Municipal Solid Waste Services in Connecticut

Staff Briefing

Legislative Program Review and Investigations Committee

October 8, 2009

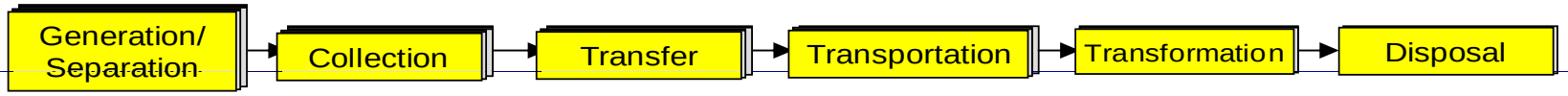
Scope of Study

- Expanded 2008 briefing - resources recovery ownership
- Describe solid waste management services
  - Subject of this briefing
- Examine adequacy, cost, sustainability
  - Next phase

Presentation Contents

- MSW System Components and Trends
- Participants and Planning
- Collection and Transfer
- Recycling
- Resources Recovery
- Landfills

Waste System Components



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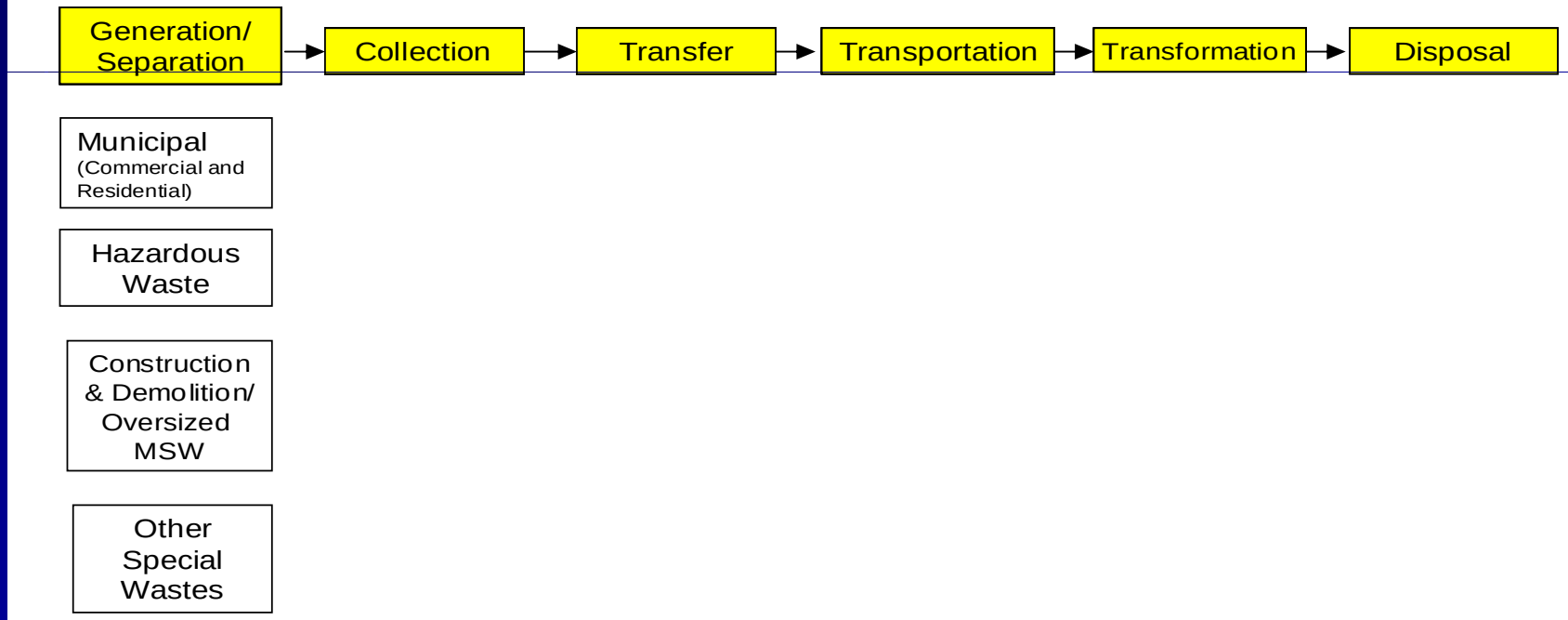

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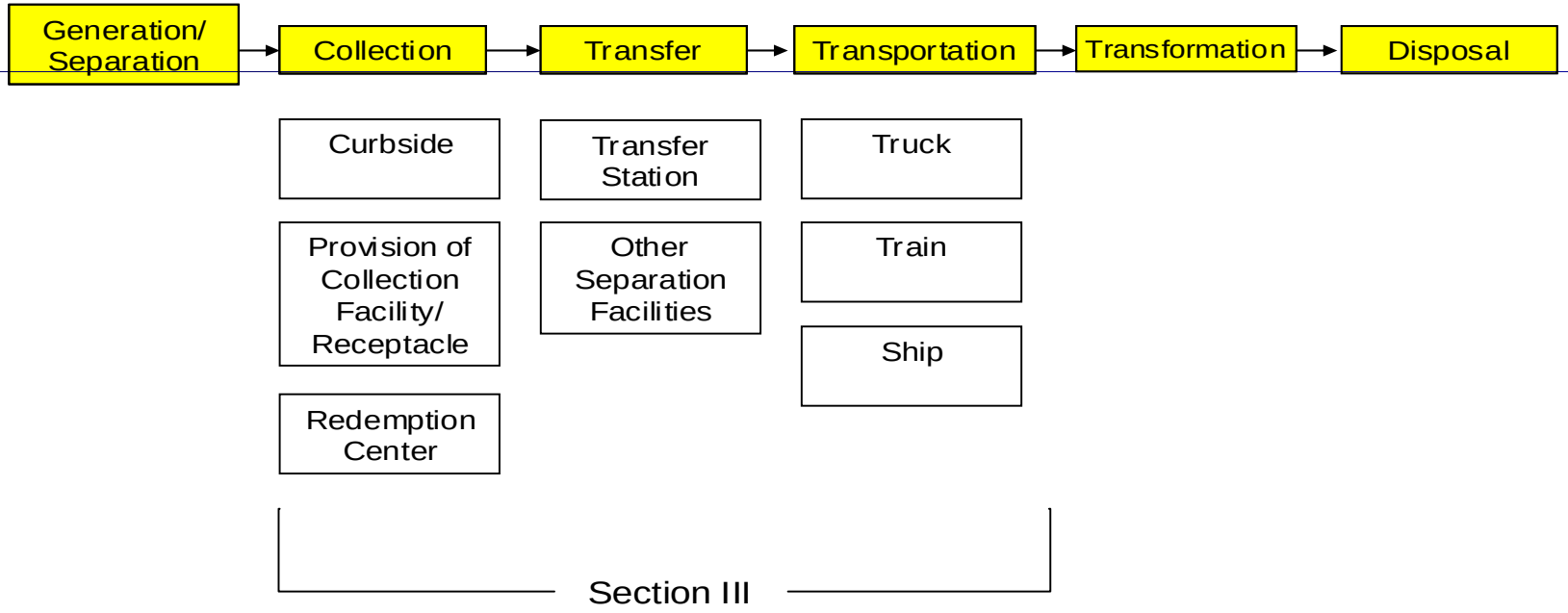

