A FRAMEWORK FOR THE PHILIPPINE HOUSING SECTOR · DRAFT FOR CONSULTATION

The Integrated Solid Waste Management & Resource Recovery Plan

for every major new housing development

SUBDIVISIONS | HORIZONTAL HOUSING | CONDOMINIUMS

The proposal. Major new housing developments in the Philippines should incorporate an Integrated Solid Waste Management and Resource Recovery Plan (ISWM-RRP) as part of community planning and development. The plan covers infrastructure, segregation at source, collection systems, recovery and recycling, responsibilities after turnover, resident education, performance measurement and appropriate linkage with EPR programs.

This does not reinvent Philippine waste policy. RA 9003 already establishes segregation, recycling, composting, resource recovery and MRFs; RA 11898 adds the EPR framework. The opportunity is to integrate these principles deliberately into the way we plan and build housing.

Prepared from the presentation of **Isabelita Paredes Mercado** — *Enhancing Solid Waste Management in the Philippines for Housing Development* · 34th Annual SHDA–DHSUD National Developers Convention · 16 September 2026 · trashtocashback.com

Housing is community infrastructure — and so is waste

Housing development is the creation of a functioning community, not simply the construction of houses or condominium buildings. Communities generate waste every day, for decades. This framework makes solid waste management the same kind of planned, essential community infrastructure as roads, water, power and open spaces — determined at the planning stage.

Who the framework is for

PARTY	ROLE IN THE ISWM-RRP
Developer	Owns the plan from site development planning to turnover; builds the infrastructure; contracts initial operations
Contractor	Implements construction-phase waste management (separation of concrete, metals, wood, plastics, cardboard, packaging)
LGU / Barangay	Primarily responsible for RA 9003 implementation in its jurisdiction; regulates premises of six or more residential units; collects or authorizes collection
Homeowners' association / Property manager	Operates the system after turnover; sustains resident participation and reporting
Waste-management service provider	The "private center" RA 9003 allows: exchange, collection, recovery, recycling, measurement
Producers / PROs (EPR)	Fund recovery of packaging under RA 11898; receive audited, traceable recovery data

The legal foundation — already national law

REPUBLIC ACT No. 9003 — ECOLOGICAL SOLID WASTE MANAGEMENT ACT (2001)

- **LGU responsibility (§10):** LGUs are primarily responsible for implementation and enforcement within their jurisdictions.
- **The developer's clause (§21, ¶2):** for premises containing **six (6) or more residential units**, the LGU shall require the owner to provide residents **a designated area and containers** for source-separated recyclables, to be collected by the city, municipality **or private center** — the only place the Act speaks directly to housing, and it covers every subdivision and condominium.
- **Segregation at source:** separating materials at their point of origin to promote recycling and reuse and reduce the volume requiring collection and disposal.
- **MRF:** a materials recovery facility in every barangay or cluster of barangays — receiving, sorting, processing and storing compostable and recyclable materials efficiently and in an environmentally sound manner; residuals to appropriate disposal.
- **Construction debris** is included among the non-hazardous wastes covered by the law.

REPUBLIC ACT No. 11898 — EXTENDED PRODUCER RESPONSIBILITY ACT (2022)

- Obliged enterprises must recover a rising, annually-audited share of their plastic packaging footprint.
- The law **expressly provides** for redemption and buy-back schemes, diversion into recycling and value chains, transportation to appropriate facilities, and **partnerships with LGUs, communities and the informal waste sector**.
- **What this means for housing:** recovered household packaging now has somebody with a legal reason to pay for it — a funding and partnership channel for community recovery systems, provided recovery is traceable and audited.

4PH alignment. The Pambansang Pabahay para sa Pilipino program includes developers, contractors and LGUs, prioritizes high-density and vertical development (walk-ups · mid-rise 5–9 · high-rise 10+, plus horizontal modalities), and emphasizes sustainable, resilient housing — making waste systems directly relevant to community planning.

Five components, one lifecycle

The plan is organized on the Waste-Smart Housing Community model — **PLAN → SEGREGATE → COLLECT → RECOVER → MEASURE** — five interconnected components covering the development's whole life, from the site development plan to decades of daily operation. Each component below states its objective, the questions the plan must answer, and its minimum elements.

1 PLAN — designed in, not left over

Objective: solid waste management begins with the site development plan. Waste rooms, collection points and truck access are part of the original engineering and architectural plan.

