

PUBLIC WORKS UPDATE

SEWER AND SOLID WASTE AND RECYCLING UPDATE

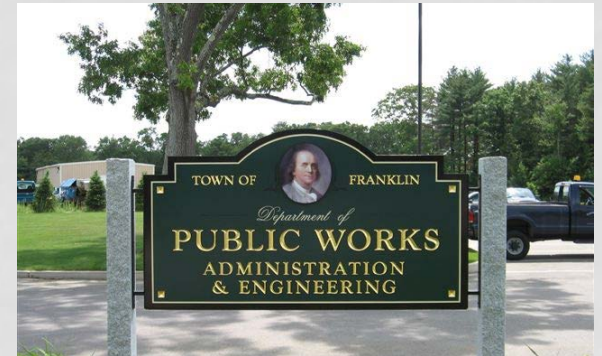
Robert Cantoreggi, Director

Chris White, Solid Waste Coordinator

Scott Haynes, Arcadas Engineering

FRANKLIN, AT A GLANCE

- Suburban, Bedroom Community
- Population: 33,400+
- 290 “lane-miles” of roadways
- Total Land: 27 Square Miles
 - 4 Square Miles of Impervious
- Drinking water supply from groundwater
- 160 miles of water works
- 148 miles of sewer works
- 128+ Miles of Drain Pipe
 - 7,000+ Catch Basins
 - 600+ Outfalls
 - 200+ Treatment Basins



TRIADIC APPROACH

STORMWATER



WASTEWATER

DRINKING WATER

SEWER WORKS

SEWER: REGULATOR ISSUES

- High I & I Rates
- Replacement of Beaver Street Interceptor
 - Cost = \$15 – 20 million
- Increase Cost Of Treatment Plant Operations Due To High Flow



SEWER I & I

- Inflow and Infiltration Occurs When Stormwater and Groundwater Enters the Sanitary Sewer System
- Reduces the Unnecessary Treatment of Groundwater



IMPLEMENTATION

- Public Education
- Promote Low Flow Fixtures
- Restrict New Sewer Extensions
- Implement Strict Inspections / Higher Standards
- Package Treatment Plants



IMPLEMENTATION

Lining and Sealing Program

- Lined 32+ Miles of Pipe
- Sealed 2100+ Manholes
- 60+ Inflow Sources Identified and Removed
- Improved SCADA System for Effective Management
- Monitoring & Maintaining the Beaver Street Interceptor



RESULTS

- Decreased Daily Flow
- Decreased Infiltration Rate
- Increased Sewer Cost
- Beaver Street Interceptor Still In Use With Capacity



SEWER I & I

	2005	2016	% Change
Average Daily Flow	1,610,000	1,378,073	-14%
Average Infiltration Rate	930,000	721,099	-23%
Peak Inflow Rate	2,790,000	1,389,875	-50%

CHARLES RIVER POLLUTION CONTROL DISTRICT (CRPCD)

