
Regional Waste Management Study

Prepared For

Western Connecticut Council of Governments

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June 2021

Barton&Loguidice

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Table of Contents

EXECUTIVE SUMMARY	iv
1.0 INTRODUCTION.....	1
1.1. About WestCOG.....	1
1.2. Purpose of Study.....	1
2.0 BACKGROUND ON CONNECTICUT’S SOLID WASTE MANAGEMENT SYSTEM	2
2.1. Structure	2
2.2. Development, Construction, & Ownership of the RRFs	2
2.3. Current State of the RRFs and Local Disposal Capacity Shortfall.....	3
2.4. Existing Transfer Station Network	4
2.5. Recent Developments in Southwest CT.....	6
2.6. Impacts to non-HRRA WestCOG Municipalities	6
3.0 GENERAL BACKGROUND INFORMATION ON WEST COG NON-HRRA MUNICIPALITIES	8
3.1. Current Regionalized Activities.....	8
3.1.1. Household Hazardous Waste (HHW).....	8
3.1.2. Westport Interlocal Agreements	9
3.2. General Information	9
3.3. Permit and Tipping Fees	9
3.4. Primary Service Contracts.....	10
3.5. Materials Processed.....	12
3.6. Disposal Costs & Revenues	14
4.0 EVALUATION OF MSW DISPOSAL OPTIONS.....	14
4.1. Disposal Options Currently Relied Upon by Study Municipalities	15
4.2. In-State Disposal Options.....	16
4.2.1. Resources Recovery Facilities (RRF’s)	16
4.2.2. Private Solid Waste Facilities	19
4.3. Out-of-State Disposal Options	21
4.4. Out-of-State Options Used by MIRA.....	23
4.5. Direct Hauling Waste from A Municipal Transfer Station to Distant Landfills	24
5.0 OPPORTUNITIES FOR REGIONALIZATION	25
5.1. Lead Entity; Separate Vendor Contracts.....	25
5.2. Formal Regional Governing Structures.....	25

5.2.1. Creating Regional Resource Recovery Authority	26
5.2.2. Joining Existing Resource Recovery Authority	26
5.2.3. Creating a Regional Refuse Disposal District	28
5.2.4. Collaborating by Interlocal Agreement	28
5.2.5. Collaborating by Contract	28
5.3. Sharing Facilities	29
5.4. Regional Procurement of Contracts	29
5.5. Implement a Glass Recycling Program	29
5.6. Wilton and Weston Transfer Station Consolidation and Improvements	30

Figures

<u>Figure 1 – Food Scrap Collection Bin – Darien Transfer Station</u>	vii
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Tables

<u>Table 1 – Resource Recovery Facility Ownership Status</u>	3
<u>Table 2 – Permit & Hauler Registration Fees</u>	10
<u>Table 3 – Primary Tipping Fees</u>	10
<u>Table 4 – MSW & SSR Tonnage Processed</u>	13
<u>Table 5 – MSW, SSR, & Other Material Tonnage Processed</u>	13
<u>Table 6 – MSW & SSR T&D Unit Costs</u>	14
<u>Table 7 – Summary of Disposal and Recycling Options Used by the Municipalities</u>	15
<u>Table 8 – Current MSW T&D Costs – FY2021</u>	16
<u>Table 9 – Wheelabrator/City Carting Milford, CT Facility Permitted Capacity</u>	21
<u>Table 10 – Out-of-State Disposal Options and Travel Distance</u>	22

Appendices

Appendix A – Data Tables

Acronyms

CCSMM	Connecticut Coalition of Sustainable Materials Management
C&D	Construction and Demolition
CFC	Chlorofluorocarbons
DEEP	Connecticut Department of Energy and Environmental Protection
EPR	Extended Producer Responsibility
GBRSWIA	Greater Bridgeport Regional Solid Waste Interlocal Agreement
GBRSWIC	Greater Bridgeport Regional Solid Waste Interlocal Committee
HRRA	Housatonic Resource Recovery Authority
HHW	Household Hazardous Waste
LF	Landfill
MIRA	Materials and Innovation and Recycling Authority
MRF	Materials Recycling Facility
MSW	Municipal Solid Waste
OCC	Old Corrugated Containers
OMSW	Oversize Municipal Solid Waste
RRDD	Regional Refuse Disposal District
RRF	Resource Recovery Facility
RRRA	Regional Resources Recovery Authority
SCRRRA	Southeastern Connecticut Regional Resource Recovery Authority
SSR	Single Stream Recycling
T&D	Transportation and Disposal
VRF	Volume Reduction Plant
WTE	Waste-to-Energy
WestCOG	Western Connecticut Council of Governments

EXECUTIVE SUMMARY

A. Background

This study has been undertaken by the Western Connecticut Council of Governments (“WestCOG”) with the goal of exploring opportunities for regional collaboration in managing municipal solid waste (“MSW”) and related materials through:

- Analyzing current solid waste market trends;
- Collecting, compiling, and evaluating data regarding current solid waste practices and trends;
- Engaging with municipalities in the study area to explore these issues and opportunities for regional cooperation, and
- Developing recommendations for consideration by the municipalities for implementation.

The WestCOG municipalities that have been the subject of this review (the “Study Area”) include:

1. Darien
2. Greenwich
3. New Canaan
4. Norwalk
5. Stamford
6. Wilton
7. Weston
8. Westport

Unlike in some regions of the state, there is no existing regional entity (such as a regional resources recovery authority) providing MSW management solid waste services to all of the communities in the Study Area at this time. Historically, all of these municipalities participated in a regional solid waste commission associated with managing flows of MSW to the Bridgeport RRF. At this time, only Westport remains part of such a collaborative, as it is a member of the Greater Bridgeport Regional Solid Waste Inter-local Agreement (GBRSWIA). Recently, Weston has contracted with the Housatonic Regional Resources Recovery Authority (“HRRRA”) for MSW services and Wilton is currently advancing plans to join HRRRA as well.

A number of the municipalities have been cooperating with Norwalk in periodically procuring household hazardous waste (“HHW”) services. Municipalities in the Study Area otherwise procure and contract for services on their own.

B. Study Approach

There are many different ways to increase efficiencies and reduce operating costs in the Study Area and elsewhere. Other studies recently undertaken, such as the Connecticut Coalition of Sustainable Materials Management (CCSMM) focus on initiatives to achieve greater source reduction, organics diversion, and recycling rates. While these are important initiatives, it is important to understand that many of these initiatives may add to overall system costs and the purpose of this particular study is to focus on ways for the Study Area to work together in a more regionalized manner to reduce operating costs.

There are critical factors impacting solid waste management in Connecticut and which have influenced the study approach. The trends described in this report, namely, lack of adequate local disposal capacity for MSW, have the potential to increase operating costs, particularly for smaller municipalities that are not part of a larger solid waste authority or similar consortium. The fact that MIRA was unable to receive the support from state and local government to refurbish the CSWS RRF, which currently represents over one-third of the state's MSW processing capacity and is currently a critical State solid waste infrastructure component, is an indicator that the trend of waste exportation will continue and accelerate in the upcoming years. Increasingly, public and private operators need to be positioned to efficiently export municipal solid waste and other materials to out-of-state markets not only for temporary service during interruptions but over time, for regular service.

With this understanding in mind, the WestCOG towns are advised to focus on two primary objectives: 1) reduce operational costs associated with solid waste collection and transfer station operations, and 2) evaluate how to optimize its existing infrastructure and procurement process to accommodate an increasing portion of their waste streams that may require long distance hauling.

And as such, this study's approach is a responsive approach to the issues faced by local officials charged with municipal waste management and budgeting and focuses on operational changes that can be implemented at the municipal and regional level to reduce operating costs irrespective of other important initiatives.

Solid Waste Market Trends

Increasing Shortfall of In-State MSW Disposal Capacity

The state of Connecticut in recent years has experienced a lack of adequate in-state MSW disposal options. The last year for which the Connecticut Department of Energy and Environmental Protection ('DEEP') published detailed data regarding MSW in-flows and out-flows was 2014. For that year, DEEP reported that 345,863 tons of MSW generated in-state were disposed of out-of-state, while 132,860 tons of out-of-state MSW waste were disposed of in-state¹. There is reason to expect that this imbalance has increased in recent years and the shortfall in in-state MSW disposal capacity is expected to continue to increase, especially with the 2015 closure of the Wallingford Resource Recovery Facility (RRF) and impending closure of the Hartford Resource Recovery Facility ("RRF") currently slated for June 2022. Considering the Hartford RRF has typically processed in excess of 500,000 tons of MSW/year, it is clear that in-state options will become scarcer in the future without a dramatic change in MSW disposal practices.

Primarily due to decreasing in-state capacity for oversized MSW ("OMSW") and construction and demolition waste ("C&D"), which began much earlier than capacity challenges for MSW, and less so due to the increasing scarcity of MSW disposal options in-state, operators in Connecticut and nearby states have been investing for several

¹ Please note the Wallingford Resource Recovery Facility was converted to a transfer station in April, 2015 resulting in a loss of an additional 140,000 tons of waste disposal capacity in the following years.

years in equipment and infrastructure to deliver wastes to distant out-of-state landfills in states such as New York, Pennsylvania, Ohio, and Kentucky. This includes not only methods to ship MSW, OMSW, and C&D by truck, but to also ship some of those waste streams by rail to facilities specifically designed to receive and off-load inbound materials from railcars.

Even with the shortage of available in-state capacity, we do not anticipate significant new disposal capacity to manage MSW will come on-line in the Study Area or in-state in the foreseeable future. Consequently, aside from successfully contracting for access to in-state capacity, municipalities will increasingly need to be prepared to have their MSW transported to distant facilities.

Privatization and Consolidation

Connecticut has also experienced a trend of increasing privatization of in-state MSW capacity, starting with the conversion of several RRF's from public control to full private ownership, and increasing consolidation in the western part of the state's private industry with the merger between Wheelabrator Technologies Inc., Tunnel Hill Partners, and City Carting (now known as WIN Waste Innovations)². These actions together have further reduced municipal control and, to some extent, options for waste management and disposal.

For example, until these recent acquisitions and subsequent merger, parties in the Study Area had the ability to contract either with City Carting for hauling and disposal, or with Wheelabrator just for disposal, hiring a separate party for hauling services or perform that work themselves. Under the new circumstances, the entities formerly known as Wheelabrator and City Carting are now essentially the same entity, reducing the number of parties that might compete for services. It is not yet clear what if any effect this will have upon the marketplace; the ongoing decline in adequate in-state MSW disposal capacity will likely be the single largest driver of market pricing for MSW services in the future.

That being said, we find that entities controlling larger tonnage amounts can obtain favorable transportation and disposal (T&D) rates with long distance hauling vendors. One example of this is the City of Stamford, which is currently paying less for MSW T&D than any other municipality in the Study Area through its contract with a vendor who hauls this waste out-of-state most of the time but uses in-state RRF capacity on a limited basis when available.

² Please note there are various references to Wheelabrator and City Carting throughout the report and these references have not been changed to WIN Waste Innovations in order to provide the reader with the knowledge of the original contractual relationships.

New Capacity for Certain Other Waste Streams

On a more positive note Connecticut has recently experienced investment in facilities to manage certain components of waste streams handled by municipalities in general:

- The opening of the Quantum Biopower Anaerobic Digestion Facility located in Southington, Connecticut that accepts and processes up to 40,000 tons per year of source separated commercial organic and compostable wastes which are then digested to produce methane and a soil amendment by-product; and
- The opening of the Urban Mining Glass Processing Facility located in Beacon Falls which can process clean bottle glass and recovered MRF glass to create a product that can be used in the production of concrete products.

Additional organics facilities have been proposed for development in Connecticut, which may provide some opportunity for municipalities in the Study Area to manage source separated organic materials in the future.

State Initiatives & Legislative Actions

DEEP has been advancing efforts to reduce waste generation in the State. In 2020, DEEP created the Connecticut Coalition of Sustainable Materials Management (CCSMM). As of March 2021 a total of 81 municipalities across Connecticut had pledged to support this Coalition.

The CCSMM consisted of four (4) working groups focused on the areas of food scraps/organics collection & diversion, unit-based pricing, extended producer responsibility (EPR), and initiatives to increase recycling. The working groups predominantly comprise municipal representatives. A Findings Report was completed in January, 2021, and a PowerPoint was shared on January 11, 2021 which identified the working group's recommendations, including suggestions for potential legislative actions.

Legislative actions are one of the most effective ways to implement the more impactful CCSMM recommendations (i.e. expansion of the commercial organics recycling law and implementation of unit based pricing systems). Covid-19 impacted the ability for most solid waste and recycling related legislative items to be brought to the floor for discussion during the 2021 legislative session, though this should not be the case in the next 2-3 years.

WestCOG and the local municipalities should continue to track potential legislative actions closely to stay in tune with any potential measures that may be passed at the state level, while concurrently working to advance initiatives at the local level. Initiatives can be implemented through local ordinance or executive decision; however, this typically requires support of local voters and can at times be more difficult to enact.

RECOMMENDATIONS

Following is a summary of the recommendations that have resulted from this review. Please refer to the balance of the report for additional information and background on these items.

More Regional Cooperation

In general, municipalities that work together or are part of a regional resource recovery authority or similar regional agreement have historically been able to leverage their aggregate waste streams (MSW, SSR, organics, OMSW, etc.) tonnage to yield better transportation and processing/disposal (“T&D”) rates in the marketplace. This opportunity may have particular benefits for both small and large municipalities: smaller municipalities may obtain much better pricing for items such as MSW and OMSW services when joining with other, larger municipalities, and larger municipalities may enjoy the benefit from joint procurement of a variety of waste streams, especially with smaller-quantity items such as HHW (already jointly procured in the Study Area), source separated organics, source-separated glass, waste oil, or similar items.

Regional cooperation also provides the ability to unify public outreach and education initiatives and deliver consistent messaging from town to town on important subject matter such as CTDEEP’s “What’s In / What’s Out” recycling education campaign, and best practices aimed at source reduction and organics diversion. For example, an educational campaign on the benefits of backyard composting could be organized and implemented at a regional level. Municipalities who are a member of a RRA enjoy this benefit; whereas the Study Area municipalities each have this responsibility at the individual level.

The recommendation to pursue more regional cooperation particularly applies to the municipalities of Greenwich, Stamford, Darien, Norwalk, and New Canaan. Their most recent collaboration, which also included the municipalities of Wilton, Weston, and Westport, has been through joint procurement of HHW services, whereby Norwalk managed a regional procurement under which each municipality then had the ability to accept the pricing and enter into an individual contract with the vendor. It is also understood that Darien and Norwalk (and possibly others) worked together on a procurement of MSW T&D services, however they each now work directly with the vendor for contracts for service.

