

Staff Briefing

# Resources Recovery Facility Ownership: Options and Implications

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Legislative Program Review  
& Investigations Committee

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# Introduction

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## Introduction

In May 2008, the Legislative Program Review and Investigations Committee approved a study focused on the future ownership options for the state's four resources recovery facilities (RRFs) currently operating in connection with the Connecticut Resources Recovery Authority (CRRA). CRRA is a quasi-public entity established 35 years ago with the purpose to develop and implement solid waste recycling, disposal, and resources recovery systems and facilities designed to serve municipalities, regions, and private entities, which *voluntarily* agree to use the authority's services. The study was prompted by concerns about the future ownership of these RRFs and specifically what implications private ownership of a critical component of the state's solid waste management system—resources recovery-- might present.

The four facilities—in Bridgeport, Wallingford, Hartford, and Preston-- were developed and constructed using long-term revenue bonds issued under CRRA's bonding authority. Generally, the operating and service contracts associated with these facilities run concurrent to the bond dates, and are set to terminate upon debt retirement. Agreements that were made at least 20 years ago about who would own the facilities after the long-term debt was retired are now starting to be operationalized. The agreements, like the projects, are all different.

The committee study is scheduled to conclude in December 2008. This interim report contains descriptive background information intended to provide a framework within which the study focus may be considered. The report contains no conclusions or proposed recommendations; those will be provided in December. Committee staff is continuing to interview the great variety of persons and groups with a stake and interest in this topic, as well as use other methods of research and analysis.

While the committee study scope focus is on the four RRFs connected to CRRA, similar concerns about ownership may be raised about the other two RRFs. These facilities also were developed and constructed with bond debt issued under the statutory authority of municipalities and also are operating under long-term contracts terminating in the next several years. These facilities provide part of the currently finite resources recovery capacity in the state.

## Report Contents

The report contains three sections. Section One gives an overview of municipal solid waste in Connecticut, including a brief look at the non-recyclable disposal process and tipping fees. Section Two provides information about the six resources recovery facilities now operating in the state, their ownership status, and their current relationships with Connecticut municipalities. Section Three discusses the selected roles of CRRA, municipalities, and the Department of Environmental Protection as pertinent to resources recovery facilities.



## Overview of Municipal Solid Waste in Connecticut

Just over 40 years ago, open-burning dumps were used by Connecticut municipalities as a primary way of disposing of household and other solid waste. In 1966, state law changed to prohibit open burning, requiring municipalities to use sanitary landfills instead. While this transition in solid waste disposal was underway, the 1971 Solid Waste Management Act, among other items, required that each municipality “make provisions for the safe and sanitary disposal of all solid wastes generated within its boundaries.” The act led to the statutory definition of “Municipal solid waste” (MSW) as “solid waste from residential, commercial and industrial sources, excluding solid waste consisting of significant quantities of hazardous waste” (C.G.S. 22a-207). While fixing municipal responsibility, the act in other ways represented the first time a statewide approach to solid waste was contemplated.

By 1973, when it adopted the Solid Waste Management Services Act (not to be confused with the 1971 Solid Waste Management Act noted above), the legislature made several findings, including: *“that prevailing solid waste disposal practices generally, throughout the state, result in unnecessary environmental damage, waste valuable land and other resources, and constitute a continuing hazard to the health and welfare of the people of the state.”*

The legislature went further and also set out a series of solid waste policies for the state, beginning with the first: *“That maximum resources recovery from solid waste and maximum recycling and reuse of such resources in order to protect, preserve and enhance the environment of the state shall be considered environmental goals of the state”*. Passage of the solid waste management services act identified resources recovery as a favored disposal method in Connecticut, furthering that policy with the establishment of the quasi-public CRRA to encourage a regional approach by municipalities using resources recovery. (Appendix A contains the complete list of legislative findings and statement of policy on solid waste management services).

Also in 1973, the state adopted what is termed an “integrated approach” to solid waste management following the lead of the federal EPA. Since then, the core state solid waste planning document has been required to utilize the following priority for managing solid waste:

1. source reduction
2. recycling
3. composting of yard waste or vegetable matter;
4. bulky waste recycling;
5. resource recovery or waste to energy plants; and
6. incineration and landfilling.

The first four activities, considered solid waste diversion strategies, are intended to avoid the problem of disposal altogether. Resources recovery facilities, the immediate focus of this

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study, are fifth in the hierarchy. Resources recovery has two main positive features. It reduces the volume and weight of solid waste considerably (up to 90 percent in volume and 70 to 80 percent in weight). The second feature of resources recovery is that its volume reduction process also produces energy, out of a material, i.e., solid waste, already created and needing to be handled. Some Connecticut cities already operated their own incinerators that reduced their solid waste volume, but did not have the energy-producing benefit.

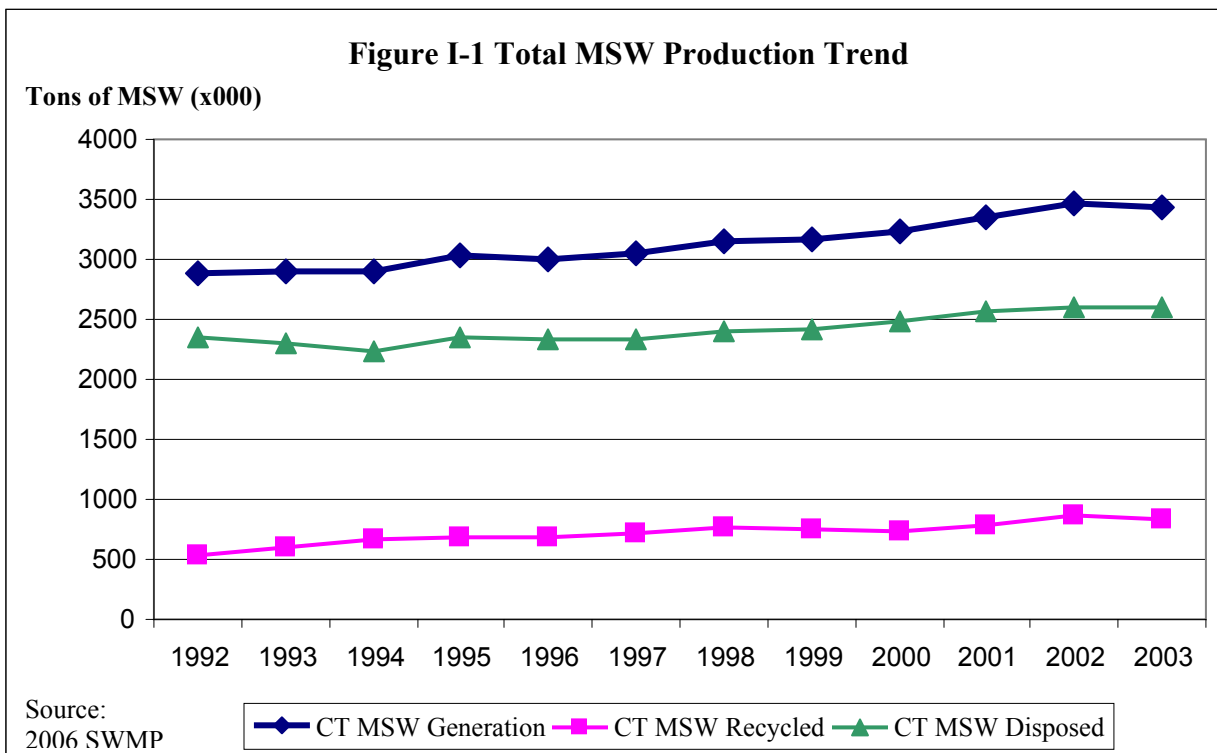
**Municipal solid waste management compared.** *Connecticut relies on resources recovery as a way to dispose of its municipal solid waste far more than any other state in the nation. According to the 2006 State of Garbage in America report, Connecticut leads the nation by disposing 64.9 percent of its disposable solid waste using RRFs. Massachusetts at 37 percent is second. Ten states are estimated to send 10 to 28 percent of their MSW to waste-to-energy facilities, while the remaining thirty-eight states send less than 10 percent to RRFs.*

Table I-1 shows how Connecticut's municipal waste stream is handled in comparison to the national average, the New England average, and other northeastern states. As the table shows, nationwide the average amount of MSW disposed of in landfills was 64.1 percent, over double the amount recycled (28.5 percent), while the amount of MSW sent to RRFs (7.4 percent) was a very distant third.

