

Introducing Measures To Improve Garbage Collection Efficiency



INTEGRATED SOLID WASTE MANAGEMENT

Notes 6

Environmental Management



Systematic routes with minimal left turns, regular schedules for collection, and regular vehicle maintenance maximize the use of limited resources.

The Need for Effective Waste Management

Most local governments confine solid waste management operations to garbage collection, transport, and disposal. However, this simple system still uses half of the total budget for a municipality's waste disposal operations.

Many factors account for this inefficiency. Encouraging citizen participation in pre-collection interventions like segregation and the use of appropriate receptacles takes time. Inappropriate equipment and the lack of safety gear result to inefficient utilization of personnel. Without systematic routes and regular schedules for collecting, other resources like time and fuel are wasted. Operating under already meager budgets, local governments find that the combined effects of all these factors make collection of solid waste costly.

The necessary solutions come in at different levels. Citizens' participation will have to be encouraged further. The purchase of appropriate vehicles such as compactor trucks and safety equipment demands larger appropriations from local governments. A simple way to cut costs is to improve the collection system. This includes establishing a collection route with minimal left turns, regular schedule for collection, and maintaining vehicles regularly. This ensures that limited budgets go a long way and doable measures are immediately implemented.

The Local Governance Technical Notes series is a publication of the Governance and Local Democracy (GOLD) Project made possible through support of the United States Agency for International Development (USAID) under the terms of the GOLD Project Contract No. 492-0471-C-00-5089-00. The series provides information on key processes and tools in integrated solid waste management: understanding an integrated approach, waste appraisal, consensus building and organizing, earning from solid waste, organic fertilizer production, garbage collection efficiency, improving dumpsite operations, and preparing for a landfill.



Technology

Better Waste Collection

These are practical steps to improve solid waste collection and maximize the use of limited budgets:

1. Prepare the following: a map (scale 1:5,000) showing road network presently covered by garbage collection and indicating population distribution by barangay or purok; another map of similar scale with present collection routes plotted out using arrows to indicate collection direction; and a collection schedule with day, time, and areas covered.
2. Identify concerned groups or individuals and get their views on problems and recommendations in a roundtable discussion. Include the garbage collection crew, barangay officials, purok leaders, local police, and representatives from institutions, NGOs/POs, and the business sector.
3. With assistance from a technical resource person, organize orientation

and hands-on workshops. Review data from prepared maps and tables (see item 1). Review references on the basic techniques in establishing an efficient collection system. Determine which techniques can be adopted to develop an improved collection system. Such techniques include the following:

- A systematic routing scheme with consideration for safety and the maximum use of operating resources.
- Safety gear, uniforms, and valid identification cards for collectors.
- A schedule that covers collection time and days for both regular and “on-request” areas.
- Pre-collection interventions that include the use of light but sturdy receptacles for segregated solid waste, e.g., sacks or trash bags. These can be brought to designated collection points according to a pre-agreed schedule or

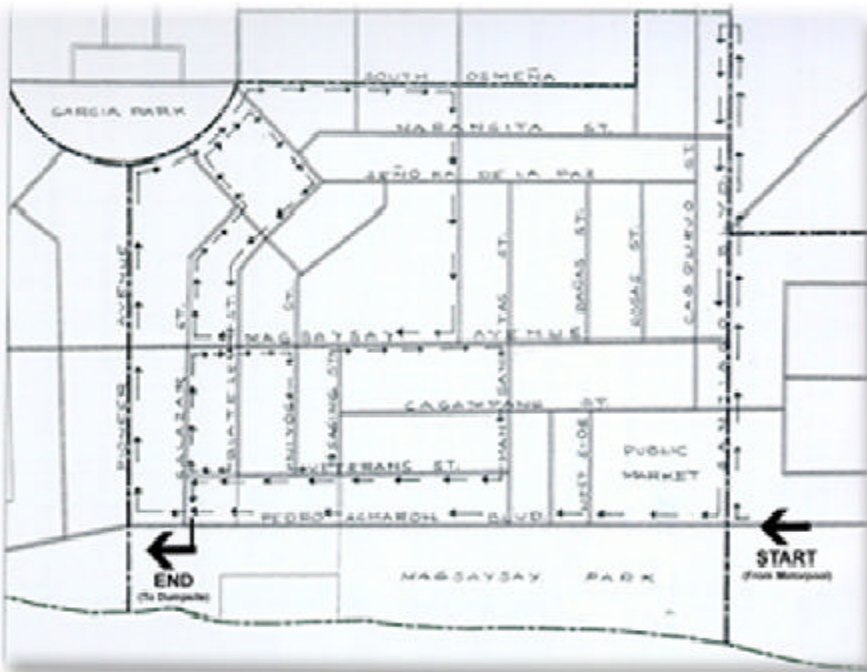
the curbside when the collection truck arrives.

