CALIFORNIA COMPOST COALITION

July 2018 | Vol. 5, Issue 7 Sustainable Organics Recycling

MRFy's Law & Order

'Anything that can be MRFed will be MRFed' is the '**MRF First!**' credo to divert waste from landfills and reach the many statewide goals and mandates. With the industry falling on the China National Sword and shuffling recyclables around, we are now told to '*throw it out when in doubt*', keeping materials source-separated. California is suppose be at a 75% statewide recycling rate by 2020, but will be dropping toward an estimated 40% recycling rate in 2020. Defaulting to just the three-container organic waste collection service to comply with SB 1383 will keep materials clean, but will not achieve the 75% organic waste recovery mandate by 2025. With bales stacking higher and wood chips piling up, the industry is losing a once dependable revenue sources while heavily investing in MRF upgrades and labor, leaving us seriously wondering if anything can go wrong will go wrong in the world of recycling and composting.

MRFs are leaping forward with technology improvements, including optics and automation as SB 1383 regulations are being promulgated. MRF standards are now being placed in proposed regulations based on the AB 341 statutes and SB 1383 mandates to recover 50% of all organics by 2022 and 75% of all organics by 2025. The next-generation of "high diversion organic waste processing facilities" are being designed to produce compost feedstock, dry anaerobic digestion feedstock, wet anaerobic digestion slurry, and/or fertilizer feedstocks, with each market holding their own specification for a low contamination threshold. The organic waste recovery rate can be as high as 75% for the MSW processing line, and when co-located at a Facility with expanded source-separation programs, the Facility organic waste recovery rates can be as high as 90%, far exceeding SB 1383 mandates.

Giving jurisdictions the old 1-2-3 cart organic waste collection service is fantastic for source-separationists, who limit contamination and take great care of the residential sector (see waste flow chart centerfold). This proven system has been rolled out for decades, will be uniformly labeled by 2022 for new carts and 2025 for existing carts, and will be color-coded statewide by 2032, or by the end of their useful lifecycle, which is typically 7 to 10 years. The blue cart can be commingled or spilt, striving to keep the recyclables clean to meet the new standards of China's National Sword. The green cart with food waste can be mixed, or split, and could go to composting or anaerobic digestion with prescribed incompatible material and contamination limits. The black cart can be landfilled, but if it happens to be further processed at a MSW Processing Facility to squeeze out more organics to go to anaerobic digestion, the MSW Processing Facility is **not** subject to the high diversion requirements, since the three-cart system is in place according to Section 30.1(b). That's the way it should be to continue source-separation with '**MRF First!**' To get to the 75% organic waste recovery rate by 2025, the facility needs to squeeze the black cart MSW in a systems approach with source-separation.

Providing the three-bin organic waste collection service for the commercial sector follows the same SB 1383 theme for the residential sector (see waste flow chart centerfold). Even with best management practices and continual training the post-consumer source-separated food waste collection routes still produce 30% to 40% residual, far exceeding Section 17409.5.8(a) that limits incompatible materials to no more than 10% after 2022. This section would not apply if no more than 10% of the residual sent to disposal from the processing facility are organic waste. The black bin can be landfilled, but if it happens to be further processed at a MSW Processing Facility to yield even more organics, this MSW processing line is **not** subject to the high diversion requirements, since the three-bin system is in place, which is needed to get to the 75% organic waste recovery rate.

The three-container organic waste collection service for both residential and commercial sectors is viewed as the SB 1383 California standard, with uniform colors and labeling and the black container being landfilled. There is less burdensome reporting and you don't have MRF performance anxiety. Based upon recent proposals and modeling, this system cannot deliver on the 75% organic recovery rate and could maybe achieve 50% with the best outreach, education, and monitoring. Staying true to source-separation programs being offered to all commercial accounts, the black bin can be further processed to

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MRFy's Law & Order

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recover organic waste, especially from multi-family accounts and defiant restaurants.