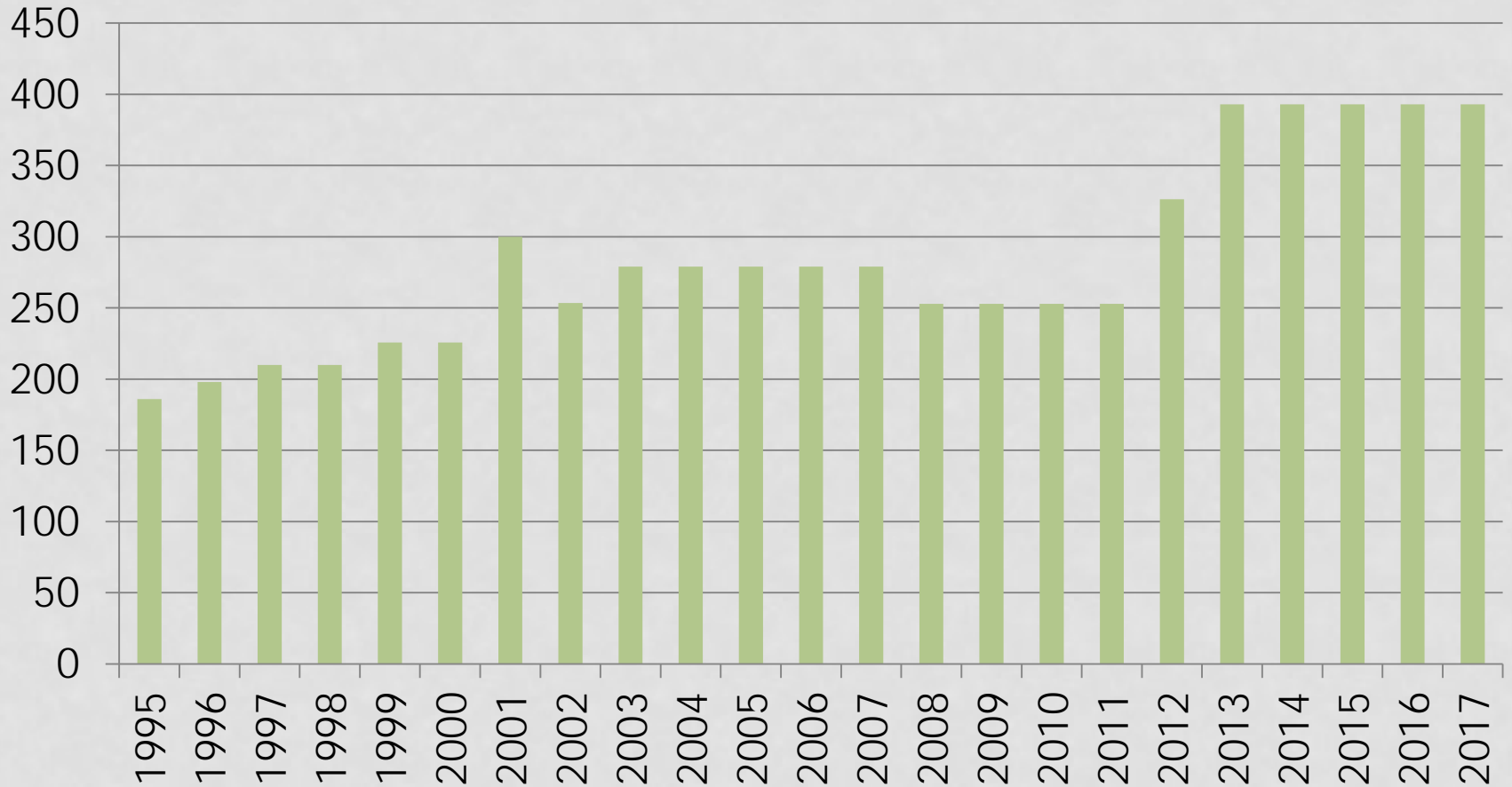


CHARLES RIVER POLLUTION CONTROL DISTRICT (CRPCD)

- Franklin “Share” of plant: 64%
- FY 2018 Annual operating assessment costs: \$2.14 Million
- FY 2018 Capital Assessment for repairs and improvements required by EPA: \$1.54 Million



ANNUAL COST PER RESIDENT



FUTURE PROJECTS

Collection System Master Plan, Phase 2

- Accurately mapping the sewer system and creating a model to assess future flows and potential capacity issues