- Other effective strategies such as the use of a public address system mounted on collection vehicles.
4. Testing the new collection system's schedule and routing scheme in actual field conditions and using the results to evaluate, fine tune, and finalize the new system.
 5. Issuance of ordinances to mandate the new collection system.
 6. Orienting the local police and volunteer enforcers to ensure compliance and providing them citation tickets.
 7. Extensive dissemination of information about the system before launching full implementation. This provides citizens information to appreciate their role in ensuring the implementation of the improved collection system.

Improving the Routing System

How waste collection is done and the routes of collection trucks are important factors in the use of resources. These are helpful pointers:

- Maximize resources and lessen traffic accidents by: planning the route to minimize “U” and left turns; whenever possible, collecting solid waste from both sides of the road; starting collection from the highest portion of a sloping street, going downhill, to ease collection for the crew and minimize the use of fuel.
- Assign a professional driver/mechanic to operate and maintain collection trucks. Equip vehicles with basic maintenance and waste collection tools.
- Provide open trucks with fish nets or canvas cover to minimize spillage of collected solid waste.



A planned collection route with minimal left and “U” turns conserves fuel and time as practiced in General Santos City.



Policy and Practice

Enabling Framework

Republic Act No. 7160 also known as the "Local Government Code of the Philippines" devolves certain powers to local government units, including enforcement of laws on cleanliness and sanitation, the preparation of a solid waste management program, and other environmental functions. Section 17 mandates barangays and municipalities to provide services for solid waste collection and management. Section 3, article I encourages the participation of private sector in local governance.

Presidential Decrees 552, 825, 856, and 984 provide rules and penalties covering sanitation and disposal.

Memorandum Circular No. 39-A of January 19, 1988 from the Office of the President enjoins local governments to establish integrated solid waste management systems that include: management of waste generation; handling and on-site storage; collection, transfer, and transport; processing and recovery; and disposal.

ORDINANCE NO. 08
Series of 1997

**"Comprehensive and Integrated
Solid Waste Management Program"**

VIOLATIONS:

1. Littering or throwing of solid wastes in streets, thoroughfares, public vehicles and other public places such as parks, plazas, public churches, etc.
2. Burning of solid wastes except only for health purposes but only biodegradable wastes.
3. Dumping of solid wastes outside the perimeter of residential establishments, lots, vacant lots, canals, streams, seas, rivers, creeks, etc.
4. Non-segregation of solid wastes into biodegradable and non-biodegradable.
5. Non-provision of waste receptacles for institutional use of commercial, institutions, industrial establishments, and public vehicles.
6. Provision of garbage receptacles outside the perimeter areas of residences, commercial, industrial and institutional establishments. Segregated wastes must be placed in either **SACKS OF PLASTIC BAGS OR IN CONTAINERS**.
7. Littering or scattering of solid wastes which not exclude or collection and/or the collection had not arrived yet.
8. Non-maintenance of cleanliness at the front side and back of residential houses, stores, canteens, etc.

The program is implemented by the GSC Solid Waste Management Council through the City Environment and Natural Resources, Office City Planning & Devt., Office and the Barangay Councils of the City.

REPUBLIC OF THE PHILIPPINES
City of General Santos
Office of the City Environment & Natural Resources

SOLID WASTE TICKET
(City Ordinance #08 Series of 1997)

No. **0208002**

TICKET #	DATE
VIOLATOR:	
ADDRESS:	
Unrecyclable / Not Other Recyclable Debris	

VIOLATIONS

You are hereby cited for violating ordinance #08 S. 1997.

