



FOGO (Food Organics Garden Organics)

Operational Implementation Plan

February 2022

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happen**

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1 INTRODUCTION

The Shire of Esperance (the Shire) *Community Waste Strategy 2018-2023* set a target of diverting 50 per cent of Municipal Solid Waste from landfill by 2025. The Shire cannot make progress towards this goal without significant changes to current waste management practices.

At the Ordinary Council Meeting (OCM) held 25 January 2022, Council endorsed key recommendations for a proposed Food Organics Garden Organics (FOGO) introduction to inform the Operational Implementation Plan (OIP) and high-level costings for the service.

Under the proposed service, FOGO waste will be collected by trucks as part of the Shire's regular kerbside bin collection program, and processed into low-contamination, high quality saleable compost. The service is only one component of the Shire's overall waste management portfolio.

The OIP is a live document and will be continually updated to support effective FOGO implementation and to supplement documentation related to the Myrup Community Drop Off and Waste Transfer Station (Waste Transfer Station).

2 DEFINITIONS AND ACRONYMS

Table 1.1 Definitions

Item	Definition
BCIP	Business Case and Implementation Plan
CAPEX	Capital Expenditure
CES	FOGO Communications and Engagement Strategy
CO2-e	Carbon Dioxide Equivalents
Council	Elected Member Body
DCD	GHD Detailed Concept Design Report 2021
DWER	Department of Water and Environmental Regulation
DPIRD	Department of Primary Industries and Regional Development
FOGO	Food Organics Garden Organics
GHG	Greenhouse Gas Emissions
MAF	Mobile Aerated Floor
MSW	Municipal Solid Waste (waste produced by households and council operations)
N	Sample Size
OCM	Ordinary Council Meeting
OIP	Operational Implementation Plan
OPEX	Operational Expenditure
RFT	Request for Tender
WTR	GHD Waste Transport Report 2021

3 RELATED DOCUMENTS

- Community Waste Strategy 2018-2023
- Strategic Community Plan 2017-2027
- Corporate Business Plan 2021-2025
- Talis Business Case and Implementation Plan - Organics Recycling Program 2019 (BCIP)
- Strategic Waste Management Options – 2016 Revision
- State Government – Waste Avoidance and Recovery Strategy 2030
- Community Waste Engagement Plan 2018-2023
- Shire of Esperance Community Engagement Policy
- GHD Waste Transport Report 2021 (WTR)

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- Myrup Waste Management Facility – Detailed Concept Design Report 2021 (DCD)
 - FOGO Communications and Engagement Strategy 2021 (CES)
 - FOGO Implementation Options Paper - 2022

4 PROJECT TEAM

Executive Sponsor: Chief Executive Officer
Project Sponsor: Director External Services
Project Manager: Manager Council Enterprises

Project Team: Director Asset Management
Manager Asset Planning
Waste Management Coordinator
Waste Management Supervisor
Waste Education Officer
Client Services Officer
Manager Marketing & Communications
Supervisor Asset Administration
Appointed Consultants

5 PROJECT BENEFITS

There are a number of benefits associated with the FOGO project;

- Significantly reduced environmental impacts;
- Compliance with State Policy;
- Supporting the Community Waste Strategy;
- Advancing recycling culture across the Shire;
- Promoting awareness and education on sustainability;
- Conservation of landfill void space; and
- Employment opportunities.

These benefits are outlined in greater detail in the BCIP.

5.1 Environmental Benefits

5.1.1 Emissions

Council has committed to the targeted reduction of waste with an emphasis on resource recovery and waste minimisation to protect the environment. Landfills are significant contributors of Greenhouse Gas Emissions (GHG) due to the production of methane gas under putrefaction (anaerobic) conditions.

One (1) tonne (t) of organic waste disposed of to landfill, and subsequently broken down by anaerobic fermentation, releases about 1t of carbon dioxide equivalents (CO₂-e) of GHG. The WTR calculated there is an additional 312t CO₂-e produced by trucking the residual waste to Coolgardie when compared to a local landfill. Organic material would account for 125t. Combined with emissions produced from transport to landfill, the potential saving of through the introduction of a FOGO service is 3,629t CO₂-e p/annum.

