher than the average growth rate across the state of 1.8% to 2021 reducing to 1.5% after that (Department of Transport Planning and Local Infrastructure, 2014).

The Shire has a higher-than-average proportion of residents aged over 55 years which make up 38.7% of the population, substantially more than the Victorian proportion of 25.4%. Also, those over 65 years represent 23.4% of the population, compared to an average of 14.1% across Victoria. It is also projected that the ratio of residents over 65 will continue to grow to make up approximately 24.7% of the population in 2031 (Department of Transport Planning and Local Infrastructure, 2014).

The current number of households in the Shire is projected to rise from 13,600 in 2011 to 19,480 in 2025. This growth is calculated based on the projected rate of growth of 2.6% per annum. It is noted that this rate of growth is slightly greater than the projected population growth rate of 2.4% per annum (Department of Transport Planning and Local Infrastructure, 2014).

The average household size in the Shire is currently 2.2 persons compared to the average across Victoria of 2.5 persons. This is due to a large portion of households being lone households making up approximately 31% of households (ABS website, accessed January 2015) compared to 25% of households across Victoria. The older age structure projected in the future contributes to an increased proportion of one and two person households in Victoria. As those residents over 65 are projected to continue to grow, it is likely that the number of lone households will likewise grow.

Bass Coast has a reliance on the construction industry, with 16.5% of employment generated in this sector (ABS website). Victoria in Future 2014 projects that the number of structural
private dwellings will increase from 2011 to 2016 by approximately 470 dwelling per annum and to 2026 by approximately 450 dwellings per annum. This broadly aligns to recent construction and residential building approval activity as measured from July 2006 to March 2012 volumes of 476 and 537, respectively per annum (Department of Transport, Planning and Local Infrastructure, 2013). The projected population increases also support such continued construction.

The median household weekly income for residents in Bass Coast is just over $800, compared to Victorian average of approximately $960 per week. The unemployment rate as at December 2014 is 5.3% at the Shire (Bass Coast Shire Council, communications December 2014).

Other industries to which the Shire relies for employment are Retail trade, Accommodation & foodservices, and Health Care & Social Assistance providing over 10% of the employment opportunities (ABS website). As a holiday destination and with an ageing population, these industries are likely to continue to be the main employment industries.

Agriculture is also to remain a key industry in the Shire.

Table 2  Population and Households – Current and Projected

<table>
<thead>
<tr>
<th></th>
<th>2011 (last census)</th>
<th>2015 (Projected)</th>
<th>2025 (Projected)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Residents (1)</td>
<td>Households (1)</td>
<td>Dwellings (2)</td>
</tr>
<tr>
<td>Number</td>
<td>30,233</td>
<td>13,600</td>
<td>24,222</td>
</tr>
<tr>
<td>Number (Holiday Period)</td>
<td>70,000</td>
<td>24,222 (dwellings)</td>
<td>76,965</td>
</tr>
<tr>
<td>Predicted Growth Rates</td>
<td></td>
<td></td>
<td>2.4% pa</td>
</tr>
</tbody>
</table>

Sources:
3. www.forecast.id.com.au - The projected increase in holiday makers has assumed the same predicted population growth.

It is important to note that as a major tourist/holiday destination, a large proportion of the dwellings are holiday homes owned by absentee/non-resident ratepayers, with the majority only occupied during the main holiday periods. The population can swell to over double the census resident numbers as a result. Non-resident ratepayers are also anticipated to remain attracted to the area in the future over the holiday periods (Christmas, Easter, school...
holidays, long weekends) and to invest in property within the Shire. It has been assumed that during the summer holiday period the majority of dwellings will be occupied. There are also a number of major events that generate large number swells over weekends, internationally recognised events, such as the Phillip Island Grand Prix.

The generation and management of waste of the residents, non-resident ratepayers and holiday home visitors, events and tourists is to be considered is the development of this strategy.

3.6 NON-RESIDENTIAL PROPERTIES AND COMMERCIAL AND PUBLIC SECTOR ORGANISATIONS OPERATING IN THE MUNICIPALITY

All Council kerbside collection data (undertaken by contractors) for commercial and public sector organisations has been incorporated into the residential information. Other non-residential properties/ commercial/public sector seek private company assistance for the provision of waste collection services. The majority of waste managed by private waste contractors is deposited at Bass Coast Shire Council facilities, indicating that the majority of waste collected in the Shire, both Council and private collections for all properties, is managed within the Shire.

This means that Bass Coast Shire Council has a general understanding of all current waste levels that can be projected that need to be managed within the Shire now and into the future.
### 3.7 COMPARISON WITH OTHER SIMILAR SHIREs

The Surf Coast Shire Council (SCSC) is also a major holiday destination on Victoria’s coast, comprising main towns of Torquay, Anglesea, Aireys Inlet and Lorne, with similar distance from Melbourne. Their characteristics are compared in the table below:

**Table 3: Bass Coast Shire Council and Surf Coast Shire Council Characteristics Comparison**

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Surf Coast Shire Council</th>
<th>Bass Coast Shire Council</th>
</tr>
</thead>
<tbody>
<tr>
<td>Distance from Melbourne</td>
<td>75 – 125 km</td>
<td>130 km</td>
</tr>
<tr>
<td>Population (2011)</td>
<td>26,700</td>
<td>30,233</td>
</tr>
<tr>
<td>Projected Population growth rate</td>
<td>2.3% per annum to 2021 then 1.9% per annum</td>
<td>2.4% per annum to 2021 then 2.5% per annum</td>
</tr>
<tr>
<td>Population aged &gt;65 years in 2011</td>
<td>14.1%</td>
<td>23.4%</td>
</tr>
<tr>
<td>Projected Population aged &gt; 65 in 2031</td>
<td>20.8 %</td>
<td>24.7%</td>
</tr>
</tbody>
</table>
| Employment (Categories based on those within ABS) | • Accommodation & Food Services  
• Construction  
• Retail Trade  
• Health care & social assistance | • Construction  
• Retail Trade  
• Accommodation & Food Services  
• Health care & social assistance |
| Industry | • Services, agriculture, tourism, electricity supply, building construction | • Retail, hospitality, construction, health and community services, education and training and agriculture |
| Median household weekly income | • $1,277 | • $800 |
| Lone households | • 21 % | • 31 % |

Sources:
- Bass Coast Shire Council website (www.basscoast.vic.gov.au);
- Surf Coast Shire Council website (www.surfcoast.vic.gov.au);
- Bass Coast Shire Council, communications December 2014.
It is notable that those older than 65 years of age are not currently nor predicted in future to represent a high percentage of the total population in Surf Coast Shire as is currently and projected for Bass Coast Shire. The median household weekly income in Surf Coast Shire is much higher than Bass Coast Shire.

### Key Issues Identified - Municipality

- The growth in population is predicted to continue at a higher rate than the Victorian average;
- Swell of residents during holiday and event periods will continue to grow requiring consideration in waste management over those periods;
- Ratio of residents over 65 will grow and remain a significant portion of the current population;
- Holiday home owners may have a level of service expectations equal to their area of permanent residence. Expectations include being charged on a pro rata basis against usage, i.e. only in holiday period when they are there – an opt in/out ability, or opt out completely;
- Pockets of high risk of bushfire areas requiring mitigation works; and
- Population disbursed across a wide area.

#### 3.8 WASTE MANAGEMENT OVERVIEW

Council currently provides a number of facilities and services to manage waste within the Shire. These include kerbside collection, drop off facilities, and public place litter and recyclables collection bins.

Refer to Section 6 for further information
4 STRATEGIC FRAMEWORK

The WMS has been developed in consideration of the needs of the municipality as well as regional, Victorian and Australian waste policy objectives as a whole. These have been articulated in the following documents:

- *Environment Protection Act 1970*, as amended;
- Federal Government’s National Waste Policy;
- DEPI’s *Statewide Waste and Resource Recovery Infrastructure Plan*; as well as a number of Strategies and Frameworks being completed by Sustainability Victoria, including Investment Facilitation Framework; Collaborative Procurement Framework; Victorian Market Development Strategy for Recovered Resources; Victorian Community and Business Waste Education Strategy; Victorian Organic Resourcing Recovery Strategy; and
Figure 1 below illustrates how the legislation, policies and strategic plans by various agencies of government are considered and integrated with the WMS of Bass Coast Shire Council.

Figure 1   Interlinking of Legislation, Policies and Plans

The WMS has been developed in consideration of the federal, state and regional policies and plans, where available.
The key principle underpinning the WMS is the waste hierarchy, which was formally adopted in Victoria under the state’s *Environment Protection Act 1970*. The waste hierarchy places waste avoidance as the most preferred option and waste disposal the least preferred. All the policies developed by all levels of government are based on this hierarchy.

**Figure 2 Waste Hierarchy**

The principle of shared responsibility, also detailed in the *Environment Protection Act 1970*, is also important to the WMS to ensure that the responsibility for the protection of the environment is shared by all levels of government and industry, business, communities and the people of Victoria.

Refer to Annex A for details of legislation, policies, plans and guidance which the development of this WMS considered.

Importantly it is noted that this WMS needs to align to a number of plans and strategies that are still either in draft or are yet to be completed. Those being developed by Sustainability Victoria include:

- Investment Facilitation Framework;
- Collaborative Procurement Framework;
- Victorian Market Development Strategy for Recovered Resources;
- Victorian Community and Business Waste Education Strategy; and

Gippsland WRRG is also still to develop the Regional Waste and Resource Recovery Implementation Plan (RWRRIP).
A review of Bass Coast Shire Council’s WMS from a legislative and strategy perspective only within an initial two year time frame is considered warranted to ensure alignment with these plans and strategies.

4.1 GIPPSLAND WASTE AND RESOURCE RECOVERY GROUP

The Gippsland WRRG (formally Gippsland Regional Waste Management Group) is a Victorian state agency, established under the *Victorian Environment Protection (Amendment) Act 2006*.

There are seven WRRGs in Victoria. WRRGs are Victorian State Government statutory authorities established on 1 August 2014 by s49C(1) of the *Environment Protection Act 1970*. The WRRGS succeeded the former Regional Waste Management Groups.

The objectives of a Waste and Resource Recovery Group are:

1. to undertake waste and resource recovery infrastructure planning to meet the future needs of its waste and resource recovery region while minimising the environmental and public health impacts of waste and resource recovery infrastructure; and

2. to facilitate efficient procurement of waste and resource recovery infrastructure and services for its waste and resource recovery region through the collective procurement of waste management facilities and waste and resource recovery services in the region; and

3. to integrate regional and local knowledge into State-wide waste and resource recovery market development strategies; and

4. to educate businesses and communities within its waste and resource recovery region to reduce waste going to landfill by using waste and resource recovery infrastructure and services efficiently; and

5. to ensure Regional Waste and Resource Recovery Implementation Plans and programs are informed by local government, business and community and inform State-wide waste and resource recovery planning and programs.

In seeking to achieve their objectives the Groups are required to collaborate with councils, Sustainability Victoria, the Environment Protection Authority Victoria (EPA), industry, business and the community.

The Groups have a legislative responsibility to each develop their RWRRIPs to set out how the waste and resource recovery needs of their region will be met over a 10 year period.

The RWRRIPs will align with and be integrated into the SWRRIP. The completion of the RWRRIP is to be undertaken over the next 18 months.

The Gippsland WRRG encompasses the municipalities of Latrobe, Bass Coast, Baw Baw, East Gippsland, South Gippsland and Wellington. The region serviced by the Group extends from Phillip Island to Mallacoota, an area of some 40,000 square kilometres with a population of almost 250,000 people and is the largest WRRG in the State of Victoria.
4.2 BASS COAST SHIRE COUNCIL PLANS, POLICIES AND STRATEGIES

Bass Coast Shire Council’s key strategy documents, Council Plan 2013 – 2017 and draft Natural Environment Sustainability Strategy 2015- 2025 provide the basis for the key direction of the Shire regarding waste management.

4.2.1 Bass Coast Shire Council - Council Plan 2013 - 2017

The Bass Coast Shire Council vision, as articulated in the Council Plan, is that

_Bass Coast Shire will be recognised as a unique place of environmental significance where our quality of life and sense of community is balanced by sustainable and sensitive development, population and economic growth_” (website accessed 3/12/14).

Its mission is:

_To take a leading role in partnership with other levels of government, businesses, community groups and individuals to make our community’s vision a reality. Also, Councillors, management and staff are committed to following these overarching principles to guide all decisions and actions:_

- _The social, environmental and economic priorities of the Shire benefit both current and future generations;_
- _The intrinsic value of biodiversity and the protection of the natural eco systems will be recognised;_
- _Equity in the distribution of resources across the Shire;_
- _Transparent evidence-based and inclusive decision making;_
- _The provision and use of energy and resources will be promoted in an efficient and sustainable way._

The Council’s goal for the environment is to ensure that the natural assets of Bass Coast are promoted and managed sustainably so they can be enjoyed now and by future generations.

Strategies to achieve the Council vision are detailed in the Council Plan (Bass Coast Shire Council, 2013), including a number of waste management strategies and measures.
4.2.2 Draft Natural Environment Sustainability Strategy – 2015 to 2025

The Natural Environment Sustainability Strategy 2015-2025 (NESS) will replace the Environment Sustainability Plan (2008 – 2013). The purpose of the NESS is to provide a framework and strong, clear direction for Bass Coast Shire Council and its community regarding sustainability of the natural environment over the next 10 years. The focus is on four core themes for sustainable management of the natural environment across Bass Coast:

- Mitigating the forecast impacts of climate change by integrating the predictions into our decision making and planning for infrastructure, services and utilities. We will improve climate change sustainability by helping our community and organisation to make better environmental decisions and respond more effectively to the challenges of our changing climate;

- Facilitate appreciation of our unique natural environment through sustainable public access. We will do this by maintaining coast and bushland management, and continuing to fulfil our responsibilities as a land manager under the Planning and Environment Act (1987), Coastal Management Act (1995) and the Crown Land (Reserves) Act (1978);

- Improve health of the landscape through increased biodiversity and indigenous vegetation protection. We will do this by improving land and catchment management, and working cooperatively to better protect, manage and increase our biodiversity, waterway health, and land management; and

- Develop community partnerships that promote environmental awareness. We will do this by building, developing and maintaining our stakeholder relationships and community partnerships that promote environmental awareness and value.

The draft NESS references the WMS by stating that the WMS “impacts the environment and Bass Coast Shire Council recognises waste management as a fundamental element in caring for our natural environment and has a separate Waste Management Strategy to provide sustainable solutions to the collection, disposal, resource recovery and aftercare of waste.”

The four core themes are further expressed in strategic objectives. Pertinent to the WMS are:

1. Mitigating the forecast impacts of climate change by integrating the predictions into our decision making and planning for infrastructure, services and utilities:
   a. Identify and deliver projects to upgrade infrastructure and reduce Council’s carbon emissions.
   b. Identify and invest in environmentally sustainable technology and options to increase materials efficiency and reduce consumables.
   c. Ensure the social, environmental and economic responsible disposal of municipal waste.

2. Improve health of the landscape through increased biodiversity and indigenous vegetation protection:
   a. Continue to minimise the amount of litter and other pollutants entering the stormwater system through infrastructure and education.
4.2.3 Waste Management Plan 2012 – 2016

The current plan (Bass Coast Shire Council, 2012) reflects Council’s commitment to providing services to the community that move toward achieving sustainable waste management. It also reflects the Victorian government’s Towards Zero Waste strategy, the Gippsland Regional Waste Management Plan and the introduction of the carbon tax, all three of which are no longer current.

The targets of this Waste Management Plan are consistent with those of the Council Plan (Bass Coast Shire Council, 2013):

1. To increase the amount of recycled waste each year;
2. To increase the ratio of recycled waste versus waste to landfill each year;
3. To achieve a rating of 65 in the annual community satisfaction survey.

4.2.4 Local laws

Council local laws relating to waste management are detailed below.

Bass Coast Shire Council Local Law No. 1 (Neighbourhood Amenity) 2012 - Clause 30, 31, 47 & 48 (and associated ‘Discretion Guideline’ for each of those clauses in Part 11):

- 30 Domestic Waste, Recyclable and Hard Waste Collection;
- 31 Removing Recyclable Material and Hard Waste;
- 47 Street Litter Bins and Recycling Bins; and
- 48 Placing Bulk Rubbish Containers.

Clause 30 was recently included to provide for an offence penalty relating to kerbside recycling bin contamination. This clause is used by Bass Coast Shire Council officers relating to Council’s ‘Non-conforming recycling bin’ process – this is a staged process using both educational and enforcement tools to inform households and businesses of issues with their recycling bin and to motivate improved waste disposal behaviour.

By law, ratepayers are unable to leave a bin out for more than 48 hours on the nature strip. This has implications for holiday home owners.

4.2.5 Planning

Land use planning decisions have implications for waste management facilities and/or services, such as encroachment, as well as potential implications for the location of a new waste facility. Controls relating to waste management planning for new developments also need to be considered.

Council has powers to impose formal conditions on a Planning Permit. Such conditions may relate to vehicle access for private waste collections and bin storage space (e.g. multi-unit premises, commercial accommodation premises, retirement homes), litter bins in public car
parks or maintenance of site to prevent litter (e.g. major food outlets or industrial sites). There are several types of triggers for consideration of waste management issues, such as land use zoning, proposed use, or size of a development.

As at 2015 there is no specific Local Planning Policy for waste management aspects in Bass Coast Shire Council’s Planning Scheme, as such, it is basically up to Council Planners to consider each development proposal individually and identify potential waste management concerns, such as maintaining appropriate buffer distances to protect waste real estate/facilities.

4.2.6 Environmental Health

The following key environmental health requirements are applicable to the Bass Coast Shire:

- Australia’s Food Standards Code (FSC) Standard 3.2.3 – Food Premises and Equipment places requirements on food businesses regarding the storage of garbage and recyclable matter (see Clause 6);

- FSC Standard 3.2.2 – Food Safety Practices and General Requirements (Clause 19) requires food premises to be maintained to a standard of cleanliness where there is no accumulation of garbage or recycled matter, except in containers.

**Key Issues Identified – Council Plans, Policies and Strategies**

- Insufficient interaction between Council departments to address waste management, including:
  - Planning approvals - to ensure that waste management aspects of planning approvals are considered to protect waste real estate, current and future, (buffer distances maintained) and allow provision of waste services (waste collection); and
  - Site Inspections - to regularly inspect and improve recycling and waste management practices at food premises in conjunction with meeting Food Safety Standards.
5 COMMUNITY CONSULTATION

5.1 INTRODUCTION

In an endeavour to develop a WMS that addresses the expectations of the local community with respect to the waste management strategic vision, input from the local community and key stakeholders was considered essential. Communication was undertaken as a two-step process: community consultation was undertaken prior to the development of the draft WMS to identify any additional waste management key issues important to the Shire community, businesses and community organisations that had not already been identified by the project team; and secondly key stakeholders were provided with an opportunity to comment on the Draft WMS prior to finalisation and adoption by Bass Coast Shire Council.

It was originally planned to provide the broad community the draft WMS for their review by way of Public Notice. However, it was determined by Council that community sentiment was such that earlier implementation of the WMS was likely to be of higher importance than seeking further comment on the WMS.

5.2 COMMUNITY CONSULTATION PLAN

A Community Consultation Plan, a copy of which is provided in Annex B was developed to guide the engagement with the community and identified stakeholders during the preparation of the WMS.

The Community Consultation Plan aimed to meet the following objectives:

- Identification of stakeholders to be involved in the development of the WMS;
- Identification, and understanding, of key issues early in the project to allow sufficient time to adequately address them in the development of the WMS;
- Create a framework to seek and encourage input from stakeholders and provide opportunity for this to occur; and
- Proactively inform and interact with the community and project stakeholders about the WMS and its development process and how they can contribute.

The plan identified key stakeholders ranging from internal stakeholders, government agencies, private waste contractors and the community, and their method of engagement to inform and engage.

5.3 STAKEHOLDER ENGAGEMENT

An Information Sheet was developed to provide details of project works conducted to date. These details included identified key issues, proposed long term waste management vision and objectives, and proposed strategic outcomes and suggested options for each objective. Surveys to gain input from the community – personal, business and organisation – were also developed.
An Information Sheet was provided to all stakeholders, except for some stakeholders who were contacted directly over the phone whereby the contents of the information sheet were summarised. A copy of the Information Sheet is provided in Annex B.

The following table summarises the engagement undertaken:

**Table 4 Community Engagement**

<table>
<thead>
<tr>
<th>Type of consultation</th>
<th>Description/Action Undertaken</th>
<th>Targeted Stakeholder</th>
</tr>
</thead>
<tbody>
<tr>
<td>Direct communications</td>
<td>Direct communications including meetings, mail and phone contact were conducted. Feedback is summarised in Section 5.4.</td>
<td>Bass Coast Shire Council Sustainable Environment Department officers, GWRG, neighboring local government area (South Gippsland Shire), private waste contractors</td>
</tr>
<tr>
<td>Formal presentations</td>
<td>Formal presentations were delivered detailing the identified key issues to date, draft vision and objectives and next steps, as well as the Draft WMS. Feedback is summarised in Section 5.4.</td>
<td>Internal Reference Group, Bass Coast Shire Councilors</td>
</tr>
<tr>
<td>Public information sessions</td>
<td>Notice of public information sessions was advertised in local papers and on the Bass Coast Shire Council website. Public information sessions were conducted at four venues (Grantville, Cowes, Wonthaggi and Inverloch). These sessions were separated into times for specific appointments, information session and presentation. Note: This differed slightly to the Community Consultation Plan. Static displays of the majority of the identified key issues and the vision were set up at each session. Information Sheets were provided to all attendees and information regarding completion of an online survey (or hard copy version supplied) as well as provision of direct feedback to the external consultant. Refer to Section 5.4 for feedback provided at the sessions.</td>
<td>Business community, residents</td>
</tr>
<tr>
<td>Surveys</td>
<td>Hard copy surveys were issued at the Public Information Sessions on request and on-line surveys (one tailored to the business community and one tailored to individuals, including residents/ratepayers) were available on the Council website. On-line surveys were also issued to community organisations via email requesting assistance with the development of the WMS and completion of the online survey. (This was based on a download of the Bass Coast Community Directory.) Please note that the surveys manually completed at the Public Information Sessions were input into the online survey. Refer to Section 5.4 for a summary of survey feedback.</td>
<td>Business community, residents. Non-resident rate payers</td>
</tr>
</tbody>
</table>

Internal Reference Group – The Internal Reference Group was a group established consisting of representatives from Bass Coast Shire Council (environment, engineering and waste groups), Gippsland WRRG and select Councillors.

An email address to the environmental consultant was also available for the community to provide input and/ or questions via the website, Information sheet and surveys.
The Council website was updated during the WMS development to provide information regarding the project; public information sessions; links to online surveys; and the WMS for comment four weeks prior to adoption by Council. The feedback and key issues identified from the consultation process have been utilised to develop this WMS. Feedback from the consultation process is discussed below and throughout the document.

5.4 STAKEHOLDER CONSULTATION FEEDBACK

A summary of the key issues identified by each stakeholder group, including completed surveys, is listed below.

5.4.1 Internal Reference Group

This was a group established consisting of representatives from Bass Coast Shire Council (environment, engineering and waste departments), GWRRG and Councillors (two). An initial formal presentation was presented to the group on 9 February 2015. The formal presentation, a copy of which was provided to the group after the session, included the identified key issues to date, proposed vision and objectives of the WMS and broad discussion regarding the next steps of the WMS development. The following key comments/issues were identified for further consideration:

- Travel times to waste facilities increase over holiday periods, particularly from Phillip Island;
- Illegal dumping – assessment of the potential link between locations of frequent illegal dumping and distance to waste collection facilities to be conducted;
- Resale shops – The presentation noted that resale shops were generally unviable. It was noted that a contractor was running a shop at Latrobe City which was running well. Suggested there was the potential for the introduction of a resale shop in the region that will sell recycled waste; and
- Waste facilities – potential to share a landfill with adjoining local governments (i.e. Grantville/Koonwarra landfills with South Gippsland Shire Council).

A further presentation to the Internal Reference Group of the draft WMS and community consultation outcomes was made on 15 May 2015. The Draft WMS was provided to the group prior to the meeting. Minor updates to the draft WMS were completed based on consolidated feedback provided.
5.4.2 Councillors

An initial formal presentation was provided to Councillors in a Policy workshop. Copy of the presentation was provided to the Councillors post meeting. The following key comments/issues were provided for consideration:

- Holiday home owners – looking at an ‘opt in’/’opt out’ service with commensurate costs. There are equity issues and financial considerations;
- Local by laws do not allow a bin to be out for more than 48 hours – what is to be done when the ratepayer is not present? This is especially pertinent to holiday home owners;
- Feasibility study on a 3 bin system to include consideration of the impact on the current facilities provided, i.e. Transfer Stations;
- Potential wind issue for an empty 80L bin knocking it over;
- Potential opportunity to manage waste on a regional basis, i.e. MRF at Grantville. It was suggested that a “state of the art” regional MRF, including an education facility, be developed at Grantville landfill.
- Green waste trial;
- Cost model required for alternative waste technologies;
- Hard waste collection – on call service due to previous litter and Worksafe issues.