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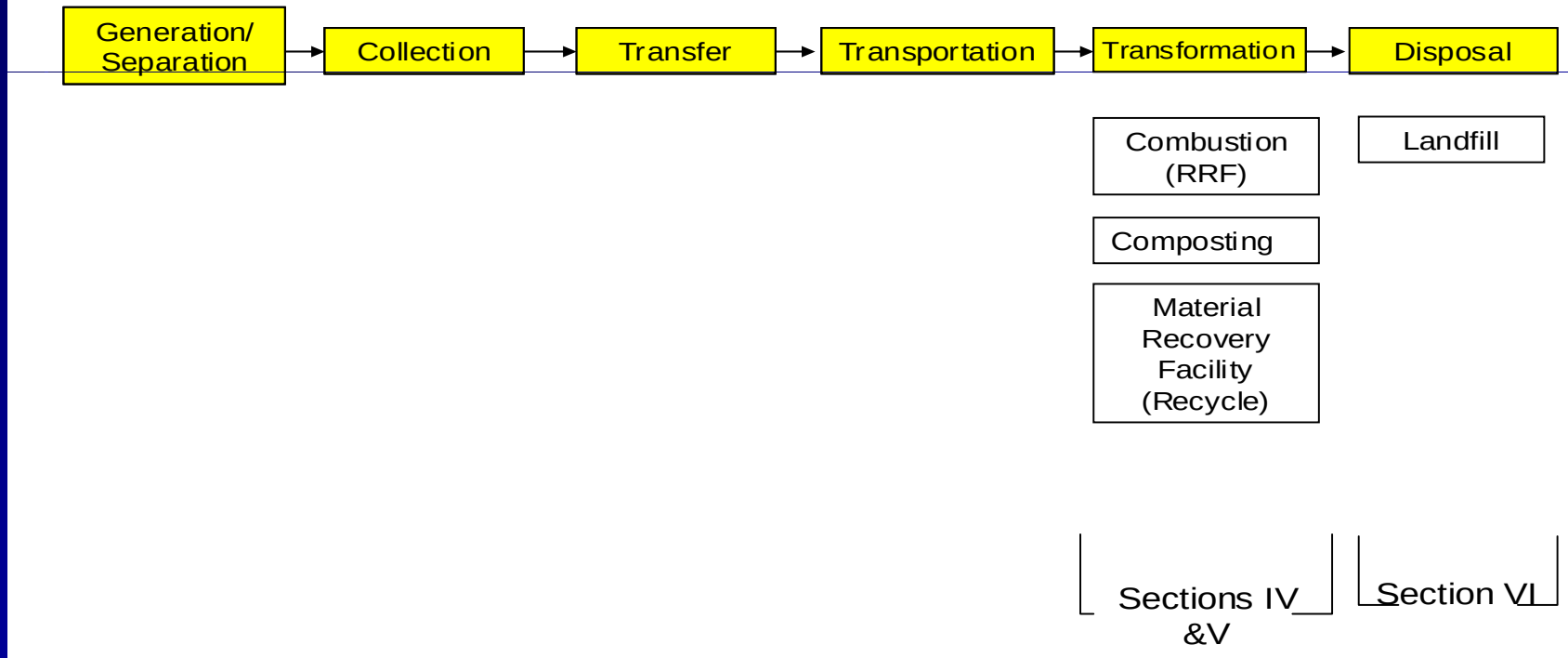
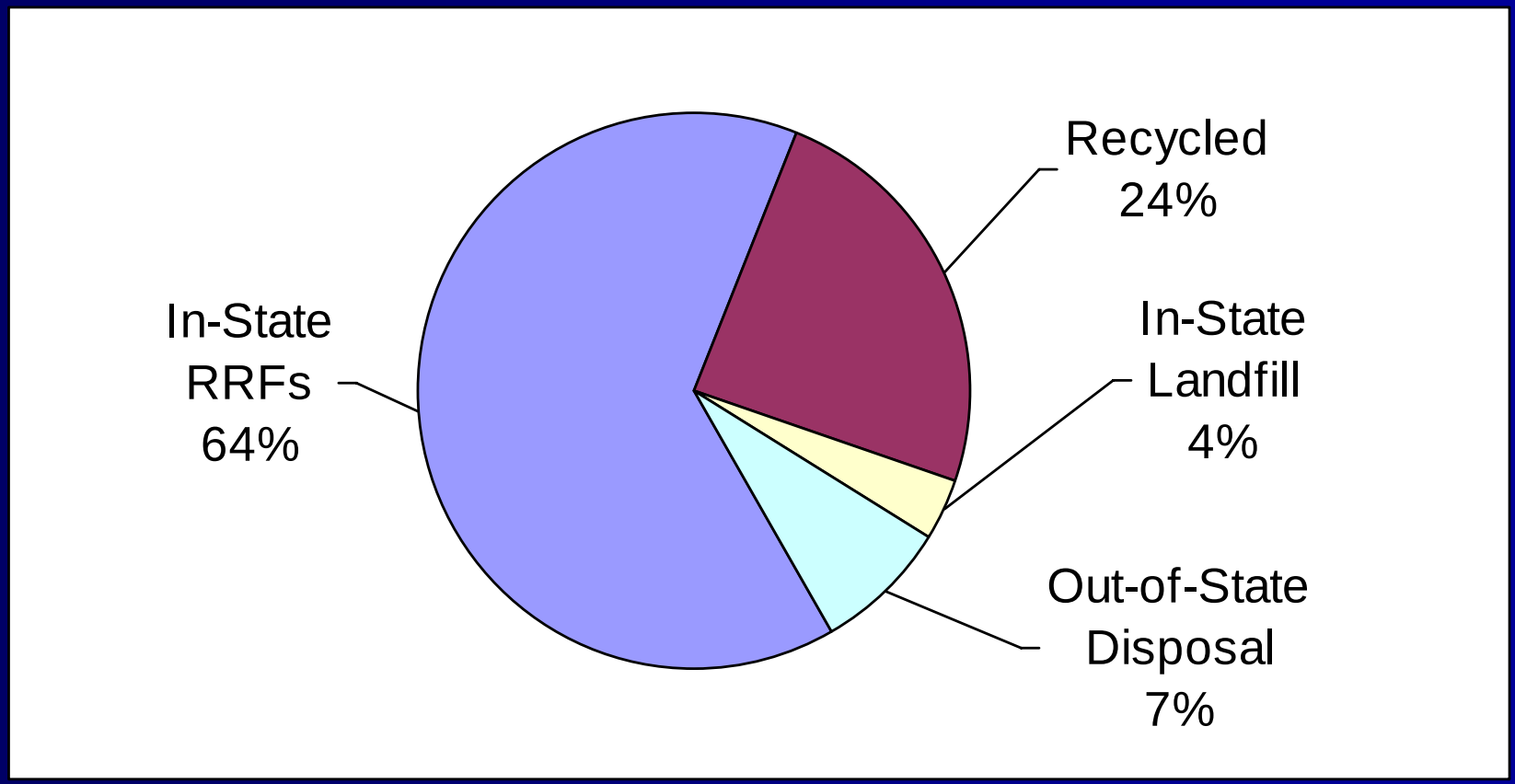