Further, the composting of organic materials does not produce methane when managed correctly. If the Shire establishes a well-run composting facility maximising aerobic conditions through regular aeration of its material piles, it could significantly reduce the amount of GHG compared with landfilling this material.

Table 1.2 Emissions Comparison - FOGO

Emission Source	Emissions (t CO ₂ -e)	Source
Cart to Coolgardie	125	WTR
Landfilling of Material	3,504	DPRID
TOTAL CO₂-e for Landfill	3,629	

5.1.2 Waste Hierarchy

The Waste Hierarchy is a set of priorities for the efficient use of resources underpinning the objectives of the *Waste Avoidance and Resource Recovery Strategy 2030* adopted by the WA Waste Authority. This includes a preference for materials to be diverted from landfill through reuse, reprocessing and recycling prior to the application of energy recovery techniques or landfill.

The removal of organic materials from waste and the generation of compost can also result in environmental benefits by reintroducing nutrients into the soil thereby improving soil conditions, assisting with erosion control, preventing further loss of topsoil and providing carbon sequestration potential.

6 INTERNAL AND EXTERNAL STAKEHOLDERS

A complete list of stakeholders is outlined in the CES.

7 KEY ASSUMPTIONS

As resolved by Council at the 25 January 2022 OCM, the following assumptions are made in relation to the FOGO service:

- That the Shire will provide a standard three (3) bin service to comply with the Waste Sorted program and Better Bins Plus: Go FOGO Funding program;
- That FOGO will be collected on a weekly basis and refuse and recycling on an alternating fortnightly basis;
- That the service will cover the same area as the current kerbside recycling service;
- That the FOGO program be a mandatory program to be consistent with the waste and recycling services;
- That a kitchen caddy and compostable bags be provided without charge to each household replaceable upon request after compostable bags provided as requested.

8 COMMUNITY CONSULTATION

At the OCM held 25 January 2022, Council endorsed an extensive CES for the service. The purpose of the CES is to *achieve community-wide support and adoption of a FOGO collection service for the Shire*.

The CES complements the Shire's Community Engagement Policy (the Policy), which has been developed from the IAP2 Spectrum of Public Participation. The Policy outlines principles to guide the development, implementation, and evaluation of engagement processes.

The adoption of the CES followed considerable consultation with the Esperance community. This included a statistically significant survey (90% confidence level) undertaken between 14 October 2021 and 12 November 2021 (n = 361), indicating overwhelming support for the proposed service.

9 SERVICE DESIGN

9.1 Facility Design and Construction

The Shire will undertake a public Request for Tender (RFT) for the Detailed Design of the Waste Transfer Station, including interrelated FOGO elements in late February 2022. Subject to a value for money contract, Detailed Design is expected to be completed by January 2023.

A further RFT will occur for construction of the Waste Transfer Station. A separate RFT will occur for mobile plant and equipment, and a Request for Quotation for the associated reports will be required for the application for Works Approval and Licence to Operate.

9.2 Works Approval and Licence Application Process

The Shire will apply for a Works Approval and Licence to Operate a Category 67A prescribed premise under Part V of the *Environmental Protection Act 1986* from the Department of Water and Environmental Regulation (DWER).

This application process will commence in early 2023 following the Detailed Design. FOGO Collection and processing cannot commence until the Waste Transfer Station is constructed, operational and licenced. The Works Approval will ensure compliant construction and the Licence to Operate will control ongoing environmental protection measures and annual reporting mechanisms.

9.3 Rollout of Bins and Other Infrastructure

Procurement processes will occur in early 2023 for the supply of FOGO bins, kitchen caddies, compostable bags and the roll out of this infrastructure to the community.