<b>Table I-1. Connecticut Municipal Waste Stream: Selected Comparisons</b>			
	<b>Percent of Municipal Waste Stream by Methods of Handling</b>		
	<b>Waste to Energy</b>	<b>Landfill</b>	<b>Recycling</b>
National Average	7.4	64.1	28.5
New England Average	35.0	36.0	29.0
<b>Connecticut</b>	<b>64.9</b>	<b>10.9</b>	<b>24.2</b>
Maine	19.1	46.4	34.5
Massachusetts	37.0	29.2	33.8
New Hampshire	16.1	58.8	25.1
Rhode Island	0.2	87.4	12.5
Vermont	8.8	61.9	29.3
New Jersey	15.1	49.0	35.9
New York	19.5	37.5	43.0
Source: State of Garbage in America 2006, Produced by Biocycle and Earth Engineering Center of Columbia University. All data 2004, except Connecticut data from 2003			

The Department of Environmental Protection (DEP) estimate of the total amount of MSW generated in Connecticut in FY 2003 was 3,430,707 tons, up from 2,897,128 in FY 1993, an 18 percent increase. Over the same time period, the population of Connecticut increased by five percent. The amount of waste generated per person climbed from .88 tons per capita per year in FY 1993 to .99 tons per capita per year in FY 2003.

While the amount of MSW generated has climbed steadily upward, the ratio of diverted to disposed waste does not appear to change, as can be seen in Figure I-1.



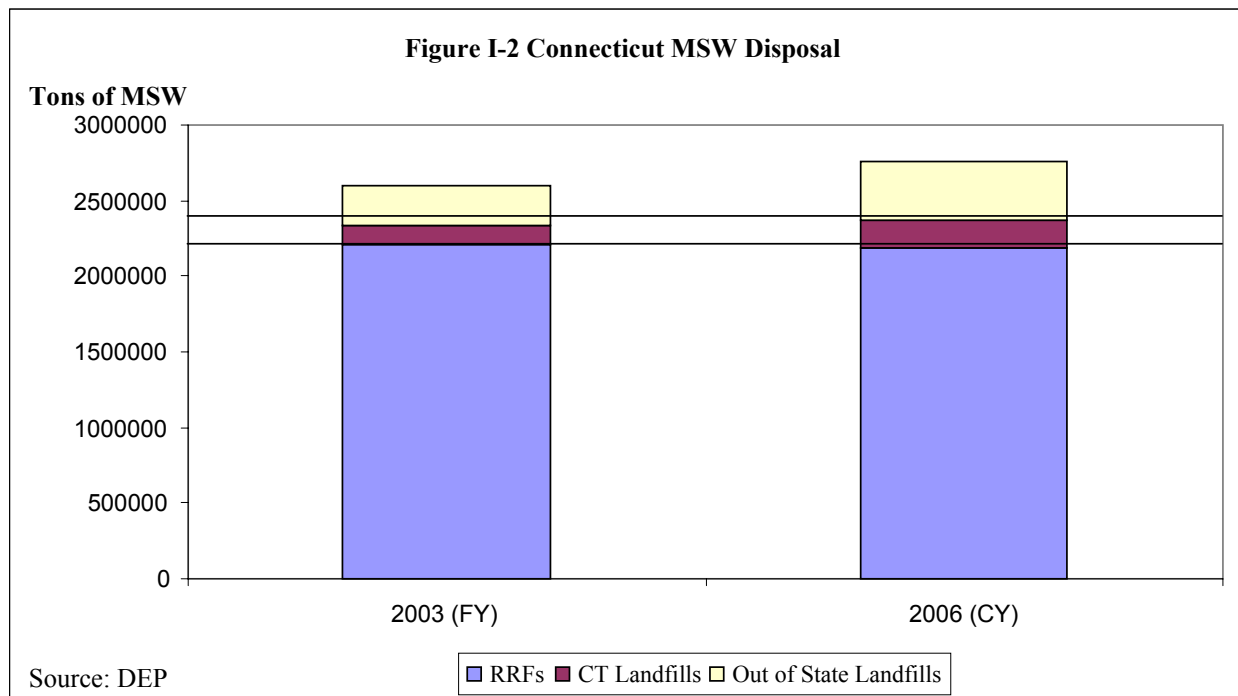
Of the state MSW generated in FY 2003, 2,210,540 tons were disposed of at Connecticut RRFs, 121,080 tons were disposed of at Connecticut landfills, and 268,823 tons were disposed of at landfills out of state.

In 2006, the amount of state MSW sent to Connecticut RRFs decreased slightly to 2,185,381 tons (down 1.1 percent from 2003) while the amount disposed at in-state landfills increased to 182,084 tons (up 50.4 percent) and the amount disposed at out-of-state landfills increased to 386,843 tons (up 43.9 percent).

As reported in DEP's 2006 State of Connecticut Solid Waste Management Plan (SWMP), by the end of 2009, the two remaining Connecticut MSW landfills (Hartford and Windsor/Bloomfield) will be at capacity and/or closed, at which point all MSW must go to either Connecticut RRFs or be shipped out of state. Currently, the six RRFs have a permitted capacity of approximately 2.6 million tons of MSW per year, the smallest of which, Wallingford, has a permitted capacity of 420 tons/day and the largest of which, Mid-Connecticut (Hartford), has a permitted capacity of 2850 tons/day.

Permitted capacity is a maximum amount not assumed to be actually useable due to maintenance and other operational aspects. So assumptions about how much capacity is actually useable are important. A high estimate of usable capacity is 92-93 percent of permitted capacity, which would mean in Connecticut 2.4 million tons MSW per year (shown as the highest line in

Figure I-2). A more conservative estimate of usable capacity is 85 percent of permitted capacity, which would mean in Connecticut approximately 2,209,000, the average tonnage processed at Connecticut RRFs from FY 2000 through FY 2004 (shown as the lower line in Figure I-2).



**MSW imports and exports.** Approximately 33,108 tons of MSW disposed of in Connecticut was imported from other states in 2006, most of which was from Massachusetts (30,890) and New York (2,163). In contrast, Connecticut exported approximately 386,843 tons of MSW in 2006. The amount of MSW imported has decreased dramatically in recent years as RRF capacity has been filled with in-state MSW and existing in-state landfills have reached capacity. The amount of export has increased heavily since 1992 when there were no reported exports as most municipalities were still relying heavily on local landfills. The amount of Connecticut MSW exported fluctuated between approximately 246,000 and 387,000 tons during FY 1997 to CY 2006.

**Statewide capacity.** *Assuming the state has no available landfill capacity, that all of the imported MSW is replaced by existing Connecticut MSW, that the state continues to produce the 2006 level of MSW, and that the Connecticut RRFs are able to run at the high estimate of 92 to 93 percent capacity, the state will need to export over 350,000 tons of MSW once the final landfills are closed in 2009.*

The 2006 state solid waste management plan sets as a primary state goal that the state will increase diversion rates (recycling and composting) from roughly 30 percent steadily up to 58 percent by 2024 to meet the projected growth in MSW with the current level of RRF capacity. The plan acknowledges the challenge of that goal, noting that the diversion rate remained relatively stagnant while fluctuating between 22 percent and 25 percent from 1994 to 2003. (The current available diversion rate does not include recycling done through deposits.)



**RRF ash residue.** A byproduct of the resources recovery process is residue ash. The residue ash has about 10 percent of the volume and 20 to 30 percent of the weight of the original MSW. It must be disposed of at a specialized ash landfill.

