



**REPUBLIC OF THE PHILIPPINES
CITY OF ILOILO**

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ILOILO CITY'S SOLID WASTE MANAGEMENT INITIATIVES FOR FLOOD RISK REDUCTION

I. Introduction

Iloilo City, like many highly urban cities (HUC) in the Philippines, has experienced its fair share of flooding incidents. This is associated with its economic growth and rapid expansion of its urban footprint in terms of building infrastructure, road networks and commercial/industrial complexes. The city's vulnerability to such hazard has necessitated a multifaceted approach to address the underlying issues. A critical component of this approach is the implementation of an effective solid waste management (SWM) system.

This report highlights the comprehensive measures taken by Iloilo City to manage solid waste as part of its broader flood prevention strategy.

II. Current Solid Waste Management in Iloilo City in line with Flood Prevention

Iloilo City has implemented various programs to address solid waste management. Key initiatives and details are discussed below.

1. The City has established a waste collection system to ensure timely and efficient waste removal in all 180 barangays. Every barangay within the city is covered by either door-to-door collection services, established collection points, or both. J. S. Layson, a contracted private hauler through a competitive bidding process is the primary private hauler responsible for collecting and transporting residual wastes from all 180 private hauler responsible for collecting and transporting residual wastes from all 180 barangays to the City Sanitary Landfill (SLF). J. S. Layson's services averaged 170 collection trips per day. Table 1 provides an overview of the collection method distribution in the seven districts of the city.

Table 1. Waste Collection Methods Per District

Districts	Collection Point	Door-to-Door Collection
Jaro District	70%	30%
City Proper	85%	15%
La Paz	80%	20%
Arevalo	50%	50%
Molo	50%	50%
Mandurriao	70%	30%
Lapuz	80%	20%

Effective waste collection reduces the amount of litter and waste that might end up in rivers, streams, drainage system and other waterways.

2. Streets and major thoroughfares are maintained daily by GSO personnel. A total of 280 waste sweepers are deployed daily to keep the city's major streets and thoroughfares free from trash and debris that could obstruct drainage systems or pollute waterways. Furthermore, a 9-cubic-meter vacuum sweeper truck (Figure 2) is utilized on high-speed and wide highways for the same purpose.



Figure 1. City street sweepers



Figure 2. City-owned Vacuum Sweeper Truck

3. As part of the continuous rehabilitation of the Iloilo River, waste/boom traps are installed along the river tributaries to intercept and collect solid waste before it flows downstream. Removing debris, trash, and other waste from waterways prevents blockages that can obstruct the flow of water and reduce its flow capacity. Thus, the likelihood of localized flooding and overflow is decreased by unobstructed waterways. Currently, a total of seven (7) waste traps are installed along the Iloilo River tributaries, four (4) in Batiano River and three (3) along Dungon creek. Table 2 shows the total collected wastes from these waste traps.

Table 2. Boom traps waste collection details

Tributary	No. of Traps	Waste collected (kg)			
		2023	2024 (Jan-Jun)	Total	Average/day
Batiano River	4	33,837	11,700	45,537	90 kg/day
Dungon Creek	3	-	5,319	5,319	41 kg/day

Note: Boom traps along Dungon Creek were not yet installed in 2023

Waste intercepted in these traps are collected daily (except during weekends) to prevent overflow and ensure effective operation.



Figure 3. Boom Trap installed along Dungon Creek



Figure 4. Boom Trap installed along Batiano River

4. The City-ENRO and GSO personnel regularly conduct clean-up activities along the Iloilo and Jaro rivers. These efforts typically involve volunteers from various sectors, including academia, MSMEs, NGOs, and NGAs. This initiative is part of the continuous rehabilitation of the city's major estuarine, aimed not only at demonstrating the city's commitment to sustainable growth and development but also at restoring biodiversity and enhancing the waterways' water capacity. Table 3 shows the total collected wastes from river clean-up activities.

