REPORT TO THE ENVIRONMENT COMMITTEE REGARDING WINE AND SPIRITS GLASS

CONNECTICUT DEPARTMENT OF ENERGY AND ENVIRONMENTAL PROTECTION

February 2022

Contents

I. Introduction / PA 21-58 Background

In 2021, the Connecticut legislature passed Public Act 21-58, which updated the state's beverage container deposit law. One of the provisions of this act, found in section 8, required the Department of Energy and Environmental Protection (DEEP) to develop the terms for a memorandum of agreement (MOA) that provided for the in-state processing of not less than 80% of the wine and liquor beverage containers sold in this state into furnace-ready cullet or byproduct that is melted or otherwise used in cement, glass or fiberglass products. Because the Act identifies in-state processing as the only allowable processing to count toward the 80% goal, the department recognizes Strategic Materials Inc. and Urban Mining as the only qualified processing facilities in Connecticut as of February 2022.

Furthermore, the Act requires the department establish a memorandum of agreement which includes provisions that delineate and assign responsibility among various stakeholders for: (1) Establishing and implementing such collection systems and methods, (2) transporting collected containers to any such facility, (3) properly recycling and managing any containers not accepted by any such facility, (4) executing any financial obligations among the parties pursuant to such agreement, (5) recordkeeping of volume, tonnage and categories of containers processed, annually, pursuant to such agreement, and (6) auditing costs, efficiencies and benefits of such agreement.

DEEP determined that it did not have the authority to be a party to an MOA with entities outside of state government, nor could it compel entities to sign on to an MOA. To be responsive to the legislature's intent from section 8 of Public Act 21-58, DEEP identified key stakeholders, conducted a survey, and held two meetings to gather information concerning the options for achieving 80% recycling rate for wine and spirit glass. The meetings were held by Zoom on January 7 and January 25, 2022.

Over 30 people registered for each of the two meetings. For a full list of meeting registrants for each meeting, please refer to Appendix A at the end of the document.

II. Six Potential Pathways to 80% In-state Processing and Stakeholder Comments

DEEP provided participating stakeholders with six potential pathways for achieving 80% in-state processing of wine and liquor beverage containers, and asked stakeholders to answer a handful of general questions as well as questions related to each pathway. DEEP received written responses from Urban Mining, Strategic Materials, the Wine and Spirits Wholesalers of Connecticut, Brescome Barton, NWRA, and Glass Packaging Institute. The questions, and written responses received by the department, are summarized below.

A. General questions posed to stakeholders and summary of responses

1. How will the percentage processed be measured/calculated?

DEEP received the following comments:

- the term "processed" must be fully defined and understood in order to calculate the percentage processed;
- the entities receiving the materials for processing would be best positioned to provide the data; and
- Urban Mining indicated that they and other processing facilities already report glass volumes and that the average percentage of wine and spirits against total glass could be estimated and used as a metric.

As stated above, DEEP believes that the term "processed" is well-defined in statute, and that Urban Mining and Strategic Materials are the only two in-state entities that are currently processing materials as defined in Public Act 21-58.

2. Is there existing data on the number of wine & spirits containers sold in Connecticut?

The participating wine and spirits wholesalers indicated that they do keep records of all Connecticut sales. However, the Wine & Spirits Wholesalers of Connecticut (WSWC) indicated that they do not segregate their data by container type (e.g., glass, plastic, or cardboard). It is possible to extrapolate the number of glass containers based on data they do have but that data would take about a month to compile and was not available at the time of publishing this report. Additionally, any data provided by WSWC would not include data from wholesalers that are not members of their organization.

3. How will the number of wine & spirits containers collected/processed be determined?

Urban Mining suggested periodic sampling at MRFs for single stream collections and at the processors for source separate or uncrushed glass, and that measuring the number of wine and spirits bottles that are processed should be done after the increase of the bottle deposit to $0.10 goes into effect. That increase will cause the percentage of wine and spirits bottles relative to all MRF glass to go up as more redeemable glass bottles are returned for a deposit refund.

4. Would it be feasible to have a "voluntary deposit system" outside of the mandated system?

None of the stakeholder respondents believed a voluntary deposit system to be feasible.

5. What stakeholders make up the "requisite parties"? Do you consider your organization a "requisite party"?

All respondents agreed that they should be requisite parties. Stakeholders named entities that DEEP had not previously identified, including wine and liquor suppliers and municipalities, as potential requisite parties.

6. Are there any potential pathways not identified [by DEEP] that your organization would recommend to achieve the 80% processing goal?

Respondent stakeholders indicated that due to the emergence of companies like Urban Mining that can process MRF glass coupled with investments in new technologies at MRFs, that no changes to the current system may be needed in order to reach the 80% in-state processing goal.

B. Potential pathways posed to stakeholders for achieving 80% in-state processing

PATHWAY	COMMENTS
1. Add wine & spirits containers to bottle bill, utilize existing BB infrastructure	• Would need legislation to add to the bottle bill. • Would likely not meet 1/1/23 goal. • Even if added to BB, redemption rate will take time to ramp up to 80% redemption. QUESTIONS: • Is this potentially a viable pathway for you/your organization? • What, if any, new infrastructure would be needed? How would that infrastructure be financed? • What would be the optimal deposit for wine and liquor bottles?
2. Collect wine & spirits glass containers separately curbside (i.e., dual stream collection)	• There would be new expenses incurred for such collection: additional collection routes and/or new trucks & bins. QUESTIONS: • Is this potentially a viable pathway for you/your organization? • Do you see opportunities to include other types of glass (e.g., pickle jars) in a dual stream system? • How would this service be financed? • Are there opportunities for efficiencies to minimize the need for additional collection routes and/or new trucks & bins?
3. Collection of separately bagged glass within curbside recycling containers (i.e., co-collection)	• Would need to be able to sort bagged glass from other curbside recyclables at a permitted facility. • Unknown if bags containing glass containers would survive collection/hauling process. • No facilities set up to provide this type of sorting service yet. QUESTIONS: • Is this potentially a viable pathway for you/your organization? • How can bag durability be addressed? Are there other ways to achieve a successful co-collection model? • Can sorting be managed without jeopardizing worker safety?