There are several options available to be considered by municipalities in the Study Area to collaborate in the future to jointly procure and manage services, including:

- Following the past practice used for HHW services, where the interested parties work together to create a Request for Proposals (RFP) that is issued and managed by one community; with all municipalities having an option to take the pricing obtained, or not;
- Asking an existing party such as WestCOG to undertake procurement of a waste management service on behalf of interested municipalities in their service area. There are examples of this having been done in other areas of the state for a range of services;

- Creation of a new regional entity, such as a regional resources recovery authority, by interested municipalities. Thereafter, the new authority would conduct the procurement and potentially assist in managing the services provided to the member municipalities, or
- Discuss with the Greater Bridgeport Regional Solid Waste Interlocal Agreement (GBRSWIA) the potential of joining that Interlocal when its current disposal agreement with Wheelabrator expires in June 2024.
- Attempt to regionalize specific service contracts as a starting point. For example, Darien, Greenwich, and Norwalk all contract with City Carting for MSW and SSR T&D and each municipalities contract expires within 6 months of one another.

Municipalities may consider a range of factors when evaluating the options for regional cooperation, including: the magnitude of the cost of the contracts under discussion, the potential duration of the contracts desired, the degree of support desired by an outside party to assist the municipalities in managing the procurement(s) and services, the number of potential waste streams involved, and similar aspects of the effort.

We found that, for MSW services in particular, municipalities in the Study Area have a range of special provisions they typically include in service contracts for MSW T&D, ranging from loading outbound trailers to operating the transfer station and managing inbound deliveries. It should be possible to craft a regional procurement that incorporates these custom services into an overall T&D procurement, or similar aspects of procurements for other waste streams.

Transfer Station Expansion/Consolidation

The B&L Team visited each transfer station within the study area to identify the type of equipment used in its operation, the materials and tonnages handled, general site characteristics (footprint, layout, space for expansion, traffic issues), and its proximity to other transfer stations and disposal facilities. When considering these factors, it is apparent that the municipalities of Wilton and Weston may benefit from consolidation of their transfer station operations; specifically closure of the Weston Transfer Station and expansion of the Wilton Transfer Station to accept Weston's residential and private haulers. This is discussed in more detail in Section 5.6 of this report. B&L has the following recommendations for the Towns of Wilton and Weston:

- Wilton and Weston should continue their discussions and evaluation of consolidating their transfer station operations. B&L anticipates that both municipalities would realize measurable savings from closing Weston's transfer station and the parties reaching an agreement to allow Weston residents and haulers to utilize Wilton's facility. Wilton's impending HRRRA membership, of which Weston is already a member, should further facilitate this arrangement.
- Alternatively, B&L recommends Wilton and Weston evaluate consolidation of their transfer station activities by closing the Weston transfer station and converting the

Wilton transfer station to a residential drop-off only facility. Considering the reduction in private hauler use at both transfer stations over the past several years, it may be prudent to explore this conversion.

- Wilton should pursue improvements to its transfer station to increase efficiency, comply with standard safety requirements, and decrease operating and transportation costs.

These improvements include:

- Removal of its MSW compactor;
- Modification of its MSW load out area to accept 53' open top transfer trailers to take the place of the current compactor system; and/or
- Separation of residential and commercial vehicular traffic.

Regional Glass Recycling Program

One of the waste streams for which municipalities have seen dramatically increased marketplace pricing is single stream recyclables ("SSR"). A few municipalities have historically enjoyed a firm contract price for SSR and remain insulated thus far from spikes in pricing. For others, however, pricing has now approached and rivaled the typical cost of MSW T&D. One way to possibly help reduce this expense would be to ask residents to source separate glass, which is often the largest single component of SSR by weight. This material would then be sent to one of the State's glass processing operations (Strategic Materials or the newly operational Urban Mining Facility). This could be accomplished by:

- Providing 'glass only' collection bins for residents to place their source separated glass into (this would most likely be a roll-off container);
- Contracting with a vendor who can service the region's 'glass only' collection containers. The vendor could in turn be responsible for securing a disposal agreement with either Strategic Materials or Urban Mining;
- Promoting awareness to residents that a 'glass only' depository is available at their transfer station and to refrain from including glass with the SSR; and/or
- Evaluating the effectiveness of the program and monitoring developments with the CT Bottle Bill – at a future date it may be feasible to offer a separate collection container for redeemable glass to support volunteer redemption programs.

This recommendation would have the greatest financial benefit to the municipalities who are paying more for their SSR T&D and also process higher tonnages of residential SSR.

Regional Food Scraps Drop-off Program

Several of the WestCOG municipalities have implemented pilot food scrap drop-off programs at their transfer stations. These are relatively simple programs that consist of stationing bins for food scrap collection in a designated area of the transfer station site. The towns that already have some version of this program in place are Darien, Norwalk, and Greenwich. Stamford began implementation of a pilot program in April 2021. Wilton is open to the idea of implementing a similar program.

A food scraps drop off program could be implemented at a regional level without much effort. Similar to how Norwalk manages the HHW contract, one municipality would need to take ownership of the food scraps drop off collection contract (or WestCOG could perform this function) and negotiate the per haul and per bin pricing for each town. This could set the groundwork towards implementation of a regional curbside collection program.

Figure 1 – Food Scrap Collection Bin – Darien Transfer Station



Other Recommendations

The B&L Team has the following miscellaneous recommendations aimed at reducing operating costs or increasing revenues:

- Evaluate the current structure and fees levied for hauler registration/permit fees, specifically;
 - For those municipalities who are not charging a hauler registration fee for private haulers, consider doing so;
 - For those municipalities who are charging hauler registration fees consider implementing a fee structure similar to Norwalk, which charges haulers by vehicle based on the gross vehicle weight rating;
 - Evaluate the ability to charge landscapers permit/license fees;
- Evaluate current practices for scale house operations and ticketing system and consider:
 - Requiring all transfer station users to pay by debit card, allowing for better tracking of tipping fees;
 - Implementation of automated ticketing systems for private haulers and possibly residents;

- Evaluate the ability to fit larger roll-off containers for scrap metal, bulky waste and other lower tonnage material streams to reduce the number of truck trips and therefore save in annual transportation costs. There may be an opportunity to receive grant money from the state to support the purchase of larger roll-off containers, through the recently released RecyclingCT Grant.
- Specifically for the municipality of Westport:
 - Continue to participate in the Greater Bridgeport Regional Solid Waste Interlocal Agreement (GBRSWIA), which will be in effect until June 30, 2024.
 - Participate in discussions with Greenwich, Stamford, Norwalk, New Canaan, and Darien to identify opportunities for them to join the GBRSWIA when the current disposal contract with Wheelabrator expires on June 30, 2024.

1.0 INTRODUCTION

1.1. About WestCOG

Founded in 2014, the Western Connecticut Council of Governments (WestCOG) is one of nine regional Councils of Governments established pursuant to Connecticut General Statute's 4-124i et seq. WestCOG serves the Western Connecticut Planning Region, the second most populous and fastest growing region in Connecticut, with an estimated population of 610,000.

WestCOG is governed by a board comprising the Chief Elected Officials (Mayors and First Selectmen) of its members. Its members, which make up the WestCOG Planning Region, consist of three principal cities (Stamford, Norwalk and Danbury) and fifteen surrounding towns (Bethel, Bridgewater, Brookfield, Darien, Greenwich, New Canaan, New Fairfield, New Milford, Newtown, Redding, Ridgefield, Sherman, Weston, Westport, and Wilton).

State policy since 2013 has been to incentivize COGs to diversify beyond their long-established roles in regional land use and transportation planning into the regional delivery of services currently or expected to be provided by local governments, either through direct provision ("regional services") or through facilitating inter-local cooperation ("shared services").

Accordingly, WestCOG is working with its members to find ways to improve solid waste management, for the purpose of containing costs and developing efficiencies.

1.2. Purpose of Study

In accordance with WestCOG's role of facilitating the regional delivery of services, this study was commissioned to evaluate improvements that can be made to the current solid waste and recycling management practices employed by eight (8) WestCOG municipalities³. At the outset of this Study, these municipalities (Darien, Westport, Greenwich, Stamford, Norwalk, New Canaan, Wilton, and Weston) were not members of a regional solid waste and recycling entity and it was believed that they may stand to benefit from more regional collaboration⁴. The ultimate goal of this study was to identify recommendations for a more regionalized approach to solid waste management that can be feasibility implemented to achieve a reduction in operating costs for the municipalities and for the region as a whole. The Study's purpose is also to identify operational efficiencies and to respond to market conditions given changes in interstate waste management systems. Finally, to the extent feasible the Study aims to be supportive of statewide waste management initiatives.

³ Although there are 18 municipalities within the WestCOG Planning Region, the other 10 municipalities are currently members of the Housatonic Resource Recovery Authority (HRRA), a regional solid waste and recycling authority, and as a result are not part of this study.

⁴ Weston formally joined the HRRA on July 1, 2020 but remained an active participant in the study.

2.0 BACKGROUND ON CONNECTICUT'S SOLID WASTE MANAGEMENT SYSTEM

2.1. Structure

To fully understand why regional collaboration is so important, we must look at how our State's current solid waste management network was developed and intended to function.

Based upon legislation passed in 1973, Connecticut's solid waste management system was constructed around the concept of a "hub and spoke" system, with a Resource Recovery Facility (RRF, also referred to as a waste-to-energy (WTE) facility) acting as the hub and the surrounding member towns acting as the spokes. As such the "state-wide" solid waste management system was a network of several regional, and largely independently functioning systems. These regional systems were optimized to function around an RRF, with waste being direct hauled by collection vehicles (i.e., packer trucks) in combination with transfer stations serving both residents and collection vehicles. At that time, some of the transfer stations in the Study Area were believed to handle most or all of the waste generated in the municipality (example; Greenwich), while others likely handled only a portion of locally generated material.

For the past several decades the RRFs have effectively managed the MSW generated from participating cities and towns, in concert with transfer stations, avoiding the need to "long-haul" waste to out-of-state disposal facilities, and minimizing the need to transfer larger volumes of material through the transfer stations. As the State's recycling laws were passed in the 1980s and 1990s, many of the regional RRF systems became a vehicle for towns to work together in contracting for recycling services, often with privately owned/operated facilities.

2.2. Development, Construction, & Ownership of the RRFs

The State's original resource recovery authority (CRRRA, now MIRA) as well as other regional and municipal Resources Recovery Authorities (RRAs), worked together with industry on the construction of six (6) Resource Recovery Facilities (RRFs, also referred to as waste-to-energy (WTE) facilities) to provide the means for statewide MSW disposal capacity. More specifically, four (4) facilities (Bridgeport, Wallingford, Hartford, and Preston) were developed and constructed using long-term revenue bonds issued by CRRRA's bonding authority, and the other two (2) facilities (Bristol and Lisbon) were developed and constructed with bond debt issued under the statutory authority of the Connecticut Development Authority and municipalities. Except for the MIRA Hartford and Lisbon facilities, the others all were implemented under a complex financing structure that involved tax-exempt debt with a private equity contribution. All six (6) facilities entered Service Agreements that generally ran concurrent with the debt service, meaning that when the bond debt had been paid off, the Service Agreements expired at or about the same time. In the cases of Bridgeport, Preston, Bristol, and Wallingford, due to provisions set forth in the original contract or lack of the public contracting party to exercise their option to retain ownership of the facility, each such facility transitioned ultimately to private ownership as provided for in the original contracts. Currently, only the Hartford CSWS RRF and the Lisbon RRF remain publicly owned. See Table 1 below for current ownership status.

Table 1 – Resource Recovery Facility Ownership Status

Facility	Commercial Operation Date	Debt Service Paid Off	Current Owner	Current Operator
Bristol Resource Recovery Facility	May 1988	2014 – Covanta assumed ownership control from the BRRFOC at that time	Covanta	Covanta
Bridgeport Resource Recovery Facility	July 1988	2008 – Wheelabrator assumed ownership control at that time	Wheelabrator	Wheelabrator
Hartford Connecticut Solid Waste System RRF	October 1988	2012 – CRRA (now MIRA) Has always owned this facility.	MIRA	NAES
Wallingford Resource Recovery Facility	May 1989	2009 – Covanta assumed ownership control at that time and converted the facility to a transfer station in 2015	Covanta	Country Disposal Services, LLC (operating it as a transfer station)
Preston Resource Recovery Facility	Feb. 1992	2015 – Covanta assumed ownership control at that time	Covanta	Covanta
Lisbon Resource Recovery Facility	1995	2020 – Eastern Connecticut Resource Recovery Authority (ECRRA Has always owned this facility.)	ECRRA	Wheelabrator

As noted, the Bridgeport RRF, where the majority of the MSW generated from the WestCOG municipalities is disposed, is currently owned and operated by Wheelabrator Technologies Inc. (WTI) and is approximately 31 years old.

2.3. Current State of the RRFs and Local Disposal Capacity Shortfall

Over the years the RRFs have faced increased economic challenges. Increased operations and maintenance ('O&M') costs, declining power prices, a lack of renewable energy credits, and a declining metals market have forced an increase in disposal (tipping) fees. The increase in tipping fees is necessary not only to offset declining revenue streams, but also to fund the capital improvements necessary to continue safe, reliable, and environmentally sound operation of these RRFs. In the case of the Wallingford RRF, the decision was made to close this facility in 2015, as the economics were better to convert this facility to a transfer station and process much of the 140,000 tons per year at the neighboring Bristol RRF.

Currently, MIRA has been unsuccessful in securing the funding required to refurbish the Connecticut Solid Waste System (CSWS) RRF (formerly known as the Mid-Conn RRF). As negotiations failed with a potential developer to refurbish the facility, MIRA may be forced to close if the State of Connecticut does not support the funding of the major renewal effort.

Should this facility close, the state will lose over 700,000 tons per year of disposal capacity which accounts for approximately 35%⁵ of the waste processed within the state each year. This will place more stress on the remaining RRF's, which are already operating at or above their design capacity.

Over the past decade municipalities in Connecticut and throughout the greater southern New England market have faced a growing waste disposal capacity shortfall which will only increase in the future. The closure of the Wallingford RRF, RRF availability issues due to equipment outages, and the closure of the Southbridge and Chicopee landfills in Massachusetts have already significantly reduced local and regional disposal capacity. The impending closure of the CSWS RRF (anticipated for the summer of 2022) will only exacerbate this shortfall.

The combination of all these circumstances has resulted in Connecticut becoming a net exporter of solid waste and over the past decade the tonnage being exported from the state has steadily increased. Without the development of additional local disposal capacity in the near future, which we believe to be unlikely in the State of Connecticut, this trend will continue.