Municipal Solid Waste (MSW) Overview

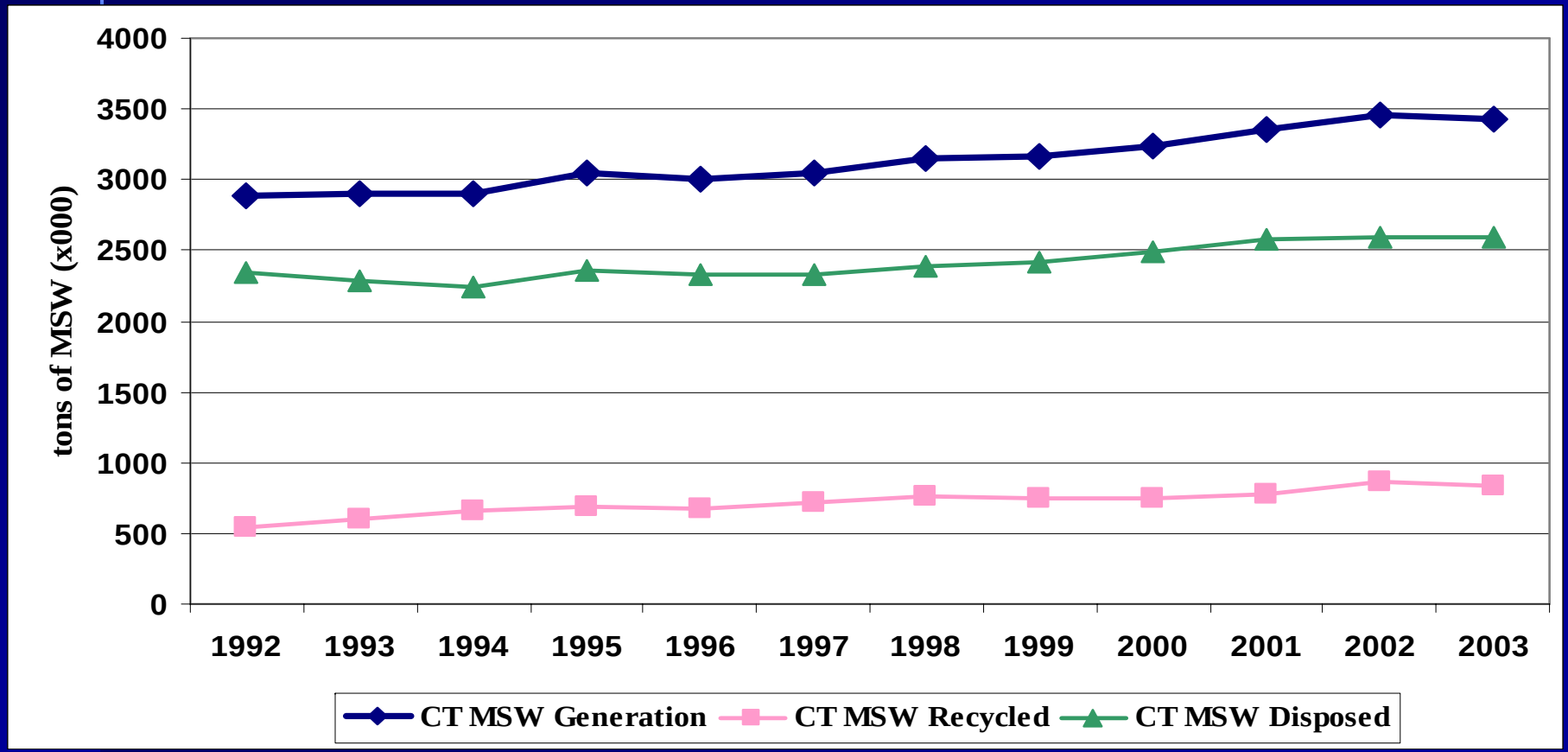
- MSW = solid waste from residential, commercial, and industrial sources

- Excludes:
  - solid waste with significant amounts of hazardous waste,
  - land clearing debris,
  - demolition debris,
  - biomedical waste, sewage sludge, and scrap metal