Currently there are two ash landfills in the state, in Hartford and Putnam. The Hartford landfill is expected to close by the end of October 2008, leaving the Putnam facility, owned by Wheelabrator Technologies Inc., as the only remaining in-state ash disposal facility for 2009 and beyond. According to the SWMP, the facility had approximately 6.7 million tons of remaining capacity as of the end of 2004. If the six RRFs continue to generate approximately 551,000 tons of ash per year and the current out-of-state ash disposal is kept in Connecticut after the expiration of current contracts, the Putnam landfill will reach its current capacity after FY 2018.

### **Municipal Solid Waste Disposal Process and Fees**

Figure I-3 shows on a very basic level how municipal solid waste is disposed of in Connecticut. It focuses on the flow of non-recyclable solid waste, or what gets disposed of through resources recovery facilities or landfills.<sup>1</sup> Throughout the system, agreements are in place covering different aspects of the process--from getting municipal solid waste from where it is generated to where it is disposed of. Also throughout the system, as indicated along the right side of the figure, there is a mix of public and private entity activity at all stages.

Solid waste haulers, a pivotal part of the process, illustrate this mix. The hauling function can be carried out by individual subscription service arranged and paid for by homeowners and others for haulers to pick up their solid waste curbside, by private contractors under contract with a municipality, or by municipal public works employees picking up solid waste. As shown, the hauler can deliver the non-recyclable solid waste to either an in-state transfer station, an in-state RRF, or directly out of state.

**Tipping fees.** Tipping fees are typically a per ton charge on waste handling or disposal. They are based primarily on the operating and administrative expenses of waste disposal, which may include a variety of subcosts, including transport, transfer station use, actual disposal, and debt repayment. Tipping fees may or may not include a separate recycling fee. Depending on any given situation (e.g., length of contract with users), tip fees may be more or less influenced by competition.

The variation in what tipping fees cover makes direct comparison difficult. According to the National Solid Wastes Management Association (2005 Tip Fee Survey), the Northeast Region (CT, ME, MA, NH, NY, RI, VT) saw average 2004 tipping fees of \$70.53 per ton in comparison to the 2004 national average of \$34.29. The Northeast was by far the highest region, as the remaining 6 regions ranged from \$24.06 to \$46.29. In general, tipping fees at non-landfill facilities have been higher than landfill sites.

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<sup>1</sup>The figure does not show how recyclables, bulky waste, or construction and demolition waste (C&D) are handled, also key features of the state's solid waste management system.

In Connecticut, tipping fees vary widely depending on the municipalities' contracts, proximity to disposal sites, and type of disposal (RRF vs. landfill vs. out-of-state landfill). Currently, long-term member municipality contract tipping fees at RRFs run from \$59 to \$81 per ton. Revenue generated by the sale of recovered energy essentially subsidizes the tipping fees, depending on the structure of the contract with the RRF owner or operator. RRF disposal services are also sold on the spot market, at different fee levels.

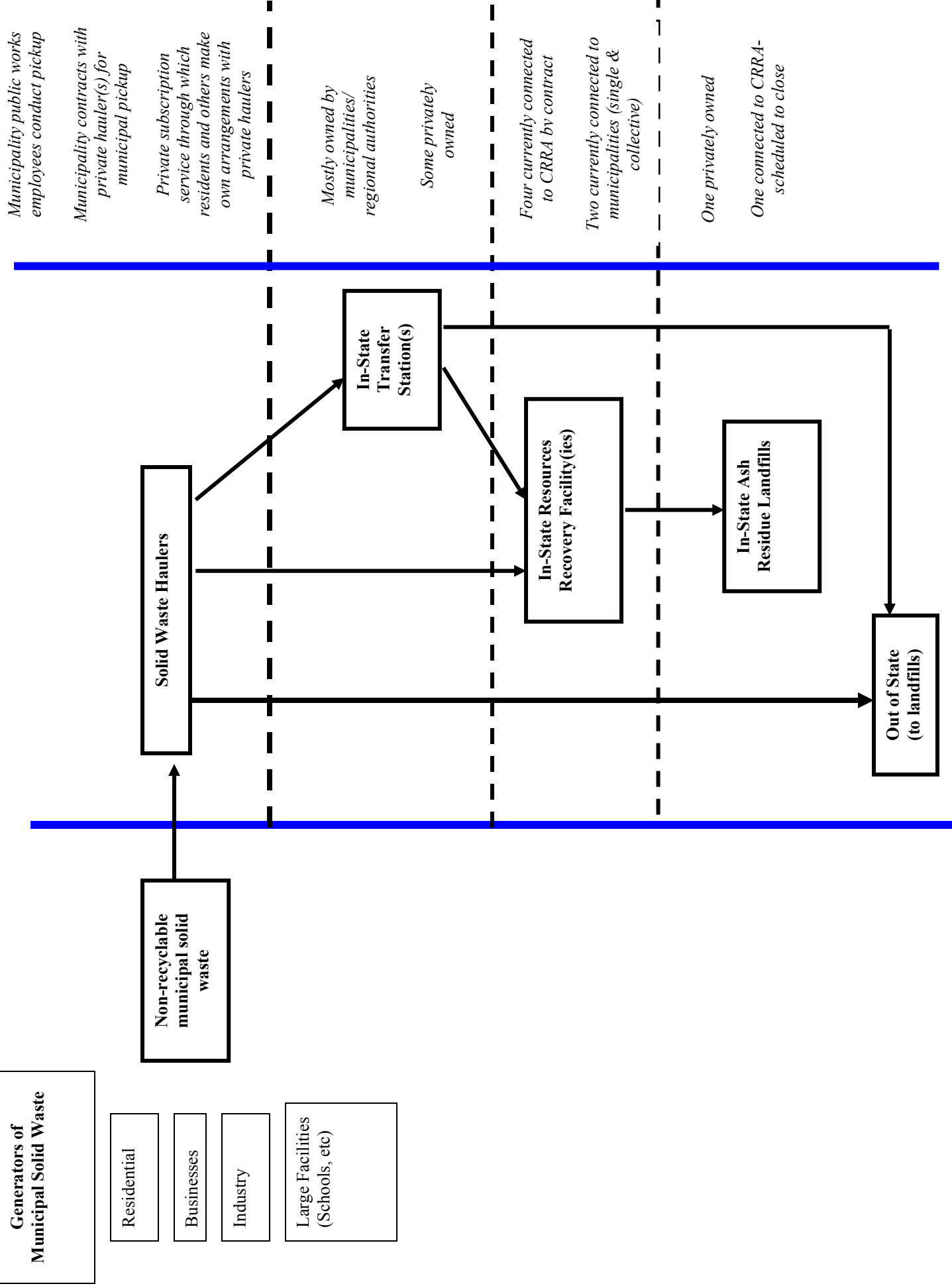
Long-term contract-based tipping fees for Connecticut RRFs in 2005 and 2008 are shown in Table I-2. (Again, tipping fees may not be directly comparable due to differences in what they cover.)

<b>Table I-2. Tipping Fees at CT Resources Recovery Facilities: 2005 and 2008</b>		
<i>Facility</i>	<i>2005*</i>	<i>2008**</i>
Bristol Resource Recovery Facility	\$66	\$65.50
Bridgeport Resources Recovery Project	\$69	\$81
Mid-Connecticut Project (Hartford)	\$70	\$69
Wallingford Project	\$57	\$59
Southeast Project (Preston)	\$60	\$60
Wheelabrator Lisbon Waste-to-Energy Facility	\$60-\$66	-
*Source SWMP		
**Source CRRA and BRRFOC website		

As the long-term debt obligations for these facilities retire over the next several years, it might be expected that tipping fees would decrease, all things being equal. However, as the long-term debt obligations are ending, so are the long-term energy sales contracts. It is expected that the favorable rates being paid to RRFs in the past will not continue, offsetting savings from debt retirement.

Impact on costs to Connecticut municipalities for resources recovery services due to ownership changes, long-term contract terminations, and other changes in the solid waste market is an implication to be considered further in this study.