2.4. Existing Transfer Station Network

The above described "hub and spoke" system works well as long as the local RRFs remain operational. Many transfer stations were not designed to accommodate inbound large-capacity collection vehicles since, for some towns, the destination RRF was accessible by collection truck. And, since the truck trip from the transfer station to the RRF was minimal, some of the smaller stations were not built to utilize a load out process involving larger open-top trailers, a system now standard in the industry for new facilities. In the past, it was practical for MSW to be cost effectively transported to the local RRF either in the local collection vehicle, or from the transfer station via smaller roll off containers and compactor boxes. These methods of transportation become less and less cost effective the farther the haul distance becomes. Ultimately, to reach more distant disposal destinations, transfer stations need to be able to accept collection vehicles serving the municipality (or have another nearby destination available) and the station itself needs to allow for the use of an open top load out process using large transfer trailers, or a baling operation using flatbed trailers, must be implemented.

Not all of the eight (8) WestCOG municipalities in the Study Area have the load out infrastructure in place to support long distance hauling and are therefore constrained to waste disposal options that are in close proximity. See Section 4.0 for more detail on the long-distance waste disposal options which may be available to the municipalities if upgrades are made to the transfer station infrastructure.

There are three (3) different types of transfer stations in the Study Area:

⁵ Data from Connecticut's 2016 Comprehensive Materials Management Strategy

1. Facilities that allow for the use of modern, open-top transfer trailers (Greenwich, Stamford, and New Canaan);
2. Facilities that are designed to use compactor-type transfer trailers (Darien, Westport, and Norwalk), and,
3. Stations that are designed for lower volumes of MSW deliveries and use roll-off boxes and hydraulic compaction (Weston and Wilton).

The compactor-trailer transfer stations are similar in design and were constructed approximately forty years ago as the towns were closing out local landfills and the original regional Bridgeport resource recovery facility was under construction. The contractor responsible to build and operate the earlier facility (not the Wheelabrator plant now operating) was also responsible to build out the MSW delivery system, hence the similarity.

Consequently, all the stations except for those in Weston and Wilton use tractor-trailers to move MSW and OMSW to destination facilities. The use of tractor-trailer trucks provides a more economical method to transport MSW since payloads can reliably double that typically realized when using roll-off compactor boxes. For a given trip, labor costs would be the same for both truck-types, and the cost of the truck systems, while different, are not significant when amortized over the equipment's lifespan on a per-trip basis. The industry long ago recognized that tractor-trailer trucks are essential to cost-effective delivery of waste or recyclables to more distant processing and disposal facilities.

Like Weston and Wilton, compactor-box trucks are in use at smaller volume stations in many areas; however, this is only practical when the destination processing/disposal facility is somewhat nearby but as the distance traveled increases the cost becomes prohibitive.

Four transfer stations in the Study Area use a compactor-based tractor-trailer arrangement under which MSW is pressed into the rear of the trailer with a stationary hydraulic compactor. This arrangement was once popular in the industry however most operators have transitioned over the past twenty years to the use of open-top trailers that provide more flexibility in the materials one is able to load into the truck (MSW, OMSW, C&D, brush, tires, mulch, etc.), and also avoids the need for a stationary compactor which demands a great deal of electrical power and some maintenance (and a loader as well). The open-top trailers also allow the operator to evenly distribute the load over the length of the trailer thereby mitigating the potential for concentrating the load in the rear of the unit and corresponding exceedances of axle-weight limits.

Nonetheless, it does not make sense for the stations in the Study Area that use the compactor-trailer set-up to invest in the substantial and costly station renovations required to accommodate use of an open-top-transfer-trailer until such time as their transfer stations are undergoing renovation for other purposes.

Given the challenge of locating an acceptable site, plus the cost of capitalizing and operating new technology in combination with permitting timelines, it is unlikely that a new MSW facility (e.g., RRF or similar high-volume facility) will be constructed in the next ten years within or near

to the Study Area. Unfortunately, as noted previously, it is likely that access to existing disposal capacity will be increasingly under pressure in coming years. MIRA has been unsuccessful in its efforts to receive the support of state and local governments to refurbish the Hartford CSWS RRF, which currently represents over one-third of the state's MSW processing capacity and is therefore a critical component of Connecticut's solid waste infrastructure. Under current plans, that facility will cease operating on June 30, 2022. Further, the Wallingford RRF ceased operating in recent years and was converted to use as a transfer station, meaning that MSW previously processed at that site now must be delivered to another processing or disposal site. These factors will continue to advance the ongoing trend of waste exportation to distant out-of-state sites in the upcoming years. Increasingly, public and private operators need to be positioned to efficiently export municipal solid waste and other materials to out-of-state markets not only for temporary service during interruptions, but over time for day-to-day service.

2.5. Recent Developments in Southwest CT

Recently Tunnel Hill Partners, City Carting, and Wheelabrator Technologies Inc. (WTI) merged to form a new entity known as WIN Waste Innovations. This new entity is now a vertically integrated business that provides collections, transfer, and both landfill and WTE disposal. WTI owned and/or operated the Bridgeport, Dutchess County, NY, and Peekskill, NY RRFs. City Carting owned and operated three (3) transfer stations in Fairfield County, CT and operates several additional transfer stations in Westchester County, NY. Tunnel Hill Partners is considered the largest integrated waste-to-rail company in the United States and owns two landfills in Ohio, one in Pennsylvania, and has over 1,700 gondolas and 100 flatcars in its rail fleet. The new conglomerate has also received a large influx of private equity funding which B&L surmises will be used to improve its existing WTE and transfer station infrastructure, rail capability, and hauling and collection capabilities.

2.6. Impacts to non-HRRA WestCOG Municipalities

The eight (8) municipalities in this Study are not banded together for solid waste planning and management by any formal arrangement or group entity. Instead, waste collection and transfer operations are a mix of public and private operations, and the specifics vary from municipality to municipality. It appears based upon the data provided, that a significant portion of the waste disposal occurs at the Bridgeport RRF or one of the neighboring Wheelabrator operated facilities. Due to scheduled or unscheduled facility downtime at one or more of the RRFs in CT, facility operators periodically "long haul" MSW to more distant disposal facilities.

Considering the factors that have been highlighted in the previous sections, namely:

- 1) Conversion from public to private ownership of the RRFs
- 2) Reduction in local solid waste disposal capacity
- 3) Lack of adequate transfer station infrastructure to support long distance hauling
- 4) Increased concern regarding in-state disposal capacity at existing RRFs, Hartford in particular

The conclusion reached is that municipalities need to be positioned to take advantage of more distant disposal sites if needed and that regional collaboration may help leverage the combined tonnage of each municipality to yield better transportation and disposal costs.

Municipalities that are part of a regional authority, such as the HRRRA municipalities, or part of an interlocal agreement, such as Westport, may enjoy better contract protection against increasing tip fees and more assured access to local facilities since they would offer more “buying power” in the marketplace for arrangements such as contracts with local RRFs such as Bridgeport.

Another factor that should be considered is the long-term reliability of the remaining RRFs, most notably, the Bridgeport RRF. Over the coming decades, owners of the RRF’s that continue to operate will need to continue to weigh the cost of continued operation vs the cost of long-haul exportation. In both scenarios, it is likely to result in increased disposal costs for municipalities, but the municipality that can access long distance disposal facilities will be in a better position to respond to rapidly changing conditions.

For example: it is not unreasonable to consider the scenario whereby WTI elected at some point in the future to shut down the Bridgeport RRF and convert the receiving building into a transfer station, similar to what Covanta did with the Wallingford RRF. The Bridgeport RRF is one of the oldest in the state and is currently operating near or past its original intended economic lifespan. Considering WTI’s expanded network of transfer stations and rail haul capabilities that have been realized through its mergers with City Carting and Tunnel Hill Partners, this scenario is possible. The WestCOG municipalities that have the ability to support long haul through one of its member’s transfer stations will fare better than municipalities that have to pay to transport its materials to a larger transfer facility in order to reach long distance disposal options.

3.0 GENERAL BACKGROUND INFORMATION ON WEST COG NON-HRRA MUNICIPALITIES

B&L has compiled detailed information on each of the study municipalities and assembled that information into a set of data tables. Some of those tables are included within the body of this report; however, most are attached as Appendix A and include the following information:

- 1) Table A-1: Transfer Station Information
- 2) Table A-2: Waste and Recycling Demographics
- 3) Table A-3: MSW & SSR Collection System
- 4) Table A-4: Permit & Registration Fees
- 5) Table A-5 & A-6: Tipping Fees
- 6) Table A-7: Primary Vendor Service Contracts
- 7) Table A-8: Transfer Station Staffing and Roles
- 8) Table A-9 & A-10: Materials and Tonnage Processed
- 9) Table A-11 & A-12: Material Disposal Costs (Unit Costs)
- 10) Table A-13: Annual Material Transportation and Disposal Costs
- 11) Table A-14: Annual Revenues
- 12) Table A-15: Annual Transfer Station Operating Costs
- 13) Table A-16: List of Licensed Haulers

3.1. Current Regionalized Activities

3.1.1. Household Hazardous Waste (HHW)

Although each municipality generally administers operations on its own regarding solid waste management, the study municipalities operate under a Regional HHW Agreement. In this arrangement, each municipality hosts one (1) HHW collection event each Calendar Year, which is held within the boundaries of the host municipality but not at the actual transfer station⁶. During 2020, many of the HHW Collection Events were cancelled due to the COVID-19 pandemic. Some of the municipalities in the study have mentioned it would be prudent to hold more HHW events, particularly during the months of November through February; however, this may prove challenging and may require finding one or more additional sites that are acceptable to both a host community and the other participating municipalities.

The City of Norwalk is the lead municipality in bidding this service. Once a successful contractor is selected, each municipality then individually contracts with the HHW Collection Vendor. At the start of this study, the HHW Collection Vendor was Care Environmental Corp. (“Care”) and the contract duration was from January 1, 2020 through December 31, 2022 with options to extend the Agreement for two additional terms of one (1) year each. However, the City of Norwalk ended up terminating its contract with Care and on October 26, 2020 issued a new RFP for HHW Collection, which

⁶ The Transfer Station permits do not allow for the handling of HHW at the actual transfer station

was awarded to Clean Harbors, Inc. Based on information provided by several of the municipalities, the cost of these services have roughly doubled under the new agreement.

3.1.2. Westport Interlocal Agreements

Westport is currently a party to two separate Interlocal Agreements with surrounding non-WestCOG municipalities for both solid waste and recycling management. The first interlocal agreement is known as the Greater Bridgeport Regional Solid Waste Interlocal Committee (GBRSWIC). This includes the towns of Bethany, Bridgeport, Easton, Fairfield, Milford, Monroe, Stratford, Trumbull, Westport, and Woodbridge. Collectively these towns have committed 185,000 tons of MSW to go to the Bridgeport RRF under a ten-year agreement that started in July 2014. In March 2019 the town of Southbury joined the GBRSWIC.

The second inter-local agreement is called the Greater Bridgeport Regional Recycling Interlocal Committee (GBRRIC) and was formed in 2018 to combat the collapse of the recycling market. There are fourteen towns that are parties to this agreement, which aggregates the municipal recyclables within this network to increase purchasing power with private haulers. Currently the GBRRIC has a contract with Oak Ridge Waste & Recycling and is paying \$75/ton for recyclables.

As a result of these Inter-local Agreements, B&L is of the opinion that Westport is receiving a very favorable rate for MSW T&D; however, it was observed that they are paying the second highest fees for SSR.

3.2. General Information

All of the transfer stations with the exception of Stamford are registered under DEEP's Municipal General Permit. Each municipality has at least one transfer station that is available for use to residents and private haulers. Operating hours vary from town to town, but in general each transfer station is open five to six days per week for approximately eight hours per day. Wilton is the only town that operates its transfer station less than five days per week.

Except for Norwalk and Stamford, all municipalities are 100% private subscription based for MSW and SSR collection. This means that there is no municipal collection, and the municipality does not hold any contracts with a specific hauler to perform collection services. For Norwalk, City Carting has a contract to collect curbside residential garbage in the 4th Taxing District as well as SSR for the entire city. Stamford is approximately 75% municipal collection.

3.3. Permit and Tipping Fees

There are various fees that each municipality charges to collect material and to use a transfer station to transfer or dispose of that material. Table 2 and Table 3 display the permit and primary tipping fees that are currently in place at each transfer station.

Table 2 – Permit & Hauler Registration Fees

Town	Permit/Registration Fees
Darien	\$150 per vehicle for the delivery of waste materials excluding garbage
Greenwich	\$150 per vehicle & \$75 per "satellite vehicles" i.e. pickup trucks
New Canaan	\$100 per vehicle
Norwalk	<12,000 lbs. - \$125; >12,000 lbs. - \$500
Stamford	No registration fee
Wilton	\$750 per vehicle plus a container permit fee of \$50 per container
Weston	\$250 per hauler; no per vehicle charge
Westport	For both commercial and residential haulers the annual license fee per vehicle based on vehicle capacity. No licensing process for yard waste haulers.

Table includes hauler registration fees. Residential fees can be found in Table A-5 in Appendix A.

Table 3 – Primary Tipping Fees

Town	MSW Tipping Fees (Private Haulers)	MSW Tipping Fees (Residential Drop-Off)
Darien	\$94.00	\$0.00 with permit
Greenwich	\$112.00	\$0.00 with permit
New Canaan	\$95.00	\$0.00 with permit
Norwalk	\$90.00	Residents with a Disposal Permit Card (pickup trucks, etc.) receive 1 Ton Free (incl's yard waste dumped at other facility) then \$90/ton thereafter
Stamford	\$101.00	First 200 lbs. per day is free, over 200 lbs. costs \$5.05 per every extra 100 lbs.
Wilton	\$93.00	\$4.50 per ticket (one ticket required per 32 gal bag)
Weston	\$95.31	\$4 per sticker (one sticker required per bag)
Westport	\$110.00	\$0.00 with permit. If resident exceeds 6, 30 gallon allotment they are charged \$110/ton

Only Weston charges private haulers a tipping fee for SSR (per the HRRRA agreement) which was \$75.31 per ton for Q2-2021. Other Tipping Fees can be found in Table A-6 in Appendix A.

3.4. Primary Service Contracts

Each municipality has contracts with different vendors for various services such as transfer station operations, and transportation and disposal of MSW, SSR, and other primary materials. Please refer to Table A-7 – Primary Service Contracts in Appendix A for more detail including specific contract expiration dates and vendors.

The key takeaways are as follows:

Transfer Station Operating Contracts

- 1) The municipalities of Darien, Greenwich, and Norwalk have a contract with a private operator to manage the day-to-day operations of the transfer station⁷. More specifically, each of these municipalities contract with the same company (City Carting) for this service.
- 2) The municipalities of Stamford, New Canaan, Wilton, Weston, and Westport operate their transfer stations predominantly with municipal staff⁸.
- 3) The town of Wilton does not currently have a contract in place for the transportation and disposal of any materials it collects and instead hauls its materials with municipal staff and trucks to the Norwalk Transfer Station for disposal.⁹
- 4) Many of the transfer station operation contracts and T&D contracts expire within six months or one year of one another, which would potentially facilitate regionalizing some of these contracts.

