The Crystal Ball: Where Will Our Waste Go?

The Waste Disposal Commodity Market

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Approach to the Crystal Ball

1. **Look at the past: forecasts from the 1980s and 1990s (*fun with old consulting work*)**
2. **Look at the theory: lessons from micro-economics *(stuff we learned in school)***
3. **Look into the future**

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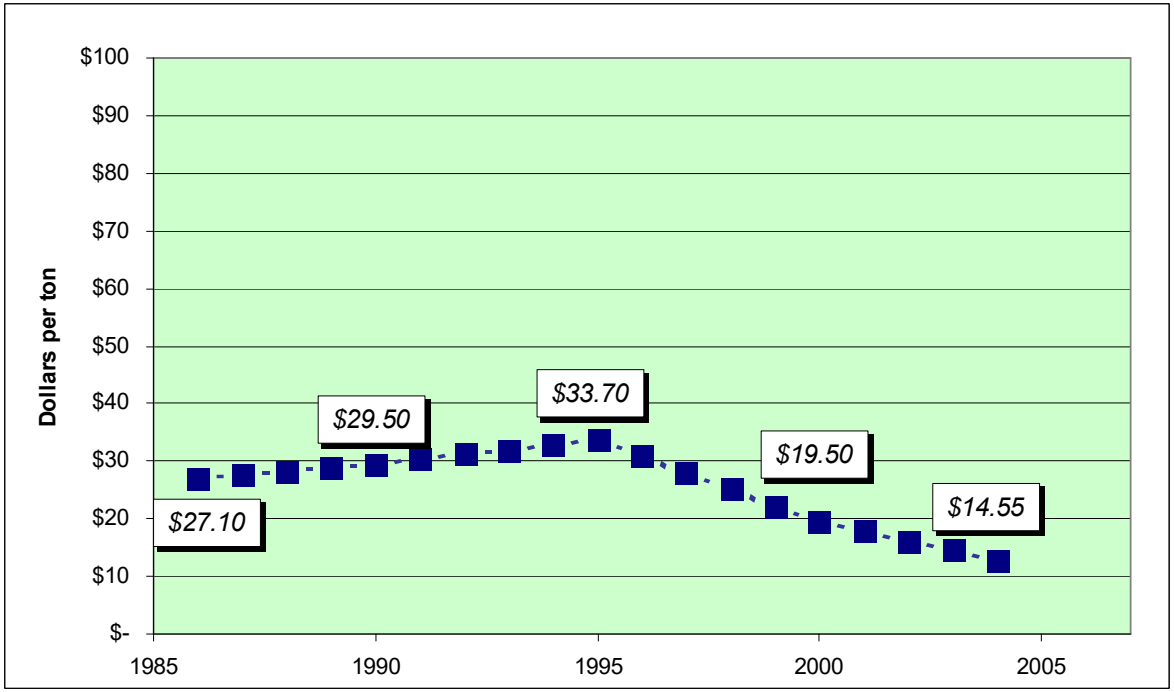
Disposal cost forecast from NESWC financing documents, April 18, 1983
Source: Official Statement for the Town of North Andover Resource Recover Bonds, page A-53
Transportation plus disposal costs for a contract community at 10 miles, current year dollars



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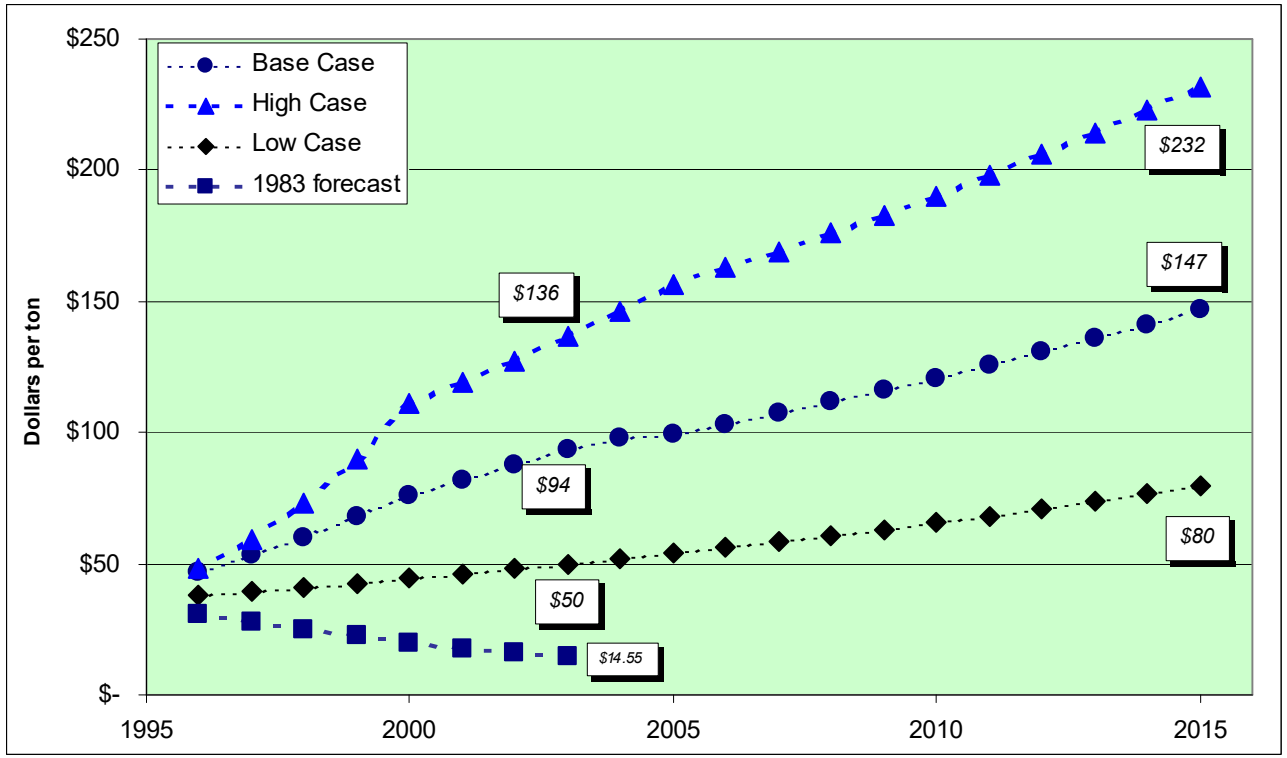
Spot market tip fee forecast provided to NESWC, summer 1995



