

**SUBJECT: ORGANICS PROCESSING FACILITY**

**REPORT BY: CITY WIDE SERVICES**

**CONTACT: DIRECTOR CITY WIDE SERVICES / MANAGER WASTE SERVICES**

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## **PURPOSE**

To accept a variation to contract 2019/144T for the design and construction of an Organics Processing Facility for combined Food Organics and Garden Organics (FOGO) at the Summerhill Waste Management Centre (SWMC) to enable food waste to be processed four years earlier than currently scheduled.

The variation exceeds the Chief Executive Officer's delegation with respect to variations to major projects.

## **REASON FOR CONFIDENTIALITY**

The confidential attachment has been classified confidential in accordance with the provisions of the Local Government Act 1993 as follows:

Section 10A(2)(c) information that would, if disclosed, confer a commercial advantage on a person with whom the council is conducting (or proposes to conduct) business

Section 10A(2)(d) commercial information of a confidential nature that would, if disclosed:

- (i) prejudice the commercial position of the person who supplied it
- (ii) confer a commercial advantage on a competitor of the council

Section 10B(1)(a) and (b) the discussion of the item in a closed meeting:

- (a) only as much of the discussion as is necessary to preserve the relevant confidentiality, privilege or security; and
- (b) the Council or Committee concerned is satisfied that discussion of the matter in an open meeting would, on balance, be contrary to the public interest.

## **GROUND FOR CLOSING PART OF THE MEETING**

In respect to Section 10D(2) the grounds on which part of a meeting is to be closed for the discussion of the particular item must be stated in the decision to close that part of the meeting and must be recorded in the minutes of the meeting. Accordingly an appropriate resolution to proceed is required first.

## **MOTION TO PROCEED**

The discussion of the confidential attachment take place in a closed session, with the press and public excluded, for the following reasons:

A The matter relates to

Section 10A(2)(c) information that would, if disclosed, confer a commercial advantage on a person with whom the council is conducting (or proposes to conduct) business; and

Section 10A(2)(d) commercial information of a confidential nature that would, if disclosed:

(i) prejudice the commercial position of the person who supplied it or confer a commercial advantage on a competitor of the council.

B The closed session involves only as much of the discussion as is necessary to preserve the relevant confidentiality, privilege or security.

## RECOMMENDATION

That Council:

- 1 Resolves to bring forward the scheduled expansion of an Organics Processing Facility (OPF) by four years to enable both food and garden organics to be processed from year one.
- 2 Notes that by bringing forward the expansion of the OPF from 32,600 tonnes per annum (tpa) to 50,000 tpa, the project will instead need to be undertaken as a single step construction project, with a single lead contractor.
- 3 Accepts a variation to contract 2019/144T for the design and construction of an Organics Processing Facility for combined Food Organics and Garden Organics (FOGO) at the Summerhill Waste Management Centre (SWMC) to enable food waste to be brought forward by four years from the current schedule as shown at **Attachment A**.
- 4 Notes that by bringing forward the processing of food organics by four years, an additional 24,000 tonnes of waste will be diverted from landfill and instead generate approximately \$450,000 from the sale of additional commercial grade composting material.
- 5 Notes that by bringing forward the processing of food organics to the first year of OPF operation, the total capital project cost will reduce by \$4.6M and reduce City of Newcastle's (CN) s88 waste levy liability by \$3.5M over four years.
- 6 Resolves that City of Newcastle (CN) continue to seek funding opportunities for the OPF including through requesting the return of a larger share of the s88 waste levy paid by CN to the NSW Government, and exploring low interest loans from organisations such as the Clean Energy Finance Corporation and TCorp.