MSW & SSR Hauling and Disposal Contracts

- 5) Wilton does not currently have a contract for hauling services and uses transfer station staff to transport MSW, SSR and other received materials to the Norwalk Transfer Station for disposal.
- 6) Westport has separate contracts for hauling and disposal of MSW. Westport has an Interlocal Agreement for MSW management with approximately thirteen other municipalities, who have a collective disposal agreement directly with Wheelabrator. Westport is also part of a second Interlocal Agreement with many of the same municipalities for SSR management and these towns have a collective disposal agreement directly with Oak Ridge Recycling, LLC. Westport contracts with City Carting for the hauling of both MSW (to the Wheelabrator RRF in Bridgeport, CT) and SSR (to the Oak Ridge Recycling Facility in Shelton, CT).
- 7) Darien, Greenwich, and Norwalk have contracts with City Carting for hauling and disposal of MSW and SSR.
- 8) New Canaan has a contract with Enviro Express Inc. for MSW hauling and disposal and a contract with Oak Ridge Recycling LLC for hauling and disposal of SSR.

⁷ Note that all transfer stations, even those that are privately operated, have municipal staff running the scale house and, in some cases, performing other duties.

⁸ Stamford's T&D contracts for MSW, leaves, logs, brush, and yard waste include the vendor loading out those materials, therefore, vendor staff perform those duties.

⁹ All materials are self-hauled by the Town to the Norwalk Transfer Station with the exception of scrap metal, which is hauled to Lajoie's in Norwalk, CT.

3.5. Materials Processed

Collectively, approximately 250,000 tons of MSW, SSR, bulky waste, C&D debris, brush and yard waste, and other recyclables are transferred through these transfer stations each year. Tables 4 & 5 display the quantities of each of the major material streams for each municipality.

Table 4 – MSW & SSR Tonnage Processed

Town	Total MSW & SSR	Total MSW	MSW - Delivered by Hauler	MSW - Residential Drop-off	Total SSR	SSR - Delivered by Hauler	SSR - Residential Drop-off
Darien	6,008.6	2,768.7	412.1	2,356.6	3,239.9	2,558.7	681.2
Greenwich	46,706.7	32,190.3	26,475.4	5,714.8	14,516.5	12,896.3	1,620.2
New Canaan	7,873.0	6,187.0	Not Provided	Not Provided	1,686.0	Not Provided	Not Provided
Norwalk	25,130.3	25,014.1	16,523.0	8,491.1	116.2	0.0	116.2
Stamford	57,946.8	57,646.8	53,646.8	4,000.0	300.0	0.0	300.0
Wilton	3,237.0	2,286.0	2,150.0	136.0	951.0	724.0	227.0
Weston	1,462.0	892.0	320.0	572.0	570.0	154.0	416.0
Westport	18,943.2	15,535.6	2,754.2	12,781.4	3,407.6	Not Provided	Not Provided

Table 5 – MSW, SSR, & Other Material Tonnage Processed

Town	Total Material Tonnage	Total MSW	Total SSR	C&D & Bulky Waste	Other Recyclables	Brush & Yard Waste	Food Waste ⁽²⁾
Darien	13,714.4	2,768.7	3,239.9	529.34	463.3	6,670.0	43.23
Greenwich	75,809.5	32,190.3	14,516.5	6,693.6	4,332.9	17,790.1	286.12
New Canaan	10,685.0	6,187.0	1,686.0	2,812	Not Provided	Incl'd in C&D/BW #	Not Provided
Norwalk	25,766.8	25,014.1	116.2	0	500.0	0.0	136.5
Stamford	79,947.4	57,646.8	300.0	102.99	1020.3	20,877.2	N/A
Wilton	3,406.5	2,286.0	951.0	76.0	93.5	0	N/A
Weston	1,836.5	892.0	570.0	250	124.5	0	0
Westport	23,356.8	15,535.6	3,407.6	Not Provided	427.7	3,930.6	55.3

3.6. Disposal Costs & Revenues

Table 6 below displays MSW and SSR T&D costs for each municipality. For the municipality of Wilton, the transportation cost component of the combined T&D cost for MSW and SSR was calculated by the B&L Team based on estimated total trip time, tonnage per load, driver labor, fuel, and truck maintenance costs. For the municipality of Weston, the transportation cost component of the combined T&D cost for SSR has been estimated based on average tonnage per load and the unit transportation costs provided in the Weston-Oak Ridge Bridge Agreement.

Table 6 – MSW & SSR T&D Unit Costs

Town	MSW T&D	SSR T&D
Darien	\$97.42	-\$7.50
Greenwich	\$93.66	\$65.00
New Canaan	\$88.20	\$83.74
Norwalk	\$93.00	-\$17.50
Stamford	\$75.70	\$66.00
Wilton	\$104.14	\$82.99
Weston	\$95.31/ton for MSW brought to TS by private haulers; \$89.77/ton for MSW brought to the TS by residents	\$49.46/ton for residential SSR; \$107.18 per ton for commercial SSR
Westport	\$80.59	\$78.46

Disposal costs for certain items are covered under existing Extended Producer Responsibility (EPR) programs. These items include mercury thermostats, paint, mattresses, and e-waste. Please refer to Table A-11 through Table A-15 in Appendix A for specific unit based and annual disposal and revenue estimates for each transfer station.

4.0 EVALUATION OF MSW DISPOSAL OPTIONS

Municipalities in the study area have a wide range of alternative disposal options available to them, comprising a blend of resource recovery facilities (RRFs) and landfills (LFs). While capacity at Connecticut's in-state RRFs is stretched, the geographic location of the Study Area in the southwest corner of the state provides ease of access to numerous out-of-state options. These options include RRFs located in Westchester County, and landfills located in New York and Pennsylvania reducing the potential impact of future disruptions of service at in-state RRFs to municipalities in the Study Area.

This section of our report provides a summary of disposal options currently in use by the study municipalities, the status of specific in-state and regional disposal/management facilities, options historically used by the state's Materials Innovation and Recycling Authority (MIRA), and listing of other out-of-state facilities.

4.1. Disposal Options Currently Relied Upon by Study Municipalities

The following table summarizes information provided by the municipalities either directly to the study team, or from DEEP quarterly solid waste reports:

Table 7 – Summary of Disposal and Recycling Options

Municipal Solid Waste	Darien	Greenwich	New Canaan	Norwalk	Stamford	Weston	Westport	Wilton
Alliance Waste Management, Taylor PA					X			
City Carting	X							X
Commonwealth LF, PA					X			
Keystone Sanitary Landfill, Dunmore PA		X			X			
Wheelabrator Bridgeport RRF		X	X		X	X	X	
Wheelabrator Peekskill NY		X	X			X		
Single Stream Recyclables								
City Recycling Inc.	X	X		X	X			X
Oak Ridge Shelton			X			X		
Oversized MSW								
Sunny Farms Landfill OH		X						
City Carting								X
Scrap Metal								
Rubino Brothers, Inc.	X	X			X			
Brookfield, Elmsford NY		X						
Lajoies								X
Electronics, Light Bulbs & Alkaline Batteries								
Take 2 Inc, Waterbury					X			X
Freon								
VF Environmental Services								X
Food Composting Waste								
New Milford Farms		X						
Curbside Composting of Ridgefield, CT	X							
Yard Waste, Stumps, Logs, Leaves								
Bulfamante, Rye Brook NY		X						
Scotts Earthgro Lebanon CT		X						
GER Inc. Clinton CT,					X			
Grass or Leaves to Grillo Services Milford	X				X			
Leaves to Snows Farm in Easton, CT	X							
Tires								
Bob's Tire Co					X			X
Clothing								
BayState Textiles, Pembroke MA					X	X		
Simple Recycling, Solon, OH					X			
USAgain	X							

The costs that municipalities in the Study Area realize for the transportation and disposal of MSW and other waste stream varies, as would be expected given the diversity of the towns in population and operations. Contractors take into consideration a range of factors when bidding for these services, not the least of which is the volume to be handled but also factors such as the bidding climate at the time of each respective procurement. The municipalities can bid out

transportation (also known as hauling) and disposal contracts separately, or as one combined transportation and disposal (T&D) contract. Westport for example has a disposal contract directly with the Bridgeport RRF and a transportation contract with City Carting to haul the waste from the transfer station to the RRF. Focused on MSW, and excluding the cost of station operations and administration, the following T&D costs have been reported:

Table 8 – Current MSW T&D Costs – FY2021

Town	Transportation Cost	Disposal Cost	Combined T&D Cost
Darien	-	-	\$97.42
Westport	\$15.80	\$64.79	\$80.59
Greenwich	-	-	\$93.66
Stamford	-	-	\$75.70
Norwalk	-	-	\$93.00
New Canaan	-	-	\$88.20
Wilton	\$7.24	\$96.90	\$104.14
Weston	-	-	\$95.31 (private haulers) \$89.67 (residential drop-off)
HRRA Towns	-	-	\$95.31 (private haulers) \$89.67 (residential drop-off)

*All costs are FY2021

Note that Wilton self-hauls and pays \$96.90 per ton to disposal of its MSW at the City Carting Transfer Station in Norwalk. The \$7.24 per ton transportation cost is an estimate based on the average tonnage per load, driver salary, trip turnaround time, and cost of fuel and other consumables.

4.2. In-State Disposal Options

4.2.1. Resources Recovery Facilities (RRF's)

Connecticut no longer has active MSW landfills. For well over two decades, municipalities in the State have principally relied upon a network of RRFs that were constructed and placed into operation during the late 1980s and early 1990s.

Based upon then-current information and costs, at the time the RRFs were first developed it was anticipated that electric power prices would continue to increase over time. Two of Connecticut's RRFs contracted with utilities for a fixed payment schedule (\$/MwH) that escalated to well over twenty cents per kilowatt hour. Others contracted for a high baseline price, with a share of the "avoided cost" above the baseline in the future. Those baselines were never exceeded and today, electric power producers find the "marketplace pricing" now an essential component of New England's power pool often yields just three cents per kilowatt hour, and less at times, given US energy industry trends including the deployment of technologies to increase oil and natural gas

production. Since tipping fees and energy sales revenues are the only important¹⁰ revenue sources for RRFs, there is now uncertainty regarding the ability of these facilities to make the on-going renewal and replacement investments to continue operating for the long term. In particular it is well recognized that MIRA's Hartford RRF is not expected to continue operating more than a few years at best unless conditions change unexpectedly¹¹. Since the Hartford RRF processes in excess of 500,000 tons of MSW each year, should it cease operating there would be a dramatic increase in waste exports from the State at that time and likely more intense competition for access to the remaining in-State RRFs by municipalities and private collectors.

For the above reason, in-state disposal options, which are already not used by some of the Study Area municipalities, may prove unreliable or more costly for reliance up for long-term use in general. Following is a summary of the in-state RRF options.

4.2.1.1 MIRA Hartford RRF

This facility is owned by the Materials and Innovation and Recycling Authority (MIRA), a quasi-public organization and operated by a private company (NAES Corporation). Currently, MIRA has Municipal Service Agreements (MSAs) with 50 municipalities. These municipalities are currently paying a uniform base disposal fee of \$91/ton for FY2021 and have a contract with MIRA that expires in June, 2027 (note there is an annual opt-out provision that all of these towns currently qualify for each year so this contract is not binding). Non-contract municipalities are paying \$93/ton. As discussed in earlier sections of this report, the MIRA RRF is in need of significant capital refurbishment to continue safe and reliable operations and currently this funding does not exist; as a result, the facility is scheduled to close at the end of June 2022.

B&L discussed the options available for the study towns to disposal of waste at the MIRA with a MIRA representative. B&L was informed that at this time MIRA is not in a position to accept, and does not plan to solicit for, additional MSW tonnage for the RRF.

B&L was also informed that what will likely happen after June 2022 is that MIRA will continue to accept only tonnage from the 50 communities who currently have MSAs and will transfer that material to other facilities including those located out-of-state. MIRA will no longer accept what is referred to as "non-participating" MSW (MSW from municipalities with which it does not have contracts, but instead comes in under its private waste hauler contracts).

¹⁰ Some RRFs also recover ferrous or non-ferrous metals for sale but the revenue from that activity is insignificant compared to the O&M cost of an RRF.

¹¹ The Hartford RRF uses a different processing system than the other RRFs in Connecticut and realizes a higher O&M cost as a result, contributing to that facility's less reliable future.

While it is possible that at a future date MIRA will have the ability to expand its customer base to accept waste once again from non-contract municipalities and private haulers, the B&L Team does not consider the MIRA RRF a viable alternative disposal option at this time.

4.2.1.2 Wheelabrator Bridgeport RRF

This facility is privately owned and operated by WIN Waste Innovations (formerly WTI) and currently serves as the main disposal option for the West COG municipalities, as well as other HRRRA towns and other individual municipalities such as Trumbull, Easton, and Monroe. Information found online indicates that the towns of Trumbull, Easton, and Monroe were paying \$60.49 per ton as of April 2016¹². As shown in Table 8, Westport is currently paying \$64.79 per ton for MSW disposal.

4.2.1.3 Covanta Bristol RRF

The B&L Team reached out to Covanta to discuss available capacity at this facility but was not able to receive a response during the study period. However, based on previous discussions with the Bristol Resource Recovery Facility Operating Committee (BRRFOC) and general understanding of existing capacity already under contract, the B&L Team does not consider this facility to be a viable alternative disposal option at this time.

4.2.1.4 Covanta Preston RRF

This facility has an annual disposal capacity of approximately 200,000 tons. Until the year 2021, approximately 140,000 tons of this capacity was under contract with SCRRRA, though this tonnage dropped to approximately 110,000 when SCRRRA signed a separate 5-year disposal agreement with Willimantic Waste in the fall of 2019 (under that contract SCRRRA pays the full \$70/ton tip fee for its member towns). There may be capacity available at this facility as a result. The B&L Team reached out to Covanta to discuss available capacity at this facility but was not able to receive a response during the study period.

4.2.1.5 Wheelabrator Lisbon RRF

In January 2021, the Southeastern Connecticut Regional Resource Recovery Authority (SCRRRA) started sending approximately 135,000 tons per year of MSW to the Lisbon RRF as part of a new 10-year arrangement. Previously SCRRRA had been contracted with Covanta's Preston RRF and as of 2020 was paying \$84/ton. The member municipalities in the SCRRRA network were paying \$58/ton and SCRRRA was paying

¹² http://www.trumbull-ct.gov/filestorage/7112/7181/Transfer_Station_Cost_Review_-_April_2016.pdf

\$26/ton. Under the new agreement with Lisbon, the new tip fee will be \$69/ton and the town's portion will remain \$58/ton with SCRRRA's contribution reducing to \$11/ton. The tip fee can be increased over the 10-year contract based on the CPI with a 3% cap.