Table 3. Jaro and Iloilo River waste collection details

River	Waste collected (kg)			
	2023	2024 (Jan-Jun)	Total	Average/day/activity
Jaro River	No data	10,381	10,381	2,076 kg/activity
Iloilo River	23,001	8,644	31,645	66 kg/day



Figure 5. Clean-up along Esplanade



Figure 6. Surface water clean-up along Iloilo River



Figure 7. Clean-up along Jaro River near Tabuc-Suba Lapaz



Figure 8. Clean-up along Jaro River near Caingin

- In collaboration with DENR-EMBR6 on the Dungon Creek Rehabilitation Project, three (3) Mobile Sewage Treatment Plants (MSTPs) and interceptors with capacity of 15-25 cu.m/day will be set up along Dungon Creek. These units will treat wastewater from residential drainage systems and filter out solid waste, aiming to improve the water quality of the tributaries feeding into the Iloilo River.



Figure 9. Interceptor installed at Calubihan portion of Dungon Creek



Figure 10. MSTP installed at Calubihan portion of Dungon Creek

- The City government enacted policies that aim to implement campaigns that foster a culture of responsibility and environmental stewardship among residents, encouraging them to properly dispose their waste and maintain their surroundings trash free.

6.1 Regulation Ordinance 2004-149 - Environmental Code: Iloilo City Anti-Littering Ordinance

Individuals who violate Section 34 of RO 2004-149 (Prohibited acts under RA 9003) in the city, shall upon conviction, be punished with a fine, render community service or imprisonment. Table 4 shows the total individuals apprehended violating this ordinance.

Table 4. Total individuals apprehended for violating the Anti-Littering Ordinance

	Year				Total
	2021	2022	2023	2024 (Jan-Jun)	
Citation Tickets issued	399	420	263	214	1296



Figure 11. Implementation of Anti-littering Ordinance

6.2 Executive Order No. 089

An executive order promoting the cleaning of surroundings and cultivation of gardens in all barangays of Iloilo City during Saturdays. This initiative is not only to spearhead massive clean-up operations but also for people to develop a mindset and habit of maintaining a disease-free community. This annual campaign, particularly during the wet season, has been relaunched consistently for five years. It aims to reinforce sustainable clean-up efforts to fight dengue and keep streets and surrounding areas clean, thereby reducing the risk of flooding during heavy rains.



Figure 12. Clean-up drive in Barangay Sampaguita, City Proper



Figure 13. Clean-up drive in Barangay Bito-on, City Jaro

All 180 barangays support the endeavor striving for a healthier, sustainable, and waste-free Iloilo City.

7. To prepare for the rainy season, the City Engineer's Office, carried out drainage maintenance and declogging across all drainage systems in the metropolis. This initiative aims to enhance water flow and boost the capacity of the drainage systems, particularly during heavy rainfall.



Figure 14. Declogging of city drainages



Figure 15. Vacuuming of city drainages

These activities are essential for keeping urban drainage systems in good working order, which helps manage stormwater, prevent flooding, and protect both property and public safety.

8. To address the growing need for an effective solid waste management system, Iloilo City has teamed up with the German Agency for International Cooperation, the European Union, Central Philippine University, and USAID-CCBO. Through these partnerships, waste collection vehicles (Figure 16) were given to 18 pilot barangays of the city. These barangays were prioritized for they are geographically located near bodies of water in the metropolis



Figure 16. Waste collection vehicles and equipment given to 18 pilot barangays.

It is crucial to enforce a strict solid waste management system in these areas to prevent waste from reaching water bodies like the Iloilo River and Batiano River. By preventing wastes from entering water bodies, the natural flow of rivers and streams is maintained, reducing the likelihood of overflow.

9. The SBCC/IEC activities serve a variety of purpose focused on influencing individual and community behavior through targeted communication strategies to promote sustainable waste management practices and environmental stewardship. Activities for implementation includes:

