

Construction Plastics Initiative

Findings from a pilot study examining the recovery, recycling, and circular potential of construction-phase plastics in Metro Vancouver

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PLASTIC ONLY

ACCEPTED

- ✓ All Plastic Types (1-7)
- ✓ Hard & Soft Packaging
- ✓ Poly Bubble Wrap, Stretch Wrap
- ✓ Plastic Bags, Tarps, Film
- ✓ Styrofoam Insulation
- ✓ PVC, ABS, PE-X Pipes
- ✓ Vinyl Siding & Flooring
- ✓ Plastic Tubs, Buckets (Clean)
- ✓ Sinks, Containers

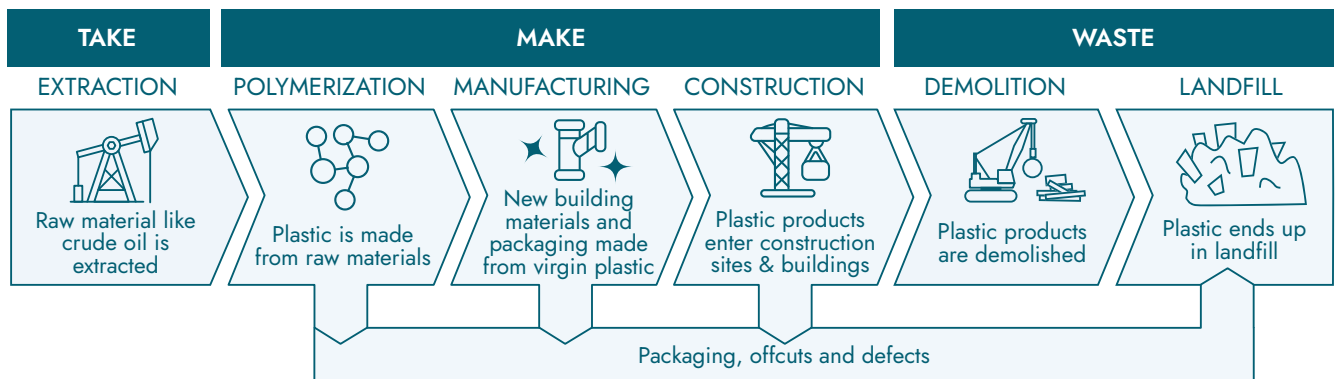
NOT ACCEPTED

- X Cardboard, Metal, Glass, Wood
- X Non-Plastic Items
- X Contaminated or Dirty Plastics
- X Paint Buckets
- X Adhesive & Sealant Tubes
- X Electrical Wire, Cables
- X Hazardous Materials
- X Food Waste, Organic Materials

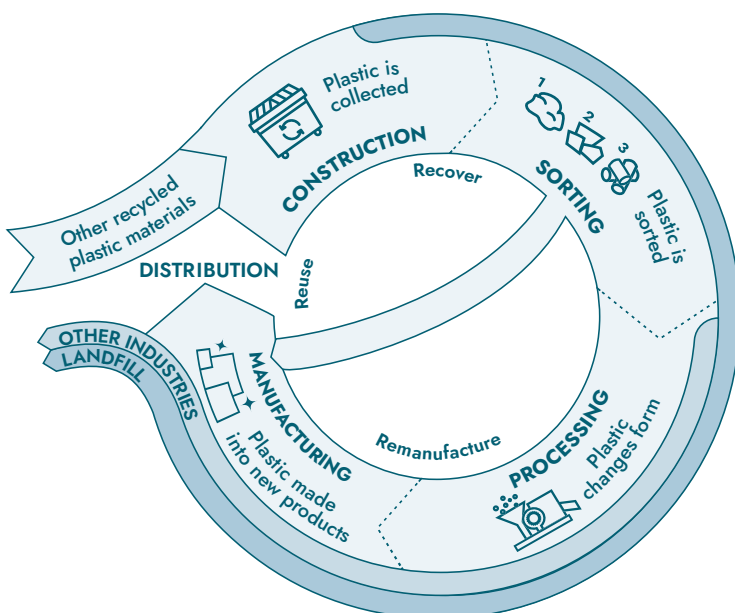
Executive Summary

Canada introduced 7.1 million tonnes of plastic into the domestic market in 2021, of which construction-related products, excluding packaging, accounted for 22.3 per cent. In addition, European studies indicate that as much as 80 per cent of plastics generated from construction are packaging. Yet plastics generated during construction remain poorly understood and largely undervalued, often buried within commingled waste streams and broader building material categories. This lack of visibility has made it difficult to determine the scale of the problem, identify the most recoverable materials, or design practical interventions.