A procurement process, and contractor negotiations, for the additional fortnightly kerbside collection service will be conducted in mid-2023 in preparation for the GO LIVE date. This will include negotiation with the current contractor to shift the weekly refuse service to a fortnightly service. The current kerbside contract expires on 30 June 2024.

9.4 GO LIVE

The GO LIVE date is scheduled for **1 July 2024** to coincide with the commencement of the 2024/205 financial year. This will allow sufficient time for the commissioning of the Waste Transfer Station.

9.5 Collection Process and Area of Service

Table 1.3 Waste Collection Changes

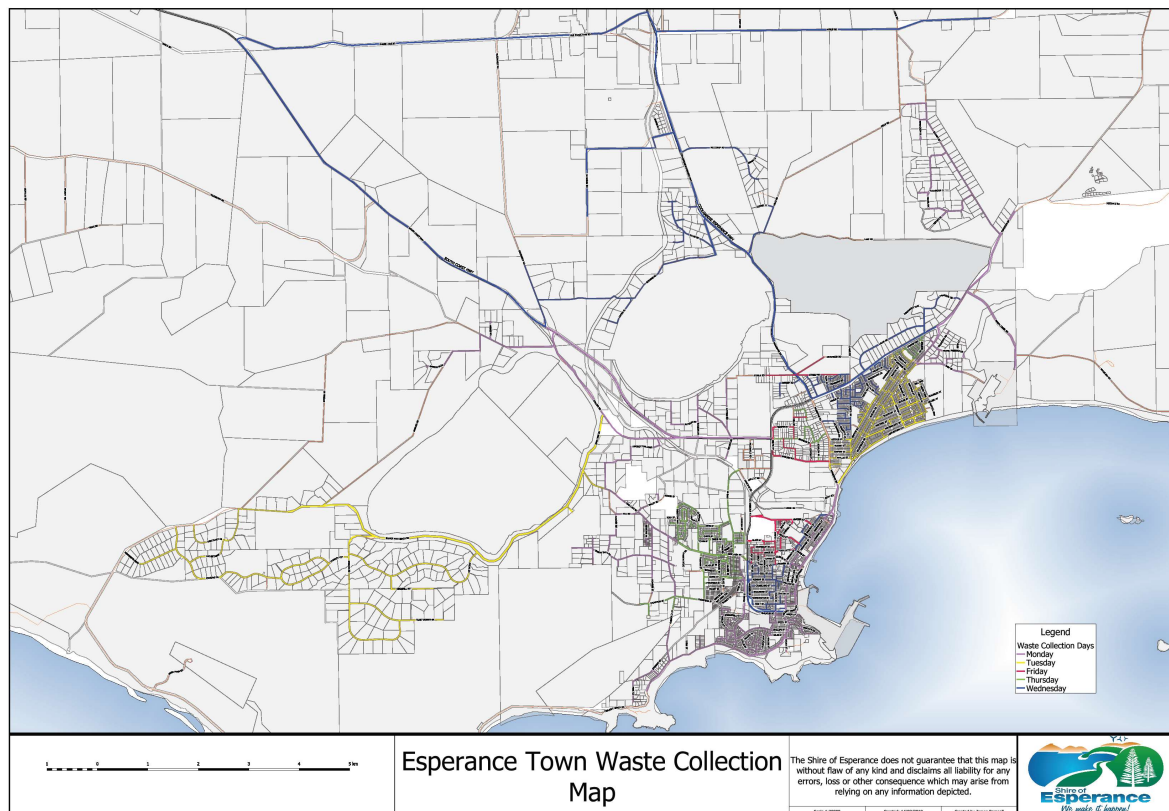
Bin	Current Schedule	Future Schedule
General/Residual Waste	Weekly	Fortnightly
Recycling	Fortnightly	Fortnightly
FOGO	Nil	Weekly

The FOGO collection area will replicate the area currently serviced by the recycling collection, being the townsites of Esperance and Gibson. A kerbside FOGO service (240L or bulk bin) will also be available to commercial customers within the Esperance townsite.