## KEY ISSUES

- 7 On 20 April 2020, Council awarded contract 2019/144T for the design and construction of an OPF to Barpa Pty Ltd; a majority Indigenous owned business with extensive experience constructing commercial buildings, research facilities, retail outlets, educational facilities, hospitals, and sports/recreation facilities.
- 8 Dutch firm Waste Treatment Technologies (WTT) is the main waste technology sub-contractor to Barpa with experience in the design and construction of anaerobic digestion, waste to energy, mechanical treatment, mechanical biological treatment and composting. WTT has designed more than 120 composting facilities worldwide over the past few decades, including in Australia.
- 9 The approved project budget for the original Phase 1 (garden organics only) of the OPF is for a year one processing capacity of 32,600 tpa at a cost of \$28.5M.
- 10 It was proposed in April 2020 when Council awarded the contract to Barpa that the OPF be expanded in capacity to 50,000 tpa at the end of the fourth year of operation at additional cost to allow for the inclusion of food waste and growth of the facility (Phase 2). This would have been subject to a separate engagement process.
- 11 Community engagement since the Phase 1 contract was awarded has shown strong community support for the expedited processing of food waste. It is therefore pertinent to consider bringing forward the processing of food waste and the implementation of a combined FOGO service to year one of operation.
- 12 Since Council's decision in 2020, the NSW State Government has released its Waste and Sustainable Materials Strategy – 2041, which mandates that all local governments introduce FOGO collection by 2030. Of more immediate relevance is that major food waste generating commercial ratepayers must have systems in place to divert food waste by 2025.
- 13 Bringing forward the food processing component by four years will mean building the OPF to its full processing capacity of 50,000 tpa from day one rather than a staged construction of augmentation in year four of its operation. The total project cost of constructing a 50,000 tpa OPF in a single stage is shown at **Attachment A**.
- 14 The limitation on the Chief Executive Officer's financial delegation is as follows:  
  
*variation to Major Projects (projects exceeding \$5m) exceeding an amount of 10% above the approved project budget.*

## FINANCIAL IMPACT

- 15 Table 2 as shown in **Attachment A** provides a comparison of costs between constructing the 50,000 tpa OPF via a one and two stage process.

- 16 Completing the OPF with a 50,000 tpa capacity in a single stage removes the additional \$4.6M cost of separately staging the project. There will also be additional savings via the avoidance of the NSW Government's waste levy on food waste four years earlier than previously planned (an additional saving of approximately \$3.5M).
- 17 It is also estimated that the 24,000 tonnes of food waste diverted from landfill over the four years will generate approximately \$450,000 from the sale of additional commercial grade composting material.

### Third Party Funding

- 18 In 2018 a NSW Government grant was awarded to CN for \$1.5M (3.7% of the project cost) under the Waste Less Recycle More Program for the Summerhill Organics Recycling Facility.
- 19 A Grant review was recently conducted for all key infrastructure at SWMC, of which 48 government grants were assessed but no funding opportunities were available for this project due to eligibility restrictions specifically imposed on the Newcastle LGA, or the type of infrastructure to be constructed.
- 20 CN will continue to assess government grants and low interest loans from organisations such as the Clean Energy Finance Corporation and TCorp up until the time of construction to ensure all available funding options have been exhausted prior to commencing the project.

### Timing of Expenditure

- 21 The total project expenditure for delivery of a single stage 50,000 tpa facility is expected to occur as shown in Table 3 at **Attachment A**.
- 22 Financial benefits / outcomes of bringing forward food organics to year one of the OPF are summarised in Table 4.

Financial element	Dollar impact	Comment
Income from composting food waste	\$0.45M	Income from sale of compost produced 24,000 tonnes of food waste
Reduced construction costs	\$4.6M	Reduced due to economies of scale by delivering Phase 1 and Phase 2 simultaneously
s88 waste levy savings by avoiding landfilling of food organics	\$3.5M	Levy savings by avoiding landfilling of 24,000 tonnes of food waste

Table 4: Financial benefits from bringing forward FO collection to year 1 of OPF operation

## COMMUNITY STRATEGIC PLAN ALIGNMENT

23 This project aligns with the following Newcastle 2030 Community Strategic Plan (CSP).

### Protected and Enhanced Environment

2.1.1 Improve waste minimisation and recycling practices in homes, work places, development sites and public spaces.

24 CN incorporated the United Nations Sustainable Development Goals (SDGs) within the updated CSP adopted by Council in June 2018. The provision of organics processing delivers on the following SDGs:

- i) Goal 8: Decent work and economic growth;
- ii) Goal 9: Industry, innovation and infrastructure;
- iii) Goal 12: Responsible consumption and production; and
- iv) Goal 13: Climate action.