The two-container organic waste collection service (see waste flow chart centerfold) might have been a reasonable 'wet/dry' option before the commodity market collapsed, as it will be more challenging today given the new specifications for export bales. However, this could be used in low density or rural routes for collection efficiency coupled with MRF technology upgrades. The high diversion organic waste recovery requirements rightfully applies here, and if co-located at a facility with a residential source-separated green cart system, those tons should also be used to define high-diversion at that facility. A hybrid system of 3-carts for residential and 2-bins for commercial, while squeezing the black cart should be an option where all of the tons processed at that facility should define high-diversion, and not just the wet MSW processing line on it's own.

The unsegregated single-bin collection system is the black box for the black containers that is causing all of this Law & Order. This is yesterday's dirty MRF that people are dancing around that deserves the oversight that SB 1383 is reaching toward and that the MRF police will inspect.

MRF performance cannot be viewed in a vacuum or defined by dirty processing lines, but needs to be evaluated as a recycling system complimented by other MRF processing operations within the same facility or connected to a downstream composting facility. Source-separation thrives and the new MSW processing line dives deeper into the waste stream, going after the mixed organics in solid waste that would have otherwise gone to the landfill and is truly '**MRF First!**'

We understand that the organic waste recovery rate requirements are not on the landfills or even on the jurisdictions, but is a statewide mandate. Should California default to the three-container system alone, the statewide organic waste recovery rate may eventually hover around 50% by 2025, with all jurisdictions claiming a good faith effort based upon their education, outreach, and monitoring for the favored 3-container program. Using the fair share argument and based upon their 2014 disposal tonnages and statewide waste characterization, all jurisdictions should be setting organic waste diversion targets to develop their program to reach a 75% recovery rate by 2025, since the old 1-2-3 will not get them there.

Market development with state and local government procurement has been lacking for compost and wood waste over the years, but CalRecycle has stepped-up and offered the fair share argument to determine local government procurement targets for renewable natural gas (RNG). The statewide RNG target could be 46 million diesel gallon equivalents that could fuel over 8,000 refuse trucks, which happens to be the general amount of trucks still on diesel in urban areas. The entire waste collection fleet could be fueled by the RNG produced by the organic waste that the fleet collected.

In a perfect world, the purist demands source-separation and zero waste with markets magically materializing. With the downstream fall of mixed paper and plastics, the statewide recycling rate is dropping fast to 40% regardless of goals and mandates as SB 1383 gears up. Organically, compost and RNG have local markets that can be produced from a closed-loop hybrid system of source-separation and MSW processing to get to 75% organic waste recovery. SB 1383 could become MRFy's Law, placing incentives on source-separation with less reporting and good faith that can't deliver 75%, while penalizing MSW processing coupled with source-separation with onerous reporting that can actually deliver 75%.

Section 30.7 - Cart Color Requirements:
New Carts By 2032, or Useful Life

Section 30.8 - Labeling Requirements:
New Carts by 2022, Existing Carts by 2025

SB 1383 - Section 30.1: Three-Cart System Options
Three-Cart Organic Waste Collection Services (Residential)

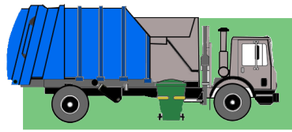
	Pre-Processing Facility	Contamination/Residual	Processing Facility	Contamination/Residual	Markets

Source Separated Organics (SSO)

1 CART

No Textiles, Carpets, Plastic Coated Paper, Human Waste, Pet Waste, or Treated Wood Waste.

Or



SSO Recovery Facility
30% - 40% Residual
Industry Average

Food Waste Processing Facility
30% - 40% Residual
Industry Average

After 2022, No more than 10% Incompatible Material by Weight
Section 17409.5.8(a)

After 2022, no more than 10% incompatible material by Weight
Section 17409.5.8(a)

Compost Facility

Compost/ Anaerobic Digestion/ Feed Facility

After 2022, no more than 10% of the Residual sent to Disposal are Organic Waste
Section 17409.5.8(c)(2)
Then Not Subject to **Section 17409.5.8(a)**

