

**SOUTH CENTRAL REGIONAL**

**COUNCIL OF GOVERNMENTS**

**FUTURE OF REGIONAL SOLID  
WASTE DISPOSAL BEYOND  
CURRENT RESOURCE  
RECOVERY 20 YEAR CONTRACTS  
IN THE SCRCOG REGION**

**PREPARED BY:**



**January 30, 2009**

## DEFINITION OF ACRONYMS

AD- Anaerobic Digestion  
C&D- Construction and Demolition Debris  
CRRRA- Connecticut Resources Recovery Authority  
CT DEP- Connecticut Department of Environmental Protection  
DSNY- New York City Department of Sanitation  
ECRRA- Eastern Connecticut Resource Recovery Authority  
EPA- Environmental Protection Agency  
FY- Fiscal Year  
IPC- Intermediate Processing Center  
MRF- Material Recycling Facility  
MSA-Municipal Service Agreement  
MSW- Municipal Solid Waste  
NA- Not Available  
OBW- Oversized Bulky Waste  
RDF- Refuse-Derived Fuel  
RFP- Request for Proposal  
RFI- Request for Information  
RFQ- Request for Qualifications  
RRF-Resource Recovery Facility  
SCRCOG- South Central Regional Council of Governments  
SHW- Solid and Hazardous Waste  
SWC-Solid Waste Committee  
SWDA- Solid Waste Disposal Agreement  
TPD- Tons per Day  
TPY- Tons per Year  
WDA- Waste Delivery Agreement

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## II. INTRODUCTION

On August 13, 2008, R. S. Lynch & Company, Inc. (the “Consultant”) was engaged by the South Central Regional Council of Governments (“SCRCOG”) to identify and evaluate future solid waste management options for SCRCOG’s 15 member Towns.

At that time, 5 member Towns disposed of their residential waste at the Bridgeport Resource Recovery Facility through a contract with the Connecticut Resources Recovery Authority (“CRRRA”), 4 member Towns disposed of their residential waste at the Wallingford Resource Recovery Facility through a contract with CRRRA, and 6 Towns utilized a variety of other arrangements.

### SCRCOG MEMBER TOWNS’ EXISTING DISPOSAL ARRANGEMENTS

TOWN	FY 2008 WASTE VOLUME (TONS)*	EXISTING ARRANGEMENT As of 12/19/08	CONTRACT END DATE
Bethany	1,875	Bridgeport via CRRRA	12/08
East Haven	14,734	Bridgeport via CRRRA	12/08
Milford	54,640	Bridgeport via CRRRA	12/08
Orange	7,493	Bridgeport via CRRRA	12/08
Woodbridge	5,204	Bridgeport via CRRRA	12/08
Hamden	35,579	Wallingford via CRRRA	6/10
Meriden	32,128	Wallingford via CRRRA	6/10
North Haven	18,587	Wallingford via CRRRA	6/10
Wallingford	42,862	Wallingford via CRRRA	6/10
Branford	13,443	Bristol RRF	6/14
Guilford	12,338	CRRRA/Mid-Conn RRF	6/12
Madison	10,463	CRRRA/Mid-Conn RRF	6/12
New Haven	145,981	Wheelabrator Facility	12/08
North Branford	7,384	CRRRA/Mid-Conn RRF	6/12
West Haven	27,128	Bridgeport via Wheelabrator Arrangement	6/11

\*Total Town Tonnage Reported to the CT DEP from In-State Disposal Facilities or Transfer Stations

Upon commencement of this study, very limited time remained for the Bridgeport and Wallingford communities to make new solid waste disposal arrangements due to their pending contract end dates. Accordingly, it was determined by SCRCOG and the Consultant to focus initially on the identification and evaluation of options immediately available to the Bridgeport and Wallingford communities.

These options, which are referred to in this report as Current Disposal Options, were quickly identified and researched by the Consultant and a summary of them was provided to each member Town on September 10, 2008.

During October and November, a series of competing draft contracts were offered by CRRA, Wheelabrator and Covanta to various SCRCOG member Towns offering renewed waste disposal services at the Bridgeport and Wallingford Facilities. Each of these draft contracts was reviewed and analyzed by the Consultant with results and recommendations presented to the Bridgeport communities on November 5<sup>th</sup> and the Wallingford communities on November 13<sup>th</sup>. Analysis and recommendations related to these proposed contracts is included in Section III of this report.

Pursuant to this engagement, the Consultant also conducted a phone survey of each SCRCOG member in order to assemble an up-to-date description of current waste management practices. All SCRCOG Towns participated in this voluntary survey except for the Towns of Milford and Orange. As of the date of this report New Haven has provided incomplete information. Sections IV and V hereof present the findings of this survey along the information gathered from the CT DEP, private waste management companies, previous engagements completed by the Consultant and other sources. Also presented in Section IV hereof is a Town-by-Town projection of waste volumes and disposal costs for each Current Option.

Section VI addresses Future Disposal Options which is a term used herein to refer to potentially desirable options which are not fully developed at this time but which may be available within 3-6 years. These options include both in-State and out-of-State disposal, rail haul and new technology options. Future Disposal Options are relevant for those SCRCOG members who are not facing immediate expiration of their current arrangements and/or for SCRCOG member Towns who are facing immediate expiration of their current arrangements but who choose a shorter term new contract now, assumed to be 5 years, and thus will be reassessing their disposal options again within the 3-6 year Future Option time horizon.

Section VII hereof addresses certain issues regarding current and future waste recycling arrangements available to SCRCOG Towns.

An important element of this Study has been to identify the appropriate role and administrative option(s) available to SCRCOG and its member Towns to most effectively continue to identify, evaluate and implement Future Disposal and Recycling Options. This issue is addressed in Section VIII.

Finally, Section IX of this report presents a summary of our findings to date and a list of recommendations for future action.

**SUMMARY OF CURRENT AND FUTURE WASTE DISPOSAL OPTIONS FOR SCRCOG TOWNS**

<b>Town</b>	<b>Existing Arrangement</b>	<b>Contract End Date As of 12/19/08</b>	<b>Current Disposal Options</b>	<b>Future Disposal Options</b>	<b>Future Disposal Options Assumed Start Date</b>
Bethany	Bridgeport via CRRRA	12/08	Option 1:Bridgeport via Wheelabrator, 10Yrs Option 2:Bridgeport via Wheelabrator, 5Yrs <b>Option 3:Bridgeport via CRRRA, 5.5Yrs</b> Option 4:New Haven, 2Yrs	Projected Current Option 1 Projected Current Option 2 Extend Current Option 3 Projected Current Option 4 Bale and Rail Haul Export Transfer and Road Haul to Lisbon/Mass Burn Transfer and Road Haul to Lisbon/New Technology	2014
East Haven	Bridgeport via CRRRA	12/08	Option 1:Bridgeport via Wheelabrator, 10Yrs <b>Option 2:Bridgeport via Wheelabrator, 5Yrs</b> Option 3:Bridgeport via CRRRA, 5.5Yrs Option 4:New Haven, 2Yrs	Projected Current Option 1 Extend Current Option 2 Projected Current Option 3 Projected Current Option 4 Bale and Rail Haul Export Transfer and Road Haul to Lisbon/Mass Burn Transfer and Road Haul to Lisbon/New Technology	2014
Milford	Bridgeport via CRRRA	12/08	Survey Not Conducted		
Orange	Bridgeport via CRRRA	12/08	Survey Not Conducted		
Woodbridge	Bridgeport via CRRRA	12/08	<b>Transfer Station Drop-Off Options:</b> Option 1:Bridgeport via Wheelabrator, 10Yrs Option 2:Bridgeport via Wheelabrator, 5Yrs <b>Option 3:Bridgeport via CRRRA, 5.5Yrs</b> Option 4:New Haven, 2Yrs <b>Independently Contracted Hauler Options:</b> Option 1:Bridgeport via Wheelabrator, 10Yrs Option 2:Bridgeport via Wheelabrator, 5Yrs <b>Option 3:Bridgeport via CRRRA, 5.5Yrs</b>	<b>Transfer Station Drop-Off Options:</b> Projected Current Option 1 Projected Current Option 2 Extend Current Option 3 Projected Current Option 4 Bale and Rail Haul Export Transfer and Road Haul to Lisbon/Mass Burn Transfer and Road Haul to Lisbon/New Technology	2014
Hamden	Wallingford via CRRRA	6/10	<b>Option 1:Wallingford via Covanta, 20Yrs</b> Option 2:Wallingford via CRRRA, 20Yrs Option 3:New Haven, 2Yrs	None... 20 Year Current Option to be Selected	
Meriden	Wallingford via CRRRA	6/10	<b>Option 1:Wallingford via Covanta, 20Yrs</b> Option 2:Wallingford via CRRRA, 20Yrs Option 3:New Haven, 2Yrs	None... 20 Year Current Option to be Selected	
North Haven	Wallingford via CRRRA	6/10	<b>Option 1:Wallingford via Covanta, 20Yrs</b> Option 2:Wallingford via CRRRA, 20Yrs Option 3:New Haven, 2Yrs	None... 20 Year Current Option to be Selected	
Wallingford	Wallingford via CRRRA	6/10	<b>Option 1:Wallingford via Covanta, 20Yrs</b> Option 2:Wallingford via CRRRA, 20Yrs Option 3:New Haven, 2Yrs	None... 20 Year Current Option to be Selected	

**SUMMARY OF CURRENT AND FUTURE WASTE DISPOSAL OPTIONS FOR SCRCOG TOWNS**

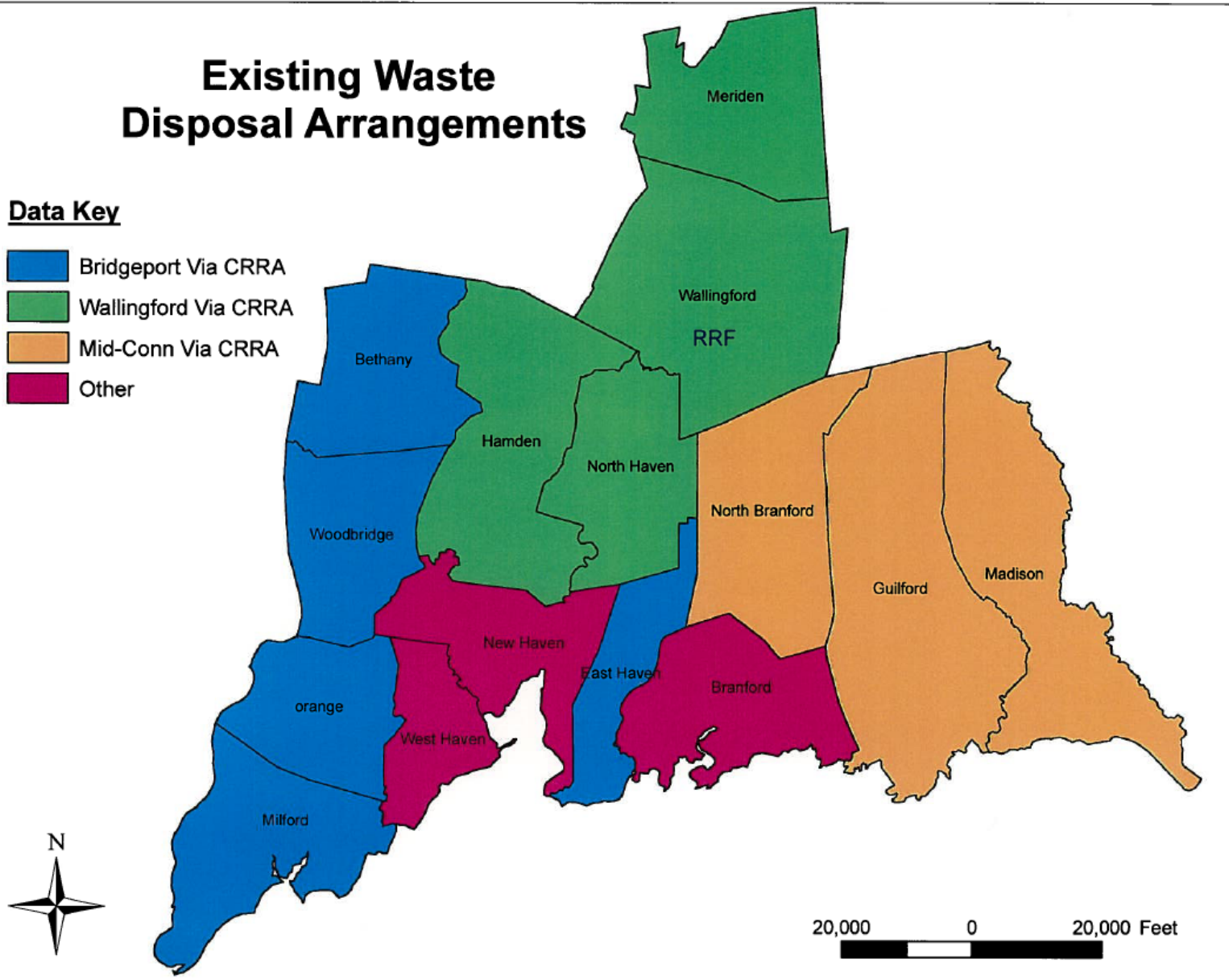
<b>Town</b>	<b>Existing Arrangement</b>	<b>Contract End Date As of 12/19/08</b>	<b>Current Disposal Options</b>	<b>Future Disposal Options</b>	<b>Future Disposal Options Assumed Start Date</b>
Branford	Bristol RRF	6/14 w/ 5Yr extension	None	Extend Existing Bristol Contract Projected Bridgeport via Wheelabrator, 10Yr Offer Projected Bridgeport via Wheelabrator, 5Yr Offer Projected Bridgeport via CRRA, 5.5Yrs Offer Bale and Rail Haul Export Transfer and Road Haul to Lisbon/Mass Burn Transfer and Road Haul to Lisbon/New Technology	07/14
Guilford	CRRA/Mid-Conn RRF	6/12	None	Extend Existing Mid-Conn Contract Projected Bridgeport via Wheelabrator, 10Yr Offer Projected Bridgeport via Wheelabrator, 5Yr Offer Projected Bridgeport via CRRA, 5.5Yrs Offer Bale and Rail Haul Export Transfer and Road Haul to Lisbon/Mass Burn Transfer and Road Haul to Lisbon/New Technology	07/12
Madison	CRRA/Mid-Conn RRF	6/12	None	Extend Existing Mid-Conn Contract Projected Bridgeport via Wheelabrator, 10Yr Offer Projected Bridgeport via Wheelabrator, 5Yr Offer Projected Bridgeport via CRRA, 5.5Yrs Offer Bale and Rail Haul Export Transfer and Road Haul to Lisbon/Mass Burn Transfer and Road Haul to Lisbon/New Technology	07/12
New Haven	Wheelabrator Facility	12/08	Survey Not Conducted		
North Branford	CRRA/Mid-Conn RRF	6/12	None	Extend Existing Mid-Conn Contract Projected Bridgeport via Wheelabrator, 10Yr Offer Projected Bridgeport via Wheelabrator, 5Yr Offer Projected Bridgeport via CRRA, 5.5Yrs Offer Projected New Haven, 2 Yr Offer Bale and Rail Haul Export Transfer and Road Haul to Lisbon/Mass Burn Transfer and Road Haul to Lisbon/New Technology	07/14
West Haven	Bridgeport via Wheelabrator Arrangement	6/11	None	Projected Bridgeport via Wheelabrator, 10Yr Offer Projected Bridgeport via Wheelabrator, 5Yr Offer Projected Bridgeport via CRRA, 5.5Yrs Offer Projected New Haven, 2 Yr Offer Bale and Rail Haul Export Transfer and Road Haul to Lisbon/Mass Burn Transfer and Road Haul to Lisbon/New Technology	07/11

*\*Highlighted Options Indicates Selected Option*

# Existing Waste Disposal Arrangements

## Data Key

-  Bridgeport Via CRRA
-  Wallingford Via CRRA
-  Mid-Conn Via CRRA
-  Other





### III. COMPARISON OF CONTRACTS RELATING TO CURRENT OPTIONS

#### BRIDGEPORT RESOURCE RECOVERY FACILITY

SCRCOG Bridgeport Towns were offered two alternative contracts for continued use of the Bridgeport RRF. CRRA offered a draft 5 ½ year Municipal Service Agreement (MSA) and Wheelabrator offered a simpler draft 5 year Waste Disposal Agreement (WDA). The following is a complete analysis of the key provisions of these offers.

Assumed Municipal Participants:

CRRA	The Draft MSA reviewed herein was offered to East Haven on 9/24/2008: Bethany, Bridgeport, Easton, Fairfield, Milford, Monroe, Orange, Shelton, Stratford, Trumbull, Westport, and Woodbridge are named in the draft MSA.
Wheelabrator	The draft WDA reviewed herein was offered to the Town of East Haven. Wheelabrator has indicated that they will offer a similar Agreement to any SCRCOG Municipality which makes a written request to them indicating that they are soliciting options independently of the CRRA. We have assumed that the initial Tip Fee would be \$1/Ton higher than the rate offered to East Haven.
Analysis	N.A.

Term:

CRRA	January 1, 2009 to June 30, 2014, 5.5 years
Wheelabrator	January 1, 2009 to January 1, 2014, 5 years
Analysis	N.A.

Cost of Service:

<p>CRRA</p>	<p>\$61/ton plus (1) <b>CRRA’s administrative fee (Please See CRRA’s Definition for Administrative Fees Following this Analysis)</b>, plus (2) <b>CRRA’s “Cost of Operation”(Please See CRRA’s Definition for Cost of Operation Following this Analysis)</b>, plus (3) an annual cpi increase at the rate of 75% of the specified cpi index plus (4) costs associated with any under-delivery of waste by a municipality, plus (5) potential increases for the following items:</p> <ul style="list-style-type: none"> <li>-Increases in the cost of diesel fuel</li> <li>-Increases in the costs of chemicals, testing and related environmental compliance</li> <li>-Increases in taxes or other Governmental charges</li> <li>-Waste delivery shortfalls</li> <li>-Costs of the to be created “Greater Bridgeport Regional Solid Waste Committee”</li> <li>-Additional costs related to the CRRA’s “Alternate Arrangement” in the event that Wheelabrator is unable to accept Acceptable Waste.</li> </ul>
<p>Wheelabrator</p>	<p>\$63.50, plus (1) 100% of the designated cpi index, plus (2) any increases in any governmental surcharges, taxes, fees and other charges, plus (3) any capital or operating cost increase incurred by Wheelabrator as a result of an Uncontrollable Circumstance. <b>(Please See Wheelabrator’s Definition of Uncontrollable Circumstance Following this Analysis)</b></p>
<p>Analysis</p>	<p>The most important difference in these two Cost of Service provisions is that the CRRA MSA includes a very long list of potential add-ons to the tip fee which may be imposed by CRRA. The draft MSA contains no \$/ton limitation on additional CRRA Administrative Fees or Costs of Operation. Further, only a few of the allowed add-on items require the approval of the Municipalities’ SWC. The potential “Alternate Arrangement” add-on puts the Municipalities at risk, indirectly, for force Majeure events or uncontrollable circumstances which are not otherwise directly allocated to the Municipalities. We recommend that potential Municipal signers of this Agreement seek to require all substantial expenditures by the CRRA which are to be passed through as add-ons to the tip fee be subject to the approval of the Municipalities’ SWC.</p> <p>While the Wheelabrator contract has much fewer potential tip fee add-ons, it does require an annual CPI adjustment at 100% of the index vs. CRRA’s 75% offer. While the indexes are somewhat different, we estimate the potential tip fee difference to be around 1%/yr., or less that \$1/ton. The proposed Wheelabrator WDA directly allocates Uncontrollable Circumstances risk to the Municipalities, whereas the CRRA MSA does this indirectly through the “Alternate Arrangement” provision.</p> <p>Furthermore, Wheelabrator proposed definition of Uncontrollable Circumstances is quite broad including “the failure of any subcontractor or supplier to furnish labor, services, materials or equipment....” We recommend that potential Municipal signers of this Agreement seek to narrow Wheelabrator’s proposed definition of Uncontrollable Circumstances.</p>

Cost Sharing and Payment Provisions:

<p style="text-align: center;">CRRA</p>	<p>The MSA obligates each municipality to deliver a committed number of tons. If the participating municipalities together deliver less than 90% of the overall amount of committed tons, they will be obligated to share the costs of the shortfall. Unless the Interlocal Committee decides on a different basis, the shortfall will be shared pro rata among the municipalities that are short (taking into account that other municipalities may have overdelivered, and CRRA may have found other tons to deliver). If the participating municipalities are more than 10% over the amount of committed tons, they will be obligated to share the costs of disposal of the excess. Unless the Interlocal Committee decides on a different basis, the excess will be shared pro rata among the municipalities that are over (taking into account that other municipalities may have underdelivered). The tonnage commitment of a municipality may be reduced to the extent recycling programs result in a reduction of the overall committed tonnage of CRRA to the Bridgeport facility.</p>
<p style="text-align: center;">Wheelabrator</p>	<p>Company will invoice the Municipality within ten (10) days after the end of each week for all deliveries of Acceptable Waste at the Facility. Any payment for Tipping Fees not received within twenty (20) days of the date of invoice, or any other payment by the Municipality hereunder not received when due, shall bear interest at the lesser of one and one-half percent (1.5%) per month or the maximum legal rate per month.</p>
<p style="text-align: center;">Analysis</p>	<p>Since the Municipal signers of the proposed CRRA MSA will be obligated to pay a financial penalty for delivering less than 90% of their annual tonnage guarantee, it is necessary to provide a mechanism for allocating such penalties fairly among the Municipalities. We believe the proposed CRRA language does this fairly and reasonably.</p> <p>Since the proposed Wheelabrator contract requires no such minimum quantity of waste commitment, its payment provisions are much simpler.</p>

Waste Delivery Obligation and Risk:

<p>CRRA</p>	<p>Each Municipality “shall deliver or cause to be delivered to the Facility, all residential Acceptable Waste under its control and generated by or within the boundaries of the Municipality...the Municipality shall take all necessary steps within its legal authority to ensure that its (waste delivery ) obligations (are) satisfied ..during each Contract Year of the Agreement” <b>(Please See CRRA’s Definition of Acceptable Waste Following this Analysis )</b></p>
<p>Wheelabrator</p>	<p>For each Contract Year, the Municipality shall deliver or cause to be delivered to the Facility all Acceptable Waste collected by or on behalf of the Municipality, and any other Acceptable Waste the disposal of which is controlled by the Municipality. <b>(Please See Wheelabrator’s Definition of Acceptable Waste Following this Analysis)</b></p>
<p>Analysis</p>	<p>The proposed CRRA MSA, by requiring the delivery of all Acceptable Waste controlled by the Municipality <b>and</b> generated by or within its boundaries, allocates substantially more waste delivery risk and, potentially, cost onto the Municipalities than does the proposed Wheelabrator WDA which only mandates the delivery of waste which is controlled by the Municipality.</p> <p>In order for Municipalities to be able to meet their future waste delivery obligations under the proposed CRRA MSA it will may be necessary to affect some form of active and enforceable flow control mechanism.</p> <p>An important waste delivery issue which CRRA’s proposed MSA raises is the conflict between the goal of maximizing the amount of waste which the Municipality may recycle over the 5.5-year term of the new contract and the financial penalty which can arise under the contract if the total amount of waste delivered by the Municipality to the Facility is deficient in any of the next 5.5 years. As new recycling technologies and systems emerge over the life of the proposed contract it is likely that all Participating Municipalities will have the same opportunity to increase recycling volumes. Furthermore, to the extent that the Municipalities wish to comply with the recycling directive of the State’s Solid Waste Management Plan, they may wish to add additional items to CRRA list of recyclables, such as plastics No.3-No.7.</p> <p>One way the potential conflict between maximizing recycling rates and meeting contractual delivery obligation to waste-to-energy facilities has been eliminated in other contracts in the State is by creating a “recycling out” in the contract which allows a municipality to reduce its waste delivery obligation ton-for-ton by the amount which it manages to recycle during any year of the contract period, without limitation.</p>

Facility Ownership/Vested Rights:

CRRA	The Municipality shall not acquire any vested or ownership rights in the Facility or the Facility Site nor shall the Municipality have or claim any right to the exclusive use of the Facility or the Facility Site or any part thereof by reason of this Agreement.
Wheelabrator	The Municipality shall not acquire any vested or ownership rights in the Facility or the Facility Site nor shall the Municipality have or claim any right to the exclusive use of the Facility or the Facility Site or any part thereof by reason of this Agreement.
Analysis	N.A.

Other Key Contract Issues:

CRRA	<p>Transfer Stations in Fairfield, Milford, Trumbull and Westport will no longer be leased to or operated by CRRA.</p> <p>The Greater Bridgeport Regional Solid Waste Committee (“SWC”) can engage its own engineering, accounting, legal and financial consultants and include the costs related thereto in the tip fee.</p> <p>The SWDA has a “Most Favored Nations” provision. This provision provides that, in the event Wheelabrator offers a disposal arrangement to a Connecticut municipality during the term of this contract, which arrangement the CRRA municipalities believe is a more favorable arrangement, that the CRRA municipalities have the option to take the terms of the more favorable arrangement.</p> <p>Note that the SWDA contemplates the delivery to Wheelabrator of an opinion of your municipality’s counsel as to the due authorization and binding effect of the MSA.</p>
Wheelabrator	Upon the occurrence of an event of default, the party not in default may terminate this Agreement by written notice to the defaulting party.
Analysis	We have pointed out the Default provision in the proposed Wheelabrator contract because it appears to be the only remedy to Wheelabrator if a Municipality fails to live up to the provisions of the WDA. This is in contrast to the proposed CRRA MSA which provides for financial penalties, not termination, if a Municipality fails to deliver 90% of its annual tonnage guarantee.

**DRAFT CRRA – Bridgeport Municipal Service Agreement (“MSA”) Definitions**

**CRRA's Administrative Fee:** is defined as CRRA's "reasonable administrative expenses (including overhead and fixed costs) attributable or allocable to the rendering of services under this Agreement, including the following costs or expenses:

- (i) billing costs;
- (ii) costs related to the enforcement of CRRA's rights under this Agreement or the SWDA;
- (iii) attorneys' fees and legal costs...
- (iv) insurance; and
- (v) contract management"

**Cost of Operation:** is defined as "the sum of all reasonable costs and expenses of CRRA, as approved by the SWC where such approval is required (emphasis added), resulting from or necessitated by the ownership, operation, administration, and maintenance of the Facility and Facility Site, or the rendering of services by the CRRA ..."

CRRA Cost of Operation items specifically mentioned which **do not** require SWC approval include debt service on any CRRA's issued for the project, any uncollectible CRRA receivables, the cost of CRRA working capital or reserve funds and attorneys fees for the defense of lawsuits. CRRA Cost of Operation items specifically mentioned which **do** require SWC approval include attorneys' fees for the initiation of lawsuits or all other costs reasonably incurred by the CRRA.

**Acceptable Waste:** Means unwanted or discarded materials of the kind normally collected or disposed of, or caused to be collected or disposed of, by or on behalf of a municipality through private or municipal collection, and commercial, governmental and light industrial waste which a municipality is required pursuant to Conn. Gen. Stat. § 22a-220 and other State law to make provision for the safe and sanitary disposal of, but not including in any case Recyclables, SHW or OBW.

**Recyclables:** Means segregated newspaper and cardboard and commingled or segregated junk mail and magazines, commingled glass food and beverage containers, metal food and beverage containers, Plastic Containers, and such other items to be designated by SWEROC and the Authority from time to time. Such other items may include, but not limited to, office paper and computer paper. In no case shall "Recyclable" be deemed to include any material or substance defined as Hazardous Waste.

**Plastic Containers:** Means containers made from (1) polyethylene terephthalate (PET) or (2) high density polyethylene (HDPE).

**Conecticut Gen. Stat. § 22a-220:**

Sec.22a-220 (a) – Each municipality shall make provisions for the disposal of solid waste

generated within its borders, including its share of the residue remaining after a recycling facility has processed its recyclables.