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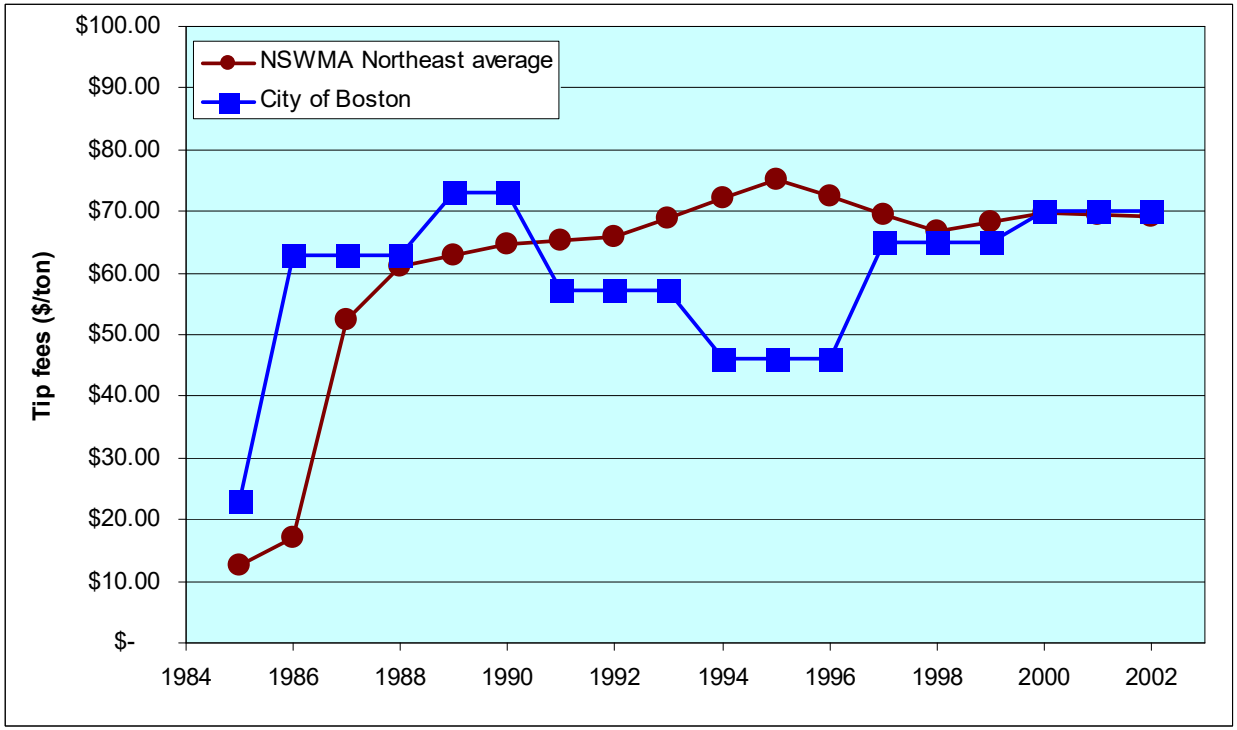
Actual tip fees, City of Boston bids and NSWMA survey data
Sources: City of Boston DPW; *Waste Age*, November 1, 2002