**Figure I-3. Municipal Solid Waste Management System**





### Current Resources Recovery Facilities

All six operating resources recovery facilities in Connecticut started commercial operation within a seven-year period from 1988 through 1995. Table II-1 shows the order in which they began commercial operation along with the years their bonds will be paid.

<b>Table II-1. Resources Recovery Facilities in Connecticut: Selected Information</b>				
<b>Facility</b>	<b>Contracted Towns</b>	<b>Commercial Operation Date</b>	<b>Year Bonds Will Be Paid</b>	<b>Current Operator</b>
Bristol Resource Recovery Facility	14	May 1988	2014	Covanta
<b>Bridgeport Resources Recovery Project</b>	19	July 1988	2008	Wheelabrator
<b>Mid-Connecticut Project (Hartford)</b>	70	October 1988	2012	Covanta/MDC
<b>Wallingford Project</b>	5	May 1989	2009 (FY)	Covanta
<b>Southeast Project (Preston)</b>	12	February 1992	2015	Covanta
Wheelabrator Lisbon Waste-to-Energy Facility	1	1995	2020	Wheelabrator
<b>Total</b>	<b>121</b>			

The Bridgeport, Mid-Connecticut (Hartford), Wallingford, and Southeast (Preston) projects (all bolded) are financed with CRRA revenue bonds. The Bristol and Lisbon facilities are financed with municipal-connected bonds. Appendix B provides additional summary information about each, including design capacity and actual amount of solid waste burned.

One of the study charges is to describe any potential future ownership shifts for the six resources recovery facilities. Suffice it to say that for each facility, complicated agreements entered into many years ago, both financial and otherwise, relate to the question of who will own the facility. Based on interviews and reviewing some of these agreements, it appears clear that when the long-term debt retires, for some facilities it is already settled who the owner is, and for others, certain purchase options exist that keep the question open at least temporarily. Table II-2 provides some detail, but in summary:

- two facilities will be privately owned (Bridgeport and Southeast), representing 42 percent of overall RRF capacity);

- two facilities will be privately owned unless the authorities involved exercise their options to purchase at fair market value (Wallingford and Bristol, representing 15.3 percent of overall RRF capacity); and
- two will be owned publicly by authorities (Mid-Connecticut and Lisbon, representing 42.6 percent of overall RRF capacity).

<b>Table II-2. CT Resources Recovery Facilities: Ownership After Long-Term Debt Retired</b>	
<b>■ Mid-Connecticut Project (Hartford)</b>	<b>CRRA project</b>
<i>CRRA owns the facility now and will remain the owner</i>	
<b>■ Bridgeport Project</b>	
<b>■ Southeast (Preston) Project</b>	<b>CRRA projects</b>
<i>These projects were set up under their agreements with CRRA so that Wheelabrator and Covanta respectively are the equity owners of those facilities when the long term solid waste disposal agreements conclude and the revenue bonds are repaid. (There seem to be different contract extension possibilities under the Southeast contract, but ultimate ownership does not change). In both of these cases, the private companies invested assets in the facility, in part at least to take advantage of federal investment tax credits, which provided them with equity interests.</i>	
<b>■ Wallingford Project</b>	<b>CRRA project</b>
<i>The project was set up under an agreement between CRRA and Covanta so that Covanta is the owner when the solid waste disposal agreement concludes, unless CRRA purchases the facility for fair market value. There are several contingencies if the contract is neither extended nor a purchase made, such as the land reverts to American Cyanamid.</i>	
<b>■ Bristol Resource Recovery Facility</b>	<b>Not CRRA project</b>
<i>An agreement similar to the one for the Wallingford project exists between the Bristol Resource Recovery Facility Operating Committee and Covanta in that when the bonds are repaid, Covanta is the owner unless BRRFOC purchases the facility for fair market value (there is also an option to extend the agreement, or for a new contract for the entire disposal capacity)</i>	
<b>■ Lisbon</b>	<b>Not CRRA project</b>
<i>The Eastern Connecticut Resource Recovery Authority (ECRRA) whose sole member is Middletown owns the facility now and will remain the owner when the bonds are paid</i>	
Source: 2006 SWMP App. K and PRI staff interviews	

### Summary Statistics

- Two companies operate the six resources recovery facilities in Connecticut.
  - Covanta operates four (three of which are currently connected to CRRA)
  - Wheelabrator operates two (one of which is currently connected to CRRA)

- Altogether, 121 municipalities (72 percent of 169) *directly* utilize the services of a resources recovery facility in CT as member municipalities under a long-term contract (over five years) to handle their MSW.
  - The MSW from 89 municipalities is handled under a facility-specific contract by Covanta
  - The MSW from 32 municipalities is handled under a facility-specific contract by Wheelabrator
- Eleven towns in western Connecticut are members of the Housatonic Resources Recovery Authority (HRRA). HRRA does not contract directly with an RRF facility, but has a long-term contract with a Wheelabrator subsidiary that provides that HRRA MSW will be disposed of either at the Lisbon or Bridgeport facilities, or out- of-state as a fallback.
- Thirty-seven municipalities (22 percent of 169) do not currently have long-term contracts with just one Connecticut RRF.
- The four current RRFs with connections to CRRA serve 106 municipalities through long-term contracts.
- The other two current RRFs that are independent of CRRA serve 15 municipalities.