The Construction Plastics Initiative (CPI) was undertaken to address that gap by producing site-level evidence from active construction projects in Metro Vancouver and by testing whether a more circular approach to construction-related plastics is technically, operationally and financially feasible in practice. In most cases, these materials continue to move through a linear system in which products are manufactured, used briefly, and discarded.



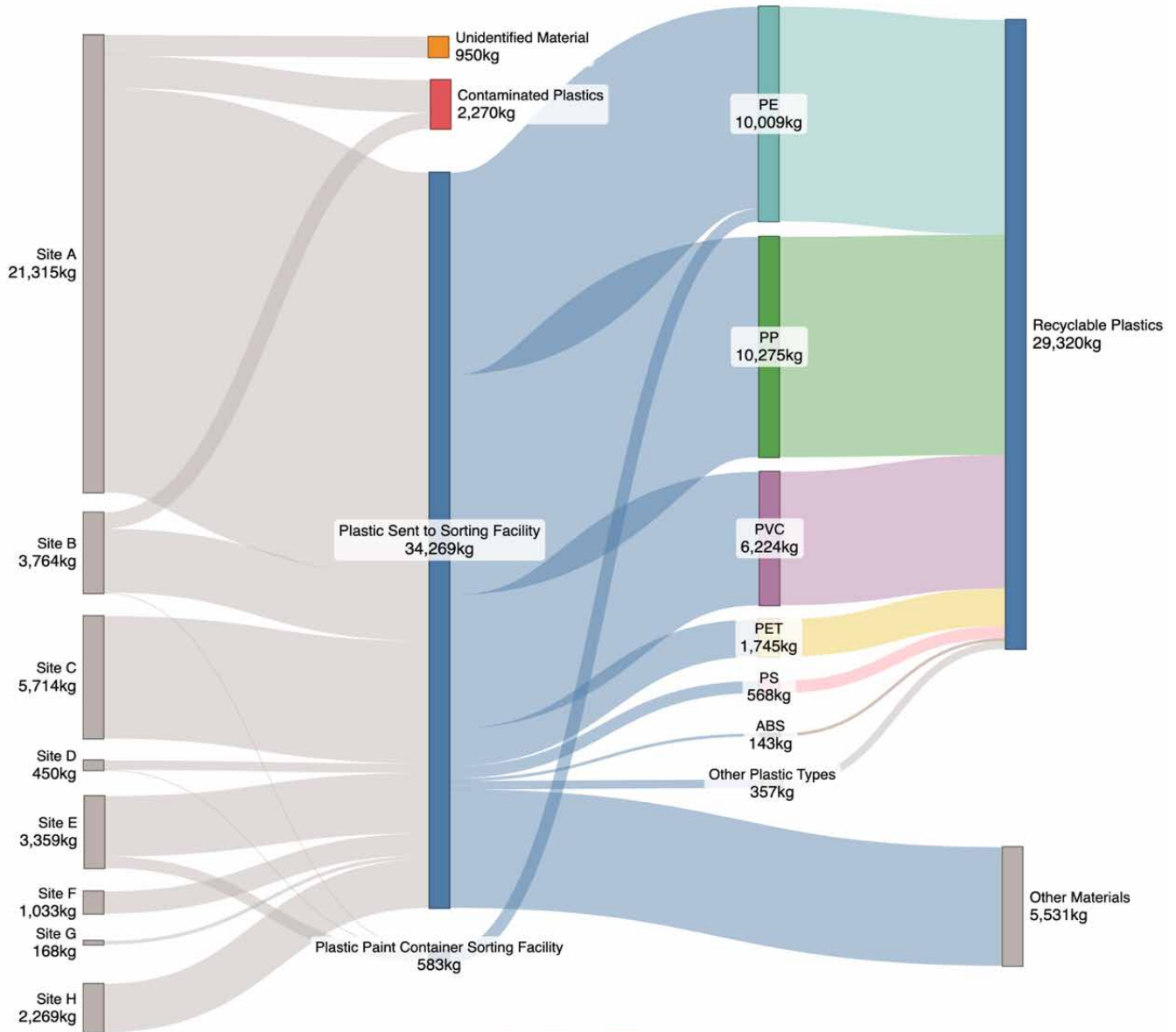
CPI was designed as a pilot program to test whether a more circular approach could be established for construction-related plastics in Metro Vancouver by improving collection, tracking, sorting, processing, and reintegration into manufacturing.