A future service (or availability of disposal options) for satellite townsites may need to be considered by Council, such as discounted disposal costs at the Waste Transfer Station for domestic volumes of FOGO materials.

The Shire provides a sea container in most satellite towns for the bulk collection of recyclables, collected approximately every two (2) to five (5) months. However, it would not be financially feasible for the Shire to introduce a FOGO bulk service to these areas given the weekly collection requirement.

Figure 1.1 Collection Area



9.6 Processing

FOGO material will be delivered to the Waste Transfer Station via kerbside collection trucks. Green waste will also be delivered by self-haul in utes/trailers and by large commercial trucks direct to site.

Once operational, the Shire will also approach other organic waste producers to ascertain the likelihood of increasing the volumes of organic waste available to process. Further investigation is required to ascertain the likelihood of integrating organic waste from the Myrup Liquid Waste Facility into this process.

FOGO material will be placed on a collection hardstand at the Waste Transfer Station. The kerbside material and green waste will be mixed together and placed over a Mobile Aerated Floor (MAF) in a windrow. Depending on licence conditions, it may be covered by a tarpaulin for the initial stage of maturation.

The MAF system will control the aeration and moisture content to ensure maturation occurs consistently. The material will be turned regularly and large contamination will be removed by hand. Once fully matured, FOGO material will be screened to produce a fine (< 10mm compost) and a slightly larger soil conditioner. Any larger organic material will be returned to the start of the process. Shredding of the material will occur either prior to windrowing or after maturation (yet to be determined).

9.7 Testing of Compost/Soil Conditioner

The compost, once matured and screened, will be set aside and sampled for testing to ensure compliance with *Australian Standard 4454-2012 Composts, Soil Conditioners and Mulches*.

10 FINANCIAL CONSIDERATIONS

10.1 Capital (one off) Costs

Table 1.4 CAPEX Costs

Infrastructure and Equipment	Cost	Source	Depreciation Period
Organic Processing Hardstand	\$211,786	DCD	50 years
Concrete Walls and Bins	\$38,500	DCD	50 years
MAF System Supply and Installation	\$120,000	DCD	15 years
Purchase Primary FOGO Shredder	\$300,000		20 years
Purchase Organics Screen	\$150,000		20 years
Purchase Mobile Conveyor	\$25,000		20 years
Wheel Loader	-	DCD	
Purchase 240L Recycling Bins – green with yellow lid	\$218,680	Quotes	
Replace lids on green bin – light green lid	\$49,203	Quotes	
Purchase 140L FOGO Bins – green with red lid	\$164,010	Quotes	
Kitchen Caddies	\$25,000	Quotes	
Leachate Collection Infrastructure	\$50,000	Estimate	20 years
Better Bins Plus: Go FOGO Funding	(\$114,807)	Website	
Communications and Engagement	\$237,500	CES	
Bin Rollout and Cartage by Contractor	\$200,000	Estimate	
TOTAL	\$1,674,872		

*N.B. CAPEX costs exclude regional loading. CAPEX requirements will be further considered during Detailed Design of the Waste Transfer Station.

Costs associated with general waste communications and engagement have been excluded from the above CAPEX figures.

Organic processing hardstand areas are based on 3,400m² of concrete. There are no costs included for a wheel loader which will be shared with the Waste Transfer Station. Waste bins and lids are based on a supply of 5,467 items. Kitchen caddies are based on a supply of 5,000 caddies as not all households will take up the opportunity for a caddy.

Communications and engagement activities comprise Stages 3 and 4 of the CES excluding bin audits and kitchen caddies which have been specifically budgeted for in CAPEX costs. Engagement activities include provision for a portion of project manager costs budgeted at \$41,000 (1/3 of wages) p/annum for a two (2) year fixed term contract.

Better Bins Plus: Go FOGO Funding income is based on income of \$21 per bin.