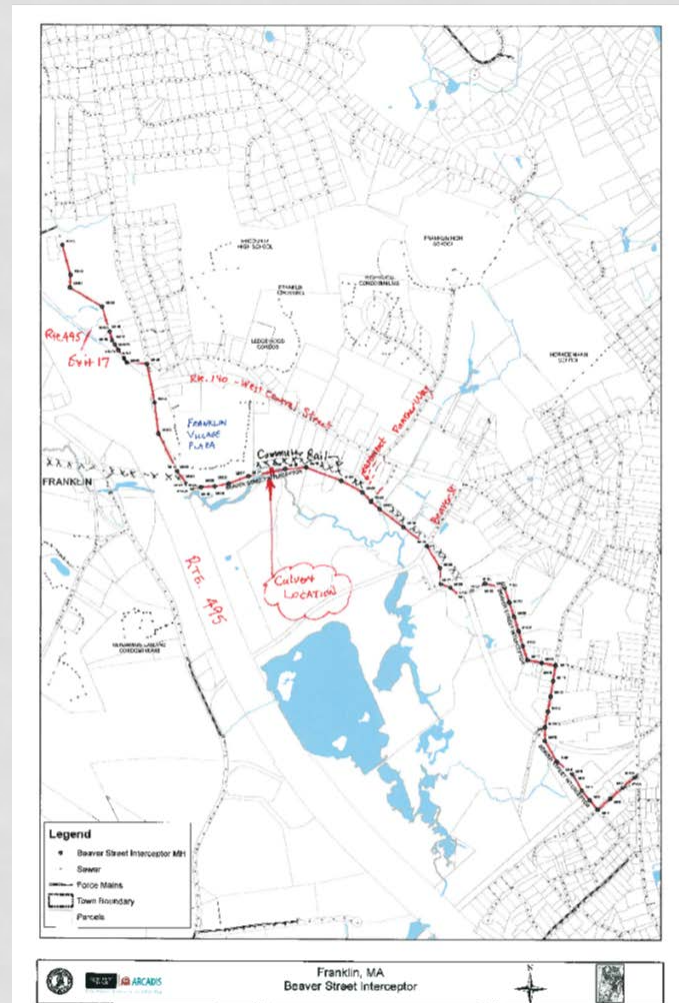
Continued Infiltration/Inflow Analysis, Sewer System Evaluations and Rehabilitation Construction

- State mandated “I/I Analysis” report to DEP
- Town-wide flow metering

Pump Station Evaluations and Upgrades

BEAVER STREET INTERCEPTOR

- Location: Beaver St to Pond St
- Carries 70% of Town's Sewer
- On Average, 1.8 Million Gals Per Day Travel Through Pipeline



BEAVER STREET INTERCEPTOR



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BEAVER STREET INTERCEPTOR

Beaver Street Interceptor

- Pipeline and manhole inspections
- Condition assessment, rehabilitation recommendations
- Interceptor renewal/replacement study

Renewal/Replacement Alternatives Analysis

- Cured-in-place line and other in-situ repairs
- Reconstruct along current alignment
 - Wooded easement, parallel to commuter rail tracks
- Reconstruct in different location
 - Would likely requiring pump station(s)

Estimated for Replacement \$15-20 Million!!!