4.2.2. Private Solid Waste Facilities

In addition to RRFs, municipalities in the Study Area also have the option of seeking contracts with other types of private facilities in the general area. DEEP permits private and public facilities that accept waste and recyclables for processing and/or transfer to ultimate markets (in the case of recovered materials) or disposal facilities. This type of facility is often permitted as a volume reduction plant under Connecticut's regulations, generally referred to as "volume reduction plants" ("VRPs" or "VRFs" by the industry). While facilities that only accept recyclables may sometimes be permitted as a VRF, they may also be permitted as a recyclables processing facility.

There are several such facilities within reasonable transport distance from the municipal transfer stations in the Study Area.

Often these operators are positioned in staffing or equipment or both to accept waste for ultimate delivery to long-distance out-of-state facilities, typically landfills. This option (delivery to a facility for subsequent long-haul landfilling) is a direct competitor to use of nearby RRFs.

Additionally, facilities that accept OMSW and C&D waste typically process the waste to recover metals, old corrugated containers (OCC), rigid plastics, wood and other materials. There are a range of processing approaches used in the states for these waste streams, ranging from basic "dump and sort" with a combination of manual labor and mobile equipment to complex, modern processing systems deploying automated equipment in combination with manual sorting stations.

Since these are privately owned and operated, the fees charged can vary from customer-to-customer based upon the nature of the material delivered, volumes to be delivered, market conditions, and other factors.

Following is a brief summary of VRFs that could be considered as potential destinations for materials received at the transfer stations together with basic information about the types of material they can receive and quantities.

4.2.2.1 AMEC Carting LLC, 1 Crescent Street, Norwalk

This company has a permitted VRP that is authorized to handle up to 400 tons/day of C&D waste, OMSW, scrap metal including CFC appliances, propane tanks w/o valves, paper/cardboard, plastics, lead-acid batteries, scrap tires and clean wood.

4.2.2.2 Wheelabrator/City Carting, Norwalk

This group has operations on Meadow Street which includes handling materials at two different buildings:

- At one building, up to 250 tons/day of MSW plus C&D waste, OMSW, scrap metal including CFC appliances, propane tanks with valves, mixed paper, cardboard, commingled containers (glass, plastic and metal), scrap tires, and clean wood.
- At the other, recyclables including mixed paper, cardboard, commingled containers (glass, plastic and metal.)

The total amount that is authorized to be received at both buildings is 500 tons/day.

4.2.2.3 City Recycling, Inc., 61 Taylor Reed Place, Stamford

This company has a permitted facility that is authorized to handle up to 1,000 tons/day of MSW, C&D waste, OMSW, scrap metal and CFC appliances, paper, cardboard, commingled recyclables (plastic glass and metal food containers), scrap tires, scrap metal, clean wood, universal waste and clean fill.

4.2.2.4 Murphy Road Recycling LLC, 1300 Seaview Ave. Bridgeport

This company has a permitted recycling facility (classified as an Intermediate Processing Center, or IPC) that is authorized to accept up to 350 tons/day of paper/cardboard, food/beverage containers and plastic containers, scrap metal, plastics (films, rigid plastics) and clean wood.

4.2.2.5 Wheelabrator/City Carting, 221 Old Gate Lane, Milford

This company's operations have the ability to export waste and materials by rail. There is a VRF area plus a recycling facility area at the site. Its permit differentiates the amount and types of materials it can accept depending upon whether it is using rail transfer. Following is a summary of the authorized capacity of the facility.

Table 9 – Wheelabrator/City Carting Milford, CT Facility Permitted Capacity

Area	Inbound Waste Type	Tons/Day with Rail Transfer	Tons/Day w/o Rail Transfer	Comments
VRP	Processed C&D	1,600	100	Received from other VRFs for direct transfer by rail
	Unprocessed C&D & clean wood	550	1,000	Processed & sorted at the VRF
VRP	Putrescible MSW baled & bagged	1,000		Received from other VRFs for direct transfer by rail
VRP	Contaminated Soil/Sediment	1,600		Received from other VRFs for direct transfer by rail
Recycling	Non-putrescible MSW	300	300	Received from commercial/industrial facilities for recycling
		5,050	1,400	

4.2.2.6 Oak Ridge, 90 Oliver Terrace, Shelton

This company's facility is permitted to handle up to 425 tons/day of C&D waste plus 275 tons/day of recyclables and commercial/industrial MSW.

4.2.2.7 Oak Ridge, 46 Oliver Terrace, Shelton

This second, nearby facility is authorized to accept up to 200 tons/day of the following waste from C&D loads: OMSW, paper/cardboard, clean wood, scrap metal including appliances with CFC, and scrap tires.

4.3. Out-of-State Disposal Options

A considerable amount of MSW generated in Connecticut is currently disposed of out-of-state, and a fair portion of that is from the Study Area. According to DEEP¹³, in 2018 just over 325,000 tons of MSW were sent out-of-state for disposal, including to both RRFs and LFs. Given the uncertainty regarding the long-term reliability of in-state RRFs, one may reasonably expect this figure will grow over time.

Fortunately, there exist a large number of out-of-state disposal facilities, both RRFs and LFs that are available for use by municipalities in the Study Area. Indeed, some have already been taken advantage of as illustrated above under the discussion of current destinations/practices.

Table 9 below, provides a list of key out-of-state facilities and the estimated one-way distance from an approximate center of the Study Area¹⁴.

¹³ Information provided by CT DEEP to CT MIRA and shared with the study team.

¹⁴ Assumed for this purpose to be in Darien, a relative center of the study area.

Table 10 – Out-of-State Disposal Options and Travel Distance

1-Way Travel Miles	Facility
52	Westchester RRF (Peekskill NY)
66	Dutchess County RRF (Poughkeepsie NY)
134	Millbury RRF (Millbury MA)
150	Keystone Sanitary Landfill (Dunmore PA)
155	WM Fitchburg/Westminster LF (Westminster MA)
158	Alliance Landfill (Taylor, PA)
165	WM DRPI LF (New Castle DE)
184	SEMASS RRF (Rochester, MA)
193	Covanta Haverhill RRF (Haverhill, MA)
204	WM Green Ridge LF (Gansevoort NY)
205	Commonwealth LF (Hegins PA)
244	Turnkey Landfill (Rochester NH)
291	Seneca Meadows Landfill (Waterloo NY)
331	Hyland Landfill (Angelica, NY)
342	WM High Acres LF (Fairport NY)
443	Brunswick LF (Lawrenceville VA)
545	Tunnel Hill LF (New Lexington OH)
594	Sunny Farms Landfill (Fostoria OH)

As is evident in the above table, some of the facilities are relatively accessible using a single-shift truck trip, anticipating the truck makes the return loop empty back to the area on the same day with the driver. However, others are not feasibly accessible in this fashion without extraordinary arrangements. For example, Seneca Meadows landfill is located west of Syracuse in west-central New York. With an estimated one-way distance of about 300 miles, a truck would be hard pressed to make the round trip in less than 12 hours assuming some time is consumed at the landfill for weigh-in, tipping, and weigh-out, each activity of which could involve some queuing time even if not significant.

Given the distance to many out-of-state landfills, private transfer station operators in Connecticut and New England are increasingly investing in modern baling systems that produce a bale of MSW that is either wrapped in plastic or enclosed in a special bag for this purpose. The bales are then placed on either a flatbed truck trailer or into a van-type trailer operated by an independent trucker for delivery to long-haul distant landfills. After tipping, that truck does not necessarily return directly for another load of bales but proceeds to another destination for its next load which may be an entirely different commodity headed to a different destination.

New York City has invested in an enormous equipment inventory that includes special shipping containers and railcars to move MSW great distances. This option, though feasible, requires significant investment in equipment and the ability to store a large number of containers and

railcars to meet day-to-day MSW removal requirements. None of the stations operated by municipalities in the Study Area appear suitable for implementation of this approach.

4.4. Out-of-State Options Used by MIRA

MIRA has a large number of municipalities in the State under contract for municipal solid waste services at its RRF located in Hartford CT. These include municipalities in the central region where waste collectors (both public systems and private collectors) have the ability to direct-deliver waste directly to the RRF and additional municipalities that are served by regional transfer stations in Essex, Torrington, and Watertown. The transfer stations are operated by a contractor on behalf of MIRA and where waste arriving at those facilities is then transferred to the RRF.

Under normal operating conditions, MIRA can process at the RRF all of the municipal solid waste received at any of the transfer stations or direct-delivered to the RRF itself. However, from time-to-time when an upset condition occurs, MIRA must rely upon other facilities to manage the waste received from its municipal customers and this includes in-state RRFs and out-of-State facilities. In 2019, MIRA experienced a severe outage that affected its ability for some time to process much of the waste it receives under contract. At that time, MIRA was forced to implement arrangements with contractors to move waste from its facilities to out-of-state disposal locations. [Note: two in-state locations also received waste from MIRA at that time.] Here is a list of the sites used by MIRA at that time:

- Casella of Holyoke TS
- Covanta of Springfield RRF
- Commonwealth LF (PA)
- Covanta Haverhill RRF
- Keystone LF (PA)
- Seneca Meadows LF (NY)
- Western Recycling TS (MA)
- Brunswick LF (VA)
- WM Chicopee MA LF (now closed)
- Casella Southbridge MA LF (now closed)

Since those arrangements were in response to a short-term condition it is not clear that all of the facilities (RRFs in particular) would be willing to enter into permanent day-to-day service agreements. Although MIRA's costs were higher than would likely be realized with a permanent arrangement, its ability to continue to serve its customers by relying upon these facilities underscores the breadth of options available to operators in the State.

4.5. Direct Hauling Waste from A Municipal Transfer Station to Distant Landfills

At present, only Greenwich and Stamford are known to have MSW/OMSW transported long-haul to out-of-state landfills based upon the information provided by the municipalities in the Study Area. For this approach to be cost-effective, the following logistical parameters should be addressed:

1. Loads need to be maximized, which means the station must be configured to allow for the use of transfer trailers and ideally open-top trailers.
2. The haul distance could result in more than an 8-hour turn-around time, meaning that drivers would be working an extended day as compared to typical municipal employment arrangements.
3. The transportation system and personnel arrangements must be able to react to mechanical breakdowns of equipment at long distances. It is possible that a truck/trailer could require service a hundred miles or more from the origin loading point.

Both Greenwich and Stamford avoid dealing with these logistical issues by contracting with private companies that are set up to deal with these components. We are aware of no municipalities that operate long-distance transport/disposal logistic services, and it is recommended that any municipality considering this disposal option consider entering into a contract for services with a party well-equipped to manage and provide this service reliably.

5.0 OPPORTUNITIES FOR REGIONALIZATION

There are many ways that municipalities in the state can and have collaborated to improve efficiency and reduce the costs of handling solid waste and recycling for their residents, businesses, and institutional constituents. The following is a summary of the ways municipal cooperation has and currently is structured for various municipalities across the state of Connecticut and could be explored by the WestCOG municipalities.

5.1. Lead Entity; Separate Vendor Contracts.

One way to work regionally is offered by the example given by some of the state's COGs. In this arrangement the COG conducts a procurement that member municipalities then elect to engage the vendor individual based upon the COG documents. This practice has been used for other types of services and could easily be used for solid waste management purposes. In a similar way, the State DOT offers municipalities the ability to utilize their vendor pricing in some ways.

DEEP has indicated that there may be funding opportunities for the COGs to hire additional staffing to support their involvement in the procurement of solid waste and recycling services. Some of the services WestCOG may be able to offer include:

- Develop Request for Bid documents for various T&D services
- Negotiate with bidders on behalf of the municipalities
- Secure multiple bids for different services from which the towns can select their preferred vendor

B&L has investigated which if any of the other eight COGs have performed these types of services before and found that there are precedents. The Northeast COG has in the past actively coordinated HHW events and currently has a staff engineer that has been working on conceptual plans for siting a permanent indoor HHW facility in Pomfret, CT; however, they cannot move forward with its construction without funding for the design development of this facility from the State.

In addition, the River COG is active in the coordination of HHW collection and disposal events at a regionally developed facility in Essex, CT.

B&L foresees that many of the COGs, particularly ones that are operating in regions that do not have an existing RRA, may take a larger role in the procurement of solid waste and recycling services in the coming years.

5.2. Formal Regional Governing Structures

There are several options available for municipalities to formally create a new entity that will govern itself and then contract for, manage, or even own and operate a shared solid waste management facility/service. These include the formation of a Regional RRA, Refuse Disposal District, or by Interlocal Agreement or contract.

5.2.1. Creating Regional Resource Recovery Authority

Several regional Resource Recovery Authorities (RRAs) have been created and are in operation in the State, all created under a relatively easy-to-implement process laid out in the Connecticut General Statutes. The RRAs provide value by leveraging the collective tonnage of their member municipalities to achieve better rates for material handling, transportation, and disposal. Also, it is worth noting is that an RRA can exist in a solid waste system that consists predominantly of direct haul to a local waste-to-energy facility (in the case of the Southeastern Connecticut Regional RRA) and in a network that requires additional transfer of materials at one or more transfer stations prior to transportation to the final disposal facility (in the case of the Housatonic RRA). There are also smaller RRAs such as the Salisbury Sharon Resource Recovery Authority (SSRRA) which solely consists of these two towns and was created to support the construction and operations of a new jointly shared transfer station. Each of these entities was created by the participating towns, and has its own governing board and powers, all of which are enumerated in the joint ordinance adopted by the participants. This option is particularly helpful for services and operations that are intended to be somewhat long-term or permanent at the time of creation and where the new entity will need to be able to make decisions and operate independently. These entities are also able to generate revenues from hauler registration fees and a portion of tipping fees, coordinate public outreach and educational programs and HHW collection events, and borrow money and own facilities, if so empowered by the participants.

5.2.2. Joining Existing Resource Recovery Authority

HRRA would be the RRA for the WestCOG municipalities to consider joining if this option were to be pursued. In fact, including Weston and Wilton, 12 out of the 18 WestCOG municipalities are already members of the HRRA.

As of the date of this report only Weston has joined the HRRA although Wilton is understood to be at some stage in that process.

The B&L Project Team had several discussions with HRRA early in the study to understand the benefits HRRA has to offer. According to HRRA:

- HRRA is nontax funded, and their revenue is generated from public education grants, hauler registration and permitting fees, and tipping fees received at one of the HRRA Transfer Stations (located in Newtown, Danbury, and Ridgefield);
- There is no cost to the municipality to join¹⁵;
- Their responsibilities include:

¹⁵ There is no cost for membership, but by joining municipalities will lose hauler registration fee revenue, as that revenue would be collected by HRRA and used to fund HHW Collection Events.