A final presentation to the Councillors was undertaken on 8 July 2015 providing the final Draft WMS vision and objectives and high priority suggested options for consideration. A copy of the presentation was provided after the meeting to the Councillors. It was agreed at the meeting that community comment on the draft WMS by way of Public Notice would not be undertaken as it was considered that all strategic issues had been identified, preferring to focus on implementing the WMS as soon as possible.

Feedback from the Internal Reference Group and Councillors were considered and incorporated initially into Community Consultation with Information sheet and surveys updated to reflect, where applicable, and the final WMS.

5.4.3 Gippsland Waste and Resource Recovery Group

Phone discussions with Gippsland WRRG occurred on 23 March 2015 with the Executive Officer. The following key comments/ issues are noted:

- Bass Coast Shire Council’s WMS should align with the regional plan – suggest review of WMS in 2 years-time;
- Collaborate with other Councils in the region, in particular South Gippsland Shire Council;
- Waste contracts - potential to align with the contracts in other Councils in the region;
• Green/organic waste service – Organic waste is considered a high priority by the region and would be supportive of a processing facility in the region. The region undertook a study of waste generation by residents with a variable number of bins, i.e. inclusion or not of green waste bin, to identify the impact of waste tonnages disposed to landfill. The study concluded the waste disposed via garbage bins was the same regardless of the introduction of a green waste service. Therefore, if a green waste service was to be introduced it should also include the collection of organic waste (i.e. food waste) to reduce waste disposed to landfill resulting in simpler landfill management. Once the facility is established, there is a need to amend garbage collection to fortnightly to provide an incentive to use the organics bin which should then be collected weekly. Only implement green waste collection if have organics included so only change resident behaviour once. Recognised that there were potential issues with end market for any products of a organics waste facility;

• Land use planning – Council planners need to understand waste management implications of planning decisions made to ensure protection from encroachment and potential conflicts between waste management and other uses, in particular residential;

• Alternative waste treatment (AWT) technologies – Collaborative approach undertaken with regard to the potential application of alternate waste treatment technologies across the region. An expression of interest has been issued by Latrobe City Council, on behalf of all the Councils in the region, to understand potential AWT technology initiatives and opportunities available. Need to consider long term view and the future transition from current facilities to AWTs;

• Recyclables contamination rates – The high rates can be attributed to equipment/engineering limitations at current Material Recycling Facility (MRF) and reflect limited capacity to separate and recover small glass pieces from recycling rather than consider glass pieces as ‘contamination’. Bass Coast Shire Council, via contractors, notifies households and business operators of contaminated recycling bin issues where able to address at the user level. Need to also publicise users that dispose of recyclable waste correctly to educate, and potentially reward, the community;

• Public Place litter/Illegal dumping – A proactive approach is required by Bass Coast Shire Council to understand the issue and extent of problem and the reasons for littering and illegal dumping, cost is not the whole story;

• Waste management facilities – Bass Coast Shire Council could potentially run an effective system with the operation of three facilities rather than four. It is also recommended facilities have a consistent model for ease of public use;

• Cost model - The region is able to provide Council with a facility cost assessment model to benchmark resource recovery, storage, infrastructure, and cost per tonne per site;

• Hard waste – There are residents in the community that need a collections service. An ‘at call’ service has worked effectively in Latrobe City Council;

• Resale Shops – Eaglehawk landfill is an example of an operating innovative model. Need to move away from typical products that are available at the local charity shops and not be a holding area, need to consider the right partner with clear expectations;
• Best Practice Compliance for Waste Facilities – Bass Coast Shire Council should be operating their landfills at best practice while aspiring to best practice for their other facilities; and

• Provision of comments on the strategic outcomes/ suggested options, which have been updated to reflect.

5.4.4 South Gippsland Shire Council

Consultant met with Waste Manager and Sustainability Manager from South Gippsland Shire Council on 18 March 2015. The following key comments/ issues were identified:

• South Gippsland Shire Council are currently implementing a three bin system across the shire;

• Green waste is being taken to Pinegro in Morwell. However, if they were to accept kitchen organics they would need to seek out another facility as Pinegro do not accept kitchen organics;

• Koonwarra Landfill is closed on weekends as the use does not warrant cost of remaining open;

• Hard waste collection service provided once a year – user pays service where user has to book the service. This occurs once a year in July/August. Pensioners get a discounted price with other residents paying full cost;

• Resale shop to be opened at Koonwarra and to be run by the Landfill contractor. The shop will be the first stop for the customer entering and its aim is to divert material from landfill;

• Contract with current Koonwarra Landfill and Transfer Station contractor has conditions to provide incentives to minimise waste to landfill;

• Koonwarra Landfill - considerable airspace remaining, approval for the next 10 – 12 years available with potential for further development to see airspace available until 2060;

• Potential partnering opportunities with Bass Coast Shire Council, such as a regional MRF or organics facility; and

• Organics facility – potential to share an organics facility with Bass Coast Shire Council to cater for the green and organic waste generated between the two Councils.

5.4.5 Private Waste Contractors, including Waste Facility Operators

Discussions with seven private contractors operating in the Shire were undertaken over March and April 2015. Generally all waste material collected in the Shire is disposed of at the Grantville Landfill or other Recycling and Waste Transfer facilities, and so volumes of these materials are included with the total shire data. Koonwarra Landfill (South Gippsland Shire Council) and Lyndhurst Landfill were also utilised.

The following key comments/ issues were noted:
• Waste disposal costs were a major driver to their business and so were considered a key waste management issue. This results in an increase in cost for provision of waste collection for the community, and is considered one of the reasons for litter dumping;

• Green waste no charge period – green waste collected on behalf of residents during the green waste no charge period, six weeks over November/ December, by private waste contractors continue to attract a fee, resulting in private contractors charging the resident the ‘normal’ cost for green waste collection services during this period;

• Recyclable materials – more materials could potentially be recycled and diverted from landfill if appropriate facilities were in place (e.g. gypsum and plasterboard);

• Contractors are only able to take their trucks to the Grantville facility as the waste contractor trucks cannot access the smaller waste recycling facilities. This impacts on the costs to manage materials, the extent of which is dependent on the location of where the materials are being collected;

• Waste facilities – If Grantville landfill were to close, additional travel times to alternate landfills may impact on business cost base;

• Alternate Waste treatment technologies opportunities are available, need region to consider;

• Phillip Island requires a transfer station, along with bins to be used by tourists;

• Education is the key to changing community behaviours and diverting material from landfill. Creating landfill space is expensive;

• Green waste – if a green waste collection service is provided, the material would need to be composted and currently there is no market for composted green waste, it would also need to be a compulsory collection to make it viable;

• No incentive for landfill operators to reduce waste to landfill; and

• Contamination rates – reflect inability to process all materials rather than actual contamination. Upgrading the current MRF is not considered by the contractor as viable.

The external consultant was also contacted directly by a private contractor who advised that their organisation was seeking committed waste throughput from the region to utilise in their proposed waste to energy facility.

5.4.6 Business Community

The following summarises the responses from the two completed online Business Surveys:

• Waste collection frequency – there is a need for more Council services over the holiday period, more than increased recycling bin collection frequency to weekly;

• Waste facilities – waste facilities cater for residents rather than commercial properties;

• Waste disposal costs – considered too expensive for hard waste items;
• Hard waste collection should be free as provided historically and is currently provided in other municipalities. It is suggested that this is causing current litter/illegal dumping issues; and

• Willing to travel 10-15 minutes to nearest waste disposal facility.

It is noted that with only two online surveys completed, the responses cannot be assumed to be a reflection of the majority of the business community.

5.4.7 Organisations

On-line surveys were also issued to organisations via email requesting assistance with the development of the WMS and completion of the online survey. (This was based on a download of the Bass Coast Community Directory). Of the 352 identified organisations, 88 surveys were commenced with 64 completed. A number were also completed by private householders.

The following summarises the responses from the completed Organisational Surveys:

• The following were considered important key issues to be addressed in the WMS:
  o Local population and household characteristics – waste management should consider the ageing demographic of the region and the increase in population over the holiday period;
  o Contamination rates – It was suggested that an increase in community education is required in addition to access to a modern MRF in the region;
  o Public Place Waste Collection - illegal dumping may be related to insufficient hard waste collection services and litter potentially due to the Phillip Island facility or due to high costs;
  o Waste facilities - travel time of 30 minutes for Cowes residents to the nearest waste disposal facility (Grantville or Wonthaggi), best practice compliance at waste facilities, and owning and maintaining a landfill within Bass Coast Shire;
  o Private waste Facilities – an understanding of private waste facilities within Bass Coast Shire is required to understand potential regional facility options;
  o Hard waste collection;
  o Resale shops;
  o Advanced waste treatment technologies – considered important to understand their potential application and economic viability.

• The majority considered the key waste management issues had been identified, with green waste and hard waste to be considered as key issues;

• The majority agreed with the WMS objectives detailed; and
• Green waste – collection system should be considered.

Direct discussions and email correspondence with Gippsland Strategic Coordinator from Sustainability Victoria in March 2015, where it was noted that:

• WMS to align to Sustainability Victoria’s strategies, recommending a review period in approximately 2 years;

• Bass Coast Shire Council, identification of customers that contaminate commingled recycling bins, by way of contractor visual checks, is something that they are doing well; and

• Consider sharing landfill facility with South Gippsland Shire Council as there are insufficient volumes to warrant two landfills.

5.4.8 Residents/ Ratepayers

Those attendees of the Public Information Sessions were provided with the option to provide direct feedback to an external consultant that attended the sessions or to complete a survey, either hard copy or on-line via Council’s website.

Of the 91 respondents who commenced the survey, 87 completed it. The majority of the respondents were within the 35 – 64 age brackets. It is noted that those that attended the Public Information Sessions were generally over 65 years of age.

With regard to current kerbside collection services, the frequency of collection and bin sizes of MSW and commingled recycling met the majority of the respondent’s needs. Options to amend the size and frequency of collection were noted as desired, also that if organics recycling were offered the MSW bin size and frequency could reduce.

The majority consider that Council should not provide additional services over the holiday period, however 41% suggested that a number of additional services should be considered, including increased frequency of collection at public place bins in high usage spots and after major events and long weekends, as well as consider increasing the period of weekly kerbside commingled recycling collection.

Private waste contractors were used for the collection of green and hard waste.

All disposal facilities are utilised by the public, in particular the facility in Wonthaggi, with some facilities within the South Gippsland Shire visited, with utilisation ranging from every month to 1 – 2 times a year. Majority utilise the facilities for green waste disposal and consider the facilities adequate for their purpose. Comments suggest that the cost of using these facilities is considered by some to be high (approximately half in separate question consider the costs to be too high) and that the current Cowes Recycling Bank does not meet their needs, that is, the facility has limited opening days/hours and does not accept hard waste.

The majority of the community (48%) are willing to travel 10 – 15 minutes to dispose of their waste. Thirty five percent (35%) were willing to travel 15 - 20 minutes.
The following were considered important key issues to be addressed in the WMS:

- Local population and household characteristics – waste management should consider the ageing demographic of the region, in particular green and hard waste collection services and the increase in population over the holiday period, with increased collections required, especially public litter bins;

- Contamination rates – It was suggested that an increase in community education is required;

- Public Place Waste Collection – Suggested that Council need to increase community education and continue to enforce penalties, also that illegal dumping may be related to the Phillip Island facility, i.e. limited opening times and/or hard waste materials accepted, or due to high waste disposal costs;

- Waste facilities – Cowes Recycling Bank and travel time for Cowes residents, suggesting that Phillip Island should have a comparable service to Wonthaggi; Inverloch Waste Transfer/Recycling Centre, with comments that the current facility should be closed;

- Hard waste collection, with comments that it is necessary regardless of the recovery of materials for reuse and/or recycling;

- Resale shops;

- Advanced waste treatment technologies.

The majority considered the key waste management issues had been identified, with green waste and hard waste to be considered as key issues;

The majority agreed with the WMS objectives detailed;

Other comments included:

- The need for a facility on Phillip Island;

- Green and hard waste collection should be provided;

- Greenwaste should be mulched and be available for the community at Council Facilities. Some residents consider that the provision of two sets of three week no charge periods, say April/May and November/December prior to and post the CFA’s fire risk period as more useful, rather than existing 6 week no charge period, as it is more consistent with their requirements; and

- Education - Residents do not consider the community/ businesses are adequately educated, especially with regard to what can be recycled. Education was considered key to managing materials at the source, where most cost effective, rather than try to separate out later, say at the landfill. Education should include how to minimise the generation of waste in the first place.

Feedback has also been included throughout the document.
### Key Issues Identified - Stakeholder Consultation

- A facility to dispose of materials, comparable to that provided in Wonthaggi, is required in Phillip Island, the Cowes Recycling Bank does not adequately meet the needs of the community. The majority of the community is willing to travel 10-15 minutes to a waste disposal facility;
- Green waste - Collection service, especially for the ageing population, should be considered. The inclusion of kitchen organics into any green waste collection service to divert from Municipal Solid Waste (MSW) bins and minimise greenhouse gas generation at landfill;
- Hard waste collection service currently provided does not adequately meet the needs of the community;
- Potential collaboration with adjacent Council, in particular South Gippsland Shire Council, share facilities/costs now and in the future, potentially for organic waste;
- WMS should align with regional strategy;
- Contamination rates, majority of which reflect lost opportunity to recycle and to divert from landfill; and
- Education of the community is required.

### 5.5 STATEWIDE LOCAL GOVERNMENT COMMUNITY SATISFACTION SURVEY 2014.

Each year Local Government Victoria (LGV) coordinates and auspices a State-wide Local Government Community Satisfaction Survey throughout Victorian local government areas.

The Local Government Community Satisfaction Survey, Bass Coast Shire 2014 Resource report main objectives are to assess the performance of Bass Coast Shire Council across a range of measures and to seek insight into ways to provide improved or more effective service delivery. The survey also provides councils with a means to fulfil some of their statutory reporting requirements as well as acting as a feedback mechanism to LGV.

Four hundred over the phone resident interviews were conducted between the 31 January 2011 and 11 March 2014 in Bass Coast Shire Council. Note that this survey did not sample non-resident ratepayers. Results for residents of Grantville, Wonthaggi & Inverloch and Phillip Island were separated out. Survey included questions regarding Bass Coast Shire Council waste management services.

The Bass Coast Shire Council Survey included questions regarding Bass Coast Shire Council waste management services. Unfortunately the Surf Coast Shire Council survey questions did not.
Waste management performance index scores, detailed below, are in response to the question “How has Bass Coast Shire Council performed on ‘Waste Management’ over the last 12 months?”

<table>
<thead>
<tr>
<th>Area</th>
<th>2014 Index Scores</th>
</tr>
</thead>
<tbody>
<tr>
<td>State-wide</td>
<td>73</td>
</tr>
<tr>
<td>Large Rural Shires</td>
<td>70</td>
</tr>
<tr>
<td>Bass Coast</td>
<td>58</td>
</tr>
<tr>
<td>Wonthaggi &amp; Inverloch</td>
<td>70</td>
</tr>
<tr>
<td>Grantville</td>
<td>70</td>
</tr>
<tr>
<td>Phillip Island</td>
<td>38</td>
</tr>
<tr>
<td>Men</td>
<td>59</td>
</tr>
<tr>
<td>Women</td>
<td>58</td>
</tr>
<tr>
<td>18-34</td>
<td>64</td>
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<tr>
<td>35 – 49</td>
<td>51</td>
</tr>
<tr>
<td>50 – 64</td>
<td>59</td>
</tr>
<tr>
<td>65+</td>
<td>59</td>
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</tbody>
</table>

It is noted that residents of Phillip Island are the least satisfied with the waste management performance of the Shire.

In general, residents of Phillip Island have rated Council’s performance the lowest across the municipality, with waste management scoring only 38. This may be due to the recent closure of the Rhyll Transfer Station in 2013. The opening of the Cowes Recycling Bank in early 2014 was in response to community concerns regarding the lack of a nearby waste management drop-off facility. Cowes Recycling Bank currently accepts all the same waste streams that Rhyll Transfer Station accepted, with the exception of hard waste, however smaller load limits for General Waste and Green Waste apply and the opening times of the facility, Friday to Monday from 10.30 am to 3.30 pm, are less than Wonthaggi, 7 days a week 8.30 am – 4.30 pm.

Overall performance, when asked “On Balance, for the last twelve months, how do you feel about the performance of Bass Coast Shire Council, not just on one or two issues, But overall across all responsibility areas? Has it been very good, good, average, poor or very poor?” Bass Coast index score was 50. Grantville scored 57, Wonthaggi & Inverloch 54 while Phillip Island 43. The results compared unfavourably to Large Rural Shires of 57 and State-wide of 61.

**Key Issues Identified – Community Satisfaction**

- **State-wide Local Government Community Satisfaction Survey (2014)** – Bass Coast Shire Council results were significantly below state-wide and large rural shire averages, with Phillip Island residents score being lower than the average Bass Coast Shire score. Surf Coast Shire (a comparable Shire) results were very high in comparison; and
- **In general, residents of Phillip Island have rated Council’s performance the lowest across the municipality, with waste management scoring only 38. This may be due to the closure of the Rhyll Transfer Station in 2013.**
6 CURRENT WASTE MANAGEMENT

6.1 INTRODUCTION TO COUNCIL WASTE MANAGEMENT OPERATIONS

Council currently provides a number of facilities and services to manage waste within the Shire. These include:

- **Kerbside** - a two bin system, 120 Litre (L) Municipal Solid Waste (MSW) or garbage collected weekly and 240L commingled recycling bin collected fortnightly to the majority of Bass Coast Shire Council ratepayers, along with 240L MSW and commingled recycling bins collected weekly and fortnightly, respectively, optional service to commercial customers. Drop off facilities – Bass Coast Shire Council provides four drop off facilities, three Transfer Stations/Recycling Centres (Grantville, Wonthaggi and Inverloch) and one Recycling Bank (Cowes);

- Green waste accepted for no charge prior to high fire risk times, i.e. six weeks during November/ December;

- Public Place garbage and recycling bins, over 500 across the Shire predominantly located at town centres, parks and recreation facilities and some car parks;

- “On call” hard waste collection, highly subsidised once a year;

- Collection of illegally dumped waste, usually hard rubbish (by Council Roads management program);

- Collection of waste and recyclables generated at local Festivals and Events;

- Oversight and/or management and operation of Grantville Landfill plus Recycling and Waste Transfer Centres located at Grantville, Cowes, Wonthaggi and Inverloch; and

- Management of solid inert and organic (green waste and timber) waste and recyclables from residential properties disposed of at waste disposal facilities.

Although, a green waste kerbside collection service is not provided, a green waste collection trial via Municipal Garbage Bins (MGBs) was conducted over 18 months in the northern part of Phillip Island, completed in March 2015. Feedback to date from property owners who took up the optional green waste kerbside collection service, approximately 7 – 9% of those offered the service, suggests that the majority were satisfied with the service and would be likely to take it up as a user pays service if offered in the future. Refer to Section 6.3 for further information.

Street sweeping and illegal dumping services are provided by Bass Coast Shire Council, however these are managed and delivered through Council’s Roads management program with material taken to Grantville Landfill. Although these services are external to the scope of waste services, illegal dumping is an identified key issue and so has been considered in this WMS.
To cater for the influx of holiday makers and to generally assist residents around the busy Christmas holiday period, recycling bins are collected weekly from Boxing Day to the end of January. Three of the four drop off facilities, Inverloch Recycling and Waste Transfer Centre is not open on Fridays, are also open on Good Friday over Easter long weekend.

Council offer an “On call” hard waste collection once a year at a subsidised cost. No collection services are provided by Bass Coast Shire Council for green waste.

A number of private commercial waste service providers operate in the Bass Coast Shire, supporting the Bass Coast Shire Council's waste management services to the community. These include waste collection services for predominantly commercial premises and construction industry, such as mini and bulk skips for waste/ commingled recyclables/ paper & cardboard. Additional residential requirements, i.e. larger bin sizes, green or hard waste collections are expected to be, and are currently, met by private commercial contractors.

Detailed information on the current waste collection services, waste composition and quantities and waste disposal facilities is provided in Annex E.

6.2 KERBSIDE MSW AND COMMINGLED RECYCLING COLLECTION

6.2.1 Residential Collection

Weekly collection and disposal of MSW and fortnightly collection and sorting of recyclables is provided to over 24,000 properties across the Shire.

Areas outside the main population areas, Wonthaggi, Inverloch, Phillip Island and Grantville, Coronet Bay, Corinella and Cape Paterson, are not provided with such services. Rural-Residential ratepayers wishing to have their waste collected as part of the current kerbside collection service are required to make a formal request to Council who will ascertain if the property could reasonably be included.

The residential services provided to residents are consistent with those provided across Victoria. The Victorian Local Government Annual Survey (2010 – 2011) notes that the 120L MSW bins are the predominant bin used for the collection of garbage across Victoria. Sustainability Victoria’s Guide to Preferred Standards for Kerbside Recycling in Victoria (2004) outlines that the preferred collection systems are:

- 240L commingled collected fortnightly; or
- 120L commingled collected weekly.

It is understood that currently 53, or 67%, of LGAs provide an organics collection service in addition to the MSW and commingled recycling collection service, while 26, or 33%, LGAs do not provide an organics collection service (communications from Sustainability Victoria, 14 July 2015).
6.2.2 Multi Unit Dwellings (MUDs)

Bass Coast Shire Council has many small MUDs however most are provided with their own set of MSW bins and commingled recycling bins and have adequate bin storage areas for the number of units at each MUD.

There are several large MUDs or strata-titled commercial accommodation developments serviced by Bass Coast Shire Council which present waste management issues, including:

- insufficient room available on site to store MSW and commingled recycling bins to which each unit is entitled; and

- insufficient room, as well as amenity and noise issues, for both MSW and commingled recycling bins to be placed out the front of the units for collection as well as inability for a collection truck to collect from within the site.

Council is working with these MUDs to develop responses to such issues. Such responses to date have included the provision of larger but smaller number of MSW bins.

Sustainability Victoria has developed a *Best Practice Guide for Waste Management in Multi-Unit Developments (2009)*, to assist incorporating best practice in the design, establishment, operation and ongoing management of waste services. The above issues may be identified and prevented in future by improved interaction between Council departments to address waste management.
6.2.3 Non-residential waste collection services

Kerbside collection services similar to that provided to residential properties are offered to non-residential properties as an optional service by Bass Coast Shire Council. Of the 24,281 properties serviced with the Bass Coast Shire Council kerbside collection service (as at 30 June 2014), approximately 1,500 services are provided to non-residential properties, such as commercial properties, (e.g. retail shops and offices), and industrial properties (e.g. manufacturers and warehouses). Commercial properties are entitled to a 240L garbage bin and 240L commingled recycling bin.

All services provided to non-residential properties are delivered concurrently with residential services with no non-residential specific volumes data collected. All volumes collected are included in the residential information. An estimation of the volumes has been provided by the private waste collection contractor. Refer to Annex E for details.

<table>
<thead>
<tr>
<th>Key Issues Identified – Kerbside Collection</th>
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</thead>
<tbody>
<tr>
<td>• Smaller bin sizes, i.e. 80L waste and 120L commingled recycling, have been shown to reduce waste material being disposed. These may also be sizes more manageable for those in the &gt;65 age bracket as well as for lone person households;</td>
</tr>
<tr>
<td>• Areas with high proportions of holiday houses are likely to need larger than 80L bins due to potential high waste generation rates by visitor groups at peak periods;</td>
</tr>
<tr>
<td>• Insufficient internal consultation between Statutory Planning and Waste Services teams to assist with the management of waste generated by large MUDs, in terms of storage and collection, either by Bass Coast Shire Council or private waste contractors; and,</td>
</tr>
<tr>
<td>• Insufficient data capture of waste services provided to non-residential properties.</td>
</tr>
</tbody>
</table>
6.3 GREEN WASTE

Green waste is accepted at all four waste disposal facilities across the Shire year round. This disposal attracts a fee to cover the cost of processing the material. It is currently accepted at no charge over six weeks of the year, during November and December, to coincide with the CFAs fire prevention period. The material is mulched on site at Wonthaggi, Inverloch and Grantville, however, not at Cowes, where the material is transported to Grantville. The Transfer Station Site Managers own the material once deposited and decide whether they want to sell it or give it away for free based on availability of an end market. Feedback from residents, in particular in Cowes, is that the material should be mulched and be available for the community. Some residents consider that the provision of two sets of three week ‘no charge’ periods, such as April/May and November/December prior to and post the CFA’s fire risk period as more useful as it is more consistent with their requirements.