If **Section 17409.5.8(c)(2)** Compliant, then not subject to **Section 17409.5.8(a)**

After 2022, no more than 10% of the Residual sent to Disposal are Organic Waste
Section 17409.5.8(c)(2)
Then Not Subject to **Section 17409.5.8(a)**

If **Section 17409.5.8(c)(2)** Compliant, then not subject to **Section 17409.5.8(a)**

Compost Markets
0.5% Contamination
Section 17409.5.8(c)(2)

Compost Markets, Feed Markets

Source Separated Recycling (SR) Dual Stream

2 CART

No Textiles, Carpets, Plastic Coated Paper, Human Waste, Pet Waste, or Treated Wood Waste.

Or SR Single Stream

Recycling Center

Material Recovery Facility

Typically Less than 10% Residual
- No SWFP

Greater than 10% Residual
- SWFP

Bales

Bales

Less than 0.5% Contamination

Less than 0.5% Contamination

China, Oversea Markets

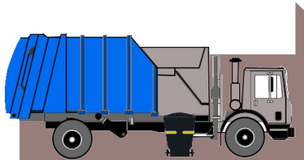
China, Oversea Markets

Municipal Solid Waste (MSW)

3 CART

Not Subject to High Diversion Requirement with Three-Cart system

Or



MSW Processing Facility

Transfer Station or Landfill

If Food Waste Allowed in Black Can, High Diversion Applies **Section 30.1(c)(1).** After 2022, No more than 10% incompatible material by Weight **Section 17409.5.8(a)**

100% Residual

Compost or Anaerobic Digestion

Landfill

After 2022, no more than 10% of the Residual sent to Disposal are Organic Waste
Section 17409.5.8(c)(2)

After 2022, no more than 10% of the Residual sent to Disposal are Organic Waste
Section 17409.5.8(c)(2)

If **Section 17409.5.8(c)(2)** Compliant, then not subject to **Section 17409.5.8(a)**

Compost Markets

Landfill

Section 30.7 - Bin Color Requirements:
New Bins By 2032, or Useful Life

Section 30.8 - Labeling Requirements:
New Bins by 2022, Existing Bins by 2025

SB 1383 - Section 30.1: Three-Bin System Options
Three-Bin Organic Waste Collection Services (Commercial)

Pre-Processing Facility | **Contamination/Residual** | **Processing Facility** | **Contamination/Residual** | **Markets**

Source Separated Organics (SSO)

1 BIN

No Textiles, Carpets, Plastic Coated Paper, Human Waste, Pet Waste, or Treated Wood Waste.

Food Waste Processing Facility
30% - 40% Residual
Industry Average

After 2022, no more than 10% incompatible material by Weight **Section 17409.5.8(a)**

Compost/ Anaerobic Digestion/ Feed Facility

After 2022, no more than 10% of the Residual sent to Disposal are Organic Waste **Section 17409.5.8(c)(2)** Then Not Subject to **Section 17409.5.8(a)**

If **Section 17409.5.8(c)(2)** Compliant, then not subject to **Section 17409.5.8(a)**

Compost Markets, Feed Markets

Source Separated Recycling (SR) Single Stream

2 BIN

No Textiles, Carpets, Plastic Coated Paper, Human Waste, Pet Waste, or Treated Wood Waste.

Material Recovery Facility
25% - 50% Residual
Industry Average

Greater than 10% Residual - SWFP

Bales

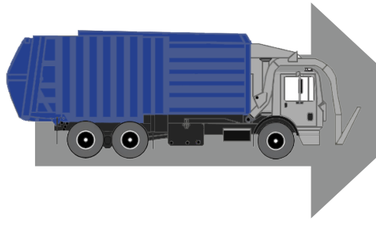
Less than 0.5% Contamination

China, Oversea Markets

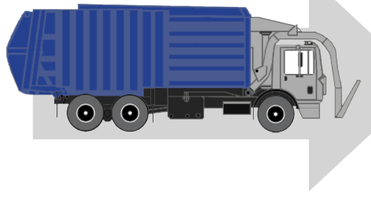
Municipal Solid Waste (MSW)