Sec.22a-220 (b) – Each recycling facility shall maintain records on the amount of solid waste derived from each municipality and the amount of residue apportioned to each municipality.

Sec. 22a-220( c) – Any municipality whose solid waste is processed at a recycling facility, or any solid waste facility which accepts residue from a recycling facility, may at any reasonable time, inspect the recycling facility and any records relating to amount of SW received and the amount of residue apportioned to each municipality.

Sec.22a-220 (d) – If any municipality, regional authority, or regional solid waste facility fails to receive proper residue allocation from a recycling facility, it may bring civil action for relief.

Sec.22a-220c (b) – The owner or operator of a resource recovery facility or solid waste facility receiving a load of solid waste containing a significant quantity of designated recyclables, shall notify the driver of the vehicle delivering the load and the municipality where the load originated. Such facility owners and operators shall conduct periodic, unannounced inspections of loads delivered to the facility and shall conduct additional inspections upon the request of the DEP commissioner.

Sec.22a-220d – Failure of an owner or operator of a resource recovery facility or solid waste facility to notify a municipality about loads originating in the municipality and containing significant amounts of recyclables shall be subject to a warning by the municipality or the DEP Commissioner for the first violation and to a civil penalty of \$500 for each subsequent violation.

Failure of an owner or operator of a resource recovery facility or solid waste facility to conduct an inspection requested by the DEP Commissioner shall be subject to a civil penalty of \$1,000 dollars for each violation and \$5,000 for each subsequent violation.

Any municipality which fails to receive notification as required, or the Attorney General at the request of the DEP Commissioner, may bring an action under this section.

## **Draft Wheelabrator – Bridgeport Waste Delivery Agreement (“WDA”) Definitions**

**Uncontrollable Circumstance:** Means any act or event affecting Company that may have a material adverse effects on its rights or obligations under this Agreement, but only to the extent such act or event is (1) beyond reasonable control of Company; and (2) not the result of any negligence or misconduct of the Company in the performance of its obligations hereunder. Such acts may include, but shall not be limited to, the following:

- (i) an act of God, epidemic, landslide, lightning, earthquake, fire, explosion, storm, flood, an act of the public government and people, civil disturbance, strike, lockout, work slowdown, or similar industrial or labor action or any other similar occurrence;
- (ii) the order and/or judgment of any federal, state, local or foreign court, administrative agency or governmental officer or body after the date hereof;
- (iii) suspension, termination, interruption or failure of renewal of any permits, license, consent, authorization or approval essential to the operation, ownership, and possession of the Facility;
- (iv) adoption, promulgation, modification of or change in interpretation after the date hereof of any federal, state, local or foreign rule or law, regulation or ordinance to the extent that the effect of such change cannot be reasonably accommodated;
- (v) the failure of any subcontractor or supplier to furnish labor, services, materials or equipment on the date agreed provided that Company is not able to reasonably obtain substitute labor services, materials, equipment; or
- (vi) the failure of the community in which the facility is situated or the appropriate federal or state agencies or public or private utilities having operational jurisdiction over the facility to provide and maintain and assure the maintenance of all utilities, services, sewerage and water lines to the facility required for the operation of the Facility, provided they are essential to the operation of the Facility.

**Acceptable Waste:** means all household garbage, trash, rubbish, refuse, normally or which may be hereinafter collected and disposed of by or on behalf of Municipality, but excluding without limitation (i) Hazardous Waste; (ii) any item of waste exceeding six feet in any one of its dimensions or being in whole or in part a solid mass, the solid mass portion of which has dimensions such that a sphere with a diameter of eight inches could be contained within such solid mass portion; (iii) all large household appliances, commonly referred to as “white goods” including, without limitation, refrigerators, stoves, washing machines, drying machines, water heaters, and the like; (iv) any controlled substances regulated under the Controlled Substances Act, 21 USC 801 et seq. **(Please use the Following Link to Access Information on the Controlled Substance Act: <http://www.usdoj.gov/dea/pubs/csa.html>)**, or any equivalent state law; (v) small appliances containing chlorofluorocarbons (CFCs) including, without limitation, air conditioners, water coolers, and dehumidifiers; and (vi) all other items of waste which Company reasonably believes would be likely to pose a threat to health or safety or the



acceptance and disposal of which may cause damage to the Facility or be in violation of any judicial decision, order, action, permit, authorization, license, approval or registration of any federal, state or local government or any agency thereof, or any other regulatory authority or applicable law or regulations. In addition, the parties recognize that some substances which are not, as of the date of this Agreement, considered harmful or of a toxic nature or dangerous, may be determined by the EPA or any other federal, state, or local agency subsequent to the date hereof to be hazardous, toxic, dangerous, or harmful, and at the time of such determination, such substances shall cease to be Acceptable Waste.

WALLINGFORD RESOURCE RECOVERY FACILITY

SCRCOG Wallingford Towns were offered two alternative contracts for continued use of the Wallingford RRF. CRRA offered a draft 20 year Municipal Service Agreement (MSA) and Covanta offered a simpler draft 10 year with two possible 5 year extensions Waste Disposal Agreement (WDA). The following is a complete analysis of the key provisions of these offers.

Assumed Municipal Participants:

CRRA	The draft MSA (10/27/08) lists all five current Wallingford Municipalities: Cheshire, Hamden, Meriden, North Haven and Wallingford.
Covanta	The draft Municipal Solid Waste Disposal Agreement (WDA) (10/03/08) lists all five of the current Wallingford Municipalities: Cheshire, Hamden, Meriden, North Haven and Wallingford.
Analysis	N.A.

Term:

CRRA	CRRA is requesting that the five Wallingford Participating Municipalities approve the proposed MSA and related flow control ordinance before year end 2008. CRRA is attempting to commence the fair market value appraisal process now.  Service under the MSA would run from July 1, 2010 until June 30, 2030 or 20 years.
Covanta	10 years plus two, 5 year optional extensions
Analysis	N.A.

Cost of Service:

<p>CRRA</p>	<p>Each Participating Municipality will pay CRRA’s total “Cost of Operation on a per ton basis using each Municipalities’ “Average Annual Tonnage” which shall mean in respect of a full Contract Year (reduced proportionally for any shorter Contract Year) the average of the number of Tons of Acceptable Solid Waste delivered to the Project by or on behalf of the Municipality and accepted by the Authority during each of the most recent previous two full 12-month periods beginning on July 1<sup>st</sup> of one calendar year and ending on June 30<sup>th</sup> of the next succeeding calendar year.</p> <p>Waste Business Journal.Com (November 25, 2008) has reported year 1 tip fees (FY 2011) to be \$67.45-\$75.30/ton with approx. a 3.5% annual increase thereafter. These estimates assume CRRA retains the Municipalities’ approximately \$7 million reserve fund and uses it to fund the new Reserve Fund requirements. These estimates do not include any change of law, force Majeure, waste delivery shortfall or other cost increases allowed in the draft MSA.</p> <p>The new Reserve Fund requirements <b>(12/30/08)</b> are as follows:</p> <p>Working Capital Fund: \$1,934,600  Balancing Fund: \$2,425,061  Risk Fund: \$1,047,107  Decommissioning Fund: \$2,100,000  Total: \$7,506,768</p> <p><b>Please See CRRA’s Definition of Cost of Operation Following this Analysis</b></p>
<p>Covanta</p>	<p>\$65/ton (Lowered from \$71/ton) on July 1, 2010, plus (1) 100% of a mutually designated cpi index but not less than 2% nor greater than 4%, plus (2) adjustments due to Change of Law or Force Majeure, plus (3) any Wallingford Host Community Fee increase agreed to by Covanta.</p> <p><b>Please See Covanta’s Definition of Change-in-Law and Event of Force Majeure Following this Analysis</b></p> <p>The proposed WDA is a “put-or-pay” agreement which means that the above tip fee will be charged for each Municipalities’ guaranteed tonnage delivery whether such tonnage is actually delivered or not.</p>
<p>Analysis</p>	<p>The most important difference in these two Cost of Service provisions is that the CRRA MSA simply requires the Municipalities to pay whatever CRRA’s costs turn out to be in each of the next 20 years. These costs include a long list of potential add-ons to the tip fee which may be imposed by CRRA. The draft MSA contains no \$/ton limitation on CRRA Administrative Fees or Costs of Operation. Further, only a few of the allowed add-on items require the approval of the Municipalities’ SWC. We recommend that potential Municipal signers of this Agreement seek to require all substantial expenditures by the CRRA which are to be passed through as add-ons to the tip fee be subject to the approval of the Municipalities’ SWC.</p> <p>While the Covanta contract has much fewer potential tip fee add-ons, it does require an annual CPI adjustment at 100% of the index. We estimate the potential tip fee impact to be around \$2-\$3/ton.</p>

Cost Sharing and Payment Provisions:

<p>CRRA</p>	<p>CRRA’s proposed MSA establishes a well structured and detailed process for the sharing of costs among the five Participating Municipalities. This process begins with the CRRA setting a total project budget for each Town in advance of each of the 20 contract years (July 1 – June 30). To create each annual budget, CRRA may assume that each Participating Municipality and all five Participating Municipalities collectively, will deliver their “Average Annual Tonnage” which is defined as the average annual tonnage over the past 2 years.</p> <p>CRRA will bill each Participating Municipality monthly based upon the actual number of tons it delivers each month and the budget’s total cost per ton. If, during any Contract Year, CRRA “becomes aware that the amount of (total waste) deliveries...are such that there is the potential for a deficit”, the CRRA shall (1) notify the Policy Board, and (2) “exercise commercially reasonable efforts to mitigate such potential deficit by soliciting additional deliveries of waste” including Contract and Spot waste from non-Participating Municipalities. Since there is no “Most Favored Nation” provision whereby the Participating Municipalities will be billed a lower cost per ton if CRRA offers a reduced price to non Participating Municipalities, the price offered for Contract and Spot Waste to non- Participating Municipalities may well be less than the cost per ton to be paid by the Participating Municipalities.</p> <p>Within 30 days of the end of each Contract Year, the CRRA will provide to each Participating Municipality a statement delineating, among other things, the total waste delivered for that year by each Participating Municipality, total revenues and expenses incurred by the project for that year and the amount, if any, by which total revenues fell short of total expenses, which is called the “Shortfall”. While various reserve fund deposits and withdrawals are used to temporarily fund cash deficits and to replenish the reserve funds, the ultimate economic impact of any shortfall falls on the Participating Municipalities and results in additional payment obligations by the Participating Municipalities to CRRA for the past year in which the Shortfall was incurred.</p> <p>The proposed allocation of Shortfalls is addressed in detail in CRRA’s proposed MSA, making clear distinctions between Shortfalls arising from one or more Participating Municipality’s failure to deliver the budgeted amount of waste, and shortfalls arising from project costs exceeding budgeted amounts, among other distinctions. If one or more Participating Municipality fails to deliver the budgeted amount of waste, for instance, but other Participating Municipalities deliver enough over-budget waste to avoid a waste volume based shortfall, then the under-delivering Participating Municipalities are not penalized for the shortage of waste. System-wide shortfalls are allocated essentially according the respective amounts of waste delivered by each Participating Municipality.</p> <p>In establishing each year’s budget and in operating and administering the project during each year, the CRRA is authorized to budget for and actually expend funds, without limitation, for a widely defined category of costs. In some cases the proposed CRRA contract provides for consultation with the Policy Board but does not require their approval for many substantial financial decisions.</p> <p>The proposed MSA authorizes the CRRA to budget for and expend funds for, among other items, “all expenses resulting from or necessitated by (in CRRA’s determination) the Project, including...oversight of the Project, any Renewals and Replacements of the Project, the cost of rendering of Project services by CRRA as consistent with “Good Operating Practice” and all CRRA costs and expenses for administration (again in CRRA’s determination).</p>
<p>Covanta</p>	<p>Each participating Municipality shall timely pay, or shall have timely paid, monthly to Covanta the Tip Fee for each ton of PM Acceptable Solid Waste from such participating Municipality accepted by Covanta at the Facility during the immediately preceding month during the Term.</p> <p>Notwithstanding the foregoing, for each Contract Year during the Term, each Participating Municipality shall be required to pay a minimum aggregate Tip Fee (the “<u>Contract Year Minimum Fee</u>”) equal to the product of : (i) the Tip Fee for such Contract Year multiplied by (ii) the Participating Municipality’s Guaranteed Tonnage.</p>
<p>Analysis</p>	<p>Since the Municipal signers of the proposed CRRA MSA will be obligated to pay a financial penalty for delivering less than their annual tonnage guarantee, it is necessary to provide a mechanism for allocating such penalties fairly among the Municipalities. We believe the proposed CRRA language does this fairly and reasonably.</p> <p>The Covanta proposed WDA is a “Put-or-Pay” contract which allocates each under-delivering Municipality its share of the financial penalty directly.</p>

Waste Delivery Obligation and Risk:

<p>CRRA</p>	<p>CRRA’s draft MSA obligates each of the five Participating Municipalities to agree to “deliver or cause to be delivered to the Project ...through local source separation, flow control, contract and all other necessary means permitted by law, all Acceptable Solid Waste generated by or within the boundaries of the Municipality” and to enact an ordinance (model language provided) directing the same.</p> <p>Acceptable Solid waste is defined as “unwanted or discarded materials of the kind normally collected or disposed of...through private or municipal collection, and commercial, governmental and light industrial waste which a municipality is required by State law to make provision for the safe and sanitary disposal of, but not including ...Recyclable Materials or Unacceptable Waste”. A limited list of Recyclable Material is defined which excludes No.3-No.7 plastics and other potentially recyclable materials.</p> <p>Each Participating Municipality is obligated to “take all necessary steps within its legal authority” to ensure this obligation.</p>										
<p>Covanta</p>	<p>The proposed WDA obligates each Municipality to the following provision:</p> <p>During the Term, the Municipality shall, at its sole cost and expense, deliver or cause to be delivered by its Authorized Haulers to the Delivery Point in accordance with the terms of this Agreement all Acceptable Solid Waste generated within its boundaries and shall take all appropriate actions to ensure that all Acceptable Solid Waste generated within its boundaries will be delivered to the Facility in each Contract Year during the term, including the continuation of the designation by the Municipality’s legislative body , adopted in accordance with Section 22a-220a of the Connecticut General Statutes, that all Acceptable Solid Waste generated within the Municipality’s boundaries be delivered to the Facility. During the term, the Municipality shall not directly or indirectly cause Acceptable Solid Waste within its possession or subject to its control to be delivered to any Person other than Covanta, except to the extent that Covanta rejects such waste pursuant to Section 1.2c.</p> <p>The proposed WDA is a “put-or-pay” agreement which means that the above tip fee will be charged for each Municipalities’ guaranteed tonnage delivery whether such tonnage is actually delivered or not. The guaranteed tonnages are specified as follows:</p> <table data-bbox="337 1073 646 1209"> <tr> <td>Cheshire</td> <td>9,955 tons</td> </tr> <tr> <td>Hamden</td> <td>17,107 tons</td> </tr> <tr> <td>Meriden</td> <td>17,174 tons</td> </tr> <tr> <td>North Haven</td> <td>11,537 tons</td> </tr> <tr> <td>Wallingford</td> <td>21,162 tons</td> </tr> </table> <p><b>Please See Covanta’s Definition of Acceptable Solid Waste Following this Analysis</b></p>	Cheshire	9,955 tons	Hamden	17,107 tons	Meriden	17,174 tons	North Haven	11,537 tons	Wallingford	21,162 tons
Cheshire	9,955 tons										
Hamden	17,107 tons										
Meriden	17,174 tons										
North Haven	11,537 tons										
Wallingford	21,162 tons										
<p>Analysis</p>	<p>Both proposed contracts, by requiring the delivery of all Acceptable Waste generated within its boundaries, allocates waste delivery risk and, potentially, cost onto the Municipalities.</p> <p>In order for Municipalities to be able to meet future waste delivery obligation it may be necessary to affect some form of active and enforceable flow control mechanism.</p> <p>An important waste delivery issue which both contracts raise is the conflict between the goal of maximizing the amount of waste which the Municipality may recycle over the term of the new contract and the financial penalty which can arise under the contract if the total amount of waste delivered by the Municipality to the Facility is deficient. As new recycling technologies and systems emerge over the life of the proposed contract it is likely that all Participating Municipalities will have the same opportunity to increase recycling volumes. Furthermore, to the extent that the Municipalities wish to comply with the recycling directive of the State’s Solid Waste Management Plan, they may wish to add additional items to the list of recyclables, such as plastics No.3-No.7.</p> <p>One way the potential conflict between maximizing recycling rates and meeting contractual delivery obligation to waste-to-energy facilities has been eliminated in other contracts in the State is by creating a “recycling out” in the contract which allows a municipality to reduce its waste delivery obligation ton-for-ton by the amount which it manages to recycle during any year of the contract period, without limitation.</p>										

Facility Ownership/Vested Rights:

<p>CRRA</p>	<p>CRRA’s proposed MSA contemplates that during the period between the execution of the MSA by the five Wallingford Participating Municipalities and the commencement of service on July 1, 2010, the CRRA will attempt to purchase the facility from Covanta pursuant to a fair market value buyout provision in its current contract with Covanta.</p> <p>The proposed MSA further establishes the debt service and other financing costs associated with any such buyout essentially as a pass-through cost, without limitation, to be paid by each Participating Municipality over the MSA’s 20 year life by including these debt service and other financing and acquisition costs as one element of the per ton disposal fee to be paid by each Participating Municipality over the ensuing 20 years.</p> <p>Notwithstanding that the full financial burden of the facility acquisition is to be borne by the Wallingford Participating Municipalities, the proposed MSA, under Section 204, asks each Participating Municipality to “agree(s) that it does not possess and shall not acquire at any time any vested, beneficial or other ownership rights of any kind to the Facility, and any other portion of the Project or and Project Reserves” through their 20 year payment obligation under the MSA.</p> <p>Further, under the proposed MSA the separation of payment obligation from ownership rights is raised not just with regard to the debt service and other financing costs of the initial facility acquisition, but also with regard to the debt service and financing costs related to any “Renewals and Replacements of the Project” which CRRA may elect to undertake.</p>
<p>Covanta</p>	<p>The Municipality does not acquire any vested or ownership rights in the Facility or the Facility Site nor have any right to the exclusive use of the Facility or the Facility Site.</p>
<p>Analysis</p>	<p>CRRA’s proposed delinking of the payment of the costs of facility acquisition, repair and replacement from the future benefits of facility ownership, to be retained by the CRRA, appears to be not equitable or consistent with best practice.</p> <p>One of the many future waste management challenges facing Connecticut Towns today arises from the fact that the service agreements which were executed for the Wallingford Facility, Preston Facility and others, all suffer from the same delinking of payment obligation from ultimate ownership. In those cases the private sector operator retains facility ownership notwithstanding the fact the user Municipalities have paid for the construction, repair and replacement of the facilities over the course of the contract.</p> <p>We recommend that all beneficial ownership of the Facility and all future rights in the Facility be vested in and controlled by the Participating Municipalities.</p>

Other Key Contract Issues:

CRRA	<p><b>Selection of Consulting Engineer</b> The definition of Consulting Engineer indicates that this firm shall be selected by CRRA. Since the Consulting Engineer’s work can affect the costs and risks borne by the potential Participating Municipalities we would recommend that the Consulting Engineer be a firm mutually acceptable to CRRA and the Participating Municipalities.</p> <p><b>Green Power Credits</b> Recovered Products has been defined to include “energy, capacity and any green power credits...” We would suggest expanding this to make sure green power credits include any Renewable Energy Credits or Certificates, Renewable Energy Production Tax Credits and any Emission Reductions Credits, including carbon credits, created by the project.</p> <p><b>Limitation on CRRA’s Basic Obligation</b> Section 201 establishes CRRA’s basic obligation to “...receive and dispose of all Acceptable Solid Waste delivered ...by the Municipality...”. Sections 202 b and c put potentially unlimited restrictions on the quantity of waste CRRA must accept. These limitations should be removed or limited.</p> <p><b>Project Reserves</b> The project reserves and possible “additional Project Reserves” seem excessive. Their direct cost, if funded with new money from the Participating Municipalities, or their opportunity cost, if funded with funds in current reserves, must be fully accounted for in any cost of service analysis</p> <p><b>Contract Waste and Spot Waste</b> Provisions should be added such as a “Most Favored Nations” clause or other limitation which protects the Participating Municipalities from subsidizing out of system waste providers through higher tips fees payable by Participating Municipalities.</p> <p><b>Changes in Circumstances</b> The provisions of Section 616 should be enhanced with a dispute resolution mechanism if the CRRA and Participating Municipalities cannot agree.</p>
Covanta	<p><u>The Policy Board:</u> Each Participating Municipality shall have a representative on the Policy Board. The representative of each Participating Municipality shall either be its chief executive officer or such other person as the chief executive officer shall designate. Covanta shall periodically consult with the Policy Board in those matters relating to citizen complaints, scheduling and routing of deliveries, contract modifications, billing procedures and other matters of concern to the Policy Board. Covanta and the policy Board will cooperate fully and assist each other so that the facility will operate smoothly. The Policy Board also shall have such other duties are expressly agreed upon by the Parties. Unless otherwise agreed upon in writing by Covanta and the Participating Municipalities, actions of the Policy Board shall be determined by a majority of members of the Policy Board or by such other voting percentage as the bylaws of the Policy Board shall provide.</p>
Analysis	N.A.

**Draft CRRA – Wallingford Municipal Service Agreement (“MSA”) Definitions**

**Cost of Operation:** Shall mean, for any relevant period, the sum of all Authority costs and expenses resulting from or necessitated by the Project, including: (i) the ownership, operation, maintenance or oversight of the Project; (ii) any renewals and replacements to the Project; and (iii) the rendering of Project services by the Authority to any person (including the Participating Municipalities); all as consistent with Good Operating Practice. “Cost of Operation” includes, without duplication, the following items of cost or expense:

- (a) expenses of operation and maintenance of the Project (whether or not incurred under an Operating Contract), including insurance, taxes, disposal expense for Residue and Bypass Waste, and renewals, replacements, repairs, extensions, enlargements, alterations or improvements;
- (b) any amounts to be paid or accrued to pay the principal and sinking fund installments of, the interest and any redemption premiums on, and all other costs of all Bonds, and any other costs and expenses incurred in connection with Bonds, to discharge the Authority’s obligations under this Agreement and the Financing Agreements;
- (c) the amount of any deficits of the Authority (including costs of collection) resulting from the failure to receive, when and as due, sums payable to the Authority by any Participating Municipality or sums payable to the Authority from any Person with respect to services provided by the Authority, which sums the Authority will make reasonable efforts to collect;
- (d) amounts deemed necessary or desirable by the Authority with respect to its obligations under this Agreement or any Financing Agreement, all as determined by the Authority Board in its sole discretion consistent with Good Operating Practice;
- (e) all costs of environmental mitigation, clean-up and disposal of Unacceptable Waste delivered by or on behalf of the Participating Municipalities, which costs the Authority has been unable, after reasonable efforts, to collect from the generator (or Person delivering such Unacceptable Waste on behalf of such generator), or from the Participating Municipality in which such Unacceptable Waste was generated;
- (f) the PILOT;
- (g) all costs of accepting, delivering, storing, disposing of Solid Waste and marketing of Recovered Products (including ordinary operation and maintenance costs) under this Agreement;
- (h) the amount of deposits to Project Revenues in accordance with provisions of Section 307 hereof and deposits to the Municipal Fund in accordance with the provisions of Section 301 hereof;
- (i) all costs and any special disposal fees incurred by the Authority with respect to types or categories of Solid Waste delivered to the Project which the Authority determines require special handling, which fees shall reasonably reflect the costs of such special handling;
- (j) all Authority costs and expenses for the administration of this Agreement and the equivalent agreements with other Participating Municipalities; and
- (k) all costs of the mothballing, decommissioning, retirement, dismantling, monitoring and disposition of the Project, and any other actions of the Authority necessary under applicable law in order to discontinue permanently the operation of the Project. In the event that services are provided to the Participating Municipalities through the use of Authority facilities (other than Project facilities) which are also used by a Person or Persons other than the Participating Municipalities, only the costs related to the use of such other facilities by the Participating Municipalities shall be include in the Cost of Operations.

**Draft Covanta – Wallingford Waste Disposal Agreement (“WDA”) and Related Memorandum of Understanding Definitions**



**Acceptable Solid Waste:** Means mixed household solid waste and commercial solid waste generated within the boundaries of the Municipality and collected by or on behalf of the Municipality (including trash, refuse, garbage), other than Recyclable Materials, which has the characteristics of Solid Waste and which is (i) normally collected or disposed of by householders or other residents and by churches, schools and other municipal buildings (which for purposes of this Agreement shall be deemed to be household waste), and (ii) permitted under then Applicable Law to be accepted at the Delivery Point, Processed at the Facility and disposed of at a Landfill, and which is not otherwise Unacceptable Waste.

**Change-in-Law:** Means any of the following events or conditions which have or will have, an adverse effect on (i) the ability of Covanta to perform its obligations under this Agreement or its ability to accept, Process or dispose of the Acceptable Solid Waste delivered hereunder, (ii) the Facility, a Landfill, or any other facility or landfill utilized in Processing or disposing of Acceptable Solid Waste delivered by the Municipality or disposing Residue derived therefrom, or (iii) the ability of Covanta, or any operator of the Facility or a Landfill, to equip, to test, to operate, to own or to possess the Facility or a Landfill, to the extent that such is not the result of any willful or negligent act or omission of the Party relying thereon as jurisdiction for not performing any obligation or complying with any condition required of such party under this Agreement and shall include the following:

- (A) the enactment, adoption, promulgation, implementation (if new or materially different from existing implementation), repeal, modification, interpretation (if materially different from existing interpretation), or enforcement (if materially different from existing enforcement) of any Federal, state, or local law, statute, act, ordinance, code, rule, regulation, policy or requirement not adopted or enforced on or before the Effective Date or decree, judgment, order of a court or governmental authority or agency or other action by a governmental authority or agency after the Effective Date;
- (B) the imposition of any condition on the issuance, re-issuance, or continued effectiveness of any official permit, license or approval after the Effective Date, which establishes requirements more burdensome than those that would have been imposed as of the Effective Date;
- (C) the termination, suspension, rescission, modification, failure to renew or denial of any such permit, license or approval;
- (D) the imposition or increase of any Tax of any nature or the imposition or amendment of any requirements obligating Covanta, or any owner or operator of the Facility or a Landfill or any of their respective affiliates, to establish, maintain or increase reserves or financial assurances of any nature whatsoever by a Federal, state or local governmental authority or entity on the operation, ownership, possession or use of the Facility, a Landfill or any equipment used to construct, maintain, operate or test the Facility or a Landfill or to satisfy its obligation hereunder or the collection or disposal of Solid Waste at the Facility or a Landfill; or
- (E) an increase in the Host Municipality Fee on or after the Effective Date.

**Event of Force Majeure:** Means (A) an occurrence beyond the reasonable control of the Party affected which adversely affects the facility, a Landfill or the operation or the ability of any Party to perform its obligations hereunder (including the ability of Covanta to accept, Process or dispose of any Acceptable Solid Waste delivered hereunder) or the ability of Covanta, or any person acting on behalf of Covanta, to comply with the requirements of any governmental order, permit or other approval; (B) acts of God, landslides, lightning, earthquakes, hurricanes, tornadoes, blizzards, fires, explosions, floods, acts of public enemy, wars, blockades, insurrections, riots or civil disturbances; (C) labor disputes, strikes, work slowdowns or work stoppages; (D) an order or judgment of any Federal, state or local court, administrative agency or governmental body, or other entity, if not the result of willful or negligent action of the party relying thereon or failure to act in accordance with this Agreement; provided, however, that the contesting in good faith by such Party of any such order and/or judgment shall not constitute or be

construed to constitute a willful or negligent action or inaction of such Party; (E) blockage of access to the Facility, or a Landfill if not the result of willful or negligent action of the Party relying thereon; (F) any surface or subsurface condition (including the presence of hazardous materials) at the Facility, or a Landfill not created solely by Covanta or an affiliate which causes a complete or partial suspension of services at the Facility or a Landfill or adversely affects operations at the Facility or a Landfill; (G) the condemnation, taking, seizure, involuntary conversion or requisition of title to or use of the Facility or a Landfill or any portion thereof by action of any Federal, state or local governmental agency or authority; (H) a Change-in-Law; and/or (I) the repair, maintenance and/or improvement of the facility or Site requested by a participating Municipality.