10.2 Annual Operating Costs

Table 1.5 OPEX Costs

Expenditure/Income	Expense	Source
Kerbside Collection	\$196,155	Estimate – Based on current kerbside fee
Communications and Engagement	\$109,000	CES
Salaries and Wages	\$45,095	Implementation Plan and Business Case
Depreciation	\$36,755	CAPEX
Utilities	\$12,548	Implementation Plan and Business Case
Plant and Equipment Maintenance	\$21,959	Implementation Plan and Business Case
Consumables	\$10,000	Estimate
Australian Standard Testing	\$5,000	Implementation Plan and Business Case
Waste Audits	\$15,000	Estimate
Bin Replacements	\$10,000	Estimate
Sale of Compost	(\$71,807)	Implementation Plan and Business Case
TOTAL	\$389,705	

*N.B. OPEX figures are subject to change in accordance with Detailed Design of the Waste Transfer Station and procurement activities.

Kerbside collection costs are based on one (1) additional fortnightly pickup added to the overall waste collection schedule. Communications and engagement activities are based on ongoing community engagement and waste education materials, and an additional 0.5 FTE to make the current waste education officer a full-time position.

OPEX costs include labour for a 0.5 full-time equivalent (FTE) site operator. The sale of compost is based on a projection of \$30 p/tonne for 2,393t of material p/annum.

10.3 Comparative Costs

The WTR states the expected cost to build and operate the Waste Transfer Station as well as transporting residual waste to Coolgardie is \$72.70 p/tonne. The initial gate fee being charged by the Shire of Coolgardie is \$35 per tonne. Thus, the total cost of waste being transported to Coolgardie is \$107.70 p/tonne.

The BCIP identified there is a potential diversion of 3,504t of organic material p/annum from landfill. The cost to dispose of this waste p/annum in Coolgardie is calculated at \$377,380.80 p/annum compared to a local processing cost of \$389,705 p/annum.

Table 1.6 Comparative Costs

Disposal Method	Volume	Rate	Total Cost
Cart to Coolgardie	3,504t	\$107.70 p/tonne	\$377,380
FOGO Processing	3,504t	\$111.21 p/tonne	\$389,705
Variance	N/A	\$3.51	-\$12,325

As indicated in Table 1.6, the introduction of FOGO will represent a marginal operating deficit of \$12,325 p/annum. No scenario modelling has been completed. However, it is considered efficiencies could be achieved in annual waste operating costs to obtain a break-even position.

Comparatively, the cost of developing a new landfill at Kirwan Road, was \$103 p/tonne however the concept was relinquished by Council following environmental concerns in March 2020. The alternative option of constructing a new landfill and transporting waste to the Grass Patch area was costed at \$118.70 p/tonne (WTR).

The current costs of processing at the Wylie Bay Landfill, as presented to Council via briefing in October 2019, is estimated at circa \$60 p/tonne, representing a variance of \$47.70 p/tonne on the transport to Coolgardie option, or \$51.20 on the option of FOGO.

All estimates exclude contractor collection costs as these do not comprise the core cost of operating a landfill and are unchanged for all of the above options.

10.4 Waste Service Charges

The Shire currently charges an annual Waste Levy on all rate assessments as future provisioning for the expenditure associated with the construction of either a new lined landfill or a transfer station.

Assessments within the collection area for waste and recycling are charged a fee dependant on the size of the bin to be provided. In order to be compliant with requirements under the WasteSorted Grants, the intent is to issue standard bin sizes and colours to all residents within the area covered by the current recycling service.

This will enable the Shire to charge one fee for all three bins. Currently, the Shire charges \$255 for a 240L waste bin on a weekly pickup, and \$170 for a 240L recycling bin on a fortnightly pickup, totalling \$425 p/annum.

The proposal is to maintain a minimum fee of \$425 for a standard three bin service and utilise a portion of the Waste Levy (if needed) so ratepayers are not paying an additional amount for the new service.

It is important to note the decision to undertake FOGO is a marginal financial increase when compared to cartage of waste to Coolgardie (which has already been committed to) and brings a substantial environmental benefit in reducing carbon emissions.