For those residents unable to take this material to the waste facilities, much of the material is disposed of in the garbage bin, if possible. Larger branches cannot be placed in the bins and so these require alternate management arrangements, such as burning in the allowable times. Feedback suggests that residents desire a green waste bin collection service. Across Victoria, green organics kerbside collection (predominant container type 240L) is provided in 48% of Victorian households, some of which are an optional user pays service. Fortnightly regular mandatory services generated a yield of 354 kg/household. On call service yielded 68 kg per household with participation rates very low (10.63% in 2010-11). Fortnightly optional user pay services with participation rate of 44.9% and yield of 386 kg per household – although costs higher (Victorian Local Government Annual Survey 2010-2011).

Private waste contractors are currently used to assist with the transport of green waste to the Shire waste facilities, however, this is at a cost to the ratepayer. It is also noted that private waste contractors are unable to dispose of green waste at no charge during the CFA fire prevention period over November/December, even if disposal is being conducted on behalf of residential ratepayers. It is understood from community feedback that this has made the use of such facilities cost prohibitive.

While the diversion of waste from landfill as a general principle is consistent with the waste hierarchy, not all waste diversion should be given equal importance. It is considered the diversion of materials with potential for environmental degradation, such as batteries; those with high embodied energy, such as metals and plastics; or those with high potential greenhouse gas emissions, one of the most significant environmental impacts of landfills; should be priority materials. The environmental impact of the deposition of woody material into a landfill is minimal, as wood decomposition does not generate methane (high carbon footprint) unlike readily degradable organic materials, such as kitchen organics. Woody material in landfill breaks down by action of fungi under aerobic conditions producing carbon dioxide and not methane. As such, the diversion of timber material from landfill does not significantly reduce its greenhouse gas emissions, and the cost to collect woody wastes is unlikely to be offset by the savings in landfill space/ carbon footprint. Readily degradable green waste from houses, such as lawn clippings, in contrast to woody waste, do have the potential to generate methane gas when breaking down anaerobically in landfills.
The current quantities of green waste disposed to the waste disposal facilities, not including Grantville Recycling and Waste Transfer Centre, is 2,182 tonnes (2013/14 year). Although the green waste quantities for Grantville have not been accounted for, the current quantities are insufficient for a commercial composting facility, with a marketable end product, to be viable. There are small scale facilities that are being established in the area, however, they are still not of the scale required to manage the likely quantities and quality of material to be collected via a 3 bin system.

Material can be transported to regional facilities currently in operation. For example green waste could be transported to Morwell/Dutson Downs, however, the costs of collection and long haul transportation need to be assessed against the cost of not collecting this material, i.e. backyard composting or disposal to landfill. Part of the cost of disposal to landfill is that green waste is a potential resource that could be reused. Large branches are also difficult for the community to manage; they often do not fit in their bins and are a potential fire hazard.

An organics market for green waste is currently limited, especially for poorly processed products. It is considered that Bass Coast Shire Council and South Gippsland Shire Council have insufficient throughput to develop a composting facility on their own. Therefore, consideration is required for either the development of a regional facility or to key into an existing facility that requires further throughput, such as a water authority or waste to energy facility. It is understood that the management of organics, food organics and green organics (FOGO), is a Gippsland Waste and Resource Recovery Group priority.

A trial of kerbside green waste collection was conducted over three six month stages commencing September 2013 and completed in March 2015. The optional service was offered to approximately 7,000 garbage rate paying residents in the urban areas of Cowes, Silverleaves, Rhyll, Ventnor and Wimbledon Heights (all in the north of Phillip Island). The trial involved the collection of material and transportation to a regional facility. The take up rate was approximately 7 – 9%. This take up rate is considerably less than the optional take up rate of similar optional facilities offered in other municipalities, with average participation rate of 44.9%, and slightly less than “at call” green waste collection services offered across Victoria with average participation rate of 10.6% (Sustainability Victoria, 2013).

A green waste trial survey was completed in 2013 with 364 respondents. The majority of the respondents were located in Cowes and were generally greater than 50 years old and they were either “extremely satisfied” or “satisfied” with the service. 84% of respondents indicated they would be very disappointed if the optional service was no longer provided.

Gippsland WRRG advised that they undertook a study of waste generation by residents with a variable number of bins, i.e. inclusion or not of a green waste bin. They found that the tonnages were the same in the MSW bin regardless of green waste collection. The Gippsland WRRG considers that diversion of food waste along with green waste was required to impact on tonnages disposed to landfill. Also, from a change in community behaviour perspective, one change to a green waste and kitchen organics bin was much easier than to just green waste and then later green and kitchen wastes.

Home composting has become easier, especially for the elderly. Bins, such as Aerobins, are less costly than previously and easier to use than the older style black bins. Feedback from the community suggests that green waste management is considered to be a key issue.
Key Issues Identified – Green Waste

- Residents are currently required to travel to dispose of larger green waste materials, which for many, in particular the elderly, is difficult;
- Kerbside collection trial had a poor take up rate, however, residents require an equitable service for managing this material, especially at high fire risk areas and times;
- Evidence that green waste kerbside collection may not minimise the amount of waste disposed to landfill, i.e. placed in the garbage bin, and deposition of woody waste to landfill generates minor quantities of methane;
- Organics market currently limited for processed products; and
- Bass Coast Shire Council and South Gippsland Shire Council have insufficient throughput to develop a composting facility, collaboration with region/adjacent councils required.

6.4 HARD WASTE

Council offers a hard waste “on-call” waste collection service once a year at a highly subsidised cost. Main types of hard waste are furniture, boxes of general rubbish, steel, whitegoods and mattresses.

Council previously provided a yearly collection of hard waste in 2008 whereby resident and non-resident ratepayers would place their hard waste on the nature strip at a designated time during the year and all material would be collected. Due to litter, OHS and public safety issues, Council now provides this at call service where the property owners need to book for waste to be collected, the material remains within the boundary of the resident’s property with weight restrictions applying. There is now a subsidised fee for this service, with additional charges for mattresses.

It is understood the current tonnages of hard waste collected have steadily increased from 84 tonnes in 2011/12 to 152 tonnes 2013/14. These tonnages are estimations based on the number of collections, i.e. 6 tonnes per 25 collections. It is understood that of the six tonnes collected, one tonne of steel is recovered. However, it is not clear what proportion of rest of the material collected is recovered. Based on the 2010 – 2011 Victorian average data provided in the Victorian Local Government Annual Survey (2010 – 2011), of the 78,000 tonnes collected by 42 LGAs, 71,000 tonnes was disposed to landfill. This represents a diversion rate of 7.9% of what is collected. It is understood that the majority of the material is subject to scavenging prior to collection, reducing the proportion of recyclable materials. Negative impacts of scavenging have been limited by the at-call service model, where waste items have to remain inside the private property boundary until the booked collection date.

The community have advised that they consider that the previous blanket service, where the cost was included in their rates service was more convenient than this current service and that they would like to see an increase in the number of hard waste collections available. Some in the community were not aware of this current on call service. The blanket service was considered “free” as the cost was hidden in rate charges.

A survey conducted by the Metropolitan Waste and Resource Recovery Group (MWRRG, 2014) provides data on hard waste services offered in Melbourne by other Councils. This survey was published in December 2014. It contains data from the 31 Metropolitan Councils.
Twenty of the 31 councils provide a fully funded at call service, eight provide a blanket service and three councils provide both services. Three of the councils charge a call out fee for the at call service. All councils provide some form of service.

The tonnes collected across the metropolitan area have increased 94% in the last 12 years and the cost to collect the waste has increased 389%. The trend is that waste collection costs have been increasing 4 times faster than the amount of waste collected. This steep increase can be attributed to increased collection and disposal costs that have increased faster than inflation.

While residents prefer a “free” hard waste service the reality is that cost pressures on councils, with proposed rate increases capped at CPI, will make supporting these services into the future more difficult. A partly subsidised at call service allows for the provision of a hard waste service for residents without access to trailers and also helps control costs.

A “free” yearly service effectively means that all residents pay for the service regardless of whether they use the service or not. The “free” yearly service promotes the view among residents that hard waste management is the problem of local government and not the problem of the generator.

Moonee Valley City Council offer a yearly hard waste collection service, which many LGAs also provide, but also a service called “Renew” which allows the use of the current 240 L commingled recycling bin once a quarter to collect reusable goods. Such goods include:

- Useable textiles and clothing: Clothes, footwear, ties, scarves, hats, jewellery, blankets, sheets, pillow cases, bed linen, table covers, towels, kitchen textiles, ornamental textiles;
- Hard goods: Handbags and purses, belts and leather items, toys, games, books, cookware (pots, pans, fry pans) and cutlery, sporting goods (must fit in the recycling bin), plastic bags, plastic household items such as, food containers;
- Mobile phones: handsets, batteries, chargers, car kits, hands free pieces; and
- Printer cartridges: all types of print cartridges (ink, powder etc.).

This is not for the larger hard waste objects, such as mattresses.

Key Issues Identified – Hard Waste

- **Hard waste collected Victoria wide has a small proportion of recovery value, approximately 8%. Although it is understood that a considerable volume of steel is currently recouped from the Bass Coast Shire Council hard waste collections, an understanding of the total recovery value in the Shire is not understood;**
- **Hard waste collection is a service desired by the community to collect large garbage items for those residents who are unable to transport the items to the Transfer Station, such as older residents, rather than a waste recovery operation;**
- **Feedback from the community has suggested that they are not satisfied with the current On Call collection service, subsidised once a year.**
6.5 OTHER WASTE COLLECTION SERVICES

Council also provides a range of other waste collection services within the municipality. These services include street sweeping and street clearing and litter removal, provided by Council’s road management program; kerbside collection of public place garbage and recycling bins by the current private waste collection contractor; and collection of bins used for community events. Council, in conjunction with the Council Events Team, provide 240 L MSW and commingled recycling bins for small scale events on an as needs basis, such as football games, markets, etc. Waste management for larger scale events are managed by commercial private waste contractors. It is understood that the majority of the material collected is disposed at Grantville Landfill (personal comments Council staff, 28 May 2015).

Council provide over 500 public place garbage and recycling bins predominantly located at town centres, high-use foreshore locations, popular parks and recreational facilities and some beach car parks. These street litter bins are regularly collected. Busier areas are collected daily (twice in peak periods) while more underutilised bins may be collected after two to three days. Public place recycling bins are fitted at most locations in conjunction with waste bins but are collected as part of the general kerbside recycling collection due to genuine logistical considerations of servicing a large regional municipality so at this stage specific public place recycling tonnage figures are not available.

Council increases collection frequency of the PPR bin system when there are community events or major events, e.g. Cowes foreshore bins emptied daily or twice daily instead of 3-4 times a week as usual.

6.6 OVERVIEW OF CURRENT COUNCIL WASTE CONTRACTS

Each of the Council’s current waste management contracts are aligned in terms of commencement and end dates. There are three main contracts:

- Contract 08053 – Management and Operation of Resource Recovery Centres (Transfer Stations);
- Contract 08054 – Operation And Management of Grantville Landfill And Transfer Station; and
- Contract 08055 – Collection and Processing of Recyclables (Kerbside recycling and sorting at MRF); Collection of Litter and waste Kerbside waste collection); Collection of “At Call” Hard Waste.

Cowes Recycling Bank is currently operated by Bass Coast Shire Council.

Although a trial of green waste kerbside collection was conducted between 2013 and 2015, no current contracts for green waste collection exist. Green waste is currently collected at Council’s waste disposal facilities and mulched onsite, except at Cowes, where green waste is transferred to Grantville.

Small scale private facilities are being established in the area providing green waste management services, however, they are still not of the scale required to manage the likely quantities and quality of material to be collected via a three bin system.
The use of in house vs private contractors for waste management varies across the country. Where Council staff are knowledgeable and proficient in the administration of waste management contracts there are examples of in house collections offering a more cost effective service. However, the opposite is also true in some Shires where there are examples of egregious ‘in house’ service provision where the in house teams performed extremely poorly when benchmarked against external contractors.

For Bass Coast Shire Council, in house provision of services may be problematic in that Bass Coast may not have the critical mass of service requirements necessary to support an in house team. Such a team would be required to support services, such as fleet management, workshops, Human Resources, and such specialists may not be available at Bass Coast.

An overview of all current waste contracts is provided in Annex E

### Key Issues Identified – Current Council Contracts

- **Contracts are due for renewal in February 2016 with notification of extension by 30 November 2015 for up to 3 years;**
- **Collection contractors and facility operators have the opportunity to assist with identification of inappropriate disposal practices, provide education to facility and service users, and to improve diversion rates;**
- **Collaboration with adjacent council, i.e. South Gippsland Shire, there may be an opportunity to potentially align contracts in the future;**
- **Contracts cover large components of the Shire’s waste management requirements, minimising the opportunities for those contractors that may only be able/want to bid on one or two elements;**

### 6.7 WASTE COMPOSITION AND QUANTITIES

Quantities and composition of waste and recyclable materials collected from across the municipality are provided in Annex E

No detailed recent waste audits within the Shire have been conducted of residential kerbside bins. It is understood that the metropolitan region has been conducting recent waste audits. The results obtained from the waste audits could be utilised by other WRRGs and their LGAs, such as Bass Coast Shire Council. It is understood that more than 60% of all materials in landfill are biologically active, i.e. plant and animal matter.

A Public Place Litter bin audit was conducted in March 2011 to assess the effectiveness of new public place recycling infrastructure installed in the CBD areas of Wonthaggi, Inverloch, San Remo and Grantville. The new infrastructure (PPR station) included a 240 L garbage and 240 L commingled recycling bin housed within a metal frame. The contents of both bins were collected from 15 PPR bin stations. It was found that of the material that is collected in commingled recycling bins, 93% were recyclable, which equates to a 7% contamination rate. Of the material collected as garbage, 20% was found to be material that could be recycled. 88% of the material by weight was represented by paper, cardboard & liquid paperboard with the remainder comprising of glass, plastic and aluminium.
6.7.1 Contamination Rates

Reported contamination rates in Bass Coast Shire Council have been a rate of approximately 30% by weight for the majority of kerbside recycling for the past three years which, compared to the Victorian average of 8.3% (Sustainability Victoria, 2013), are very high.

An audit of the recycling material at two transfer stations (Wonthaggi and Inverloch) conducted by Bass Coast Shire Council (June 2014) concluded a significant amount of the material identified as contamination was broken glass pieces, i.e. material that could not be processed. This is a reporting anomaly as the glass pieces down to 10-20mm are recyclable, at a more modern, automated MRF, but not at the MRF currently used to process the majority of the Shire’s commingled recyclables. The audit concluded that the actual rate of contamination, i.e. material that is not recyclable in the first place, is closer to 5% of total tonnage rather than 20%

As the figures for contamination reported from the MRF recycling process are higher than those shown in the bin audit, i.e. closer to 30%, it is assumed that under current recycling processing practices, kerbside recycling is likely to have marginally higher contamination rates. However as the recycling material from the kerbside service and the transfer bins are managed and sorted at the same facility, it is assumed that the vast majority of this contamination is also broken glass and glass fines (glass pieces under 10-20mm)

Unfortunately new manufactured glass containers are thin walled making it hard to collect without crushing. This is a national packaging issue. Kerbside recycling trucks compaction rates may be varied to minimise breakages.
It is noted that the environmental impact of glass in a landfill is insignificant and so diversion benefits are low. It is also worth considering that to recycle glass and broken glass is very energy intensive. Melbourne has very large stockpiles of broken glass that at this time does not have a facility where it can be recycled.

Recyclable materials from the other Transfer stations (Grantville Recycling and Waste Transfer Centre and Cowes Recycling Bank) are processed in Melbourne at another processor with contamination rates assumed to be approximately 5 – 8% by weight (Council provided information December 2014). This rate is comparable with average contamination rate across Victoria in 2010-2011 (Sustainability Victoria, 2013) reported as 8.3%.

It is likely that the contamination rates across the Shire are at least comparable with Victorian averages, such that the community as a whole are appropriately using their recycling bins. The commingled recyclables contractor (private waste contractor communications 11 March 2015) supported this belief noting that the standard of material in the bins was very high.

Although it can be concluded that a contamination rate of 5 – 8% is likely to be the more realistic rate, the calculated diversion rate is based on actual diversion from landfill, and so is impacted by the quantity of the material that cannot be processed and is landfilled.

6.7.2 Waste Transfer Station, Resource Recovery Centres and Drop-off facilities

Bass Coast Shire Council currently own four drop off facilities:

- Grantville Recycling and Waste Transfer Centre;
- Wonthaggi Recycling and Waste Transfer Centre;
- Inverloch Recycling and Waste Transfer Centre; and
- Cowes Recycling Bank.

Council also own the Grantville Landfill.

The Cowes Recycling Bank is managed and operated by Bass Coast Shire Council staff however the remaining facilities are managed and operated by private waste contractors.

No major private facilities are available in the Shire.

The majority of materials managed by private waste contractors are processed through Bass Coast Shire facilities. The private waste contractors operating in the Bass Coast Shire are detailed in Section 6.8.4.

Refer to Annex E for details of the materials received and recycled at Bass Coast Shire Council facilities.
6.7.3 Comparison with Other Shire and Victoria wide

A comparison of the volumes of garbage and commingled recyclables collected per household, and the rate of material recycled rather than landfilled, represented as a percentage (Diversion rate) was undertaken with Surf Coast Shire and the Victorian average. This was conducted using 2010 – 2011 data as this is the latest publically available information.

The comparison revealed that:

- Household garbage yield per household is less in the Bass Coast Shire (303 kg) than Surf Coast Shire (350 kg) and Victorian Average (488 kg);
- Commingled recyclables yield per household (net of contamination) is less in the Bass Coast Shire (206 kg) than Surf Coast Shire (257 kg) and Victorian Average (279 kg);
- Diversion of waste to commingled recyclables (30%) is less than both Surf Coast Shire (56%) and Victorian Average (45%), irrespective of kerbside green waste collections; and
- Total diversion rate, including drop off material, is higher in Bass Coast Shire (52%) than the Victorian average (50%), however, lower than the Surf Coast Shire (61%).

Surf Coast Shire Council was noted as predominantly providing a 120L garbage bin weekly and 240L commingled recycling bin fortnightly, at this time.

Surf Coast Shire Council differs to Bass Coast Shire Council collection services as follows (based on review of Surf Coast Shire Council website):

- Garbage - 120L weekly kerbside to all urban areas, optional for rural areas and collected fortnightly. Ability to upgrade the service offered by increasing the bin size up to 360L or by an additional collection service. Bass Coast Shire Council offer 120L weekly kerbside to all residents in the main Shire areas;
- Commingled recyclables – 240L bin collected fortnightly in both urban and rural areas. The service is optional for rural areas. Bass Coast Shire Council offer 240L fortnightly kerbside to all residents in the main Shire areas;
- Green waste – 240L bin collected fortnightly. Service to Rural areas not provided. Bass Coast Shire Council does not offer any collection services for green waste.

Surf Coast Shire Council also provides a number of rubbish drop-off points for holiday home owners when leaving the Surf Coast Shire. General household and commingled recyclable materials can now be placed in rubbish bins at any time at the designated collection points, located in three areas in Torquay, Anglesea and Lorne. There is no charge for the use of these facilities.
6.7.4 **Historical Total Waste and Recyclables managed by Bass Coast Shire Council**

Garbage and recyclables collected via kerbside collections and at the drop off facilities over the last three financial years (2011/12 to 2013/14) reveal that:

- The volume of garbage collected per household and per collection service marginally increased over the period;
- The volume of commingled recyclables collected per household and per collection service remain unchanged, as 222 kg per household and 124 kg per service;
- The volume of total recyclables including green waste has increased, mainly due to the increase in green waste being disposed;
- The kerbside diversion rate, that is kerbside recyclables as a percentage of kerbside MSW and recyclables collected, has fallen from 25.5% to 24.7% over the period; and
- The Total Diversion rate, that is total recyclables collected via kerbside and drop off facilities as a percentage of total waste not including C&I and C&D waste nor litter and street sweepings, increased over the period from 30.8% to 32.4%

The results during the last three years differs to what has been reported in the 2010-2011 Victorian Local Government Annual Survey report (Sustainability Victoria, 2013). Discussions with Bass Coast Shire Council representatives suggested that the likely cause of the differences are potential changes in methods of collecting the data and/or changes with Bass Coast Shire Council personnel (Bass Coast Shire Council discussions March 2015).

The yield per household, as per census data in 2011 (ABS website, accessed January 2015), as well as per property, as per Victoria in Future data (Department of Transport, Planning and Local Infrastructure, 2014) and per collection service is detailed in *Annex E*. The difference in the number of properties and the number of households predominantly reflects the number of holiday homes in the area. These holiday homes utilise the waste management services of the Bass Coast Shire Council over the main holiday periods, as well as likely intermittently during the year as required. In 2013 – 2014, there has been an increase in the yield of garbage, a stagnant yield for commingled recyclables, and the corresponding diversion rate for kerbside collection was fairly constant.
6.7.5 Waste Projections

Based on the current volumes and extrapolating with the projected growth in the population, waste tonnages have been projected. Refer to Annex E for projected volumes to 2025.

### Key Issues Identified – Waste Composition and Quantities

- Reporting of broken glass as contamination is incorrect and not allowing reliable comparisons;
- High reported rates of material unable to be processed is likely to be reflective of broken glass and glass fines in the waste stream due to technology upgrades required by the local Material Recycling Facility;
- Compaction rates of Kerbside recycling trucks may need to be adjusted to minimise breakages;
- Need to improve the data collected. Public Place Recycling to be separated from other kerbside recycling, likewise commercial recycling and rubbish collection to be separated from residential;
- No separate event information has been provided – need to detail whether there are special bins in place and then the collected waste from these that are managed;
- It is noted that the quantity of Municipal Solid Waste received at the Grantville Recycling and Waste Transfer Centre doubled for the 2013/14 year, compared to the previous two years. It is understood that this is due to the closure of the Rhyll Transfer Station on Phillip Island. The Cowes Recycling Bank has only been open since 1 July 2013 and its impact is not reflected in the current waste figures;
- Co-mingled recyclables (not including green waste) collected are less per household than other comparable Shire; and,
- Data collected by Bass Coast Shire Council does not separate residential and commercial, nor clearly detail contamination rates separated by collection services and locations.
6.8 WASTE MANAGEMENT FACILITIES

This section details the waste management facilities provided within the Shire, in nearby shires as well as regionally. Refer to the figure below which details the locations of these facilities.

6.8.1 Council Waste Disposal and Resource Recovery Facilities

As detailed in section 6.7.2, Bass Coast Shire Council currently own four drop off facilities and one landfill. Refer to Annex E for details of the site, waste types/streems received, volume and users per day, in Tables 8 and 14.

Bass Coast Shire Council provide waste disposal vouchers to charitable organisations and volunteer-based community groups which allows/enables free disposal of up to 6 m³ waste at their facilities. To qualify for waste disposal vouchers an organisation must provide services with public interest value and only dispose of waste related to their organisation’s public service activities.
6.8.2 Material Recycling Facility (MRF)

The current recycling sorting centre processing collected commingled recyclables is owned and operated by a private contractor.

Feedback from Councillors suggested that a “state of the art” MRF, including an education facility that can be shared with the region, established in conjunction with the Shire at Grantville Landfill should be considered. Such a facility would require regional support due to the high capital cost and the requirement to have a high waste volume throughput to make it operationally viable. These facilities in Melbourne process volumes in excess of 250,000 tonnes per annum. Setting up such a facility in Bass Coast Shire would also require considerable transportation of material to and from the Shire such that the economic, social and environmental costs would be very high, higher than just transporting the materials to Melbourne for processing.

Discussions with the current MRF private contractor has identified that to upgrade their facility to process the materials, which are increasing, comparably to facilities in Melbourne and process more of the recyclable material, i.e. improve diversion rates is not economically viable for them. They currently send a portion of their collected materials to Melbourne for processing and envisage transporting more in the future, moving away from processing the materials.

The regular occurrence/presence of potentially hazardous sharps (needles, syringes and self-injection devices) in the recycling stream is a problem currently experienced by the private contractor. The contractor currently provide reports to Bass Coast Shire Council when sharps are found and Bass Coast Shire Council is working to educate local healthcare professionals and sharps users about responsible disposal options and existing local services, such as the Community Sharps Bin program, in an attempt to reduce the problem.
6.8.3 Resale Shops

Resale shops at Transfer Station/Recovery Centre sites anecdotally are not economically viable due to limited customer base and the need to staff the facility. Economies of scale may be gained from a regional facility whereby a shop could be manned.

Professional organisations, such as Outlook Environmental (have a number of waste transfer sites including Pakenham) that use disadvantaged workers for employment and vocational training, or one that seeks markets for items either locally or overseas, such as Renew (refer to Section 6.4 for discussion), are required to assist with assessing the viability of such a venture. No such facility is offered within the Bass Coast Shire however there was interest from the community regarding such a facility, i.e. Resale Shop.