## ENVIRONMENTAL IMPLICATIONS

25 A summary of non-financial project benefits/outcomes from bringing food organics collection to year one of the OPF are shown in Table 5:

Environmental, social or economic element	Project benefit/outcome
Diversion from landfill	Approximately 24,000 tonnes of food waste will be diverted from landfill over a period of four years
Reduced greenhouse gas (GHG) emissions	Approximately 24,000 tonnes of GHG (CO <sub>2-e</sub> ) will be avoided
Production of compost that can be used in landscaping, agriculture or rehabilitation	Approximately 10,000 tonnes of compost will be produced from food waste with a commercial value
Community expectation	Four community surveys conducted between 2019 and 2021 show strong support for waste diversion projects. One in ten unprompted survey participants in 2019 indicated they expect an organics service similar to Lake Macquarie City Council's.

Table 5: Environmental and social benefits from bringing forward FO to year 1 of OPF operation

## PROJECT BENEFITS

26 Broader project benefits are shown in Table 6

Project Element	Project Benefit (25 years)
Food and garden organics diverted from landfill	1 million tonnes
Greenhouse gases saved by diverting food and garden organics from landfill	1 million tonnes CO2-e
Levy savings by diverting food and garden organics from landfill	\$180M
Revenue from sale of compost	\$25M

Table 6: Project benefits

## RISK ASSESSMENT AND MITIGATION

- 27 Risk is being mitigated as the Council resolved to deliver the OPF via Barpa Pty Ltd through an Early Contractor involvement procurement model. This model ensures that development of the design is more focused on a value outcome for CN in regards to the future operational costs, and allows a level of flexibility to alter the design requirements as required. For a facility of this nature, the lifetime operating costs substantially exceed upfront capital delivery costs.
- 28 Barpa Pty Ltd is a majority Indigenous owned business with extensive experience constructing commercial buildings, research facilities, retail outlets, educational facilities, hospitals and sports/recreation facilities.
- 29 Further risk is being managed through WTT (who is the main waste technology sub-contractor to Barpa). WTT has extensive experience in the design and construction of Anaerobic Digestion, waste to energy, mechanical treatment, mechanical biological treatment and composting. WTT has designed more than 120 composting facilities worldwide over the past few decades.
- 30 The contract comprises of two separable portions. Separable Portion 1 includes design and approvals and Separable Portion 2 includes construction and commissioning. It is anticipated that Separable Portion 1 will be completed by the end of 2022 followed by the commencement of Separable Portion 2 in early 2023.
- 31 Separable portion 2 (SP2) is already part of the contract awarded to Barpa. The contract has a target budget and a target program for SP2, however the target budget and target program will be revised in accordance with the recommendations and resolution contained within this report and at **Attachment A**.

## RELATED PREVIOUS DECISIONS

- 32 Confidential report to Council on 28/04/2020 on Tender – Organics Processing Facility 2019/144T where it was resolved:

*That Council:*

- 1 *Reject the lump sum tender prices submitted and endorse the engagement with Barpa Pty Ltd through an Early Contractor Involvement (ECI)*

*procurement model based on a target budget of \$20,365,222 (excl. GST) for the Organics Processing Facility for Contract No. 2019/144T.*

- 2 *Award the contract based on delivery being comprised of two separable portions. Council shall fund Separable Portion 1 (Design and Approvals). During Separable Portion 1 City of Newcastle (CN) will seek third party funding. Commencement of Separable Portion 2 (Construction) will be contingent on CN Officers reporting back to Council regarding the success of this funding.*
- 3 *Council will condition the contract so that Barpa Pty Ltd must give preference to local companies when selecting the trade sub-contractors for the project.*
- 4 *This confidential report relating to the matters specified in s10A(2)(d) of the Local Government Act 1993 be treated as confidential and remain confidential until the Chief Executive Officer determines otherwise.*