3 BIN

Not Subject to High Diversion Requirement with Three-Bin system



Or



MSW Processing Facility

If Food Waste Allowed in Black Can, High Diversion Applies **Section 30.1(c)(1).** After 2022, No more than 10% incompatible material by Weight **Section 17409.5.8(a)**

Compost or Anaerobic Digestion

After 2022, no more than 10% of the Residual sent to Disposal are Organic Waste **Section 17409.5.8(c)(2)**

Compost Markets

After 2022, no more than 10% of the Residual sent to Disposal are Organic Waste **Section 17409.5.8(c)(2)**

Landfill

If **Section 17409.5.8(c)(2)** Compliant, then not subject to **Section 17409.5.8(a)**

Transfer Station or Landfill

100% Residual

Landfill

Section 30.7 - Bin Color Requirements:
New Bins By 2032, or Useful Life

Section 30.8 - Labeling Requirements:
New Bins by 2022, Existing Bins by 2025

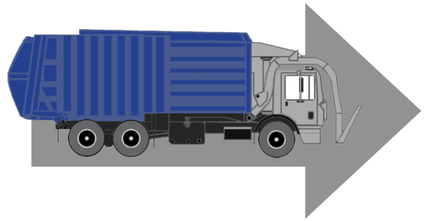
SB 1383 - Section 30.2: Two-Bin System
Two-Bin Organic Waste Collection Services (Commercial)

Pre-Processing Facility | **Contamination/Residual** | **Processing Facility** | **Contamination/Residual** | **Markets**

Mixed Organic Waste and Non-Organic Waste

1 WET

No Textiles, Carpets, Plastic Coated Paper, Human Waste, Pet Waste, or Treated Wood Waste.



MSW Processing Facility
High Diversion Requirement:
50% by 2022, 75% by 2025
Section 1(a)(33)

If Food Waste Allowed in Black Can, High Diversion Applies **Section 30.1(c)(1).** After 2022, No more than 10% incompatible material by Weight **Section 17409.5.8(a)**

Compost or Anaerobic Digestion

After 2022, no more than 10% of the Residual sent to Disposal are Organic Waste
Section 17409.5.8(c)(2)

Landfill

If **Section 17409.5.8(c)(2)** Compliant, then not subject to **Section 17409.5.8(a)**

Mixed Recyclables

2 DRY

Paper Product, Printing and Writing Paper, Wood and Dry Lumber, Okay.

Material Recovery Facility

Greater than 10% Residual - SWFP

Bales

Less than 0.5% Contamination

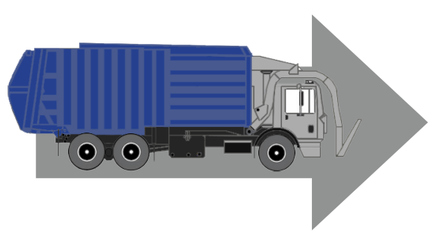
China, Oversea Markets

SB 1383 - Section 30.3: Unsegregated
Single-Bin Collection Services (Commercial)

Pre-Processing Facility | **Contamination/Residual** | **Processing Facility** | **Contamination/Residual** | **Markets**

Municipal Solid Waste (MSW)

1 BIN



MSW Processing Facility
High Diversion Requirement:
50% by 2022, 75% by 2025
Section 1(a)(33)

If Food Waste Allowed in Black Can, High Diversion Applies **Section 30.1(c)(1).** After 2022, No more than 10% incompatible material by Weight **Section 17409.5.8(a)**

Compost or Anaerobic Digestion

After 2022, no more than 10% of the Residual sent to Disposal are Organic Waste
Section 17409.5.8(c)(2)

Compost Markets

After 2022, no more than 10% of the Residual sent to Disposal are Organic Waste
Section 17409.5.8(c)(2)

Landfill

If **Section 17409.5.8(c)(2)** Compliant, then not subject to **Section 17409.5.8(a)**

Less than 0.5% Contamination

China, Oversea Markets