Most MSW Disposed at RRF



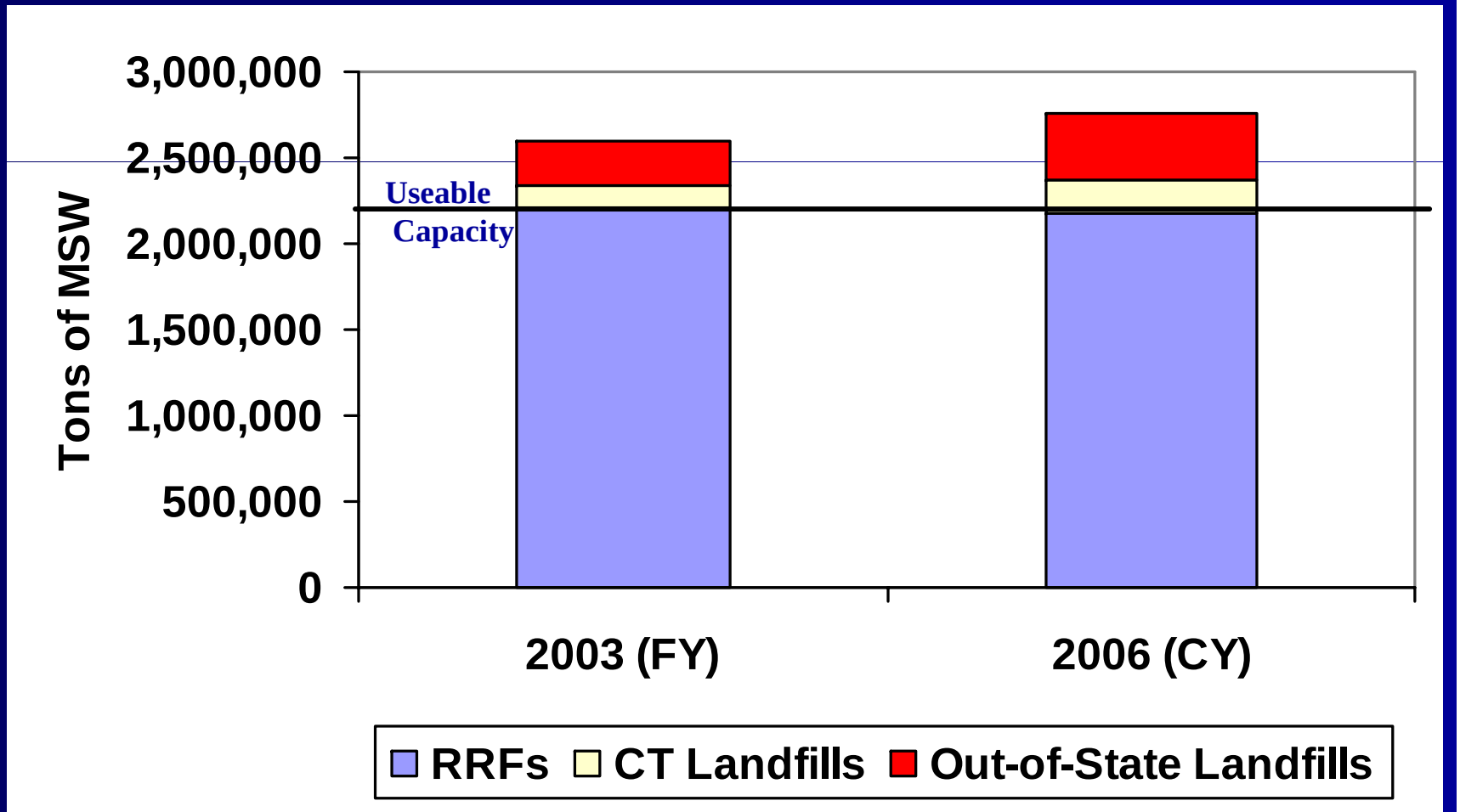
Increasing MSW Generation



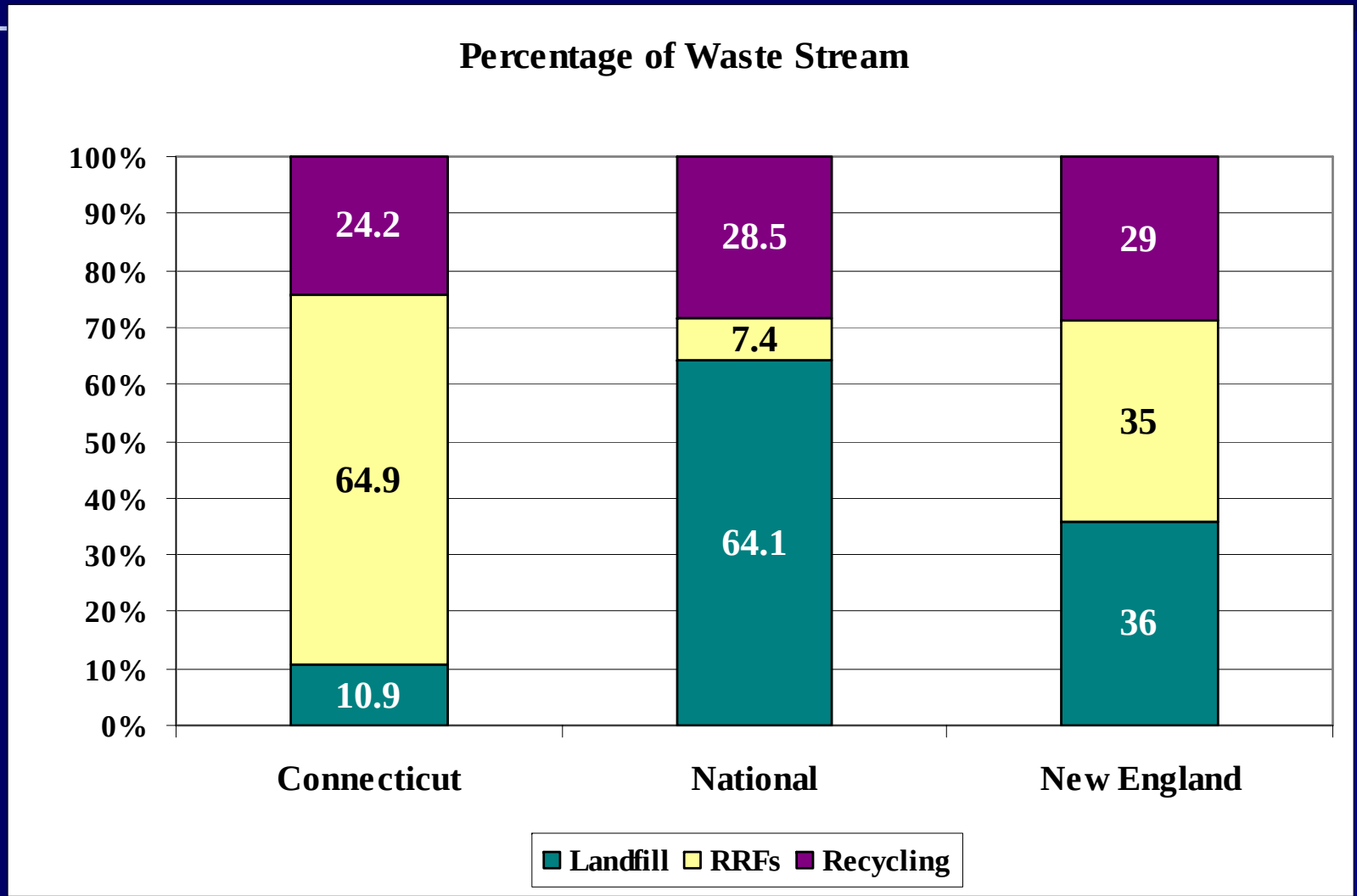
MSW Per Capita Increase

- MSW Disposed Per Year
  - Up 13.5% from 1993 to 2003
- Connecticut Population
  - Up 5.5% from 1993 to 2003
- MSW Disposed Per Capita Per Year
  - Up 7.5% from 1993 to 2003

In-State Disposal Capacity Shortfall



Most Reliant on Resources Recovery Facilities



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Participants: Responsibility for MSW Divided

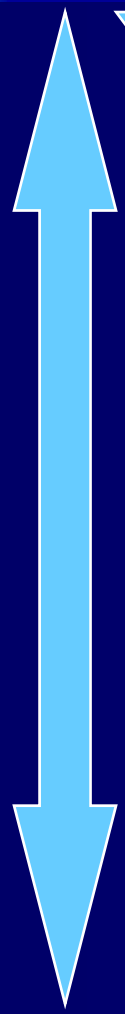
	REGULATION	ENFORCEMENT	PLANNING	FACILITY FINANCING	SERVICE PROVISION
Federal	✓	✓			
State	✓	✓	✓		
CRRA		✓	✓	✓	✓
Municipal		✓		✓	✓
Municipal Regional Bodies		✓		✓	✓
Private Sector		✓		✓	✓

State Planning

- State Solid Waste Management Plan (SWMP)
  - Required by statute; DEP develops
  - CRRA has mandated portion
- 2006 SWMP
  - Premise is self sufficiency
  - Key issue capacity shortfall – solve by doubling diversion rate
  - 8 of 80 strategies implemented

Waste Reduction and Recycling Must be Emphasized

Most Favored Option



Least Favored Option

Source Reduction

Recycling

Composting

Bulky Waste Recycling

Resource Recovery

Incineration

Landfill

Plan Implementation

- CRRA
  - Build SW facilities to support the plan
  - Plan of operations, DEP approval required
- DEP
  - Solid Waste Management Advisory Committee
- Municipalities and Municipal Authorities
  - Any action consistent with plan
  - Actual disposal practices may not be in line with plan

Participants and Planning

- Federal, state, local, quasi-public, private sector
- Required state plan developed by DEP, implemented by others
- Plan must reflect preferred methods

