

# INTRODUCTION

The Bakoteh dumpsite is a 30 year old facility that needs design intervention in order to continue serving the needs of the community. With +578 tons of waste processed daily, it's time for new solutions to the many complex waste challenges KMC faces.

# OBJECTIVES

- Center community and wellbeing in site redesign
- Determine changes necessary to resolve site issues
- Assess financial viability of the project

# 2020 SWANA DESIGN COMPETITION: BAKOTEH DUMP SITE REIMAGINATION

Aidan Breen, Cecilia Giordano, Chandler Jacobson, Joshua Kenyon, Robbie Mingay



## RECCOMENDATIONS

### WASTE SORTING AND COMMUNITY EDUCATION

**1** We know that education and culture shifts takes generations, but also that this investment will leverage necessary change at the Bakoteh Site

### PARTIAL CLOSURE AND CAP OF THE BAKOTEH SITE

**2** The existing site can generate value with partial closure, formalize or involve waste pickers and reorient community relationship to the space.

### UTILIZE BAKOTEH SITE AS A TRANSFER STATION

**3** The site can be utilized as a sorting location for appropriate processing and transfer to the final sanitary landfill.

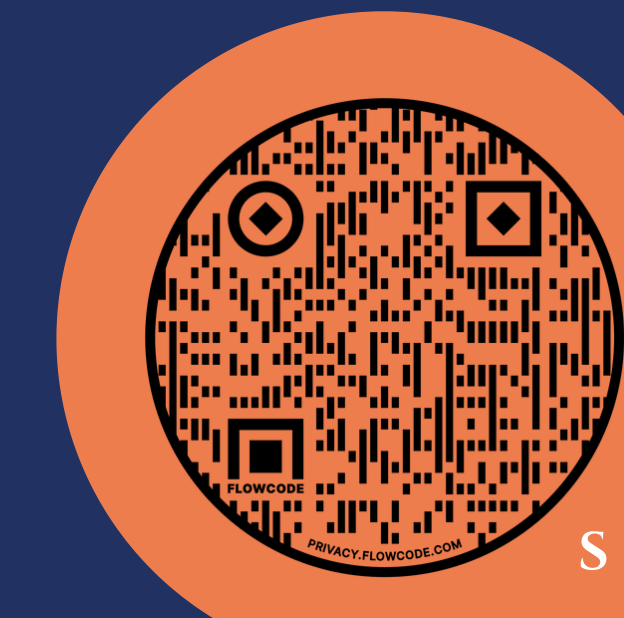
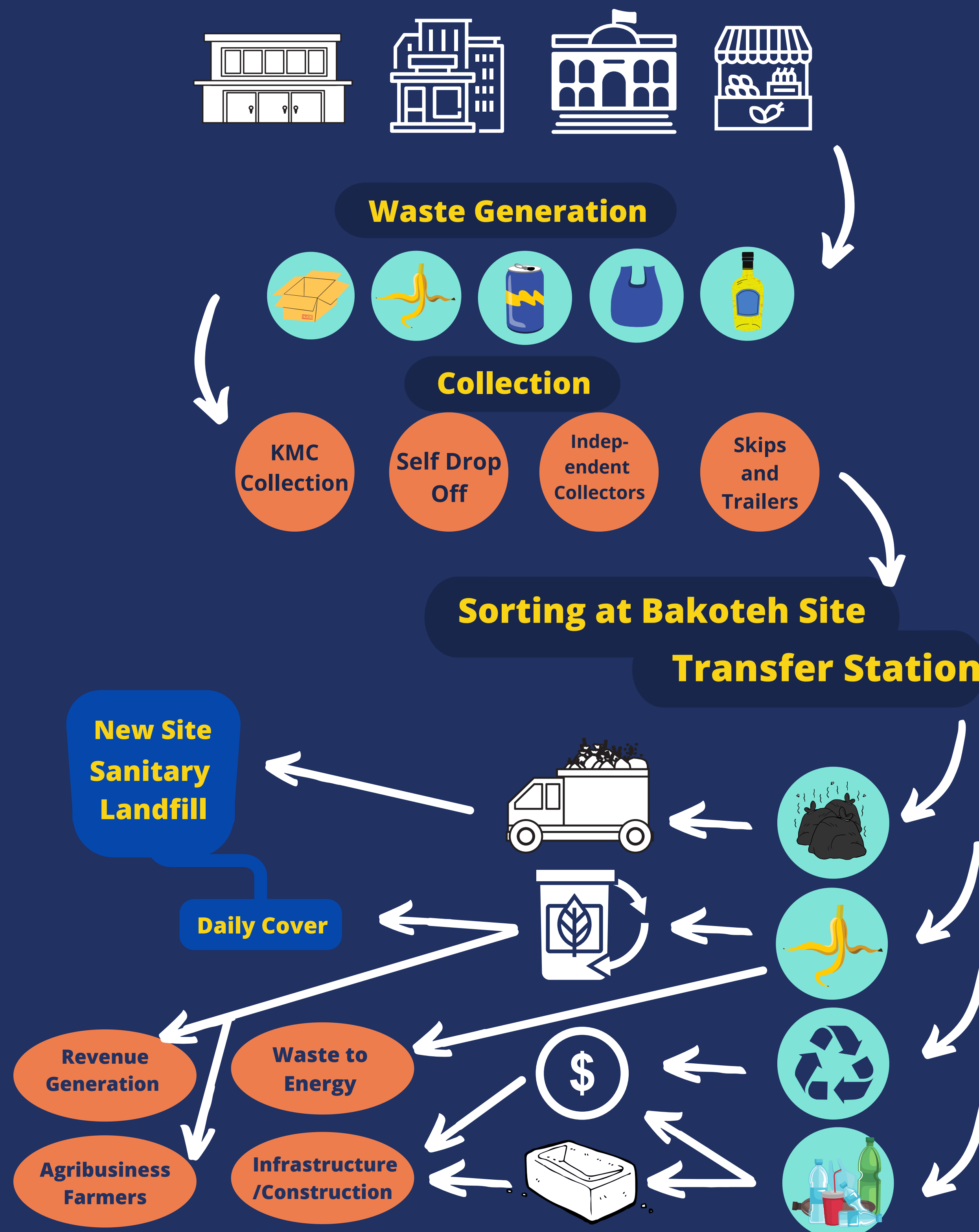
### ESTABLISH NEW SANITARY SITE