**Recyclable Material:** Shall mean and include any item of sold waste (other than Unacceptable Material) which cannot under any provision of any Recycling Act be accepted for disposal, at the time in question, at the Facility.

#### IV. TOWN BY TOWN REPORTS

## **BETHANY**

### **Existing System**

#### **Municipally Owned Solid Waste/Recycling Facilities**

##### **Recycling Center**

The Town's recycling center consists of several roll-off containers in which Town residents deposit their recyclables. Acceptable recyclables include, among others, newspaper, mixed paper, glass containers, corrugated cardboard, scrap metal, deposit can and bottles, #1 (PETE) plastic, and #2 (HDPE) plastic. The Town's recycling center currently does not have the physical capacity to handle recyclables from other municipalities.

#### **Material Collection**

##### **MSW**

The Town of Bethany contracts a private hauler to collect residential waste (MSW) on a weekly basis from its residents. The municipally contracted private hauler brings most of the Town collected waste directly to the Wheelabrator Bridgeport Resource Recovery Facility.

##### **Bulky Waste and Construction & Demolition**

The Town collects Bulky Waste from its residents at the Town operated recycling center. Residents that wish to bring Bulky Waste to the Town recycling center must call in advance and make an appointment. Town residents are responsible for arranging the disposal of Construction & Demolition debris on their own.

##### **Recyclables**

The Town of Bethany collects recyclables at the Town recycling center. Collected recyclables include newspaper, mixed paper, glass containers, corrugated cardboard, scrap metal, deposit can and bottles, anti-freeze, electronics, Freon, NiCad batteries, storage batteries, #1 (PETE) plastic, and #2 (HDPE) plastic.

#### **Material Disposal/Sales**

##### **MSW**

The municipally contracted private hauler brings most of the Town collected residential waste directly to the Wheelabrator Bridgeport Resource Recovery Facility. Town of Bethany tonnage reported to the Connecticut DEP that was disposed of at State solid waste disposal facilities, State regional transfer stations or single town transfer stations that export waste out-of-state in Fiscal Year 2008 was as follows:

Bridgeport Resource Recovery Facility	1,742.00
Stratford Transfer Station	<u>132.97</u>
Total:	1,874.97

### **Bulky Waste and Construction & Demolition**

All Bulky Waste collected at the Town recycling center is transported from the recycling center by a private hauler to a facility of its choice.

### **Recyclables**

The Town of Bethany contracts a private hauler to transport the recyclables collected at the Town recycling center to the following facilities as reported to the Connecticut DEP in Fiscal Year 2008:

Anti-Freeze (Advanced Liquid)	0.28
Corrugated Cardboard (Stratford Baling Corp)	145.28
Electronics (Northeast Lamp Recycling)	1.71
Freon (Environmental Services)	0.02
Glass Containers (IPC-Hartford)	85.18
Newspaper (Stratford Baling Corp)	128.34
NiCad Batteries (Northeast Lamp Recycling)	0.37
Mixed Paper (Stratford Baling Corp)	182.64
Plastic Containers #1&#2 (Stratford Baling Corp)	35.72
Scrap Metal (Stratford Baling Corp)	90.31
Storage Batteries (Albert Brother's Inc.)	<u>2.37</u>
Total:	672.22

### **Current Options**

1. **Option 1:** Enter into a Contract Directly with Wheelabrator and Deliver Waste to the Bridgeport Resource Recovery Facility Via Packer Truck for a 10 Year Contract Term

2. **Option 2:** Enter into a Contract Directly with Wheelabrator and Deliver Waste to the Bridgeport Resource Recovery Facility Via Packer Truck for a 5 Year Contract Term
3. **Option 3:** Enter into a Contract with CRRA and Deliver Waste to Bridgeport Resource Recovery Facility Via Packer Truck
4. **Option 4:** Drive Packer Trucks Directly to the New Haven Regional Transfer Station

## Estimated Cost of Current Options

### Estimated Transfer, Transportation and Disposal Costs with No Growth and Aggressive Diversion Assumptions (20% by 2028)

Bethany	2 Year Total (2009-2010)	5 Year Total (2009-2013)	10 Year Total (2009-2018)
Option 1: Bridgeport via Wheelabrator, 10Yrs	\$365,284.72	\$926,404.75	\$1,896,485.94
Option 2: Bridgeport via Wheelabrator, 5Yrs	\$355,958.61	\$902,752.67	NA
<b>Option 3: Bridgeport via CRRA, 5.5Yrs</b>	<b>\$359,689.05</b>	<b>\$912,213.50</b>	<b>NA</b>
Option 4: New Haven, 2Yrs	\$380,281.09	NA	NA

*\*Highlighted Option Indicates Selected Option*

### Estimated Transfer, Transportation and Disposal Costs with Minimal Growth and Minimal Diversion Assumptions (10% by 2018)

Bethany	2 Year Total (2009-2010)	5 Year Total (2009-2013)	10 Year Total (2009-2018)
Option 1: Bridgeport via Wheelabrator, 10Yrs	\$370,791.15	\$954,750.53	\$2,005,500.16
Option 2: Bridgeport via Wheelabrator, 5Yrs	\$361,324.47	\$930,374.75	NA
<b>Option 3: Bridgeport via CRRA, 5.5Yrs</b>	<b>\$365,111.14</b>	<b>\$940,125.06</b>	<b>NA</b>
Option 4: New Haven, 2Yrs	\$386,013.58	NA	NA

*\*Highlighted Option Indicates Selected Option*

### Estimated Average Cost/Ton of Current Options

Bethany	2 Year Total (2009-2010)	5 Year Total (2009-2013)	10 Year Total (2009-2018)
Option 1: Bridgeport via Wheelabrator, 10Yrs	\$98.89	\$101.87	\$107.03
Option 2: Bridgeport via Wheelabrator, 5Yrs	\$96.37	\$99.27	NA
<b>Option 3: Bridgeport via CRRA, 5.5Yrs</b>	<b>\$97.38</b>	<b>\$100.31</b>	<b>NA</b>
Option 4: New Haven, 2Yrs	\$102.95	NA	NA

*\*Highlighted Option Indicates Selected Option*

## Future Options

As of the date of this report the Town of Bethany has decided to execute CRRA's proposed 5 ½ year MSA for continued use of the Bridgeport RRF. Accordingly, we have identified the

following Future Disposal Options for the Town to consider when the currently planned solid waste disposal contract ends:

<b>Bethany</b>	<b>Year 1 Future Option (Beginning 2014)</b>
Projected Current Option 1: Bridgeport via Wheelabrator, 10Yrs	\$108.11
Projected Current Option 2: Bridgeport via Wheelabrator, 5Yrs	\$105.35
Extend Current Option 3: Bridgeport via CRRA, 5.5Yrs	\$106.46
Projected Current Option 4: New Haven, 2Yrs	\$112.55
Bale and Rail Haul Export	\$103.61
Transfer and Road Haul to ECRRA/Lisbon/Mass Burn	\$126.87-\$132.50*
Transfer and Road Haul to ECRRA/Lisbon/New Technology	To Be Determined

*\*Includes Long-Term Municipal Ownership*

## **EAST HAVEN**

### **Existing System**

## **Municipally Owned Solid Waste/Recycling Facilities**

### **Closed MSW Landfill**

The Town sites several dumpsters at its closed MSW landfill. Town residents can dispose of a limited amount of broken down Construction & Demolition debris and Bulky Waste at this site.

## **Material Collection**

### **MSW**

The Town of East Haven contracts a private hauler to collect residential waste (MSW) on a weekly basis from its residents, including apartment buildings and condominiums. The contracted private hauler also collects MSW from municipal buildings on a daily basis. The Town increased the frequency of collection at the municipal buildings because it was finding that people were illegally dumping their waste into the municipally owned dumpsters. The municipally contracted private hauler brings most of the Town collected waste directly to the Wheelabrator Bridgeport Resource Recovery Facility. Last Fiscal Year the municipally contracted hauler collected over 14,000 tons of MSW from the Town.

### **Bulky Waste and Construction & Demolition**

The Town accepts a limited amount of broken down Construction & Demolition debris and Bulky Waste at its closed MSW landfill. The municipally contracted private hauler also collects a limited amount of Construction & Demolition debris and Bulky Waste curbside from Town residents.

### **Recyclables**

The Town of East Haven contracts a private hauler to collect recyclables on a weekly basis from its residents, including apartment buildings and condominiums, as well as municipal buildings. The collected recyclables include glass, tin and aluminum cans, #1 (PETE) plastic, #2 (HDPE) plastic, corrugated cardboard, newspaper, magazines and junkmail.

## **Material Disposal/Sales**

### **MSW**

The municipally contracted private hauler brings most of the Town collected residential waste as well as waste collected from municipal buildings directly to the Wheelabrator Bridgeport Resource Recovery Facility. Last Fiscal Year, the Town sent over 14,300 tons of MSW to the Bridgeport RRF. However, the Town is contractually obligated to send a minimum of 18,000 tons of MSW to the Bridgeport RRF and must pay for this amount regardless of whether the Town reaches its minimum or not. Town of East Haven tonnage reported to the Connecticut DEP that was disposed of at State solid waste disposal facilities, State regional transfer stations or single town transfer stations that export waste out-of-state in Fiscal Year 2008 was as follows:

Bridgeport Resource Recovery Facility	14,306.00
Milford Transfer Station	156.83
New York-Connecticut Waste Transfer Station	4.38
Stratford Transfer Station	<u>266.69</u>
Total:	14,733.90

### **Bulky Waste and Construction & Demolition**

All Construction & Demolition and unburnable Bulky Waste debris that is collected curbside by the municipally contracted private hauler and at the Town closed landfill is transported to a facility located within 50 miles of the Town by the municipally contracted private hauler.

### **Recyclables**

The municipally contracted private hauler that collects recyclables from Town residents is contractually obligated to transport the collected recyclables directly to a recycling facility located within 50 miles of the Town. The Town of East Haven contracted a private hauler to transport its recyclables, except for the composted material, to the following locations as reported to the Connecticut DEP in Fiscal Year 2006:

Commingled Containers (IPC-Stratford)	515.07
Corrugated Cardboard (IPC-Stratford)	26.65
Grass (Municipal Composting/Mulching)	5.00
Leaves (Municipal Composting/Mulching)	450.00
Newspaper (IPC-Stratford)	694.53
Scrap Metal (Metal Management)	147.00
Waste Oil (Advanced Liquid)	<u>9.27</u>
Total:	1,847.52

### **Current Options**

1. **Option 1:** Enter into a Contract Directly with Wheelabrator and Deliver Waste to the Bridgeport Resource Recovery Facility Via Packer Truck for a 10 Year Contract Term



2. **Option 2:** Enter into a Contract Directly with Wheelabrator and Deliver Waste to the Bridgeport Resource Recovery Facility Via Packer Truck for a 5 Year Contract Term
3. **Option 3:** Enter into a Contract with CRRA and Deliver Waste to the Bridgeport Resource Recovery Facility Via Packer Truck
4. **Option 4:** Drive Packer Trucks Directly to the New Haven Regional Transfer Station

## Estimated Cost of Current Options

### Estimated Transfer, Transportation and Disposal Costs with No Growth and Aggressive Diversion Assumptions (20% by 2028)

East Haven	2 Year Total (2009-2010)	5 Year Total (2009-2013)	10 Year Total (2009-2018)
Option 1: Bridgeport via Wheelabrator, 10Yrs	\$2,767,295.17	\$7,018,184.11	\$14,367,248.77
Option 2: Bridgeport via Wheelabrator, 5Yrs	\$2,694,008.75	\$6,832,321.18	NA
Option 3: Bridgeport via CRRA, 5.5Yrs	\$2,752,637.88	\$6,981,011.52	NA
Option 4: New Haven, 2Yrs	\$2,740,912.06	NA	NA

*\*Highlighted Option Indicates Selected Option*

### Estimated Transfer, Transportation and Disposal Costs with Minimal Growth and Minimal Diversion Assumptions (10% by 2018)

East Haven	2 Year Total (2009-2010)	5 Year Total (2009-2013)	10 Year Total (2009-2018)
Option 1: Bridgeport via Wheelabrator, 10Yrs	\$2,809,010.39	\$7,232,923.85	\$15,193,110.13
Option 2: Bridgeport via Wheelabrator, 5Yrs	\$2,734,619.22	\$7,041,373.96	NA
Option 3: Bridgeport via CRRA, 5.5Yrs	\$2,752,637.88	\$6,981,011.52	NA
Option 4: New Haven, 2Yrs	\$2,782,229.57	NA	NA

*\*Highlighted Option Indicates Selected Option*

### Estimated Average Cost/Ton of Current Options

East Haven	2 Year Total (2009-2010)	5 Year Total (2009-2013)	10 Year Total (2009-2018)
Option 1: Bridgeport via Wheelabrator, 10Yrs	\$95.34	\$98.21	\$103.19
Option 2: Bridgeport via Wheelabrator, 5Yrs	\$92.81	\$95.61	NA
Option 3: Bridgeport via CRRA, 5.5Yrs	\$94.83	\$97.69	NA
Option 4: New Haven, 2Yrs	\$94.43	NA	NA

*\*Highlighted Option Indicates Selected Option*

## Future Options

In early November, the Town of East Haven approved the proposed 5 year Wheelabrator WDA for continued use of the Bridgeport RRF. Accordingly we have identified the following Future Disposal Options for the Town to consider when the 5 year WDA expires in 2014:

<b>East Haven</b>	<b>Year 1 Future Option (Beginning 2014)</b>
Projected Current Option 1: Bridgeport via Wheelabrator, 10Yrs	\$104.23
Extend Current Option 2: Bridgeport via Wheelabrator, 5Yrs	\$101.47
Projected Current Option 3: Bridgeport via CRRA, 5.5Yrs	\$103.67
Projected Current Option 4: New Haven, 2Yrs	\$103.23
Bale and Rail Haul Export	\$103.61
Transfer and Road Haul to ECRRA/Lisbon/Mass Burn	\$126.87-\$132.50*
Transfer and Road Haul to ECRRA/Lisbon/New Technology	To Be Determined

*\*Includes Long-Term Municipal Ownership*

**MILFORD**

Information Incomplete As of the Date of this Report

**ORANGE**

R. S. LYNCH & COMPANY

Information Incomplete As of the Date of this Report

**WOODBIDGE**

R. S. LYNCH & COMPANY   
1887, 1911, 1927, 1937, 1947, 1957, 1967, 1977, 1987, 1997, 2007, 2017

## **Existing System**

### **Municipally Owned Solid Waste/Recycling Facilities**

#### **Transfer Station**

The Town owned and operated transfer station processed approximately 3,500 tons of MSW last fiscal year. The Town's transfer station does not have the capacity to accept MSW from other municipalities. In Fiscal Year 2008, the Town's transfer station also processed over 1,000 tons of recyclables and over 550 tons of Bulky Waste and C&D.

### **Material Collection**

#### **MSW**

Residents of the Town of Woodbridge independently contract private haulers to collect their residential waste (MSW). All residential waste collected from within the Town borders is transferred directly to the Town owned transfer station. Private haulers which collect MSW from within Town borders are required to obtain a permit from the Town and deliver all Town collected waste directly to the Town transfer station. Additionally, the Town also owns and operates a transfer station for residents that don't have their waste collected by a private hauler. One-third of the MSW collected at the Town transfer station is brought directly there from residents that do not contract a private hauler to collect their waste.

#### **Bulky Waste and Construction & Demolition**

The Town accepts Construction & Demolition debris and Bulky Waste at its transfer station.

#### **Recyclables**

The Town owned transfer station accepts recyclables from its residents. Collected recyclables include, among others, #1 (PETE) and #2 (HDPE) plastic containers, corrugated cardboard, newspapers, junk mail, glass, aluminum, tin and metal.

### **Material Disposal/Sales**

#### **MSW**

Most residential waste that is collected at the Town owned transfer station is compacted and transported via tractor trailer to the Bridgeport Resource Recovery Facility by a municipally contracted private hauler. The Town is contractually obligated to deliver 2,800 tons of MSW per year to the Bridgeport Resource Recovery Facility. Town of

Woodbridge tonnage reported to the Connecticut DEP that was disposed of at State solid waste disposal facilities, State regional transfer stations or single town transfer stations that export waste out-of-state in Fiscal Year 2008 was as follows:

Bridgeport Resource Recovery Facility	3,474.00
Stratford Transfer Station	231.22
Watertown Transfer Station	<u>1,498.84</u>
Total:	5,204.06

### **Bulky Waste and Construction & Demolition**

All Construction & Demolition debris and Bulky Waste that is collected at the Town transfer station is transported to the New Haven transfer station by John's Refuse, which is a municipally contracted private hauler.

### **Recyclables**

Recyclables collected at the Town transfer station are transported by a private hauler to the following locations as reported to the Connecticut DEP in Fiscal Year 2008:

Commingled Containers (IPC-Stratford)	303.06
Corrugated Cardboard (IPC-Stratford)	61.71
Freon (Reliable Refrigeration Plus, Inc)	0.02
Leaves (Municipal Composting/Mulching)	137.00
Newspaper (IPC-Stratford)	384.05
Office Paper (Stratford Baling Corp)	4.46
Propane Tanks (Paraco Gas Co)	0.96
Scrap Metal (Metal Management)	118.72
Scrap Metal (Stratford Baling Corp)	11.69
Tires (City Recycling, Inc)	4.00
Tires (Don Stevens Tire)	<u>0.25</u>
Waste Oil (Advanced Liquid)	<u>4.62</u>
Total:	1,030.54

### **Existing System Expenses**

The Town budgeted approximately \$675,000 for the operation of its transfer station for FY 2009, which includes employee benefits. Under the Town's current contract, it is paying approximately \$80/ton for the disposal of MSW and \$14.33/ton for its 2,800 minimum commitment tonnage.

### **Current Options**

Town Options for MSW Received at the Town of Woodbridge Transfer Station

1. **Option 1:** Enter into a Contract Directly with Wheelabrator and Deliver Waste to the Bridgeport Resource Recovery Facility Via Tractor Trailer from the Town of Woodbridge’s Transfer Station for a 10 Year Contract Term
2. **Option 2:** Enter into a Contract Directly with Wheelabrator and Deliver Waste to the Bridgeport Resource Recovery Facility Via Tractor Trailer from the Town of Woodbridge’s Transfer Station for a 5 Year Contract Term
3. **Option 3:** Enter into a Contract with CRRA and Deliver Waste to the Bridgeport Resource Recovery Facility Via Tractor Trailer from the Town of Woodbridge’s Transfer Station
4. **Option 4:** Enter into a Contract with New Haven and Deliver Waste to the New Haven Transfer Station Via Tractor Trailer from the Town of Woodbridge’s Transfer Station

Options for Town Residents that Independently Contract Private Haulers to Collect Their MSW

1. **Option 1:** Town Enters into a Contract Directly with Wheelabrator and Independently Contracted Private Hauler Delivers Waste to the Bridgeport Resource Recovery Facility Via Packer Truck for a 10 Year Contract Term
2. **Option 2:** Town Enters into a Contract Directly with Wheelabrator and Independently Contracted Private Hauler Delivers Waste to the Bridgeport Resource Recovery Facility Via Packer Truck for a 5 Year Contract Term
3. **Option 3:** Town Enters into a Contract with CRRA and Independently Contracted Private Hauler Delivers Waste to the Bridgeport Resource Recovery Facility Via Packer Truck

**Estimated Cost of Current Options**

**Estimated Transfer, Transportation and Disposal Costs  
with No Growth and Aggressive Diversion Assumptions (20% by 2028)**

<b>Woodbridge</b>	<b>2 Year Total (2009-2010)</b>	<b>5 Year Total (2009-2013)</b>	<b>10 Year Total (2009-2018)</b>
<b>Transfer Station Drop-Off Options:</b>			
Option 1:Bridgeport via Wheelabrator, 10Yrs	\$886,923.45	\$2,249,341.57	\$4,604,731.00
Option 2:Bridgeport via Wheelabrator, 5Yrs	\$861,038.46	\$2,183,694.20	NA
<b>Option 3:Bridgeport via CRRA, 5.5Yrs</b>	<b>\$871,392.45</b>	<b>\$2,209,953.15</b>	<b>NA</b>
Option 4:New Haven, 2Yrs	\$1,071,638.77	NA	NA
<b>Independently Contracted Hauler Options:</b>			
Option 1:Bridgeport via Wheelabrator, 10Yrs	\$1,048,652.89	\$2,659,506.35	\$5,444,398.27
Option 2:Bridgeport via Wheelabrator, 5Yrs	\$1,022,767.90	\$2,593,858.98	NA
<b>Option 3:Bridgeport via CRRA, 5.5Yrs</b>	<b>\$1,033,121.90</b>	<b>\$2,620,117.93</b>	<b>NA</b>

*\*Highlighted Option Indicates Selected Option*

**Estimated Transfer, Transportation and Disposal Costs  
with Minimal Growth and Minimal Diversion Assumptions (10% by 2018)**



Woodbridge	2 Year Total (2009-2010)	5 Year Total (2009-2013)	10 Year Total (2009-2018)
<b>Transfer Station Drop-Off Options:</b>			
Option 1:Bridgeport via Wheelabrator, 10Yrs	\$900,293.26	\$2,318,166.08	\$4,869,421.16
Option 2:Bridgeport via Wheelabrator, 5Yrs	\$874,018.06	\$2,250,510.05	NA
<b>Option 3:Bridgeport via CRRA, 5.5Yrs</b>	<b>\$884,528.14</b>	<b>\$2,277,572.46</b>	<b>NA</b>
Option 4:New Haven, 2Yrs	\$1,087,793.05	NA	NA
<b>Independently Contracted Hauler Options:</b>			
Option 1:Bridgeport via Wheelabrator, 10Yrs	\$1,064,460.67	\$2,740,880.93	\$5,757,354.37
Option 2:Bridgeport via Wheelabrator, 5Yrs	\$1,038,185.48	\$2,673,224.90	NA
<b>Option 3:Bridgeport via CRRA, 5.5Yrs</b>	<b>\$1,048,695.56</b>	<b>\$2,700,287.31</b>	<b>NA</b>

\*Highlighted Option Indicates Selected Option

## Estimated Average Cost/Ton of Current Options

Woodbridge	2 Year Total (2009-2010)	5 Year Total (2009-2013)	10 Year Total (2009-2018)
<b>Transfer Station Drop-Off Options:</b>			
Option 1:Bridgeport via Wheelabrator, 10Yrs	\$86.51	\$89.12	\$93.63
Option 2:Bridgeport via Wheelabrator, 5Yrs	\$83.99	\$86.52	NA
<b>Option 3:Bridgeport via CRRA, 5.5Yrs</b>	<b>\$85.00</b>	<b>\$87.56</b>	<b>NA</b>
Option 4:New Haven, 2Yrs	\$104.53	NA	NA
<b>Independently Contracted Hauler Options:</b>			
Option 1:Bridgeport via Wheelabrator, 10Yrs	\$102.29	\$105.37	\$110.71
Option 2:Bridgeport via Wheelabrator, 5Yrs	\$99.76	\$102.77	NA
<b>Option 3:Bridgeport via CRRA, 5.5Yrs</b>	<b>\$100.77</b>	<b>\$103.81</b>	<b>NA</b>

\*Highlighted Option Indicates Selected Option

## Future Options

As of the date of this report the Town of Woodbridge has decided to execute CRRA's proposed 5 ½ year MSA for continued use of the Bridgeport RRF. Accordingly, we have identified the following Future Disposal Options for the Town to consider when the currently planned solid waste disposal contract ends:

Woodbridge (Town Transfer Station Options)	Year 1 Future Option (Beginning 2014)
Projected Current Option 1:Bridgeport via Wheelabrator, 10Yrs	\$94.58
Projected Current Option 2:Bridgeport via Wheelabrator, 5Yrs	\$91.82
Extend Current Option 3:Bridgeport via CRRA, 5.5Yrs	\$92.92
Projected Current Option 4:New Haven, 2Yrs	\$114.27
Bale and Rail Haul Export	\$103.61
Transfer and Road Haul to ECRRA/Lisbon/Mass Burn	\$126.87-\$132.50*
Transfer and Road Haul to ECRRA/Lisbon/New Technology	To Be Determined

\*Includes Long-Term Municipal Ownership

## HAMDEN

## Existing System





## **Municipally Owned Solid Waste/Recycling Facilities**

### **Transfer Station**

The Town's transfer station currently does not accept MSW. However, it does accept Bulky Waste and recyclables. The Town's transfer station currently does not have the physical capacity to handle waste from other municipalities. Last Fiscal Year the Town transfer station handled 1,803.74 tons of Bulky Waste and 249.13 tons of metal.

## **Material Collection**

### **MSW**

The Town of Hamden contracts a private hauler to collect residential waste (MSW) on a weekly basis from most one to six family homes located within the Town. The contracted private hauler brings most Town collected residential waste directly to the Wallingford Resource Recovery Facility. Last Fiscal Year the municipally contracted hauler collected 13,434 tons of MSW from Town residents. The Town also contracted a private hauler to collect over 1,007 tons from municipal buildings. Owners of apartment buildings and condominiums located within the Town of Hamden independently contract private haulers to collect their residential waste. These independently contracted haulers must be permitted by the Town of Hamden and are required to transport the collected residential waste to the Wallingford Resource Recovery Facility. CRRA bills these independently contracted haulers for the disposal of Hamden residential waste collected from Town apartment buildings.

### **Bulky Waste and Construction & Demolition**

The Town contracts a private hauler to collect Construction & Demolition debris and Bulky Waste for the entire months of April and October from residential homes. Last Fiscal Year a private hauler collected over 931 tons of C&D and Bulky Waste from Town residents. The Town also collected 1,803.74 tons of Construction & Demolition debris and Bulky Waste at its transfer station.

### **Recyclables**

The Town contracts a private hauler to collect recyclables from its residents, schools and municipal buildings on a bi-weekly basis. The collected recyclables include glass, cans, #1 (PETE) plastic, #2 (HDPE) plastic, paper, cardboard, newspaper, books and telephone books. The Town also accepts a limited amount of recyclables at its transfer station.

## **Material Disposal/Sales**

### **MSW**

The municipally contracted private hauler brings most Town collected residential waste as well as waste collected from municipal buildings directly to the Wallingford Resource Recovery Facility. Independently contracted haulers must be permitted by the Town of Hamden and are required to transport the collected residential waste to the Wallingford Resource Recovery Facility. CRRA bills these independently contracted haulers for the disposal of Hamden residential waste collected from Town apartment buildings. Town of Hamden tonnage reported to the Connecticut DEP that was disposed of at State solid waste disposal facilities, State regional transfer stations or single town transfer stations that export waste out-of-state in Fiscal Year 2008 was as follows:

Bridgeport Resource Recovery Facility	2.00
Mid-Connecticut Resource Recovery Facility	159.05
Preston Resource Recovery Facility	31.49
Wallingford Resource Recovery Facility	35,339.26
Stratford Transfer Station	<u>46.78</u>
Total:	35,578.58

**Bulky Waste and Construction & Demolition**

All Construction & Demolition debris and unburnable Bulky Waste that is collected curbside by the municipally contracted private hauler is taken directly to the Construction & Demolition processing facility in New Haven, Connecticut. All Construction & Demolition debris and unburnable Bulky Waste that is collected at the Town transfer station is transported to the Construction & Demolition processing facility in New Haven, Connecticut by a private hauler.