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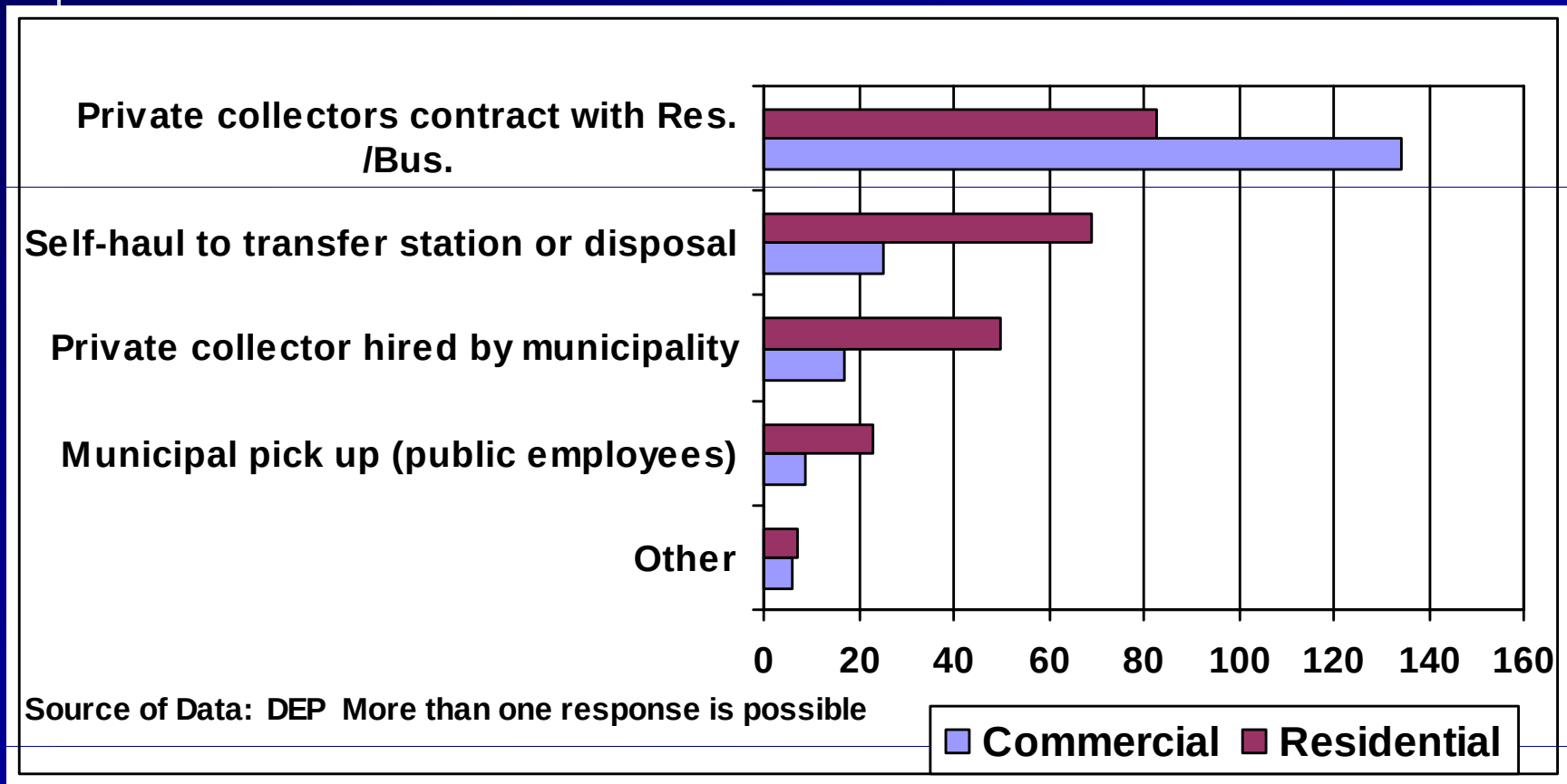
Types of Collection

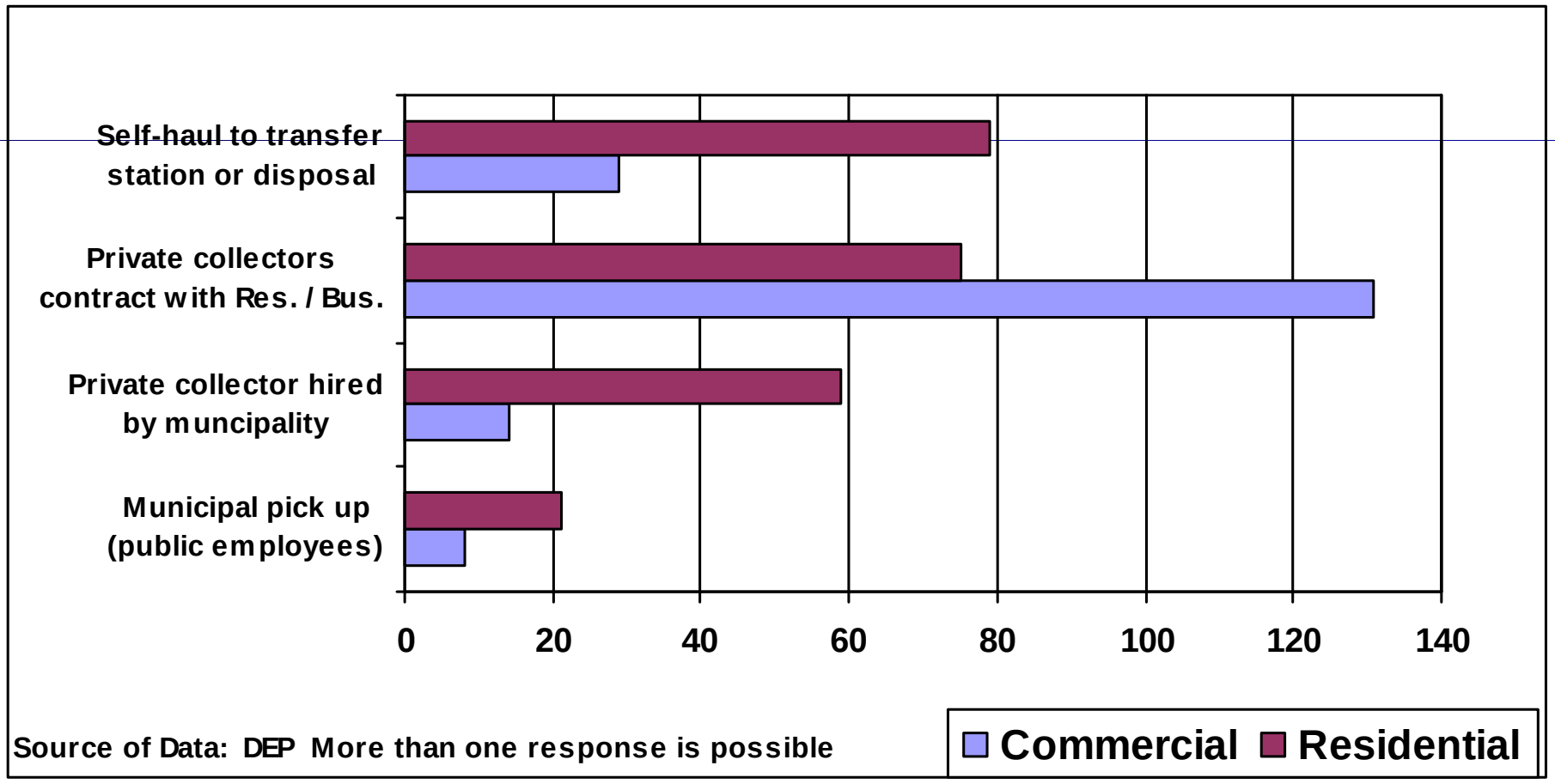
- Municipal collection
- Municipality contracts with private collector
- Municipal drop off
- Resident contracts with private collector
- Combination