- Ensuring all registered haulers have paid their dues and also are licensed and insured.
- Performing public outreach and education, to teach recycling education and provide other programs including an annual billboard competition, to promote awareness.
- Facilitating the HHW events and retaining and managing the contract with the HHW vendor so the individual municipalities do not need to manage this contract.
- Advertising the HHW events.
- HRRRA is also responsible for starting the first pilot organics collection program in Bridgewater, CT. Some of the West COG towns (Darien, Norwalk) have modeled their own pilot programs after this program.

Regarding tipping fee revenues, they receive a portion of the tipping fees in the amount of \$2 per ton for MSW and \$5 per ton for recycling received at the HRRRA transfer stations through the year 2029. The hauler registration fees are kept in a separate fund and used to fund (currently) six (6) HHW events per year. Host communities of HHW events also receive \$10,000 from this fund to supplement the cost of the event.

HRRRA has a contract with Oak Ridge Recycling, LLC for both MSW and SSR disposal, which extends through 2029. The current rate private haulers pay to tip MSW at one of the HRRRA transfer stations is \$95.31 per ton and increases \$1.56 per ton per year for the duration of the contract. The current private hauler tip fee for SSR is \$88.41 per ton. HRRRA's municipal rates (the rates the HRRRA member towns pay) are lower than what private haulers are charged to tip materials at the transfer stations. HRRRA municipalities pay \$89.77 per ton for MSW disposal (with a \$1.56 per ton annual escalation) and \$10 per ton for SSR through 2029.

Weston joined HRRRA in July 2020. Its existing contracts for transfer station operations and MSW and SSR hauling and disposal were set to expire June 30, 2020 and the existing vendor for these services (City Carting) was proposing significant fee increases and Weston was exploring alternative options.

Weston's joining of HRRRA made sense for several reasons. Geographically it is located within direct haul distance to the Bridgeport RRF (the disposal location for HRRRA waste) and the Oak Ridge Recycling Facility located in Shelton, CT (the disposal location for HRRRA recyclables). As a result, additional handling of material can be avoided and all MSW and recyclables disposed at the Weston Transfer Station can be direct hauled to these processing facilities.

In addition, Oak Ridge Recycling, LCC, the vendor with whom HRRR has a contract with for MSW and SSR hauling and disposal, signed a similar contract concurrently with Weston when Weston joined HRRR. The contract mirrored the language from the HRRR-Oak Ridge Agreement with respect to disposal costs and contained some additional provisions to account for T&D of the bulky waste and hauling costs of the MSW and SSR, including specific surcharges for underweight loads.

As of June, 2021, Wilton is going through the process to become a member of HRRR. Wilton was operating without a hauling and disposal contract ever since their contract with City Carting expired on June 30, 2019. As shown in Table 6, Wilton is paying the highest T&D costs for MSW out of all the West COG municipalities. This is a result of a combination of factors including a high tipping fee, using municipal staff to self-haul materials for disposal, and using small roll-off containers to transport the majority of materials (resulting in higher cost per ton transportation costs). Currently, the majority of material collected at the transfer station (MSW, SSR, Bulky Waste & C&D Debris) is hauled to the City Carting transfer station in Norwalk.

5.2.3. Creating a Regional Refuse Disposal District

Chapter 446d of the Connecticut General Statutes allows for the creation of a Regional Refuse Disposal District (RRDD), which appears to be similar in many ways to a Regional Resources Recovery Authority, or RRRR (which was added to the Statutes later). To our knowledge, RRDD#1 is the only existing example, which was formed in 1970 by the towns of Barkhamsted, Colebrook, New Hartford and Winchester. This entity owns a facility and provides services to its participating towns.

5.2.4. Collaborating by Interlocal Agreement

The Town of Westport is currently a party to two separate inter-local agreements for MSW and SSR.

The Towns of Durham and Middlefield have entered into an interlocal agreement for the joint management of a transfer station site (which includes a now-closed landfill). Under that agreement, the towns provided for creation of a management board with members from both municipalities.

5.2.5. Collaborating by Contract

Of course, there also are examples of multi-municipal cooperation where one town is providing a service to another and where a contract is in place to outline the parameters of that arrangement. We know of one circumstance where one town provides hauling services to a neighboring town's transfer station. There may also be examples in other service areas.

While there may be other ways in which municipalities can cooperate in providing solid waste management services, the above listing illustrates options that are already in practice in the State, and which may prove advantageous to the future efforts in the study area.

5.3. Sharing Facilities

Closing a transfer station and directing residents and business customers to an alternative out-of-town station can be a difficult decision for a municipality. Nor is it always easy for one community to accept the potential traffic and administrative responsibilities of another municipality's residents. However, there are many examples in the State of towns sharing a solid waste facility, including but not limited to:

- Salisbury and Sharon;
- Durham and Middlefield;
- Barkhamsted, Colebrook, New Hartford, and Winchester; and
- Madison and Guilford.

One of the primary drivers of multi-town cooperation is the cost-effectiveness of staffing, maintaining, and operating just one facility in lieu of two or more. Assuming the shared facility site is well located from ease of traffic handling and surrounding land use perspectives, this approach can save money and allow the towns to continue to offer a local station for residents to use when it may be difficult to continue to do so on a stand-alone basis.

If one examines Connecticut's experience with multi-town facilities, the circumstances that appear to have contributed to shared stations include:

1. The municipalities are adjacent to each other.
2. They are all similar in size and not large in population.
3. They are similarly developed, with most of them semi-rural or suburban.

5.4. Regional Procurement of Contracts

The non-HRRA WestCOG Study Area municipalities, namely Greenwich, Stamford, Darien, Norwalk, and New Canaan should evaluate the various options available to them for regional collaboration as described in detail in Section 5.1 - 5.2.

5.5. Implement a Glass Recycling Program

By Connecticut law, glass is a mandated recyclable item and is illegal to be thrown away in the MSW stream. However, for all intents and purposes, glass is detrimental to SSR and reduces the aggregate value of the other recyclable commodities as well as contributing to an increase in MRF operating costs.

CT is a “bottle bill state”, meaning that glass can be redeemed at designated redemption centers for 5 cents per bottle. Currently, state legislature is considering changes to the current bottle bill program to increase the redemption payment to 10 cents per bottle and expand the law to include wine and liquor bottles. Expansion of the bottle bill program will help divert more glass from the SSR; however, how effective it may be remains to be seen.

In 2020, HRRRA implemented a Pilot Glass Recycling Program to explore the effectiveness of further removing glass from the SSR. The program has been quite effective and has shown a glass diversion rate of about 25% from the residential drop-off SSR tonnage. Under HRRRA’s arrangement, they have contracted with Oak Ridge to haul the separated glass to the Urban Mining Glass Processing Facility in Beacon Falls, CT. HRRRA’s all in costs for T&D of this glass is currently \$10 per ton.

B&L has spoken with representatives from Urban Mining who have indicated that they have adequate capacity to take additional MRF and bottle glass. They did note that their facility is designed to process MRF glass; however, they are installing additional glass breaking equipment to be able to handle bottle glass as well.

B&L recommends that all of WestCOG’s non-HRRRA towns implement a similar pilot program. Savings will be more beneficial to towns that are paying high SSR T&D costs and also generate high volumes of SSR, most notably, Greenwich.

5.6. Wilton and Weston Transfer Station Consolidation and Improvements

The B&L Team has identified several opportunities for the municipalities of Wilton and Weston to work collaboratively to reduce operating costs and increase efficiency. It is understood that prior to initiation of this review, Weston and Wilton had considered the potential for cooperating in handling local deliveries of waste and recyclables. Geographically, consolidation is particularly feasible as the two existing transfer stations are relatively close to each other (approx. 5 miles apart and about 10 minutes of drive time). Both transfer stations currently operate in similar fashion, using compactors to load out MSW and recyclables, and smaller roll-offs or container boxes to handle other materials such as scrap metal and bulky waste. The consolidation becomes particularly appealing with Wilton’s impending membership with HRRRA, following in the footsteps of Weston. Several benefits can be realized by this consolidation including a net reduction in municipal labor costs, facility operations, and material T&D. Further, the combined tonnage of MSW and SSR handled by these two stations is still just 75% of the amount handled at the next lowest tonnage station in the Study Area (Darien) and almost 50% of the amount handled at the second lowest tonnage station (New Canaan).

As part of this study B&L discussed the idea of consolidating transfer station operations, specifically, closing the Weston Transfer Station and expanding the Wilton Transfer Station to accept Weston residents and haulers, with representatives from Weston and Wilton and understand that both towns are currently investigating this in more detail.

Should these municipalities desire to pursue a shared operation, it may be prudent to also consider the improvements identified above that would convert the Wilton Transfer Station to an open-top transfer trailer operation.

Neither Weston nor Wilton's transfer stations are designed to accommodate transfer-trailer trucks. Accordingly, they would not be able to efficiently deliver wastes to a distant site if necessary. Should those municipalities plan to continue operating their transfer stations for the handling of MSW and OMSW, it may be prudent to modernize the stations to be able to accommodate modern open-top transfer trailers. Such improvements would also allow for installation of measures to ensure compliance with OSHA and industry safety rules.

Appendix A

Tables

TABLE 1A - TRANSFER STATION INFORMATION

	TS Address	Operating Hours	Publicly or Privately Operated⁽¹⁾
Darien	126 Ledge Rd, Darien, CT 06820	Mon-Sat; 7-2:45 pm, closed on 6 holidays. Swap Shop open M/W/F 9 AM - 1 PM	Privately operated
Greenwich	99 Holly Hill Ln, Greenwich, CT 06830	Mon-Fri; 7 - 2:30 PM, Sat; 7 - 12 PM	Privately operated
New Canaan	139 Lakeview Ave, New Canaan, CT 06840	Mon-Fri; 7:30 - 3:15 pm; Sat - 7:30 - 2:15 pm, closed 3 holidays, modified hrs on other 5 holidays	Publicly operated
Norwalk	61 Crescent St Norwalk, CT 06854	M-F: 7:30 am-3 pm; Sat: 7:30 am - 2 pm; closed on 6 holidays	Privately operated
Stamford	101 Harbor View Ave, Stamford, CT, 06902	Mon-Sat; 6 AM - 2 PM (ancillary public drop off facility located on 130 Magee Avenue operates Tues & Sat from 7-2 pm)	Publicly operated
Wilton	71 Mather St, Wilton, CT 06897	Mon, Tues, Thurs; 7-3:30 pm, 2nd and 4th Saturdays each month; 9-12 pm	Publicly operated
Weston	237 Godfrey Rd E, Weston, CT 06883	Tues-Sat; 8-2:30; closed on 8 holidays	Publicly operated
Westport	300 Sherwood Island Rd, Westport, CT 06880	Mon-Fri; 7 - 2:30 PM, Sat; 7 - 12 PM	Publicly operated

1) Although many of the transfer stations are privately operated, they all still have varying levels of on-site municipal staff performing roles such as scale house attendant, loader operator, or waste material inspector

TABLE 2A - DEMOGRAPHICS

	Population ⁽¹⁾	Number of Permit Holders ⁽²⁾	# of households ⁽¹⁾	People per Household ⁽¹⁾	% of permit holders per Capita	% of permit holders (% of households)
Darien	21,728	4,485	6,895	3.15	20.6%	65.0%
Greenwich	62,840	7,300	22,271	2.82	11.6%	32.8%
New Canaan	20,233	2,184	7,116	2.84	10.8%	30.7%
Norwalk⁽³⁾	88,816	6,661	34,187	2.60	7.5%	19.5%
Stamford	129,638	12,269	49,141	2.64	9.5%	25.0%
Wilton	18,343	1,800	6,090	3.01	9.8%	29.6%
Weston⁽⁴⁾	10,252	3,447	3,447	2.97	33.6%	100.0%
Westport	28,491	Not Provided	9,916	2.87	N/A	N/A

1) Obtained from US Census Quick Facts website: <https://www.census.gov/quickfacts/fact/table/US/PST045219>

2) This does not account for residents that obtain 2 permit stickers per household (which is allowed in some municipalities) so number may be biased low for some municipalities

3) City of Norwalk has 2 types of residential permits - Disposal Pass for cars, SUVs, minivans (4,814) & Residential Permit Cards for pickup trucks, vans, and trailers (1,847)

4) A transfer station permit is mailed to every household; therefore this metric cannot be used to estimate how many residents actively use the transfer station. Based on a 3 week traffic count study conducted, Weston estimates between 15-20% of the residents use the transfer station as their predominant means to dispose of MSW.

TABLE 3A - MSW & SSR COLLECTION				
	MSW Collection	SSR Collection	Number of Licensed Haulers	Miscellaneous Notes
Darien	Private subscription; multiple haulers	Private subscription; multiple haulers	8	
Greenwich	Private subscription; multiple haulers	Private subscription; multiple haulers.	23	Town issues separate bids for MSW and SSR collection at municipal facilities and separately for trash cans in commercial business districts
New Canaan	Private subscription; multiple haulers	Private subscription; multiple haulers.	11	
Norwalk	City Carting has contract with Norwalk for collection of curbside residential garbage in the 4th Taxing District; Multiple private haulers for collection of commercial garbage and residential garbage in the 5th Taxing District	City Carting has contract	48	Not all commercial haulers are licensed. City of Norwalk requires all commercial haulers to register and also requires landscapers to register with the City.
Stamford	Mix of municipal and private collection	Municipal collection	N/A	Approximately 75% municipal collection/25% private subscription
Wilton	Private subscription; multiple Haulers	Private subscription; multiple Haulers	10	Does not accept material from commercial establishments with greater than 5 employees
Weston	Private subscription; multiple Haulers	Private subscription; multiple Haulers	8	
Westport	Private subscription; multiple Haulers	Private subscription; multiple Haulers	12	

TABLE 4A - PERMIT AND REGISTRATION FEES			
	Private Haulers/Semi-Commercial Registration Fee	Private Haulers/Semi- Commercial License Fee	Residential Vehicles
Darien	\$150 per vehicle for the delivery of waste materials excluding garbage	N/A	Residents without garbage collection: permit fee is \$120.00, this entitles the resident to two (2) permits, a third permit is an additional \$40.00. Residents with garbage collection: permit fee \$40.00, this entitles the resident to two (2) permits, a third permit is an additional \$40.00. All seniors 65 and over are entitled to one (1) free permit per household, additional permits are \$40.00. Seniors may receive one (1) free Recycling & Refuse Center Permit by mail
Greenwich	\$150 per vehicle & \$75 per "satellite vehicles" i.e. pickup trucks	N/A	\$25 for annual permit
New Canaan	\$100 per vehicle	N/A	Permit required to dispose of waste/recyclables. Cost is \$45 if serviced by a private hauler and \$75 if not
Norwalk	<12,000 lbs - \$125; >12,000 lbs - \$500	<5,000 lbs - \$125; >5,000 lbs - \$250; >12,000 lbs - \$750; Rolloff Containers & Compactors - \$25	Permit required to dispose of waste, minimum charge of \$20 for any vehicle that does not have a disposal pass, residential permit card, or commercial account. Also have \$100 disposal passes for residents and/or real property owners that do not pay vehicle tax to Norwalk.
Stamford	No registration fee	N/A	Permit is required but is free to obtain. First 200 lbs per day is free. Cost to disposal of material in excess of 200 lbs varies.
Wilton	\$750 per vehicle plus a container permit fee of \$50 per container	N/A	Vehicle permit stickers are necessary for entrance and are no charge to residents. Tickets are required to dispose of waste. A book of 10 tickets cost \$45. Tickets are \$4.50 per 32 gallon bag of household garbage (\$3.50 per bag if 65 years or older). Tickets can be ordered online and through the mail.
Weston	\$250 per hauler; no per vehicle charge	None	Vehicle permit stickers are necessary for entrance and are no charge to residents. Permit is provided to each household on an annual basis as part of the tax bill. Tickets are required to dispose of waste at the TS. It cost \$4 per sticker and one sticker is required per 30 gallon bag. Elderly people that qualify through Elderly Tas Relief Program qualify for a reduced sticker price.
Westport	For both commercial and residential haulers the annual license fee per vehicle based on vehicle capacity. No licensing process for yard waste haulers.	N/A	Cost is free but sticker is available and recommended for residents who use facility more frequently. Also residents whose vans, pickups or tag-along trailers display a valid sticker may bring up to six 30 gallon bags or containers per trip. if resident exceeds 6, 30 gallon allotment they are charged \$50/load. Any vehicle or trailer larger than a conventional pickup with a 4' x 8' bed will be charged \$110 per ton.

