

RI Compost Conference

Prince George's
County, MD
ASP Compost
Facility

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Overview

- Scale, feedstock and technologies
- Prince George's County
- Pilot scale demonstration of ASP compost system
- Design of full-scale system
- Construction
- Operation

ASP = Aerated Static Pile

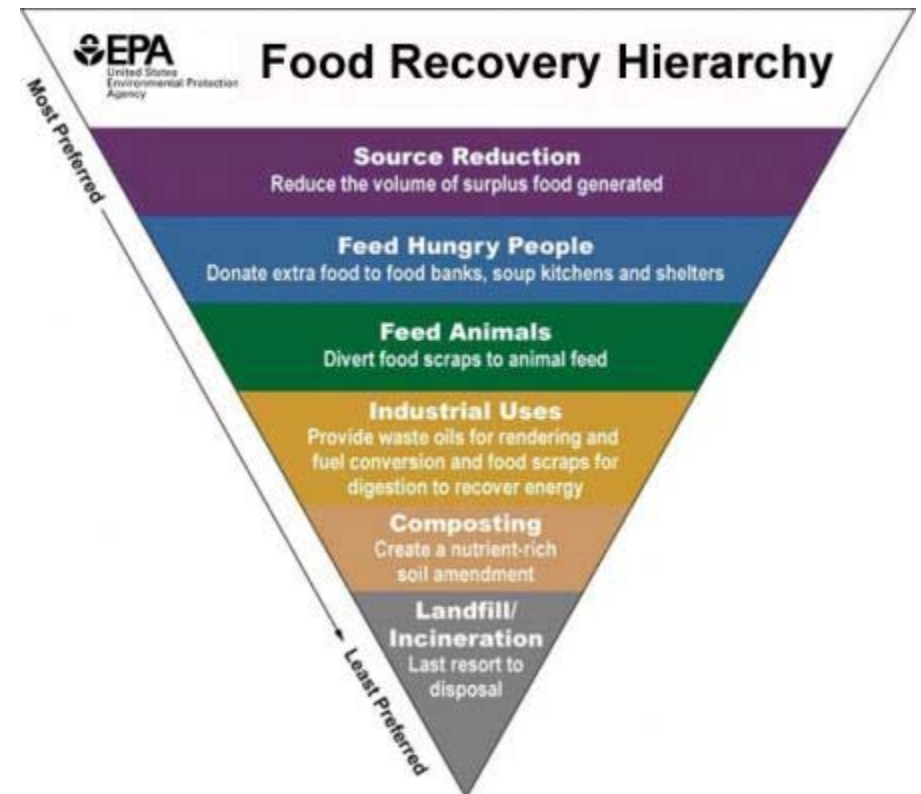




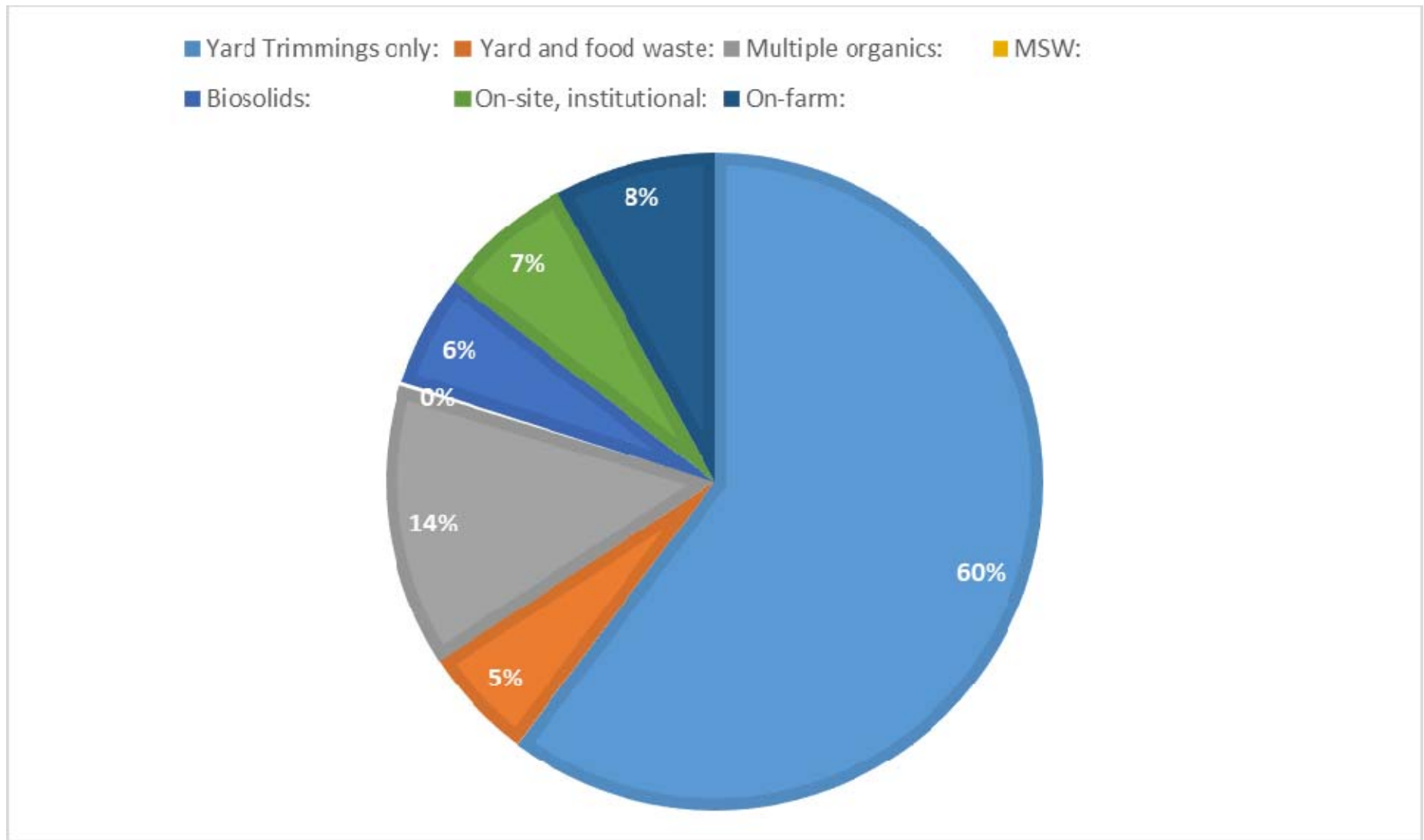
Scale, Feedstocks, and Technologies

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ILSR Hierarchy vs EPA Hierarchy