6.8.4 Private Waste Disposal and Resource Recovery Facilities and Services

There are no privately owned, publically accessible waste disposal facilities in the Shire.

There are a number of private waste contractors operating in the Shire, supporting the Shire's waste management services to the community. These include waste collection services for commercial premises, construction industry and residents:

These include:

- Cleanaway Regional (Transpacific). Offer waste collection services for commercial premises; waste and paper/cardboard; skips and commingled service;
- Bass Highway Waste – services available to commercial and households, including provision of mini and bulk skips; waste only;
- Wonthaggi Recyclers – currently undertake kerbside collection services – waste and recyclables for Bass Coast Shire Council, as well as processing of recyclables; provide a disposal option/MRF service for commercial customers;
- Multiple Private Skip Hire Operators, such as Phillip Island Waste & Recycling (formerly Island Skip Hire) and Bass Coast Rubbish Removal & Bin Hire – provision of mini skips to commercial and household customers;
- Wheel-A-Waste – provision of skips/dumpsters (waste/cardboard) and commingled recycling, green waste collection for commercial customers; provision of skips and green waste collection for household customers; plus a waste transfer facility (limited use); and
- SITA Environmental Solutions (now Suez Environmental) – waste and recycling collections, provision of skips for commercial and household customers.

Other, small and large, waste management contractors are also located or operate within the Shire, such as Veolia Environment, Aussie Compost Co, and Magic Lands Rubbish Removal & Maintenance.

The extent of non-council services provided is not clearly understood as recorded waste volumes are not readily available for review. It is understood from discussions with many of
these contractors that the majority of material collected is disposed of at current Shire facilities.

Feedback from the contractors has identified a number of issues with the management of wastes across the Shire. The main issues are detailed within community consultation Section 5.4.5 with a summary provided below:

- Waste disposal costs were a major driver to their business;
- Contractors are charged a fee for green waste disposal during the green waste no charge period;
- Waste facilities – If Grantville Landfill were to close, additional travel times to alternate landfills may impact on business cost base;
- Education is key to changing community behaviours and diverting material from landfill; and
- No incentive for landfill operators to reduce waste to landfill.

6.8.5 Best Practice Review

A review of current facilities offered throughout the Shire was undertaken against the Guide to Best Practice at Resource Recovery Centres (Sustainability Victoria, 2009) with recommendations made for upgrades to best practice. A review of the site's location and any planning conditions applicable to the site was also undertaken. Refer to Annex D for Planning Information considered.

Grantville Landfill is operated under EPA licence with compliance assessed by an EPA appointed auditor on a regular basis. The last three Annual Performance Statements have been provided. Non compliances have been documented with actions detailed to address these. There is considerable airspace available at the landfill such that the Shire’s landfilling needs will be catered for the next approximately 30 years.

ERM undertook a preliminary review of the facilities by way of site walkover in consideration of the Guide to Best Practice at Resource Recovery Centres (Sustainability Victoria 2009) to identify any issues regarding the current use of the facilities and likely works required for their ongoing use in the future. Although the Cowes Recycling Bank was visited on 26 November 2014, a review was not undertaken as this is not a permanent Transfer Station/ Resource Recovery Facility. Private waste contractors, Wonthaggi Recyclers and ACE Environmental, assisted with this review. From discussions with onsite staff, it is apparent that the operational staff, in particular Gatehouse staff, attempt to educate site visitors to minimise the waste to be disposed to landfill.

Facilities are classified into three categories according to the throughput range (tonnes per annum) of all materials received at the site. The guidance is then tailored to the varying needs and capabilities of the different categories. All three facilities are Category 2, throughput between 1,001 – 30,000 tonnes per annum.
A summary of findings is detailed as follows:

6.8.5.1 Inverloch

Inverloch Recycling and Waste Transfer Centre is located in close proximity to Inverloch Township. It is also located approximately 10 minutes from Wonthaggi and approximately 16 minutes from Koonwarra Transfer Station.
The site is zoned Public Use Zone (PUZ6) (Local Government) with adjacent land uses zoned as follows:

- East – PCRZ – Public Conservation and Reserve Zone, incorporating Screw Creek; and
- North, west and south – GRZ1 – General Residential Zone.

Screw Creek runs to the south east and east of the site where stormwater is likely to be discharged to.

The site is also subject to a Wildfire Management overlay and a Vegetation Protection overlay.

The facility's location poses potential impacts to the environment, in particular relating to stormwater discharge and fire, and aesthetic impacts to the community due to the continued encroachment of residential development.

The facility operates on Saturday, Sunday and Monday from 8.30 am to 4.30 pm.

The preliminary review of the facility notes:

- Bitumen roads within the site require upgrade;
- All material capable of being recycled needs to be available up front prior to garbage disposal, along with opportunity to revisit recyclables area if need be;
- Green waste drop off is separate to the rest of the materials available for disposal. Traffic is required to enter the recyclables/garbage disposal area to visit the gatehouse prior to then crossing in coming traffic to visit the green waste disposal area;
- Poor signage on bins and on roads providing inadequate direction to site visitors;
- Certain "spots" for materials, e.g. mattresses and e-waste, were provided but no signage and no containers to assist with disposal nor collection;
- Green waste is not stored and processed on a hard stand area, with potential for contaminated stormwater to discharge to the neighbouring properties and Screw Creek;
- Green waste is stockpiled and mulched on site 5 – 6 times per year. Due to the potential fire hazard of such stockpiling, as well as the potential aesthetic impacts on the local community, e.g. dust, noise, vermin, odour, it is recommended that all green waste be removed to Wonthaggi (or another suitable site) for storage/processing purposes; and
- Consideration to re-design of the facility to address identified issues, with potential to cover areas and include a weighbridge.
6.8.5.2 Grantville

Grantville Recycling and Waste Transfer Centre is located close to Grantville Township, however minimal nearby residential properties are in close proximity. It is also adjacent to the Grantville Landfill.

The site is zoned Special Use Zone (SUZ2) with adjacent land uses zoned for farming. The site is also subject to a Wildfire Management Overlay.

The facility is situated such that any potential aesthetic and/or environmental impacts appear to be minimal.

The facility operates 7 days a week from 8.30 am to 4.30 pm.

The preliminary review of the facility notes:

- Bitumen roads within the site require upgrade. It is understood that funding is available this financial year to re-bitumen road and paint the roads with coloured lines to assist visitors to dispose of their materials appropriately and efficiently;

- The facility layout allows for gatehouse review of items, separation of trucks and cars with clear signage of recyclables. However all material capable of being recycled needs to be available up front prior to garbage disposal, however there is the opportunity to revisit recyclables area if need be;

- Green waste is not stored and processed on a hard stand area, however potentially contaminated stormwater is likely to run off to the leachate pond within the landfill footprint;

- Hazardous materials, such as paint, cannot be accepted at the site. Wonthaggi Recycling and Waste Transfer Centre has a detox your home collection facility, however this is too far away for many residents; and

- Consideration to re-design the facility to address identified issues, and potentially address acceptance of hazardous materials.

6.8.5.3 Wonthaggi

Wonthaggi Recycling and Waste Transfer Centre is located in near proximity of the local community.

The site is zoned Public Use Zone (PUZ6) (local government) with adjacent land uses zoned as follows:

- North – Low density residential zone (LDRZ);
- South, south east – Farming Zone;
- North East – Public Use Zone (PUZ5) (Cemetery).
The site is not subject to any planning overlays, however a Wildfire Management Overlay is located nearby to the south west of the site.

The facility operates 7 days a week from 8.30 am to 4.30 pm.

The preliminary review of the facility notes:

- Bitumen roads within the site require upgrade;

- The facility layout allows for gatehouse review of items, separation of trucks and cars with clear signage of recyclables. Movement of traffic is one way with separate entrance and exit points to the site. This allows minimal opportunity to revisit recyclables area if need be;

- Green waste is not stored and processed on a hard stand area, however the green waste is located in depression on site so run off unlikely; and

- Consideration to re-design of the facility to address identified issues, and/or alternative site.

Feedback has suggested that the facilities that are retained across the Shire should have a common model so that their layout is consistent and as such easier for the public to use.

6.8.6 Waste Management Facilities in Neighbouring Municipalities

Waste Transfer facilities are also offered within the adjacent Shire of South Gippsland, including Koonwarra Landfill and Transfer Station, Foster Transfer Station, Korumburra Transfer Station, Mirboo North Transfer Station, Walkerville Transfer Station and Venus Bay Transfer Station. It is believed that the Koonwarra Transfer Station and Landfill and the Inverloch Transfer Station may have a fair degree of overlap in users depending on opening days and current charges.

Koonwarra Landfill is located in close proximity to the Bass Coast Shire with private waste contractors and the general public of Bass Coast Shire using the landfill.

6.8.7 Regional Facilities

A review of regional landfills that Bass Coast Shire Council may utilise to transport their waste to has highlighted two such potential facilities – Hyland Highway Landfill (1 hr 40 minutes away) and Hallam Road Hallam (1 hour 15 minutes away) from Wonthaggi. Although Grantville landfill is only approximately 27 minutes away from Wonthaggi, the costs associated with owning this facility, including development and rehabilitation costs, operating and aftercare costs, as well as social and environmental costs, may outweigh transport and gate fees associated with travelling to these regional facilities.
6.8.8 Travel Times

Although not documented, it is generally regarded that a catchment area for a waste transfer station is usually defined by a 15 minute travel time (one way) from a residential area to the facility. This is the time the majority of survey respondents selected as the time that they would travel to a waste facility. A review of travel times within a comparable Shire (Surf Coast Shire) reveal average travel times between 15 – 20 maximum between the major towns in the shire to the Transfer Stations either within the Shire (Anglesea, Lorne or Winchelsea) or adjacent to the shire (Drysdale).

A preliminary review of travel times within the Bass Coast Shire Council reveals the following:

Table 6: Travel Times

<table>
<thead>
<tr>
<th>From</th>
<th>To</th>
<th>Approximate Travel Time (minutes)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cowes</td>
<td>Grantville</td>
<td>30</td>
</tr>
<tr>
<td>Cowes</td>
<td>Wonthaggi</td>
<td>40</td>
</tr>
<tr>
<td>Inverloch</td>
<td>Wonthaggi</td>
<td>10</td>
</tr>
<tr>
<td>Inverloch</td>
<td>Venus Bay</td>
<td>24</td>
</tr>
<tr>
<td>Inverloch</td>
<td>Koonwarra</td>
<td>16</td>
</tr>
<tr>
<td>Wonthaggi</td>
<td>Koonwarra</td>
<td>29</td>
</tr>
<tr>
<td>Wonthaggi</td>
<td>Korumburra</td>
<td>32</td>
</tr>
</tbody>
</table>

Note: Travel times based on sourcing directions using the website whereis.com and based on travel from town to town. The times do not account for increased traffic at peak times.

6.8.9 Old or closed waste management facilities within the municipality

The following closed landfills in the Shire are to be managed as per the EPA’s Closed Landfill Guidelines (EPA, 2012)

- Inverloch Landfill;
- Wonthaggi Landfill; and
- Rhyll Landfill.

No other old or closed landfills are known to exist however, to understand Council’s ongoing liabilities with respect to such landfills, investigations may be prudent. The risk to Council of facilities closures decreases with time. The risk to Council from facilities closed greater than 10-15 years ago are likely to be low, mainly due to the waste material having decomposed such that minimal landfill gas generation potential will remain and settlement of materials has occurred.

The community, when asked in the online community consultation surveys associated with the completion of this WMS whether they were aware of any sites across the Shire where waste was previously disposed there were a few responses that Council will need to include in their investigations.
The status of the existing closed landfills, and any newly identified landfills, should be identified to enable prioritisation of works required, such as capping, monitoring and aftercare, and corresponding costs.

### Key Issues Identified – Waste Management Facilities

#### Council Facilities

- **Phillip Island – Closure of Rhyll Transfer Station** – Community consider there is a need for a Transfer Station to service the area. The Cowes Recycling Bank was set up to meet the current community's need, however, this is not considered to be a long term solution by both Bass Coast Shire Council nor the community;
- **Owning and maintaining a landfill for a small Shire**, such as Bass Coast Shire Council, may not be the most viable option financially and environmentally for the community;
- **Facility at Cowes is a temporary facility**, i.e. recycling bank. The travel time for a Cowes resident is in excess of 30 minutes if they had to rely on either the Wonthaggi or Grantville locations to dispose of their waste/recyclables. While the travel time for an Inverloch resident is 10 minutes to Wonthaggi or 16 minutes to Koonwarra or 24 minutes to Venus Bay; and
- **Higher waste management requirements during holiday period**;

#### Material Recycling Facility

- Access to a modern MRF in the region to manage collected waste materials. Current MRF utilised for the majority of the collected recyclable materials requires investment to process more recyclable material, volume and type. As recycled materials are ultimately transported from Bass Coast Shire there is no transportation saving in processing material in the Shire compared to transporting to a larger more efficient processor in Melbourne; and
- **A syringe problem in Public Place Recycling bins**.

#### Resale Shops

- The community is interested in having a Resale Shop provided as part of Bass Coast Shire Council waste services. Based on experience, not all Resale Shops are viable and do not provide the community with the incentive to dispose of their reusable items thoughtfully rather than to landfill, however, organisations, such as Outlook Environmental and Renew, are viable and are supported by the community.

#### Private Waste Facilities and Services

- An understanding of the quantity and type of material being managed privately is not understood, nor the capacity of these facilities. However, this information is unlikely to be forthcoming in a competitive environment;
- **During the green waste no charge period**, private waste contractors utilised by residents do not get the benefit of this amnesty, that is they have to pay for the green waste that they dispose;
- **A greater number of diversion options would be beneficial**, such as gypsum/plasterboard; and
- **Large private trucks are unable to utilise the Waste Transfer/Recycling Centres**, requiring transportation to Grantville.
**Best Practice Review**

- Inverloch Recycling and Waste Transfer Centre – Rezoning of the land to Rural Residential has caused a number of unverified complaints regarding odours and green waste mulching. If the facility is no longer able to accept such waste, the facility may no longer be required; and
- Current Recycling and Waste Transfer Centres – refer to Best Practice Review, Section 6.8.5.

**Old or Closed Waste Management Facilities**

- Closed/Old landfill liabilities - Wonthaggi, Rhyll, Inverloch (closed landfills), Lang Lang, and the high management cost for rehabilitation and aftercare costs to Bass Coast Shire Council.

**Waste Management Facilities in Neighbouring Municipalities/ Regional Facilities**

- South Gippsland Shire, adjacent to Bass Coast Shire, operates a landfill (Koonwarra Landfill), located in close proximity to Bass Coast Shire. The cost, financial, environmental and social, of running two landfills simultaneously for two small shires is likely to be high. Closing or mothballing (temporarily ceasing filling) one site and placing all waste in the remaining site would provide the potential for significant cost savings and potential for improved environmental performance; and
- Understanding of facilities in the region to gain an appreciation of all facilities available to the community.

**Travel Times**

- Travel times during the holiday period were noted by stakeholders as being considerably higher than those during other periods; and
- Holiday residents on Phillip Island need to dispose of waste at peak times driving to Grantville or Wonthaggi at Christmas period when roads are clogged with traffic.

6.9 ALTERNATIVE WASTE TREATMENT

Alternative Waste Treatment technologies involving pre-sorting of commingled wastes and complex treatment systems (e.g. pyrolysis) generally require large committed long term waste volumes to justify the capital expense required to develop, approve and operate such a facility. The waste volumes generated by Bass Coast Shire Council and the surrounding region would not support the development of such a capital intensive facility at this time. However, if policy settings change and there is statutory intervention that may change the cost of landfilling or increase the value of recycled products, economies of scale may be achieved in conjunction with the Region such that an Advanced Waste Treatment facility may be possible in the future.

However, other alternative waste treatment technologies exist that are less capital intensive and require less waste throughput to be viable, such as windrow composting.
Based on ERM’s local and international experience, potentially viable technologies for source separated waste processing would include aerobic and/or anaerobic digestion of source separated organic waste streams e.g. windrow or in-vessel composting of green waste, food waste or other organic wastes).

Refer to Annex C for a more comprehensive outline of current Alternative Waste Treatment technologies.

Consultation with the Gippsland WRRG and local councils is required to understand quantity and type of materials available on a regional basis and the potential for a large scale alternative waste treatment facility.

An Expression of Interest has been developed by the six Gippsland regional councils (Gippsland Collaborative), issued by the Latrobe City Council to understand potential AWT technology initiatives and opportunities for the region. The Gippsland Collaborative waste investment initiative is seeking proposals from companies who wish to invest in innovative economic infrastructure in Gippsland to manage a guaranteed supply of MSW.

It is understood that a number of private contractors have shown interest in using the waste currently generated across the region to be utilised in treatment facilities. Responses to the Expression of Interest will assist with understanding the level and type of interest and allow an assessment of the viability of these facilities. This is required prior to any decisions being made regarding any commitment being made to any facility to manage the region’s waste. As detailed in section 5.4.5, one particular contractor advised that they were seeking committed waste throughput from the Gippsland region to be used in their proposed waste treatment facility. There may be other opportunities for consideration, changing the current management regime across the region. However, these options should be managed, as is currently, via an EOI, such that the proposed facility and its operation meet all current legislative requirements, as well as the regions.

Key Issues Identified - Alternative Waste Treatment (AWT)

- AWT feasibility assessments for smaller scale source separated waste streams (e.g. organics); and
- Current large scale comingled waste AWT technologies are not economically viable in Victoria however collaboration across the region on large scale waste management facilities is encouraged over the next ten years as the AWT market develops.

6.10 DATA COLLECTION

There is a need to review current data collection practices to ensure they meet preferred standard Guideline for the collection and reporting of solid waste data in Victoria (Association of Regional Waste Management Groups, 2012) Commercial kerbside and litter collection data is not separated from residential kerbside collection.

No waste audits have been conducted within the Shire therefore the type and volume of materials disposed to landfill that may be reused or recycled is not clearly understood. Such information would assist with understanding current Council waste management efforts to divert material from landfill and for targeting future Council support efforts, such as in education, type and size of bins needed, The Guideline for the collection and reporting of
solid waste data in Victoria recommends that waste audits should be conducted every three years. However, the cost of such waste audits would need to be weighed up against the advantages of conducting a Shire specific audit.

Recent waste audits have been conducted by the Melbourne Metropolitan WRRG, the results of which may be used by Bass Coast Shire Council to understand general waste management performance. Although not Shire specific, they provide a guide to general community behaviours, may reflect state wide waste management education and strategies and provide a sanity check of current information and/or future Shire waste audit.

### Key Issues Identified - Data Collection

- Current data collection practices not consistent with preferred data collection standard; and
- Minimal understanding of Shire specific garbage and recyclables stream.

### 6.11 EDUCATION AND COMMUNITY ENGAGEMENT

Current education programs include:

- Keep Bass Coast Beautiful recycling and litter prevention program;

- Non-conforming Recycling Bin project: Non-conforming recycling bins targeted for positive behaviour change. Excessively contaminated kerbside recycling bins are stickered to educate the households or businesses, with sustained improvement found in 95% of properties that receive an initial contamination notification (1300 properties as of July 2014). It is also considered to have been key to reducing Council’s contaminated recycling disposal costs down from $180K/year in 2011/12 to $160K for 2012/13, and containing it at $160K in 2013/14 despite rising landfill and operational costs; and

- Illegal dumping/Litter enforcement to reinforce educational messages, with outdoor surveillance cameras installed at illegal dumping hot spots/places with recurring illegal dumping issues to identify offenders.

Positive reinforcement of the community seems to be lacking in the engagement with the community, they need to know that they are doing well, as well as how they can improve.

Feedback from the residents is that they do not feel that the community/businesses are adequately educated with regard to what can be recycled and how to minimise the generation of waste in the first place. It was also noted that education is considered key to managing materials at the source, where most cost effective, rather than try to separate out later, say at the landfill. It was recommended that education programmes include information to community, including holiday makers, for example by way of awareness DVDs to ratepayers and schools; school visits to waste facilities.

The Bass Coast Shire Education program is to consider the state wide strategy, *Victorian Community and Business Waste Education Strategy*, which is understood is currently being finalised. The WMS is recommended to be reviewed in light of this strategy, and other waste strategies and plans being completed in two years-time. Refer to Section 4.0 for further details regarding state wide strategies.
6.12 LITTER MANAGEMENT

Local governments are the major players in controlling, cleaning up and trying to prevent litter. Around the world it is agreed the most effective litter prevention behaviour change programs include a mix of approaches across the three critical areas of education, infrastructure and enforcement. The mix of these elements needs to be adapted to the local conditions and include incentives, communications and evaluation. These are the elements that characterise Victoria’s approach to litter prevention.

_Victorian Litter Strategy 2012–14 Love your Victoria_ (Sustainability Victoria, 2013b) strategy for the prevention of littering in Victoria reflects recent and relevant changes, challenges and opportunities. The strategy supports new and continuing initiatives/programs to prevent litter, increase public place recycling and address illegal dumping in Victoria.

There are a number of recognised illegal dumping points around the Shire with the majority of these being public recreation reserves, shopping precincts and secluded back roads in rural areas. Also targeted by dumpers were dead end roads leading to coastal car parks.
The majority of littering is in the form of small incidental littering cases, however, some large scale illegal dumping does occur, which is made up of:

- household hard waste, especially mattresses and couches;
- green waste; and
- smaller quantities of domestic household waste.

The average reported load size of illegal dumping was 2.5m³ with an average of 25-30 illegal dumping incidents reported per month.

Council currently have a number of litter prevention approaches that cover the three critical areas of education, infrastructure and enforcement, including:

- Approximately 500 public place litter bins;
- Keep Bass Coast Beautiful program; and
- Surveillance cameras to identify illegal dumpers.

Litter removal activities were estimated to cost Council around $100,000 per year inclusive of disposal and Council resources for collection. Through Council’s litter prevention activities, $40,000 was saved in the 2012-2013 financial year in disposal cost and staff hours with nearly 200 hours of depot staff labour diverted from illegal dumping collection to more positive park management activities.

Shire public place litter bins, over 500, are collected across the Shire. Currently, recycling bins and rubbish bins that have inappropriate material in them are currently identified and reported to Bass Coast Shire Council.

Also the Gippsland WRRG has advised that they have undertaken a number of waste audits of public place bins with this information available for Councils to use to assist with understanding general composition of bins and contamination areas.

### Key Issues Identified – Litter Management

- Litter continues to be an issue; and
- Need to understand where this is occurring and assess possible reasons.
6.13 COUNCIL INTERNAL WASTE MANAGEMENT

Bass Coast Shire Council undertakes a number of activities and practices aimed at improving waste management practices within Bass Coast Shire Council operations as well as the community.

Internally, Bass Coast Shire Council is a Certified Waste Wise Organisation and continues to implement programs to reduce waste and use more recycled products in its own operations.

Within the community, Bass Coast Shire Council, in partnership with the region, supports product stewardship and advocates for improved regulations to require producers and suppliers to reduce or take responsibility for their packaging. Bass Coast Shire Council also attempt to influence waste management practices in the community by way of planning permit requirements for developments and through general community awareness programs.

Council does not currently have clear internal waste management guidance documents incorporating specific procedures and strategic outcomes to achieve. These are recommended to be developed as part of the WMS as it is important that Bass Coast Shire Council is shown to be, and is, leading the way with waste management.

There is no specific Local Planning Policy for waste management aspects in Bass Coast Shire Council's Planning Scheme. As such, it is basically up to Council Planners to assess each development proposal and identify potential waste management concerns.

Increased engagement across Council departments to raise awareness of waste management and how it needs to be and can be addressed in Council works, ranging from the planning process and consideration of development proposals to internal purchasing decisions to events co-ordination. Options to address this include increased education, requirement to refer certain works to the waste team for consideration, such as planning decision, and then longer term options such as internal policies and procedures to be incorporated into standard work practices.

Key Issues Identified – Council Internal Waste Management

- No clear internal waste management guidance incorporating specific Bass Coast Shire Council procedures and strategic outcomes to achieve; and
- Reliance on Council Planners to consider waste management rather than procedures to ensure.

6.14 PARTNERING

Bass Coast Shire Council need to consider partnering with Private contractors, local Councils and the region to assess other potential waste management opportunities to continually improve the services and facilities provided to the community. These opportunities have been discussed in other sections of this document.
6.15 CARBON FOOTPRINT

Bass Coast Shire Council need to continue to address greenhouse gas generation, in particular landfill gas, to comply with the Landfill BPEM and the NGERS Act reporting threshold (25,000 tonnes per annum CO2-e). This also forms a part of the broader minimisation of the Shire carbon footprint.

Reporting thresholds of 25,000 tonnes of CO2-e still remain. This is applicable for Councils who have operational control of a facility (usually landfill) that emits over this figure during a financial year period.