To explore that question, Light House worked with eight active construction sites over a fourteen-month period. The study tracked material from job sites through hauling, sorting, storage, processing, and manufacturing, while also documenting the operational conditions that affected recovery. The intent was not to produce a definitive account of all plastics generated across the construction sector, but rather to test the practicality of a circular value chain under real-world conditions and to identify significant opportunities and constraints. As such, the findings should be understood as evidence from a pilot program involving participating projects with differing

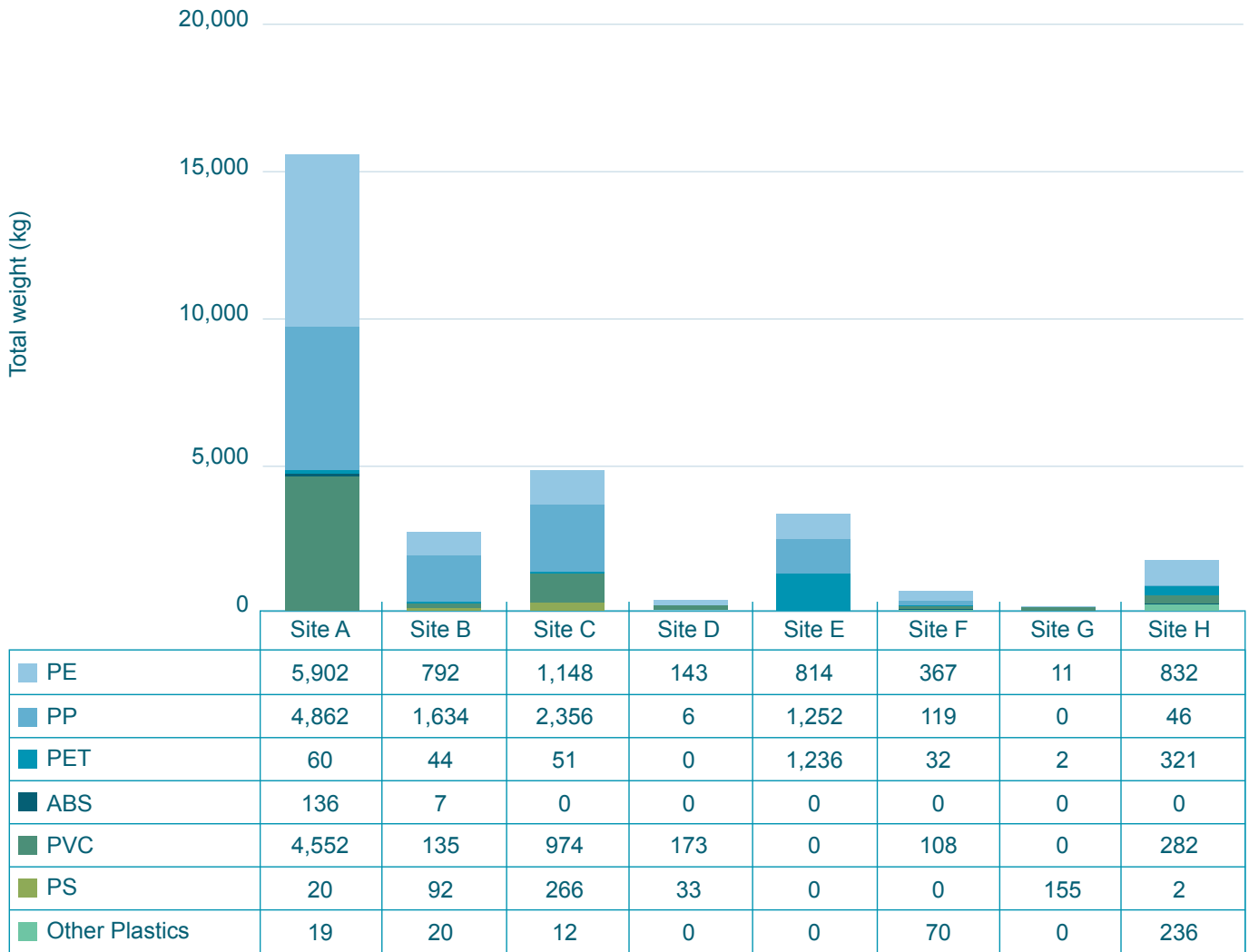
characteristics, construction methods, and project phases, rather than as a complete representation of sector-wide conditions.

