

ANNEXURE H 2: Integrated Waste Management Plan

WELMOED VILLAGE URBAN NODE DEVELOPMENT AT LYNEDOCH: (Portion 28 of Farm Welmoed Village No. 468, Stellenbosch)

INTEGRATED WASTE MANAGEMENT PLAN



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1. INTRODUCTION

The Welmoed Village development Integrated Waste Management Plan (IWMP) addresses management of all household solid and organic waste / refuse, produced by the owners, tenants, and residents of the development, maintenance staff, and visitors.

The IWMP applies only to the operational phase (post development) of the Village, consisting of 884 residential units, a lifestyle centre, businesses, community facilities, and educational facilities, or any part thereof and becomes applicable upon transfer of the first dwelling unit or property to a new owner. The IWMP will require amendment and updating as the development progresses over time and micro enterprises and other uses are established inside of the Village. For the time being, the IWMP is based on the Urban Studio Welmoed Urban Design Framework, April 2024 (Annexure A).

2. PURPOSE

The IWMP aims to provide guidelines on waste reduction, segregation, collection, and disposal practices in accordance with local and national best practices, to avoid deterioration of the natural environment and negative impacts on the health and safety of the local communities. It is prepared in keeping with the Stellenbosch Municipality Integrated Waste Management Bylaw, 2021 (SMIWMB).

The IWMP will form part of the rules for the management of the Village and will be maintained by the Welmoed Village Property Owners' Association (WVPOA).

The IWMP can also be used for making an application to the Municipality for reduced tariffs relating to waste management.

3. STATUTORY BACKGROUND

The SMIWMB forms the basis of IWMP for the Village. However, all waste management actions must also be compliant with the National Environmental Management: Waste Act, 2008, Act 59 of 2008, and the related Regulations.

The Department of Forestry, Fisheries, and the Environment (DFFE) promulgated Regulations to control the management of waste, including, but not limited to the following:

3.1. Prohibition of certain wastes

The National Norms and Standards for Disposal of Waste to Landfill (Government Notice R636 of 2013): This Regulation aims to restrict and prohibit certain waste types from going to landfill, and these include abattoir waste, green waste, and liquid waste. In terms thereof 50% of garden waste must be diverted from landfill. It further determines that household hazardous e-waste, including batteries, will be restricted from disposal to landfill.

3.2. Assessment of waste to landfill

The Norms and Standards for the Assessment of Waste for Landfill (GN 635 of 2013): Provides a standard assessment methodology for waste prior to disposal at landfill and advises on the total and leachable concentration limits. Prescribe the requirements for the assessment of waste prior to disposal at landfill.

3.3. Waste classification

Waste Classification and Management Regulations (GN 634 of 2013): Aims to regulate the classification and management of waste in a manner that supports and implements the provision of the Waste Act. Provides a mechanism and procedure for the listing of waste management activities that do not require a Waste Management License. Prescribes requirements for disposal to landfill, timeframes for management of certain wastes and general duties of waste generators, transporters, and managers.

3.4. Stellenbosch Bylaw

The SMIWMB includes the following definitions and provisions of importance to the Welmoed Village IWMP:

The property owners, residents, and tenants in Welmoed Village are defined as waste generators¹ in the SMIWMB. The Bylaw places the following obligations on waste generators:

- Manage any waste in such a manner that the waste does not cause harm to human health, the health of other living organisms, or damage to the environment.
- Avoid the generation of waste, or where it cannot be avoided, minimise the toxicity and amounts of waste generated; re-use, recycle or recover waste where possible; separate waste; maintain suitable cleanliness and hygiene standards on their premises.
- Conclude a contract with the Municipality or an accredited service provider, to collect waste at least once a week.

The WVPOA may establish a waste minimisation club² to facilitate compliance with the statutory obligations of the Village (as a waste generator) and to receive financial relief from the Municipality for management of the waste. Waste management clubs may apply to the Director: Infrastructure Services of the Municipality for a special dispensation as an enhanced service associated with waste minimisation in terms of the Municipality's Tariff By-Law and Tariff Policy,

¹ Stellenbosch Municipality Integrated Waste Management Bylaw, 2021: "waste generator" — (a) means — (i) a property owner; (ii) a household; (iii) an organisation; or (iv) a business entity, the inhabitants, occupants or employees of which generate waste; and (b) includes sorters of waste such as — (i) recycling or waste minimisation groups; (ii) scrap dealers; and (iii) buy-back centres;

² "waste minimisation club" means a group of persons, typically residing in a — (a) high density residential or office building; or (b) multi-property cluster residential or business development, that have an agreement, approved by the Director in terms of this By-law, to minimise waste according to an integrated waste management plan, in exchange for a lower tariff;

amongst others by submitting an integrated waste management plan to the Municipality.