Residential and Commercial MSW Collection, 2008



Source of Data: DEP More than one response is possible

Residential and Commercial Recycling Collection, 2008



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Collection

- Legal Requirements
  - Register with municipality; practices vary
  - Handling of recyclables, including role in enforcement
- Flow Control
  - Has changed over the years
  - Municipality cannot direct hauler to private disposal facility without a contract with hauler
  - Can impact liability and financing for facilities in future

Collection

- Anti-competitive practices
  - Extensive price fixing
  - No legislative solutions
- Data
  - DEP unable to get all solid waste disposal data

Transfer Stations

- Intermediate collection and aggregation points
- 255 Permittees
  - 171 public
  - 84 private
- Largest (Danbury) was privately owned, being auctioned
  - 84 % of MSW in Danbury region flows through
- Provide flexibility, potential for rail transfer out of state

Collection and Transfer

- Collection system is complex and varied
- Haulers influence where waste goes
- Anti-competitive practices; no legislative changes enacted
- Transfer station – aggregation point links collection and disposal

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Recycling

- Recycling is:
  - "the processing of solid waste to reclaim material"
  - a combination of mandatory and voluntary components

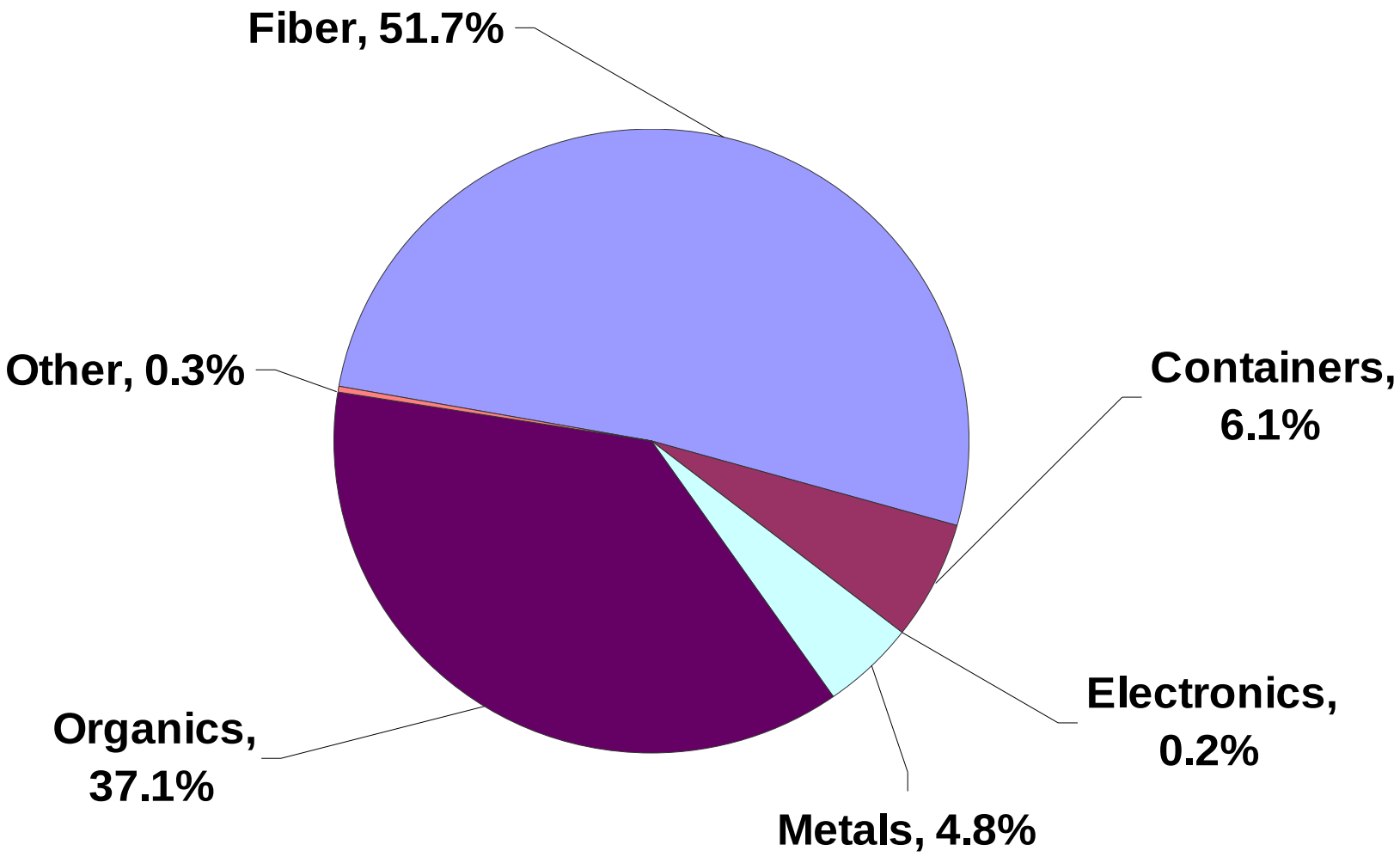
Recycling

- Certain items are required to be recycled:
  - Fiber (corrugated cardboard, office paper, newspaper)
  - Food containers (metal and glass)
  - Leaves
  - Scrap metal
  - Other (Batteries and waste oil)