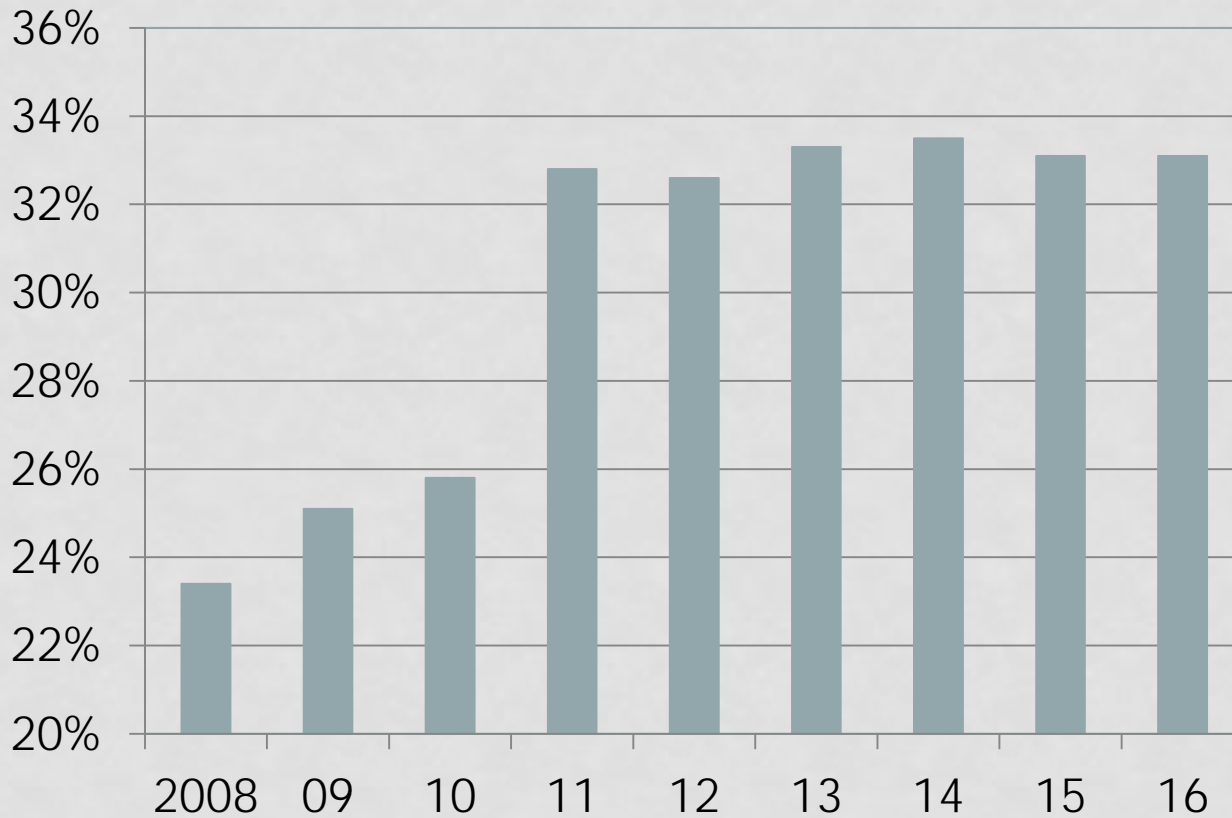
QUESTIONS ???