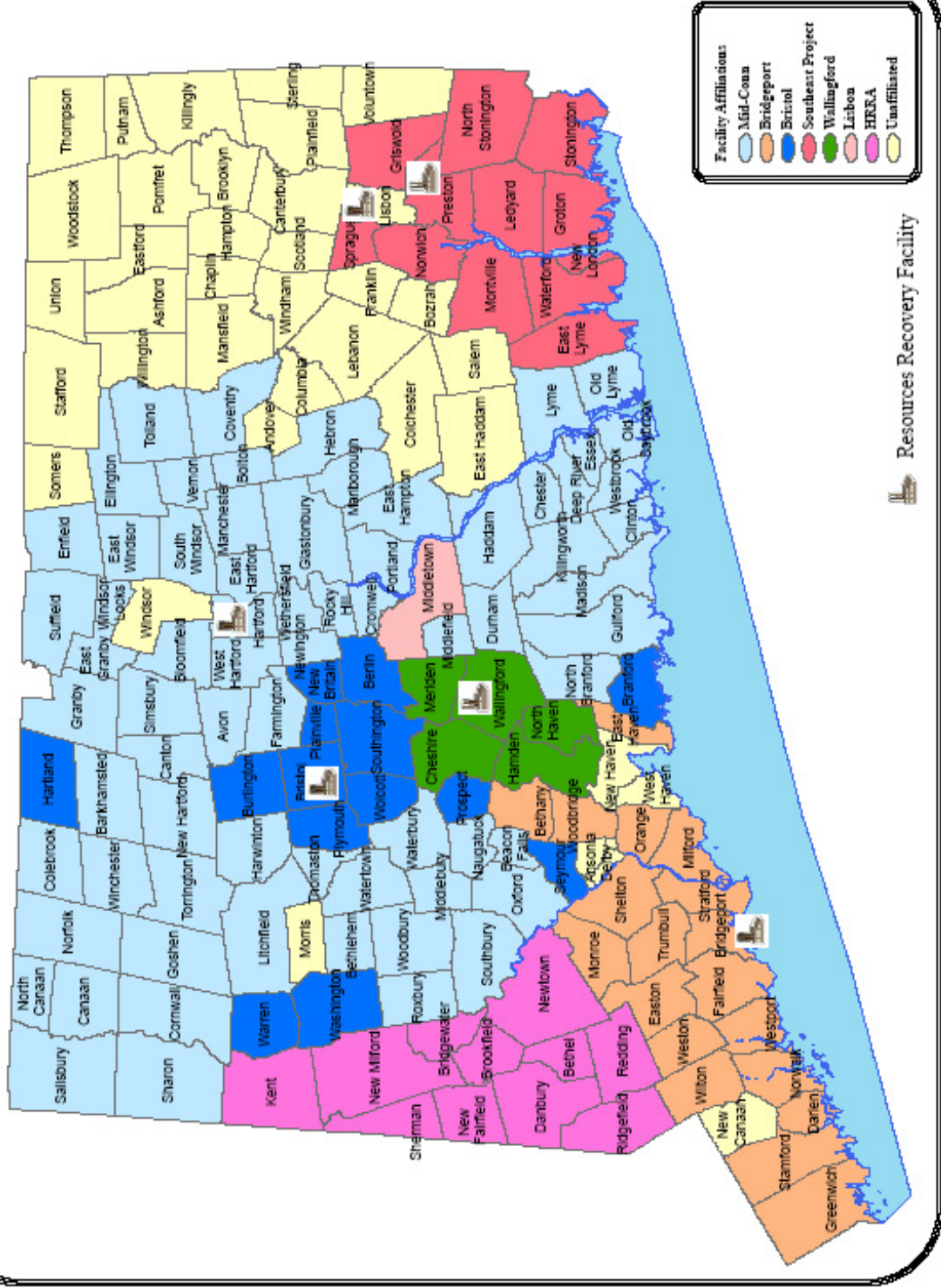
## **Municipal Perspective**

The Connecticut map in Figure II-1 shows:

- by far the largest number of municipalities connected to any one RRF project are the 70 (41 percent) under contract with CRRA for their MSW to be handled by Mid-Connecticut (operated by Covanta and MDC);
- 19 (11 percent) are under contract with CRRA (until 12/30/08) for their MSW to be handled by the Bridgeport Project (operated by Wheelabrator);
- 12 (7 percent) are under contract with CRRA for their MSW to be handled by the Southeast Project (operated by Covanta);
- 14 (8 percent) are under contract with the BRRFOC for their MSW to be handled by the Bristol facility (operated by Covanta);
- 5 (3 percent) are under contract with CRRA for their MSW to be handled by the Wallingford Project operated by Covanta;
- 11 (7 percent) belong to the Housatonic Resources Recovery Authority and HRRA does not contract directly with any one facility, but instead has an agreement that disposes of HRRA MSW at either Lisbon or Bridgeport;
- as indicated above, 37 (22 percent) currently do not have long-term contracts with just one Connecticut RRF.

(See Appendix C for municipal information in table form)

Figure II-1 Municipalities By Long-term Resources Recovery Facility Contracts





## **Other Relevant Policy Changes**

While the ownership and current municipal usage of the resources recovery facilities are important factors to consider when thinking about the state's solid waste management needs, and the focus of this study, it seems almost as important that long term contracts are coming to an end. This frees up all parties to reconsider their options and thus unsettles the status quo. Since the first facilities began operation in 1988, a lot has changed in the world of solid waste, perhaps most significantly: 1) the state law and approach to recycling and source reduction efforts; 2) the U.S. Supreme Court decisions on flow control, distinguishing between public and private RRFs; 3) the energy market; and 4) changing technology. These factors and others affect the context in which resources recovery facility ownership needs to be considered from a state policy perspective.

## **State Approach to Recycling**

The elevated emphasis on recycling in Connecticut through the institution of mandatory municipal recycling in July 1991 significantly changed the solid waste landscape in Connecticut, with implications for resources recovery. There seems to be a competitive tension between the state's use of resources recovery facilities and its recycling mandate. Successful RRF operation requires a consistent, predictable amount of solid waste, and seeks to lock municipalities into long-term agreements requiring minimum waste amounts. In contrast, recycling and other diversion strategies achieve success when the amount of solid waste to be disposed of is reduced. The state's interest in maximizing recycling efforts may be an important consideration when thinking about the need for public control over resources recovery facilities and by what method (e.g., ownership or new type of regulation).

Under mandatory recycling, each municipality is required to make provisions for the separation, collection, processing and marketing of items generated within its borders as solid waste and designated for recycling per DEP regulations. The statutory goal is to recycle 25 percent of the solid waste generated in each municipality, with another goal of either reducing the weight of that solid waste by January 1, 2000 by an additional 15 percent through source reduction, or by recycling the additional percentage of waste generated. Thus, if the waste reduction goal is not achieved, there is an effective recycling goal of 40 percent of solid waste generated. (Municipalities may require additional materials be recycled, beyond those required by DEP.)

Municipalities may comply with their recycling obligations by contracting with another municipality, a municipal authority, a regional entity, CRRRA, a nonprofit organization or a private contractor. Municipalities are required to submit annual reports to DEP describing the measures they have taken to meet their recycling obligations. The municipalities are required to notify by mail all the collectors registered to haul solid waste about the recycling requirements, as these collectors are obligated, if they have reason to believe people from whom they collect solid waste are violating the recycling laws, to report that to the municipalities.

The DEP commissioner is authorized to issue orders to enforce the recycling laws. If the commissioner determines that a municipality is making insufficient progress in implementing a recycling program, he may issue a notice of recycling program deficiency. After a multi-step meeting and review process, if the DEP commissioner still determines the recycling program is deficient, he or she can issue an order directing the municipality to come into compliance.

According to the 2006 SWMP, “MSW recycling rates have increased from less than 5 percent before recycling became mandatory in 1991 to almost 30 percent of the MSW generated in FY 2005.” (noting the estimate includes non-reported recyclables such as bottle bill material). The plan also notes that “recycling rates have stagnated over the last 10 years..., while “...per capita waste generation has increased”. Looking forward, the 2006 SWMP establishes a target of 58 percent MSW disposal diversion by 2024. If that target was met, using the plan’s projected increase of MSW generated in 2024, and using an in-state disposal capacity figure that assumes no new MSW disposal will be developed, the SWMP states there would be a zero in-state capacity shortfall. Adjusting the diversion goal downward and keeping all the other assumptions the same obviously creates a progressively larger in-state capacity shortfall, ending in the projection that if the diversion rate stayed the same, the in-state capacity shortfall in 2024 would be 1,454,000 tons of MSW.

## **Flow Control**

Flow control refers to efforts or mechanisms to mandate the direction of municipal solid waste to certain disposal facilities instead of others. Resources recovery facilities require a certain amount of solid waste coming in to be financially feasible. The U.S. Supreme Court decided two flow control cases 13 years apart—one in 1994 and one in 2007. As public versus private ownership was the pivotal factor distinguishing these cases, they are relevant to this study’s focus.

In 1994 in C&A Carbone, Inc. v. Clarkstown 511 US 383 (1994), the Supreme Court held that a Clarkstown, New York flow control ordinance that forced trash haulers to deliver waste to a particular private processing facility violated the Commerce Clause (based on the dormant commerce clause interpretation of implicit restraint on states). A few years after the Carbone case was decided, garbage haulers again went to federal court in New York challenging flow control ordinances involving public processing facilities as also violative of the Commerce clause. The Carbone case involved a private facility (although that characterization was disputed by at least one Justice).

In United Haulers Association, Inc., et al v. Oneida-Herkimer Solid Waste Management Authority, \_ US \_, 127 S.Ct 1786 (2007), the Court determined that the flow control ordinances in the Herkimer case “benefit a clearly public facility, while treating all private companies exactly the same... such flow control ordinances do not discriminate against interstate commerce for purposes of the dormant Commerce Clause.” The Court said further:

“... States and municipalities are not private businesses—far from it. Unlike private enterprise, government is vested with the responsibility of protecting the health, safety and welfare of its citizens... Given these difference, it does not make sense to regard laws

favoring local governments and laws favoring private industry with equal skepticism. As our local processing cases demonstrate, when a law favors in-state business over out-of-state competition, rigorous scrutiny is appropriate because the law is often the product of “simple economic protectionism”. Laws favoring local government, by contrast, may be directed toward any number of legitimate goals unrelated to protectionism. Here the flow control ordinances enable the Counties to pursue particular policies with respect to the handling and treatment of waste generated in the Counties, while allocating the costs of those policies on citizens and businesses according to the volume of waste they generate.”