Even with those limitations, the study offers valuable insight into the types and quantities of plastics generated during construction and the extent to which they may be recoverable. CPI collected 77 loads representing 38,070 kg of construction-derived plastic. Of the 34,268 kg sent for sorting, 29,319 kg, or 77 per cent, was classified as recyclable.



The material profile suggests that the clearest near-term opportunity lies in relatively clean, homogeneous plastic packaging and protection. Films, wraps, strapping, geotextiles, and similar materials accounted for a substantial share of the plastics observed across participating sites. By resin type, polyethylene, particularly low-density polyethylene (LDPE) associated with soft plastic films and sheeting, was the most significant category across the study, followed by polypropylene (PP). PVC also represented a notable share by weight, though less by volume because of its

density, while PET and other resins were present in smaller quantities. These patterns indicate that a limited number of recurring material streams account for much of the recoverable plastic generated during construction. At the same time, the pilot makes clear that technical recyclability does not in itself ensure practical recovery.



Contamination averaged 21 per cent by weight across participating projects and was shaped by a range of site conditions, including project stage, weather, loading practices, bin placement, and the degree of oversight given to separation systems. In some cases, contamination appeared to result less from confusion about acceptable materials than from convenience and competing site pressures. Smaller mixed plastics, plastics combined with tape or other materials, and plastics generated during excavation or erosion and sediment control activities proved especially difficult to manage cleanly. By contrast, sites with visible leadership, repeated communication, and more deliberate collection practices generally achieved better outcomes. The study therefore suggests that good system design that aligns with how construction sites actually function is critical to achieve effective source separation.

CPI also tested whether construction-derived plastics could move beyond collection and sorting into actual manufacturing applications. A representative sample of LDPE from lumber wrap and PP from clear poly sheeting was mechanically processed into pellets, and the LDPE was successfully incorporated into a construction product. This manufacturing trial showed that integration is possible, but it also underscored

the importance of scale, resin-specific pathways, and end markets that can accommodate some variability in feedstock. Generally, findings suggest that a circular value chain for construction-related plastics may become increasingly feasible where enabling conditions are in place, including clearer material identification, better aggregation of material, more targeted collection systems, stronger processing capacity, and more robust end uses for recycled plastic.

Taken together, the report concludes that construction-related plastics merit more focused attention within circular economy efforts than they currently receive. The pilot initiative shows that a meaningful share of plastics generated during construction can be recovered under the right conditions, particularly where the emphasis is placed on cleaner packaging-related streams and on system design that reflects operational realities on site. It also shows that important barriers remain, especially in relation to contamination, handling, processing capacity, and market development. For that reason, the principal contribution of CPI is not to present a fully proven model, but to clarify where the strongest opportunities appear to exist, where the main points of failure arise, and what kinds of coordinated action would be needed to move construction-related plastics closer to a genuinely circular system. To that end, the report concludes by offering 27 recommendations to support a transition to a more circular economic model for managing plastics in construction.