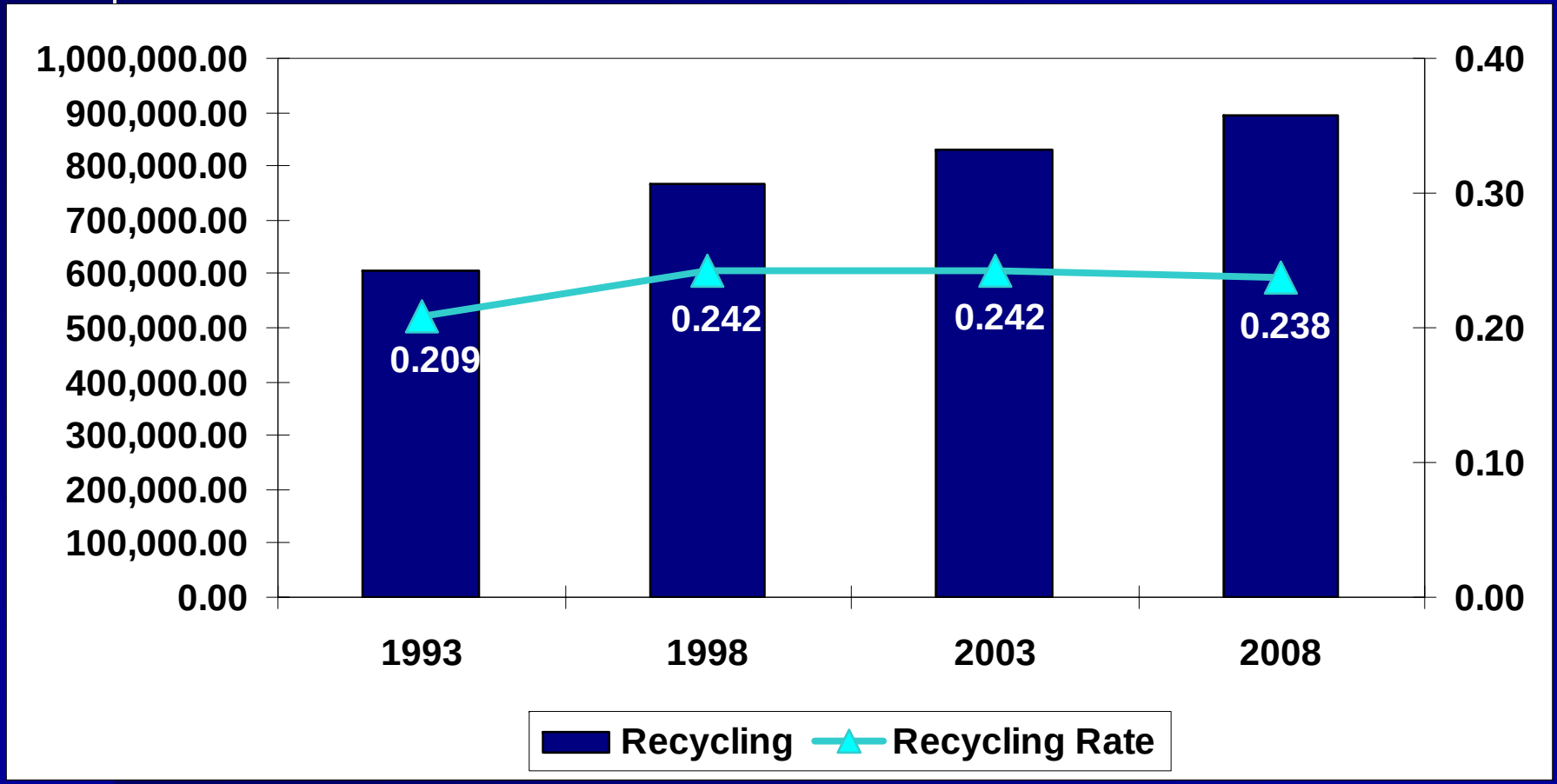
Recycling

- What can be recycled (beyond mandatory):
  - Plastics 1 & 2, Magazines, Discarded Mail
    - at least 85% of towns responding
  - Coated Paper Cartons, Telephone Books, Chipboard
    - over 50% of towns responding
  - Plastics 3-7
    - over 25% of towns responding

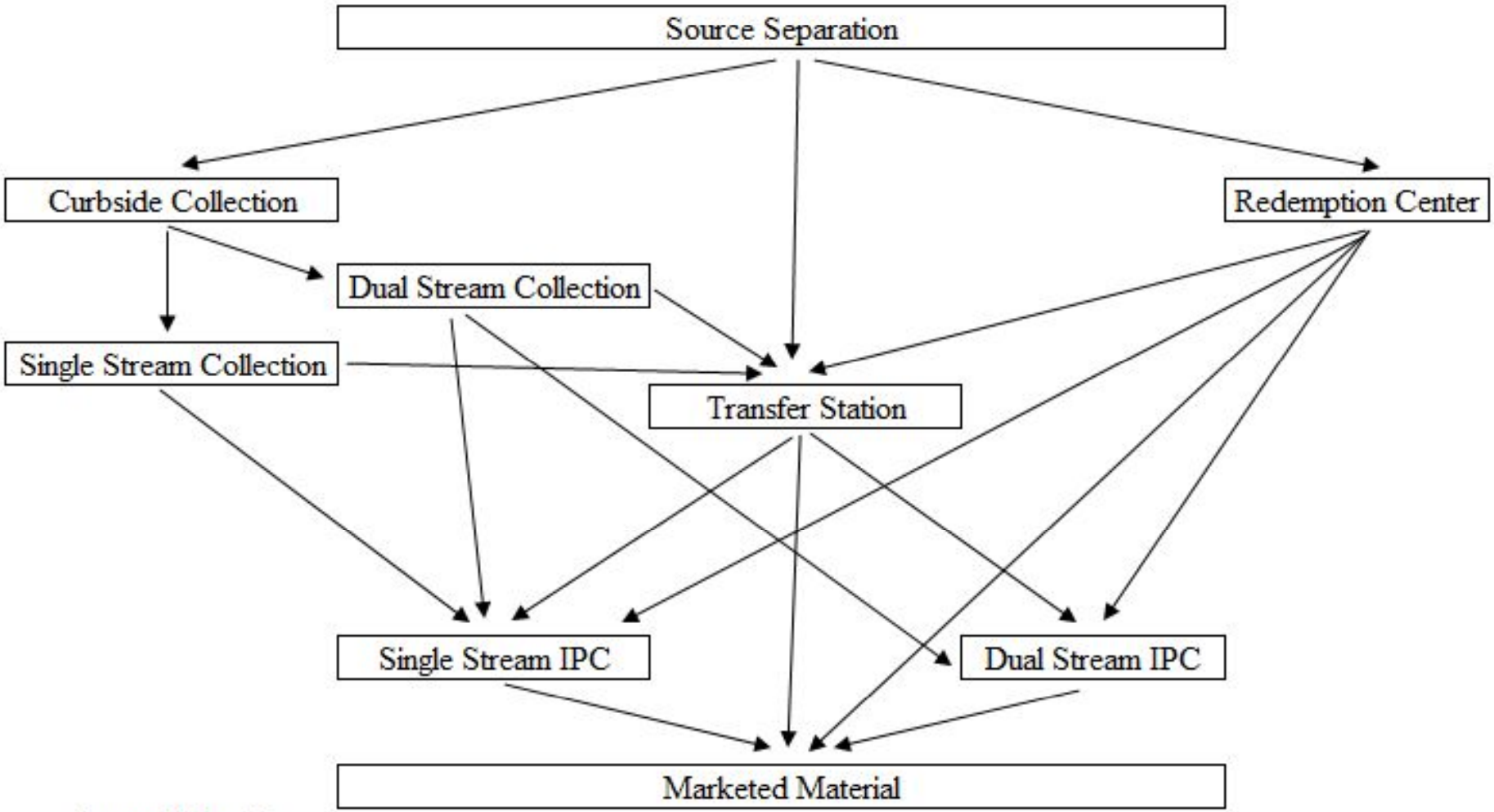
Percentage of Recycled Material (FY 2008, by weight)