Program review staff does not know how many Connecticut municipalities have or had flow control ordinances, but to the extent they benefited in-state private disposal facilities versus out-of-state ones, those ordinances are invalid. Of course, the point of long term contracts with municipalities to bring their MSW to a particular facility is to achieve some kind of flow control, but contracts are of a different nature than government mandates.

As in other areas of solid waste policy, it seems there is a conflict between the goal of state self-sufficiency discussed in the 2006 SWMP and the reality of flow control regulation. Unless there is total public ownership of both RRFs and ash residue landfills, market reasons may encourage out-of-state disposal of Connecticut waste (and in-state disposal of out-of-state waste).

## **Energy Market**

Currently, electricity providers purchase RRF-generated energy under contracts entered into at a time when electricity providers were compelled, by statute, to purchase all available RRF-generated energy at the same rate that energy was sold to municipalities (C.G.S. Sec. 16-243e). The statute provides that the rate and the mandate to buy last the length of the original contract, so long as the contract was valid for at least 20 years after the initial operation of a facility. As most of the original energy purchasing contracts are keyed to the financing of the facilities, the energy contracts are also beginning to expire. Without further statutory direction, electric providers will most likely purchase the RRF generated energy at the much cheaper wholesale rate rather than the municipal rate.

For context, in terms of energy produced, Connecticut resources recovery facilities generate approximately 184 Megawatts of electricity, which is 2.7 percent of the capacity of all current electricity generating resources in Connecticut at 6,700 Megawatts.

## **Technology**

The six currently operational RRF plants in Connecticut all utilize similar technologies to obtain energy from waste. The plants use a combustion-based system in which waste is burned in order to create steam that is then used to move a turbine. The fuel source, or feed stock, for the plants is a collection of municipal solid waste (MSW), construction and demolition debris (C&D), and, in some instances, tires.

With the exception of the Mid-Connecticut Project, the plants use a “mass burn” technique where all of the feed stock is burned heterogeneously and any recyclable materials (ferrous metals, etc.) are filtered out of the remaining ash residue. The Mid-Connecticut Project uses refuse derived fuel (RDF) instead of a mass burn approach. In the RDF model, recyclables are filtered out prior to combustion and the remaining feed stock is shredded. Use of the RDF model is meant to increase homogeneity of fuels and produce a more reliable energy stream, as the components of the fuel are more closely monitored than in mass burn models. At this point it is unclear whether one model of fuel is more advantageous than the other.

While the plants have been updated with additional environmental control features, the basic technology of the plants has remained largely unchanged from their construction and opening. As the plants were constructed between 13 to 20 years ago, it is possible that the technology current at the time has become outdated. Several companies have made notable strides in the efficiency of waste-to-energy facilities in Europe and are in the process of bringing those technologies to the United States as demand grows here. Advances in technology have reduced the amount of residue that must be landfilled. The inert ash that is left over from Connecticut’s current facilities has around 10 percent of the volume of the original waste stream and between 20-30 percent of the weight. New technologies promise a 99 percent or more volume reduction from the original waste stream. Further, most of the remaining 1 percent residue from the new processes is able to be reused, possibly as ground fill for road construction, instead of being disposed of in landfills.

Waste facilities around the world fall into a few general categories: incinerators, steam-converters, and transportable energy creators. Incinerators burn waste to reduce volume before landfilling and typically do not recapture energy in any form. They also tend to emit any number of regulated pollutants. There are no longer any active incinerators in Connecticut and their numbers are dwindling throughout the United States.

Steam-capturing plants, such as those used in Connecticut, burn waste and use the heat from the combustion to produce steam. The steam can be provided to steam loops as a source of heat or can be combined with an electrical turbine to produce electricity, as happens in Connecticut.

Transportable energy creating facilities use a high-temperature process, such as plasma-arc technology, to reduce the waste into energy-filled solids or gases that can be used to generate electricity on site or sold to specialized power plants or individual industries for their own use. The main advantage of these facilities is that the energy that is recovered from the waste can be stored and transported, whereas the steam based facilities must immediately use the steam as it is generated.

### **Bridgeport and Wallingford Projects**

These two projects are the first two RRFs that will be affected by the long-term debt retirement and the termination of other connected contracts, and how their situations evolve is instructive to this study and will continue to be followed.

**Bridgeport.** As the solid waste agreement between Wheelabrator and CRRA regarding the Bridgeport facility comes to an end on December 30, 2008, it appears that all parties involved in that project are experiencing change. Wheelabrator and CRRA disputed certain end-of-contract related provisions and went to arbitration, which has concluded. Not in dispute was that Wheelabrator would be the owner of the facility on January 1, 2009. With all the member municipal service contracts with CRRA expiring also, what the 19 current member towns are planning on doing varies. For example:

- As of September 16, 12 municipalities are planning to continue utilizing the services of CRRA, whereby each will have a contract with CRRA to provide a certain minimum amount of waste, and CRRA will have a contract with Wheelabrator through which a certain amount of capacity will be guaranteed reserved for the municipal group under contract with CRRA. Although details are still being worked out, it seems pretty clear that these contracts will not be for 20 years again, but more like around five, with options to extend.
- Six or seven current member municipalities, in a process started by Norwalk, decided to seek RFPs for their solid waste disposal beginning in 2009. Norwalk and a couple of these towns have entered into contracts with City Carting and Recycling, under which City Carting will bale and wrap their solid waste and transport it to Ohio landfills. The contract also provides that City Carting will negotiate with Wheelabrator and Covanta to try to get a cheaper disposal rate by using the in-state RRFs, with the savings split 50-50 between City Carting and the municipalities.

**Wallingford.** The five town municipal service agreements and CRRA's operating agreement with Covanta terminate on June 30, 2010, although the bonds mature in November 2008. As noted above, under these soon-to-terminate long-term agreements, Covanta will be the facility owner, except that CRRA has the right to purchase it for fair market value (there are also contract extension provisions). In essence, the status of the Wallingford project is that currently, many discussions are occurring between the various parties involved.

### **Other Current Regional Activity**

Two Regional Planning Organizations, the South Central Regional Council of Government (SCRCOG) and the Capitol Regional Council of Government (CRCOG) are both in the process of preparing regional solid waste plans, or are nearing completion. At least one of these plans is being funded by a grant from the regional performance incentive program (RPIP). As may be recalled from the PRI committee's 2007 study entitled *Connecticut's Regional Planning Organizations*, the regional performance incentive program (RPIP) was established in 2007 on a pilot basis within "responsible growth" legislation. The committee recommendation to extend and otherwise modify the RPIP (along with other recommendations) passed the 2008 legislature and became P.A. 08-182.



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### Selected Roles Related to RRFs

Although CRRA was established in 1973, it was not until 1988 that the first CRRA-related resources recovery facility, in Bridgeport, began commercial operation on a consistent basis (an earlier CRRA effort in Bridgeport never got off the ground totally, suffering construction delays, explosions, and bankruptcy). As noted earlier, three other recovery facility projects have since been developed under the authority of CRRA.

Another two resources recovery facilities were developed and operate under municipal authority. One of these RRFs, the Bristol facility, operates under a group of member municipalities called the Bristol Resource Recovery Facility Operating Committee (BRRFOC). The other, Lisbon, operates under a single municipality, Middletown, under the name of the Eastern Connecticut Resource Recovery Authority (ECRRA).

### CRRA Role and Authority

A review of the legislative history shows that one of the main reasons CRRA was created was to provide a vehicle to encourage a regional approach to solid waste management, through voluntary decisions on the part of towns to utilize the services of CRRA. In a way, CRRA is like a broker between a party who has something to sell – municipalities with solid waste – and a party who want to buy that product—companies who are in the business of building and operating resources recovery facilities. A major asset that CRRA brings is its revenue bonding authority to finance facilities.