THE PLANNING-STAGE QUESTIONS (ANSWER BEFORE CONSTRUCTION IS COMPLETED)

- **How many families will live here?**
- **How much waste will they generate?**
- **Where will the residents segregate their waste?**
- **Where will recyclables go?**
- **What will happen to food and other biodegradable waste?**
- **How much residual waste will eventually require final disposal?**
- **Who will be responsible for operating the system after the developer turns over the community?**

ESTIMATING GENERATION — PLANNING FIGURES (CITED, ESTIMATE-GRADE)

BASIS	FIGURE	SOURCE / NOTE
Per person, national	**0.40 kg/day**	NSWMC National SWM Status Report (2014; re-stated 2016). All-sources MSW per capita — a conservative household base.
Per person, Metro Manila	**0.50–0.69 kg/day**	NSWMC (2016) urban anchor — use for NCR sites.
Per household	**≈1.6 kg/day** (national, 4.1 heads) · **≈1.9–2.6 kg/day** (NCR, 3.8 heads)	PSA 2020 Census household size × per-capita base.
Worked example	**A 500-household development ≈ 800–1,300 kg/day ≈ 24–39 tonnes/month** — the number the waste rooms, MRF and hauling schedule must be sized for.	

Figures are planning estimates for sizing, with sources and confidence stated — refine with a local waste analysis and characterization study (WACS) at detailed design. Operational reporting later uses measured, not estimated, quantities.

MINIMUM PLAN ELEMENTS

- Projected generation by stream; designated segregation areas within convenient distance of every unit (per RA 9003 §21 for 6+ unit premises)
- Space for storage, collection and resource recovery: waste rooms per floor or cluster; a central MRF or exchange/collection point; composting provision
- Truck access, turning radii, holding areas and collection scheduling designed into the road and utility plan
- **Typology notes:** high-rise — per-floor waste rooms, chute policy for residuals only (never mixed), ground-floor recovery room; mid-rise walk-ups — per-building bins + cluster MRF; horizontal — cluster collection points + village MRF

2 SEGREGATE — every household knows where its waste belongs

Objective: segregation at source, made convenient. If we want residents to change their behaviour, the desired behaviour must be easy to follow.

MINIMUM PLAN ELEMENTS

- Four streams at household level: **biodegradable/compostable · recyclable · residual · household special wastes** (separate handling)
- Convenience standards: designated area and labeled containers close to homes/units; simple, visual, consistent signage
- **Resident education:** move-in orientation as part of unit turnover; ongoing barangay/HOA campaigns; children and schools included
- **Incentive layer (recommended):** reward participation — see the Recovery incentive model on this page. Behaviour changes when it is easy *and* rewarded.

3 COLLECT — and preserve the segregation

Objective: collection designed around the segregated system. What residents separate, collection must keep separate.

MINIMUM PLAN ELEMENTS

- Stream-specific schedules, containers and vehicles or compartments; no re-mixing at any handling step
- A responsibilities matrix — LGU, developer, homeowners' association and service provider each know their role (Part 3)
- **Turnover continuity clause:** the waste-management system must not disappear when the developer completes and turns over the project — contracts, budgets and operating procedures transfer to the HOA/property manager with a transition period

4 RECOVER — prevent material from becoming garbage

Objective: the question changes from “how efficiently can we collect garbage?” to **“how much material can we prevent from becoming garbage in the first place?”** Only the remaining residual waste goes to final disposal.

MINIMUM PLAN ELEMENTS

- MRF or recovery system per RA 9003: receive, sort, process, store — efficiently and in an environmentally sound manner
- Recyclables (paper, plastics, cardboard, metals, glass) into recycling value chains; biodegradables composted or appropriately processed
- **EPR linkage:** recovered plastic packaging documented traceably so it can count toward producers' RA 11898 obligations — bringing EPR funding into the community system

THE INCENTIVE MODEL — PROVEN REFERENCE IMPLEMENTATION

The **Trash to Cashback** program (BEST) operationalizes recovery on five pillars — **SEGREGATE → EXCHANGE → REDEEM → COLLECT → RECYCLE**. Residents exchange sorted recyclables for Environmental Points and **redeem** them as cashback at local partner stores — the incentive that changes behaviour, with the value circulating back into the neighbourhood economy. Running today in **30 cities · 339 collection points · 23,700+ participating residents · 4.18 million kg recovered — all measured**, including inside master-planned private estates (Fort Bonifacio, Ortigas Center). Any equivalent incentive-backed recovery system may fill this role; the framework requirement is that recovery is *rewarded, local and measured*. · trashtocashback.com

5 MEASURE — what we accomplish

Objective: every waste-smart housing community measures its results, so developers, LGUs and community managers can determine whether programs are actually working. Measured, never estimated.