33 On 27/09/2019, Council unanimously resolved:

1. *Notes that the City of Newcastle is currently looking to invest significantly into a Summerhill Organics Recycling Facility, which will be able to recycle 50,000 tonnes of organic waste each year;*
2. *Notes that when completed, such a facility would allow for the collection of organic waste as part of City of Newcastle's Green Bin kerbside waste collection;*
3. *In the interim period, explores opportunities to promote community composting, including grants for compost bins and worm farms and a potential option to provide a centralised organic waste collection point, as part of the EPA's Waste Less Recycle More funding;*
4. *Commits to maintaining a weekly general waste collection service for Newcastle residents.*

## **CONSULTATION**

34 CN conducted four community surveys between 2019 and 2021. Relevant survey findings are:

- i) In the 2019 survey, without being prompted, 10% of respondents would like to see an "organics service similar to LMCC".
- ii) 68% of respondents are concerned with the amount of waste landfilled (2020 survey).
- iii) 83% of respondents feel personally responsible for reducing the amount of waste to landfill (2020 survey).
- iv) 70% of respondents would separate all or most of their food waste if FOGO was introduced (2021 survey).

- 35 A Councillor workshop was held on 15 March 2022 to discuss the recommendation to bring food organics forward by four years.
- 36 Early consultation required by the Development Application (DA) process prior to its lodgment has been completed. A formal DA will be lodged for the project in April 2022.

## **BACKGROUND**

### **Procurement approach for design and construction of OPF**

- 37 The Council resolved to deliver the OPF via Barpa Pty Ltd through an Early Contractor involvement procurement model. This model ensures that development of the design is more focused on a value outcome for CN in regards to the ongoing operational costs, and allows a level of flexibility to alter the design requirements as required.
- 38 The contract comprises of two separable portions. Separable Portion 1 includes design and approvals and Separable Portion 2 includes construction and commissioning. It is anticipated that Separable Portion 1 will be completed by the end of 2022 followed by the commencement of Separable Portion 2 in early 2023.
- 39 Separable Portion 1 – Scope of Services

The scope of services required for Separable portion 1 include the following deliverables:

- i) Design;
- ii) Licensing and approvals;
- iii) Cost planning;
- iv) Program development; and
- v) Feasibility planning of additional design opportunities.

- 40 Separable Portion 2 – Scope of Services

The scope of services required for Separable Portion 2 include the following deliverables:

- i) Procurement of all equipment required for construction and operation of the OPF;
- ii) Construction of the OPF;
- iii) Commissioning the OPF; and
- iv) Performance testing of the OPF for one complete production cycle, including product testing by an independent laboratory.

### **Contract 2019/144T Design and Construction of OPF**

- 41 The contractual arrangement for the organics project is a Construction Management agreement (AS4916) between CN and Barpa. Barpa will be required to engage all sub-consultants and suppliers directly for the design, supply and construction works related to the OPF.
- 42 The appointment of consultants under Separable Portion 1 is at Barpa's discretion, however the appointment of all sub-contractors under the much larger Separable Portion 2 will be subject to a tendering process involving CN officers, with the award of each trade package subject to approval by CN. Further, CN's tendering guidelines are included in the contract meaning that local operators will be weighted favorably as part of each sub-contract. This process ensures value for money is achieved and fair opportunity is provided for all suppliers/sub-contractors to tender the work and that local companies are appropriately considered.
- 43 There will be in the order of 20+ individual trade packages required to construct the OPF equating to a cumulative value of approximately 85% of the project construction costs. The people resources required can be seen in **Attachment A**.