US Compost Facilities by Feedstock



Compost Technologies

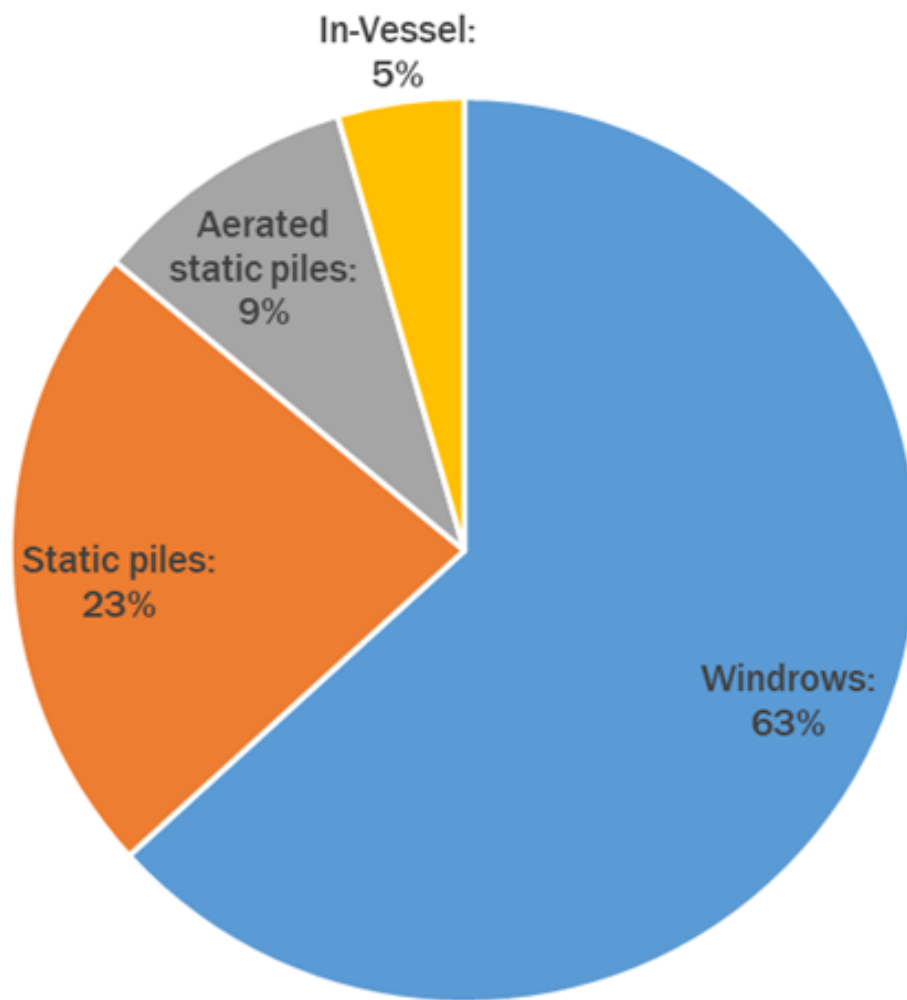
Turned Windrow

Static Pile

Aerated Static Pile (ASP)

In-vessel

US Compost Facilities by Method



Composting Method	Number of US Facilities
Windrows	1,135