**Recyclables**

All recyclables collected by the municipally contracted hauler are brought directly to Murphy Road Recycling Facility in Kensington, CT. Additionally, recyclables collected at the Town transfer station, except for the municipally composted material, are transported by a private hauler to the following locations as reported to the Connecticut DEP in Fiscal Year 2008:

Commingled Containers (Kensington Murphy Road Recycling)	1,015.20
Corrugated Cardboard (Kensington Murphy Road Recycling)	951.02
Corrugated Cardboard (Marcus Paper Co)	656.64
Electronics (Amandi Services)	34.82
Leaves (Municipal Composting/Mulching)	7,983.50
Newspaper (Kensington Murphy Road Recycling)	2,359.15
Newspaper (Marcus Paper Co)	26.41
Office Paper (Marcus Paper Co)	5.76
Mixed Paper (Kensington Murphy Road Recycling)	367.41
Mixed Paper (Marcus Paper Co)	0.52
Scrap Metal (Industrial Recycling)	253.55
Tires (Don Stevens Tire)	0.97
Waste Oil (Safety Kleen)	13.32
Yard Waste (Total Landscaping & Tree Service)	<u>3,150.00</u>
Total:	16,818.27

### Current Options

1. **Option 1:** Enter into a Contract Directly with Covanta and Deliver Waste to the Wallingford Resource Recovery Facility Via Packer Truck
2. **Option 2:** Enter into a Contract with CRRA after it Purchases the Wallingford RRF at Fair Market Value and Deliver Waste to the Wallingford RRF Via Packer Truck
3. **Option 3:** Drive Packer Trucks Directly to the New Haven Regional Transfer Station

### Estimated Cost of Current Options

Estimated Transfer, Transportation and Disposal Costs  
with No Growth and Aggressive Diversion Assumptions (20% by 2028)

Hamden	2 Year Total (July 1, 2010 -June 30, 2012)	5 Year Total (July 1, 2010 -June 30, 2015)	10 Year Total (July 1, 2010 -June 30, 2020)
Option 1:Wallingford via Covanta, 20Yrs	\$5,480,983.95	\$13,897,002.37	\$28,436,720.92
Option 2:Wallingford via CRRA, 20Yrs	\$6,206,130.83	\$15,735,607.99	\$32,198,964.99
Option 3:New Haven, 2Yrs	\$7,079,095.03	NA	NA

\*Highlighted Option Indicates Selected Option

## Estimated Transfer, Transportation and Disposal Costs with Minimal Growth and Minimal Diversion Assumptions (10% by 2018)

Hamden	2 Year Total (July 1, 2010 -June 30, 2012)	5 Year Total (July 1, 2010 -June 30, 2015)	10 Year Total (July 1, 2010 -June 30, 2020)
Option 1:Wallingford via Covanta, 20Yrs	\$5,647,469.73	\$14,538,057.18	\$30,599,133.60
Option 2:Wallingford via CRRRA, 20Yrs	\$6,394,643.06	\$16,461,475.84	\$34,647,469.88
Option 3:New Haven, 2Yrs	\$7,294,123.68	NA	NA

*\*Highlighted Option Indicates Selected Option*

## Estimated Average Cost/Ton of Current Options

Hamden	2 Year Total (July 1, 2010 -June 30, 2012)	5 Year Total (July 1, 2010 -June 30, 2015)	10 Year Total (July 1, 2010 -June 30, 2020)
Option 1:Wallingford via Covanta, 20Yrs	\$79.41	\$81.80	\$85.94
Option 2:Wallingford via CRRRA, 20Yrs	\$89.91	\$92.62	\$97.31
Option 3:New Haven, 2Yrs	\$102.56	NA	NA

*\*Highlighted Option Indicates Selected Option*

### **Future Options**

As of the date of this report the Town of Hamden has authorized its executives to sign the proposed 20 year (10 year, plus two 5 year options) Covanta Waste Disposal Agreement. Accordingly we have not identified any Future Disposal Options for Hamden.

## MERIDEN

### Existing System

#### **Municipally Owned Solid Waste/Recycling Facilities**

##### **Bulky Waste Transfer Station**

The City's transfer station currently does not accept MSW or recyclables. However, it does accept Bulky Waste. The City's current Bulky Waste transfer station does not have capacity for waste generated from other municipalities. Currently, the City's Bulky Waste transfer station consists of several roll-off containers and a front-end loader. City residents drop off their Bulky Waste on the ground in front of the roll-off containers and a Town employee loads the material into the roll-off containers with a front-end loader. Materials currently collected at the Bulky Waste transfer station include White Goods, Leaves, Brush and Demolition material. The City has recently engaged an engineering firm to design a safer and more efficient transfer station. The City expects to put the construction of the new transfer station up to bid within a few months. It is expected that the construction of the new facility will cost the City approximately \$1,500,000. The new transfer station design did not increase the capacity of the existing transfer station. Therefore, the new transfer station will not have capacity for waste from other municipalities.

#### **Material Collection**

##### **MSW**

The City of Meriden contracts a private hauler to collect residential waste (MSW) on a weekly basis from one to four family homes located within the City's Inner Tax District. It is estimated that residential waste collected from the Inner Tax District accounts for 35%-40% of the total MSW generated from within the City. The contracted private hauler brings all City collected residential waste directly to the Wallingford Resource Recovery Facility. All buildings that house more than four families are responsible for contracting their own private hauler to collect their residential waste and deliver it to the Wallingford Resource Recovery Facility. All households and buildings located outside of the City's Inner Tax District are also responsible for contracting their own hauler to collect their residential waste.

##### **Bulky Waste and Construction & Demolition**

The City accepts Bulky Waste at its transfer station. The City does not handle Construction debris. Residents must arrange for the disposal of Construction debris on their own.

## Recyclables

The City contracts a private hauler to collect recyclables from its residents that live in one to four family homes located within the City's Inner Tax District on a bi-weekly basis. The collected recyclables include corrugated cardboard, newspapers, magazines, glass bottles and jars, mixed paper, metal cans and foil, #1 (PETE) plastic, #2 (HDPE), catalogs and telephone books. Most of these recyclables are taken directly to the Murphy Road Recycling Facility in Kensington, CT. All households and buildings located outside of the City's Inner Tax District as well as households with more than four families within the Inner tax District are responsible for contracting their own hauler to collect their recyclables. The City also collects White Goods, Leaves, and Brush at its Bulky Waste transfer station.

## Material Disposal/Sales

### MSW

The municipally contracted private hauler brings all City collected residential waste directly to the Wallingford Resource Recovery Facility. Independently contracted haulers must be permitted by the City of Meriden and are required to transport all MSW collected within the City of Meriden to the Wallingford Resource Recovery Facility. The City is contractually obligated to deliver 39,700 tons of MSW per year to the Wallingford Resource Recovery Facility. City of Meriden tonnage reported to the Connecticut DEP that was disposed of at State solid waste disposal facilities, State regional transfer stations or single town transfer stations that export waste out-of-state in Fiscal Year 2008 was as follows:

Mid-Connecticut Resource Recovery Facility	936.18
Wallingford Resource Recovery Facility	31,026.58
Dainty Rubbish Service, Inc.	<u>165.20</u>
Total:	32,127.96

### Bulky Waste and Construction & Demolition

All Bulky Waste that is collected at the City Bulky Waste transfer station is transported by a private hauler to a facility of its choice. Most of the Construction debris generated within the City's borders is disposed at the Complete Waste Removal and Recycling Service in Berlin, Connecticut. Residents are responsible for contracting the disposal of Construction debris on their own.

## Recyclables

Most recyclables collected by the municipally contracted hauler are brought directly to the Murphy Road Recycling Facility. Independently contracted haulers that collect recyclables from within the City borders are also required to bring recyclables collected

in Meriden to the Murphy Road Recycling Facility. As detailed below, the City also sends recyclables to other facilities.

Ballasts (Northeast Lamp Recycling)	0.03
Commingled Containers (Kensington Murphy Road Recycling)	533.85
Commingled Containers (Albert Brothers, Inc)	5.07
Corrugated Cardboard (Kensington Murphy Road Recycling)	275.62
Corrugated Cardboard (Advanced Recycling Corp)	4.05
Corrugated Cardboard (CWPM)	329.12
Electronics (Environmental Services)	1.21
Electronics (NA)	12.90
Electronics (WeRecycle)	0.49
Freon (Environmental Services)	0.01
Leaves (NA)	1,900.00
Office Paper (Hanna Paper Recycling, Inc)	3,545.95
Mixed Paper (Kensington Murphy Road Recycling)	1,238.97
Scrap Metal (Metal Management)	<u>43.49</u>
Total:	7,890.76

### Current Options

1. **Option 1:** Enter into a Contract Directly with Covanta and Deliver Waste to the Wallingford Resource Recovery Facility Via Packer Truck
2. **Option 2:** Enter into a Contract with CRRA after it Purchases the Wallingford RRF at Fair Market Value and Deliver Waste to the Wallingford RRF Via Packer Truck
3. **Option 3:** Drive Packer Trucks Directly to the New Haven Regional Transfer Station

### Estimated Cost of Current Options

#### Estimated Transfer, Transportation and Disposal Costs with No Growth and Aggressive Diversion Assumptions (20% by 2028)

Meriden	2 Year Total (July 1, 2010 -June 30, 2012)	5 Year Total (July 1, 2010 -June 30, 2015)	10 Year Total (July 1, 2010 -June 30, 2020)
Option 1:Wallingford via Covanta, 20Yrs	\$4,785,993.86	\$12,134,859.11	\$24,830,937.82
Option 2:Wallingford via CRRA, 20Yrs	\$5,440,811.73	\$13,795,145.93	\$28,228,297.33
Option 3:New Haven, 2Yrs	\$7,645,348.26	NA	NA

\*Highlighted Option Indicates Selected Option

## Estimated Transfer, Transportation and Disposal Costs with Minimal Growth and Minimal Diversion Assumptions (10% by 2018)

Meriden	2 Year Total (July 1, 2010 -June 30, 2012)	5 Year Total (July 1, 2010 -June 30, 2015)	10 Year Total (July 1, 2010 -June 30, 2020)
Option 1:Wallingford via Covanta, 20Yrs	\$4,931,369.20	\$12,694,628.01	\$26,719,156.05
Option 2:Wallingford via CRRRA, 20Yrs	\$5,606,077.26	\$14,431,502.21	\$30,374,860.86
Option 3:New Haven, 2Yrs	\$7,645,348.26	NA	NA

*\*Highlighted Option Indicates Selected Option*

## Estimated Average Cost/Ton of Current Options

Meriden	2 Year Total (July 1, 2010 -June 30, 2012)	5 Year Total (July 1, 2010 -June 30, 2015)	10 Year Total (July 1, 2010 -June 30, 2020)
Option 1:Wallingford via Covanta, 20Yrs	\$76.79	\$79.10	\$75.96
Option 2:Wallingford via CRRRA, 20Yrs	\$87.29	\$89.92	\$86.35
Option 3:New Haven, 2Yrs	\$122.66	NA	NA

*\*Highlighted Option Indicates Selected Option*

### **Future Options**

As of the date of this report the City of Meriden has authorized its executives to sign the proposed 20 year (10 year, plus two 5 year options) Covanta Waste Disposal Agreement. Accordingly we have not identified any Future Disposal Options for Meriden.



## NORTH HAVEN

### Existing System

#### **Municipally Owned Solid Waste/Recycling Facilities**

##### **Transfer Station**

The Town transfer station only accepts MSW and Bulky Waste from Town residents. According to Town Public works personnel, the transfer station is not equipped to export waste via tractor trailer. The transfer station currently does not have the capacity to handle waste from other municipalities.

##### **Recycling Center**

The Town's recycling center currently does not have the physical capacity to handle recyclables from other municipalities. Last Fiscal Year the recycling center processed 144.97 tons of recyclables, 41.48 tons of #1 and #2 plastics, 121.91 tons of cardboard, 159.99 tons of mixed paper and 153.89 tons of scrap metal.

#### **Material Collection**

##### **MSW**

The Town of North Haven collects residential waste (MSW) on a weekly basis from most one to two family homes located within the Town's borders with a municipal fleet. The sanitation department's municipal fleet brings all Town collected residential waste directly to the Wallingford Resource Recovery Facility. Owners of apartment buildings and condominiums located within the Town independently contract private haulers to collect their residential waste. Town permitted independently contracted haulers can bring waste collected from North Haven apartments to the Wallingford Resource Recovery Facility for the same Tip Fee which the Town pays.

##### **Bulky Waste and Construction & Demolition**

The Town collects Bulky Waste from its residents with municipal collection vehicles. The Town also accepts a limited amount of Bulky Waste at its transfer station.

##### **Recyclables**

The Town collects recyclables from its residents on a weekly basis with municipal collection vehicles. The collected recyclables include glass food and beverage containers, metal food and beverage containers, aluminum foil, newspaper, and corrugated cardboard. The Town also accepts these recyclables, among others, at its transfer station.

## Material Disposal/Sales

### MSW

The sanitation department's municipal fleet brings all Town collected residential waste directly to the Wallingford Resource Recovery Facility. Independently contracted haulers can bring waste collected from North Haven apartments to the Wallingford Resource Recovery Facility for the same Tip Fee which the Town pays. Town of North Haven tonnage reported to the Connecticut DEP that was disposed of at State solid waste disposal facilities, State regional transfer stations or single town transfer stations that export waste out-of-state in Fiscal Year 2008 was as follows:

Mid-Connecticut Resource Recovery Facility	65.01
Preston Resource Recovery Facility	33.38
Wallingford Resource Recovery Facility	18,406.60
Stratford Transfer Station	<u>82.21</u>
Total:	18,587.20

### Bulky Waste and Construction & Demolition

All Bulky Waste that is collected by the Town with a municipal fleet is transported directly to the Town transfer station. Bulky Waste that is collected at the Town transfer station is transported to the New Haven transfer station by a private hauler. All Demolition debris that is collected at the Town transfer station is transferred by a private hauler to a facility of its choice. Town residents are responsible for the disposal of Construction debris on their own.

### Recyclables

All recyclables collected by the municipal fleet are brought directly to the New Haven transfer station. As detailed below recyclables collected at the Town transfer station are transported by a private hauler to various locations throughout the State. The following Town of North Haven recycling data was reported to the Connecticut DEP for FY 2008:

Commingled Containers (Kensington Murphy Road Recycling)	299.39
Corrugated Cardboard (Marcus Paper Co)	121.91
Corrugated Cardboard (Stratford Baling Corp)	144.47
Corrugated Cardboard (Willimantic Waste Paper Co)	60.27
Glass Containers (IPC-Stratford)	15.46
Grass (Borrelli & Sons, Inc)	506.00
Leaves (Borrelli & Sons, Inc)	1,787.50
Metal Containers (IPC-Stratford)	12.40
Newspaper (Marcus Paper Co)	144.97
Newspaper (Willimantic Waste Paper Co)	648.87
Office Paper (Hanna Paper Recycling, Inc)	1,523.00
Plastic Containers #1 & #2 (IPC-Stratford)	41.48
Scrap Metal (Metal Management)	153.89
Scrap Metal (Stratford Baling Corp)	37.78
Tires (Don Stevens Tire)	0.44
Waste Oil (Earth Technology)	14.70
Total:	5,512.53

## Current Options

### Future MSW System Options

1. **Option 1:** Enter into a Contract Directly with Covanta and Deliver Waste to the Wallingford Resource Recovery Facility Via Packer Truck
2. **Option 2:** Enter into a Contract with CRRA after it Purchases the Wallingford RRF at Fair Market Value and Deliver Waste to the Wallingford RRF Via Packer Truck
3. **Option 3:** Drive Packer Trucks Directly to the New Haven Regional Transfer Station

### Estimated Cost of Current Options

#### Estimated Transfer, Transportation and Disposal Costs with No Growth and Aggressive Diversion Assumptions (20% by 2028)

North Haven	2 Year Total (July 1, 2010 -June 30, 2012)	5 Year Total (July 1, 2010 -June 30, 2015)	10 Year Total (July 1, 2010 -June 30, 2020)
Option 1:Wallingford via Covanta, 20Yrs	\$2,705,845.95	\$6,860,656.39	\$14,038,608.17
Option 2:Wallingford via CRRA, 20Yrs	\$3,084,682.04	\$7,821,193.05	\$16,004,104.91
Option 3:New Haven, 2Yrs	\$3,792,848.06	NA	NA

\*Highlighted Option Indicates Selected Option

## Estimated Transfer, Transportation and Disposal Costs with Minimal Growth and Minimal Diversion Assumptions (10% by 2018)

North Haven	2 Year Total (July 1, 2010 -June 30, 2012)	5 Year Total (July 1, 2010 -June 30, 2015)	10 Year Total (July 1, 2010 -June 30, 2020)
Option 1:Wallingford via Covanta, 20Yrs	\$2,788,036.46	\$7,177,131.60	\$15,106,145.62
Option 2:Wallingford via CRRA, 20Yrs	\$3,178,379.75	\$8,181,976.85	\$17,221,104.56
Option 3:New Haven, 2Yrs	\$3,908,056.43	NA	NA

*\*Highlighted Option Indicates Selected Option*

## Estimated Average Cost/Ton of Current Options

North Haven	2 Year Total (July 1, 2010 -June 30, 2012)	5 Year Total (July 1, 2010 -June 30, 2015)	10 Year Total (July 1, 2010 -June 30, 2020)
Option 1:Wallingford via Covanta, 20Yrs	\$75.04	\$77.30	\$81.21
Option 2:Wallingford via CRRA, 20Yrs	\$85.55	\$88.12	\$92.58
Option 3:New Haven, 2Yrs	\$105.18	NA	NA

*\*Highlighted Option Indicates Selected Option*

### Future Options

As of the date of this report the Town of North Haven has authorized its executives to sign the proposed 20 year (10 year, plus two 5 year options) Covanta Waste Disposal Agreement. Accordingly we have not identified any Future Disposal Options for North Haven.

## WALLINGFORD

### Existing System

#### **Municipally Owned Solid Waste/Recycling Facilities**

##### **Disposal Center**

The Town owns a solid waste disposal center. This facility is currently operated by a private company. There is currently no capacity for waste from other municipalities at the Town's disposal center. In Fiscal Year 2008, 2,493 tons of MSW and 607 tons of Bulky Waste and C&D debris were delivered to the Town disposal center.

##### **Recycling Center**

The Town owns a recycling center. This facility is currently operated by a private company. There is currently no capacity for waste from other municipalities at the Town's recycling center. In Fiscal Year 2008, 900 tons of recyclables were delivered to the Town recycling drop-off center.

##### **Compost Center**

The Town owns a compost center. This facility is currently operated by a private company. This site is contiguous to the Town's recycling center.

#### **Material Collection**

##### **MSW**

Residents of the Town of Wallingford independently contract private haulers to collect their residential waste (MSW). Most residential waste collected from within the Town borders is transported directly to the Wallingford Resource Recovery Facility. The privately operated Town transfer station also accepts residential waste from residents that do not contract a private hauler to collect their waste.

##### **Bulky Waste and Construction & Demolition**

The privately operated Town disposal center accepts a limited amount of Construction & Demolition debris and Bulky Waste.

##### **Recyclables**

The privately operated Town owned recycling center accepts recyclables from Town residents and small businesses located within the Town. Recyclables collected at the

Town recycling center include, among others, corrugated cardboard, newspaper, office paper, box board, #1 and #2 plastics, metal food containers, junk mail, and scrap metal.

The privately operated Town owned compost center also accepts land clearing debris, leaves and brush.

## **Material Disposal/Sales**

### **MSW**

Most residential waste that is collected at the privately operated Town owned disposal center is transported to the Wallingford Resource Recovery Facility. CRRA contracts the private hauler on behalf of the Town of Wallingford. Most of the MSW collected by individually contracted private haulers is also brought to the Wallingford Resource Recovery Facility. Town of Wallingford tonnage reported to the Connecticut DEP that was disposed of at State solid waste disposal facilities, State regional transfer stations or single town transfer stations that export waste out-of-state in Fiscal Year 2008 was as follows:

Mid-Connecticut Resource Recovery Facility	1,586.83
Preston Resource Recovery Facility	16.90
Wallingford Resource Recovery Facility	41,212.85
Dainty Rubbish Service, Inc.	<u>45.43</u>
Total:	42,862.01

### **Bulky Waste and Construction & Demolition**

The Private operator of the Town's disposal center is free to dispose of the collected Construction & Demolition debris and unburnable Bulky Waste at any facility that it chooses.

### **Recyclables**

All of the recyclables collected at the privately operated Town owned recycling center are sent to the following facilities as reported to the Connecticut DEP for FY 2008:

Brush-Yard Waste (Municipal Composting/Mulching)	4,627.00
Commingled Containers (Recycle America)	684.70
Commingled Containers (CWPM)	0.50
Commingled Containers (Stratford Baling Corp)	1.10
Corrugated Cardboard (Recycle America)	2,471.50
Corrugated Cardboard (CWPM)	440.60
Corrugated Cardboard (North Shore Recycled Fibers)	98.00
Corrugated Cardboard (Shaw's Distribution Center)	288.10
Corrugated Cardboard (Stratford Baling Corp)	150.10
Corrugated Cardboard (Yorkshire Paper)	37.00
Electronics (NA)	40.50
Fluorescent Bulbs (Northeast Lamp Recycling)	3.00
Glass Containers (Stratford Baling Corp)	13.50
Leaves (Municipal Composting/Mulching)	2,500.00
Metal Containers (Stratford Baling Corp)	22.10
Newspaper (CWPM)	100.30
Newspaper (Stratford Baling Corp)	204.40
Office Paper (Recycle America)	976.20
Office Paper (Hanna Paper Recycling, Inc)	643.00
Office Paper (Marcus Paper Co)	11.00
Office Paper (Stratford Baling Corp)	2.70
Mixed Paper (CWPM)	16.30
Mixed Paper (Stratford Baling Corp)	67.70
Mixed Paper (NA)	2,009.60
Phone Books (Recycle America)	221.60
Plastic Containers #1 & #2 (Stratford Baling Corp)	29.60
Scrap Metal (Recycle America)	26.60
Scrap Metal (Metal Management)	70.90
Scrap Metal (Stratford Baling Corp)	367.10
Scrap Metal (NA)	9.70
Waste Oil (Stratford Baling Corp)	<u>8.56</u>
Total:	16,142.96

### Existing System Expenses

For Fiscal Year 2009, the Town of Wallingford will pay \$63,360 to the operator of the recycling center. The Town is responsible for providing for the maintenance of the Town owned site.

In addition, the Town of Wallingford budgeted \$24,500 in Fiscal Year 2009 to participate in the Regional Water Authority HazWaste collection program.

The Town does not pay the private operator to operate the Town owned disposal center. Town residents must pay a user fee to use this facility.

**Current Options**

**Future MSW System Options**

1. **Option 1:** Enter into a Contract Directly with Covanta and Deliver Waste to the Wallingford Resource Recovery Facility Via Packer Truck
2. **Option 2:** Enter into a Contract with CRRA after it Purchases the Wallingford RRF at Fair Market Value and Deliver Waste to the Wallingford RRF Via Packer Truck
3. **Option 3:** Drive Packer Trucks Directly to the New Haven Regional Transfer Station

**Estimated Cost of Current Options**

**Estimated Transfer, Transportation and Disposal Costs  
with No Growth and Aggressive Diversion Assumptions (20% by 2028)**

Wallingford	2 Year Total (July 1, 2010 -June 30, 2012)	5 Year Total (July 1, 2010 -June 30, 2015)	10 Year Total (July 1, 2010 -June 30, 2020)
Option 1:Wallingford via Covanta, 20Yrs	\$5,945,531.67	\$15,074,860.37	\$30,846,911.14
Option 2:Wallingford via CRRA, 20Yrs	\$6,819,126.20	\$17,289,854.12	\$35,379,338.89
Option 3:New Haven, 2Yrs	\$9,400,318.13	NA	NA

*\*Highlighted Option Indicates Selected Option*

**Estimated Transfer, Transportation and Disposal Costs  
with Minimal Growth and Minimal Diversion Assumptions (10% by 2018)**

Wallingford	2 Year Total (July 1, 2010 -June 30, 2012)	5 Year Total (July 1, 2010 -June 30, 2015)	10 Year Total (July 1, 2010 -June 30, 2020)
Option 1:Wallingford via Covanta, 20Yrs	\$6,126,128.16	\$15,770,248.59	\$33,192,601.84
Option 2:Wallingford via CRRA, 20Yrs	\$7,026,258.26	\$18,087,417.79	\$38,069,688.84
Option 3:New Haven, 2Yrs	\$9,685,854.32	NA	NA

*\*Highlighted Option Indicates Selected Option*

**Estimated Average Cost/Ton of Current Options**





Wallingford	2 Year Total (July 1, 2010 -June 30, 2012)	5 Year Total (July 1, 2010 -June 30, 2015)	10 Year Total (July 1, 2010 -June 30, 2020)
Option 1:Wallingford via Covanta, 20Yrs	\$71.50	\$73.66	\$77.38
Option 2:Wallingford via CRRA, 20Yrs	\$82.01	\$84.48	\$88.76
Option 3:New Haven, 2Yrs	\$113.05	NA	NA

*\*Highlighted Option Indicates Selected Option*

## **Future Options**

As of the date of this report the Town of Wallingford has authorized its executives to sign the proposed 20 year (10 year, plus two 5 year options) Covanta Waste Disposal Agreement. Accordingly we have not identified any Future Disposal Options for Wallingford.

## **BRANFORD**

## **Existing System**

### **Municipally Owned Solid Waste/Recycling Facilities**

#### **Transfer Station:**

The Town's transfer station currently has the physical capacity to handle residential waste from other municipalities.

#### **Bulky Waste Landfill**

This landfill is currently projected to be closed in December, 2010. However, the landfill may have remaining capacity at that time to extend its projected closure date. Currently, the Bulky Waste landfill is not open to the public and does not have the physical capacity to handle Bulky Waste from other municipalities.

### **Material Collection**

#### **MSW**

The Town of Branford contracts a private hauler to collect residential waste (MSW) on a weekly basis from most one to four family homes located within the Town. The contracted private hauler brings all Town collected residential waste to the Town owned and operated transfer station. The Town estimates that this accounts for approximately two thirds of the residential MSW generated within its borders. Owners of apartment buildings and condominiums located within the Town of Branford independently contract private haulers to collect their residential waste. The Town transfer station credits the independently contracted haulers .76 tons per year for every condominium unit from which it collects within the Town's borders. Therefore, independently contracted haulers which can prove that they collect residential waste from condominiums located within the Town borders may bring up to .76 tons of residential waste per unit serviced to the transfer station for free. However, the Town does not verify that residential waste brought to its transfer station by independently contracted haulers is actually from the condominium from which the hauler claims. The Town does spot checks to make sure that this waste is generated from within the Town borders. Waste collected from Town apartment buildings is considered commercial waste and is usually not taken to the Town transfer station. The independently contracted private haulers are responsible for the disposal of this waste.

#### **Bulky Waste and Construction & Demolition**

The Town accepts Bulky Waste at its transfer station, albeit, at a limited quantity. Town residents are allowed to bring up to one ton of Bulky Waste debris to the Town transfer station. The Town does not handle Construction debris.

### **Recyclables**

The Town of Branford contracts a private hauler to collect recyclables on a weekly basis from most one to four family homes located within the Town. The contracted private hauler brings all Town collected recyclables to the Town owned and operated transfer station. The collected materials include, among others, glass bottles, metal cans, aluminum foil, natural #2 (HDPE) plastic, aseptic packages, newspaper, magazines, catalogs, corrugated cardboard and phone books. The Town also allows residents to personally bring these materials to its transfer station. The majority of apartment buildings and condominiums located within the Town of Branford make arrangements for a private hauler to collect their recyclables. Most of the haulers contracted by condominiums bring the collected recyclables to the Town transfer station for free.

### **Material Disposal/Sales**

#### **MSW**

Most MSW that is collected at the transfer station is transported to the Bristol Resource Recovery Facility by a contracted private hauler. The Town's current contract with the Bristol Resource Recovery Facility expires on June 30, 2014 with a possible 5 year contract extension at that time. Town of Branford tonnage reported to the Connecticut DEP that was disposed of at State solid waste disposal facilities, State regional transfer stations or single town transfer stations that export waste out-of-state in Fiscal Year 2008 was as follows:

Bridgeport Resource Recovery Facility	181.00
Bristol Resource Recovery Facility	11,643.20
Preston Resource Recovery Facility	1,368.08
Stratford Transfer Station	<u>250.81</u>
Total:	13,443.09

#### **Bulky Waste and Construction & Demolition**

All unburnable Bulky Waste that is collected at the Town owned and operated transfer station is transferred to the Town owned and operated Bulky Waste landfill by a private hauler. This landfill is currently projected to be closed in December, 2010. Currently, the Bulky waste landfill is not open to the public. Residents must independently contract the disposal of Construction debris on their own.