The IWMP must be formally submitted to the waste management officer of the Municipality for approval prior to the generation of the waste to be dealt with in terms of the plan. It must amongst others include the following:

- an assessment of the quantity and type of waste that will be generated;
- a description of the services required to store, collect, transport, and dispose of such waste;
- a description of how separation of recyclable and non-recyclable material at the point of source will be done;
- the waste minimisation and pollution prevention plans of such waste generator;
- targets for waste minimisation through waste reduction, reuse, recycling, and recovery;
- the type or characteristics of waste of an environmentally sensitive nature to be produced;
- targets for waste production through waste minimisation, re-use, recycling;
- recovery measures or programmes that can minimise the consumption of natural resources and the method of disposal of waste;
- the timeframes of the implementation of the plan; and
- methods for monitoring and reporting on the implementation of the plan.

4. WASTE MANAGEMENT OPTIONS

The Stellenbosch Municipality has run out of landfill airspace and must transfer large volumes of waste to a regional waste management facility. It has also invested in dry and wet waste diversion initiatives, which need to be complemented by the Welmoed Village IWMP.

The waste hierarchy presents waste management stages commencing with the most preferable option to the least preferable option. Waste prevention is the most preferred option, followed by reuse, recycling, and safe disposal, as described in more detail below:

4.1. Prevention

Waste prevention is a lifestyle choice that focuses on reducing the amount of waste generated at source, whether by individuals, households, organizations, businesses, industry, or government. It involves reconsideration of every aspect of daily life: production, processing, manufacturing, packaging, storage, transport, marketing, and distribution processes. Waste is created in every step from the producer to the consumer and the recycler or re-user. Waste prevention requires of everyone to reconsider consumer choices and accordingly minimise the potential for generating waste and its negative impact on the environment.

Residents, tenant, owners, and maintenance staff in Welmoed Village should be aware of their consumer choices and the use of re-usable materials to ensure there

is minimal waste generation. The focus must be to prevent the generation of waste and not using non-recyclable materials.

- Reduce consumer spending by buying only in need (not want) and use what has been bought effectively.
- Mend; do not send, i.e., fix worn or broken things and keep using them rather than replacing them.
- Use second hand products where possible.
- Use paperless systems and options.
- Avoid food waste and dispose of organic waste separately.
- Buy locally produced food items with least or no packaging.
- Use refillable containers.

4.2. Re-Use

Residents, tenant, owners, and maintenance staff must be made aware of the need to reduce the volume of waste generated by them. This can be achieved by the use of re-usable materials as containers, carriers, and consumer goods such as clothing, otherwise disposed of as waste.

- Re-use by repurposing, e.g., conversion of material for cleaning cloths or filling.
- Shop with re-usable carry bags.
- Use rechargeable batteries instead of disposable.
- Use empty containers for different purposes.

4.3. Recycling

Garden refuse and non-meat food waste (organic material) must be separately disposed of, to be turned into compost for re-use in the gardens and landscaping or on adjacent farms.

All waste must be separated into recyclable streams, e.g., organic waste, glass, paper, metals, and plastics, as well as clothing. To this end sets of four colour coded bins will be made available over and above the black household refuse bins collected by an accredited service provider or the Municipality.



4.4. Disposal

Disposal is deemed the last resort and must occur in a manner as determined by the SMIWMB. The Municipality's policy in keeping with the SMIWMB is to remove only wet waste and to provide facilities for the management of recyclable material. Disposal results in waste going to landfill or to incineration for energy recovery and is the least preferred environmental option. Details relating to the disposal system are elaborated herein below. The sources of waste and the anticipated content of the solid waste generated are:

- Residential: Food wastes, paper, cardboard, plastics, textiles, leather, wood, glass, metals, ashes, domestic hazardous wastes (e.g., consumer electronics, batteries, oil, tyres, paints, solvents, pesticides, light bulbs) and limited medical wastes.
- Services and common areas: Street cleaning debris and litter, landscaping trimmings and cuttings, play area litter and sweepings, drain silt, and domestic hazardous waste.

Separation at source is essential and must focus on the separation of recyclables in such manner that they do not contaminate each other and that waste to landfill is minimised. Of the above content, the accredited service provider or the Municipality will remove only food or wet waste that cannot be used for composting and in managing this, will allow for a special tariff rate as per the approved Stellenbosch Municipality Budget and Tariffs and a reduction in the tariffs payable if the IWMP is approved and a waste minimisation club is accordingly established and approved by the Municipality.