The largest contributor to carbon generated through waste management is landfill gas generation, comprising methane and carbon dioxide. Methane is a significant greenhouse gas with a tonne of methane having the same warming impact as 25 tonnes of carbon dioxide. Grantville Landfill currently does not have any landfill gas collection infrastructure. Landfill gas is generated through the anaerobic decomposition of organic waste materials within the landfill. The easiest way to reduce carbon emissions from landfill is to increase the diversion of organic waste (e.g. food waste) from the landfill however the diversion of food on a local scale is unlikely to be cost effective at this time. Pending the removal of organic waste material, the next effective way is to implement landfill gas collection at the landfill. If sufficient methane is available, this can be converted into energy and used on site to generate power. Other methane abatement strategies include use of oxidisation layers in the cap to convert methane to carbon dioxide.

It is noted that funding is available from the Emissions Reduction Fund for capturing landfill gas. However, as funding applications will be competing with other business/ projects for low cost abatement funding, collaboration with other Councils/ region would assist with improving the business case, such as Grantville/ Koonwarra Landfills.

It is noted that both Grantville and Koonwarra Landfills are likely to be under this threshold however methane control would still provide the best method of reducing greenhouse gas emissions.
7 STRATEGIC OUTCOMES AND SUGGESTED OPTIONS

The following strategic outcomes and suggested options have been developed to address identified key issues and meet objectives of the Waste Management Strategy.

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<th>Objectives</th>
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<td>Provision of waste management services and infrastructure to community, residents and businesses to meet their needs as efficiently and equitably as possible, in a financially, socially and environmentally responsible manner.</td>
<td>• Residents and households within the Shire have accessibility to waste management infrastructure acceptable to Council and residents. • Provision of waste services to the commercial sector is to be funded by the commercial users of the services. • Provision of kerbside waste collection options to reflect needs of household. • Holiday makers and visitors to the Shire have access to adequate and convenient waste management infrastructure. • Kerbside waste services fees imposed to be proportional to total waste generation. (i.e. polluter pays principle). • Landfill gate fees to be based on full recovery of all costs for operations, rehabilitation and aftercare. (i.e. whole of life costs).</td>
<td>• Feasibility studies to be undertaken for the: o Provision of appropriate waste infrastructure/services for all Shire residents. Consideration to be given to all current Council waste disposal facilities. The consideration of the Cowes Recycling Bank is considered a high priority as it is currently not considered a long term solution to meet the needs of the community (High Priority); o Provision of 3 bin kerbside collection, i.e. addition of green organics bin collection, including feasibility of inclusion of kitchen organics. This study is to consider the green waste trial conducted and the potential for green waste to be collected on a mandatory regular collection, optional collection service, an at call basis, as detailed below as an interim option, or maintain current status quo. The assessment should include, among other factors, what the cost is to collect and transport the material, how the material is to be managed and disposed, i.e. the processing facility and the end market for the material. Changes to the current garbage and commingled recyclables collections, bin sizes and collection frequency will also need to be considered in light of any additional green waste collection services. The study, especially consideration of kitchen organics collection, should seek the collaboration of the region and adjacent councils (Hold pending the completion of state and regional strategies and plans, as discussed in section 8); o Provision of waste management infrastructure in areas that experience high levels of population change over the holiday and event periods that allows flexibility for disposal of garbage, commingled recyclables and green waste at times that are out of sync with kerbside services; o Collaboration with South Gippsland Shire regarding service sharing and/or consolidation of Shire landfills (Grantville and Koonwarra), including whole of life costs (capital, operation, rehabilitation and aftercare). This is suggested to involve sharing their...</td>
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<td>landfills across both shires, running one landfill at a time rather than two to minimise the financial, environmental and social costs of currently running two. Proposed measures would be a joint venture between the two shires. The Joint Venture will be responsible for the management of the two landfill sites. They will cover all costs using tipping fees. Council’s to pro-rata for any needed extra funding (Landfills have fixed costs and so tipping fees not always cover). The Joint Venture would cover whole of life scenarios and all liabilities (High priority).</td>
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- Contract dates should be aligned with adjacent shires to enable synergies (High Priority);
- Undertake discussions with Melbourne based recyclers to determine if they will collect recyclables from a depot in Bass Coast. If not, other options may be considered such as establishing a shared commingled depot with surrounding Shires;
- Green waste Interim Measure – Pending completion of the 3 bin kerbside collection feasibility study, option for Council to manage an At Call bundled green waste collection service. This service will provide for the collection of larger green waste that is too large to be managed on the resident property. The collection would need to be booked by the resident with Council arranging the collection. Such collections should be co-ordinated on a regular day of the fortnight/month (depending on demand) with the bundled branches (say maximum 3m³) chipped onsite by Council chipper. The resident could have the option of keeping the chipped product for use onsite or Council to remove (High priority);
- Consider increasing hard waste at call service incorporating option for green waste collection subsidised by Council from 1 per year to 4 per year. This service will also be included in the Feasibility Study for ongoing waste management facilities/services provided (High priority);
- Community engagement on provision of waste management services to be undertaken every 12-24 months, including regular surveys and communications;
- Implement consistent and comprehensive data capture for kerbside and waste management facilities, including private facilities, in consideration of best practice guidelines. Need to have regular visual checks of kerbside and litter bins to identify residents/area where waste is not being disposal of appropriately. Suggested measures include continuing the visual check of resident bins by the kerbside collector and implementing the visual checks of litter bins with cameras/ GPS on vehicles to readily identify the areas of concern;
- Regular review of waste management services and infrastructure provided by Council, private contractors or regionally to assess capacity (meet current and projected waste to
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<td>Support the provision of waste management services and infrastructure by private companies to meet the needs of the community.</td>
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<td>• Increased resource recovery, waste reuse or recycling rates by private waste companies.</td>
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<td>• Undertake a feasibility assessment of an Encouragement program for businesses by developing program objectives, types of support/assistance, likely take up and likely impact. Such assessment should include whether this program would be limited to the Bass Coast Shire Council or across the region;</td>
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<td>• Maintain an understanding of waste generation and waste profile, such as by way of regular waste audits of bins (conducted every 3 years as per best practice guidelines), or utilising available regional or metropolitan waste profile information, to be reflected in the Encouragement program;</td>
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<td>• Consider flexible charging for private waste contractors depending on the source of the material, e.g. no charge for green waste disposal during green waste no charge period if material sourced from residents;</td>
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<td>• Split contracts into small components to ensure that contractors who can only bid on one or two elements are not disadvantaged. (This does not preclude tenderer from offering a discount if they win more than one component). It is recommended that separate contracts be provided for:</td>
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<td>o Collection of kerbside waste and recyclables;</td>
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| To reduce the carbon footprint of Council’s waste management facilities and services. | • Methane emissions from Council’s landfill be managed within EPA Victoria Best Practice Environmental Management guidelines (BPEM)  
• Carbon emissions per household to reduce over the strategy period. | • Carbon emissions associated with the provision of Council’s waste facilities and services is to be calculated and reported as required by Council’s statutory obligations;  
• Feasibility assessment of the diversion of kitchen organics, from the waste to landfill stream via kerbside collections, including a full cost benefit analysis, (i.e. 3 bin system Shire wide) – refer to 3 bin collection service detailed above (Hold);  
• Assess and implement best practice landfill gas management measures at the Shire landfill. Landfill gas collection at the landfill is suggested as the best method for collection of methane and reducing the Shire’s carbon footprint. The method used will be dependent on the volume of methane being currently and to be generated at the landfill. If sufficient methane is available, this can be converted into energy and used on site to generate power. If Grantville landfill is unable to capture gas, it may be more beneficial to send material to another landfill that can. Suggest collaboration between South Gippsland and Bass Coast Shire Council to assess options (High priority); and  
• Potential to convert the landfill to a solid inert landfill so no methane generation with all organics sent to a regional facility, such as Hyland Highway, where landfill gas capture infrastructure is currently installed. |
| To engage, educate and support the community to responsibly, sustainably and innovatively manage waste generated recognising that waste management is a shared responsibility between government, industry and the community. | • Waste generation rates per household to reduce over the strategy period.  
• Landfill diversion rates per household to increase over the strategy period. | • Review waste management contracts to incorporate measures to improve diversion rates (High priority). Suggestions include:  
  o Operation of Landfill Contract provides incentives and penalties for waste diversion, landfill compaction, airspace consumption and use of daily cover. These are all critical elements and will impact on future costs at the site;  
  o Transfer Stations contracts - provide incentives and penalties for waste diversion, and improvements to green waste processing specification, in particular with regard to minimising impacts to the community. An assessment of the ongoing acceptability of green waste processing is required prior to next tender;  
  o Potential measures including identification of bins that have inappropriate material in them, as current undertaken by current waste contractor. Potentially |
align contracts to match up in the future with other Councils, such as South Gippsland Shire, to assist with future collaboration;

- Recyclables collection contract - specify maximum compaction rate to avoid glass crushing, also vehicle to have camera to record all loads to assist with identification of houses that place non-conforming wastes in bin;
- Events contract - Contractor to provide recycling bins with recyclables only bin caps for events and sporting facilities where contamination can be managed. Recycling bins and waste bins to be placed in pairs at all events. Contractor to work with event coordinators to manage contamination in recycling bins. Diversion rates for events targets to be set with events meeting targets charged lower waste fees;
- Contract dates should be aligned with adjacent shires to enable synergies;

- Undertake discussions with Melbourne based recyclers to determine if they will collect recyclables from a depot in Bass Coast. If not, other options may be considered such as establishing a shared commingled depot with surrounding Shires;
- Undertake an assessment of alternative waste bin collection options, i.e. smaller garbage and larger recycling bins, and collection frequencies with costs reflected, to provide incentive to reduce waste to landfill;
- Encourage home composting, pending the provision of kerbside collection feasibility or organics. Council to consider subsidising such bins to the community for onsite use to assist with diversion of organics from landfill. Council to proactively assist residents to be more self-sufficient in this regard. It is suggested that the provision of organic bins would require the concurrent provision of bundled periodical collection service and resident education. This may include bin delivery and onsite training, ability for the resident to contact Council if they have any questions and active follow up. (High priority);
- Consider a trial of Aerobin style composting bins to gather data on merits of use of these bins together with a bundled green waste collection compared to a three bin system (High priority);
- Community engagement on provision of waste management services to be undertaken every 12-24 months, including regular surveys and communications. Information to include waste management performance, how the community can assist and provide feedback;
- Develop a recognition and awards program recognising innovative waste management by members of the community. Waste collectors can assist by way of inspection of bins at collection time; and
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| To be compliant with applicable legislation and guidelines such that best practice is achieved at all waste disposal facilities and aspired to at other waste management facilities and waste management services in the Shire. | • Complete all statutory reporting and respond to EPA requirements within required timeframes.  
• Comply with planning permit requirements for waste facilities.  
• Design, operate and rehabilitate the residual waste management infrastructure (Grantville Landfill) in consideration of EPA Victoria Best Practice Environmental Management guidelines.  
• Design and operate resource recovery facilities and waste services in consideration of current best practice guidelines.  
• Locate and rehabilitate, where required, all former waste facilities within the Shire. | • Maintain an understanding of waste generation and waste profile, such as by way of regular waste audits of bins (or utilise available region audit information for waste profile), litter and illegal dumping activities, to be reflected in community engagement and education. The continued review of kerbside bins and litter bins, inclusion of cameras and GPS on collection vehicles, to assist with maintaining an understanding and communicating with the community.  
• Regular review of waste management services and infrastructure provided by Council against current best practice standards, such as bin types and sizes, landfill and transfer station, and data capture; and.  
• Undertake a study to locate previous waste facilities closed in the last 10-15 years based on Council records, prioritise their rehabilitation and after care, in consideration of EPA requirements and potential Council liabilities. |
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| To continually improve the performance of waste facilities and services to reduce the potential environmental, social and financial costs to the community. | - Reduction in environmental incidents related to the provision of waste services and infrastructure over the strategy period.  
- Waste disposal facilities meet current legislative requirements.  
- Waste management facilities and services to aspire to current best practice guidelines.  
- Community satisfaction increase over the strategy period.  
- Financial cost of the provision of waste management services and facilities per household is clearly understood, transparent and includes whole of life costs over the strategy period.  
- Litter and illegal dumping rates reduction per household over the strategy period. | - Develop and maintain a template (potentially utilise the region developed template) to allow for annual assessment of performance of the waste management services and facilities and identification of areas for improvement. The template will include information related to incidents, best practice standards, costs, waste generation and diversion rates, contamination rates, litter rates and the like to allow assessment of performance;  
- Review waste management contracts to incorporate measures to improve diversion rates (High priority). Suggestions include:  
  o Operation of Landfill Contract provides incentives and penalties for waste diversion, landfill compaction, airspace consumption and use of daily cover. These are all critical elements and will impact on future costs at the site;  
  o Transfer Stations contracts - provide incentives and penalties for waste diversion, and improvements to green waste processing specification, in particular with regard to minimising impacts to the community. An assessment of the ongoing acceptability of green waste processing is required prior to next tender;  
  o Potential measures including identification of bins that have inappropriate material in them, as current undertaken by current waste contractor. Potentially align contracts to match up in the future with other Councils, such as South Gippsland Shire, to assist with future collaboration;  
  o Recyclables collection contract - specify maximum compaction rate to avoid glass crushing, also vehicle to have camera to record all loads to assist with identification of houses that place non-conforming wastes in bin. Include identification of recycling bins and rubbish bins that have inappropriate material in them as is currently undertaken by current contractor but formalising this; identification of users that are doing the right thing and communicate this to the user and Council to provide positive reinforcement of behaviours; consider including such measures as a camera with GPS attached to collection vehicles to understand areas of litter problems; consider inclusion of the cost of new bins in the updated contracts to allow for current bin replacements over the next contract period (High priority);  
  o Events contract - Contractor to provide recycling bins with recyclables only bin caps for events and sporting facilities where contamination can be managed. Recycling bins and waste bins to be placed in pairs at all events. Contractor to work with event coordinators to manage contamination in recycling bins. |
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| Partner with state and regional organisations, adjacent councils and community on waste management projects, including services, infrastructure and market development. | Proactive regular consultation with Gippsland Waste and Resource Recovery Group, Sustainability Victoria, EPA Victoria and key stakeholders. | Diversion rates for events targets to be set with events meeting targets charged lower waste fees;  
- Contract dates should be aligned with adjacent shires to enable synergies;  
- Record environmental incidents related to the provision of waste services and infrastructure over the strategy period;  
- Maintain understanding of the litter and illegal dumping activities, such as where occurring and when (is there a link between dumping sites and location of facilities) and develop Waste Education Action Plan, including litter reduction activities. Publicise good news stories to encourage the community; and  
- Develop and maintain a waste management cost model as detailed above. |

- Encourage the development of a market for recycled products by preferentially procuring products made from recycled materials (market development).  
- Increase the demand for recycled products in the Shire.  

- Engage with state and regional organisations, adjacent councils and community on waste management projects biannually to be abreast of waste management projects and to assess where and how collaboration can occur (High Priority)  
- Identify opportunities for Shire to swap from products made of virgin materials to recycled materials (e.g. road side mulch, recycled paper, etc.);  
- Collaborate with region and adjacent shires in the investigation and assessment of feasible Alternative Waste Treatment options for the region; and  
- Develop an engagement program with Council departments to ensure that waste management is being considered. It is suggested that this include education across all departments; development of internal policies and procedures and strategic outcomes for internal council waste management; development of an internal referral process for such departments as planning, health and events; as well as consideration of long term policy development to incorporate waste management in department procedures. |

It is noted that some options are duplicated as they address a number of objectives. Also, some options may need to change depending on the acceptance by Bass Coast Shire Council and/or the outcome of another option. For example, collaboration with South Gippsland Shire with regard to the landfills, such that only Koonwarra Landfill remains open in the short term, which is getting a Resale Shop, may mean that the EOI regarding the potential to establish something similar may not be required. Such considerations will be assessed in the Implementation of the WMS.
Suggested options should be prioritised based on the community’s priority key issues, which are considered to be (similar key issues have been amalgamated and reworded):

- Phillip Island community need waste management services comparable to Wonthaggi area, such as a new permanent Waste Transfer/Recycling Centre; or at least a facility that can accept common household hard waste items like furniture and mattresses;

- South Gippsland Shire, adjacent to Bass Coast Shire, has its own landfill in close proximity to Bass Coast Shire. The cost, financial, environmental and social, of running two landfills simultaneously for two small shires appears to be high. Closing or mothballing one site and placing all waste in the remaining site would provide the potential for significant cost savings and potential for improved environmental performance;

- Residents are currently required to travel to dispose of larger green waste materials, which for many, in particular the elderly, is difficult; and kerbside collection trial poor take up rate, however, residents require an equitable service for managing this material, especially at fire prevention periods;

- Hard waste collection is a service desired by the community to collect large garbage items for those residents who are unable to transport the items to the Transfer Station, such as older residents, rather than a waste recovery operation;

- Resale Shop to reuse/ resell materials no longer required by the community, diverting such material form landfill, is considered a priority by the community; and

- Regular engagement with state and regional organisations and adjacent councils and community to address potential collaboration opportunities.

It is noted, however, that as Sustainability Victoria are in the process of developing a number of strategies, including the Victorian Organic Resource Recovery Strategy, which are to be reflected in the Gippsland Regional Waste and Resource Recovery Implementation Plan, any long term options should only be implemented once the alignment of this WMS with these plans is undertaken, in approximately two years’ time. This is particularly important for any organic waste options as this is a priority material for the Gippsland region. However, in the short term, time and energy should be focussed into sustainable solutions locally which can deliver benefits comparable to the larger programs.

The review of the current contract performance measures are also considered to be high priority as this should be undertaken/considered prior to the contract expiry dates.
8 IMPLEMENTATION

Each suggested option is to be reviewed by Bass Coast Shire Council and prioritised for implementation. An Action Plan is to be developed for each suggested option, with calculated costs, to address how, by whom and by when each option is to be implemented. The Action Plans will then be subject to review and approval by the Internal Reference Group prior to Council approval for implementation of each option.

The suggested options identified relating to high priority key issues are to have an Action Plan developed within six months and be implemented within twelve months of the WMS completion, subject to Council allocation of resources (e.g. budget). All other options should be prioritised into high, medium (such as Action Plan developed within 12 months) and low (such as Action Plan developed within 2 years), with timeframes developed accordingly, prior to implementation. All Action Plans to be developed and implementation commenced within 3 years of WMS completion.

The approved Action Plans will form a subset of this WMS and will be reviewed on an annual basis.

The initial review of the WMS has been set for two years’ time, at which time the WMS will be reviewed from a legislative perspective, that is, the potential impact of the completed state and regional resource recovery/waste management can be assessed and any required changes made to reflect those plans. The next date for review will be set at that time.
REFERENCES

The following references and information sources were used in the development of the WMS:

Association of Regional Waste Management Groups, 2012, Guideline for the collection and reporting of solid waste data in Victoria, August 2012;


Bass Coast Shire Council, 2011, Public Place Litter Bin Audit;


Bass Coast Shire Council, 2012a, Local Law No. 1 (Neighbourhood Amenity) 2012


Bass Coast Shire Council, 2013, Council Plan 2013 - 17;


Bass Coast Shire Council, 2014, various communications with waste summary information regarding kerbside and contamination, litter, hard waste and drop off facilities, received December 2014;


Bass Coast Shire Council, 2014b, EPA Licence No. 12129 (last amended 7/11/2014);

Bass Coast Shire Council, 2014c, Education Plan 2013 – 2017;

Bass Coast Shire Council, 2014d, The Climate Change Plan 2014 – Part one;

Bass Coast Shire Council, 2015, Draft Natural Environment Sustainability Strategy – 2015 to 2025

Bass Coast Shire Council, 2015a, Phillip Island Green Waste Trial Survey Results;


Department of the Environment, 2010, Australian Packaging Covenant;
Department of Sustainability, Environment, Water, Population and Communities, 2012, *Food and Garden Organics Best Practice Collection Manual*;


Department Sustainability and Environment, 2005, *Victoria’s Environmental Sustainability Framework – Creating a healthier environment and a stronger state*, April 2005;


JWS Research (co-ordinated by Department of Transport, Planning and Local Infrastructure on behalf of Victorian Councils), 2014, *Local Government Community Satisfaction Survey Bass Coast Shire Council 2014*;


Sustainability Victoria, 2013a, *Draft Statewide Waste and Resource Recovery Infrastructure Plan*;

Sustainability Victoria, 2013b *Victorian Litter Strategy 2012 – 2014 Love your Victoria*;

Sustainability Victoria, 2009, *Guide to Best Practice at Resource Recovery Centres*;

Sustainability Victoria, 2009a, *Guide to Best Practice for Organics Recovery*;

Sustainability Victoria, (2009b) *Best Practice Guide for Waste Management in Multi-unit Developments*;


Websites accessed:
www.forrecast.id.com.au;
SIGNIFICANT FEDERAL AND STATE LEGISLATION, POLICIES, STRATEGIES, PLANS AND GUIDELINES

Key legislation and policies of the different levels of government, include, but are not limited to those detailed below.

FEDERAL GOVERNMENT

- **National Waste Policy: Less Waste, More Resources** – the policy sets the outcomes, directions and strategies for action for the next ten years with regard to waste management in Australia.

- **Australian Packaging Covenant (APC)** - A commitment by governments and industry to the sustainable design, use and recovery of packaging. To help minimise the environmental impacts of packaging, governments require that brand owners with a turnover larger than $5 million either sign the APC or comply with the National Environmental Protection Measure (Used Packaging Materials) 2011. While participation in the Covenant is voluntary, brand owners who choose not to become signatories or who fail to comply with the Covenant requirements will be regulated under the National Environmental Protection (Used Packaging Materials) Measure (NEPM) in each of the states and territories within which the company sells its products. The NEPM is enforced by the relevant regulatory authorities in each of the states and territories.

- **Government’s Direct Action Plan** - The Australian Governments Direction Action policy is the key policy around environmental sustainability. The Emissions Reduction Fund is the centre piece of the policy and operates alongside existing programs, such as the Renewable Energy Target (5 per cent) and energy efficiency standards on appliances, equipment and buildings. The Direct Action policy also creates a 15,000 strong Green Army to conduct conservation works and this component of government policy is being implemented currently.

- **Carbon Credits (Carbon Farming Initiative) Act 2011** - The Carbon Farming Initiative is a voluntary scheme that aims to reduce the amount of greenhouse gas entering the atmosphere from activities on the land through project delivery. Carbon Farming Initiative project scope includes:
  - Agricultural emission avoidance projects
  - Introduced animal emissions avoidance projects
  - Landfill legacy emissions avoidance projects
  - Sequestration offset projects

The amendments to this piece of legislation transition the Carbon Farming Initiative by allowing the Clean Energy Regulator to:

- Conduct auctions and enter into contracts to purchase energy reductions;
- Enable a broader range of emissions reduction projects to be approved; and
- Amend the project eligibility criteria and processes for approving projects and crediting carbon credit units, and Australian National Registry of Emission Units Act 2001 and National Greenhouse Energy Reporting Act 2007 to make consequential amendments.
- Provides transitional arrangements in relation to: the Register of Offsets Projects, which is renamed the Emissions Reduction Fund Register and will include information about contracts to purchase emission reductions; and existing Carbon Farming Initiative projects and methodologies and applications for new projects.
This transition forms the introduction of the Emissions Reduction Fund.

- **The Emissions Reduction Fund** - The Emissions Reduction Fund is designed to work together with the Carbon Farming Initiative and broaden the scope for emission reduction projects. The Emissions Reduction Fund is a process to allow the Australian Government to purchase emissions reductions at lowest cost across the economy. The Clean Energy Regulator will conduct auctions to purchase emissions reductions at the lowest possible cost, and enter into five-year contracts for energy reduction purchases. The Emissions Reduction Fund will be a 'reverse auction' process. A reverse auction means that sellers (companies, industries, councils) compete to get the Government's business. In this situation prices (cost per tonne of greenhouse abatement) decrease as sellers try and undercut each other. Auctions will start in the second half of 2014, and will be run quarterly. The ERF features two types of emission reduction methods:
  - Activity methods for specific emissions reduction actions; and
  - Facility methods that can aggregate emissions reductions from multiple activities a large facilities for which data are reported under the National Greenhouse and Energy Reporting Scheme.

**Eligible Emissions Reduction fund activities:**

- Upgrading commercial buildings
- Improving energy efficiency of industrial facilities and houses
- Reducing electricity generator emissions
- Capturing landfill gas
- Reducing waste coal mine gas
- Reforesting and revegetating marginal lands
- Improving Australia’s agricultural soils
- Upgrading vehicles and improving transport logistics, and
- Managing fires in savannah grasslands

To participate in the ERF there is a minimum bid size of 2,000 tonnes of CO\textsubscript{2}-e a year on average over the life of the contract/project. For major projects that can reduce emissions by over 250,000 tonnes of CO\textsubscript{2}-e a year, the Government will ‘retain discretion to enter out-of-auction contracts’. Payment is made as a reimbursement of costs incurred in delivery of the contracted emission reductions, hence the contracting agency bears the costs upfront as the project is established and implemented.