### **Recyclables**

All recyclables collected at the Town transfer station are marketed by the Town's solid waste manager and sold to various buyers throughout the State. The Town contracts with private haulers for the transportation of these recyclables from the town transfer station to the buyer of each recyclable. The Town's solid waste manager expressed her interest in SCRCOG helping to develop a regional recycling facility in order to save on costs of transporting recyclables. She indicated that there was not currently a recycling facility in New Haven County for mixed bottle and cans. However, there are mixed paper recycling facilities located within the County. The Town might be willing to discuss siting a regional material recycling facility in Branford. The Town of Branford contracts a private hauler to transport the recyclables collected at the Town transfer station, except for the composted material, to the following facilities as reported to the Connecticut DEP for FY 2008:

Batteries (Rechargeable Battery Recycling Corp)	0.08
Brush-Yard Waste (Municipal Composting/Mulching)	1,814.00
Commingled Containers (IPC-Groton Recycling Facility)	844.00
Commingled Containers (New Haven Murphy Road Recycling)	2.13
Commingled Containers (Willimantic Waste Paper Co)	48.00
Corrugated Cardboard (Marcus Paper Co)	289.00
Corrugated Cardboard (New Haven Murphy Road Recycling)	324.64
Corrugated Cardboard (Stratford Baling Corp)	128.89
Electronics (Amandi Services)	61.00
Fluorescent Bulbs (Northeast Lamp Recycling)	1.59
Freon (Interstate Refrigerant)	0.23
Leaves (Municipal Composting/Mulching)	2,092.00
Newspaper (Marcus Paper Co)	259.13
Newspaper (New Haven Murphy Road Recycling)	112.29
Office Paper (Marcus Paper Co)	15.18
Mixed Paper (Marcus Paper Co)	2,491.00
Mixed Paper (New Haven Murphy Road Recycling)	40.95
Phone Books (NA)	1.48
Propane Tanks (Paraco Gas Co)	0.32
Scrap Metal (Rubino Brothers Inc)	408.00
Scrap Metal (WTE Recycling, Inc.)	276.00
Tires (Meridian)	0.59
Used Clothes/Goods (Childhood Dreams Foundation Inc)	6.00
Used Clothes/Goods (NA)	8.00
Waste Oil (Safety-Kleen)	<u>8.23</u>
Total:	9,232.73

## Existing System Expenses

The Town's facility processed 13,209 tons of residential waste from July 1, 2007 thru June 30, 2008. It cost the Town \$65.50 per ton for disposal and \$15.84 per ton to transport its MSW. The total budget for the Town's Department of Solid Waste and Recycling is \$2,922,000.

**Future Options**

Since there is no immediate decision required, we have identified Future Disposal Options for the Town to consider when its current solid waste disposal contract ends on June 30, 2014.

1. **Option 1:** Extend Current Contract and Continue to Deliver Waste to the Bristol Resource Recovery Facility for a 5 Year Contract Extension Term
2. **Option 2:** Enter into a Contract Directly with Wheelabrator and Deliver Waste to the Bridgeport Resource Recovery Facility Via Tractor Trailer from the Town Transfer Station for a 10 Year Contract Term
3. **Option 3:** Enter into a Contract Directly with Wheelabrator and Deliver Waste to the Bridgeport Resource Recovery Facility Via Tractor Trailer from the Town Transfer Station for a 5 Year Contract Term
4. **Option 4:** Enter into a Contract with CRRA and Deliver Waste to the Bridgeport Resource Recovery Facility Via Tractor Trailer from the Town Transfer Station

**Estimated Cost of Future Options**

Branford	Year 1 Future Option (Beginning July, 2014)
Option 1:Extend Existing Bristol Contract, 5Yrs	\$100.85
Projected Option 2:Bridgeport via Wheelabrator, 10Yrs	\$94.58
Projected Option 3:Bridgeport via Wheelabrator, 5Yrs	\$91.82
Projected Option 4:Bridgeport via CRRA, 5.5Yrs	\$92.92
Bale and Rail Haul Export	\$103.61
Transfer and Road Haul to ECRRA/Lisbon/Mass Burn	\$126.87-\$132.50*
Transfer and Road Haul to ECRRA/Lisbon/New Technology	To Be Determined

*\*Includes Long-Term Municipal Ownership*

**GUILFORD**



## **Existing System**

### **Municipally Owned Solid Waste/Recycling Facilities**

#### **Transfer Station**

The Town currently has an agreement with the Town of Madison which allows the Town of Madison residents to utilize Guilford's transfer station. All transfer station operating costs are currently shared with the Town of Madison. The Town's transfer station could potentially have the physical capacity to handle residential waste from other municipalities in the event of site modification.

### **Material Collection**

#### **MSW**

Residents of the Town of Guilford independently contract private haulers to collect their residential waste (MSW). Most residential waste collected from within the Town borders is transferred to the CRRA transfer station in Essex, Connecticut. The Town also owns and operates a transfer station for residents that don't have their waste collected by a private hauler.

#### **Bulky Waste and Construction & Demolition**

The Town accepts Construction & Demolition debris and Bulky Waste at its transfer station.

#### **Recyclables**

The Town owned transfer station accepts recyclables from its residents. Recyclables collected at the Guilford transfer station include, among others, plastic containers, metal containers, glass containers, polycoated paper, corrugated cardboard, newspaper, mixed paper, scrap metal, anti-freeze, electronics, fluorescent bulbs, NiCad batteries, tires and waste oil.

### **Material Disposal/Sales**

#### **MSW**

Most residential waste that is collected at the Town owned transfer station is compacted and transported via tractor trailer to the CRRA owned transfer station in Essex, Connecticut by a private hauler. The Town's of Madison and Guilford are jointly contractually obligated to send a minimum of 21,000 tons of MSW to the CRRA Essex

transfer station per year. This contract terminates June 30, 2012. Town of Guilford tonnage reported to the Connecticut DEP that was disposed of at State solid waste disposal facilities, State regional transfer stations or single town transfer stations that export waste out-of-state in Fiscal Year 2008 was as follows:

Mid-Connecticut Resource Recovery Facility	3,309.73
Dainty Rubbish Service, Inc.	32.79
Essex Transfer Station	<u>8,995.77</u>
Total:	12,338.29

**Bulky Waste and Construction & Demolition**

All Construction & Demolition and unburnable Bulky Waste that is collected at the Town transfer station is transported to the All Waste owned and operated transfer station in Hartford, Connecticut by a private hauler.

**Recyclables**

All of the recyclables collected at the Town transfer station, except for the composted material, are transported by a private hauler to the following locations as reported to the Connecticut DEP in FY 2008:

Anti-Freeze (Advanced Liquid)	0.86
Commingled Containers (IPC-Hartford)	369.02
Corrugated Cardboard (IPC-Hartford)	69.83
Electronics (WeRecycle)	29.36
Fluorescent Bulbs (WeRecycle)	0.17
Leaves (Municipal Composting/Mulching)	1,902.40
Newspaper (IPC-Hartford)	193.79
NiCad Batteries (WeRecycle)	0.22
Mixed Paper (Hanna Paper Recycling, Inc)	1,212.10
Mixed Paper (IPC-Hartford)	69.25
Mixed Paper (Stratford Baling Corp)	12.31
Scrap Metal (Metal Management)	135.34
Tires (Don Stevens Tire)	0.82
Waste Oil (Advanced Liquid)	<u>10.53</u>
Total:	4,006.00

**Existing System Expenses**

The total 2007 Amended Appropriations for the Town’s transfer station was \$95,000. The Town’s 2007 amended appropriations for recycling was \$104,000.

**Future Options**

Since there is no immediate decision required, we have identified Future Disposal Options for the Town to consider when its current solid waste disposal contract ends on June 30, 2012.

1. **Option 1:** Continue to Deliver Waste to the CRRA Essex Transfer Station Via Tractor Trailer from the Town's Transfer Station
2. **Option 2:** Enter into a Contract Directly with Wheelabrator and Deliver Waste to the Bridgeport Resource Recovery Facility Via Tractor Trailer from the Town's Transfer Station for a 10 Year Contract Term
3. **Option 3:** Enter into a Contract Directly with Wheelabrator and Deliver Waste to the Bridgeport Resource Recovery Facility Via Tractor Trailer from the Town's Transfer Station for a 5 Year Contract Term
4. **Option 4:** Enter into a Contract with CRRA and Deliver Waste to the Bridgeport Resource Recovery Facility Via Tractor Trailer from the Town's Transfer Station

### Estimated Cost of Future Options

Guilford	Year 1 Future Option (Beginning July, 2012)
Option 1:Extend Existing Mid-Conn Contract	\$83.97
Projected Option 2:Bridgeport via Wheelabrator, 10Yrs	\$94.32
Projected Option 3:Bridgeport via Wheelabrator, 5Yrs	\$91.67
Projected Option 4:Bridgeport via CRRA, 5.5Yrs	\$92.73
Bale and Rail Haul Export	\$99.58
Transfer and Road Haul to ECRRA/Lisbon/Mass Burn	\$121.95-\$127.36*
Transfer and Road Haul to ECRRA/Lisbon/New Technology	To Be Determined

*\*Includes Long-Term Municipal Ownership*

### MADISON





## **Existing System**

### **Municipally Owned Solid Waste/Recycling Facilities**

#### **Bulky Waste Site**

The Town accepts brush, leaves, fireplace length logs and clean fill at this site.

#### **Recycling Center**

The Town allows commercial haulers to drop off newspaper, plastic containers, glass containers and corrugated cardboard at the Town owned Recycling Center. The Town also allows residents to drop off corrugated cardboard at this site.

### **Material Collection**

#### **MSW**

Residents of the Town of Madison independently contract private haulers to collect their residential waste (MSW). Most residential waste collected from within the Town borders is transferred directly to the CRRA Essex transfer station. Private haulers which collect MSW from within Town borders are required to obtain a permit from the Town and deliver all Town collected waste directly to the CRRA Essex transfer station. Additionally, the Town has an agreement with the Town of Guilford where Town of Madison residents can personally bring their MSW to the Guilford transfer station.

#### **Bulky Waste and Construction & Demolition**

The Town accepts Bulky Waste at its Bulky Waste site. Bulky Waste collected at this site includes brush, leaves, fireplace length logs and clean fill. Town residents may also bring Construction & Demolition debris to the Guilford transfer station.

#### **Recyclables**

Town of Madison residents may bring their recyclables to the Guilford transfer station. Recyclables collected at the Guilford transfer station include, among others, plastic containers, metal containers, glass containers, polycoated paper, corrugated cardboard, newspaper, mixed paper, and scrap metal. Town of Madison residents may also bring corrugated cardboard to the Town of Madison recycling center. This recycling center is primarily for commercial haulers and only allows Town residents to deposit corrugated cardboard at the site.

### **Material Disposal/Sales**

## MSW

Most residential waste collected from within the Town borders is transferred directly to the CRRA Essex transfer station. Private haulers which collect MSW from within Town borders are required to obtain a permit from the Town and deliver all Town collected waste directly to the CRRA Essex transfer station. The Town's MSW is then transported from the CRRA Essex transfer station to the Mid-Connecticut Resource Recovery Facility. The Towns of Madison and Guilford are jointly contractually obligated to send a minimum of 21,000 tons of MSW to the CRRA Essex transfer station per year. Town of Madison tonnage reported to the Connecticut DEP that was disposed of at State solid waste disposal facilities, State regional transfer stations or single town transfer stations that export waste out-of-state in Fiscal Year 2008 was as follows:

Mid-Connecticut Resource Recovery Facility	18.87
Essex Transfer Station	<u>10,444.32</u>
Total:	10,463.19

## Bulky Waste and Construction & Demolition

All Construction & Demolition debris and unburnable Bulky Waste that is collected at the Town Bulky Waste site and the Town of Guilford transfer station is transported to the All Waste owned transfer station in Hartford, Connecticut by a private hauler.

## Recyclables

Town of Madison recyclables collected at the Town recycling center and the Town of Guilford's transfer station are transported by a private hauler to the following locations as reported to the Connecticut DEP for FY 2008:

Anti-Freeze (Advanced Liquid)	0.72
Commingled Containers (IPC-Hartford)	309.90
Corrugated Cardboard (IPC-Hartford)	58.65
Electronics (WeRecycle)	24.65
Fluorescent Bulbs (WeRecycle)	0.15
Leaves (Municipal Composting/Mulching)	1,597.60
Newspaper (IPC-Hartford)	162.74
NiCad Batteries (WeRecycle)	0.18
Mixed Paper (Hanna Paper Recycling, Inc)	1,017.90
Mixed Paper (IPC-Hartford)	58.15
Mixed Paper (Stratford Baling Corp)	10.34
Scrap Metal (Metal Management)	113.66
Tires (Don Stevens Tire)	0.69
Waste Oil (Advanced Liquid)	<u>8.84</u>
Total:	3,364.17

### Future Options

Since there is no immediate decision required, we have identified Future Disposal Options for the Town to consider when its current solid waste disposal contract ends on June 30, 2012.

1. **Option 1:** Continue to Deliver Waste to the CRRRA Essex Transfer Station Via Tractor Trailer from the Town of Guilford's Transfer Station
2. **Option 2:** Enter into a Contract Directly with Wheelabrator and Deliver Waste to the Bridgeport Resource Recovery Facility Via Tractor Trailer from the Town of Guilford's Transfer Station for a 10 Year Contract Term
3. **Option 3:** Enter into a Contract Directly with Wheelabrator and Deliver Waste to the Bridgeport Resource Recovery Facility Via Tractor Trailer from the Town of Guilford's Transfer Station for a 5 Year Contract Term
4. **Option 4:** Enter into a Contract with CRRRA and Deliver Waste to the Bridgeport Resource Recovery Facility Via Tractor Trailer from the Town of Guilford's Transfer Station

### **Estimated Cost of Future Options**

Madison	Year 1 Future Option (Beginning July, 2012)
Option 1:Extend Existing Mid-Conn Contract	\$83.97
Projected Option 2:Bridgeport via Wheelabrator, 10Yrs	\$94.32
Projected Option 3:Bridgeport via Wheelabrator, 5Yrs	\$91.67
Projected Option 4:Bridgeport via CRRRA, 5.5Yrs	\$92.73
Bale and Rail Haul Export	\$99.58
Transfer and Road Haul to ECRRRA/Lisbon/Mass Burn	\$121.95-\$127.36*
Transfer and Road Haul to ECRRRA/Lisbon/New Technology	To Be Determined

*\*Includes Long-Term Municipal Ownership*

**NEW HAVEN**

Information Incomplete As of the Date of this Report

## **NORTH BRANFORD**

### **Existing System**

#### **Municipally Owned Solid Waste/Recycling Facilities**

##### **Transfer Station**

The Town is currently in the preliminary planning stage of developing a Town transfer station.

#### **Material Collection**

##### **MSW**

The Town of North Branford contracts a private hauler to collect residential waste (MSW) on a weekly basis from all one to two family homes located within the Town. The contracted private hauler brings most of the Town collected residential waste directly to the CRRA Essex transfer station. Owners of residential buildings with more than 2 rental units located within the Town of North Branford independently contract private haulers to collect their residential waste.

##### **Bulky Waste and Construction & Demolition**

The Town contracts a private hauler to collect Bulky Waste from all one to two family homes located within the Town twice per year. Residents must arrange for the collection and disposal of Construction & Demolition debris on their own.

##### **Recyclables**

The Town contracts a private hauler to collect recyclables from all one to two family homes located within the Town on a weekly basis. The collected recyclables include catalogs, magazines, newspaper, newspaper inserts, office/school paper, junk mail, corrugated cardboard and gray board boxes. Owners of apartment buildings with more than 2 rental units located within the Town of North Branford independently contract private haulers to collect their recyclables.

#### **Material Disposal/Sales**

##### **MSW**

The municipally contracted private hauler brings most Town collected MSW directly to the CRRA Essex transfer station. The Town's MSW is then transported from the CRRA Essex transfer station to the Mid-Connecticut Resource Recovery Facility. The Town is contractually obligated to send a minimum of 7,000 tons to the CRRA Essex transfer

station per year. Town of North Branford tonnage reported to the Connecticut DEP that was disposed of at State solid waste disposal facilities, State regional transfer stations or single town transfer stations that export waste out-of-state in Fiscal Year 2008 was as follows:

Hartford Landfill	32.76
Essex Transfer Station	<u>7,351.37</u>
Total:	7,384.13

### **Bulky Waste and Construction & Demolition**

The municipally contracted private hauler brings all burnable curbside collected Bulky Waste directly to the CRRA Essex transfer station. The Town’s burnable Bulky Waste is then transported from the CRRA Essex transfer station to the Mid-Connecticut Resource Recovery Facility. Residents must arrange for the collection and disposal of Construction & Demolition debris on their own.

### **Recyclables**

As detailed below, most recyclables collected by the municipally contracted hauler are brought directly to the IPC Hartford recycling center.

Commingled Containers (IPC-Hartford)	879.50
Leaves (Municipal Composting/Mulching)	1.50
Waste Oil (Advanced Liquid)	6.16
Waste Oil (Safety-Kleen)	<u>1.66</u>
Total:	888.82

### **Future Options**

Since there is no immediate decision required, we have identified Future Disposal Options for the Town to consider when its current solid waste disposal contract ends on June 30, 2012.

1. **Option 1:** Continue to Deliver Waste to the CRRA Essex Transfer Station Via Packer Truck
2. **Option 2:** Enter into a Contract Directly with Wheelabrator and Deliver Waste to the Bridgeport Resource Recovery Facility Via Packer Truck for a 10 Year Contract Term
3. **Option 3:** Enter into a Contract Directly with Wheelabrator and Deliver Waste to the Bridgeport Resource Recovery Facility Via Packer Truck for a 5 Year Contract Term
4. **Option 4:** Enter into a Contract with CRRA and Deliver Waste to the Bridgeport Resource Recovery Facility Via Packer Truck
5. **Option 5:** Drive Packer Trucks Directly to the New Haven Regional Transfer Station

## Estimated Cost of Future Options

North Branford	Year 1 Future Option (Beginning July, 2012)
Option 1:Extend Existing Mid-Conn Contract	\$115.71
Project Option 2:Bridgeport via Wheelabrator, 10Yrs	\$123.52
Projected Option 3:Bridgeport via Wheelabrator, 5Yrs	\$120.87
Projected Option 4:Bridgeport via CRRRA, 5.5Yrs	\$121.93
Projected Option 5:New Haven, 2Yrs	\$114.42
Bale and Rail Haul Export	\$103.61
Transfer and Road Haul to ECRRA/Lisbon/Mass Burn	\$126.87-\$132.50*
Transfer and Road Haul to ECRRA/Lisbon/New Technology	To Be Determined

*\*Includes Long-Term Municipal Ownership*

## **WEST HAVEN**

### **Existing System**

#### **Material Collection**

##### **MSW**

The City of West Haven contracts a private hauler to collect residential waste (MSW) on a weekly basis from all one to four family homes located within the City. The contracted private hauler brings most City collected residential waste directly to the Bridgeport Resource Recovery Facility. Owners of apartment buildings with more than 4 rental units located within the City of West Haven independently contract private haulers to collect their residential waste.

##### **Bulky Waste and Construction & Demolition**

The City contracts a private hauler to collect Bulky Waste from all one to four family homes located within the City once per month. Residents must arrange for the collection and disposal of Construction debris on their own.

##### **Recyclables**

The City contracts a private hauler to collect recyclables from all one to four family homes as well as schools and municipal buildings located within the City on a weekly basis. The collected recyclables include glass, plastic, cans and newspaper. Owners of apartment buildings with more than 4 rental units located within the City of West Haven independently contract private haulers to collect their recyclables.

#### **Material Disposal/Sales**

##### **MSW**

The municipally contracted private hauler brings most City collected MSW directly to the Bridgeport Resource Recovery Facility. The City entered into a contract directly with Wheelabrator for the disposal of its MSW at the Bridgeport facility on December 18, 2007. The terms of the agreement began on July 1, 2008 and will expire on June 30, 2011 and did not require a minimum tonnage commitment from the City. City of West Haven tonnage reported to the Connecticut DEP that was disposed of at State solid waste disposal facilities, State regional transfer stations or single town transfer stations that export waste out-of-state in Fiscal Year 2008 was as follows:



Bridgeport Resource Recovery Facility	21,500.00
Dainty Rubbish Service, Inc.	6.46
Milford Transfer Station	5,419.38
Stratford Transfer Station	<u>201.75</u>
Total:	27,127.59

### **Bulky Waste and Construction & Demolition**

The City contracts a private hauler to collect Bulky Waste from all one to four family homes located within the City once per month. The municipally contracted private hauler brings most burnable Bulky Waste collected directly to the Bridgeport Resource Recovery Facility. Residents must arrange for the collection and disposal of Construction debris on their own.

### **Recyclables**

All recyclables collected by the municipally contracted hauler are brought directly to the following locations as reported to the Connecticut DEP in FY 2008:

Brush-Yard Waste (Municipal Composting/Mulching)	1,900.00
Commingled Containers (IPC-Stratford)	566.17
Corrugated Cardboard (IPC-Stratford)	1,283.63
Corrugated Cardboard (Stratford Baling Corp)	27.83
Leaves (Municipal Composting/Mulching)	2,207.00
Office Paper (Stratford Baling Corp)	7.17
Mixed Paper (Stratford Baling Corp)	2.29
Scrap Metal (Industrial Recycling)	21.44
Scrap Metal (Metal Management)	67.45
Scrap Metal (Stratford Baling Corp)	5.86
Tires (NA)	9.39
Waste Oil (Advanced Liquid)	<u>3.99</u>
Total:	6,102.22

### **Existing System Expenses**

The City of West Haven incurred the following expenses in Fiscal Year 2008:

Condominium Trash Pickup	\$ 108,481
Tipping Fees	\$1,028,027
City Buildings Trash Pickup	\$ 108,000
Hazardous Waste	\$ 6,101
Residential Trash Pickup	\$1,259,690
Residential Recycling Pickup	\$ 512,000

## Future Options

Since there is no immediate decision required, we have identified Future Disposal Options for the City to consider when its current solid waste disposal contract ends on June 30, 2011.

1. **Option 1:** Enter into a Contract Directly with Wheelabrator and Deliver Waste to the Bridgeport Resource Recovery Facility Via Packer Truck for a 10 Year Contract Term
2. **Option 2:** Enter into a Contract Directly with Wheelabrator and Deliver Waste to the Bridgeport Resource Recovery Facility Via Packer Truck for a 5 Year Contract Term
3. **Option 3:** Enter into a Contract with CRRA and Deliver Waste to the Bridgeport Resource Recovery Facility Via Packer Truck
4. **Option 4:** Drive Packer Trucks Directly to the New Haven Regional Transfer Station

## Estimated Cost of Future Options

West Haven	Year 1 Future Option (Beginning July, 2011)
Projected Option 1: Bridgeport via Wheelabrator, 10Yrs	\$101.00
Projected Option 2: Bridgeport via Wheelabrator, 5Yrs	\$98.40
Projected Option 3: Bridgeport via CRRA, 5.5Yrs	\$99.44
Projected Option 4: New Haven, 2Yrs	\$99.94
Bale and Rail Haul Export	\$97.63
Transfer and Road Haul to ECRRA/Lisbon/Mass Burn	\$119.56-\$124.86*
Transfer and Road Haul to ECRRA/Lisbon/New Technology	To Be Determined

*\*Includes Long-Term Municipal Ownership*

## V. OVERVIEW OF EXISTING TOWN SYSTEMS

As detailed in the following Table, the SCRCOG region consists of 15 Member Towns. Member Towns of the SCRCOG region bring their MSW to five different solid waste facilities. Four of these facilities are waste-to-energy facilities and are the final destination for all MSW that is delivered to them. These facilities are the Bridgeport Resource Recovery Facility, Mid-Conn Resource Recovery Facility, Bristol Resource Recovery Facility and Wallingford Resource Recovery Facility. The fifth facility which SCRCOG Member Towns utilize is the New Haven Transfer Station.

The New Haven Transfer Station is a large facility which processes over 100,000 tons of MSW annually. The estimated 46,000 tons of residential MSW that is collected at the New Haven Facility is currently sent to either the Bridgeport Resource Recovery Facility or the Lisbon Resource Recovery Facility. The Town of New Haven Transfer Station also services private haulers which collect commercial waste generated within the City of New Haven. The approximate 55,000 tons of commercial waste which is collected at the New Haven Facility is currently sent to various other locations.

	SCRCOG Towns	SCRCOG Bridgeport Towns	SCRCOG Mid-Conn Towns	SCRCOG Wallingford Towns	SCRCOG Bristol Towns	SCRCOG New Haven Towns
<b>Towns</b>	15	6	3	4	1	1
<b>Population</b>	560,070	164,980	55,520	186,480	29,090	124,000
<b>FY 2008 Tons of Waste Disposed</b>	429,839	111,074	30,186	129,156	13,443	145,981
<b>FY 2008 Tons of Waste Recycled*</b>	80,068	16,212	8,259	46,365	9,233	NA
<b>% of Waste Recycled in FY 2008</b>	15.70%	12.74%	21.48%	26.42%	40.72%	NA

\*Does not include data from East Haven (Bridgeport Town) or New Haven (New Haven Town). These two municipalities did not report recycling numbers to the CT DEP.

As detailed in the Table above, 6 SCRCOG Towns dispose of their MSW at the Bridgeport Resource Recovery Facility. Although the Bridgeport Facility services the most SCRCOG Member Towns, the Wallingford Facility services the largest population of SCRCOG residents.

It is important to note that the Table provided above underreports the Percentage of Waste Recycled in FY 2008 SCRCOG average due to the fact that the Town of East Haven's and the City of New Haven's recycling tonnages were not reported to the CT DEP for Fiscal Year 2008 and consequently were not included in this report. The Table provided on the following page provides a more detailed overview of each SCRCOG town's solid waste and recyclable system.