Recycling Rate

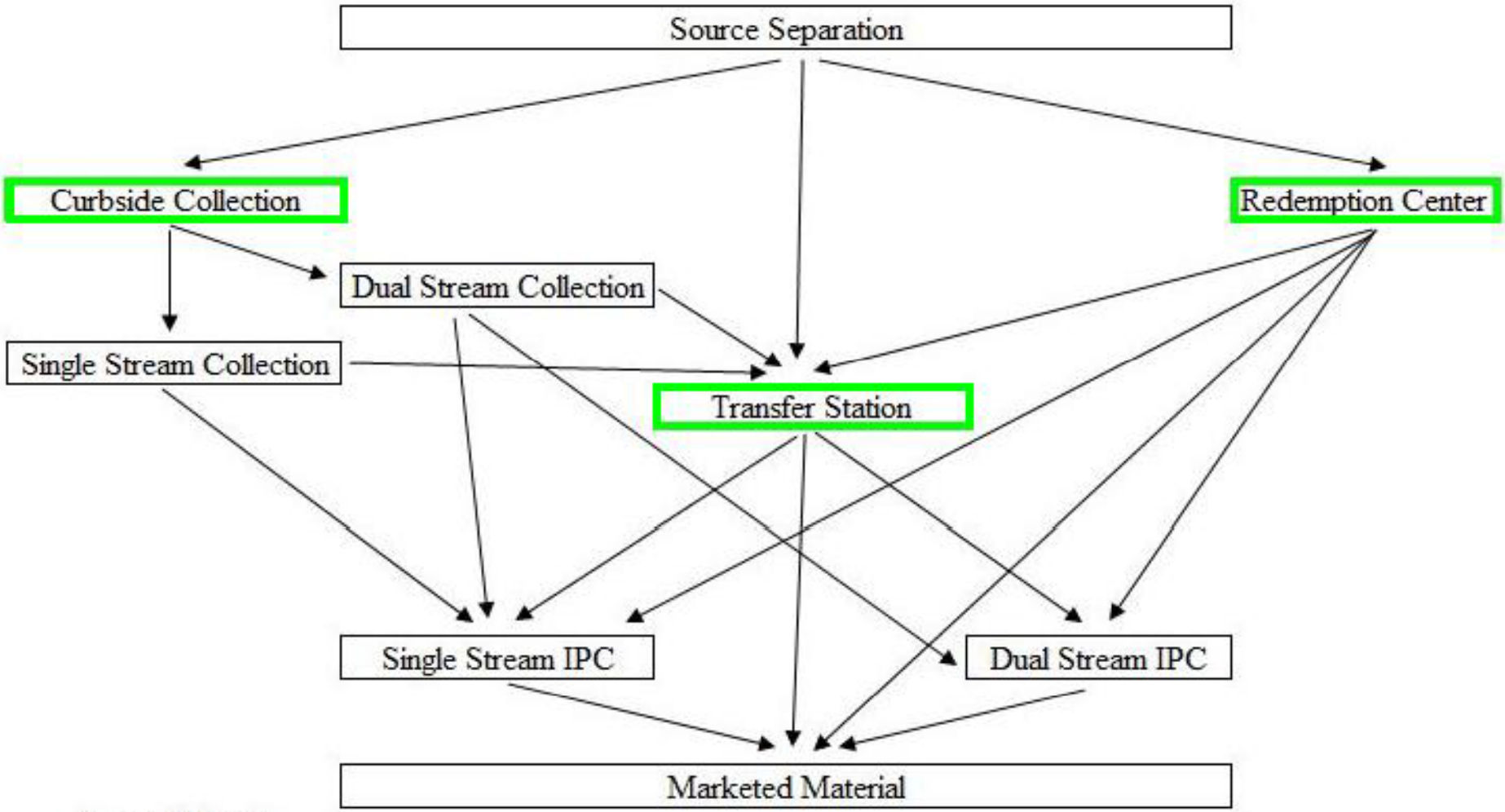


Flow of Recyclables



Source: PRI staff

Flow of Recyclables



Source: PRI staff

Curbside Recycling

- Dual-stream collection
  - Recyclables separated into:
    - Fiber/paper
    - Commingled containers
  - Predominant method in Connecticut

Curbside Recycling

- Single-stream collection
  - All recyclables in one container
  - Available only with single-stream sorting facility
  - Growing availability/use in Connecticut

Intermediate Processing Center

- IPCs:
  - Sorting facility for recyclables
  - A special kind of transfer station
  - A “disposal” site for recyclables
  - Sort paper and containers, not organics

IPCs in Connecticut

- 7 IPCs in Connecticut
  - 2 have only single stream lines
  - 1 has dual and single stream lines
  - 4 have only dual stream lines
- Combined capacity 3 times the amount of materials processed in FY 08

Recycling Costs

- Recycling tip fees lower than MSW
  - Lower prices based on sale of recyclables
    - Some revenue sharing
  - Often attached to MSW tip fee
  - Range:
    - paying $40 per ton
    - being paid $17 per ton

Recycling Costs

- Tons recycled are tons not disposed at higher MSW tip fee
  - Save the difference tipping fees
    - $40 - $90 per ton
  - Economic incentive to recycle

Composting

- Composting is a form of recycling
  - Current infrastructure is for yard waste
    - 333,100 tons of leaves and grass clippings
  - Missing infrastructure for food waste
    - Institutional food waste is the “low-hanging fruit”
    - ~100,000-150,000 tons from 1,300 producers

Recycling

- Wide town-to-town variation in recycling practices
  - Range of material
  - Collection method
- Infrastructure:
  - Good for what is commonly recycled
  - Missing for additional areas
- Recycling rates in CT are stagnant
  - SWMP calls for increase to address capacity shortfall

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Resources Recovery

- RRFs serve two basic functions
  - MSW disposal
    - 75% of FY 08 disposal (non-recycled)
  - Electricity Generation
    - 2.7% of CT capacity

RRFs in Connecticut

Location	Number of Towns	Contract Expiration	Expected Owner
Bridgeport	13	2008	Wheelabrator
Wallingford	5	2010	Covanta
Hartford	70	2012	CRRA
Bristol	14	2014	Covanta
Preston	12	2015	Covanta
Lisbon	1	2020	ECRRA

RRF Revenues

- RRF Revenues based on:
  - Tipping Fees
    - Facility
    - Length of Contract
    - Services provided
  - Energy Sale

Tipping Fees

- Services that tip fees may include
  - Transport
  - Transfer
  - Recycling
  - Administrative Fees

Tipping Fees

- Long-term contracts (over 1 year)
  - Between $60 and $69 for FY 2010
  - Often include put-or-pay provision
- Short-term and spot market
  - Can very day-to-day and seasonally
  - Sometimes as low as $40

Energy Sale

- Energy sale prices were fixed with initial contract
  - Initial prices above wholesale market
    - $.045 per kwh wholesale price (2009 average)
    - RRF price range from $.08 to $.24 per kwh
  - Tip fees likely to reflect decreased energy sale revenue

RRF Ash

- Ash residue is the left-over byproduct of incineration process
  - Consists of fly ash and bottom ash
  - 10% volume of source MSW
  - 20-30% weight of source MSW

Resources Recovery

- CT heavily reliant on RRFs
- Ownership of RRFs is transitioning
- Revenues for RRFs
  - Tipping fees
  - Energy sale

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Landfills in U.S.

- Account for 90% of U.S. MSW disposal
- Cheapest current method of disposal
- Federal requirements for sanitary landfills

Landfills in CT

- Least preferred disposal method
- CT regulations more stringent
- 300+ closed landfills
  - Inconsistent monitoring

CT Landfill Usage

- Few active landfills of any kind in CT
  - ~30 total (mostly Bulky Waste)
  - 1 active MSW landfill with limited capacity
  - 1 active ash landfill
- 25% of disposed MSW sent to landfills
  - Most to out-of-state

Ash Disposal

- 8 states allow ash reuse
  - Use at MSW landfills (cover, bedding)
  - Road sub-base
  - Ingredient in concrete or asphalt
- Residue sent to ash-only landfills in CT

Ash Disposal

- 1 active ash landfill in Connecticut
  - Approximately 17 years of capacity remaining without expansion
- Some ash is sent to out-of-state landfills
- CRRA began work for a new ash landfill, but has since suspended its efforts

Landfills

- Landfills are widely used for MSW disposal in the U.S.
- Connecticut has limited landfill capacity
- Amount of MSW sent to out-of-state landfills is likely to increase
- RRFs have a landfill component

Municipal Solid Waste Services in Connecticut

Public Hearing Today
4:30 pm – LOB Room 2D