- **National Greenhouse and Energy Reporting Act 2007** - The (NGERs Act) establishes the legislative framework for the NGER scheme, which is the national framework for reporting greenhouse gas emissions, greenhouse gas projects and energy consumption and production corporations in Australia. The key objective of the NGERs Act 2007 was to provide a single national scheme for the collection of energy and emission data, and to remove the need for inconsistent and duplicative reporting of this data across jurisdictions. The repeal of the Clean Energy Act 2011 and the recent amendments to the National Greenhouse and Energy Reporting Regulations 2008 reduces the compliance burden for many businesses in report preparation. These amendments have no effect on reporting obligations and the reporting methodology still stands. Reporting thresholds of 25,000 tonnes of CO\textsubscript{2}-e still remain. This is applicable for Councils who have operational control of a facility (usually landfill) that emits over this figure during a financial year period.
**Council and the Energy Reduction Fund** - Victorian councils may be able to participate in the ERF if there are projects that can offer low cost abatement and result in significant amounts of greenhouse gas reduction. It is unlikely that small projects (for example, those that result in less than 2,000 tonnes of greenhouse gas reduction over 5 years) would be viable given the transaction and compliance costs involved. In addition to the actual capital cost of a project, there is a range of administration, auditing, compliance, legal and technical costs associated with participating in the ERF. If councils do participate in the ERF they will be "competing" against other businesses and sectors to provide the lowest cost abatement. It is likely that for councils to participate in the ERF there will have to be a degree of collaboration between councils and aggregation of emissions reductions. By aggregating emissions reductions from large groups of councils, transaction costs can be reduced. Current emission reduction projects at Council include:

- The Sustainable street-lighting project is expected to reduce emissions by 1,500 tonnes of CO$_2$-e /year at a cost of $1.1 million over three years.
- The air-con and lighting upgrade to the Sustainable Development and Growth Division was calculated to save 23 tonnes of CO$_2$-e per annum at a cost of $957,365
- The air-con and lighting upgrade to the Council chambers is calculated to save 0.75 tonnes of CO$_2$-e, at a cost of $136,000

**STATE OF VICTORIA**

**Getting full value: the Victorian waste and resource recovery policy (2013)** - The four policy objectives are economic prosperity; integrated and efficient waste and resource recovery system; public health and wellbeing; and environmental protection. The following goals and strategic directions form the basis of the actions to achieve the vision/objectives:

- Assist Victorians to reduce the waste they generate and save Victorians' money through efficient use of resources;
- Facilitate strong markets for recovered resources;
- Facilitate a Victorian waste and resource recovery system that maximises the economic value of waste;
- Reduce the environmental and public health risks of waste;
- Reduce illegal dumping and littering; and
- Reform and strengthen the way institutions work and are governed to effectively implement waste policy.

Following on from this state policy are a number of plans, strategies and frameworks that are currently in development stage, but should finalise over 2015.

**Statewide Waste and Resource Recovery Infrastructure Plan** - The Statewide Waste and Resource Recovery Infrastructure Plan (SWRRIP), led by Sustainability Victoria on behalf of the Victorian Government, provides a state-wide roadmap to ensure Victoria has the infrastructure to effectively manage the mix and volumes of waste for the next 30 years. The SWRRIP will ensure waste and resource recovery services essential to meet the needs of all Victorians are available by:

- effectively managing the expected mix and volumes of waste
- reducing the amount of valuable materials going to landfill and maximising resources recovered
- supporting innovation and investment in better infrastructure to create jobs and bolster the economy
- minimising community, environment and climate change and public health impacts whilst supporting a viable resource recovery industry.

Refer to the Sustainability Victoria website for more information regarding this plan and a context for the following pieces of work under development

- **Investment Facilitation Framework** - The framework will:
  - Provide a strategy to attract and facilitate investment in Victoria’s waste and resource recovery infrastructure, as identified in the Statewide Waste and Resource Recovery Infrastructure Plan (SWRRIP)
  - Provide a coordinated and consistent investment service that improves Victoria’s investment appeal to waste and resource recovery infrastructure investors.
  - Raise awareness of Victoria’s waste and resource recovery infrastructure investment opportunities by promoting them locally and abroad.
  - Reduce the risk to investors by helping address market barriers to investment in the sector.
  - Facilitate the delivery of projects with improved technologies to effectively manage Victoria’s waste flows and reduce the impact on local communities and the environment, while increasing the commercial reuse of recovered resources.

- **Collaborative Procurement Framework** - The framework will:
  - Provide practical support to the waste and resource recovery groups (WRRGs) and local councils to facilitate collaborative procurement of waste and resource recovery services and infrastructure.
  - Act as a catalyst for more collaborative procurement for waste and resource recovery services and infrastructure and operate as a broker for the WRRGs and local government.
  - Respond to the individual needs of the WRRGs by providing guidance to identify, assess and plan collaborative procurement.
  - Build capability and expertise in collaborative procurement in key organisations including SV, WRRGs, local government and third party service providers.

- **Victorian Market Development Strategy for Recovered Resources** - The strategy will:
  - Meet community expectations for resource recovery activities that improve the environment, public health and amenity, while stimulating markets for the use of recovered materials for positive economic return.
  - Support conditions for the resource recovery and manufacturing sectors to grow by maximising the value of recovered materials and developing quality products.
  - Increase investment and the purchase of products made from recovered materials by promoting their qualities and functionality.

The strategy will have a 30 year vision, a 10 year strategic outlook and a five year implementation plan.
- **Victorian Community and Business Waste Education Strategy** - The Victorian Community and Business Waste Education Strategy aims to better coordinate resources across the sector and encourage greater collaboration in education planning and delivery. The strategy will:
  - Undertake a detailed review to identify best practice models in waste education and to examine current practices and priorities in waste and recycling management.
  - Set priorities for waste education.
  - Identify and maintain current practices that are making a positive contribution, replace those that are not and address any current gaps and shortfalls in waste education delivery.
  - Determine how waste education is delivered and supported rather than attempt to define what education topics should be delivered.
  - Serve to inform the development of a consistent and more integrated statewide approach to waste and resource recovery education.

- **Victorian Organic Resource Recovery Strategy** - Vision - A vibrant, functioning market for organic waste and resource recovery will ensure that the environmental, public health and amenity impacts of organic waste are eliminated. To achieve this vision Sustainability Victoria, on behalf of the Victorian Government, has identified four goals:
  1. Protection of the environment, public health and amenity
  2. Risk based and proportionate approach
  3. Strong markets
  4. Innovative solutions

To achieve these goals, seven strategic directions have been identified:
  1. Best practice environmental management
  2. Sustainable markets
  3. Leverage existing assets
  4. Identify future needs
  5. Education to facilitate change
  6. Building collective knowledge
  7. Streamlined governance and strong leadership

- **New State Government Waste Management statement** - The new government has provided a waste management statement (provided by Bass Coast Shire Council 15 December 2014) that details that they understand the need for greater efficiency in resource usage by recycling household and commercial waste; that economic opportunity is created by recovering resources; and that eliminating waste and increasing recycling starts locally within individual homes, businesses, communities and Government bodies. The statement then details actions to be undertaken by the state government, summarised as follows:
  - Replace the Getting Full Value plan;
  - Require Government Departments and agencies to set waste reduction targets;
  - Require each industry sector to develop its own program for meeting waste reduction targets;
  - Support sustainable markets for recovered resources and recycled materials with strong incentives to stop particular waste streams going to landfill;
Use landfill levies to support local government initiatives and trial projects to reduce waste and increase recycling, particularly green waste;

Support the development of a statewide infrastructure plan to provide efficiency in waste management and facilitate local solutions to waste issues (this appears consistent with the current SWRRIP being developed);

Encourage waste reprocessing infrastructure that has limited to no environmental or public health risks;

Encourage technologies that provide improved resource recovery rates, development of innovative products or clean waste to generate energy from waste; and

Promote product stewardship and support industry to recycle and reprocess.

**Victorian Litter Strategy 2012–14 Love your Victoria** – strategy for the prevention of littering in Victoria that reflects recent and relevant changes, challenges and opportunities. The strategy provides new programs to prevent litter, increase public place recycling and address illegal dumping in Victoria.

**Industrial Waste Management Policies** – Introduced in 2002 to the Environment Protection Act 1970, the Environment Protection (Resource Efficiency) Act 1985 provides the EPA with the scope to develop waste management policies. This change means that policies that deal with municipal waste can also be developed, thereby complementing existing arrangements and ensuring that a comprehensive framework of statutory policy can be maintained and strengthened;

**Victorian EPA Landfill Levies** – Landfill levies create an incentive for waste generators to investigate ways to reduce the amount of waste they generate and dispose of to landfill. Victorian landfill levies have been steadily increasing since 2011/12. For rural municipal waste the levy is currently $30.33 per tonne with industrial waste currently $53.04 per tonne. This was based on the fee unit ($13.60) and levy payable of 2.23 fee units per tonne for municipal waste and 3.90 fee units per tonne for industrial waste from 1 July 2015.

**Other waste issues or initiatives include, but not limited to:**

- Eco-Buy or similar programs that encourages the purchasing of environmentally preferable products and services;
- other EPA policy initiatives;
- product stewardship programs;
- contaminated soils and hazardous waste initiatives; and
- occupational health and safety, WorkCover and Worksafe guidelines and standards.

**Guidelines**

- NSW EPA, *Preferred resource recovery practices by local councils – Best bin systems*, August 2012
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1 INTRODUCTION

This Consultation Plan for the Bass Coast Shire (BCSC) Council Municipal Waste Management Strategy (WMS) has been developed to document the measures BCSC, via its consultant, Environmental Resources Management Australia Pty Ltd (ERM), will undertake to engage with and inform the public and stakeholders during the preparation of the WMS.

The plan aims to provide the community and key stakeholders the opportunity to participate in the development of the ten year WMS.

Community consultation will be undertaken in consideration of the BCSC Community Engagement Policy (2013) where Council is committed to actively encouraging individuals, groups and communities to be involved in local government through community engagement.

The policy also notes that Council also recognises that residents and ratepayers of Bass Coast have diverse opinions, innovative ideas and a wealth of life experience. Sharing this information through genuine community engagement allows Council to make well informed decisions about issues which directly affect the Bass Coast Community.

The Community Consultation Plan is an evolving and functional document which will be reviewed and updated, if required, during the project.
OBJECTIVES

The BCSC Community Consultation Plan aims to meet the following objectives:

- Identify stakeholders to be involved in the development of the WMS;
- Identification, and understanding, of key issues early in the project to allow sufficient time to adequately address them in the development of the WMS;
- Create a framework to seek and encourage input from stakeholders and provide opportunity for this to occur; and
- Proactively inform and interact with the community and project stakeholders about the WMS and its development process and how they can contribute.
STAKEHOLDERS

The following stakeholders have been identified following consultation with BCSC representatives.

- **Bass Coast Shire Council Sustainable Environment Department;**

- **Bass Coast Shire Council – Internal Reference Group** - BCSC has established this group consisting of representatives from Council, Gippsland Waste and Resource Recovery Group, BCSC representatives from the environment, engineering and waste groups. This group will be involved in the initial consultation of all deliverables during the project prior to commencing any further works/consultation;

- **Bass Coast Shire Council Waste Services Officers** - Discussions with facility attendants/officers to seek feedback and identification of issues;

- **Bass Coast Shire Council (Councillors)** - Formally present to Council on two occasions to seek buy in and feedback with the project and the proposed strategy;

- **Private Waste Services Contractors** - Waste collection, waste processing and waste facility operators;

- **Business community in Bass Coast Shire**, i.e. users of waste collection services and waste management facilities;

- **Environment Conservation Groups**, including Coastal Action Group, Friends groups, etc;

- **Neighbouring local government areas**; South Gippsland Shire and Cardinia Councils;

- **Bass Coast Shire residents**;

- **Government Agencies**; DEPI, CMA, EPA, Parks Vic; and

- **Non government organisations**; Bass Coast Landcare Network, Phillip Island Nature Parks.
IDENTIFIED ISSUES AND CHALLENGES TO DATE

Issues that have been raised to date and are to be considered by the WMS include:

- Changes to state, regional and municipal legislation/strategies/policies. These changes, in particular waste management policy and climate change legislation, need to be reflected in the long term direction of waste management for the state, region and local government;

- Population growth, within the municipality, including at peak holiday periods, requires strategy for the management of the increasing volumes. Population swell in holiday period from 30,000 – 70,000 population in the six week holiday period.

- Organics (Green waste) collection. Green waste is accepted at all facilities year round and is mulched. This disposal attracts a fee to cover costs of processing the green waste, however, there is a fee free period prior to summer for fire risk mitigation purposes. The Transfer Station site managers own the material once deposited and decide whether they want to sell it or give it away for free based on availability of an end market. A 18 month kerbside collection trial has been conducted for the northern area of Phillip Island.

- Contamination rates - High recyclables contamination rates, currently up to 24% of recyclable waste stream, requires management to improve the efficiency of the recyclable waste stream and technology upgrades. The high percentage of contamination is likely to be reflective of glass fines in the waste stream rather than contamination of recycling bins. MRF facilities are currently unable to be process these glass fines, so significant proportion of tonnage of contamination sent to landfill (over 90%).

- Litter and illegal dumping remains an issue, as it is across the state.

- Ongoing requirement for local government to improve provision of services and infrastructure, improve efficiencies, and move to industry best practice.

- High holiday home ownership – The community have a high level of service expectations, comparable to their expectations in metropolitan Melbourne. Expectations include being charged on a pro rata basis against usage, i.e. only in holiday period when they are there – an opt in/out ability, or opt out completely.
• Waste Services Charges - Itemised costs for waste management services received per resident verses total waste management costs across whole shire averaged across the residents. Community appetite for garbage charges, user pays principle is unknown. Consideration of all waste management costs, such as capital expenditure to develop and maintain, including landfill aftercare management, best practice waste management facilities and services, to reflect a “cradle to grave” cost approach;

• Provision of waste infrastructure across the Shire;

  • Phillip Island – Closure of Rhyll Transfer Station – Community consider there is a need for a Transfer Station to service the area. Currently a recycling Bank in Cowes to meet the current need, however this is not considered to be a long term solution by both Council and the community.

  • Inverloch Transfer station demand – Rezoning of the land to Rural Residential has caused a number of unverified complaints regarding odours and green waste mulching. Is the facility still required?

  • Wonthaggi Transfer station – does not meet best practice. Is the current facility location the best considering the upgrade that is required?

  • Closed/Old landfill liabilities - Wonthaggi, Inverloch (closed landfills), Lang Lang, and the high management cost for rehabilitation and aftercare costs to BCSC;

  • Climate Change – need to continue to address as a strategic driver for gas capture, reduced volumes of waste to landfill and the landfill tax liability threshold;

  • State Government ongoing works associated with the current waste and resource recovery policy, such as SWRRIP and Organics Strategy that are considered likely to continue to be developed will require the review of this WMS and update to reflect, where applicable.

During the consultation process, this list will be expanded based on the feedback provided.
COMMUNITY INPUT/ FEEDBACK MANAGEMENT

A database of feedback will be created throughout the consultation process collected at communication points, such as face to face meetings, community forums, survey results, etc. Reports will be generated from this database and provided to the Manager Sustainable Environment for review and distribution to the Internal Reference Group throughout the consultation process and will inform the project going forward. Reference to the feedback will be included in the draft and final WMS documents, which will reflect such feedback if applicable. Priority issues, such as complaints, will be communicated to the Manager Sustainable Environment as soon as possible.
COMMUNICATION PROCESSES

The proposed engagement incorporates various levels of consultation and methods to achieve the desired consultation, designed to create a range of input and/or communication options. Engagement is designed to be clear, accurate, timely and honest.

Levels of consultation include:

- **Input** – the main driver is to seek input from the key stakeholder to assist with developing the WMS, in particular at the commencement to elicit waste management issues and proposed strategies

- **Targeted feedback** – this level of consultation aims to seek feedback on the proposed strategic options, i.e. works conducted to date.

- **Inform** – the main aim of this level of consultation is to provide information regarding the WMS and its development.

The following table provides the proposed suite of consultation methods to deliver the objectives outlined above:

**Table 6.1 Communication Processes**

<table>
<thead>
<tr>
<th>Levels of Consultation</th>
<th>Method</th>
<th>Stage</th>
<th>Description</th>
<th>Stakeholder</th>
<th>Deliverable</th>
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<tbody>
<tr>
<td>Input</td>
<td>Formal Presentation</td>
<td>6 &amp; 8</td>
<td>Formal presentation be undertaken detailing the WMS project objectives, works conducted, proposed options and/or draft WMS. Allows for any queries or feedback</td>
<td>Internal Reference Group; Councillors</td>
<td>• Powerpoint Presentation</td>
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<td></td>
<td>Direct Contact</td>
<td>6</td>
<td>This will comprise discussions with key stakeholders, either over the phone or face to face to discuss the project and seek input</td>
<td>Identified Key stakeholders requiring one on one contact, including Gippsland Waste and Resource Recovery Group</td>
<td>• Update database with Feedback</td>
</tr>
<tr>
<td>Targeted feedback</td>
<td>Surveys (Survey Monkey)</td>
<td>6</td>
<td>These will be used to test various options proposed for the WMS and seek general issue identification. Depending on the options proposed and applicable stakeholders, more than one survey may be required. These will be accompanied by a preamble explaining the project, their role, scope and the like</td>
<td>These will be sent to identified stakeholders that BCSC will identify. Need email addresses.</td>
<td>• Tailored Survey</td>
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<td>• Information sheet</td>
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<td>• Update database with feedback</td>
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<td>Levels of Consultation</td>
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| Inform and Input       | Public Information Sessions | 6     | These will be informal information sessions with a static display and consultants/BCSC officers on hand to explain the WMS intent and the preliminary options. Feedback will be sought at the sessions and documented directly into a spreadsheet. | Bass Coast Shire residents sessions held in Cowes, Wonthaggi and Inverloch | • Information sheets  
                           |                               |                   |                                                                                                           |                              | • Update database with feedback and photos      |
| Inform and Input       | Public notice    | 8     | Once the draft WMS has been approved by BCSC, a public notice will be prepared to inform the community of its opportunity to review the draft WMS and provide feedback. The information is to be included in the local paper and on Council’s website. Feedback will be by way of form completion with the forms available at the Council’s office and website. Responses to be returned to Council (offices and internet) and on forwarded to Consultant. | All                          | Update database with feedback                      |
| Inform and potential Input | Council website | 6 onwards | BCSC to update the website with information on the project and to be updated to remain current, including references to proposed communications and surveys. It should include information about the project, feedback mechanisms and remain up to date. This should include a contact name and email address for any queries. | All                          | Information sheets                                |

Information Sheet - An Information Sheet will be developed by ERM to use for community engagement to provide details regarding the project, development process and how/when stakeholders can contribute; website address and project contact details. This will be used for most methods of consultation. Further information, such as proposed options, will be added as required.

Surveys – ERM intend to use Survey Monkey to elicit community feedback on waste management in the municipality and the proposed options. The survey will be drafted and provided to BCSC for approval prior to use.

Any forms of communication to be undertaken by ERM will be undertaken in consideration of this plan and with BCSC approval of all communication pieces, including the information sheet and survey questions.
COMMUNICATION PLAN

The table over the page expands Table 6.1, detailing the key stakeholders and the consultation method proposed to be used to obtain and deliver information; the timing of the various forms of consultation; information to be discussed/ feedback sought; and key responsibility tasks for Council and the consultant are also included.

Any communication with the community will clearly articulate the community’s role in the process of developing the WMS. The proposed Information Sheet will include a consultation process to clearly articulate the WMS development process and how and when the stakeholders can contribute. This will be based on the process diagram provided in the WMS template.

It will be made clear in all documents that this is a Waste Management Strategy not a plan and as such will develop the long term direction of waste management.
### Table 7.1 Consultation Plan

<table>
<thead>
<tr>
<th>Stakeholder</th>
<th>Details</th>
<th>Method</th>
<th>When</th>
<th>Information to discuss/ feedback sought</th>
<th>Responsibility</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Key Stakeholder Engagement</strong></td>
<td></td>
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</tbody>
</table>
| BCSC Sustainable Environment Department | Sustainable Environment Department led by Manager Sustainable Environment (Deirdre Griespsma), Co-ordinator Waste Services (David Owen) and waste services officer (Michael Spiller) | Direct Contact - Meet and maintain email and phone contact. | At deliverable dates and as required | • Information and data requirements  
• Consultation Plan  
• Long Term Vision  
• Preliminary Strategic Options  
• Information Sheet  
• Consultation/ feedback  
• Draft WMS  
• Consultation/ feedback  
• Final WMS | ERM/ BCSC collaboration |
| Internal Reference Group | BCSC have established this group consisting of representatives from Council, Gippsland Waste and Resource Recovery Group, BCSC representatives from the sustainable environment, infrastructure projects and waste services groups. This group will be involved in the initial consultation of all deliverables during the project prior to commencing any further works/consultation. | Formal presentation | | • Stage 6 – Pre Councillor Policy Workshop 11 February 2015  
• Stage 8 – Pre Councillor Policy Workshop 1 April 2015  
• As required by BCSC (to advise) | BCSC to arrange meeting/ venue at a time to suit Internal Reference Group and ERM. ERM to note feedback. BCSC to attend |
<table>
<thead>
<tr>
<th>Stakeholder</th>
<th>Details</th>
<th>Method</th>
<th>When</th>
<th>Information to discuss/ feedback sought</th>
<th>Responsibility</th>
</tr>
</thead>
</table>
| Bass Coast Shire Councillors                         | Cr Bradley Drew, Councillor delegate on the GWRRG Board, and Cr Neil Rankine as alternate delegate. | Formal presentation at Policy Workshop           | 11 February 2015          | • Preliminary Strategic Options – includes waste management trends, identified issues, proposed consultation  
  • Draft WMS – includes identified issues, proposed strategies, consultation feedback to date | BCSC to arrange meeting. ERM to note feedback. BCSC to attend |
|                                                      |                                                                         |                                                  | 1 April 2015              |                                                                                                         |                                                                                |
| Gippsland Waste and Resource Recovery Group          | Mr Matthew Peake, Executive Officer and other organisational representative from the group as invited.  
  (Sewage)                                            | Direct Contact – Face to Face meeting                                    | Stage 6, prior to the Internal Reference Group meeting | • Preliminary Strategic Options – includes waste management trends, identified issues, proposed consultation  
  • Proposed Regional Plan                             | ERM to arrange meeting at a time to suit GWRRG/ERM to note feedback. |
| Bass Coast Shire Council Waste Services Officers     | This includes facility attendants/ officers at the Council owned facilities to discuss their issues and known user issues  
  (Sewage)                                            | Direct Contact – Face to Face meetings at the Council run facilities – Grantville/Wonthaggi/Cowes/Inverloch | Stage 6                    | • Preliminary Strategic Options – includes waste management trends, identified issues, proposed consultation  
  • Operator issues  
  • Perceived user issues  
  • Waste collection issues  
  • Ideas for improvement  
  • Opinion on proposed options | ERM to arrange time to conduct face to face meetings. BCSC to inform the sites that ERM will be attending and provide ERM with contact names and times available |
| Neighbouring local government areas - South Gippsland Shire and Cardinia Council officers | Direct Contact – Face to Face at a meeting with a Council contact        | Stage 6                                          |                           | • Preliminary Strategic Options – includes waste management trends, identified issues, proposed consultation  
  • Ideas for collaboration between the two councils, such as waste collections/ waste facilities/ AWT/ education | BCSC to advise officers to contact at South Gippsland Shire Council and ERM will contact to arrange |
<table>
<thead>
<tr>
<th>Stakeholder</th>
<th>Details</th>
<th>Method</th>
<th>When</th>
<th>Information to discuss/ feedback sought</th>
</tr>
</thead>
<tbody>
<tr>
<td>Community Consultation</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Private Waste Services Contractors</td>
<td>Cleanaway Regional (Transpacific)</td>
<td>Direct contact - over the phone discussions may be sufficient</td>
<td>Stage 6</td>
<td>Understanding of current and projected waste volumes and type</td>
</tr>
<tr>
<td></td>
<td>Wonthaggi Recyclers</td>
<td></td>
<td></td>
<td>Operator issues</td>
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<tr>
<td></td>
<td>Bass Highway Waste</td>
<td></td>
<td></td>
<td>Perceived user issues</td>
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<tr>
<td></td>
<td>Island Skip Hire</td>
<td></td>
<td></td>
<td>Waste collection issues</td>
</tr>
<tr>
<td></td>
<td>Bass Coast Rubbish Removal and Bin Hire</td>
<td></td>
<td></td>
<td>Ideas for improvement</td>
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<tr>
<td></td>
<td>Wheel-A-Waste</td>
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<td></td>
<td>Opinion on proposed options</td>
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<td></td>
<td>SITA Environmental Services</td>
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<td></td>
<td>BCSC to identify contact person/ details and ERM to contact</td>
</tr>
<tr>
<td>Environment Conservation Groups</td>
<td>Coastal Action Group</td>
<td>Tailored Survey link to be sent via email</td>
<td>Stage 6</td>
<td>Current issues</td>
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<tr>
<td></td>
<td>Friends groups</td>
<td></td>
<td></td>
<td>Ideas for improvement</td>
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<td></td>
<td>Opinion on proposed options</td>
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<td></td>
<td></td>
<td>BCSC to provide list and their contact / email details</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td>ERM to draft Survey questions for BCSC approval</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>ERM to send survey request via email and collate responses</td>
</tr>
<tr>
<td>Government Agencies</td>
<td>DEPI</td>
<td>Tailored Survey link to be sent via email</td>
<td>Stage 6</td>
<td>Current issues</td>
</tr>
<tr>
<td></td>
<td>CMA</td>
<td></td>
<td></td>
<td>Ideas for improvement</td>
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<td></td>
<td>EPA</td>
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<td></td>
<td>Opinion on proposed options</td>
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<tr>
<td></td>
<td>Parks Vic</td>
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<td></td>
<td>BCSC to provide list and their contact / email details</td>
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<td>ERM to draft Survey questions for BCSC approval</td>
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<td></td>
<td></td>
<td></td>
<td>ERM to send survey request via email and collate responses</td>
</tr>
<tr>
<td>Stakeholder</td>
<td>Details</td>
<td>Method</td>
<td>When</td>
<td>Information to discuss/ feedback sought</td>
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<td>-------------</td>
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<td>----------------------------------------</td>
</tr>
</tbody>
</table>
| Non government organisations | • Bass Coast Landcare Network  
• Phillip Island Nature Parks | Tailored Survey link to be sent via email | Stage 6 | • Current issues  
• Ideas for improvement  
• Opinion on proposed options | BCSC to provide list and their contact / email details  
ERM to draft Survey questions for BCSC approval  
ERM to send survey request via email and collate responses |
| Business Community in Bass Coast Shire | Commercial users of waste collection and waste management facilities | Public Information Sessions to be conducted at 3 venues – Cowes, Wonthaggi and Inverloch | Stage 6 | • Current issues  
• Ideas for improvement  
• Future requirements  
• Opinion on proposed options | BCSC to identify to arrange venue/time for the sessions and advertise. This may include letter drops to those community members that need to be specifically invited to ensure that they are aware of the sessions  
ERM to collaborate with BCSC to arrange the static displays and be available for discussions with community. ERM To manage feedback at the time of the sessions |
| Bass Coast Shire residents | | Public Information Sessions to be conducted at 3 venues – Cowes, Wonthaggi and Inverloch | Stage 6 | • Current issues  
• Ideas for improvement  
• Future requirements  
• Opinion on proposed options | BCSC to identify to arrange venue/time for the sessions and advertise. |
<table>
<thead>
<tr>
<th>Stakeholder</th>
<th>Details</th>
<th>Method</th>
<th>When</th>
<th>Information to discuss/ feedback sought</th>
<th>Responsibility</th>
</tr>
</thead>
<tbody>
<tr>
<td>All, including Bass Coast Shire residents</td>
<td></td>
<td>Public Notice</td>
<td>Stage 8</td>
<td>• Draft WMS</td>
<td>ERM to prepare public notice to inform the community of its opportunity to review the draft WMS and provide feedback. The information is to be included in the local paper and on Council’s website. Feedback will be by way of form completion with the forms available at the Council’s office and website. Responses to be returned to Council (offices and internet) and on forwarded to ERM.</td>
</tr>
</tbody>
</table>