SCRCOG Bridgeport Towns	Population	FY 2008 Tons of Waste Disposed	FY 2008 Tons of Waste Recycled	% of Waste Recycled in FY 2008	Provider of Waste Collection	Frequency of Waste Collection	Provider of Recyclables Collection	Frequency of Recyclables Collection
Bethany	5,470	1,874.97	672.22	26.39%	1	1x/Week	4	
East Haven	28,760	14,733.90	NA	NA	1	1x/Week	1	1x/Week
Milford	54,800	54,640.24	5,599.24	9.29%	NA		NA	
Orange	13,970	7,492.87	2,807.83	27.26%	NA		NA	
West Haven	52,720	27,127.59	6,102.22	18.36%	1	1x/Week	1	1x/Week
Woodbridge	9,260	5,204.06	1,030.54	16.53%	3,4		4	
	<b>164,980</b>	<b>111,073.63</b>	<b>16,212.05</b>	<b>12.74%</b>				
SCRCOG Mid-Conn Towns	Population	FY 2008 Tons of Waste Disposed	FY 2008 Tons of Waste Recycled	% of Waste Recycled in FY 2008	Provider of Waste Collection	Frequency of Waste Collection	Provider of Recyclables Collection	Frequency of Recyclables Collection
Guilford	22,310	12,338.29	4,006.00	24.51%	3,4		3,4	
Madison	18,810	10,463.19	3,364.17	24.33%	3,4		3,4	
North Branford	14,400	7,384.13	888.82	10.74%	1	1x/Week	1	1x/Week
	<b>55,520</b>	<b>30,185.61</b>	<b>8,258.99</b>	<b>21.48%</b>				
SCRCOG Wallingford Towns	Population	FY 2008 Tons of Waste Disposed	FY 2008 Tons of Waste Recycled	% of Waste Recycled in FY 2008	Provider of Waste Collection	Frequency of Waste Collection	Provider of Recyclables Collection	Frequency of Recyclables Collection
Hamden	58,180	35,578.58	16,818.27	32.10%	1	1x/Week	1,4	Every Other Week
Meriden	59,650	32,127.96	7,890.76	19.72%	1,3	1x/Week	1,3	Every Other Week
North Haven	23,910	18,587.20	5,512.53	22.87%	2,4	1x/Week	2,4	1x/Week
Wallingford	44,740	42,862.01	16,142.96	27.36%	3,4		3,4	
	<b>186,480</b>	<b>129,155.75</b>	<b>46,364.52</b>	<b>26.42%</b>				
SCRCOG Bristol Towns	Population	FY 2008 Tons of Waste Disposed	FY 2008 Tons of Waste Recycled	% of Waste Recycled in FY 2008	Provider of Waste Collection	Frequency of Waste Collection	Provider of Recyclables Collection	Frequency of Recyclables Collection
Branford	29,090	13,443.09	9,232.73	40.72%	1,3,4	1x/Week	1,3,4	1x/Week
	<b>29,090</b>	<b>13,443.09</b>	<b>9,232.73</b>	<b>40.72%</b>				
SCRCOG New Haven Towns	Population	FY 2008 Tons of Waste Disposed	FY 2008 Tons of Waste Recycled	% of Waste Recycled in FY 2008	Provider of Waste Collection	Frequency of Waste Collection	Provider of Recyclables Collection	Frequency of Recyclables Collection
New Haven	124,000	145,981.23	NA	NA	2,4	1x/Week	2,4	1x/Week
	<b>124,000</b>	<b>145,981.23</b>	<b>NA</b>	<b>NA</b>				
<b>Data Key:</b>								
	(1) Town Contracts a Private Hauler to Collect Residential Material							
	(2) Town Collects Residential Material with a Municipal Fleet							
	(3) Residents Independently Contract a Private Hauler to Collect Material							
	(4) Town Owns and/or Operates a Facility for Residents to Bring their Material							

As displayed in the following Table, 9 of the 13 SCRCOG towns which participated in our survey either contract the collection of MSW for their residents or collect their residents' MSW with a municipal fleet. The remaining 4 participating SCRCOG Towns own a transfer station where residents can bring their MSW. Two of the 15 SCRCOG towns did not participate in our survey. Additionally, 8 of the 13 SCRCOG towns which participated in our survey either contract the collection of recyclables for their residents or collect their residents' recyclables with a municipal fleet. The remaining 5 participating SCRCOG Towns own a facility where residents can bring their recyclables.

Material Collection Frequency	MSW Collection	Recyclable Collection
	# of Towns	# of Towns
2x/Week	0	0
1x/Week	9	6
Every Other Week	0	2
Independently Contracted or Resident Drop-Off Only	4	5
Did Not Participate in Survey	<u>2</u>	<u>2</u>
	15	15

Industry-wide, the higher frequency at which a municipality or municipally contracted hauler collects a town's residential recyclables the higher a town's recycling rate. However, according to the Table provided below, this is not the case for the SCRCOG region. The two towns which have a municipally contracted private hauler collect residential recyclables every other week have a higher average recycling rate than towns which collect or municipally contract the collection of their residents' recyclables on a weekly basis.

Recyclables Collection 1x/Week	
	Recycling Rate
East Haven (1)	NA
West Haven (1)	18.36%
North Branford (1)	10.74%
North Haven (2,4)	22.87%
Branford (1,3,4)	40.72%
New Haven (2,4)	NA
	23.17%
Recyclables Collection Every Other Week	
	Recycling Rate
Hamden (1,4)	32.10%
Meriden (1,3)	19.72%
	25.91%
Independently Contracted or Resident Drop-Off Only	
	Recycling Rate
Bethany (4)	26.39%
Woodbridge (4)	16.53%
Guilford (3,4)	24.51%
Madison (3,4)	24.33%
Wallingford (3,4)	27.36%
	23.82%

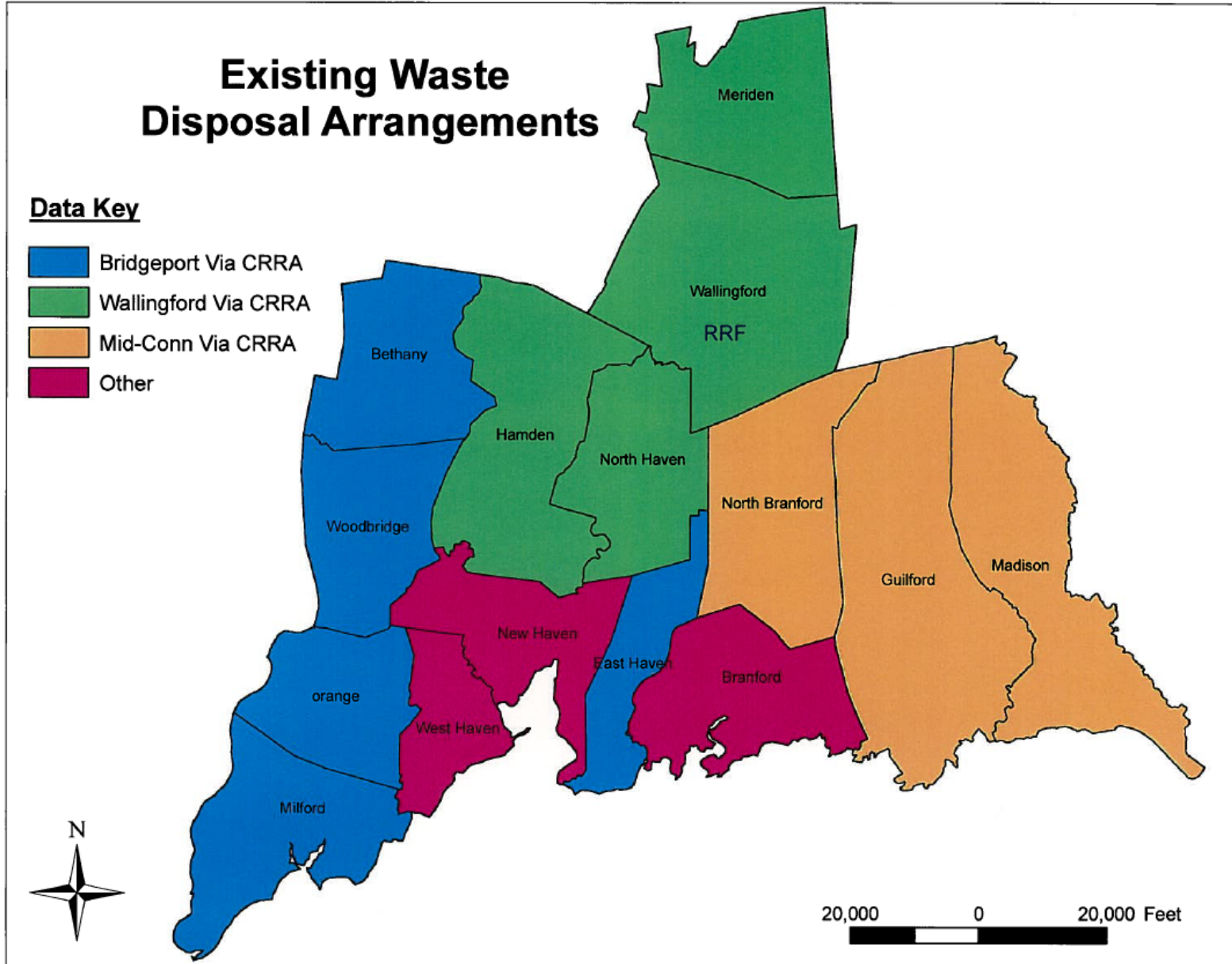
Generally, when a town either collects its residents' recyclables with a municipal fleet or municipally contracts a private hauler to collect its residents' recyclables, the town's recycling rate is higher than if the town lets its residents manage their recyclables. As detailed in the Table provided below, this is true for the SCRCOG region. However, although the average recycling rate for towns that collect or municipally contract the collection of their residents' recyclables is higher than the average recycling rate of towns which let residents handle their own recyclables, we normally would expect a larger discrepancy between these two numbers.

<u>Municipally Contracted/Collected Recyclables</u>		<u>Individually Contracted/Resident Drop-Off Recyclables</u>	
East Haven (1)	NA	Bethany (4)	26.39%
West Haven (1)	18.36%	Woodbridge (4)	16.53%
North Branford (1)	10.74%	Guilford (3,4)	24.51%
Hamden (1,4)	32.10%	Madison (3,4)	24.33%
Meriden (1,3)	19.72%	Wallingford (3,4)	27.36%
North Haven (2,4)	22.87%		
Branford (1,3,4)	40.72%		
New Haven (2,4)	NA		
<b>Average Recycling Rate:</b>	<b>24.09%</b>	<b>Average Recycling Rate:</b>	<b>23.82%</b>
<b><u>Data Key:</u></b>			
(1) Town Contracts a Private Hauler to Collect Residential Material			
(2) Town Collects Residential Material with a Municipal Fleet			
(3) Residents Independently Contract a Private Hauler to Collect Material			
(4) Town Owns and/or Operates a Facility for Residents to Bring their Material			

# Existing Waste Disposal Arrangements

## Data Key

-  Bridgeport Via CRRA
-  Wallingford Via CRRA
-  Mid-Conn Via CRRA
-  Other

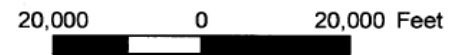
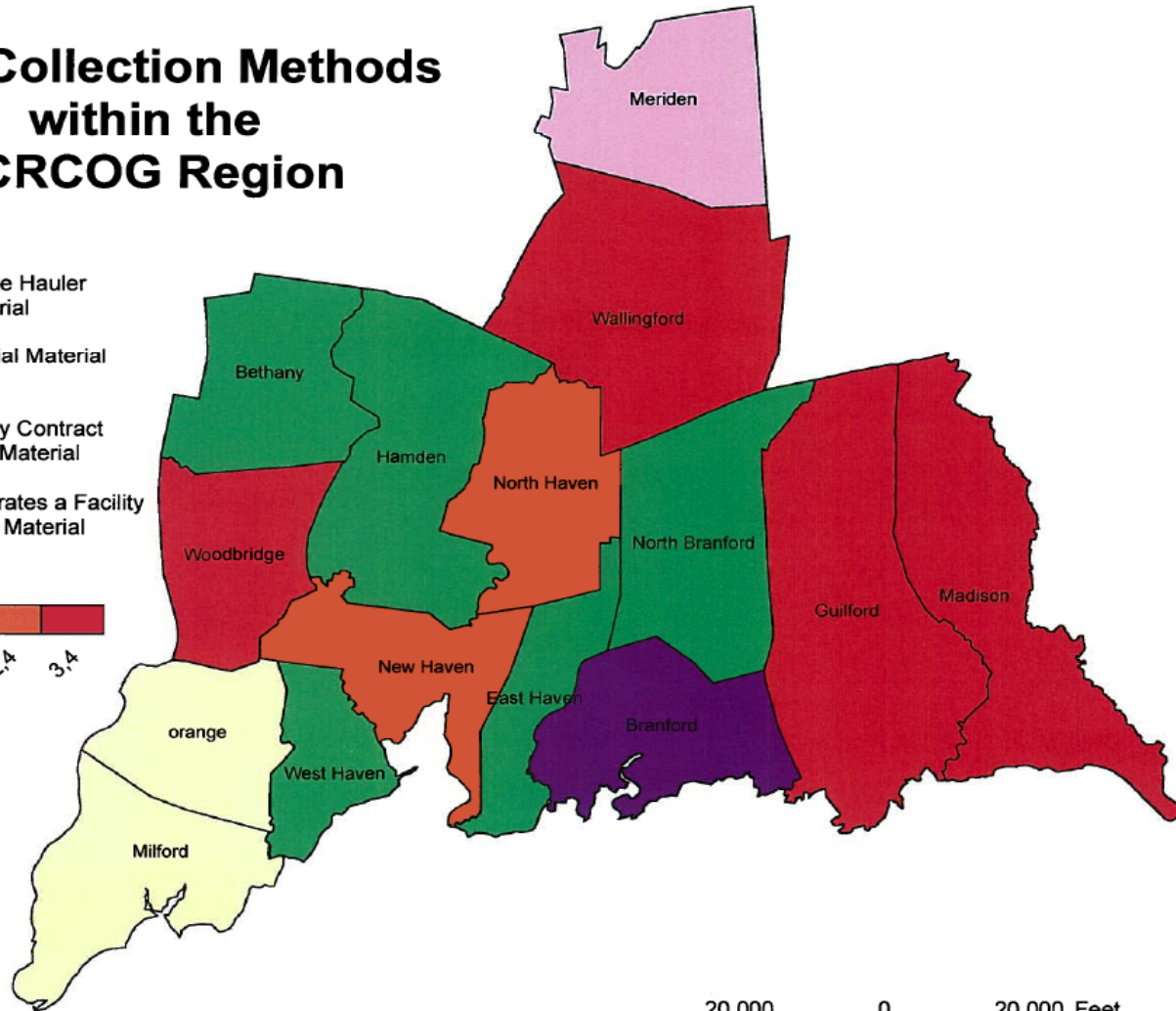


# MSW Collection Methods within the SCRCOG Region

## Data Key

- 1: Town Contracts a Private Hauler to Collect Residential Material
- 2: Town Collects Residential Material with a Municipal Fleet
- 3: Residents Independently Contract a Private Hauler to Collect Material
- 4: Town Owns and/or Operates a Facility for Residents to Bring their Material

## MSW



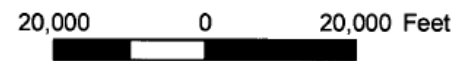
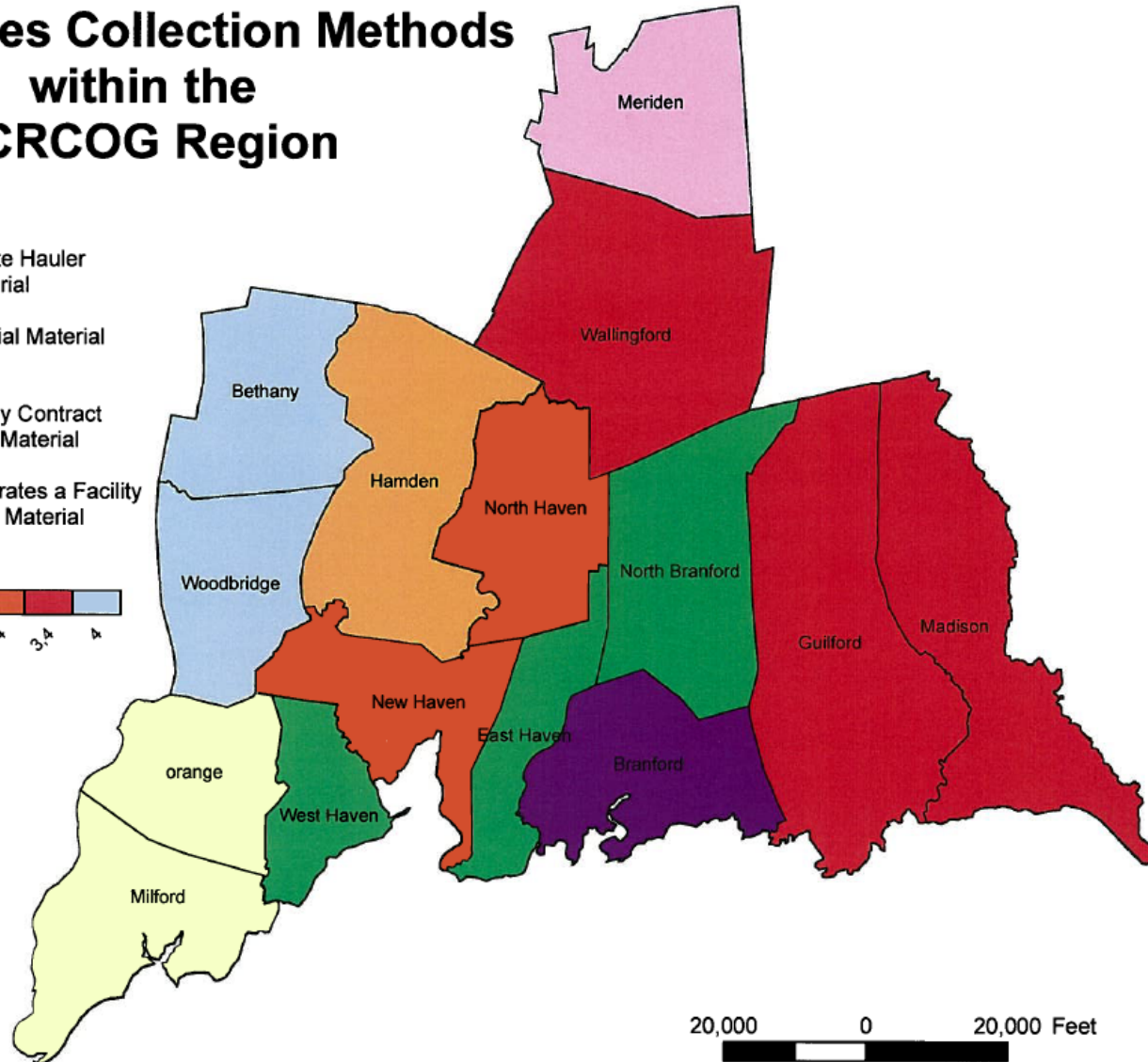
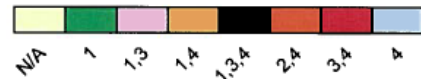


# Recyclables Collection Methods within the SCRCOG Region

## Data Key

- 1: Town Contracts a Private Hauler to Collect Residential Material
- 2: Town Collects Residential Material with a Municipal Fleet
- 3: Residents Independently Contract a Private Hauler to Collect Material
- 4: Town Owns and/or Operates a Facility for Residents to Bring their Material

## Recyclables



## RENT AND FUTURE DISPOSAL OPTIONS

### In-State Disposal Options

Currently there are six operating Resource Recovery Facilities in the State with a total maximum permitted capacity of 2.6 million tons of MSW. Four of these facilities (Bridgeport, Mid-Conn, Preston and Wallingford) are currently affiliated with the CRRA while two (Lisbon and Bristol) operate independently of the CRRA.

Two of CRRA's facilities are expected to revert to private ownership under the terms of the original project agreements...Bridgeport to Wheelabrator on 12/30/2008 and Wallingford to Covanta on 6/30/2010.

### CONNECTICUT RESOURCE RECOVERY FACILITIES

<b>Facilities</b>	<b>Bridgeport</b>	<b>Bristol</b>	<b>Mid-Conn</b>	<b>Preston</b>	<b>Wallingford</b>	<b>Lisbon</b>
<b>Maximum Annual Capacity (Tons)</b>	821,250	237,250	888,888	251,485	153,300	105,640
<b>Operator</b>	Wheelabrator	Covanta	MDC/Covanta	Covanta	Covanta	Wheelabrator
<b>Current Contract Termination Date</b>	12/08	6/14	6/12	6/15	6/10	2020
<b>Post Contract Ownership</b>	Wheelabrator	Covanta	CRRA	Covanta	Covanta	ECRRA
<b>SCRCOG Members Currently Using Facility</b>	Bethany East Haven Milford Orange Woodbridge West Haven	Branford	Guilford Madison N. Branford	None	Hamden Meriden North Haven Wallingford	None

Nine SCRCOG members currently have contracts through CRRA to dispose of their MSW at either the Bridgeport or Wallingford facility. These contracts expire in 12/08 and 6/2010 respectively. For these SCRCOG members who need to make an immediate decision regarding future MSW disposal we have identified and evaluated in this report options which are currently available to them and have called these options "Current Disposal Options".

In addition we have identified and evaluated herein "Future Disposal Options" which represent options which are expected to be available to SCRCOG Towns on a 3-6 year timeframe. For SCRCOG member Towns who are currently choosing among Current Disposal Options due to the immediacy of expiration of their present arrangements, Future Disposal Options include the possible continuation of whatever current option is selected now as well as new Future Disposal Options which have been identified herein.

**SUMMARY OF CURRENT AND FUTURE WASTE DISPOSAL OPTIONS FOR SCRCOG TOWNS**

<b>Town</b>	<b>Existing Arrangement</b>	<b>Contract End Date As of 12/19/08</b>	<b>Current Disposal Options</b>	<b>Future Disposal Options</b>	<b>Future Disposal Options Assumed Start Date</b>
Bethany	Bridgeport via CRRA	12/08	Option 1:Bridgeport via Wheelabrator, 10Yrs Option 2:Bridgeport via Wheelabrator, 5Yrs <b>Option 3:Bridgeport via CRRA, 5.5Yrs</b> Option 4:New Haven, 2Yrs	Projected Current Option 1 Projected Current Option 2 Extend Current Option 3 Projected Current Option 4 Bale and Rail Haul Export Transfer and Road Haul to Lisbon/Mass Burn Transfer and Road Haul to Lisbon/New Technology	2014
East Haven	Bridgeport via CRRA	12/08	Option 1:Bridgeport via Wheelabrator, 10Yrs <b>Option 2:Bridgeport via Wheelabrator, 5Yrs</b> Option 3:Bridgeport via CRRA, 5.5Yrs Option 4:New Haven, 2Yrs	Projected Current Option 1 Extend Current Option 2 Projected Current Option 3 Projected Current Option 4 Bale and Rail Haul Export Transfer and Road Haul to Lisbon/Mass Burn Transfer and Road Haul to Lisbon/New Technology	2014
Milford	Bridgeport via CRRA	12/08	Survey Not Conducted		
Orange	Bridgeport via CRRA	12/08	Survey Not Conducted		
Woodbridge	Bridgeport via CRRA	12/08	<b>Transfer Station Drop-Off Options:</b> Option 1:Bridgeport via Wheelabrator, 10Yrs Option 2:Bridgeport via Wheelabrator, 5Yrs <b>Option 3:Bridgeport via CRRA, 5.5Yrs</b> Option 4:New Haven, 2Yrs <b>Independently Contracted Hauler Options:</b> Option 1:Bridgeport via Wheelabrator, 10Yrs Option 2:Bridgeport via Wheelabrator, 5Yrs <b>Option 3:Bridgeport via CRRA, 5.5Yrs</b>	<b>Transfer Station Drop-Off Options:</b> Projected Current Option 1 Projected Current Option 2 Extend Current Option 3 Projected Current Option 4 Bale and Rail Haul Export Transfer and Road Haul to Lisbon/Mass Burn Transfer and Road Haul to Lisbon/New Technology	2014
Hamden	Wallingford via CRRA	6/10	<b>Option 1:Wallingford via Covanta, 20Yrs</b> Option 2:Wallingford via CRRA, 20Yrs Option 3:New Haven, 2Yrs	None... 20 Year Current Option to be Selected	
Meriden	Wallingford via CRRA	6/10	<b>Option 1:Wallingford via Covanta, 20Yrs</b> Option 2:Wallingford via CRRA, 20Yrs Option 3:New Haven, 2Yrs	None... 20 Year Current Option to be Selected	
North Haven	Wallingford via CRRA	6/10	<b>Option 1:Wallingford via Covanta, 20Yrs</b> Option 2:Wallingford via CRRA, 20Yrs Option 3:New Haven, 2Yrs	None... 20 Year Current Option to be Selected	
Wallingford	Wallingford via CRRA	6/10	<b>Option 1:Wallingford via Covanta, 20Yrs</b> Option 2:Wallingford via CRRA, 20Yrs Option 3:New Haven, 2Yrs	None... 20 Year Current Option to be Selected	

**SUMMARY OF CURRENT AND FUTURE WASTE DISPOSAL OPTIONS FOR SCRCOG TOWNS**

<b>Town</b>	<b>Existing Arrangement</b>	<b>Contract End Date As of 12/19/08</b>	<b>Current Disposal Options</b>	<b>Future Disposal Options</b>	<b>Future Disposal Options Assumed Start Date</b>
Branford	Bristol RRF	6/14 w/ 5Yr extension	None	Extend Existing Bristol Contract Projected Bridgeport via Wheelabrator, 10Yr Offer Projected Bridgeport via Wheelabrator, 5Yr Offer Projected Bridgeport via CRRA, 5.5Yrs Offer Bale and Rail Haul Export Transfer and Road Haul to Lisbon/Mass Burn Transfer and Road Haul to Lisbon/New Technology	07/14
Guilford	CRRA/Mid-Conn RRF	6/12	None	Extend Existing Mid-Conn Contract Projected Bridgeport via Wheelabrator, 10Yr Offer Projected Bridgeport via Wheelabrator, 5Yr Offer Projected Bridgeport via CRRA, 5.5Yrs Offer Bale and Rail Haul Export Transfer and Road Haul to Lisbon/Mass Burn Transfer and Road Haul to Lisbon/New Technology	07/12
Madison	CRRA/Mid-Conn RRF	6/12	None	Extend Existing Mid-Conn Contract Projected Bridgeport via Wheelabrator, 10Yr Offer Projected Bridgeport via Wheelabrator, 5Yr Offer Projected Bridgeport via CRRA, 5.5Yrs Offer Bale and Rail Haul Export Transfer and Road Haul to Lisbon/Mass Burn Transfer and Road Haul to Lisbon/New Technology	07/12
New Haven	Wheelabrator Facility	12/08	Survey Not Conducted		
North Branford	CRRA/Mid-Conn RRF	6/12	None	Extend Existing Mid-Conn Contract Projected Bridgeport via Wheelabrator, 10Yr Offer Projected Bridgeport via Wheelabrator, 5Yr Offer Projected Bridgeport via CRRA, 5.5Yrs Offer Projected New Haven, 2 Yr Offer Bale and Rail Haul Export Transfer and Road Haul to Lisbon/Mass Burn Transfer and Road Haul to Lisbon/New Technology	07/14
West Haven	Bridgeport via Wheelabrator Arrangement	6/11	None	Projected Bridgeport via Wheelabrator, 10Yr Offer Projected Bridgeport via Wheelabrator, 5Yr Offer Projected Bridgeport via CRRA, 5.5Yrs Offer Projected New Haven, 2 Yr Offer Bale and Rail Haul Export Transfer and Road Haul to Lisbon/Mass Burn Transfer and Road Haul to Lisbon/New Technology	07/11

*\*Highlighted Options Indicates Selected Option*

## **Eastern Connecticut Resource Recovery Authority**

The Eastern Connecticut Resource Recovery Authority (“ECRRA”) was established as a public Authority under State law in 1990. ECRRA owns and operates, via an operating contract with Wheelabrator Lisbon, Inc., a 500 ton per day mass burn resource recovery facility located in Lisbon, Connecticut. The City of Middletown (the “City”) is currently the sole municipal member of ECRRA. Facility construction was financed with \$128 million of tax exempt revenue bonds issued by ECRRA in 1993 and the facility commenced commercial operation, on time and under budget, in January, 1996. The bonds are payable solely from net revenues generated by facility operations and neither ECRRA nor the City has any obligation for the repayment of debt principal and interest.

ECRRA is a separate and unrelated entity to the Connecticut Resource Recovery Authority (“CRRA”), which is one of several other public and private sector entities which also offer waste management and recycling services to Connecticut municipalities.

### **Unique Features of ECRRA’s Structure**

ECRRA was structured to offer several unique and beneficial features to its current and potential future municipal members. Neither the Authority nor Middletown is obligated to deliver more waste than the City itself may directly collect from time to time through its City Sanitation District. There is no “put or pay obligation” or flow control risk borne by any municipal participant. Furthermore, tip fees payable by the City and private haulers choosing to collect and deliver Middletown waste are effectively capped at a level not to exceed a fixed rate plus an annual CPI adjustment. Due to ECRRA’s low administrative and overhead costs, this municipal tip fee is the lowest in the State and has averaged approximately \$53 per ton since facility inception. Wheelabrator, under a contract guaranteed by its parent, Waste Management, Inc., is obligated to provide sufficient waste to fill the capacity of the facility and to pay all facility costs and expenses. To date, waste generated in Middletown has represented approximately 10-15% of total waste processed.

