Material Recovery Facility (MRF) Perspective
Background on Lakeshore Recycling Systems
Collection (residential & commercial)
Recycling Collection

- Initial curbside recycling required the driver to sort material at the curb
  - Very little contamination

- Single-stream Recycling
  - Created operational efficiencies
  - Automation
  - Created more contamination
Single-stream Recycling System
Tip Floor / Pre-sort Line
Sorting System
Mixed-Paper Screen
Ferrous Magnet
Optic Sorter (for PET)
Robotics (for HDPE & cartons)
Robotics
Eddy Current (Aluminum cans)
Baled Material (sent to markets)
Challenges with Curbside Recycling
Overall Recycling Challenges

- Contamination
- Operation Green Fence (2013)
- National Sword (2017 - 18)
  - New requirements of 99.50% clean baled material
- Increased consumer products
- Poor commodity markets
  - Recent changes since end of 2017
  - Higher processing costs
Changing Consumer Packaging

- Consumer packaging
  - Increased flexible packaging
  - Increased single use plastics
Challenges facing today’s facilities

- Lightweighting
- Amazon effect
  - Less cardboard packaging use
  - More non-recyclable plastic use
- Increased single use plastics
  - Plastic bags
- Lack of technology to sort new consumer products
  - Investment in recycling infrastructure is required
- Poor communication / education
Recycling Opportunities

- Increased Education / communication
- Cart inspection programs
  (Oops stickers for improper recycling)
Recycling Opportunities

- New technologies

Robotic

Optic Sorter
Recycling Opportunities

**Policy changes**

- San Francisco County and City’s Mandatory Composting & Recycling Ordinance
- Minimum Recyclable Content Standards
- Extended Producer Responsibility
- Plastic Bag Bans
- National Bottle Deposit Bill
- Plastics Tax

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**New California Bill Aims to Improve Recyclable Plastic in Beverage Containers**

October 4, 2019 • By Keith lorris

In the past year, California residents used more than 12 billion plastic beverage bottles, according to data collected by CalRecycle, with many of those containers having little recyclable materials.

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Questions?