### **Current Organics Collection and Processing**

- 44 About 66,000 domestic households throughout the Newcastle local government area are provided with a 240 litre organics bin (green lid) for the fortnightly collection of garden organics.
- 45 Kerbside organics combined with garden organics self-hauled to SWMC from domestic and commercial sources are shredded prior to being transported via a 173 km return trip to a third-party processing facility for composting. During 2020/21 a total of 23,418 tonnes of organics were transported from SWMC. A contract has been in place since 2017 to transport and process garden organics at a current annual cost of \$1.81M. This arrangement will cease once the OPF is operational.
- 46 Food Organics (FO) are currently landfilled. A waste composition audit completed in 2017 established each waste bin (red lid) at single unit developments contains on average 3 kg of food waste and a waste bin at multi-unit developments 1.4 kg of food waste per week. This means that approximately 9,000 tpa of food waste from households are currently landfilled. It's expected that the construction of the OPF will see at least 6,000 tpa of this food waste diverted from landfill. The diversion of this food waste will prevent the payment (at today's levy rates and tonnages) of \$3.5M over four years in s88 waste levy to the NSW Government.

### **Organic Processing Facility (OPF)**

- 47 The technology underpinning the OPF involves an aerobic, in-vessel composting system. All parts of the composting process are conducted in a fully enclosed environment to minimise environmental impacts, in particular odour. Negative air pressure within the OPF will prevent odour from escaping, avoiding

complaints experienced by existing organic processing facilities in neighbouring local government areas. Biofilters will also treat the air removed from the OPF.

- 48 Pasteurisation will occur in concrete tunnels that allow full control of oxygen levels, moisture and temperature and as such provide optimum conditions for microbial activity which significantly speed up the decomposition process compared to open air composting.
- 49 The compost produced will meet Australian Standard AS4454 for Composts, mulches and soil conditioners and EPA Resource Recovery requirements.
- 50 It is anticipated that the OPF will be operational by October 2024 and that the combined food and garden organics service can then be implemented in early 2025.

### **Review of processing capacity**

- 51 Significant developments have compelled the review of the two staged approach to introducing food waste processing and the available processing capacity of the OPF. They include:
  - i) Strong community support and desire for CN to more quickly introduce a FO service;
  - ii) Learnings from the experience of councils that have implemented FOGO collection;
  - iii) Release of the NSW Waste and Sustainable Material Strategy 2041 (NSW Waste Strategy) in June 2021; and
  - iv) Preparation of CN's draft Our Sustainable Waste Strategy (which is expected to be placed on public exhibition in May 2022).

### **Strong Community Support for an expediated Food Organics Service**

- 52 Four community surveys have been conducted between 2019 and 2021. Each shows strong support for waste diversion projects.
  - i) Without being prompted, 10% of respondents would like to see an "organics service similar to LMCC" (2019 survey);
  - ii) 68% of respondents are concerned with the amount of waste landfilled (2020 survey);
  - iii) 83% of respondents feel personally responsible for reducing the amount of waste to landfill (2020 survey); and
  - iv) 70% of respondents would separate all or most of their food waste if FOGO was introduced (2021 survey).

### **Learnings from Councils with FOGO services**

- 53 When food and garden organics are implemented the service frequency of organics bins changes from fortnightly to weekly to manage odours associated with food waste. Feedback provided by councils that have introduced FOGO services was that the quantity of organics collected increased significantly because of the weekly service frequency.

- 54 While an increase in tonnage is to be anticipated given the inclusion of FO in the green lid bin, the increase was much higher than the impact from FO alone. The explanation provided to CN is that additional garden organics are being collected that previously were not part of the collection system. Lake Macquarie City Council experienced an 80% increase in organics after introducing FOGO, with food accounting for less than half of this increase.

#### NSW Waste and Sustainable Material Strategy 2041

- 55 The NSW Waste Strategy released in June 2021 sets a target of halving the amount of organics waste sent to landfill by 2030 and achieving zero emissions from organics waste by 2030. To achieve these targets the NSW Waste Strategy requires the separate collection of:
- i) food and garden organics from all NSW households by 2030; and
  - ii) food waste from targeted businesses and other entities that generate the highest volumes of food waste, including large supermarkets and hospitality businesses by 2025.
- 56 The mandate for commercial generators to collect food waste offers opportunities for CN to increase and diversify revenue via the utilisation of its OPF.