THE SIX CORE INDICATORS

#	INDICATOR	BASIS
1	Waste the community generates	kg/period, by stream (weighed at collection)
2	Share properly segregated	% of collected waste passing stream checks
3	Recyclable material recovered	kg weighed and recorded at exchange/MRF
4	Biodegradable waste diverted	kg to composting / processing
5	Residual waste to final disposal	kg hauled to sanitary landfill
6	Households consistently participating	distinct participating households / total, per period

Cadence: monthly operating report to the HOA and LGU; annual community scorecard shared with residents. Where EPR-linked, recovery records follow a traceable chain suitable for third-party audit.

Part 3 · Governance — who does what, when

PHASE	DEVELOPER	CONTRACTOR	LGU / BARANGAY	HOA / PM	SERVICE PROVIDER
Design	Owns ISWM-RRP; sizes infrastructure	—	Reviews vs. RA 9003 & local ordinances	—	Advises on operations design
Construction	Oversees	Separates concrete, metals, wood, plastics, cardboard, packaging for reuse/recovery; responsible construction	Monitors	—	Optional: construction-waste recovery
Operation (pre-turnover)	Operates & funds; resident education at move-in	—	Collects residuals / authorizes private collection	Shadow participation	Runs exchange, recovery, measurement
Post-turnover	Transition support	—	Continues §21 oversight; residual collection	**Operates the system**; reports	Continues under HOA contract

The turnover rule. Synergy needs continuity, not a champion who leaves. The ISWM-RRP transfers as a package — infrastructure, contracts, budget line, operating procedures, and the measurement system — with a defined transition period and a named accountable officer on each side.

Part 4 · Construction-phase waste (before residents move in)

Responsibility begins before occupancy. RA 9003 includes construction debris among covered non-hazardous wastes. The plan therefore includes: separated bays for concrete, metals, wood, plastics, cardboard and packaging; reuse and recycling wherever practicable rather than automatic disposal; and hauling records. A sustainable housing community begins with responsible construction.

Start small, expand on results

LEVEL	WHAT IT LOOKS LIKE	WHO IT FITS
Level 1 · Compliant	Designated segregation areas + containers (§21); residual collection arranged; construction-waste separation; move-in orientation	Minimum for every 6+ unit premises
Level 2 · Waste-Smart	Level 1 + sized waste rooms and MRF from the site plan; four-stream collection preserved end-to-end; incentive-backed recovery point; six indicators measured	Major new developments adopting this framework
Level 3 · EPR-linked	Level 2 + traceable recovery records feeding producers' RA 11898 compliance; composting on-site or clustered; annual community scorecard	Large estates, townships, 4PH-scale projects

The plan-coverage checklist (the eight areas)

✓	COVERAGE AREA	FRAMEWORK SECTION
☐	Infrastructure (waste rooms, MRF, truck access)	Component 1 — PLAN
☐	Segregation at source (four streams, convenience)	Component 2 — SEGREGATE
☐	Collection systems (stream-preserving)	Component 3 — COLLECT
☐	Recovery and recycling (MRF, incentive model)	Component 4 — RECOVER
☐	Responsibilities after turnover	Part 3 — Governance
☐	Resident education	Component 2 + Governance
☐	Performance measurement (six indicators)	Component 5 — MEASURE
☐	Linkage with EPR programs (RA 11898)	Component 4 + Part 5 Level 3

The choice. We can build communities where waste becomes an increasing burden on LGUs — or design communities where segregation is convenient, recyclable materials are recovered, residents participate, and only the remaining residual waste requires final disposal. A sustainable home should be part of a sustainable community, with responsible solid waste management built into its design from the very beginning.

Sources & basis

RA 9003 (Ecological Solid Waste Management Act of 2000) §10, §21 and MRF provisions; RA 11898 (Extended Producer Responsibility Act of 2022); DHSUD 4PH housing typologies; NSWMC National SWM Status Report per-capita generation (0.40 kg/person/day national, 2014/2016; 0.69 NCR 2016); PSA 2020 Census of Population and Housing (average household size 4.1 national / 3.8 NCR); program figures from the BEST / Trash to Cashback measured exchange ledger (as of 15 Sep 2026). Generation figures are planning estimates — refine with a local WACS; operating reports use measured quantities only. Framework drafted from the SHDA–DHSUD 2026 presentation of Isabelita Paredes Mercado; DRAFT for consultation with SHDA, DHSUD and LGUs — not a legal opinion.