Upon repayment of the revenue bonds in 2020 and simultaneous termination of its Wheelabrator service agreement, CL&P electric sale agreement and other project contracts, ECRRA, not Wheelabrator, will own the facility free and clear. ECRRA member Towns will be free to arrange for continued operation as a publicly owned and controlled facility under new operating contracts with Wheelabrator or other parties.

### **Planned Expansion of ECRRA and the Lisbon Facility**

ECRRA has provided for the future expansion of this facility in all of its current project documents. The current facility includes a “footprint” for a third processing line and has much of the necessary infrastructure for a third line. Such an expansion is already provided for and permitted under ECRRA’s host community agreement with the Town of Lisbon. ECRRA thus represents a logical opportunity to create new publicly owned resource recovery capacity in the State for the benefit of Connecticut Towns and Cities needing cost effective and environmentally sound waste management services.

Accordingly, ECRRA has recently initiated a multi-year effort to (1) invite additional Connecticut Towns to work with the Authority by providing waste, (2) design and permit the proposed expansion, (3) negotiate related construction and operating agreements, (4) seek to enter into an additional electric sales agreement for the sale of the incremental electric power and (5) undertake other steps necessary to provide environmentally sound, cost effective waste disposal and renewable energy capacity in the State of Connecticut.

As contract administrator of ECRRA the Consultant is very familiar with ECRRA's objectives in seeking new municipal members. We believe that ECRRA would be interested in meeting with SCRCOG members and discussing mutually beneficial Future Disposal Options. Accordingly, we have identified two possible Future Disposal Options which SCRCOG may wish to explore further. The options are:

1. Transfer and Road Haul SCRCOG member MSW to an expanded ECRRA/Lisbon/Mass Burn Facility, and
2. Transfer and Road Haul SCRCOG member MSW to an expanded ECRRA/Lisbon/New Technology Facility.

While currently these options are at early conceptual stage, several factors may make them interesting to some SCRCOG members. The current ECRRA site is perhaps the most likely location for new future waste-to-energy capacity due to the in-place permissive host community agreement and the State's inclination, indicated in the State Solid Waste Management Plan, to prefer expansion of existing facilities rather than permitting of new facilities if and when the Connecticut DEP determines that additional waste-to-energy capacity is needed in-State.

Furthermore, the in-place host community agreement would probably allow an expansion using a new waste conversion technology if and when such technology becomes commercially available. We believe that ECRRA would be receptive to discussions regarding the hosting of a new waste conversion technology if such an option appears to be beneficial to all parties.

Most importantly, since ECRRA owns the facility both now and upon expiration of all contracts in 2020, ECRRA is able to offer long term municipal ownership participation to SCRCOG members or other Towns which may be interested in working together to develop ECRRA's expansion potential.

While it is beyond the scope of this study to prepare a detailed cost estimate of waste disposal service to SCRCOG members at an expanded facility site utilizing a new technology, we have utilized the following very preliminary estimates to help put the mass-burn option in context:

<b><u>Item</u></b>	<b><u>Potential \$/Ton (Current Dollars)</u></b>
Transfer MSW from collection vehicles to Tractor trailers	\$10
Transport waste from SCRCOG region to Lisbon, CT	142 Mile @ \$0.23/mile = \$32.66
Tip Fee Range at Lisbon-	<u>\$70-\$75</u>
Total	\$112.66-117.66/Ton

In evaluating potential ECRRA options against others, SCRCOG member Towns should keep in mind the long term value of facility ownership.

## Out-of-State Disposal

According to the State of Connecticut Solid Waste Management Plan, the State of Connecticut is not planning on issuing any new solid waste landfill permits in the near future. Once the disposal capacities of landfills in Connecticut and the Northeast begin to run out, the tip fees of existing disposal facilities will increase and municipalities will have to start transporting their MSW to disposal facilities located at progressively further distances from its source.

### Tractor Trailer Out-of-State MSW Exportation

Historically, municipalities have used long haul trucks to export their MSW to out-of-state facilities. Throughout the solid waste industry, long haul trucks can refer to several different types and combinations of trucks and trailers. Depending on what type of trailers are used, a long haul truck can typically transport anywhere from 18-24 tons of MSW. However, if the MSW is baled the amount of MSW transported per long haul trip can easily exceed 25 tons. The Town of Stamford, CT is currently baling its MSW and shipping the bales on a flat bed truck to an out-of-state landfill. Currently, the total transfer, transport and disposal cost of Stamford's baled MSW is \$69/ton.

Typically, landfills located further west and south have a lower Tip Fee than landfills located in the Northeast. These lower Tip Fees can often make up for the additional transportation costs of exporting MSW out-of-state. Provided below is a sample of out-of-state MSW landfills which have remaining capacity and accept out-of-state MSW. The following sample was provided by the Connecticut DEP:

<b>Landfill</b>	<b>Location</b>	<b>Estimated Disposal Fee (\$/Ton)</b>	<b>Existing Capacity*</b>
Seneca Meadows	Seneca Falls, NY	\$20.00	11,147,730
High Acres	Fairport, NY	\$17.00-\$20.00	27,962,487
American Landfill	Stark County, OH	\$20.00	8,754,655
Suburban South RDF	Perry County, OH	\$20.00	16,197,862
Alliance Sanitary Landfill	Taylor, PA	\$20.00-\$25.00	26,860,091
Conestoga/New Morgan	Morgantown, PA	\$20.00-\$25.00	18,154,359
Middle Pennsylvania Landfill	Gloucester, VA	\$20.00	19,481,474
Charles City Landfill	Richmond, VA	\$20.00	15,527,359

\* As reported by each state's environmental governing body from 2004-2005



The following Table is an estimate of what it would cost each SCRCOG Town to export MSW via tractor trailer to an out-of-state landfill. The following Table assumes that all MSW tonnage would be exported from the waste centroid in the Town of North Haven because of North Haven's central location in the SCRCOG region, at a rate of \$0.23/mile.

<b>Landfill</b>	<b>\$/Ton Transfer</b>	<b>\$/Ton Transportation</b>	<b>\$/Ton Disposal</b>	<b>Total \$/Ton</b>
Seneca Meadows	\$10	\$149.96	\$20.00	\$179.96
High Acres	\$10	\$164.22	\$17.00-\$20.00	\$191.22-\$194.22
American Landfill	\$10	\$246.56	\$20.00	\$276.56
Suburban South RDF	\$10	\$274.16	\$20.00	\$304.16
Alliance Sanitary Landfill	\$10	\$82.34	\$20.00-\$25.00	\$112.34-\$117.34
Conestoga/New Morgan	\$10	\$101.20	\$20.00-\$25.00	\$131.20-\$136.20
Middle Pennsylvania Landfill	\$10	\$198.72	\$20.00	\$228.72
Charles City Landfill	\$10	\$196.88	\$20.00	\$226.88

Since the road haul exportation of MSW to an out-of-state landfill is not environmentally desirable and is not expected to become economically viable, we have not included road haul out-of-state export as a future option for SCRCOG Towns.

#### Rail Out-of-State MSW Exportation

Another economic and environmental solution for the decreasing disposal capacity and increasing Tip Fees in the state of Connecticut is for a municipality to export its MSW via rail to large western and southern landfills which have tip fees that are significantly less than tip fees of disposal facilities located in the Northeast. The economics of shipping MSW via rail can be further increased if the MSW is baled, which decreases the transportation cost per ton.

Transload America, Inc., which has offices as well as landfills and transload facilities located throughout the United States has established a technology that processes MSW into 1 ton to 3.5 ton bales. This new technology allows for MSW to be baled at an already existing transfer station using one of Transload America's balers. Bales of MSW can then be loaded onto a flatbed truck and trucked directly to an out-of-state landfill or to a transload facility where the bales would be taken off of the flatbed trucks and loaded onto a rail car. The MSW could then be exported via rail to an out-of-state landfill. An important benefit of these new MSW bale technologies is that a transload facility does not need to be permitted as a MSW transfer station because the MSW is wrapped in the LLDPE material. Transload America recently submitted a proposal to the City of New Haven to operate its transfer station, bale its MSW, transfer and transport the baled MSW via flatbed truck to a transload facility and export the baled MSW via rail to an out-of-state facility for approximately \$82/ton with a CPI and fuel surcharge adjustment. This proposal assumed that the facility would process 700 tons/day and was for a 5 year contract term. As indicated throughout this report, \$82/ton is cost competitive with present transfer, transport and disposal practices in which SCRCOG Towns are currently engaged.

Other less innovative ways in which MSW can be transported via rail include intermodal transportation and direct loading. Intermodal transportation involves loading MSW into a container which can be transported via truck or rail. One disadvantage of this system is that unlike the baling technology, the transporter must then deal with an empty container once the material is delivered to its final destination. Direct loading of MSW would simply require that MSW be directly loaded into a rail car. The major disadvantage of this option is that it requires a MSW transfer station to have direct access to rail.

Due to the many variables associated with developing a MSW rail haul system, we have not attempted to estimate what it would cost each SCRCOG Town to export its MSW via rail to a specific landfill. Some of the associated variables include the location of the transfer station at which the MSW would be baled, the location of the transload facility, and the location of the out-of-state landfill in which the MSW would be disposed. However, as presented above, the City of New Haven recently received a proposal from Transload America for the total transfer, transport and disposal of 700 tons/day of MSW to an out-of-state facility for approximately \$82/ton. A representative from Transload America has recently told us that it would cost a SCRCOG Town approximately \$92/ton for the same services that it proposed to New Haven for the disposal of 200-300 tons/day. Therefore, it can be assumed that each SCRCOG Town with a transfer station that has room for a MSW baler could export waste to an out-of-state landfill via rail for approximately the same rates.

## New and Emerging Waste Processing Technologies

### Methodology

Numerous public sector planning entities have asked the same question over the past several years... “Are there new, more environmentally friendly technologies which we should be looking at for the processing of our solid waste?”

Our approach in answering this question for SCRCOG has been to take advantage of the substantial information already available by reviewing these other recent analyses.

These recent studies have yielded considerable consensus regarding the most viable and interesting alternatives to consider. We have incorporated relevant portions of these studies herein and gleaned a consensus from them. We have also added new research and analysis on additional options which may be of particular relevance to SCRCOG members including new waste rail hauling technologies and the emerging Ze-Gen technology being pioneered in New Bedford, MA. In this way we have completed a cost effective review of alternative waste technologies.

### Review of Approach and Criteria Used by Others

Several other cities and public jurisdictions have previously or are currently considering innovative technologies as a means to manage municipal solid waste (MSW). Recent programs to evaluate alternative technologies include:

- Commonwealth of Puerto Rico, 2000;
- Collier County, Florida, 2001;
- Toronto, Canada, 2003;
- New York City: Phase 1, 2004;Phase 2, 2006 and
- Santa Barbara County, California, 2008

The innovative technologies evaluated in these programs include:

-Waste-to-Energy. The combustion of MSW resulting in the production of steam used for generating electricity. Mass burn waste-to-energy facilities differ from Refuse-Derived Fuel (RDF) facilities in that RDF facilities require the presorting of non-combustible material such as glass, metals and other recyclable materials opposed to mass burn waste-to-energy facilities which do not require the presorting of MSW. Once RDF material is presorted it is shredded into smaller pieces for combustion.

-Thermal. Thermal technologies are those that use or produce a significant quantity of heat during the course of processing MSW. Common descriptors for thermal technologies are similar, in that exothermic or endothermic chemical reactions occur during the processes that change the composition of the MSW. Types of products resulting from thermal processing

include syngas (i.e., synthesis gas composed of hydrogen gases, carbon monoxide and carbon dioxide), which is combusted to produce electricity; char, which is a carbon based solid residue; and organic liquids (e.g., lightly hydrocarbons).

- Digestion (Aerobic and Anaerobic). Digestion is the reduction of the organic fraction of MSW through decomposition by microbes, accompanied by the evolution of liquids and gases. The biological process of digestion may be aerobic or anaerobic, depending on whether air is introduced into the process. Anaerobic digestion produces a biogas, which is primarily methane and carbon dioxide, and compost. Biogas can be combusted to generate electricity. Aerobic digestion produces compost that may be used as a soil amendment or fertilizer; aerobic digestion does not produce a biogas.

- Hydrolysis. Hydrolysis is generally a chemical reaction in which water reacts with another substance to form two or more new substances. Specifically with relation to MSW, hydrolysis refers to an acid-catalyzed reaction of the cellulose fraction of the waste (e.g., paper, food waste, yard waste) with water to produce sugars. Additional process steps are used to convert the sugars to ethanol or other products such as levulinic acid, a commonly used chemical feedstock for producing specialty chemicals.

- Chemical Processing. Chemical processing is a general term for technologies that utilize one or a combination of various chemical processes. For the purpose of the study, one technology was included in this category. That technology is based on the chemical process of depolymerization, which is the permanent breakdown of large molecular compounds into smaller, relatively simple compounds. The process converts the organic fraction of MSW into energy products (steam and electricity), oil, specialty chemicals and carbon solids.

- Mechanical Processing for Fiber Recovery. Technologies included in this category mechanically process MSW to recover fiber for use in paper making. This technology category includes innovative refuse-derived fuel technologies that produce a clean source of secondary fiber.

The programs were reviewed and considered in the development of an evaluation approach for SCRCOG. Some of these Programs evaluated the new and emerging waste processing technologies via a Request for Proposal (RFP), Request for Qualifications (RFQ) or Request for Information (RFI) procurement process. A Request for Proposal is an invitation for suppliers, often through a bidding process, to submit a proposal on a specific commodity or service. Services relevant to this report include the construction or development a new and emerging waste processing technology facility. Request for Qualifications and Request for Information are primarily used to gather information to help make a decision on what steps to take next and the capabilities of various suppliers. The Programs utilized in our evaluation process are described herein.

## Commonwealth of Puerto Rico

The Commonwealth of Puerto Rico undertook procurement for an 1,800 tpd resource recovery facility to process post recycled, municipal solid waste and convert the waste to energy and/or other viable products. It was a two step procurement process: an RFQ to short list technologies and companies, followed by an RFP distributed to the qualified companies. Both conventional technologies and new and emerging technologies were considered. The procurement was initiated in 1998 and was concluded in 2000.

Technologies that were represented in the response to the RFQ included mass burn and RDF waste-to-energy technologies, the Thermostelect gasification technology and a plasma gasification technology. All technologies/companies, with the exception of the plasma gasification process, met minimum qualification criteria and were found to be qualified to receive an RFP. Companies responding to the RFP presented mass burn and RDF waste-to-energy technologies and the Thermostelect gasification technology. Upon review of proposals in accordance with comparative evaluation criteria, including proposer qualifications, technical approach, environmental impacts, price and conformance to contract terms, a mass burn technology was selected.

Although the Puerto Rico experience was a procurement rather than a study, the minimum evaluation criteria used at the RFQ stage, and the comparative evaluation criteria used during proposal evaluation provide insight for SCRCOG's study. The minimum evaluation criteria for the RFQ included the requirements that:

- The proposed technology must have been demonstrated at a minimum of one facility of similar size or with a minimum unit size of 100 tpd and shall have been in operation, for at least two years, processing municipal solid waste;
- The respondent must have successfully developed, designed and constructed and put in operation at least one, resource recovery facility with similar technology;
- The respondent must have at least two years of relevant experience in the operation and maintenance of a resource recovery facility with similar technology;
- The respondent must be capable of providing a construction performance bond and a labor and materials payment bond of a size equal to the estimated cost of construction;
- The respondent must not be involved in any bankruptcy proceeding, have participated in a financing of a similar type and size and have a positive net income for at least two of the last three years; and,
- The respondent must have a satisfactory environmental compliance record.

To date, a mass burn facility has not been developed in Puerto Rico. However, the Commonwealth of Puerto Rico Solid Waste Management Authority has recently issued an RFQ for the design, construction and operation of at least one waste-to-energy facility. The Statement of Qualifications due date was October 3, 2008.

## Collier County, Florida

In November 2001, Collier County, Florida, issued a Request for Proposals for companies to design, permit, finance, construct, start up, test, operate and manage a municipal solid waste processing and gasification facility. The facility was to have a minimum processing capacity of 75,000 tpy (approximately 200 tpd), with an option for a facility capable of processing 150,000 tpy (approximately 400 tpd). The facility was designated for County waste only and was to be located on a site provided by the County. It was not meant to displace existing recycling programs. The proposer was to be responsible for marketing products, including electricity, and for disposing of any residue. Incineration of solid waste or any product of the solid waste was not permitted. The facility was to be capable of recovering materials to the maximum extent possible to assist the County in achieving a State-mandated recycling goal of 30% and the County's ultimate goal of "zero waste" disposal.

Gasification was the only innovative technology requested in this formal procurement process. The RFP established minimum evaluation criteria that had to be met by all proposers. Those proposers that met the minimum criteria were then ranked through a comparative evaluation, using a point-assigned set of comparative evaluation criteria.

The minimum evaluation criteria included the requirements that:

- The proposer demonstrate that it had successfully completed a facility similar in scope and scale to the proposed facility and that the proposer's technology and project approach can be used to construct the facility to the County's satisfaction;
- The gasification technology proposed must have been successfully implemented by the proposer at a minimum of one gasification facility that was (at the time of the proposal) currently commercially operating, or would be in commercial operation within six months of proposer selection;
- The gasification technology must have been implemented by the proposer in at least one gasification facility with a modular unit size of 50 tpd to 350 tpd;
- The proposer or the operator team member must have demonstrated experience operating one or more waste-to-energy facilities for a minimum period of two years;
- The proposer must have a net worth of at least \$20 million; and,
- The proposer must have a current ratio (current assets/current liabilities) greater than 1:1.

The comparative evaluation criteria included qualifications, experience, financial capacity, technical approach, compliance with technical requirements and contract principles, and willingness to guarantee performance.

Based on a discussion with County officials in April 2004, it is understood that proposals from two companies met the minimum evaluation criteria: Brightstar Environmental and Interstate Waste Technologies. A comparative evaluation then found that Brightstar could provide a system of the size specified by the County at a competitive price, but that the technology had technical problems. Interstate Waste Technologies could not provide a facility as small as that specified by the County (200 tpd to 400 tpd) at a price the County considered a competitive price (understood to be \$40-\$45 per ton). As a result, the County took no action on either proposal.

## Toronto, Canada

One of the most recent procurement efforts for emerging technology was for the City of Toronto, Canada. Toronto issued a Request for Information in 2003, followed by a formal Request for Qualifications in January 2004 to develop a small scale research facility utilizing new and emerging technology, with the capacity to process 5,000 to 20,000 tpy of Toronto's residual (i.e., post recycled) waste. Technologies were limited to physical processes, biological processes, chemical processes and advanced thermal processes, including pyrolysis, fixed-bed gasification, fluidized bed gasification, high temperature gasification and plasma gasification, where a synthesis gas is produced and the synthesis gas is treated prior to thermal oxidation.

Thirteen (13) companies responded to Toronto's RFQ. Of the 13 companies, four were found to have satisfied the mandatory information requirements and screening criteria. Of the four, two presented fluidized bed gasification processes, one a plasma gasification process, and one an aerobic composting process.

Mandatory criteria (in the RFQ) which must have been met for a company/technology to be considered qualified to receive an RFP included providing evidence that:

- The technology reference facility has a design capacity of not less than 1 tpd and has processed not less than 200 tons of municipal solid waste in the previous 12 months;
- The respondent has completed the design, construction, and commissioning of one or more manufacturing or processing facilities involving electrical and mechanical systems with a total design and construction phase cost, excluding land purchase, of not less than \$7 million;
- The respondent has a bonding capacity of not less than \$7 million; and
- The respondent has direct operating control of one or more operating reference facilities. The operating reference facility must be for the purpose of solid waste management such as waste transfer, processing and/or final disposal. In addition the operating reference facility must have managed 10,000 tons of material similar to municipal solid waste in the previous 12 months.

Shortly after the City received the results of this RFQ procurement, the City Council decided to abandon the procurement process and not issue an RFP. However, Toronto does currently operate one of the two only full scale anaerobic digestion facilities in North America that process MSW. The City's AD facility is located at an existing transfer station and processes approximately 25,000 tons of MSW/year. The City fuels its AD facility by providing its residents with a curbside household organics collection program. The facility currently has an operating cost of about \$139/ton plus an additional \$50/ton of amortized capital. The City's operating costs would be higher if the facility was not located at an existing transfer station. Furthermore, the City is currently in the process of issuing an RFP for the construction of two new AD facilities with a combined capacity of 110,000 tons. It is expected that at least one of these facilities will be operational in 2011 and that the estimated cost of the combined facilities will be approximately CAN\$145/ton.

## **New York City: Phase 1, 2004**

The objective of this Study was to provide information to assist the City in its evaluation of innovative technologies. This report identified which innovative technologies were available to the City, i.e., commercially operational processing MSW, which were soon-to-be commercially in use for MSW, and which were promising, but in an earlier stage of development. It also compared these technologies to conventional waste-to-energy technology to identify the potential advantages and disadvantages that may exist in pursuing innovative technologies. Conventional waste-to-energy technology was chosen as a point of comparison since such technology is the most widely used technology available today for reducing the quantity of post-recycled waste being landfilled.

For the purposes of the Study, “new and emerging technologies” were defined as technologies (e.g., biological, chemical, mechanical, and thermal processes) that were not currently in widespread commercial use in the United States, or that had only recently become commercially operational. Technologies that were commercially operational in other countries, but only recently or not at all in the United States, were defined as “new and emerging” with respect to use in the United States. Proven, commercial solid waste management processes and technologies with widespread use in the United States, such as conventional waste-to-energy, landfilling, and stand alone material recovery facilities (MRFs), were not considered for this Study. Also, as the New York City Department of Sanitation (DSNY) has already conducted a separate, thorough evaluation of aerobic MSW composting/co-composting, these technologies were not considered in the Study. MRFs and refuse derived fuel (RDF) processes that are required as a prerequisite to new and emerging technologies (e.g., to prepare incoming MSW as feedstock for gasification, anaerobic digestion, waste-to-ethanol systems, etc.) were considered in the Study. Stand-alone RDF technologies were considered, upon demonstration that the RDF technology includes innovative features that offer substantial improvements and advantages over conventional RDF technology. Conventional RDF technology is considered to be a process that mechanically separates out metal and inert, (noncombustible) materials from MSW (e.g., through screening and magnetic separation), and shreds the screened MSW to produce more homogenous fuel.

The Study started with a wide search to maximize the identification of new and emerging technologies. The search included a review of unsolicited proposals received by the City in the recent past, along with independent research to expand the list of innovative technologies and project sponsors. To further widen the search, a Request for Information (RFI) was issued to gather consistent information from companies offering new and emerging waste management and recycling technologies. The search resulted in the identification of forty-three (43) technologies. Using a methodology developed specifically for the City, these 43 technologies were evaluated through three levels of increasing scrutiny to focus efforts on the most promising technologies.

The objective of the Evaluation was to identify, describe and evaluate new and emerging technologies based on type of technology, status of development, and potential applicability for New York City. The Evaluation considered 43 technologies. These technologies were categorized as follows:



- Thermal
- Digestion
- Hydrolysis
- Chemical Processing
- Mechanical Processing

The technologies were advanced through three levels of scrutiny from preliminary review to more detailed, comparative review of the more developed technologies. Fourteen of the 43 technologies initially identified advanced to the most detailed level of comparative review.

As part of the New York City Study the technologies were categorized by their development status (i.e., are they in commercial use, being tested at a demonstration or pilot facility, or in the process of ongoing, developmental research). The results are summarized as follows. Please note that these results were as of September, 2004 the date of when the report was completed:

Anaerobic digestion is currently in commercial operation (for MSW) outside of the United States (e.g., Canada, Israel, the Netherlands, Italy, Germany, and other European countries). Anaerobic digestion has not been commercially applied within the United States. Therefore, technology transfer to the United States would need to be addressed in considering commercial application in this country. (e.g., MSW composition, waste management practices, end-product markets and regulatory requirements).

Thermal processing (i.e., gasification) is currently in commercial operation (for MSW) outside of the United States (e.g., Japan, Germany, and Italy). Several types of gasification technologies are in commercial operation, including fluid bed gasification, high temperature gasification, plasma gasification and gasification/vitrification. These gasification technologies have not been commercially applied within the United States. Again, technology transfer to the United States would need to be addressed in considering commercial application in this country.

Hydrolysis is not yet in commercial operation for MSW. However, one company (Masada Oxydol) has conducted pilot testing in the U.S. and a facility has been under development in Middletown, New York for several years.

Aerobic digestion is not yet in commercial operation for MSW. However, a 30-tpd demonstration plant is in operation in Vancouver, Canada, processing source-separated food waste and other source-separated organic waste. Additional research and testing is required to advance to pilot-testing for mixed MSW.

Chemical processing (specifically, depolymerization represented by Changing World Technology's Thermal Conversion Process) requires research and testing to advance to the pilot stage for MSW. An eight-tpd pilot plant in Philadelphia is available to conduct this research and testing. Also, the first full-scale facility by Changing World Technologies (Carthage, Missouri), which will manage turnkey processing waste, is expected to be commercially operational shortly.

Mechanical processing for fiber recovery bears monitoring. It is the least developed of all the innovative technology categories, with only bench-scale testing completed for the fiber recovery process.

Based on success demonstrated out of the United States by several companies, anaerobic digestion and thermal processing (gasification) technologies could be considered for commercial application in the United States, including serving New York City, with suitable project definition and risk sharing between the public and the private sponsor. Should the potential risk be greater than a project sponsor is willing to assume, then a pilot project for anaerobic digestion or gasification technologies could be established first, before commercial application. The results of such pilot technologies could be used to establish the basis for commercial application, including project definition and risk sharing.

Hydrolysis could also be considered for a pilot project. The City could monitor the development of the commercial hydrolysis project in Middletown, NY and could consider sending waste to this facility (for pilot testing) if and when it becomes operational.

### **New York City: Phase 2, 2006**

New York City completed Phase 1 of its New and Emerging Technologies Study in September of 2004. The Phase 1 Study concluded that thermal processing and anaerobic digestion were the most highly developed new and emerging conversion technologies proposed to the City. Albeit, to date of this report (March, 2006), there were no commercial operations of these technologies in the United States. The Phase 1 Report also suggested that the City should possibly further explore hydrolysis since at the time of the report completion, a pilot testing of this technology was completed and a commercial facility was under development in Middletown, NY. Based on the information provided by the Phase 1 Report participants, these emerging technologies were deemed to be cost-competitive with current waste-to-energy practices as well as other environmental benefits over the traditional waste-to-energy practices. The Phase 1 Study recommended that the City conduct a more focused, detailed review of information provided by Phase 1 Study participants. The result of this recommendation is the Phase 2 Study.

This Phase 2 Study had two objectives. The first objective of this Study was to provide a more detailed evaluation of the more highly developed technologies and to independently verify information provided by Phase 1 participants. The second objective of this Phase 2 Study was to address environmental, technical, and cost issues that the City would encounter if it decided to develop a project with one of the emerging technologies in question. The purpose of these analyses was to assist the City in determining whether it should proceed with the next step of developing a demonstration facility utilizing one or more of the emerging technologies in question. The demonstration facility would be part of a long-term plan. If the demonstration facility is successful, the City would develop a commercial operation sized facility.

The Phase 2 Study identified eight specific technologies all of which fell under the larger categories of thermal processing, anaerobic digestion and hydrolysis. Of the eight specific technologies identified, the City conducted detailed and independent technical analysis as well as independent economic analysis of four thermal processing and two anaerobic digestion

technologies. One anaerobic digestion technology was not independently analyzed because it could not provide project information pertaining to MSW, which was the focus of this Study. Additionally, the one identified hydrolysis technology was reviewed but not independently verified due to lack of information.