Static Piles	409
Aerated Static Piles	170
In-Vessel	81

2017 Biocycle Survey; 34
states; 2019 food waste only
report



Prince George's County

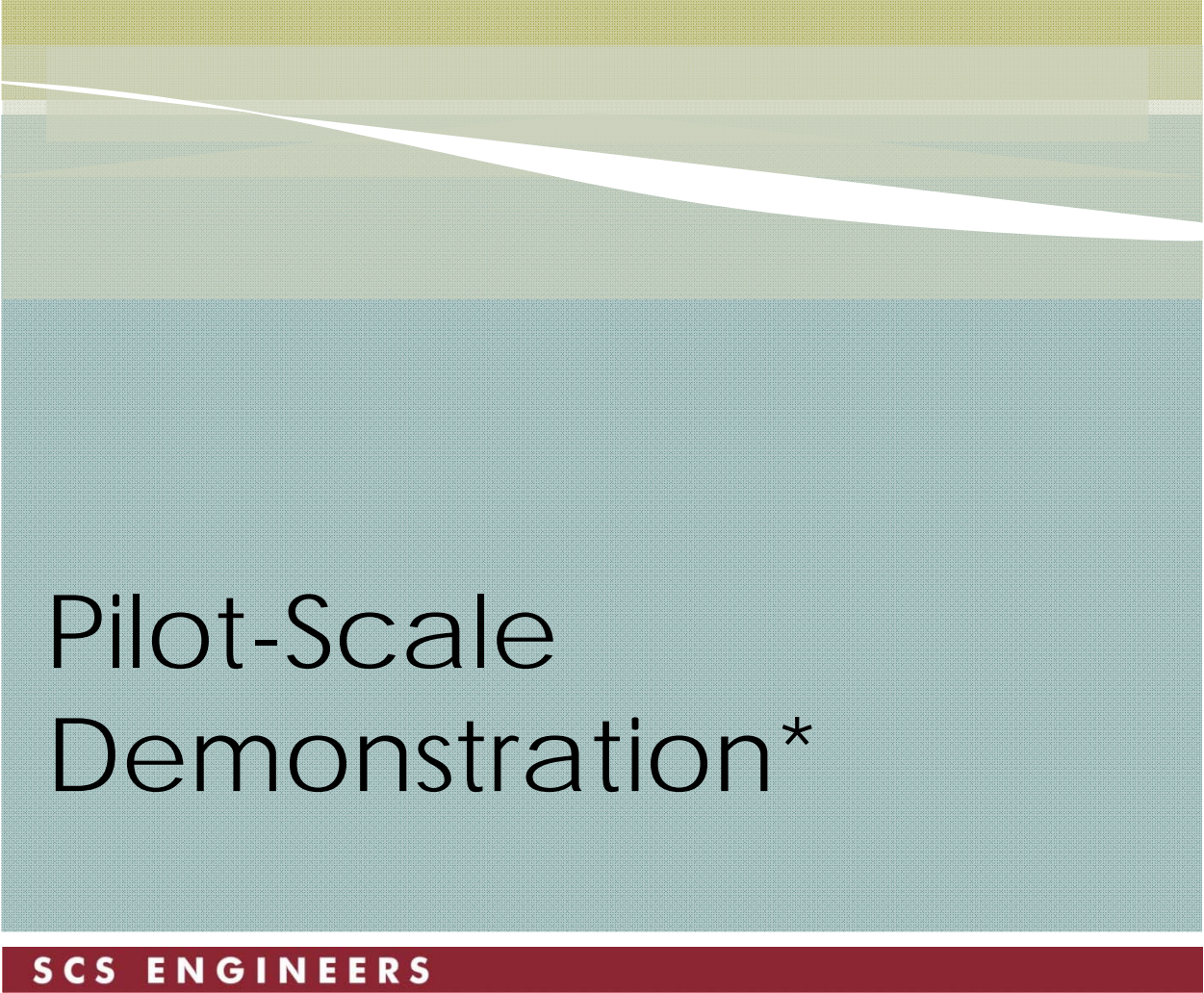
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Demographics and Material Types