Its main statutory purposes are:

- the planning, design, construction, financing, management, ownership, operation and maintenance of a variety of solid waste-related facilities<sup>2</sup>, including resources recovery facilities, considered by the authority to be necessary, desirable, convenient or appropriate in carrying out the provisions of the state solid waste management plan and in establishing, managing and operating solid waste disposal and resources recovery systems and their component waste-processing facilities and equipment;
- the provision of solid waste management services to municipalities, regions and persons within the state by receiving solid waste at authority facilities, *pursuant to contracts between the authority and such municipalities, regions and persons*; the recovery of resources and resource values from those solid wastes; and the production from such services and resources recovery operations of revenues sufficient to provide for the support of the authority and its operations on a self-sustaining basis, with due allowance for the redistribution of any surplus revenues to reduce the costs of authority services

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<sup>2</sup> Includes solid waste disposal, volume reduction, recycling, intermediate processing and resources recovery facilities and all related solid waste reception, storage, transportation and waste-handling and general support facilities

- to the users thereof including any net revenue from certain specific contracted activities;
- the utilization, *through contractual arrangements*, of private industry for implementation of some or all of the requirements of the state solid waste management plan and for such other activities as may be considered necessary, desirable or convenient by the authority;
  - *assistance with and coordination of* efforts directed toward source separation for recycling purposes; and
  - *assistance in the development* of industries, technologies and commercial enterprises within the state of Connecticut based upon resources recovery, recycling, reuse and treatment or processing of solid waste.

The CRRA statute states that “these purposes shall be considered to be operating responsibilities of the authority, in accordance with the state solid waste management plan, and are to be considered in all respects public purposes.”

### **Municipal Role and Authority**

There are two main avenues by which municipalities may effectively provide for themselves the services that CRRA may also offer them, although there are differences. These will be explored further in this study to the extent they are relevant to options for and implications of public versus private ownership of RRFs.

**Solid waste management act.** Two years before CRRA was created, the 1971 solid waste management act established that “the state, any municipality, or any municipal or regional authority may make contracts for the exercise of its corporate or municipal powers with respect to the collection, transportation, separation, volume reduction, processing, storage and disposal of its solid waste for a period not exceeding twenty years and may pledge its full faith and credit for the payment of obligations under such contracts” (C.G.S. Sec. 22a-221). (the contract duration was extended to 30 years in 1984, along with other amendments).

Under this contract authority, any municipality or two or more municipalities can enter into a contract for the long-term provision of solid waste disposal services. The statute suggests such a contract may include (1) the furnishing of municipal solid waste for disposal and (2) payment of a fee or other charge based on a per cent of actual or projected tonnage of solid waste delivered at a solid waste facility, along with other financial provisions related payments after any debt is retired.

By contract, a committee consisting of representatives of any municipality that is a party to the contract may be established. In 1988, it was established that any operating committee created under the above statute was to constitute a public instrumentality and political subdivision of the state of Connecticut established and created for the performance of an essential public and governmental function (22a-221a) A regional authority under the solid waste management act means “the administrative body delegated the responsibility of solid waste management for 2 or more municipalities which have joined together by creating a district or signing an interlocal agreement or signing a mutual contract for a definitive period of time.”



**Municipal resource recovery authority.** Chapter 103b of the statutes sets out a set of provisions under which municipalities may create either single-municipality or collective municipality (i.e., regional) resource recovery authorities (C.G.S. Secs. 7-273aa et seq). Enacted in 1981, this is an alternative approach that municipalities can take to address their solid waste needs, in addition to the provisions set out above in the solid waste management act.

## **Department of Environmental Protection Role**

In thinking about the ownership status of resources recovery facilities, as well as other factors that could enhance or detract from public control of solid waste management, it is useful to know what regulations resources recovery facilities are subject to now, regardless of ownership. Currently, the Department of Environmental Protection, through its authority under the solid waste management act, has a primary role in governing RRF activities from an environmental protection view.

Key functions of the Department of Environmental Protection related to resources recovery facilities are found in the Solid Waste Management Act Chapter 446d, including:

- **Permits:** Regulating through DEP permit requirements the construction and operation of RRFs (as well as other types of facilities used to manage solid waste, such as other types of volume reduction plants, transfer stations, ash residue disposal areas and other solid waste disposal areas, and intermediate processing facilities (for recycling));
- **Determination of need:** As a precondition to permitting the construction or expansion of an RRF, making a determination of need as to whether the construction or expansion is necessary to meet the solid waste disposal needs of the state AND will not result in substantial excess capacity of RRFs (this DON process applies also to ash residue disposal areas and mixed municipal solid waste composting facilities.);
- **Operator qualifications:** Approving the qualifications of the operator or operators of any RRF, establishing requirements for the presence of approved operators at solid waste facilities, and may develop, offer or sponsor training programs for operators of RRFs and require participation (applies to all solid waste facilities also);
- **State-wide solid waste management plan:** Developing and amending as necessary a state-wide solid waste management plan, through which the state policy of an integrated hierarchical approach to solid waste management is established, which is to include RRF capacity need predictions;
- **Mandated reporting:** Receiving certain mandated reports from RRF owners quarterly on a form prescribed by DEP that provides information the commissioner deems necessary, including the amount of solid waste, by weight or other method acceptable to DEP received from each municipality or other customer (this also applies to solid waste disposal area owners or operators); the report must also include for each Connecticut municipality the

total amount of solid waste originating from that municipality. The owner or operator may use estimates if precise data are not available, if approved by DEP.

- **Ash residue disposal plan:** Requiring the owner or operator of a resources recovery facility to submit to DEP for approval a plan for the disposal or recycling of ash residue generated at the RRF for five years from date of plan (this also applies to incinerators). The owner or operator must begin implementation of the plan within one year after it is approved (Implementation means negotiation for landfill space or landfill acquisition, application for any required permits or negotiation for ash residue recycling.;
- **Grass clippings:** Prohibiting a resources recovery facility from accepting significant quantities of grass clippings for disposal (applies to other solid waste disposal facilities also); and
- **Recycling monitoring:** Requiring the owner or operator of each RRF that has reason to believe upon visual inspection that a load of MSW delivered to facility contains significant amounts of grass clippings or significant quantities of anything required to be recycled to promptly notify of such belief to the driver of the vehicle delivering the load and the municipality from where the load originated (or agent) (applies to other solid waste facilities);
  - Requiring the owner or operator of each RRF to conduct periodic unannounced inspections of loads delivered to the RRF to assist municipalities and DEP in accurately assessing compliance with 22a-241b and 22a-208v(c). The owner or operator shall conduct additional inspections if requested by the commissioner (applies to other solid waste facilities also).

### Legislative Findings and State Policies Set Out in the Solid Waste Management Services Act (1973)

#### Legislative Findings Sec. 22a-258 (verbatim text, but bullets added)

- *It is found and declared that the people of the state of Connecticut have the right to a clean and wholesome environment;*
- *that prevailing solid waste disposal practices generally, throughout the state, result in unnecessary environmental damage, waste valuable land and other resources, and constitute a continuing hazard to the health and welfare of the people of the state;*
- *that local governments responsible for waste disposal services are becoming hard pressed to provide adequate services at reasonable costs, without damage or hazard to the environment and the loss of useful resources;*
- *that locally organized voluntary recycling programs have shown that solid wastes produced in the state of Connecticut contain recoverable resources;*
- *that technology and methods now exist to dispose of solid wastes and recover resources with commensurate environmental benefits;*
- *that coordinated large-scale processing of solid wastes may be necessary in order to achieve maximum environmental and economic benefits for the people of the state;*
- *that the amounts of solid waste being produced within the state of Connecticut are adequate to sustain such large-scale processing;*
- *that the geography and population density of the state are such as to enable and facilitate the effective and economic regional accumulation of solid wastes;*
- *that the development of systems and facilities and the use of the technology necessary to initiate large-scale processing of solid wastes have become logical and necessary functions to be assumed by state government;*
- *that the provision of solid waste disposal services to local governments at reasonable cost, through the use of state governmental powers and capabilities, would supply valuable assistance to such local governments;*
- *and, that, because of the foregoing, the provision of statutory authorization for the necessary state structure which can take initiative and appropriate action to provide the necessary systems, facilities, technology and services for solid waste management and resources recovery is a matter of important public interest and that it is the purpose and intent of the General Assembly to be and remain cognizant not only of its responsibility to authorize and establish the necessary state and local structure and powers for the effective accomplishment of solid waste management and resources recovery, but also of its responsibility to monitor and supervise the activities and operations of the state authority created by this chapter, and the exercise of the powers conferred upon such authority by virtue of this chapter.*