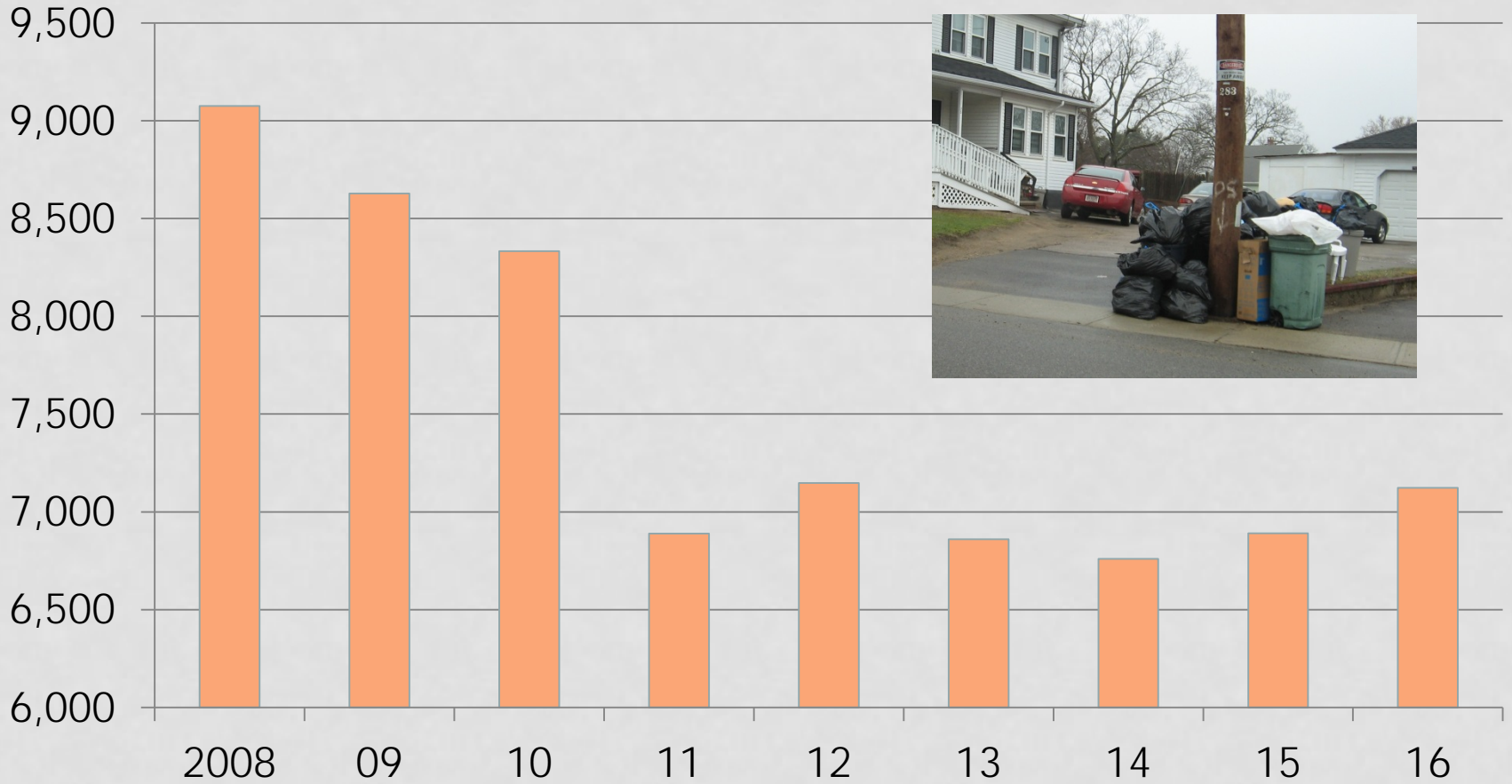
SOLID WASTE & RECYCLING

RECYCLING RATE

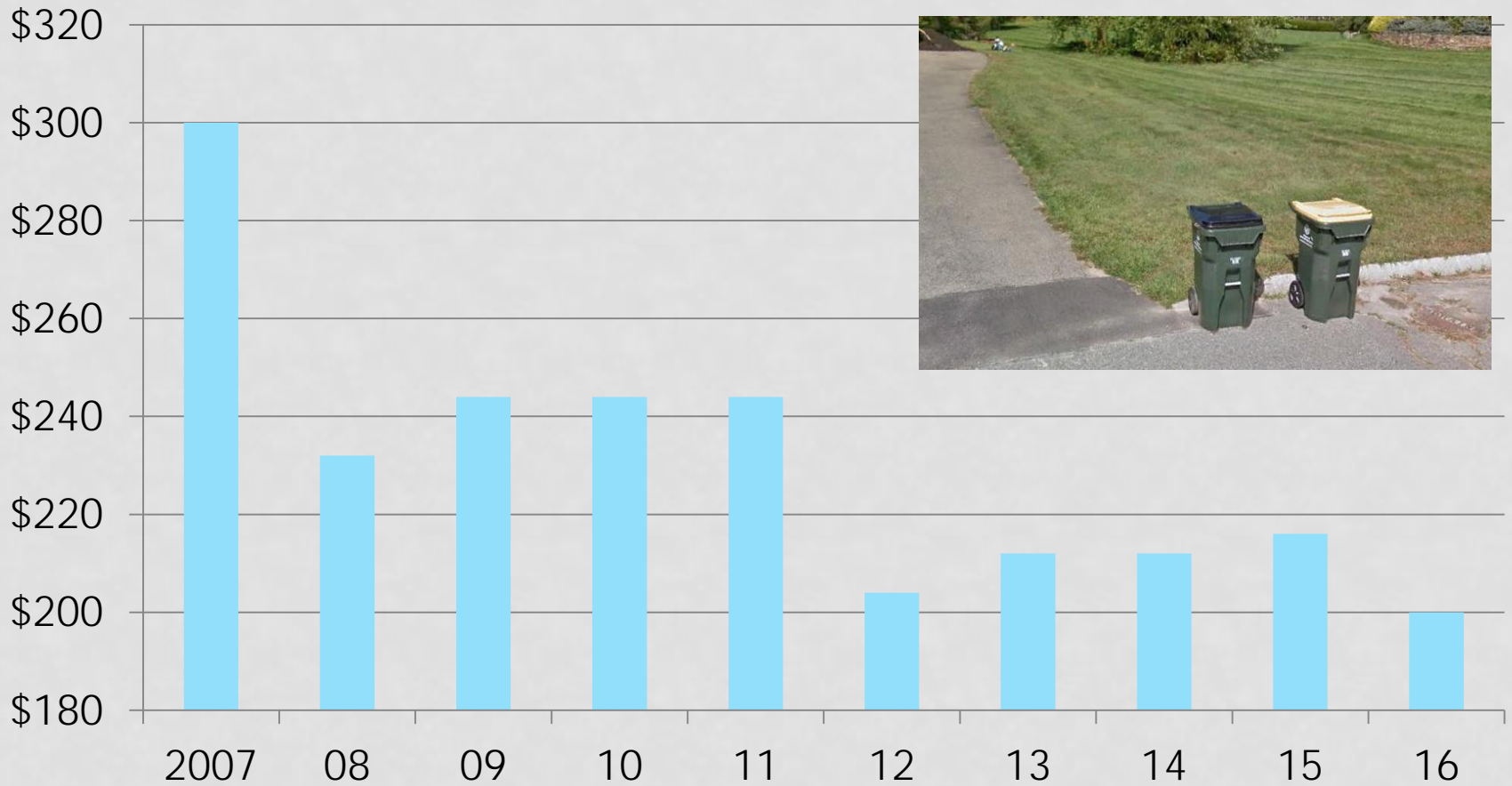
- General Increase (2008 – present)