This may include letter drops to those community members that need to be specifically invited to ensure that they are aware of the sessions. ERM to collaborate with BCSC to arrange the static displays and be available for discussions with community.
<table>
<thead>
<tr>
<th>Stakeholder</th>
<th>Details</th>
<th>Method</th>
<th>When</th>
<th>Information to discuss/feedback sought</th>
<th>Responsibility</th>
</tr>
</thead>
<tbody>
<tr>
<td>All, including Bass Coast Shire residents</td>
<td></td>
<td>Council website</td>
<td>Stage 6 onwards</td>
<td>Information to be provided on the project, feedback mechanisms, including surveys for completion if desired</td>
<td>BCSC to manage the updates to the website. Surveys will only be available during the consultation period</td>
</tr>
</tbody>
</table>
Bass Coast Shire Council


Community Consultation Information Sheet

Project Background

Bass Coast Shire is the fastest growing area in Gippsland with the resident population of about 30,000, increasing to over 70,000 during peak holiday periods (www.forecast.id.com.au). The area also attracts visitors to Philip Island for penguin parades and the Motor Cycle Grand Prix. The generation of waste is expected to increase in the future in line projected population increases, which has been predicted to rise to approximately 45,000 by 2031, an increase of approximately 42%. This, coupled with a number of identified waste management challenges and issues, provides significant drivers for consideration of a new waste management strategic direction and sustainability initiatives across the Shire.

Aim of the Waste Management Strategy

The Bass Coast Shire Council has decided to develop a Waste Management Strategy for the Bass Coast Shire municipality. The strategy’s main purpose is to guide the management of waste over the next 10 years, i.e. 2015 – 2025. The Waste Management Strategy will form the basis of waste management planning, including waste technologies, infrastructure, education programs, and collection and recovery services, i.e. whole of waste cycle.

This is not a Waste Management Plan whereby specific actions to be undertaken are documented rather the Waste Management Strategy identifies strategic outcomes to be achieved and suggests options to work towards achieving those outcomes. Detailed short and medium term actions will be developed to achieve the strategic long term objectives.

The strategy will be developed in consideration of the needs of the municipality as well as regional and Victorian waste policy objectives as a whole.

Community Consultation

An environmental consultancy, Environmental Resources Management Australia Pty Ltd (ERM), have been engaged by Council to prepare the Waste Management Strategy. To aid in the development of the strategy, ERM will be consulting with the community. The aim of the consultation is to provide the community and identified key stakeholders with the opportunity to participate in its development. Specifically to:

- Identify and understand key waste management issues early in the project to allow sufficient time to adequately address them in the development of the Waste Management Strategy;
- Seek and encourage input from stakeholders and provide opportunity for this to occur; and
- Proactively inform and interact with the community and project stakeholders about the Waste Management Strategy and its development process and how the community can contribute.
Waste Management Strategy Development Process

The development of the Waste Management Strategy by ERM, supported by Bass Coast Shire Council, has followed/is to follow the following process:

<table>
<thead>
<tr>
<th>Process Stage</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Completed</td>
</tr>
<tr>
<td>2.</td>
<td>Completed</td>
</tr>
<tr>
<td>3.</td>
<td>Completed/Evolving</td>
</tr>
<tr>
<td>4.</td>
<td>Completed</td>
</tr>
<tr>
<td>5.</td>
<td>Evolving</td>
</tr>
<tr>
<td>6.</td>
<td>Commenced/Ongoing</td>
</tr>
<tr>
<td>7.</td>
<td>Not yet commenced</td>
</tr>
<tr>
<td>8.</td>
<td>Not yet commenced</td>
</tr>
<tr>
<td>9.</td>
<td>Not yet commenced</td>
</tr>
</tbody>
</table>

Identified Issues to Date

Local Population and Household Characteristics

- The growth in population is predicted to continue at a higher rate than the Victorian average.
- Swell of residents during holiday and event periods will continue.
- Ratio of residents over 65 will grow and remain a significant portion of the current population.
- Holiday home owners have a level of service expectations equal to their area of permanent residence.

Community Satisfaction

- Community Satisfaction within the Shire, surveyed in 2014, showed waste services were significantly below statewide and large rural shire averages.
Waste Management Performance – Kerbside Collection

- Commingled recyclables (not including green waste) collected are less per household than other comparable Shire.
- Waste diversion rates from landfill are less per household than other comparable Shire and Victorian average.
- Data collected by the Shire does not separate residential and commercial, nor clearly detail contamination rates separated by collection services and locations.

Contamination Rates

- High recyclables contamination rates, currently up to 30% of recyclable waste stream (processed locally) compared to Victorian average 8.3%.
- No recent waste audits conducted of kerbside collections.

Public Place Waste Collection

- Litter and illegal dumping remains an issue.

Current Waste Management Facilities

- Current Recycling Bank in Cowes is not considered to be a long term solution by both Council and the community.
- The travel times for a Cowes resident is in excess of 30 minutes if they had to rely on either the Wonthaggi or Grantville locations to dispose of their waste/recyclables. While the travel time for an Inverloch resident is 3 minutes to Inverloch, 10 minutes to Wonthaggi or 16 minutes to Koonwarra or 24 minutes to Venus Bay.
- Inverloch Waste Transfer/ Recycling Centre – Rezoning of the land to Rural Residential has caused concerns relating to potential environmental impacts from facility location, i.e. close to waterways.
- Are the facilities being provided by BCSC compliant with current Best Practice, Wonthaggi Waste Transfer/ Recycling Centre not currently considered to meet current best practice.
- Closed/Old landfill liabilities - Wonthaggi, Inverloch (closed landfills), and previously unlicensed sites, and the high management cost for rehabilitation and aftercare costs to BCSC.
- Owning and maintaining a landfill for a small Shire, such as BCSC, may not be the most viable option financially and environmentally for the community.

Private Waste Contractors

- An understanding of the quantity and type of material being managed privately is not well understood, nor the capacity of these facilities.
- Understanding of facilities in the region to gain an appreciation of all facilities available to the community.
Hard Waste

- Hard waste that is being collected Victoria wide has a small proportion of recovery value (diversion rate 7.9%). Although it is understood that a considerable volume of steel is currently recouped from the BCSC hard waste collection, the recovery value in the Shire is not well understood.

- Hard waste collection appears to be a minimal recovery service designed to collect large garbage items for those residents who are unable to transport the items to the Transfer Station, such as older residents.

Resale Shops

- The potential to on-sell the collected reuse materials within the Shire and its viability is not understood. Would such a facility assist with improving diversion rates?

AWTs

- Advanced Waste Treatment technologies and their potential application and economic viability in the region is not understood.

Data Collection

- Commercial kerbside and litter collection data is not separated from residential kerbside collection. Needs to be consistent with “Guideline for the collection and reporting of solid waste data in Victoria”.

Note: All Victorian data is for the year 2010-2011.
Vision/ Objectives

The vision and objectives have been informed by relevant federal, state, regional and municipal policies, strategies and plans and the overarching waste hierarchy.

Vision

To reduce the impact on the natural environment of the Bass Coast Shire by using innovative approaches to: reduce waste generation; increase reuse of waste; increase resource recovery from waste; and, dispose of residual waste such that environmental impacts and economic costs are not to the detriment of future generations of the Shire.

Objectives

- Provision of waste management services and infrastructure to community, residents and businesses to meet their needs as efficiently and equitably as possible, in a financially responsible manner;
- Support the provision of waste management services and infrastructure by private companies to meet the needs of the community;
- To reduce the carbon footprint of Council’s waste management facilities and services;
- To engage, educate and support the community to responsibly, sustainably and innovatively manage waste generated, recognising that waste management is a shared responsibility between government, industry and the community;
- To be compliant with applicable legislation and guidelines such that best practice is achieved at all waste management facilities and for all waste management services in the Shire;
- To continually improve the performance (environmental, health and safety and financial) of waste facilities and services;
- Partner with state, regional and community on waste management projects including services, infrastructure and market development.
## Preliminary Strategic Outcomes and Suggested Options

The following strategic outcomes and suggested options have been developed to address identified key issues and meet objectives of the Waste Management Strategy for consideration.

<table>
<thead>
<tr>
<th>Objectives</th>
<th>Strategic Outcomes</th>
<th>Suggested Options</th>
</tr>
</thead>
</table>
| Provision of waste management services and infrastructure to community, residents and businesses to meet their needs as efficiently and equitably as possible, in a financially responsible manner. | • Residents and households within the Shire have access to waste management infrastructure within a timeframe acceptable to the Council and residents.  
• Provision of waste services to the commercial sector is to be funded by the commercial users of the services.  
• Provision of kerbside waste collection services to reflect the population demographics of the Shire.  
• Holiday makers and visitors to the Shire have access to adequate and convenient waste management infrastructure.  
• Kerbside waste services fees imposed to be proportional to waste generation. (i.e. polluter pays principle)  
• Landfill gate fees to be based on full recovery of all costs for operations, rehabilitation and aftercare. (i.e. whole of life costs) | • Feasibility studies to be undertaken for the:  
  o Provision of appropriate waste infrastructure/services for Phillip Island residents;  
  o Ongoing provision of the Inverloch Transfer/ Recycling Centre including consideration of rehabilitation and environmental risks;  
  o Review of the Wonthaggi Transfer/ Recycling Centre to meet current best practice;  
  o Provision of waste management infrastructure in areas that experience high levels of population change over the holiday and event periods that allows flexibility for disposal of garbage, commingled recyclables and green waste at time that are out of sync with kerbside services;  
  o Management of the Grantville landfill, in particular consideration of the rehabilitation and aftercare costs and ongoing liabilities.  
• Community engagement on provision of waste management services to be undertaken every 12-24 months, including regular surveys and communications.  
• Implement consistent and comprehensive data capture for kerbside and waste management facilities, including private facilities, in consideration of best practice guidelines.  
• Regular review of waste management services and infrastructure provided by Council, private contractors or regionally to assess capacity (meet current and projected waste to be managed), viability (in consideration of the cost model detailed below), and standard (meet or exceed current best practice standards such as bin types and sizes, landfill and transfer station, data capture) to meet community need.  
• Develop and maintain a waste management cost model so waste services charges to ratepayers/users reflect actual waste management costs currently or to be incurred by the Shire, including... |
<table>
<thead>
<tr>
<th>Objectives</th>
<th>Strategic Outcomes</th>
<th>Suggested Options</th>
</tr>
</thead>
<tbody>
<tr>
<td>Support the provision of waste management services and infrastructure by</td>
<td>• Increased resource recovery, waste reuse or recycling rates by private waste</td>
<td>rehabilitation and aftercare costs. Model to allow flexibility in charging for different waste services provided, such as changes to bin sizes or frequency of kerbside collections, and for subsidising selected ratepayers or users, such as pensioners. Model to also consider other environmental and social costs.</td>
</tr>
<tr>
<td>private companies to meet the needs of the community.</td>
<td>companies.</td>
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<td></td>
<td>• Methane emissions from Council’s landfill be managed within EPA Victoria Best</td>
<td>• Undertake a feasibility assessment of an Encouragement program for businesses by developing program objectives, types of support/assistance, likely take up and likely impact. Such assessment should include whether this program would be limited to the BCSC or across the region.</td>
</tr>
<tr>
<td></td>
<td>Practice Environmental Management guidelines (BPEM) Carbon emissions per household</td>
<td>• Maintain an understanding of waste generation and waste profile, such as by way of regular waste audits of bins (conducted every 3 years as per best practice guidelines), to be reflected in the Encouragement program.</td>
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<tr>
<td></td>
<td>to reduce over the strategy period.</td>
<td></td>
</tr>
<tr>
<td>To reduce the carbon footprint of Council’s waste management facilities</td>
<td>• Waste generation rates per household to reduce over the strategy period.</td>
<td>• Carbon emissions associated with the provision of Council’s waste facilities and services is to be calculated and reported as required by Council’s statutory obligations.</td>
</tr>
<tr>
<td>and services.</td>
<td>• Landfill diversion rates per household to increase over the strategy period.</td>
<td>• Feasibility assessment of the diversion of green waste, and potentially kitchen organics, from the waste to landfill stream via kerbside collections, including a full cost benefit analysis. (i.e. 3 bin system Shire wide)</td>
</tr>
<tr>
<td></td>
<td>• Community engagement on provision of waste management services to be undertaken</td>
<td>• Assess and implement best practice landfill gas management measures at the Shire landfill.</td>
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<td>every 12-24 months, including regular surveys and communications. Information to</td>
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<td>include waste management performance, how the community can assist and provide</td>
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<td>feedback.</td>
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<td></td>
<td>• Develop a recognition and awards program recognising innovative waste management by members of the community.</td>
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<tr>
<td></td>
<td>• Maintain an understanding of waste generation and waste profile, such as by way of regular waste audits of bins, litter and illegal dumping activities, to be reflected in community engagement and education.</td>
<td></td>
</tr>
<tr>
<td>Objectives</td>
<td>Strategic Outcomes</td>
<td>Suggested Options</td>
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<tr>
<td>---------------------------------------------------------------------------</td>
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<td>-----------------------------------------------------------------------------------</td>
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</tbody>
</table>
| To be compliant with applicable legislation and guidelines such that best practice is achieved at all waste management facilities and for all waste management services in the Shire. | - Complete all statutory reporting and respond to EPA requirements within required timeframes.  
- Comply with planning permit requirements for waste facilities.  
- Design and operate waste services in consideration of current best practice guidelines.  
- Locate and rehabilitate, where required, all former waste facilities within the Shire. | - Regular review of waste management services and infrastructure provided by Council against current best practice standards, such as bin types and sizes, landfill and transfer station, and data capture.  
- Undertake a study to locate previous waste facilities, prioritise their rehabilitation and after care, in consideration of EPA requirements and potential Council liabilities. |
| To continually improve the performance (environmental, health, safety and financial) of waste facilities and services. | - Reduction in environmental, health and safety incidents related to the provision of waste services and infrastructure over the strategy period.  
- Waste management services and facilities meet or exceed current best practice guidelines.  
- Community satisfaction increase over the strategy period.  
- Financial cost of the provision of waste management services and facilities per household is clearly understood, transparent and includes all of life costs | - Develop and maintain a template to allow for annual assessment of performance of the waste management services and facilities and identification of areas for improvement. The template will include information related to incidents, best practice standards, costs, waste generation and diversion rates, contamination rates, litter rates and the like to allow assessment of performance.  
- Record environmental, health and safety incidents related to the provision of waste services and infrastructure over the strategy period.  
- Understand the litter and illegal dumping activities, such as where occurring and when (is there a link between dumping sites and location of facilities) and develop Waste Education Action Plan, including litter reduction activities.  
- Develop and maintain a waste management cost model as detailed above. |
<table>
<thead>
<tr>
<th>Objectives</th>
<th>Strategic Outcomes</th>
<th>Suggested Options</th>
</tr>
</thead>
<tbody>
<tr>
<td>Partner with state, regional and community on waste management projects, including services, infrastructure and market development.</td>
<td>• Proactive regular consultation with Gippsland Waste and Resource Recovery Group, Sustainability Victoria, EPA Victoria and key stakeholders. • Encourage the development of a market for recycled products by preferentially procuring products made from recycled materials (market development). • Increase the demand for recycled products in the Shire.</td>
<td>• Engage with state, region and community on waste management projects biannually to be abreast of waste management projects and to assess where and how collaboration can occur. • Identify opportunities for Shire to swap from products made of virgin materials to recycled materials (e.g. road side mulch, recycled paper, etc.). • Remain open to feasible Advance Waste Treatment (AWT) options for the region.</td>
</tr>
</tbody>
</table>

Please note that the Suggested Options are options to be considered after the current proposed consultation and WMS development.

For more information on the project and/or to provide feedback, please contact ERM via email address ERMAustraliaMelbourneBCSCWastestrategy@erm.com. If you would like to provide feedback, please complete a survey online via Council’s website.
ANNEX C  ALTERNATIVE WASTE TREATMENT TECHNOLOGIES
Alternative Waste Treatment

Pre-treatment and AWT facilities are consistent with the current Victorian Waste and Resource Recovery Policy and the Landfill BPEM, where a suggested measure for waste minimisation is “Separation of putrescible fractions from waste streams where possible, and continually improve the separation of putrescible wastes”.

The technology reviewed is made of two key components: the sorting and the processing technology.

Sorting of the waste stream prior to processing is critical to: a) extract the available recyclable materials; b) separate the organic rich fraction for biological processing; c) separate high calorific value waste streams that could be used as fuel. In the case of MSW, prior to sorting, waste separation technologies will also be required to split bags or reduce waste size (e.g. hammer mill) for thermal processing. Typically separation and sorting technologies are required to be customised to the waste composition and waste collection methods used and therefore certainty of supply quality and control is required (e.g. through contracts) to justify the expense of customising such a facility.

Based on ERM’s local and international experience, large scale technologies for waste processing typically include:

- Biological Treatment (aerobic and anaerobic digestion for source separated organic waste streams e.g. windrow composting of green waste);
- Mechanical Biological Treatment (MBT) (typically biological process for organics with a front end mechanical process for sorting and separation);
- Thermal technologies for refuse derived fuel of high calorific value (e.g. cement kilns, incinerators, co-firing at power stations; co-firing with biomass fuels, advanced thermal technologies such as gasification and pyrolysis).

In Australia, Mechanical Biological Treatment (MBT) is the commonly cited technology for removal of the organic fractions from MSW, however, to date there are no such facilities successfully operating in Victoria with only one facility (SITA Kemps Creek ARRT Facility) in NSW operating successfully. The reasons for the small number of facilities in Australia are commonly considered to be (but not limited to):

- organics are difficult to separate from non-source separated MSW;
- the organics can be comparatively expensive to process and reuse;
- there is insufficient investment in processing infrastructure to produce valuable organic products;
- there are insufficient markets for the available volumes of waste (possibly due to barriers to getting a product to market or to lack of information about products and concerns regarding contamination making products unacceptable for some uses);
- there is insufficient planning guidelines regarding buffer distances; and
- capital and operating expense in the current market make it uneconomical for private operators to establish facilities without significant public funding.

With respect to other, non-biological ARRT technologies, in March 2012 DSE released the publication Lessons Learnt from the Victorian Advanced Resource Recovery Initiative (VARRI) to provide input into the policy review. The ARRT technologies considered included Thermal Waste Processing, Aerobic Composting, Aerobic Drying Bio drying, and Anaerobic Digestion. The document highlighted the complexity involved in the technology assessment, siting/buffer requirements, procurement and contracting, economic conditions and social/environmental impacts.
Bioreactor Landfills are permissible under the Landfill BPEM in Victoria, however to date, based on the ERM’s local experience, there has not been one successful true bioreactor landfill constructed and operated in Australia. Bioreactor landfills are highly engineered facilities requiring a high level of engineered leachate extraction, treatment and reinjection, gas extraction and monitoring of temperature, moisture and organic levels to achieve optimal gas producing conditions. The engineering required for a bioreactor cell would result in capital costs that would significantly impact on the landfill gate fees. The economics of waste disposal gate fees in Victoria are unlikely to be conducive to the capital expense required for the construction of a bioreactor landfill in the foreseeable future.
### Waste Management Options – Pre-Treatment and Technologies

<table>
<thead>
<tr>
<th>Process/Technology</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Landfill (with gas engines)</td>
<td>Landfill gas extraction system with landfill gas engines to enable the recovery of energy by burning methane – currently implemented at a number of metropolitan landfills</td>
</tr>
<tr>
<td>Energy from Waste (power only)</td>
<td>Incineration of waste, generally through use of moving grate technology. Fluidised bed incineration is also used. Energy is recovered as electricity through the use of steam turbines.</td>
</tr>
<tr>
<td>Energy from Waste, with combined heat and power recovery</td>
<td>Incineration of waste using moving grate and fluidised bed technology. Energy is recovered as heat as high or low pressure steam for industry or district heating and as electricity through the use of steam turbines.</td>
</tr>
<tr>
<td>Gasification (described as Advanced Thermal Treatment)</td>
<td>Causes the partial thermal degradation of waste in the presence of oxygen, producing a combustible gas, called syngas. Syngas can then be converted to several products, including hydrogen and transport fuels, or in this case burnt to generate electricity.</td>
</tr>
<tr>
<td>Pyrolysis (described as Advanced Thermal Treatment)</td>
<td>Causes the decomposition of organic material at high temperatures in the absence of oxygen. The products are syngas, a liquid residue and a carbon-rich bottom ash, which is assumed to be suitable for additional processing.</td>
</tr>
<tr>
<td>Mechanical Biological Treatment (Anaerobic Digestion, In-Vessel Composting and Biodrying)</td>
<td>Residual waste is sorted and segregated mechanically, enabling metals and rejects to be removed from the stream, before the remaining biodegradables are sent to composting, biodrying or anaerobic digestion. Outputs are either a Compost Like Output (CLO) or a digestate (the solid output from an anaerobic digestion plant). The majority of MBTs produce a refuse derived fuel from the non-biodegradable fraction of the waste, although in some instances the treated biological fraction may also subsequently be sent for thermal treatment of some kind.</td>
</tr>
<tr>
<td>Anaerobic Digestion (source segregated organics)</td>
<td>Process in which biodegradable material is encouraged to break down in the absence of oxygen. Waste is broken down in an enclosed vessel under controlled conditions, resulting in the production of digestate and biogas.</td>
</tr>
<tr>
<td>In-Vessel Composting (source segregated organics)</td>
<td>Aerobic digestion is undertaken within an enclosed container, where the control systems for material degradation are fully automated. Moisture, temperature and odour can be regulated and this process produces a stable compost more quickly than outdoor windrow composting.</td>
</tr>
<tr>
<td>Process/Technology</td>
<td>Description</td>
</tr>
<tr>
<td>--------------------------------------------------------</td>
<td>-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Open Windrow Composting</td>
<td>The aerobic decomposition of shredded and mixed organic waste using open linear heaps known as ‘windrows’. These are approximately three metres high and four to six metres across the base. The process involves mechanical turning of the waste until the desired temperature and residence times are achieved to enable effective degradation. This results in a bulk-reduced, stabilised residue known as compost. Windrow composting can take place outdoors or within a large building and the process takes around three months.</td>
</tr>
<tr>
<td>Autoclave (Mechanical Heat Treatment)</td>
<td>High-pressure steam used to reduce and to sterilise waste. Metals, plastics and glass are extracted and sent for recycling. The process produces a cellulose fibre that can, in theory, be used for fibreboard production or combusted.</td>
</tr>
<tr>
<td>Sorting/ Pre-treatment - Materials Recovery Facility</td>
<td>A 'Dirty' (residual waste) MRF for sorting, where plastics, metals and glass are removed. Other waste streams can also be removed, such as paper and cardboard. The exact technology is dependent on the incoming waste stream and markets for recyclable materials. Some Dirty MRFs are very similar to MBTs without the biological component. Examples of technology include:</td>
</tr>
<tr>
<td></td>
<td>• Trommel screen (available in various forms typically a tilting/rotating drum used to screen waste according to size and density); • Separators (magnetic, eddy current and optical separators, air classifiers, ballistic separators) • Shredders; • Refuse derived fuel plant and pelletisers; • Hand picking stations; • Ball mills; • Other mechanical reduction techniques (crushing, pulverising etc).</td>
</tr>
<tr>
<td>Fuel preparation</td>
<td>Similar to the Dirty MRF, fuel preparation plants sort waste to remove key recyclables and prepare the waste into a consistent nature for use as a fuel. Typically there is a driver to keep the calorific value of the waste high, and papers and cards are usually left in the waste. The consistency, quality and the calorific value of the resultant fuel depends on the plant and the source waste stream, however higher grade fuels can be used to fuel cement kilns to replace fossil fuels.</td>
</tr>
</tbody>
</table>

It is noted that in Europe and UK, policy drivers such as the EU Landfill Directive have set challenging diversion targets for biodegradable municipal waste which has provided the regulatory and economic drivers that have led to the development of a number of waste treatment technologies over the last decade.
Grantville
Inverloch
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This map should be read in conjunction with additional Planning Overlay Maps (if applicable) as indicated on the INDEX TO MAPS.