- Demographics
 - Population – 900,000 (RI – 1,000,000)
 - Households – 330,000
 - Residential, commercial, institutional
- Material Types
 - Yard debris
 - Food scraps
 - Compostable bags and serviceware



Clearly define acceptable materials



Pilot-Scale Demonstration*

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2013 Pilot-Scale Demonstration

- Historic yard waste composting
 - Open windrow with compost turner
 - LeafGrow compost product
- Food waste demonstration
 - Benchmark versus yard waste
 - Process time
 - Product quality
 - Odor control
 - Feedstock mix ratios: 10%, 25%, 50%

2013 Pilot (cont.)

- SG Mobile with Gore cover ASP system
- 1 cover, 82'x26'x12' high
- Above-ground aeration
- 8 weeks per batch
- Positive results:
 - Compost up to 50% food
 - Quality product
 - Odor control

Project Evolution

- 2013-2014: One SG mobile/ Gore cover
- 2015: Add one SG mobile/ Gore cover
- 2016: Add four SG mobile/ Gore cover
- 12,000 tpy of food capacity





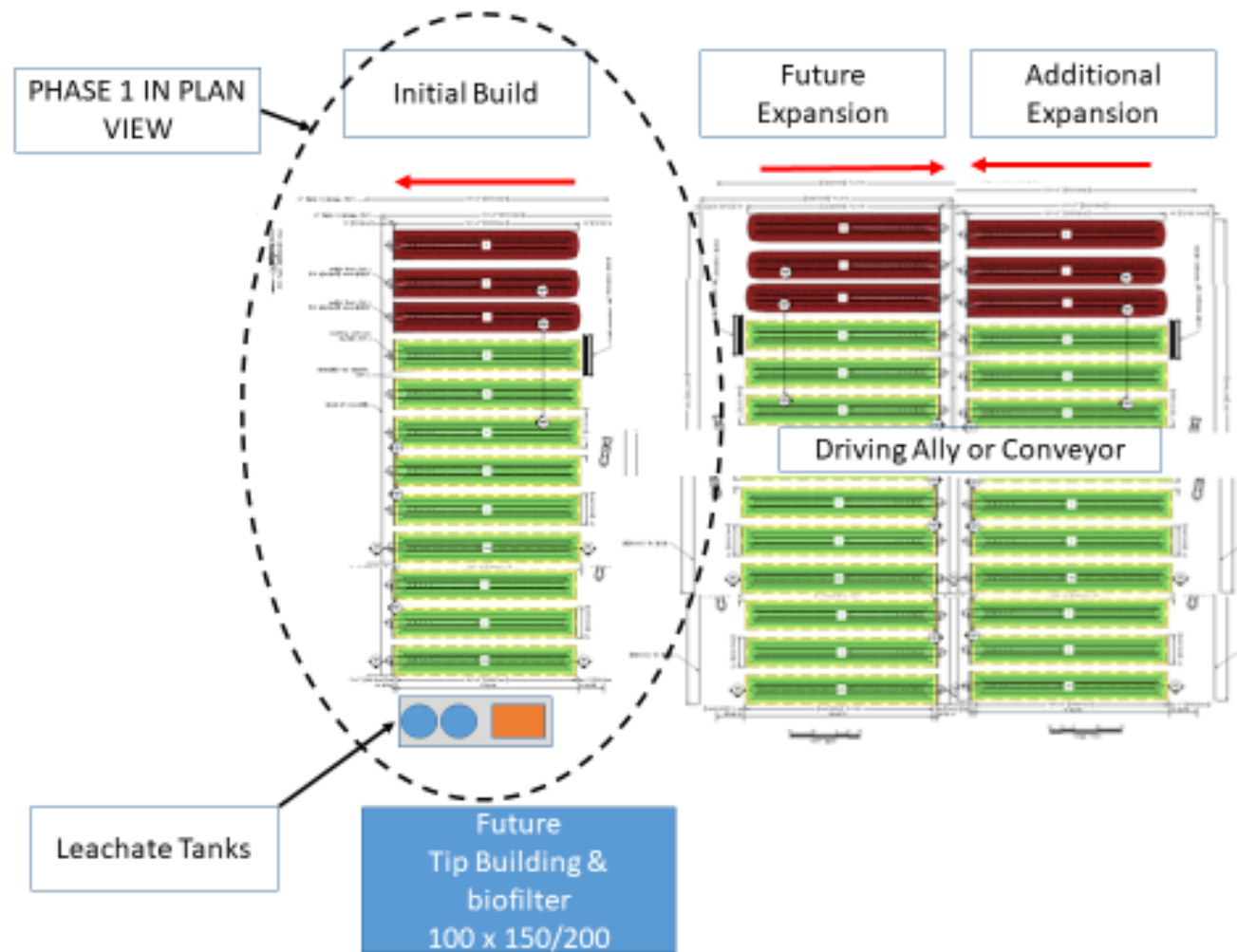
Design of Full-scale

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Design Features

- First phase (12 bunkers) of planned 36 bunkers
- SG MEGA™ system with Gore covers
- ~ 4.5 acre footprint
- Combined with 6 SG Mobile systems, 57,000 tpy capacity

Conceptual Layout – 36 Bunkers



SG Technology