Article Six follows: On _____ at about _____
Time _____ of the day _____

Specific Violation(s) _____

Contrary to Law _____

You are hereby directed to appear before the City Engineer and the City ENR Officers at the City Hall within three (3) days from date hereof, for appropriate disposition of this citation. Failure to appear within three days as required, the DENR shall within twenty-four (24) hours forward the case to the Office of the City Fiscal for filing of appropriate charges.

Plaintiff Name & Signature of Approving Officer _____

Witness Name & Signature _____

TICKET'S SIGNATURE _____

General Santos City issues solid waste management citation tickets for violations of City Ordinance 08, series of 1997 entitled "Comprehensive and Integrated Solid Waste Management Program."

Practices That Are Working

General Santos City is typical of a local government that confined its solid waste management action to collection, transport, and disposal. Collection was done on a three-shift, twenty-four-hour cycle with two trips per shift. However, even with this much effort, collection only concentrated on the city's central business district and had no regular routing or collection schedule. Garbage collec-

tors engaged in scavenging inside trucks during collection and on the way to the dumpsite. These factors contributed to inefficient collection, wasteful use of limited resources, and poor service delivery.

The Engineering Committee of General Santos City Solid Waste Management Council aimed to change this situation by organizing a series of hands-on workshops. Rep-

resentatives from different concerned groups and individuals worked together to formulate ways of improving efficiency of the current collection system and management of dumpsite operations. They formulated new collection schedules and routes, and identified pre- and post-collection intervention strategies for the community.

The strategies are presently being implemented. Routes are modified to minimize the number of left turns taken by the truck. The number of persons per compactor truck is down to a maximum of three from five excluding the driver. Citizens are informed and encouraged to reduce and segregate waste. Collection efficiency also resulted in coverage of a wider area without increasing the number of trips or collection time. These measures result in faster waste collection and more time for vehicle maintenance and crew rest.



Strategies for improving garbage collection in General Santos City included modifying routes and reducing the crew to a maximum of three excluding the driver.



LGU Action Agenda

Other Initiatives

It's one thing to read about garbage collection efficiency; it's another to maintain a system that ensures efficiency. The time you spend contacting these local governments to talk about solid waste management will give you high-impact ideas on improving your waste collection efficiency.

Olongapo City implements a system where citizens and collectors strictly follow the waste collection schedule. For more information on how the City planned and implemented that system and other innovations on solid waste management, you may call the Office of the Mayor, Olongapo City, at (047) 222-2565.

Even the best plans fail if support systems do not work. How do you employ a collection system that supports the waste segregation program? You may call the Office of the Mayor, **Marilao, Bulacan** at (044) 711-3142 for answers. You may also invite experts from the Office of the Mayor and the assisting local NGO to give a talk on how they did it.

What You Can Do

Observe the current routing system of garbage collection trucks. From what you have read so far, what practices are potential targets for immediate improvements? For instance, are there too many left and "U" turns?



Marilao employs a collection system that supports waste segregation.

Resources and References

When people and organizations cooperate, everybody wins. These communities are also taking "housekeeping" measures to make waste collection more efficient.

- **Solid Waste Management Council**, General Santos City, (083) 553-5042 c/o Office of the City Mayor.
- **Oplan Linis Project Manager**, New City Hall, Sta. Monica, Puerto Princesa City, Palawan (048) 433-2028; 433-2249
- **Lipa City, Batangas**, Office of the Mayor, (043) 561-1453

You may contact these offices if you need additional information to improve the efficiency of waste collection in your community. They will have more suggestions you can implement and will be glad to offer whatever help they can.

- **Presidential Task Force on Waste Management, Department of Environment and Natural Resources – Environmental Management Bureau (DENR-EMB)** (02) 426-2524
- **Regional and Provincial Offices, DENR**

If you're looking for more ideas, get a copy of these publications.

- *Solid Waste Management for Local Governments*. 2nd Ed. DENR-Environmental Management Bureau. Manila: 1998.
- *Integrated Solid Waste Management Sourcebook*. Associates in Rural Development–Governance and Local Democracy Project (GOLD)