MAP No 70VPO

INDEX TO ADJOINING METRIC SERIES MAP

SCALE: 1:4,999

VEGETATION PROTECTION OVERLAY

MAP No 70VPO
Wonthaggi
## Current Waste Management Information

### Kerbside Collection Services

#### Table 1  Current Bass Coast Shire Council kerbside waste services to residential properties

<table>
<thead>
<tr>
<th>Waste type</th>
<th>Type of service</th>
<th>Type of container</th>
<th>Frequency</th>
<th>Type of waste materials and exclusions</th>
<th>Number of services in 2013/2014 &amp; Participation rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>MSW (Garbage)</td>
<td>Kerbside collection</td>
<td>Mostly 120L MGB, 240L option for holiday homes accommodating &gt; 10 people, with options for 240L</td>
<td>Weekly</td>
<td>All household (plastic bags, household waste, broken glass or glass from windows and mirrors, small amounts of green waste, clothes, toys, small amounts of timber or building materials, sheet plastic, nappies, electronic equipment), not hazardous waste such as asbestos, chemicals etc.</td>
<td>24,281 83% of properties and 95% of total population</td>
</tr>
<tr>
<td>Commingled Recyclables</td>
<td>Kerbside collection</td>
<td>Mostly 240L MGB, option for 120L or an extra service</td>
<td>Fortnightly (weekly from Boxing Day to end of January)</td>
<td>Plastics 1-7, glass - bottles, jars and containers; aluminium – cans, foil pie dishes, etc; metal – all steel cans; paper including cardboard.</td>
<td>As above</td>
</tr>
<tr>
<td>Green Organics</td>
<td>No collection service provided. Trial kerbside collection</td>
<td>Optional 240L MGB</td>
<td>Fortnightly (opposite to recycling collection)</td>
<td>Organic garden/green waste only, no food waste, no other contaminants.</td>
<td>7,000 eligible properties in trial area. Stage 1 – 535 properties; stage 2 – 610 properties, stage 3 – 510 properties. Approx. 7 - 9% of eligible properties</td>
</tr>
<tr>
<td>Hard waste</td>
<td>On call, Collect from property</td>
<td>At call, booked through Council. Each ratepayer who pays the garbage levy is eligible to one subsidised collection per financial year</td>
<td>Incurs a charge of $30 with additional charges for mattress collection.</td>
<td>Approx. 630 Approx. 2.6% of properties serviced</td>
<td></td>
</tr>
</tbody>
</table>

Source: 1. Number of services & Participation rate provided by Bass Coast Shire Council, various correspondence
### Table 2  Current Bass Coast Shire Council kerbside waste services to non-residential properties

<table>
<thead>
<tr>
<th>Waste type</th>
<th>Type of service</th>
<th>Type of container</th>
<th>Frequency</th>
<th>Type of waste materials and exclusions</th>
<th>Number of services per week in 2013/2014 &amp; Participation Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>MSW (Garbage)</td>
<td>Kerbside collection</td>
<td>240L MGB</td>
<td>Weekly</td>
<td>Typical household waste</td>
<td>Approx. 500 (approx. 10 tonnes increasing to 15 tonnes over summer) 33% of non-residential properties</td>
</tr>
<tr>
<td>Commingled Recyclables</td>
<td>Kerbside collection</td>
<td>240L MGB</td>
<td>Fortnightly</td>
<td>Recyclables as per domestic properties</td>
<td>Approx 400 (10-15 kg per bin) 26% of non-residential properties</td>
</tr>
</tbody>
</table>

Source: Estimation of the volumes provided by Private Waste Collection Contractor, in discussions 11 March 2015

### OTHER WASTE COLLECTION SERVICES

### Table 3  Summary of other Bass Coast Shire Council waste collection services

<table>
<thead>
<tr>
<th>Waste type</th>
<th>Type of service</th>
<th>Type of container</th>
<th>Frequency</th>
<th>Type of waste materials and exclusions</th>
<th>Number of services in 2013/2014</th>
</tr>
</thead>
<tbody>
<tr>
<td>Street sweeping</td>
<td>This service is provided by Council’s Road management program.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Street cleaning and dumped rubbish</td>
<td></td>
<td></td>
<td>As above</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Litter bins</td>
<td>Kerbside collection</td>
<td>240L</td>
<td>As required – twice daily to 2 – 3 days</td>
<td>Domestic waste</td>
<td>Approx. 500</td>
</tr>
<tr>
<td>Public place recycling</td>
<td>Kerbside collection</td>
<td>240L</td>
<td>Fortnightly</td>
<td>Domestic recycling</td>
<td>Approx 500</td>
</tr>
<tr>
<td>Events (festivals, local markets, cultural/community events etc.)</td>
<td>Collection</td>
<td>240L MGB</td>
<td>During and/or after event</td>
<td>All waste from event, which fits in a 240L MGB. Other waste collection arranged by event organiser</td>
<td></td>
</tr>
<tr>
<td>Service</td>
<td>Contractor (or internal)</td>
<td>Address of facility</td>
<td>Contract Expiration (plus extensions)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>-------------------------------------</td>
<td>--------------------------</td>
<td>---------------------</td>
<td>----------------------------------------------------------</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Kerbside Collection</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Garbage collection</td>
<td>Wonthaggi Recyclers</td>
<td>To Grantville Landfill</td>
<td>28 February 2016 (3 year option with notification of extension required by 31 November 2015)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Garbage disposal to landfill</td>
<td>ACE Environmental Services</td>
<td>Grantville Landfill</td>
<td>As above</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Commingled recyclables collection</td>
<td>Wonthaggi Recyclers</td>
<td>Wonthaggi MRF</td>
<td>28 February 2016 (3 year option with notification of extension required by 31 November 2015)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Commingled recyclables receipt</td>
<td>Wonthaggi Recyclers</td>
<td>Wonthaggi MRF</td>
<td>28 February 2016 (3 year option with notification of extension required by 31 November 2015)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hard waste</td>
<td>Wonthaggi Recyclers</td>
<td>Wonthaggi MRF</td>
<td>28 February 2016 (3 year option with notification of extension required by 31 November 2015)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Non-residential collections - Commercial</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other waste collections</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Street sweeping and disposal</td>
<td>Council Roads Dept</td>
<td>To council depot for transfer to landfill</td>
<td>Not applicable</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Street Cleaning and dumped rubbish collection and disposal</td>
<td>Council Roads Dept</td>
<td>To Grantville Landfill</td>
<td>Not applicable</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Litter bins Collection and disposal</td>
<td>Wonthaggi Recyclers</td>
<td>Wonthaggi MRF</td>
<td>28 February 2016 (3 year option with notification of extension required by 31 November 2015)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Public Place Recycling (PPR) bins Collection</td>
<td>Wonthaggi Recyclers</td>
<td>Wonthaggi MRF</td>
<td>28 February 2016 (3 year option with notification of extension required by 31 November 2015)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PPR receipt</td>
<td>Wonthaggi Recyclers</td>
<td>Wonthaggi MRF</td>
<td>28 February 2016 (3 year option with notification of extension required by 31 November 2015)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Events waste collection and disposal</td>
<td>Wonthaggi Recyclers – use of existing public place litter and recycling bins</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Operation and Management of Waste</td>
<td>Wonthaggi Recyclers</td>
<td></td>
<td>28 February 2016 (3 year option with</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Table 5  Quantities of waste and recyclable materials collected from residential properties in 2013/2014

<table>
<thead>
<tr>
<th>Residential Collection</th>
<th>Recycled Tonnes</th>
<th>Disposed to landfill Tonnes</th>
<th>kg / hh / yr (generated)</th>
<th>Kg / ps/yr (generated)</th>
<th>kg / pp / yr (generated)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Garbage</td>
<td>9,220</td>
<td>677.96</td>
<td>379.73</td>
<td>304.97</td>
<td></td>
</tr>
<tr>
<td>Commingled Recyclables (net of contamination)</td>
<td>3024</td>
<td>Included above</td>
<td>222.35</td>
<td>124.54</td>
<td>100.02</td>
</tr>
<tr>
<td>Green Organics (Trial)</td>
<td>170</td>
<td>No data</td>
<td>309</td>
<td>As per household</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Hard Waste</td>
<td>Not clearly understood</td>
<td>Not clearly understood</td>
<td>11</td>
<td>6.2</td>
<td>5</td>
</tr>
<tr>
<td>Total of kerbside waste and recyclables generated *</td>
<td>3,194</td>
<td>9,220</td>
<td>900.32</td>
<td>504.27</td>
<td>405</td>
</tr>
</tbody>
</table>

Diversion Rate (%)* 24.70

Total kerbside waste and recyclables generated does not include volume of green waste from the trial nor hard waste collected. The diversion rate is based on this figure.
Kg/hh/yr – Kilograms per household per year
Kg/ps/yr – kilograms per service per year
Kg/pp/yr – kilograms per person per year

Green waste generated per household has been calculated based on the average number of households involved in the trial, i.e. 550. Green waste has not been included in the overall diversion rate at this stage. Hard waste collection is an at call service. It is not clear the extent of diversion from landfill of the material collected and so is not included in the total diversion rate. Wonthaggi Recyclers provided approximate information regarding the number of commercial properties serviced with very approximate quantities of waste and recyclables collected. All of the material is collected at the same time as residential waste and recyclables such that it is difficult to differentiate between commercial and residential. Approximate details of non-residential waste and recyclables collected via kerbside collection. This data is included in information above.

Source: Collection data from Council correspondence, number of households/ services and persons in the Shire is detailed in Section 3
### Quantities of waste and recyclable materials collected from Non-residential properties in 2013/2014

<table>
<thead>
<tr>
<th>Non-residential Collection</th>
<th>Recycled</th>
<th>Disposed to landfill</th>
<th>kg / Property / yr (generated)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Garbage</td>
<td></td>
<td>Approx. 520 (increasing to 780 over summer)</td>
<td>1040</td>
</tr>
<tr>
<td>Commingled Recyclables</td>
<td>156.6</td>
<td>Not calculated</td>
<td></td>
</tr>
<tr>
<td>Diversion Rate (%)</td>
<td>23</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: Wonthaggi Recyclers, phone discussions 11 March 2015, number of garbage services per week approximately 500, number of recyclables services per fortnight 400. Recyclables that cannot be processes has not been calculated above

### Quantities of waste and recyclable materials from other waste collection services in 2013/2014

<table>
<thead>
<tr>
<th>Other Waste Collection Services</th>
<th>Recycled</th>
<th>Disposed to landfill</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Tonnes</td>
<td>Tonnes</td>
</tr>
<tr>
<td>Other</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Street Sweeping</td>
<td>No information</td>
<td>No information</td>
</tr>
<tr>
<td>Street Cleaning and dumped rubbish</td>
<td></td>
<td>90</td>
</tr>
<tr>
<td>Litter</td>
<td></td>
<td>367.50</td>
</tr>
<tr>
<td>Public Place Recycling</td>
<td>Collected as part of kerbside recyclable collections</td>
<td></td>
</tr>
<tr>
<td>Events</td>
<td>No information</td>
<td>No information</td>
</tr>
<tr>
<td>Assumed total for litter, street sweeping, hard waste</td>
<td></td>
<td>1,427</td>
</tr>
</tbody>
</table>
### Materials received and recycled at Bass Coast Shire Council Landfill, Waste Transfer/Resource Recovery Centres and Recycling Bank - 2013-2014

<table>
<thead>
<tr>
<th>Facility</th>
<th>Wastes received</th>
<th>Quantity received (tonnes)</th>
<th>Quantity recovered (tonnes)</th>
<th>Quantity disposed to landfill (tonnes)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Grantville Landfill</strong></td>
<td>MSW (excluding kerbside collections see Table 9)</td>
<td>4,640.98</td>
<td>4,640.98</td>
<td></td>
</tr>
<tr>
<td></td>
<td>C&amp;I</td>
<td>9,128.14</td>
<td>9,128.14</td>
<td></td>
</tr>
<tr>
<td></td>
<td>C&amp;D</td>
<td>726.11</td>
<td>726.11</td>
<td></td>
</tr>
<tr>
<td></td>
<td>MSW</td>
<td>1,360</td>
<td>1,360</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Recyclables</td>
<td>288</td>
<td>265</td>
<td>23</td>
</tr>
<tr>
<td></td>
<td>Green waste</td>
<td>1,282</td>
<td>1,282</td>
<td></td>
</tr>
<tr>
<td><strong>Grantville Waste Transfer/Recycling Centre</strong></td>
<td>MSW</td>
<td>1,360</td>
<td>1,360</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Recyclables</td>
<td>288</td>
<td>265</td>
<td>23</td>
</tr>
<tr>
<td></td>
<td>Green waste</td>
<td>1,282</td>
<td>1,282</td>
<td></td>
</tr>
<tr>
<td><strong>Wonthaggi Waste Transfer/Recycling Centre</strong></td>
<td>MSW</td>
<td>1,360</td>
<td>1,360</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Recyclables</td>
<td>288</td>
<td>265</td>
<td>23</td>
</tr>
<tr>
<td></td>
<td>Green waste</td>
<td>1,282</td>
<td>1,282</td>
<td></td>
</tr>
<tr>
<td><strong>Inverloch Waste Transfer/Recycling Centre</strong></td>
<td>MSW</td>
<td>413.7</td>
<td>413.7</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Green waste</td>
<td>447</td>
<td>447</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>Recyclables</td>
<td>159.34</td>
<td>111.54</td>
<td>47.8</td>
</tr>
<tr>
<td><strong>Cowes Public Place Recycling Bank</strong></td>
<td>MSW</td>
<td>27</td>
<td></td>
<td>27</td>
</tr>
<tr>
<td></td>
<td>Green waste</td>
<td>894</td>
<td>894</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Scrap metal</td>
<td>87</td>
<td>87</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Commingled recycling</td>
<td>109</td>
<td>100</td>
<td>16</td>
</tr>
<tr>
<td></td>
<td>Cardboard</td>
<td>10</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>All</td>
<td>20,691.27</td>
<td>2,950.54</td>
<td>17,740.73</td>
</tr>
</tbody>
</table>

**Diversions rate (%)**

14.26

Note: Green waste cubic metres converted to tonnages using conversion factor of 0.3 assuming waste processed, i.e. mulched
NI – no information available
Diversions rate calculated as total quantity recovered divided by total quantity received
Total Waste and Recyclables Managed by Bass Coast Shire Council

**Table 9** Summary of waste and recyclables generated and recycled in the municipality for 2013/2014

<table>
<thead>
<tr>
<th></th>
<th>Total (tonnes)</th>
<th>kg / Hh / yr</th>
<th>kg / pp / yr</th>
</tr>
</thead>
<tbody>
<tr>
<td>Residential Kerbside – waste to landfill</td>
<td>9,220</td>
<td>677.96</td>
<td>304.97</td>
</tr>
<tr>
<td>Residential Kerbside – materials recycled</td>
<td>3,024</td>
<td>222.35</td>
<td>100.02</td>
</tr>
<tr>
<td>Non-residential kerbside – waste to landfill</td>
<td>(520) Included in residential kerbside</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Non-residential kerbside - materials recycled</td>
<td>(156.6) included in residential kerbside</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other collections – waste to landfill</td>
<td>1,427 (assumed street sweeping, dumping, hard waste non recycled)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other collections - materials recycled</td>
<td>Included in residential kerbside</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Facilities – residential waste to landfill</td>
<td>3,214</td>
<td>226.72</td>
<td>101.99</td>
</tr>
<tr>
<td>Facilities - C&amp;I – waste to landfill</td>
<td>9,128</td>
<td>671.19</td>
<td>301.93</td>
</tr>
<tr>
<td>Facilities - C&amp;D – waste to landfill</td>
<td>726</td>
<td>53.39</td>
<td>24.02</td>
</tr>
<tr>
<td>Facilities - materials recycled</td>
<td>2,943</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>29.682</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Diversion Rate (%)</td>
<td>20.10</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Diversion rate calculated as total materials recycled divided by total materials collected
Kg/hh/yr – kilograms per household per year
Kg/pp/yr = kilograms per person per year

Comparison with Other Shires and Victoria wide

**Table 10: Waste and recyclables collected at kerbside – 2010 - 2011**

<table>
<thead>
<tr>
<th></th>
<th>Bass Coast</th>
<th>Surf Coast</th>
<th>Victorian Average</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Kg/hh/yr</td>
<td>Diversion Rate (%)</td>
<td>Kg/hh/yr</td>
</tr>
<tr>
<td>Garbage (120L)</td>
<td>303</td>
<td>30%</td>
<td>350</td>
</tr>
<tr>
<td>Commingled Recyclables (net of contamination) (240L)</td>
<td>206</td>
<td>30%</td>
<td>257</td>
</tr>
<tr>
<td>Commingled recyclables and green waste (net of contamination)</td>
<td>30%</td>
<td>56%</td>
<td>61%</td>
</tr>
</tbody>
</table>

Diversion rate calculated as total recyclables collected net of contamination divided by total recyclables plus kerbside and drop off garbage plus contamination, not including litter or street sweeping or C&D or C&I waste
Kg/hh/yr- kilograms per household per year.
Source: Victorian Local Government Annual Survey 2010 – 2011 completed by Sustainability Victoria. It is noted that this is the latest such survey located on the Sustainability Victoria website.
Historical Total Waste and Recyclables managed by Bass Coast Shire Council

Table 11: Historical Waste and Recyclables.

<table>
<thead>
<tr>
<th></th>
<th>2011/2012</th>
<th>2012/2013</th>
<th>2013/2014</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kerbside Recyclables including contamination</td>
<td>4,312</td>
<td>4,279</td>
<td>4,320</td>
</tr>
<tr>
<td>Kerbside Recyclables not including contamination and material unable to be processed</td>
<td>3,018</td>
<td>2,995</td>
<td>3,024</td>
</tr>
<tr>
<td>Total Recyclables, including contamination and not green waste</td>
<td>5,061</td>
<td>5,037</td>
<td>5,251</td>
</tr>
<tr>
<td>Total Recyclables including green waste but not contamination</td>
<td>5,006</td>
<td>4,936</td>
<td>5,967</td>
</tr>
<tr>
<td>Kerbside Garbage including recyclables contamination</td>
<td>8,820</td>
<td>8,843</td>
<td>9,220</td>
</tr>
<tr>
<td>Waste to Landfill – Grantville (not including C&amp;I and C&amp;D waste)</td>
<td>12,937</td>
<td>13,597</td>
<td>13,861</td>
</tr>
<tr>
<td>Total waste to landfill</td>
<td>24,645</td>
<td>23,521</td>
<td>23,715</td>
</tr>
<tr>
<td>Kerbside diversion rate – (Total kerbside recyclables less contamination as a percentage of total MSW and commingled recyclables collected)</td>
<td>25.5</td>
<td>25.3</td>
<td>24.70</td>
</tr>
<tr>
<td>Total Diversion rate – (Total recyclables collected via kerbside and drop off facilities (net of contamination) as a percentage of Total waste (not including C&amp;I and C&amp;D waste nor litter and street sweeping)</td>
<td>30.85</td>
<td>30.66</td>
<td>32.43</td>
</tr>
</tbody>
</table>

Note: The total waste to landfill does not include waste from commercial waste providers and building and demolition companies, as the corresponding recycling data from these sectors has not been provided. This is also consistent with the Sustainability Victoria data. The kerbside diversion rate allows comparisons to the Sustainability Victoria diversion rates. The Victorian Annual Survey (2010-11) note that due to issues with data collection, transfer station information cannot be relied upon for any worthwhile comparisons.

Table 12: Waste and recyclables collected at kerbside

<table>
<thead>
<tr>
<th></th>
<th>2011/2012</th>
<th>2012/2013</th>
<th>2013/2014</th>
</tr>
</thead>
<tbody>
<tr>
<td>Garbage (120L)</td>
<td>Kg/hh/yr</td>
<td>Kg/ps/yr</td>
<td>Kg/hh/yr</td>
</tr>
<tr>
<td></td>
<td>649</td>
<td>364</td>
<td>650</td>
</tr>
<tr>
<td>Commingled recyclables (net of contamination) (240L)</td>
<td>222</td>
<td>125</td>
<td>220</td>
</tr>
</tbody>
</table>

| PS – service (24,281 in 2014); hh – household (13,600 in 2011) |

Waste Projections

Table 13: Projections for waste and recyclables in the municipality

<table>
<thead>
<tr>
<th></th>
<th>2014 (Current) (tonnes)</th>
<th>2020 (Projected) (tonnes)</th>
<th>2025 (Projected) (tonnes)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Residential Kerbside – waste to landfill</td>
<td>9,220</td>
<td>10,629</td>
<td>12,015</td>
</tr>
<tr>
<td>Residential Kerbside – materials recycled</td>
<td>3,024</td>
<td>3,486</td>
<td>3,940</td>
</tr>
<tr>
<td>Facilities – residential waste to landfill</td>
<td>3,214</td>
<td>3,705</td>
<td>4,188</td>
</tr>
<tr>
<td>Facilities - C&amp;I – waste to landfill</td>
<td>9,128</td>
<td>10,523</td>
<td>11,895</td>
</tr>
<tr>
<td>Facilities - C&amp;D – waste to landfill</td>
<td>726</td>
<td>1,067</td>
<td>1,206</td>
</tr>
<tr>
<td>Facilities - materials recycled</td>
<td>2,943</td>
<td>3,401</td>
<td>3,844</td>
</tr>
</tbody>
</table>
Waste Management Facilities

Table 14: Bass Coast Shire Council Waste Management Facilities

<table>
<thead>
<tr>
<th>Facility</th>
<th>Users per day – Summer/ Other times</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grantville Landfill</td>
<td>25/20</td>
</tr>
<tr>
<td>Grantville Recycling and Waste Transfer Centre</td>
<td>75/42</td>
</tr>
<tr>
<td>Wonthaggi Recycling and Waste Transfer Centre</td>
<td>140/100</td>
</tr>
<tr>
<td>Inverloch Recycling and Waste Transfer Centre</td>
<td>130/100</td>
</tr>
<tr>
<td>Cowes Recycling Bank (recently opened)</td>
<td>85/50</td>
</tr>
</tbody>
</table>