10.5 Future Waste Levy Extension

A further consideration for Council is the potential extension of the State waste levy to regional Western Australia. If the geographical area is extended under mooted reforms, FOGO will be a key cost saving initiative for the Shire, as the waste levy will act as an economic lever which creates additional costs for any landfill disposal practices.

Currently, any waste disposed of in a Perth Metropolitan Landfill (or generated in the Perth metropolitan area and disposed outside of the area) attracts a levy of \$70 p/tonne, payable to DWER quarterly.

10.6 Forecasted Expenditure

The below table is a high-level projection of anticipated income/expenditure for FOGO.

Table 1.7 Projected Expenditure

Item	Cost	20221/22				2022/23				2023/24				2024/25			
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
CAPEX																	
Expenditure																	
Organic Processing Hardstand	\$211,786																
Concrete Walls and Bins	\$38,500																
Supply & Installation – MAF System	\$120,000																
Purchase Primary FOGO Shredder	\$300,000																
Purchase Organics Screen	\$150,000																
Purchase Mobile Conveyor	\$25,000																
Purchase Recycling Bins and Lids	\$431,893																
Kitchen Caddies	\$25,000																
Leachate Collection Infrastructure	\$50,000																
Communications and Engagement	\$237,500																
Bin Rollout & Cartage by Contractor	\$200,000																
Income																	
Better Bins Plus: Go FOGO Funding	-\$114,807																
Compost to Market	-\$71,807																
OPEX																	
Kerbside Collection	\$196,155																
Communications and Engagement	\$109,000																
Salaries and Wages	\$45,095																
Depreciation	\$36,755																
Utilities	\$12,548																
Plant and Equipment Maintenance	\$21,959																
Consumables	\$10,000																
Australian Standard Testing	\$5,000																
Waste Audits	\$15,000																
Bin Replacements	\$10,000																

10.7 Funding Sources

10.7.1 Sanitation Reserve

The Shire's Sanitation Reserve and/or loan funding will be used to part fund the construction of the Waste Transfer Station, including the FOGO processing area and mobile plant and equipment

required for the processing of organic waste. The balance of the Sanitation Reserve as at 30 June 2022 will be approximately \$9.2 M.

10.7.2 Grant Funding

An application has been submitted to Round Six of the Australian Government's Building Better Regions Fund for \$9.33 m to assist in funding the Waste Transfer Station. This includes some FOGO-related elements.

An Expression of Interest has been submitted to the State Government's Food Waste to Healthy Soils Funding Scheme (\$950,000) specifically to assist with the construction of FOGO processing elements.

An application will be submitted to the Better Bins Plus: Go FOGO Funding scheme in late March 2022. Officers are confident of obtaining \$114,807 in funding through this program given the Shire will roll-out a standard three (3) service.

10.7.3 Sale of Material

Once testing results are received, the Shire will make the compost available for sale using various methods including internal use on gardens, bulk sales to a commercial farming property, bulk trailer sale to the community and bagged compost to return to ratepayers (either for a fee or on a voucher system).

Compost income of \$71,807 p/annum has been included in the operational costs. Further work may be required to develop a marketing strategy to outline the approach the Shire will take to reach both internal and external markets. The strategy may be developed in two stages firstly focusing on internal markets and then focusing on external markets once the product meets external market expectations.

10.7.4 Annual Charges

The OIP financial appraisal remains high level as it is not possible to present detailed estimates on future waste charges. This is due to the fact many items, such as contracted collection costs, processing plant and equipment, and bin supply and delivery costs are subject to Tender.

These items are also integrated with broader tendering, and detailed design processes for the Waste Transfer Station. Council will need to consider the composition of future waste charges as part of the overall waste service profile.

Officers will present further financial modelling on the implications of waste management arrangements as further information is made available, at which time Council may need to consider any changes to either the waste levy, bin charges, gate fees or rates.

11 PROJECT TIMING

11.1 Gantt Chart