The exact findings of the City's Phase 2 Study are provided below and taken directly from the March, 2006 Phase 2 Study:

- **Technical Findings.** Technical findings show that anaerobic digestion and thermal processing technologies are in commercial operation overseas for mixed MSW, and could be successfully applied in New York City. Reference facilities reviewed as part of the Phase 2 Study provide a demonstration of performance of these technologies. With two exceptions, these reference facilities are commercially operating and processing mixed MSW. The reference facility for one anaerobic digestion technology (OWS) demonstrates performance for source-separated organic waste and not mixed MSW. The reference facility for one thermal processing technology (GEM America) is more representative of a successful pilot facility than a commercial facility, having been operated on a limited, rather than continuous, basis. Technical information associated with the reference facilities was reviewed, and to the extent possible, owners, operators and/or other parties affiliated with the facilities were contacted as references for facility performance. An independent technical review and evaluation of mass and energy balances, including independent calculations of energy generating efficiency of the technologies, was completed. Recovery rates of recyclable materials and process products were confirmed, along with quantities of residue requiring landfill disposal. Equipment configurations and site layouts were reviewed, in consideration of land area required to support project development and operation.

- **Environmental Findings.** Environmental findings show that in general, anaerobic digestion and thermal processing technologies have the potential to offer better environmental performance than waste-to-energy facilities, including lower air emissions, increased beneficial use of waste, and reduced reliance on landfilling. The environmental findings are based on independent calculation, review and inter-comparison of environmental performance, including air pollutant emissions, water usage and wastewater discharge.

- **Economic Findings.** Recognizing that the economic analysis performed for this Phase 2 Study is of a planning level only, economic findings indicate that anaerobic digestion and thermal processing technologies (on a commercial scale) are less costly than or comparable to costs for current waste export practices. These findings are based on application of an economic model that considered capital costs (design and construction, site acquisition, and financing costs), operating and maintenance costs, and project revenues, for a long-term (20-year) operating period. The analysis included two project delivery approaches: implementation under a privately owned and financed design/build/own/operate or "DBOO" project delivery approach, and implementation under a publicly owned and financed design/build/operate or "DBO" project delivery approach.

- **Other Initiatives, Including Hydrolysis.** Hydrolysis is not in commercial operation for MSW. However, the technology is advancing to commercial application in the United States, with a waste-to-ethanol hydrolysis facility under development in Middletown, New York. The Middletown facility has been successfully permitted, which is a significant step for advancement

to commercial operation. However, to date of this SCRCOG report, the project developer still has not obtained the financing necessary for construction of the facility. Other initiatives are also underway in the U.S., including construction by World Waste Technologies of a fiber recovery facility in Anaheim, California.

• **Technology Transfer.** Based on the analyses conducted for this study, no issues have been identified that would prevent transfer of design and operation experience from commercial operation overseas to application of the technologies in the United States. Project-specific and site-specific issues would need to be addressed during development of an Implementation Plan, such as identification of a site, definition of regulatory requirements, verification of markets for products, and (for some technologies) consideration of equipment components and configuration for preprocessing waste of the specific characteristics as generated in New York City. In particular, it should be noted that the more space-intensive processes (those requiring more than 30 acres) may not be practical to site within New York City.

To date, the City has not developed a demonstration or commercial facility utilizing any of the conversion technologies listed above.

### **Santa Barbara County, California**

The Santa Barbara County Multi-Jurisdictional Solid Waste Task Group (MJSWTG) established a Team to evaluate the feasibility of MSW conversion technologies in 2002. The Team identified potential technologies as well as identified suppliers of these technologies, developed screening parameters and ranking criteria for the identified technologies, and ultimately evaluated the feasibility of a conversion technologies project in Santa Barbara County. In 2003, the Team recommended that the County consider implementing one of the conversion technologies into its long-term solid waste management plan. The Team developed a short-list of seven solid waste conversion technologies that were potentially capable of providing a feasible alternative to MSW landfilling. However, a conversion technology project never developed from this original study. The City and County of Santa Barbara decided to readdress this issue in 2008 to determine whether any MSW conversion technologies have become more feasible since the 2002-2003 study. The MJSWTG's goals of an MSW conversion technologies project are as follows:

1. Increase diversion of post-recycled MSW;
2. Reduce environmental impacts of landfilling MSW;
3. Provide financial feasibility and sustainability;
4. Produce green energy and other marketable products;
5. Provide a humane work environment; and
6. Result in a long-term waste disposal plan with a 20 year minimum.

In order for the Team to determine whether a specific MSW conversion technology could meet the goals listed above, it developed the following technology evaluation criteria:

1. Processing capacity of 100,000 - 220,000 tons/year on a 6 acre site;
2. Operating term of a minimum of 20 years;
3. Compatibility with existing solid waste programs;

4. A minimum of a 60% diversion percentage from landfill disposal;
5. Cost-competitive tipping fee of not more than 10% of alternative landfilling practices (The tip fee threshold was \$100/ton);
6. Must have marketable end products;
7. Minimum environmental impact;
8. Previous demonstration of conversion technology at a facility that processed at least 50 tons/day and has been operating for a minimum of 6 months;
9. Project team solid waste facility experience;
10. Project developer must have adequate financial resources; and
11. Project developer must not be barred from contracting in California.

The Team issued a Request for Information (RFI) to 25 companies and received 11 responses. Of the 11 responses, 8 satisfied the evaluation criteria listed above and were deemed to offer the potential to the City and County of Santa Barbara an economically and technically viable conversion technology as an alternative to landfilling. 5 of the responses represented thermal processing technologies (pyrolysis, gasification and plasma gasification), 2 of the responses represented anaerobic digestion technologies, and one represented a technology which employs biological drying and mechanical separation with off-site combustion of a prepared fuel. The 8 eligible responses were submitted by the following companies regarding the following new and emerging waste processing technologies:

<b>Anaerobic Digestion</b>
CA Renewable Technologies- CR&R/Arrow
Ecocorp
<b>Thermal Processing</b>
AdaptiveNRG (Plasma Gasification)
International Environmental Solutions (Pyrolysis)
Interstate Waste Technologies (Gasification)
Plasco Energy Group (Plasma Gasification)
Tajiguas Partners-WTE/Entech (Gasification)
<b>Other Technology</b>
Herhof California (Biological Drying/Mechanical Separation/Off-Site Combustion)

Based on the information provided by the RFI respondents, the Team concluded that issuing an RFP for a conversion technology is reasonable for consideration of alternatives to landfilling MSW. The Team has recommended that the City and County consider issuing an RFP to the 8 companies that passed the Team's evaluation criteria.

Conclusions from Previous Studies

The following table summarizes the results, to date, of the studies discussed above.

<b>Technology Sought</b>	<b>Short Listed</b>	<b>Being Developed</b>
<b>Puerto Rico</b>		
Resource Recovery	Mass Burn (In the Process of Evaluating Respondent Qualifications) RDF	None
	Interstate Waste Technologies (High temperature Gasification)	None
<b>Collier County, Fla.</b>		
Gasification Facility /Zero Waste	Brightstar Environmental (Dirty MRF plus Pyrolysis)	None
	Interstate Waste Technologies (High temperature Gasification)	None
<b>Toronto:</b>		
Emerging Technologies	Fluidized Bed Gasification	None
	Plasma Gasification	None
	Aerobic Composting (Conporec)	None

The City discontinued procurement of the alternatives listed above and are currently developing 2 commercial sized anaerobic digestion facilities that have a combined capacity of 110,000 tons/year. The City is currently operating a 25,000 tons/year AD facility.

**New York City**

New and Emerging Technologies

Anaerobic Digestion	None
Gasification i.e. Taylor Recycling	None
Hydrolysis i.e. Masada	None

**Santa Barbara County  
(Considering Issuing an RFP to 8 Short-Listed Respondents)**

Waste Conversion	Thermal Processing	None
	Anaerobic Digestion	None
	Biological Drying and Mechanical Separation	None

## Additional SCRCOG New Technology Options

### **New Waste Rail Haul Technologies**

According to the State of Connecticut Solid Waste Management Plan, the State of Connecticut is not planning on issuing any new solid waste landfill permits in the near future. Once the disposal capacities of landfills in Connecticut and the Northeast begin to run out, the tip fee of existing disposal facilities will increase and municipalities will have to start transporting their MSW to disposal facilities located at progressively further distances from its source.

One economic end environmental solution to this problem is for a municipality's MSW to be hauled via rail to large western landfills which have tip fees that are significantly less than tip fees of disposal facilities located in the Northeast. The economics of shipping MSW via rail can be further increased if the MSW is baled, which decreases the transportation cost per ton.

Transload America, Inc., which has offices as well as landfills and transload facilities located throughout the United States has established a technology that processes MSW into 1 ton to 3.5 ton bales using a Linear Low Density Polyethylene (LLDPE) material. Transload America's new technology allows for MSW to be baled at an already existing transfer station using one of Transload America's balers. Bales of MSW can then be loaded onto a flatbed truck and trucked directly to an out-of-state landfill or to a transload facility where the bales would be taken off of the flatbed trucks and loaded onto a rail car. The MSW could then be exported via rail to an out-of-state landfill.

An important benefit of Transload America's MSW bale technology and others like it is that a transload facility does not need to be permitted as a MSW transfer station because the MSW is wrapped in the LLDPE material. Transload America recently submitted a proposal to the City of New Haven to operate its transfer station, bale its MSW, transfer and transport the baled MSW via flatbed truck to a transload facility and export the baled MSW via rail to an out-of-state facility for approximately \$82/ton with a CPI and fuel surcharge adjustment. This proposal assumed that the facility would process 700 tons/day and was for a 5 year contract term. As indicated throughout this report, \$82/ton is cost competitive with present transfer, transport and disposal practices in which SCRCOG Towns are currently engaged.

### **Ze-Gen, New Bedford, MA**

Another new technology option for SCRCOG to consider is the Ze-Gen technology currently being developed in New Bedford, Massachusetts. However, it is important to note that this facility is only a demonstration facility and is not yet in commercial operation.

The Ze-gen technology was designed to process multiple feed stocks such as C&D, MSW, scrap tires and shredded carpet, and convert these feed stocks into near zero-emissions syngas and electrical energy.

Ze-gen is partnering with New Bedford Waste Services (NBWS), a privately owned waste transfer station. NBWS has perfected the processing of raw C&D waste, recovering the recyclable material from the waste stream and removing for proper disposal any material that

contains harmful compounds. The final product, called C&D residue, looks similar to finely ground wood chips and is Ze-gen's primary feedstock for gasification.

Ze-gen has focused its technology strategy on finding a gasification-derived solution that represents the following:

- A high yield of energy output per ton of waste processed
- A complete solution which doesn't require land filling or incineration
- Scalable and easily replicable
- C&D specific with potential for other similar waste streams

Ze-gen is currently conducting a demonstration of its gasification technology at NBWS's C&D and MSW processing facility. Specifically, the demonstration project accepts construction and demolition (C&D) residual material that is processed at the NBWS facility and uses it as the primary feed stock in a "molten bath" gasification process. The products of the gasification process are a syngas, primarily carbon monoxide and hydrogen, which are both energy rich gases. Slag is produced as a by-product in the gasification process which can be used as construction aggregate.

NBWS's facility has been site assigned by the City of New Bedford and permitted by DEP to receive, process and transfer up to 1,500 tons per day of C&D material, municipal solid waste (MSW) and scrap tires.

The test facility began operating in October of 2007, and target syngas quality was reportedly achieved in less than 6 months.

### **Single Stream Recycling Technologies**

One new technology that is currently being considered in Connecticut is single stream recycling. Single stream recycling is a recycling system in which all containers and paper fibers are mixed together by the source or resident instead of being sorted into separate commodities such as plastic, glass, newspaper and cardboard.

The benefits of single stream recycling include increased participation which translates to higher recycling rates and lower disposal fees as well as reduced collection costs since haulers can make fewer collection trips and use single compartment collection vehicles. Disadvantages of single stream recycling include decreased value of collected recyclable material due to contamination and higher material recycling facility capital and operating costs.

The CRRA has recently announced that it is overhauling its Hartford recycling facility so that it will be able to process single stream recyclables by the end of 2008. CRRA estimates that the proposed overhaul will cost approximately \$3 million.



## **Zero Waste Options**

Zero waste options are often advocated by environmental advocacy groups. Such proposals are usually not associated with any specific new technology but are generally recommended as appropriate public sector planning and development objectives. Some groups propose that a dirty MRF combined with a combination of other new technologies and to-be-developed markets for non-traditional recycling can result in a zero waste solution.

The Global Alliance for Incineration Alternatives, a primary advocate of zero waste, describes zero waste as follows:

“As GAIA members know, "Zero Waste" refers to a range of policies and practices related to materials use and waste (or discard) management. Rather than viewing waste as an inevitable burden to be disposed and replaced with virgin materials, Zero Waste seeks to reduce the quantities and toxicities of materials used, to increase production efficiency, and to reclaim and utilize discarded materials. While we realize that communities can not become truly Zero Waste overnight, we also view it as a direction and a goal. Zero Waste is a design principle that goes beyond recycling by taking a 'whole system' approach to the vast flow of resources and waste through human society.”

To date no commercial scale facility or system has come close to achieving zero waste. This is partly due to the early stage nature of the new technologies and non-traditional recycling markets, but also is related to the limited costs which citizens are willing to incur to achieve higher and higher levels of recycling.

Nevertheless, if viewed as a development goal, we feel that zero waste is an appropriate long term development objective as new technologies emerge and are successfully implemented on a commercial scale and as non traditional recycling markets are developed, such as the numerous nascent technologies and markets currently being evaluated for the recycling of post consumer glass.

## **New and Emerging Waste Processing Technologies Conclusion and Recommendations**

Notwithstanding the extensive analysis and evaluations of new and emerging technologies recently completed throughout the United States, there are no commercial scale MSW facilities using new technology that are currently operating or under construction in the United States. There are numerous single stream material recycling facilities operating on a commercial scale.

Nevertheless, we believe that SCRCOG should continue to monitor the progress of the most promising new MSW technologies, in particular the thermal processing technologies which were found to meet the evaluation criteria in Santa Barbara, California for possible inclusion in Future Disposal Options in the SCRCOG region.

With regard to Single Stream Recycling technologies, we recommend that this technology be pursued by the proposed SCRCOG Solid Waste and Recycling Task Force as discussed in Section VIII hereof.

## VII. RECYCLING OPTIONS

As depicted on the following page waste and recyclable collection methods vary widely among SCRCOG members. In Branford for example, which has achieved the highest recycling rate of all SCRCOG members, recyclables are collected by three methods:

1. Town contracted hauler,
2. Independently contracted hauler, and
3. Citizen drop-off at the Town transfer station.

Wallingford, Guilford and Madison, on the other hand, offer no municipally contracted recyclables collection and report lower recycling rates.

Achieving greater control over the recyclables stream on a SCRCOG-wide basis, we believe, is one important step toward improving the menu of recycling options available in the region and ultimately maximizing SCRCOG-wide recycling rates.

Accordingly, we have recommended that SCRCOG implement a Waste and Recycling Task Force in Section VIII hereof and implement ways to gain greater control of waste and recyclables on the SCRCOG-wide basis such as extending municipally contracted collection throughout the region.

Moving towards a single stream recyclable collection system is another way some communities have improved their recycling rates. As discussed further in Section VI hereof single stream recycling has been gaining in popularity in the Northeast and is being implemented in CRRA served areas of the State now.

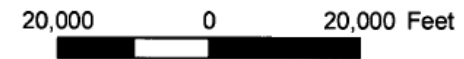
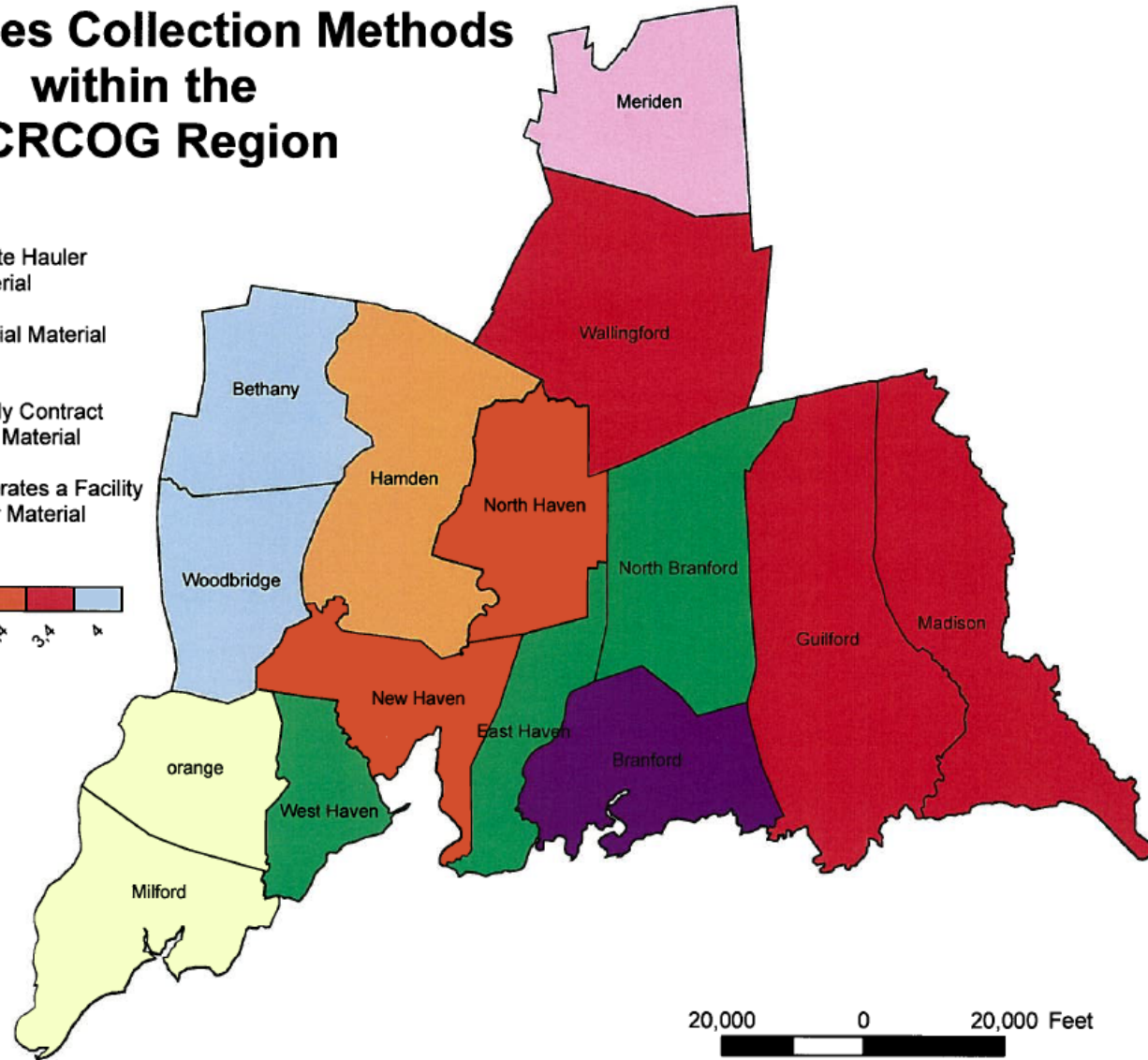
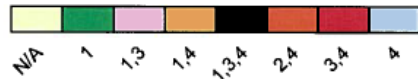
We believe that if SCRCOG members can achieve greater recyclable collection levels, opportunities may develop from both the private and public sector for an in-region single stream MRF. The encouragement of such a facility and ultimately the SCRCOG- coordinated procurement (RFP) of an in-region single stream MRF is another important goal of the recommended SCRCOG Waste and Recycling Task Force.

# Recyclables Collection Methods within the SCRCOG Region

## Data Key

- 1: Town Contracts a Private Hauler to Collect Residential Material
- 2: Town Collects Residential Material with a Municipal Fleet
- 3: Residents Independently Contract a Private Hauler to Collect Material
- 4: Town Owns and/or Operates a Facility for Residents to Bring their Material

## Recyclables



## VIII. FUTURE ROLE OF SCRCOG AND ITS MEMBERS

Historically, we believe that many Connecticut municipalities have been handicapped by the absence of effective regional solid waste and recycling planning. In many other states such as New York's Solid Waste "Planning Units". Due to the absence of County level municipal structures or other effective regional entities, solid waste planning and project development in Connecticut has been provided opportunistically by a combination of private waste management companies, two independent Resource Recovery Authorities (ECRRA and Bristol) and the CRRA.

The original intent of the CRRA was to serve as a state-wide entity responsible for planning and the development of cost effective and environmentally responsible solid waste and recycling systems. Unfortunately, today, many Connecticut municipalities and independent professionals who have evaluated CRRA's historical performance, have come to believe that the CRRA has fallen well short of its responsibilities to its municipal clients.

Poor and costly decision making, such as the hard to explain Enron decision, wasteful administrative budgets which have been arbitrarily allocated to CRRA's municipal partners over the years and CRRA's recent initiation of a very costly and speculative development of a new ash landfill in Franklin, CT are perhaps the most frequently cited examples of the CRRA's poor performance and judgment. More broadly, we believe that the failures of CRRA derive from a fundamental flaw in its governance structure. While each of CRRA's projects has a committee of member Towns who are consulted about major issues, the CRRA Board of Directors retains exclusive authority to determine budgets and commit to expenditures. There is no direct accountability by the decision-makers to the Connecticut Towns that must bear the costs.

We believe that the State's various regional Councils of Government including of course SCRCOG, represent a valuable new opportunity for effective regional solid waste and recycling planning, procurement and administration. SCRCOG's initiative to engage its members who currently utilize the Bridgeport and Wallingford resource recovery facilities in separate but similar group workshops regarding the advantage and disadvantages of the competing waste disposal contracts offered to them was very well received by those SCRCOG members. We believe that SCRCOG is the most appropriate municipal entity to continue to take the lead in future waste and recycling planning, procurement and administrative activities.

While the exact format and agenda for such an initiative can best be developed through future meetings and discussions among SCRCOG and its member municipalities, we offer the following suggestions as appropriate tasks for a SCRCOG Waste and Recycling Task Force or committee to address:

### **Short Term – within the next 12 months**

- Review and discuss this report
- Define and document the key future waste management and recycling services needed by SCRCOG members

- Identify additional waste disposal and recycling options of interest to SCRCOG members
- Discuss ways to gain greater control of waste and recyclables in the region such as extending municipally contracted collection throughout the region
- Meet with current and potential new private and public sector providers of waste disposal and recycling services in the region
- Determine the joint service procurement process and timetable (i.e. RFP) which best meets the needs of SCRCOG members for both future Waste Disposal Options and for an in-region single stream material recycling facility
- Identify solid waste and recycling advocacy issues

### **Intermediate Term – within 1-3 years**

- Issue RFPs, select service providers and execute agreements

### **Long term**

- Monitor performance
- Address new needs and options as they arise

While the tasks suggested above may best be addressed on a sub-group basis of SCRCOG such as the Bridgeport Towns, Wallingford Towns or Mid-Conn Towns, we would recommend that a SCRCOG-wide Waste and Recycling Task Force or committee also meet periodically. If three sub-groups were identified, perhaps each sub-group as well as the SCRCOG-wide committee could each meet three times a year resulting in 12 monthly meetings.

### **Cost Control**

Many structural options exist for groups of Connecticut municipalities wishing to manage solid waste and recycling on a regional basis. Many of these options, however, such the creation of a new Solid Waste Management Authority or Regional Resource Recovery Authority are expensive structures to create and administer and are only necessary if the planning entity intends to expend hundreds of thousands of dollars in the speculative siting, development and subsequent ownership of new waste management facilities. We believe that this is not the appropriate role for SCRCOG.

Rather, we believe the SCRCOG can achieve very cost effective waste and recycling planning and procurement using a program featuring the following elements:

1. Joint planning initiatives as described above,
2. Coordinated procurement (RFP) on a SCRCOG-wide basis or by subgroups of SCRCOG members, and
3. Direct contracting on a Town-by-Town basis of identical service agreements which have been jointly procured.

We believe that this approach will allow SCRCOG to best take advantage of the development resources and service options available from all possible service providers, including both private sector waste management firms and the CRRA, without having to create an expensive new administrative bureaucracy typical of most regional waste management authorities.

## IX. SUMMARY AND RECOMMENDATIONS

1. SCRCOG member municipalities enjoy a broad range of Current and Future Waste Disposal and Recycling Options to choose from. These options are available through the CRRA, directly from private waste management companies active in the region, new private firms offering innovative future options and other State Resource Recovery Authorities. These options have been identified and evaluated herein including projected total costs per ton. Additional options will likely emerge over time and projected costs will require periodic updating over the next 3-6 years.
2. Notwithstanding the extensive analysis and studies of new and emerging technologies recently completed throughout the United States, there are no commercial scale MSW facilities using new technology currently operating or under construction. There are numerous single stream material recycling facilities operating on a commercial scale.
3. We recommend that SCRCOG monitor the progress of the most promising new MSW technologies, in particular the thermal processing technologies which were found to meet the evaluation criteria in Santa Barbara, California for possible inclusion in Future Disposal Options in the SCRCOG region in the next 3-6 years.
4. We recommend that Single Stream Recycling technologies be pursued by the proposed SCRCOG Solid Waste and Recycling Task Force as discussed below.
5. Waste and recyclable collection methods vary widely among SCRCOG members. Achieving greater control over the recyclables stream on a SCRCOG-wide basis, we believe, is one important step toward improving the menu of recycling options available in the region and ultimately maximizing SCRCOG-wide recycling rates.
6. Accordingly, we recommend that the proposed SCRCOG Waste and Recycling Task Force implement ways to gain greater control of waste and recyclables throughout the region such as extending municipally contracted collection throughout the region.
7. Moving towards a single stream recyclable collection system is another way some communities have improved their recycling rates and this technology has been gaining in popularity in the Northeast and is currently being implemented in certain areas of the State.
8. The encouragement of an in-region single stream MRF and ultimately the SCRCOG-coordinated procurement (RFP) of an in-region single stream MRF is an important goal of the recommended SCRCOG Waste and Recycling Task Force.
9. Historically Connecticut municipalities have been handicapped by the absence of effective regional solid waste and recycling planning.



10. We believe that SCRCOG represents a valuable new opportunity for effective regional solid waste and recycling planning, procurement and administration. While the exact format and agenda for such an initiative can best be developed through future meetings and discussions among SCRCOG and its member municipalities, we offer the following suggestions as appropriate tasks for a SCRCOG Waste and Recycling Task Force or Committee:

<b>Short Term – within the next 12 months</b>
<ul style="list-style-type: none"> <li>• Review and discuss this report</li> <li>• Define and document the key future waste management and recycling services needed by SCRCOG members</li> <li>• Identify additional waste disposal and recycling options of interest to SCRCOG members</li> <li>• Discuss ways to gain greater control of waste and recyclables on SCRCOG-wide basis such as extending municipally contracted collection throughout the region</li> <li>• Meet with current and potential new private and public sector providers of waste disposal and recycling services in the region</li> <li>• Determine the joint service procurement process and timetable (i.e. RFP) which best meets the needs of SCRCOG members for both future Waste Disposal Options and for an in-region single stream material recycling facility</li> <li>• Identify solid waste and recycling advocacy issues</li> </ul>
<b>Intermediate Term – within 1-3 years</b>
<ul style="list-style-type: none"> <li>• Issue RFPs, select service providers and execute agreements</li> </ul>
<b>Long Term</b>
<ul style="list-style-type: none"> <li>• Monitor performance</li> <li>• Address new needs and options as they arise</li> </ul>

11. While the tasks suggested above may best be addressed on a sub-group basis of SCRCOG such as the Bridgeport Towns, Wallingford Towns or Mid-Conn Towns, we would recommend that a SCRCOG-wide Waste and Recycling Task Force or Committee also meet periodically. If three sub-groups were identified, perhaps each sub-group as well as the SCRCOG-wide Committee could each meet three times a year resulting in 12 monthly meetings.

12. We believe the SCRCOG can achieve very cost effective waste and recycling planning and procurement using a program featuring the following elements:

- Joint planning initiatives as described above,
- Coordinated procurement (RFP) on a SCRCOG-wide basis or by subgroups of SCRCOG members, and
- Direct contracting on a Town-by-Town basis of identical service agreements which have been jointly procured.

13. We believe that this approach will allow SCRCOG to best take advantage of the development resources and service options available from all possible service providers, including both private sector waste management firms and the CRRA, without having to create an expensive new administrative bureaucracy typical of most regional waste management authorities.