TABLE 5A - PRIMARY TIPPING FEES

Town	MSW - Private Haulers ⁽¹⁾	MSW - Residential Drop-Off	SSR - Private Haulers ⁽²⁾	Bulky Waste	C&D Debris	Yard Waste ⁽³⁾
Darien	\$94.00	\$0.00 with permit	\$0.00	\$130/ton for Non-Combustible Materials \$85/ton for White Goods or metal	Same as Bulky Waste (and OBW and non-combustible)	Leaves: \$70/ton Wood Chips: \$70/ton Brush: \$85/ton Grass Clippings: \$85/ton
Greenwich	\$112.00	\$0.00 with permit	\$0.00	\$0 for residential cars, \$4.75 per 100 lbs (or \$95/ton) for resident cars with a trailer, resident trucks, or commercial cars and trucks	See Bulky Waste	\$0 for residential cars, \$4.75 per 100 lbs (or \$95/ton) for resident cars with a trailer, resident trucks, or commercial cars and trucks
New Canaan	\$95.00	\$0.00 with permit	\$0.00	\$120 per ton, 300 lbs and over are assessed \$18 plus \$0.60 per 10 lb increments over 300 lbs	\$120 per ton, up to 300 lbs per day no fee, 300 lbs and over are assessed \$18 plus \$0.60 per 10 lb increments over 300 lbs	\$100 per ton, 300 lbs and over are assessed \$15 plus \$0.50 per 10 lb increments over 300 lbs
Norwalk⁽⁴⁾	\$90.00	Residents with a Disposal Permit Card (pickup trucks, etc.) receive 1 Ton Free (incl's yard waste dumped at other facility) then \$90/ton thereafter	\$0.00	\$90.00	\$90.00 - Norwalk TS does not accept C&D including asphalt and asphalt shingles, Sheetrock, Porcelain items, tiles, ceramics, taping compound, etc.	\$55 per ton
Stamford⁽⁵⁾	\$101.00	First 200 lbs per day is free, over 200 lbs costs \$5.05 per every extra 100 lbs	First 200 lbs per day is free, over 200 lbs costs \$101 per ton	First 200 lbs per day is free, over 200 lbs costs \$5.05 per every extra 100 lbs	\$101.00	First 200 lbs per day is free, over 200 lbs costs \$5.05 per every extra 100 lbs
Wilton⁽⁶⁾⁽⁷⁾	\$93.00	\$4.50 per ticket (one ticket required per 32 gal bag)	\$0.00	4 tickets (\$18) for individual item, 10 tickets (\$45) for passenger vehicles including SUVs, mini vans; 20 tickets (\$90) for pick up trucks, cargo vans, and trailers	See Bulky Waste	Not Accepted
Weston⁽⁸⁾	\$95.31	\$4 per sticker (one sticker required per bag)	\$75.31	25 cents per pound (\$500 per ton)	25 cents per pound (\$500 per ton)	Not Accepted
Westport	\$110.00	\$0.00 with permit. If resident exceeds 6, 30 gallon allotment they are charged \$110/ton	\$0.00	\$10 per item	\$90/ton for mason trucks & trailers over 4' x 8'	\$40 per load for non-modified pick-up trucks & 4' x 8' utility trailers

1) Pertains to private haulers delivering commercial and/or residential MSW to transfer station unless otherwise noted

2) Pertains to private haulers delivering commercial and/or residential SSR to transfer station unless otherwise noted

3) Consists of branches, brush, leaves, grass clippings, sod, crops, mulch, wood chips

4) Norwalk has contract with City Carting for SSR. Collection vehicles direct haul SSR to City Carting MRF in Stamford.

5) Curbside SSR in Stamford direct-delivered to City Carting MRF

6) Wilton does not have a set tip fee for SSR but charges residential haulers a SSR surcharge. If the haulers SSR tonnage exceeds 25% of the total tonnage for the month the hauler is charged \$93/ton for the excess

7) All material brought to the Wilton TS is from residents or residential haulers. Wilton does not accept material from commercial establishments with more than 5 employees.

8) Commercial tip fees for MSW and SSR set by HRRR contract with Oak Ridge Recycling, LLC

TABLE 6A - OTHER TIPPING FEES

Town	Freon or CFC containing appliances (per item)	Propane Tanks	Batteries	Anti-freeze	Tires
Darien	\$16.00	Not Accepted	No Charge	Not Accepted	No Charge
Greenwich	\$16.00	No Charge	No Charge	No Charge	\$2/tire off rim; \$4/tire on rim
New Canaan	No Charge	No Charge	No Charge	No Charge	No Charge
Norwalk	\$10.00	\$5/tank	\$2/battery for Lithium-Ion	\$2/gal	\$5 per tire
Stamford⁽¹⁾	\$12.00	No Charge	No Charge	No Charge	\$10 per tire
Wilton	3 tickets (\$13.50) per unit	Not Accepted	No Charge	Not Accepted	1 Ticket (\$4.50)
Weston	\$10.00	Not Accepted	No Charge	No Charge	\$3 per car tire; \$5 per truck tire (without rims)
Westport	\$10.00	Unknown	No Charge	No Charge	\$2.50 per tire

1) Propane tanks accepted at Magee Ave facility for no charge

TABLE 7A - PRIMARY SERVICE CONTRACTS					
	Transfer Station Operations ⁽¹⁾	MSW T&D	SSR T&D	Bulky Waste/C&D T&D	Yard Waste T&D
Darien	Contract with City Carting Expires June 30, 2024	Contract for T&D with City Carting Expires June 30, 2024	Contract for T&D with City Carting Expires June 30, 2024	Contract for T&D with City Carting Expires June 30, 2024	Darien DPW staff hauls grass clippings. Contract for T&D of brush, logs & stumps with City Carting Expires June 30, 2024
Greenwich ⁽²⁾	Contract with City Carting Expires June 30, 2026	Contract for T&D with City Carting Expires June 30, 2026	Contract for T&D with City Carting Expires June 30, 2026	Contract for T&D with City Carting Expires June 30, 2021	Contract for T&D with City Carting Expires June 30, 2022
New Canaan ⁽³⁾	Operated by municipal staff	Contract for T&D with Enviro Express, Inc. Expires Dec 31, 2023	Contract for T&D with Oak Ridge Waste & Recycling Expires June 30, 2022	Contract for T&D with City Carting Expires June 30, 2022	Contract for T&D with City Carting Expires June 30, 2022
Norwalk	Contract with City Carting Expires June 30, 2023	Contract for T&D with City Carting Expires June 30, 2023	Contract for Collection of SSR with City Carting (includes T&D) Expires June 30, 2023	Bulky Waste is comingled with MSW for transport and disposal. No C&D is accepted.	Separate YW Site - Operated by municipal staff; Contract for T&D with City Carting (Yard Waste Material) Expires June 30, 2024; Contract for T&D with D.W. Transport (Street Sweeping, C&D Material) Expires June 30, 2024
Stamford ⁽⁴⁾	Operated by municipal staff	Contract for T&D with Transfer Trailer Services, Inc. Expires Oct, 16, 2021	SSR is direct hauled to Stamford MRF which is operated by City Carting	Bulky Waste is comingled with MSW for transport and disposal. No C&D is accepted.	Contract for T&D of leaves with Grillo Services, LLC Expires July 11th, 2021 Contract for T&D of logs, brush and yard waste with The Good Earth Tree Care, Inc. Expires Nov 3, 2021
Wilton ⁽⁵⁾	Operated by municipal staff	No current contract	No current contract	No current contract	N/A - Yard Waste Not Accepted
Weston ⁽⁶⁾	Operated by municipal staff	Contract for T&D with Oak Ridge Expires June 30, 2029	Contract for T&D with Oak Ridge Expires June 30, 2023	Contract for T&D with Oak Ridge Expires June 30, 2023	N/A - Yard Waste Not Accepted
Westport	Operated by municipal staff	MSW Disposal Contract with Wheelabrator Expires June 30, 2024 Transportation Contract with City Carting Expiration Date Not Provided	Contract for T&D with City Carting Expiration Date Not Provided	Contract for T&D with City Carting Expiration Date Not Provided	Contract for T&D with City Carting Expiration Date Not Provided

1) All transfer stations, even those that are privately operated, have municipal staff running the scale house and in some cases, performing other on-site duties

2) Organics T&D contract between Greenwich and City Carting includes leaves (collected by town force) and food scraps collected at the TS

3) New Canaan contract with Oak Ridge for SSR also includes tires

4) Stamford contracts for MSW, leaves, logs, brush and yard waste disposal also includes on-site loading of materials

5) Wilton Transfer Station roll-off driver hauls MSW, SSR and other materials from the Wilton TS to the Norwalk TS and pay a tip fee to Norwalk

6) Weston contract with Oak Ridge includes MSW and SSR T&D which follows the terms of the HRRRA-Oak Ridge Agreement for MSW T&D. Weston's contract also contains separate provisions for bulky waste/C&D debris T&D

TABLE 8A - TRANSFER STATION STAFFING								
	Darien	Greenwich	New Canaan	Norwalk	Stamford⁽⁴⁾	Wilton	Weston	Westport
<i>Total FTE Municipal Staff⁽¹⁾⁽²⁾</i>	2.7	6.0	3.7	2.5	6.5	3.25	1.3	4.5
Administrative/Supervisor/Envir. Ops Manager	0.1	1.0	0.1	0.50	1.0	0.25	0.1	0.5
Scale House Attendant/Weighmaster ⁽³⁾	1.0	2.0	1.2	2.0	3.0	1.0	1.0	1.0
Loader/Equipment Operator	1.0	1.0	2.4		2.5	1.0	0.2	1.0
Waste Material Checkers/Facility Monitors	-	2.0	-		-		-	2.0
Rolloff Driver	-	-	-	-	-	1.0	-	-
DPW "loaned" labor	0.6	-	-	-	-	0.0	-	-
<i>Number of Private Operator Staff</i>	2.4	N/A	0.0	4-5	1.0	0.0	0.0	0.0
TOTAL TRANSFER STATION STAFF	5.1	6+	3.7	6.5-7.5	7.5	3.25	1.3	4.5

1) Fulltime Equivalent (FTE) employee is based on a 40 hour work week

2) FTE Municipal Staff consists of positions such as full or part time management positions, scale house attendant/weighmaster, loader/equipment operator, waste material checkers, rolloff drivers, and DPW "loaned" labor

3) Pertaining to Norwalk, this does not include Yard Waste Site staff which includes an additional weighmaster, Site attendant and Loader Operator

4) One Transfer Trailer Inc employee staffed full time on-site to load MSW

Table 9A - MSW & SSR PROCESSED							
	Total MSW & SSR⁽¹⁾	Total MSW	MSW - Delivered by Hauler	MSW - Residential Drop-off	Total SSR	SSR - Delivered by Hauler	SSR - Residential Drop-off
Darien	6,008.6	2,768.7	412.1	2,356.6	3,239.9	2,558.7	681.2
Greenwich	46,706.7	32,190.3	26,475.4	5,714.8	14,516.5	12,896.3	1,620.2
New Canaan	7,873.0	6,187.0	Not Provided	Not Provided	1,686.0	Not Provided	Not Provided
Norwalk⁽²⁾	25,130.3	25,014.1	16,523.0	8,491.1	116.2	0.0	116.2
Stamford⁽³⁾⁽⁴⁾	57,946.8	57,646.8	53,646.8	4,000.0	300.0	0.0	300.0
Wilton	3,237.0	2,286.0	2,150.0	136.0	951.0	724.0	227.0
Weston⁽⁵⁾	1,462.0	892.0	320.0	572.0	570.0	154.0	416.0
Westport	18,943.2	15,535.6	2,754.2	12,781.4	3,407.6	Not Provided	Not Provided
TOTAL	167,307.7	142,520.5	102,281.5	34,052.0	24,787.2	16,333.0	3,360.6

1) Tonnage data for Darien, Westport, Wilton is FY20 (July, 2019 - June, 2020), Norwalk is CY20, Greenwich is 4Q-19 - 3Q-20, Stamford is CY19, Weston is FY21 for MSW, SSR, and bulky waste and CY19 for other material streams

2) Norwalk CY 2020: MSW Drop off at TS is mixed residential and commercial; SSR collected from Curbside is not processed at Norwalk Transfer Station it is hauled directly to Taylor Reed. In CY20 this amounted to approximately 8,500 tons.

3) Curbside collected SSR is hauled directly to the City Carting MRF, not the Stamford TS. For CY19 this amounted to 10,670.3 tons.