SBCC/IEC Activities for Implementation	Target Audience
Community Workshop and Trainings <ul style="list-style-type: none"> ● Proper Waste Segregation and Composting, Use of Ecobags 	● Household particularly women, husband and their children, barangay officials, SK officials, business establishments
School Programs and Education Campaign <ul style="list-style-type: none"> - Proper Waste Segregation, Installation of Composting Bins, Installation of MRF, Inclusion of SWM in curricula 	● Teachers, PTA, Students, Youth organizations
Media Campaigns <ul style="list-style-type: none"> - Creation of group chats through various social media platforms, printing and layout of sintra board, commitment stickers, information cards, passbook 	● City LGU, Brgy Officials, LGBTQ (as support groups)
Community Clean Up Drive	● City LGU, Barangay Officials, Organized Support Groups, Schools, Local Partners and Stakeholders, OSY, 4P's
Door to Door Campaigns/House to House Campaign <ul style="list-style-type: none"> - Distribution of Commitment Stickers and Passbook, Information Cards 	● Household, Barangay Officials
Waste Management Champion <ul style="list-style-type: none"> - Identified Women Champions from barangay/barangay officials active in SWM 	● Barangays, Barangay Officials,
Incentive Programs <ul style="list-style-type: none"> - Recognition and Awarding 	● Barangays and Women Champion
Partnership with Local Businesses <ul style="list-style-type: none"> - In the implementation of Trash to Cash programs, Junkshops on the Regular buying of recyclables, BESWM Program and Plan Formulation 	● Private Partners (Cola Cola, CEMEX, etc), Barangay, Barangay Officials,
Community Dialogues and Forums	● Household, Barangays, Barangay Officials

Source : Updated 10 yr SWMP (2017-2026)



Figure 17. SBCC/IEC on SWM during Barangay General Assemblies



Figure 18. House to house IEC on the city's Anti-littering ordinance

10. Through the GSO and CENRO and in coordination with USAID CCBO and CPU, USAID CCBO grantee and other partners, efforts have been made to enhance the institutional capacities of the 180 barangays in Iloilo City. As of now, the 18 pilot barangays have received assistance in developing and implementing their solid waste management (SWM) action plans and programs. The following are the list of programs:

- Training of Trainers on Barangay ESWM programming
- Development of Operations Manual on SWM/3R
- Technical and logistical assistance on the creation of a multi-sectoral BESWMC and the formulation of a 3-Year BEWSM Program of Action
- Conduct other capacity building trainings such as composting, Tiangge sa Basura, self-monitoring and the use of monitoring tools
- Linking the Barangays with junk shops and consolidators for the regular buying of recyclables at source,
- Facilitate the assistance of various partners in support to the implementation of the BESWMP
- Training of enforcers from the barangays
- Enhance recording and reporting system of agreed indicators
- Develop and implement support systems such as incentives and rewards in exchange of exemplary and good SWM practices.



Figure 19. Capacity building of barangay officials on SWM plan and implementation



Figure 20. SWM materials issued to barangays



Figure 21. Training of barangay SWM enforcers



Figure 22. Waste collection vehicle issued to barangays located along river tributaries

Areas for Improvement

1. **Improved collection services:** Although waste collection in the city has improved over the years, some areas, particularly in coastal and riverine zones, still need more rigorous management approaches. Moreover, the frequency of waste collection in high-density and flood-prone areas should be increased to prevent waste buildup that can block drainage systems.
2. **Enhanced Monitoring:** Strengthening monitoring systems to ensure compliance with waste segregation and disposal regulations.
3. **Increasing Funding and Resources:** Allocate additional resources and budget for waste management programs, infrastructure development, and maintenance to support long-term flood reduction goals.
4. **Enhancing Community Engagement:** Foster greater community involvement through additional clean-up drives and partnerships with local organizations, schools, and businesses.

5. **Relocation and Resettlement Programs for informal settlers along water easements:** Coordinate with the city's Local Housing Office to develop affordable, safe, and accessible housing options away from waterways. Ensure that new locations are well-equipped with basic services like water, sanitation, and waste management.
6. **Implementation of Effective SWM for Ambulant Vendors:** Develop and enforce guidelines for waste management specifically tailored for ambulant vendors. Include requirements for waste disposal and penalties for non-compliance.
7. **Improving Public Awareness and Education:** Expand educational campaigns to raise awareness about the impact of improper waste disposal on flooding and encourage more active participation in waste management efforts.
8. **Strengthening Waste Management Policies:** Review and update waste management policies and regulations to address current issues and integrate best practices for flood risk reduction.

Conclusion

Iloilo City has made significant progress in solid waste management, which has contributed to reducing the city's vulnerability to flooding. However, innovative and sustainable efforts are required to tackle challenges arising from rapid urbanization and the changing waste generation patterns. Sustained efforts not only from the local government unit but to all sectors and further improvements in the solid waste management programs and strategies are essential to ensure a more resilient and flood-resistant urban environment.