



Bulawayo is the second-largest city in Zimbabwe. It is the capital of the Ndebele province of Matabeleland (Bulawayo Metropolitan Province). The majority of Bulawayo's population belongs to the Ndebele ethnic and language group (otherwise known as Northern Ndebele). For a long time, Bulawayo was regarded as the industrial centre of Zimbabwe, and it served as the hub to the country's rail network with the National Railways of Zimbabwe headquartered there because of its strategic position near Botswana, Zambia, and South Africa.\*

The Health Services Department (Cleansing Section) of the Bulawayo City Council is in charge of street sweeping, rubbish collection, disposal, and waste education. Waste collection and road sweeping services are provided directly by the City of Bulawayo in the Central Business District and in eight out of 29 wards of the city. In 21 wards of the city, door-to-door collection is done by community members through a Community Refuse Removal Program. There is no Materials Recovery Facility (MRF), composting facility or transfer station in the city, but there is one sanitary landfill. However, the cells at the disposal site are almost full, so there is a need to develop the remaining half of the landfill and to construct waste diversion facilities such as MRF and waste-to-energy (WtE) facilities.

Source: \* Wikipedia, Bulawayo, accessed 21 January 2019, <<https://en.wikipedia.org/wiki/Bulawayo>>

## Information

Population*	1,200,337 (city council estimates, 2016)
Population growth (annual %)*	2.1
Area (km <sup>2</sup> )*	1,707
Climate*	Subtropical climate
Main industries	N/A
Currency*	Uses USD and other world currencies

Source: \* Wikipedia, Bulawayo, accessed 21 January 2019, <<https://en.wikipedia.org/wiki/Bulawayo>>

## Current SWM Situation

Item	Outline
<b>Institutional System</b>	
Legal system	<ul style="list-style-type: none"> <li>● Environmental Management Act Chapter 20:27, 2002.</li> <li>● Public Health Act Chapter 15:09, 2017.</li> <li>● Bulawayo (Refuse Removal) By-Laws, 1977.</li> <li>● Bulawayo (Public Health) By-Laws, 1969.</li> <li>● Environmental Management (Effluent and Solid Waste Disposal) Regulations, 2007.</li> <li>● Environmental Management (Hazardous Waste Management) Regulations, 2007.</li> <li>● Environmental Management (Hazardous Substances, Pesticides and Other Toxic Substances) Regulations, 2007.</li> </ul>
Policy/Plan	<ul style="list-style-type: none"> <li>● No specific SWM Plan.</li> </ul>
Implementation system	<ul style="list-style-type: none"> <li>● Health Services Department (Cleansing Section) of the Bulawayo City Council (BCC): in charge of collection, street sweeping, disposal and waste education. The Council employs 184 employees involved in refuse removal, street sweeping and disposal. A further 282 community members are employed to provide street sweeping services in residential areas.</li> <li>● Ministry of Environment and Tourism: in charge of environmental legislation, national policies and supervision.</li> <li>● Ministry of Health &amp; Child Care: responsible for health care waste in areas outside city council jurisdiction.</li> <li>● Private sector: participates in collection of non-MSW and recycling activities.</li> </ul>
<b>Technical System</b>	
Waste generation amount & characteristics	<ul style="list-style-type: none"> <li>● Waste generation amount: 327 tons/day (Source: BCC, Year: 2018).</li> <li>● Waste generation rate: 0.30 kg/person/day (Source: BCC, Year: 2018).</li> <li>● Waste collection amount: 242 tons/day (Source: BCC, Year: 2018).</li> <li>● Waste composition:               <ul style="list-style-type: none"> <li>» Food: 38%, plastics: 15%, papers: 9%, textile: 5%, metal: 5%, glass: 5%, ash/soil: 10%, other (ceramic, wood, rubber, sand): 13% (Source: BCC, Year: 2018)</li> </ul> </li> </ul>
Storage and discharge/ Collection and transportation/ Road sweeping	<ul style="list-style-type: none"> <li>● Waste collection and road sweeping services: provided directly by the City of Bulawayo in the Central Business District and in eight out of 29 wards of the city which are mostly low-density areas. In 21 wards of the city, door-to-door collection is done by community members through a Community Refuse Removal Program. Forty-five trucks are involved in the programme. The community members transfer refuse to a Council refuse compactor stationed within the designated temporary transfer point. Street sweeping services are provided by the Council in the CBD and provided through community sweeping groups in 28 of the 29 city wards.</li> <li>● Waste from household: collected once a week through the door-to-door collection system.</li> <li>● Waste from commercial area: collected six times a week.</li> <li>● Waste collection coverage: 98% based on area covered (Data source: BCC, Year: 2018).</li> <li>● Number of collection vehicles: 18 compactor trucks (12 compactor trucks of 20 m<sup>3</sup>, four compactor trucks of 15 m<sup>3</sup> and two compactor trucks of 12 m<sup>3</sup>).</li> </ul>