4) Approximately 44,000 tons of MSW from city collection

5) Weston's tonnages are projected based on actual tonnages provided for the first half of FY20-21

Table 10A - MSW, SSR & OTHER MATERIALS PROCESSED							
	Total Material Tonnage⁽¹⁾	Total MSW	Total SSR	C&D & Bulky Waste	Other Recyclables	Brush & Yard Waste	Food Waste⁽²⁾
Darien	13,714.4	2,768.7	3,239.9	529.34	463.3	6,670.0	43.23
Greenwich⁽³⁾	75,809.5	32,190.3	14,516.5	6,693.6	4,332.9	17,790.1	286.12
New Canaan⁽⁴⁾	10,685.0	6,187.0	1,686.0	2812	Not Provided	Incl'd in BW #	Not Provided
Norwalk⁽⁵⁾	25,766.8	25,014.1	116.2	0	500.0	0.0	136.5
Stamford⁽⁶⁾⁽⁷⁾	79,947.4	57,646.8	300.0	102.99	1020.3	20,877.2	N/A
Wilton	3,406.5	2,286.0	951.0	76.0	93.5	0	N/A
Weston⁽⁸⁾	1,836.5	892.0	570.0	250	124.5	0	0
Westport	23,356.8	15,535.6	3,407.6	Not Provided	427.7	3930.6	55.3
TOTAL	234,522.8	142,520.5	24,787.2	10,463.9	6,962.2	49,268.0	521.2

1) Tonnage data for Darien, Westport, Wilton is FY20 (July, 2019 - June, 2020), Norwalk is CY20, Greenwich is 4Q-19 - 3Q-20, Stamford is CY19, Weston is FY21 for MSW, SSR, and bulky waste and CY19 for other material streams

2) Includes the 172.4 tons of food waste collected in Greenwich and 43.6 tons of food waste collected in Westport via a curbside collection program

3) Greenwich defines bulky waste as "land clearing or demolition debris"

4) Tonnage for MSW is estimate, tonnage for SSR is estimate based on contract with Oak Ridge, and C&D and Yard Waste is an estimate based on estimated tonnage in contract with City Carting

5) Norwalk processes C&D material out of the Yard Waste Site, not Transfer Station so there are no totals for this spreadsheet. All other recycling (except tonnages for cooking oil, cardboard and hard plastic) are for FY 19-20 (7/1/19 - 6/30/20). Food Scrap information is for July - December 2020.

6) Stamford is in the planning stages for a food scraps collection program at the TS

7) The 20,877.2 tons of Brush and Yard Waste consists of 7,372.2 tons of yard waste and an additional 13,505.07 tons of leaves that is loaded and hauled by a separate vendor.

8) Weston's tonnages are projected based on actual tonnages provided for the first half of FY20-21

TABLE 11A - MSW AND SSR T&D UNIT COSTS						
	TOTAL MSW T&D	MSW Disposal	MSW Hauling	Total SSR T&D	SSR Disposal	SSR Hauling
Darien	\$97.42	-	-	-\$7.50	-	-
Greenwich	\$93.66	-	-	\$65.00	-	-
New Canaan⁽¹⁾	\$88.20	-	-	\$83.74	-	-
Norwalk	\$93.00	-	-	-\$17.50	-	-
Stamford⁽²⁾	\$75.70	-	-	\$66.00	\$66.00	\$0.00
Wilton⁽³⁾	\$104.14	\$96.90	\$7.24	\$82.99	\$66.95	\$16.04
Weston⁽⁴⁾⁽⁵⁾	\$95.31/ton for MSW brought to TS by private haulers; \$89.77/ton for MSW brought to the TS by residents	-	-	\$49.46/ton for residential SSR; \$107.18 per ton for commercial SSR	\$10/ton for residential SSR \$75.31/ton (Q2-21) for commercial SSR	\$39.36/ton for Residential SSR; \$31.87/ton for Commercial SSR
Westport	\$80.59	\$64.79	\$15.80	\$78.46	-	-

1) New Canaan SSR haul cost based on \$189 per haul and estimated 3.33 tons per load

2) Stamford pays no transportation costs for SSR as this material is direct-delivered to City Carting MRF in Stamford

3) Hauling costs estimated for Wilton based on estimated driver labor costs, trip time, and vehicle and equipment wear and tear

4) Weston contract with Oak Ridge defines residential SSR as "only material hand delivered by a resident of the town of Weston" and commercial SSR as "material delivered by/from commercial haulers, residential haulers, commercial establishments, or any vehicle or person that has consolidated material generated from one or more sources" and these disposal costs mirror the HRRRA-Oak Ridge Agreement. There is also a \$35 per ton surcharge for MSW disposal for each ton below a 15 ton minimum per load and a \$25 per ton surcharge for commercial SSR for each ton below the 5 ton minimum.

5) Weston SSR haul cost based on \$185 per haul charge for residential SSR and an avg of 4.7 tons per load, and \$145 per haul charge for commercial SSR and an avg of 4.55 tons per load

TABLE 12A - OTHER MATERIAL T&D UNIT COSTS					
	Brush & Yard Waste	Bulky Waste/C&D Debris	Tires	Freon (per unit)	Food Scrap Composting
Darien	Leaves: \$26.96; Brush: \$32.39; Logs/Stumps: \$33.64; Grass: \$40 plus estimate of \$15/ton for haul cost	\$87.50	\$176.28 per pull	\$5.50	\$80 per visit and \$5 per bin
Greenwich⁽¹⁾	\$33.66	\$82.13	\$98/ton	\$10.00	Covered under Organics T&D @ \$33.66/ton
New Canaan	\$45/ton + \$175 per trip	\$85/ton + \$175 per trip	\$7 per tire + \$189 per trip	\$7.00	\$75 per trip and \$5 per bin
Norwalk⁽²⁾	Not Included In Study	\$93	\$850 per pull	\$5.00	\$65 per visit and \$5 per bin
Stamford⁽³⁾	Leaves: \$26.00; Brush: \$25.60	\$0.00	\$1.5 per tire	\$6.00	Program to be implemented in April
Wilton	Not Accepted	\$79.31	\$2 per tire	\$8.00	N/A
Weston	Not Accepted	\$85 per ton + \$205 per trip	\$3 per car tire & \$5 per truck tire	Unknown	N/A
Westport	Not Provided	Not Provided	Not Provided	Not Provided	Not Provided

1) Greenwich also pays \$90/ton for e-waste, 200/ton for fluorescent lights, \$50/ton for household batteries, \$100/ton for car batteries, and \$9/unit for propane tanks

2) Norwalk has two collection locations for food scrap collection

3) Stamford Bulky Waste and C&D debris is co-disposed with MSW

TABLE 13A - MATERIAL T&D COSTS (annual est)						
	Total Material Disposal Costs⁽⁶⁾	MSW	SSR⁽⁷⁾	Bulky Waste/C&D	Brush & Yard Waste	Other Material Disposal Costs⁽⁸⁾
Darien⁽¹⁾	\$502,722	\$269,727	-\$24,299	\$46,317	\$209,069	\$1,909
Greenwich	\$5,121,047	\$3,014,939	\$943,572	\$549,741	\$598,815	\$13,980
New Canaan	\$1,016,122	\$542,162	\$252,420	\$217,466	Incl'd in BW #	\$4,074
Norwalk	\$2,300,615	\$2,302,648	-\$2,034	Incl'd w/MSW	Not Incl'd	\$0
Stamford⁽²⁾⁽³⁾⁽⁴⁾	\$4,356,159	\$3,785,000	\$19,800	Incl'd w/MSW	\$539,859	\$11,500
Wilton	\$314,600	\$240,000	\$61,000	\$12,800	Not Accepted	\$800
Weston⁽⁵⁾	\$182,120	\$85,000	\$54,000	\$40,000	Not Accepted	\$3,120
Westport	Not Provided	Not Provided	Not Provided	Not Provided	Not Provided	Not Provided

1) \$15 per ton haul cost assumed for Darien cost to haul grass to disposal facility

2) Stamford Brush & Yard Waste cost calculated as follows: 13,505.07 tons of leaves @ \$26/ton plus 7,372.2 tons of yard waste going to GER Inc @ \$25.60 per ton

3) Stamford MSW disposal cost estimate based on 10,000 tons of MSW and \$75.50 per ton for T&D

4) Bulky waste and C&D debris is disposed of with MSW

5) MSW and SSR split between residential drop off and private hauler tonnage has not been provided therefore a 90/10 ratio of hauler to residential drop off was assumed

6) Material cost estimates for Darien, Westport, Wilton is from the period of FY20 (July, 2019 - June, 2020), Norwalk (CY20), Greenwich (4Q-19 - 3Q-20), Stamford (CY19), Weston (FY21)

7) SSR T&D costs for Stamford and Norwalk only pertain to tonnage of SSR material that is being processed at the TS

8) Consists of disposal costs for items such as tires, freon containing appliances, motor oil, etc.

TABLE 14A - REVENUES (annual est)

	Total Annual Revenue⁽¹⁾	Private Hauler Tip Fees	Private Hauler Container Fees	Private Hauler Permit & Registration Fees	Residential Permit/Sticker Fees	Other Revenue (Scrap Metal, Textiles, E-Waste)
Darien⁽²⁾	\$676,800	\$357,700	N/A	\$56,000	\$224,000	\$39,100
Greenwich	Not Provided	Not Provided	Not Provided	Not Provided	Not Provided	Not Provided
New Canaan⁽³⁾	\$516,028	\$370,369	\$0	N/A	\$115,000	\$30,659
Norwalk	\$690,300	\$513,005	\$0	Unknown	\$0	\$177,295
Stamford	\$2,027,846	\$1,900,000	\$0	\$0	\$0	\$127,846
Wilton	\$338,600	\$225,700	\$8,250	\$20,250	\$75,000	\$9,400
Weston⁽⁴⁾	\$257,000	\$137,000	\$0	\$0	\$110,000	\$10,000
Westport	Not Provided	Not Provided	Not Provided	Not Provided	Not Provided	Not Provided

1) Annual revenue estimates for Darien, Westport, Wilton is from the period of FY20 (July, 2019 - June, 2020), Norwalk (CY20), Greenwich (4Q-19 - 3Q-20), Stamford (CY19), Weston (FY21)

2) Darien's Residential Permit/Sticker Fees and private hauler permit fees represent the budgeted number for FY20, as it is more representative than a typical operating year (the actual revenue sales were \$160,800)

3) New Canaan Hauler Permit Fee is collected by Health Dept and not provided

4) Weston's private hauler permit fees are collected by HRRRA and used to supplement the cost of annual HHW events

TABLE 15A - TRANSFER STATION OPERATING COSTS (annual est)								
	Annual Operating Cost (¹)	Total Tonnage of Material Processed(²)	Estimated Gross Operating Cost/Ton(³)	Transfer Station Operator Fee	Municipal Labor(⁴)	Material Disposal Costs	Misc O&M Costs(⁵)	Revenues
Darien	\$1,114,354	13,714	\$81.25	\$377,000	\$213,132	\$502,722	\$21,500	\$676,800
Greenwich(⁶)	\$6,701,987	75,809	\$88.41	\$634,000	\$883,940	\$5,121,047	\$63,000	N/A
New Canaan	\$1,421,725	10,685	\$133.06	N/A	\$403,603	\$1,016,122	\$2,000	\$516,028
Norwalk(⁷)	\$3,418,961	25,767	\$132.69	\$851,500	\$264,847	\$2,300,615	\$2,000	\$690,300
Stamford(⁸)	\$6,454,324	79,947	\$80.73	N/A	\$1,766,846	\$4,356,159	\$331,319	\$2,027,846
Wilton	\$768,797	3,407	\$225.69	N/A	\$257,862	\$314,600	\$196,335	\$338,600
Weston	\$397,288	1,836	\$216.33	N/A	\$185,618	\$182,120	\$29,550	\$257,000
Westport	N/A	23,357	N/A	N/A	N/A	N/A	N/A	N/A

1) Does not include annual CAPEX or revenues

2) Tonnage data for Darien, Westport, Wilton is FY20 (July, 2019 - June, 2020), Norwalk is CY20, Greenwich is 4Q-19 - 3Q-20, Stamford & Weston is CY19

3) Estimated Gross Operating Cost per Ton is based on the total estimated annual operating cost (excluding revenue) divided by the total tonnage of material processed annually at the TS

4) Municipal labor estimate is intended to capture "fully loaded" labor costs, which includes admin/supervisor time, base salary of TS or DPW employees, OT, and an additional markup of 47% to 53% to capture fringe benefits (if not provided)

5) Misc O&M Costs cover misc costs provided such as utilities, consumables, permit costs, and other purchased costs

6) No annual revenue estimates are being inputted for Greenwich due to recent changes to the tipping fee structure

7) Norwalk costs pertain specifically to the main transfer station and not the yard waste facility

8) Stamford tonnage includes ~13,000 tons of leaves loaded and hauled by Grillo Services, Inc.

TABLE 16A - LIST OF LICENSED HAULERS								
	Darien	Greenwich	New Canaan	Norwalk	Stamford	Wilton	Weston	Westport
# of Licensed Haulers	8	23	11	48	N/A	10	8	12
Hauler #1	City Carting, Inc.	City Carting	City Carting			Oak Ridge Hauling, LLC	Oak Ridge Hauling, LLC	City Carting
Hauler #2	Oak Ridge Hauling	Oak Ridge Hauling, LLC	Oak Ridge			City Carting	Finocchio Brothers	Oak Ridge Hauling, LLC
Hauler #3	Finocchio Bros. Inc.	Finocchio Brother, Inc.	Amec Refuse			Ness Industries, LLC	Ness Industries, LLC	Adams Refuse
Hauler #4	Darien Disposal	Bonastia Refuse	Country Refuse			Country Refuse	BullBag Corporation	Action Container Service
Hauler #5	Tom Conte Garbage and Recycling	Capozza Carting LLC	DA Vento			County Waste Services	Bull Enterprises (1-800-GOTJUNK)	Cousins Carting
Hauler #6	Town and Country & Suburban Carting	Conelias Refuse	Home Refuse			New England Carting Company	Cherry Hill Construction Inc.	Cortez Refuse Service
Hauler #7	Darien Ice Rink	Covello, Ralph Jr.	JC Refuse			D.A. Vento Refuse	Redding Sanitation	Curbside Compost, LLC
Hauler #8	Alan Hyatt	Cox Sanitation, Inc.	MDM Sanitation			MDM Sanitation	Shred-It (Stericycle)	D&D Refuse
Hauler #9		CRG Carting	New Canaan Carting			Finocchio Brothers		Hunter Refuse
Hauler #10		DiMita Carting Corp	New England Carting			Curbside Compost, LLC		J&J Refuse
Hauler #11		Fredo Capozza Sanitation	Village Refuse					Malones Refuse Service
Hauler #12		Greenwich Carting						Westport Carting, LLC

TABLE 16A - LIST OF LICENSED HAULERS

	Darien	Greenwich	New Canaan	Norwalk	Stamford	Wilton	Weston	Westport
# of Licensed Haulers	8	23	11	48	N/A	10	8	12
Hauler #13		Greenwich Refuse & Recycling						
Hauler #14		James R. Santaguida Sanitation						
Hauler #15		J.J. Greco Carting						
Hauler #16		Longo Brothers Carting & Recycling						
Hauler #17		Mark Longo & Son Carting						
Hauler #18		Michael Creamer Inc.						
Hauler #19		Michael's Sanitation Service						
Hauler #20		Pucci Carting Inc.						
Hauler #21		Target Disposal Service						
Hauler #22		Tesei Sanitary Service						
Hauler #23		Joe Longo						

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