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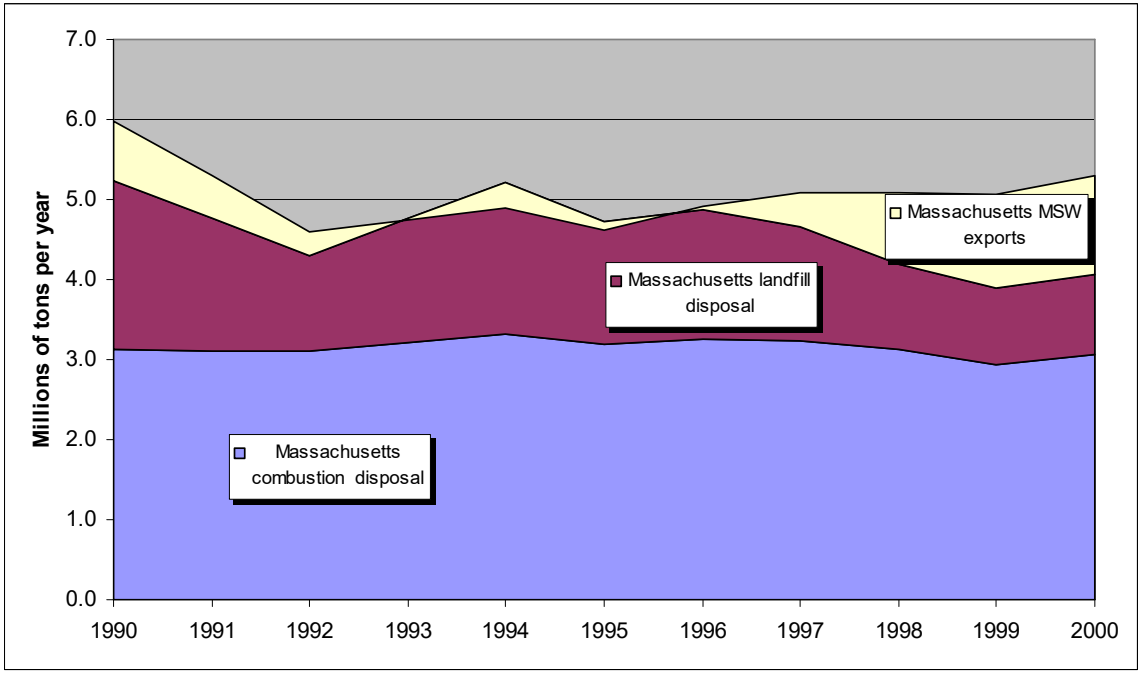
Disposal of Massachusetts MSW, 1990 to 2000: combustion, landfills and net exports

Source: MDEP Solid Waste Master Plans, 1990 to 2001



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Lessons from micro-economics

1. **Solid waste disposal capacity is a commodity product (like crude oil or sowbellies)**
   - The disposal market is competitive
   - Information flows freely
   - The disposal service is "undifferentiated": the price and terms of service are key
   - The service can involve bi-lateral contracts or playing the spot market
   - The market involves both fundamental and technical factors
   - *But there are significant barriers to entry…*

Lessons from micro-economics

2. Commodity tip fees are driven by market forces (the balance of supply and demand), *not* by CPI-type cost inflation

When supply of capacity exceeds demand :

- Disposal facilities compete to acquire waste
- Tip fees fall to the highest marginal disposal cost in the market (but prices are sticky downward)

When demand for capacity exceeds supply

- Waste generators/haulers compete for capacity
- Tip fees rise to the "walk-away cost" (the marginal cost of new market entrants)

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Lessons from micro-economics

3. **To forecast market trends, forecast the forces that will drive the disposal capacity market**
   a. Demand for waste disposal capacity
   b. Supply of waste disposal capacity
   c. Barriers to entry
   d. Balance of supply and demand
   e. Marginal cost of new entrants
   f. Market factors that override fundamentals in the short-term (tulips and dot-coms)

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Forecast of market trends

a. Local demand for disposal capacity will stay flat or fall
b. Local supply of disposal capacity will not grow, and might shrink, due to high barriers to entry for new disposal facilities and opposition to facility expansions
c. New capacity for exports has been developed and will continue to be developed
d. Supply and demand are in balance if export capacity is included. The Massachusetts market will be tied to the regional disposal market. Infrastructure for regional exports will provide a buffer against the local price shocks of the 1980s and 1990 (but not against *national* price shocks)

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Forecast of market trends (continued)

e. Tip fees at local disposal facilities will be capped by the marginal cost of additional exports

f. Market factors to watch:
   - Federal restrictions on interstate exports
   - Restrictions on imports into other states in the Northeast (Pennsylvania, New Hampshire, Rhode Island, etc.)
   - Higher transportation costs
   - Regulatory compliance costs for export infrastructure
   - New waste treatment technology that can (a) accept heterogeneous material with unknown contaminants; and (b) produce a high-value product reliably at competitive capital and operating costs