Council Vehicle



Community Trucks

Item	Outline
Intermediate treatment/ Recycling	<ul style="list-style-type: none"> <li>● There is no Materials Recovery Facility (MRF) in the city.</li> <li>● There is no composting facility in the city.</li> <li>● There is no transfer station in the city.</li> </ul>
Final disposal	<ul style="list-style-type: none"> <li>● There is one sanitary landfill in the city.</li> <li>● Richmond Sanitary Landfill: <ul style="list-style-type: none"> <li>» Owner: Bulawayo City Council.</li> <li>» Location: S 20°05'00" E 28°32'00".</li> <li>» Area: 30 hectares.</li> <li>» Operation hours: eight hours per day.</li> <li>» Waste disposal amount: 275 tons/day.</li> <li>» Data source: obtained by daily volume readings to weight conversion.</li> <li>» Installed facility: bottom clay liner, weighbridge in process of installation.</li> <li>» Operation plan: SOPs exist.</li> <li>» Operation in practice: daily compaction and covering with soil three to four times a week.</li> </ul> </li> </ul>
<b>Financial system</b>	<ul style="list-style-type: none"> <li>● Total revenue for waste service: USD 720,000/month.</li> <li>● Total expenditure for waste service: USD 410,000/month (USD 260,000/month is spent for collection and transportation, USD 80,000/month for sweeping, and USD 70,000/month for final disposal).</li> <li>● Waste collection fee: the city charges a SWM fee which results in a monthly bill that residents pay to the Council. Fees range from 4.74 USD per bin in high-density areas to 6.60 USD in low-density areas and 14.48 USD in CBD and commercial properties.</li> <li>● Tipping fee: the city charges USD 9.20/ton at the final disposal site.</li> <li>● Subsidies related to SWM from central government to local governments: none.</li> </ul>
<b>Environmental and social considerations</b>	<ul style="list-style-type: none"> <li>● Policy or law for supporting the informal sector: there is a national policy for supporting the informal sector to organise into Micro and Small Enterprises (MSEs) through the provision of job opportunities and training. However, this policy does not seem to help the informal waste sector.</li> <li>● Number of waste pickers in final disposal sites: 242 waste pickers in the Richmond Sanitary Landfill.</li> <li>● Public awareness raising activities: the community is informed on how to discharge waste such as collection day and time, separation of waste through public consultation meetings, school curriculum, flyers, and brochures. There are also campaigns for cleaning the city with community participation.</li> </ul>
<b>Donor support</b>	<ul style="list-style-type: none"> <li>● None.</li> </ul>
<b>Areas for improvement (in order of priority)</b>	<ul style="list-style-type: none"> <li>● Social issues: considering the city offers a stable refuse collection schedule, more waste education and behaviour change activities are needed to curb littering and illegal dumping.</li> <li>● Technical issues: the current cells at the disposal site are almost full, so there is a need to develop the remaining half of the landfill and to construct waste diversion facilities such as MRF and WtE.</li> <li>● The Waste Management Information System is mostly manual and has limited ability to improve decision making.</li> <li>● Finances: there is shortage of capital finances to develop the SWM system.</li> </ul>

### Waste Amount at Each Stage of Waste Flow\*

Waste flow	Amount** (ton/day)	Remarks
① Waste generation	327	Waste generated at houses, offices, shops, restaurants, etc.
② Discharge to collection	242	Waste discharged for collection services.
③ Self disposal	58	Disposal at generation sources, such as burning and burying.
④ Recycling at source	27	Reuse of materials, composting, sold to recyclers.
⑤ Collection and transport	242	Waste amount collected and transported.
⑥ Clandestine dumping	N/A	Waste illegally disposed of in unknown location.
⑦ Treatment	0	Material recycling, composting, incineration, etc.
⑧ Recycling/Reduction	0	Recycled and/or reduced waste amount by material recycling, composting, incineration, etc.
⑨ Residue	242	Residue from treatment facilities.
⑩ Final disposal site	242	Waste amount brought into disposal sites.
⑪ Recycling	15	Recycled at disposal sites.
⑫ Final disposal	N/A	Waste amount finally disposed of at disposal sites.

\* Based on the waste flow chart on page.

\*\* Figures include estimated value.

### Location of Waste Management Facility and Related Photographs:



Richmond Sanitary Landfill  
(coordinates: S 20°05'00" E 28°32'00")