**4** Given the miles traveled for waste to arrive at Bakoteh, a new site location for a sanitary landfill is sensible and accommodating to the many current waste contributors

### ESTABLISH REVENUE GENERATION AND SUFFICIENCY

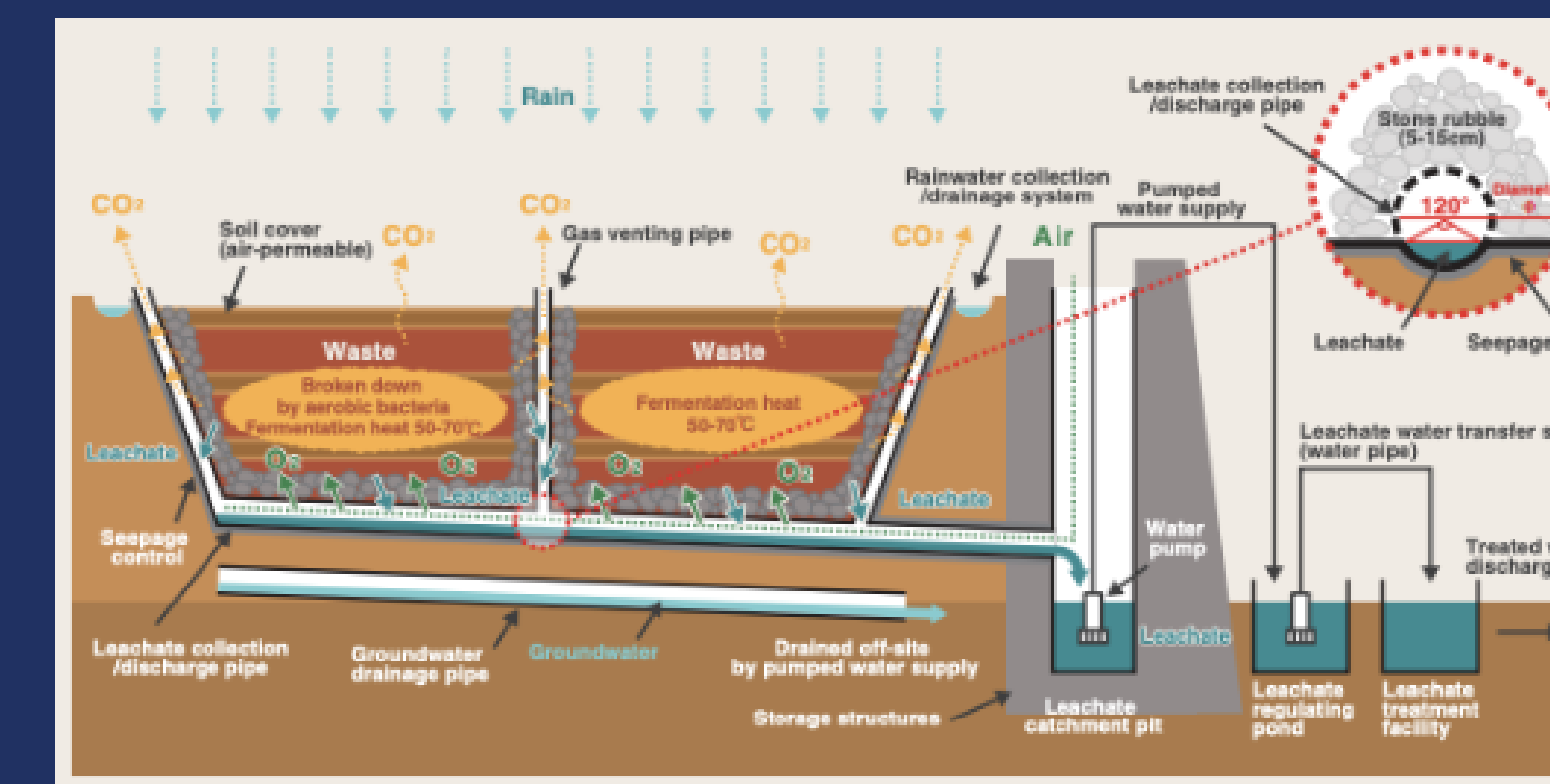
**5** Utilize as many cost generating methods are feasible including: Waste to energy, material resale, compost sale, ByFusion, solar

## PROPOSED PROCESS FLOW



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## FUKUOKA METHOD



"In this method, a leachate collection and discharge system consisting of stone rubble and perforated pipes is installed at the bottom of the landfill, so leachate in the waste layers is promptly drained to the leachate treatment system, and thermal convection occurs due to fermentation heat generated by decomposition of waste inside the layers."

## SOIL BASED LINER SYSTEM

**Layer A:** A 600-mm-thick protective soil layer that serves to filter the leachate before it is collected for treatment.  
**Layer B:** A geotextile filter layer that is used to minimize the intermixing of layer A and layer C.  
**Layer C:** A leachate collection layer comprising of 300-mm-thick layer of gravel or sand. The layer serves as a collection and drainage layer for any leachate that may be generated within the landfill.  
**Layer D:** Four layers each of 225-mm-thick gatch liner layer that must be compacted.  
**Layer E:** An additional layer of on-site soil.