5. PROPOSED WASTE MANAGEMENT INFRASTRUCTURE

The accredited service provider³ will remove the waste / refuse in accordance with the Stellenbosch Municipality Integrated Waste Management Bylaw, 2021 and shall do so according to the following principles:

- Domestic waste is collected once weekly on scheduled collection days in 240 litre wheelie bins.
- The refuse will be removed / collected from the kerbside from a central refuse room to be constructed at the entrance to each block / erf in the development according to the specifications of the accredited service provider and in keeping with the SMIWMB.
- The ratio for determination of the number of 240l wheelie bins to be provided on site will be one bin for every dwelling unit, and at least two bins for each of the non-residential uses.
- The size of a refuse room is determined according to the number of refuse bins to be accommodated therein, with sufficient space for recycling bins of 240l as well.
- Refuse rooms must be provided with lockable external gate(s) and with keys for the service provider to unlock the gate on collection days.
- Refuse room must contain the following for cleaning purposes:

³ Stellenbosch Municipality Integrated Waste Management Bylaw, 2021: *“accredited service provider” means a person or entity accredited by the Municipality in accordance with its guidelines published from time to time and who provides a waste management service in the municipal area and may include, but is not limited to waste managers, large and small business, entrepreneurs, community cooperatives, and venture learnerships.*

- Tap with running water (non-potable);
- A gully which is connected to an approved sewer connection; and
- A concrete floor.

The WVPOA will be responsible for the collection and management of the bins throughout the Village. At least one set of four colour-coded wheelie bins must be provided per erf for the Village for recyclables. The recyclable materials will be put out in the colour coded wheelie bins for collection once weekly as scheduled for collection with an approved service provider. Should a recycling system or service provider not be available, then the material will be disposed of to the Stellenbosch transfer station for further removal by the Municipality.

- Blue Bin:
 - Paper and paper materials.
 - Cardboard that is not plastic coated.
- Green Bin
 - Glass bottles, glass ware.
 - Wood and wooden goods.
- Red Bin
 - Metals, tins, cans.
 - Aluminium holders and cans.
- Yellow Bin
 - Materials with thin plastic coating in or over.
 - Plastic bags, polystyrene, tape, cling wrap, glazed wrappers, bubble wrap.
 - Plastic bottles, containers, straws, mugs, and cups.
 - Domestic hazardous waste, including nappies and household medical waste.

Garden clippings, sweepings, silt, and organic waste will be placed in skips that are placed in appropriate places in the Village as gardening and outdoor maintenance is undertaken. These skips will be removed by a certified contractor for use in the manufacturing of compost or similar.

6. SOLID WASTE MANAGEMENT

All residents will be made aware of the need to separate waste and correctly dispose of the waste and unwanted goods for recycling. Clothing and textiles will be separated for re-use rather than recycling or disposal, for which a dedicated container will be made available at the common area and the WVPOA office.

Maintenance staff responsible for the collection and distribution of the wheelie bins from the decentralised refuse rooms will assist with the segregation of the waste and the correct use of the colour coded bins.

Maintenance staff and the WVPOA will be responsible for the maintenance of the refuse rooms in a hygienic manner and ensure that regular waste clearance is undertaken. They will also be responsible for the cleanliness of the common areas and streets, collecting cuttings, litter, and sweepings and disposing thereof in the appropriate bins.

The WVPOA will retain records of all removals which are not undertaken by the Municipality. Each contractor appointed to remove any recyclable waste will have to

register each load and submit a receipt to the manager of the WVPOA for it from an authorised disposal site, e.g., composting plant, materials recovery facility, or recycling depot. The MVPOA will be responsible for maintaining and reconciling the records of removal and disposal.

7. PERFORMANCE MONITORING

Performance monitoring is essential to ensure the proper management and operations of the solid waste in the Village.

7.1. Inspections

Site and waste infrastructure inspections must be performed by the WVPOA management and are the responsibility of the WVPOA management. The Village and refuse room and infrastructure should be inspected regularly and not less than weekly. A formally documented inspection must occur, and the records maintained in the WVPOA offices.

Inspections will ensure that all commitments in this IWMP are being enforced and that the waste management does not cause any negative effect to the local environment, the Village, or the residents.

7.2. Data Collection

The waste management activities need to be monitored by the WVPOA to ensure that resources can be properly allocated to the function. The POA must maintain a register of waste collection and disposal receipts. It will allow for the addition or reduction in the number of bins for waste and of material sent for reuse and recycling.

Collected and recorded data can be used by the Municipality and other stakeholders in the case of a waste audit.

8. PERFORMANCE INDICATORS

Measurement is an important tool in improving performance, and performance indicators will help the WVPOA define and measure progress towards the goal of reducing waste and maintaining a hygienic environment.

8.1. Regular site inspection records

Maintenance of an efficient record system is a key process in the implementation of the IWMP. The findings of each inspection should be recorded in a database. Findings relating to the inspections need to be categorised as being "outstanding", "compliant", "minor departure", or "non-compliant" with the IWMP.

The number of findings of departures and non-compliance should decrease, if they occur, until the goal of zero negative findings is achieved.

Negative findings require consequence management, and corrective or preventive actions like assigning responsibilities to people, setting of deadlines, appropriate resource allocation, and disciplinary action.

8.2. Percentage Recyclables Generated

The quantities, volumes, and types of recyclables produced should be tracked to identify waste reduction opportunities. Disposed waste reduction targets should be determined by the WVPOA in consultation with the Municipality, and the volume of disposable waste production reduced annually to achieve a set goal.

9. REVIEW PROCESS

The IWMP must be reviewed and updated bi-annually in consultation with the Municipality.