TRASH BY TONNAGE



COST PER RESIDENT



CONTAMINATION



It starts at the cart,



dumps in the truck,



Goes to the facility,



shuts down the plant.



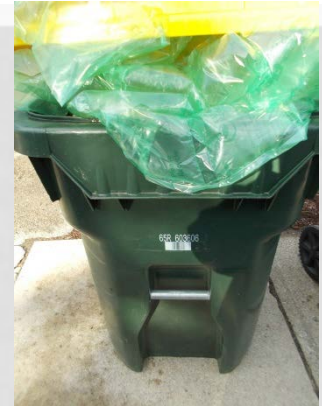
Resulting in rejected loads

China set to ban import of many recyclable materials by 2018

Increased costs !!!

CONTAMINATION EXAMPLES

- Plastic Bags, wrap or film
- Styrofoam
- Trash or Garbage
- Hazardous Waste and mercury items
- Yard waste
- *Anything not listed as acceptable materials list in the annual mailer and website*



What is the China Recycling Import Ban?

China is banning the import of 24 varieties of solid waste, including types of plastic and unsorted paper
Yard waste

- Trash contamination cannot exceed 0.5%
- Current industry 14%
- Franklin for 2016 8%

CONTAMINATION = COST

- Current Recycling Rate – 33% with 3,700 tons
- Many more items accepted at Recycling Center
- Recycling index adjusted to 8% from 10% - progress
 - Currently paying \$18/ton
 - Range from \$5 to \$40 per ton

The “\$5 clean rate” would save \$4 per customer!!!

But

The “\$40 dirty rate”, would cost \$10 more per customer!!!

HOW WE ARE MEASURED

- *Random audits*
- There are material bays at the facility
- Franklin's recycling is accumulated for a week
- The total material is be weighed first, then run through the plant by itself and the trash is be weighed
- Formula is based on % of trash left

IN



RECYCLING



OR

TRASH



STRATEGY

Working with Mass DEP, Franklin has been awarded major strategic grants!!!

1. Waste Reduction Enforcement Coordinator
 - Up to \$24k for dedicated person
 - Work to inform, educate and enforce
2. Recycling Dividends
 - Accrued through Recycling successes
 - \$25k to use for increased Recycling initiatives including outreach
3. Recycling Center Compactor
 - Additional compactor for clean single stream recycling

QUESTIONS ???