**State Policies Sec. 22a-259** (verbatim text, but spacing added)

The following are declared to be policies of the state of Connecticut:

*(1) That maximum resources recovery from solid waste and maximum recycling and reuse of such resources in order to protect, preserve and enhance the environment of the state shall be considered environmental goals of the state;*

*(2) that solid waste disposal and resources recovery facilities and projects are to be implemented either by the state of Connecticut or under state auspices, in furtherance of these goals;*

*(3) that appropriate governmental structure, processes and support are to be provided so that effective state systems and facilities for solid waste management and large-scale resources recovery may be developed, financed, planned, designed, constructed and operated for the benefit of the people and municipalities of the state;*

*(4) that private industry is to be utilized to the maximum extent feasible to perform planning, design, management, construction, operation, manufacturing and marketing functions related to solid waste disposal and resources recovery and to assist in the development of industrial enterprise based upon resources recovery, recycling and reuse;*

*(5) that long-term negotiated contracts between the state and private persons and industries may be utilized as an incentive for the development of industrial and commercial enterprise based on resources recovery within the state;*

*(6) that solid waste disposal services shall be provided for municipal and regional authorities and private persons in the state, at reasonable cost, by state systems and facilities where such services are considered necessary and desirable in accordance with the state-wide solid waste management plan and that any revenues received from the payment of the costs of such services otherwise from the operation of state systems and facilities shall be redistributed to the users of such services provided that the authority has determined that all contractual obligations related to such systems and facilities have been met and that such revenues are surplus and not needed to provide necessary support for such systems and facilities;*

*(7) that provision shall be made for planning, research and development, and appropriate innovation in the design, management and operation of the state's systems and facilities for solid waste management, in order to permit continuing improvement and provide adequate incentives and processes for lowering operating and other costs;*

*(8) that the authority established pursuant to this chapter shall have responsibility for implementing solid waste disposal and resources recovery systems and facilities and solid waste management services where necessary and desirable throughout the state in accordance with the state solid waste management plan and applicable statutes and regulations;*

*(9) that actions and activities performed or carried out by the authority or its contractors in accordance with the provisions of this chapter shall be in conformity with the state solid waste management plan and with other applicable policies and regulations of the state, as promulgated from time to time in law and by action of the Department of Environmental Protection and the Connecticut Development Authority;*

*(10) that it being to the best interest of the state, municipalities, individual citizens and the environment to minimize the quantity of materials entering the waste stream that would require collection, transportation, processing, or disposal by any level of government, it is the intent of this legislation to promote the presegregation of recoverable or recyclable materials before they become mixed and included in the waste stream; and that this intent shall be reflected in the policy of the resources recovery authority and that no provision of this chapter or action of this authority shall either discourage or prohibit either voluntary or locally ordained solid waste segregation programs or the sale of such segregated materials to private persons, unless the authority has determined based upon a feasibility report filed with the applicable municipal authority that the reduced user fees charged to it should result in its total cost of solid waste management including user fees paid to the authority to be less without presegregation than with it, and*

*(11) that these policies and purposes are hereby declared to be in the public interest and the provisions of this chapter to be necessary and for the public benefit, as a matter of legislative determination.*

## Appendix B

### Resources Recovery Facility Summary Information

Selected Information	Bridgeport RRF	Wallingford RRF	Southeast RRF	Mid-CT RRF	Bristol RRF	Lisbon RRF
<b>Maximum Permitted Design Capacity (tons/year) (1)</b>	821,250	153,300	251,485	888,888	237,250	195,640 (2)
<b>Average Amount (tons) of MSW Burned/Year (3)</b>	722,692	143,158	250,484	715,011	196,113	181,987
<b>Generation Capacity (Megawatts) (4)</b>	67	11	18	68.5	16.3	15
<b>Year Bonds Will be Paid off</b>	2008	2009	2015	2012	2014	2020
<b>Operator</b>	Wheelabrator	Covanta	Covanta	Covanta/MDC	Covanta	Wheelabrator
<b>2005 Member Tipping Fee (6)</b>	\$69	\$57	\$60	\$70	\$66	\$60-\$66
<b>Ash Disposal Site</b>	Putnam	Putnam	Putnam	Hartford	Seneca Meadows (NY)	Putnam
<p>1) This represents the maximum (theoretical) amount of waste the facility is permitted to process per day multiplied by the number of days a year the facility operates.</p> <p>2) As appropriate, 13,140 tons/year are dedicated only for processed demolition wood (based on the Lisbon RRF permit to operate)</p> <p>3) The Average Amount of Waste burned per year is based on the five year period of FY 2000-FY2004.</p> <p>4) Information obtained from facility operators (Wheelabrator Inc, Covanta Energy). Numbers are approximate at permitted capacity.</p> <p>5) Tipping fees cover a range of activities, from disposal only to transfer, recycling education, recyclables processing, and electronics recycling activities.</p> <p><b>SOURCE: based on SWMP (2006) updated</b></p>						

## Appendix C

### Member Municipalities by Long-term Resources Recovery Facility Contracts

Mid-Conn Project (70)				Bridgeport Project (19)
Avon	East Windsor	Middlebury	Suffield	Bethany
Barkhamsted	Ellington	Middlefield	Thomaston	<b>Bridgeport</b>
Beacon Falls	Enfield	Naugatuck	Tolland	Darien
Bethlehem	Essex	New Hartford	Torrington	East Haven
Bloomfield	Farmington	Newington	Vernon	Easton
Bolton	Glastonbury	Norfolk	Waterbury	Fairfield
Canaan	Goshen	North Branford	Watertown	Greenwich
Canton	Granby	North Canaan	West Hartford	Milford
Chester	Guilford	Old Lyme	Westbrook	Monroe
Clinton	Haddam	Old Saybrook	Wethersfield	Norwalk
Colebrook	<b>Hartford</b>	Oxford	Winchester	Orange
Cornwall	Harwinton	Portland	Windsor Locks	Shelton
Coventry	Hebron	Rocky Hill	Woodbury	Stamford
Cromwell	Killingworth	Roxbury		Stratford
Deep River	Litchfield	Salisbury		Trumbull
Durham	Lyme	Sharon		Weston
East Granby	Madison	Simsbury		Westport
East Hampton	Manchester	South Windsor		Wilton
East Hartford	Marlborough	Southbury		Woodbridge
<b>Non-Member Municipalities (37)</b>				
<b>Bristol (14)</b>	<b>Southeast Project (12)</b>	<b>HRRA (11)*</b>	<b>Wallingford Project (5)</b>	<b>Lisbon Project (1)</b>
Berlin	East Lyme	Bethel	Cheshire	Middletown
Branford	Griswold	Bridgewater	Hamden	
<b>Bristol</b>	Groton	Brookfield	Meriden	
Burlington	Ledyard	Danbury	North Haven	
Hartland	Montville	Kent	<b>Wallingford</b>	
New Britain	New London	New Fairfield		
Plainville	North Stonington	New Milford		
Plymouth	Norwich	Newtown		
Prospect	<b>Preston</b>	Redding		
Seymour	Sprague	Ridgefield		
Southington	Stonington	Sherman		
Warren	Waterford			
Washington				
Wolcott				
Andover	Columbia	Lisbon	Putnam	Union
Ansonia	Derby	Mansfield	Salem	Voluntown
Ashford	East Haddam	Morris	Scotland	West Haven
Bozrah	Eastford	New Canaan	Somers	Willington
Brooklyn	Franklin	New Haven	Stafford	Windham
Canterbury	Hampton	Plainfield	Sterling	Windsor
Chaplin	Killingly	Pomfret	Thompson	Woodstock
Colchester	Lebanon			