#### Our Sustainable Waste Strategy

- 57 CN's draft Sustainable Waste Strategy embraces the philosophy of a circular economy and is preparing a path for achieving 80% reduction of domestic waste to landfill while transitioning from landfilling to resource recovery. Processing of food waste and implementing a FOGO service is key to meeting the objectives of this strategy. This strategy will be brought to the Council in May to be placed on public exhibition with adoption expected later in 2022.

#### **Processing capacity constraints**

- 58 Figure 1 shows the forecasted annual organics tonnages based on bringing forward food waste processing to early 2025. It confirms year four processing capacity of 50,000 tpa allows processing of all residential food waste and significant commercial food waste which large generators are mandated to collect from 2025.

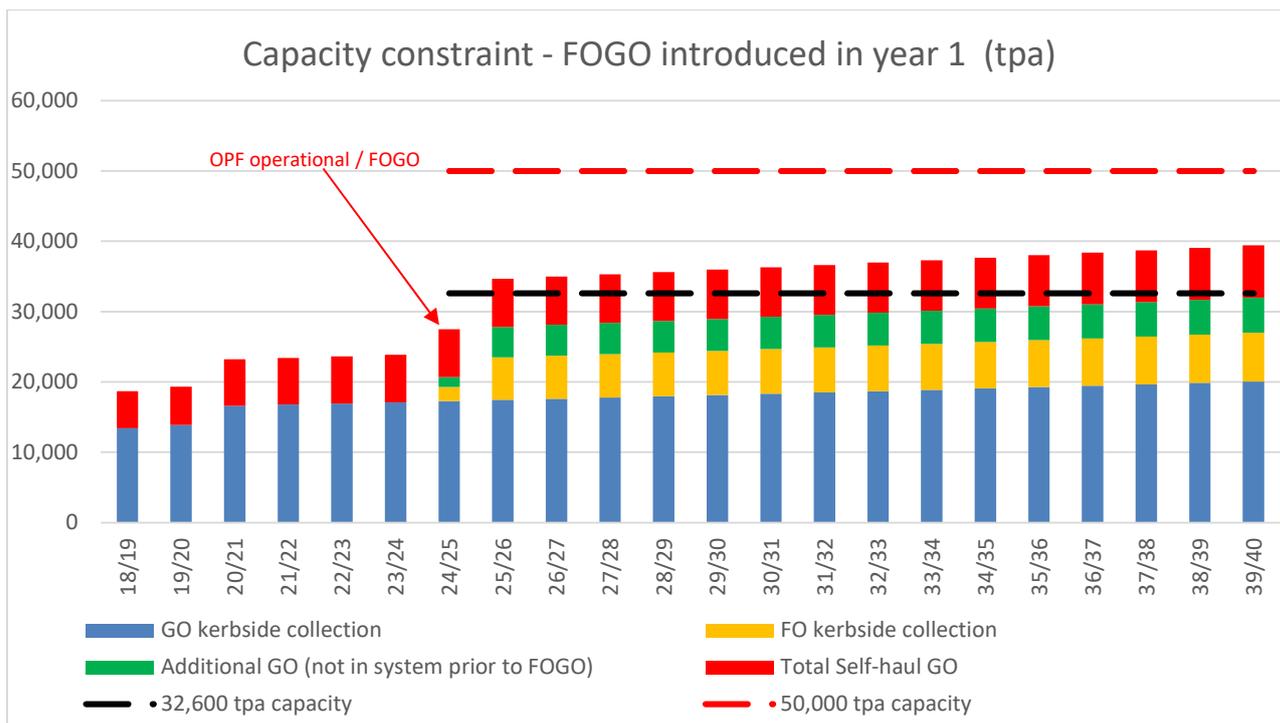


Figure 1: Annual garden and food organics tonnage forecast and processing capacity at 32,600 tpa & 50,000 tpa.

## OPTIONS

### Option 1

59 The recommendation as at Paragraph 1 – 6. This is the recommended option.

### Option 2

60 Introduction of food organics processing after year four of operation of the OPF with FOGO collection commencing in 2029. This is not the recommended option.

## ATTACHMENTS

**Attachment A:** Confidential Organics Project Information