



Enhancing the Recycling of Construction and Demolition Debris

by

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Introduction

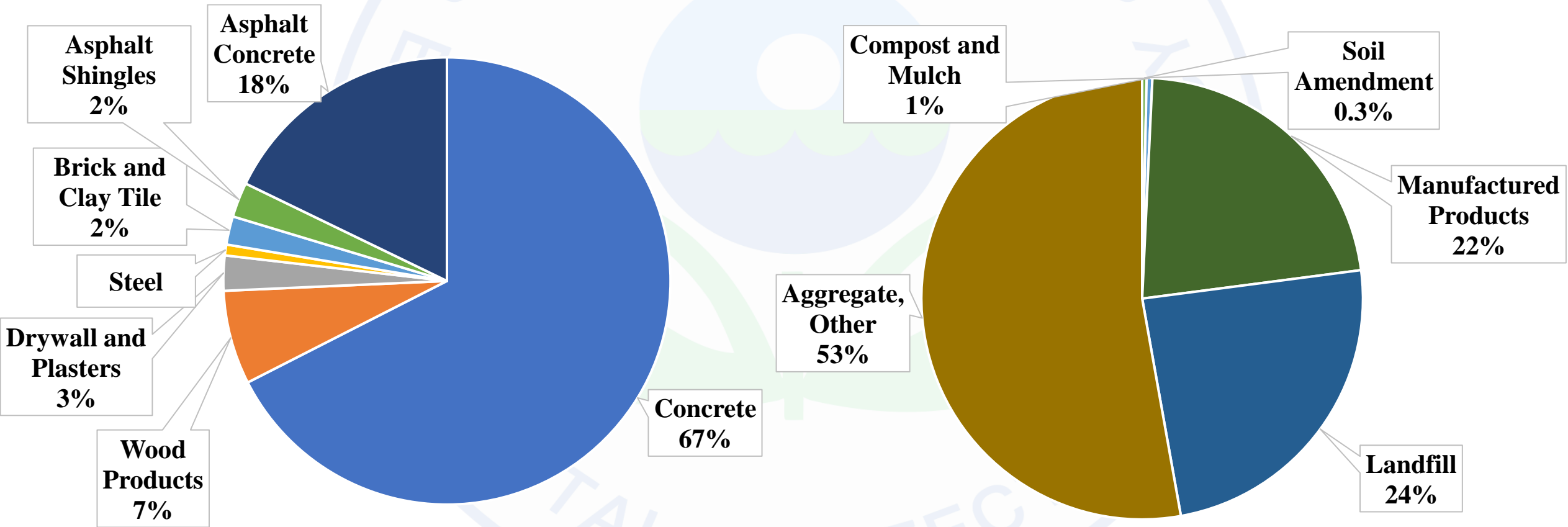
- It is estimated that more than 600 million tons of construction and demolition (C&D) materials were generated in 2018
- Current C&D debris recycling rate is 75% (by mass)
- New and emerging technologies are needed to supplement existing recycling activities for enhancing the recovery and/or recycling of C&D materials.
- EPA's Office of Research and Development (ORD) is conducting research to help enhance the recovery of C&D materials and increase the diversion of C&D materials from disposal in landfills.

Methods to Improve Sorting of Construction and Demolition Materials for Reuse

To develop methods to assess available product labeling, instrumentation, and technologies to improve the sorting processes for C&D materials. SHC will document or develop best practices to encourage reuse and recovery of building materials from deconstruction and demolition activities.



C&D Material Generation and Management



C&D Material Generation and Management by Material

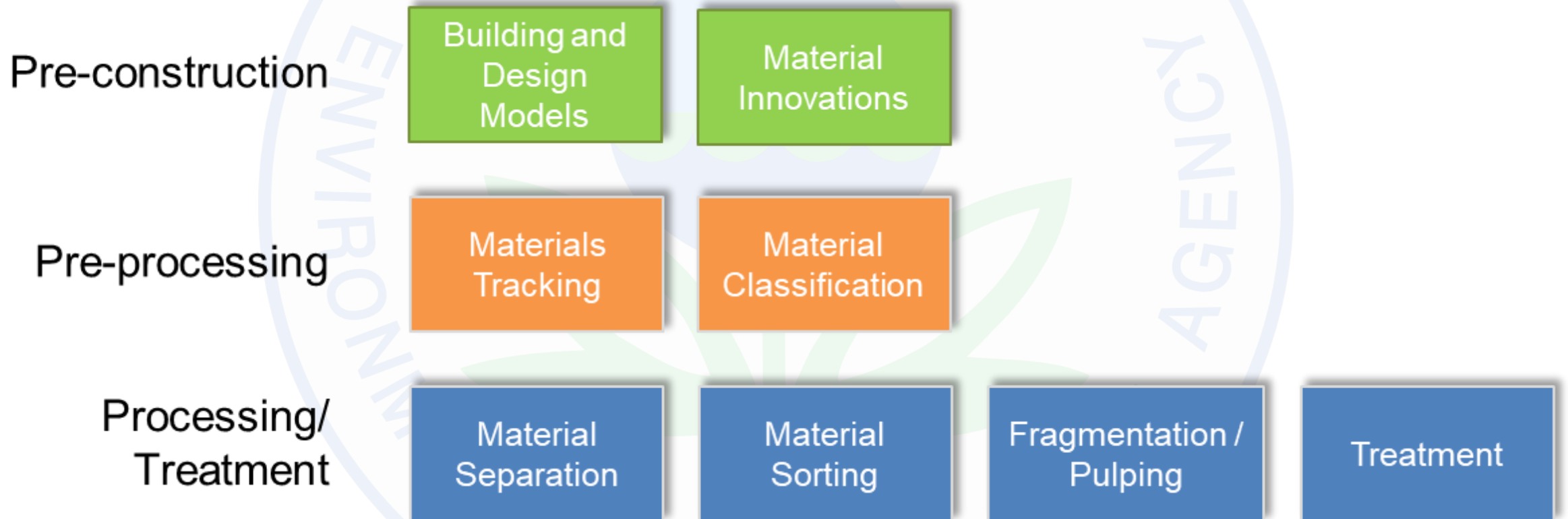
C&D Material	Millions of Tons					Percent Recycled (by mass)
	Landfill	Compost and Mulch	Manufactured Products	Aggregate, Other	Soil Amendment	
Asphalt Concrete	4.9	0	91.8	10.3	0	95.4%
Concrete	71.2	0	32.8	301.2	0	82.4%
Metal	1.1	0	3.6	0	0	76.6%
Asphalt Shingles	13.0	0	2	0.1	0	13.9%
Gypsum Drywall	13.2	0	0.2	0	1.9	13.7%
Brick and Clay Tile	10.8	0	0	1.5	0	12.2%
Wood	29.6	2.5	1.2	0	0	9.1%

Objectives

- Identify and describe emerging technology options that may advance or increase material recovery and recycling in the future
- Provide a catalogue of new and emerging technologies and outline potential strengths of each technology for recovering and recycling C&D materials



Objective - C&D Materials Recovery Technology Landscape



Future Direction

- AI assisted C&D recovery
 - Case studies for C&D technologies
 - Quantifying the potential for new technology to increase C&D materials recycling
 - Adoption and implementation resources and tools
- Evaluation of deconstruction
 - Barriers for reuse
 - Increase market value of products
- Examination of cross contamination
 - Lead base paint
 - PFAS

