

City of San José

Using Mixed Waste Processing to Transform
the Commercial Solid Waste System

New York Chapter

Solid Waste Association of North America

Mixed Waste MRFs Conference – February 24, 2016



Environmental Services

*Delivering world class utility services and programs
to improve our health, environment and economy*

Integrated Waste Management

Key Services and Programs:

- Residential and Multi-Family
- Businesses
- Construction & Demolition
- City Facilities
- Public Events



About San José

- 10th Largest City in U.S.
- 3rd Largest City in CA
- Population 1,000,000+
- Diverse Demographic Profile
- Generates 1.8 Million Tons Waste/Year
- Citywide Diversion 71%



Time for Change

2007 Green Vision

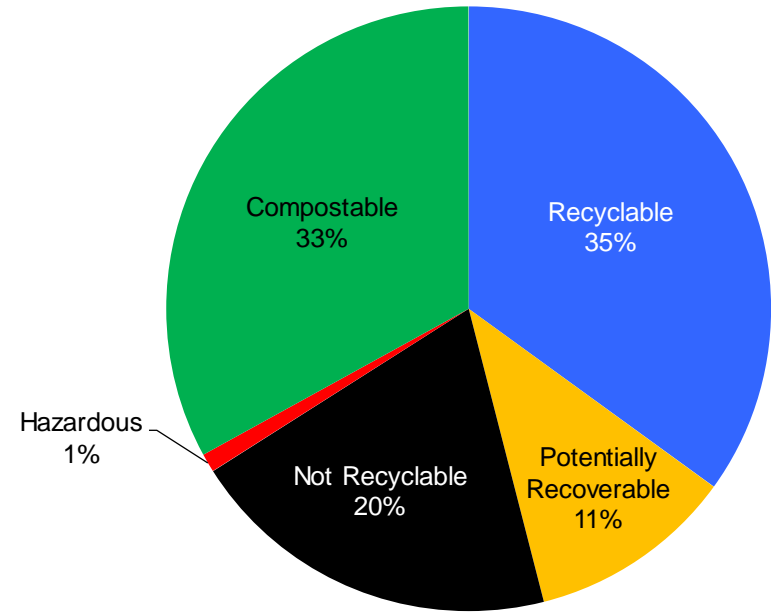
- 10 Citywide Goals
- 100% Waste Diversion
- Waste-to-Energy

2008 City Waste Characterization

- 79% disposed was recoverable

2008 MFD Mixed Waste Processing

- 75% diversion (mixed and single stream)



Commercial System 1995-2012

20+

Non-exclusive haulers

22%

Diversion rate (not including C&D or MFD)

225K

Commercial tons waste/year

8K

Commercial service accounts

Commercial System

Challenges:

- Volume-Based City Fees
- Inconsistent Customer Rates & Services
- Low Diversion Rate

Goals:

- Stabilize General Fund
- Increase Diversion
- Attract Infrastructure Development



Redesign Process

Seven Years of Planning

- Stakeholder Engagement

Two RFPs (2010)

- Organics Processing
 - 3 proposals
- Collection, Recyclables Processing and Disposal
 - 5 proposals



Commercial System 2012-2027



Collection, Recycling & Disposal



Organics Processing



Republic Services

Newby Island Resource Recovery Park

Facility Readiness:

- Materials Recovery Facility (MRF)
- Organics Composting
- Gas-to-Energy
- C&D
- CNG Fueling Station
- Landfill



Republic Services

The Recyclery

- Largest MRF in the world
- Rebuilt interior
- 110 tons per hour / 400,000 tons per year capacity
- 300 motors
- 200 employees
- BHS equipment technology





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Republic Services

Four processing lines at the MRF:

- Residential single stream
- Commercial single stream
- Commercial **Dry** Waste
- Commercial **Wet** Waste

Wet Organics:

- Pre-processed at MRF
- Direct delivered



Republic Services

2014 Recyclery Throughputs:

330K tons to MRF

220K tons from San Jose

- **2/3** tons **Dry**
- **1/3** tons **Wet**



Zero Waste Energy Development Co.

High Solids Dry Anaerobic Digestion Facility

- First in the U.S.
- Zero Waste Energy and BHS technology
- 16 digesters
 - 300 tons each
 - 21-28 day cycle
- 3 In-Vessel Compost tunnels



Zero Waste Energy Development Co.

2015 Annual Throughput:

- **70K** tons (San Jose)
- **85K** tons total (all sources)
- **95K** tons maximum
- **4K** tons compost

Site Potential:

- **270K** tons per year
- **100K** CY compost
- **1.6** MW



Organics Delivery Specifications

AD material requirements

- $\leq 0.25\%$ glass allowance
- $\leq 30\%$ fiber allowance

Organic Stream (OS) requirements:

Allowance: *Tiered Fee:*

OS1 $\leq 5\%$ (\$75.40)

OS2 5-10% (\$80.29)

OS3 10-20% (\$90.35)

OS4 20-30% (\$99.58)







How is Mixed Waste Processing Going?

- **Commercial Diversion**
 - 77% in 2014
- **Organic Streams**
 - Fiber
 - Plastics
- **Relationship Building**
 - Separate Contracts Challenges
 - Contract Amendments
- **Markets**
 - Port Accessibility
 - PG&E Power Purchase



What's Next for Mixed Waste?

- **Single Family Garbage**
- **Continue to review emerging technologies**
- **Lawrence Berkeley National Laboratory Partnership**
- **Evaluate and Adjust**
 - **Recyclables**
 - **Compost**
 - **Diversion**
 - **Marketability**





Thank you!

Questions?

OUR PASSION. OUR CITY. KEEP IT CLEAN.

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CAPITAL OF SILICON VALLEY
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