- Gore covers: 165 feet by 26 feet
- Cast-in-place concrete bunker walls
- Concrete floors with aeration trench/ leachate drain
- Each bunker has 2 aeration trenches, the length of the bunker
- Leachate drains water trap and then to sump
- Leachate pumped to dual 6,150-gallon tanks; haul to off-site treatment facility

Critical Elements

- Rounded polymer wall caps
- Aeration trench/leachate drain
- Asphalt berm to block stormwater



Leachate Management

- Storage tanks with secondary containment
- Sump



Civil/ Site

- Grading and earthwork
- Erosion and sediment control
- Stormwater management



Structural and Electrical

- Subcontractor Arcon designed bunkers
- Considered pre-cast walls; price and schedule dictated cast-in-place
- Leachate tank foundation by SCS
- Subcontractor Grotheer for electrical design
- 2.5-hp electric blowers plus oxygen and temperature monitoring
- Leachate sump: 2 grinder pumps



Construction - 2018

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Schedule and Cost

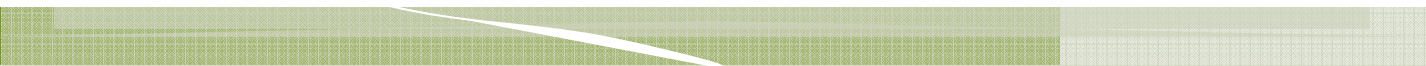
- Completed in October 2018
- Capital cost of about \$5 million



Operation

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Rhode Island Possibilities

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<1/2 - acre



Thank You!

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