	• How would sorting be financed?
4. Collect wine & spirits glass containers at drop-off kiosks	• Drop off glass containers at designated collection bins – could be at town properties (e.g., transfer stations), retail parking lots, and/or other locations. QUESTIONS: • Is this potentially a viable pathway for you/your organization? • Who would transport glass from collection bins/kiosks and deliver to a processing facility or intermediate sorting facility? • How would this service be financed?
5. Wine & Spirits Wholesalers start new stewardship organization or join existing stewardship organization	• Would allow flexibility in implementation. QUESTIONS: • Is this potentially a viable pathway for you/your organization? • Do you need more information about the concept of stewardship organizations or extended producer responsibility?
6. Adjust CGS 22a-208z, which allows for some collected glass to be used as alternate daily cover at landfills	• Opportunities exist: Reducing the amount of MRF glass that goes to landfills for alternate daily cover will help achieve the 80+% recovery goal. QUESTIONS: • Would improving the quality of glass in the recycling stream make it more economical to send to processing facilities as opposed to being used for alternate daily cover?

C. Stakeholder responses to potential pathways

1. Add wine and spirits to bottle bill, utilize existing bottle bill infrastructure

- Wholesalers expressed opposition to expanding the bottle bill to add wine and spirits containers, adding that the bottle bill was initially conceived to be a litter prevention program and not a recycling solution.
- NWRA suggested this would not be necessary, as markets have responded through technology improvements at MRFs and the entrance of Urban Mining to the Connecticut market to manage glass.
- Urban Mining indicated that expanding the bottle bill would cause an unnecessary burden as they are able to manage single stream collected glass.

- Strategic Materials believes that expanding the bottle bill to cover wine and spirits bottles would be the quickest way to reach the 80% processing goal. Their South Windsor facility can accept and manage 100% of the bottle bill glass the state can currently produce.
- Glass Packaging Institute referenced lessons learned from their A Circular Future For Glass report, suggesting that adding wine and spirits bottles to the bottle bill is one of two viable strategies to reach the 80% processing goal (the other being a hybrid commercial collection system supplemented by separate residential curbside collection of glass). GPI did acknowledge that to be successful, investment by the wine and spirits industry or haulers would be necessary.

2. Collect wine & spirits glass containers separately curbside (i.e., dual stream collection)

- Wholesalers believe this is the most viable option to reclaim wine and spirit container glass.
- NWRA cited cost concerns with this option. Haulers and MRFs have already invested significantly in side-loaders for pickup and technologies that extract glass at the MRF, and it would be costly to purchase additional trucks for dual stream pickups while causing more traffic and emitting more greenhouse gases.
- Urban Mining indicated their plant can already process single stream glass, so this pathway was unnecessary.
- Glass Packaging Institute identified curbside separation as a viable strategy for meeting the 80% processing goal if it were combined with a commercial collection system.

3. Collection of separately bagged glass within curbside recycling containers (i.e., co-collection)

- Wholesalers indicated this pathway was worth considering.
- NWRA expressed concerns about viability, indicating that there are no current bag technologies that survive the collection process, MRFs do not have sorting capability and bags can jam sorting equipment, and there are no useful markets for contaminated plastic bags in the recycling stream.
- Urban Mining indicated their plant can already process single stream glass, so this pathway was unnecessary.
- Strategic Materials indicated that there have been difficulties in getting bag systems adopted in traditional trash or recycling streams for co-collection (and cited Chicago as an example), however bag drop systems may be more viable.
- Glass Packaging Institute has data from a recently studied bag model using a dedicated set of resilient bags that could be tracked, cleaned and reused for a potential wine and spirits collection pilot in New York City, however the bag system may not be the most efficient in every part of the state. Could be supplemented by a drop off system.
- *Note:* DEEP is currently monitoring pilot programs, such as the one in Meriden, that are testing co-collection of separately bagged food scraps. While glass poses challenges that don't exist with food scraps, there may be lessons learned from these pilots that can inform the potential viability of glass co-collection.

4. Collect wine & spirits glass containers at drop-off kiosks

- Wholesalers did not believe this was an option worth considering.
- Urban Mining noted they are already accepting this type of glass, and there are haulers currently providing transportation services to bring kiosk glass to their facility.
- Strategic Materials noted that they are working with the Housatonic Resources Recovery Authority (HRRA), which has implemented a program for drop-off glass, to process that glass. They indicated that drop-off glass is higher quality than single stream glass, but lower quality than bottle bill glass, and that drop-off programs tend to produce a lower volume of glass than curbside or bottle bill programs.
- Glass Packaging Institute indicated a drop off system could be part of the solution, but acknowledged increased contamination with these programs may limit processing without a centralized pre-clean or equipment added to Strategic Materials or Urban Mining's processing capabilities.

5. Wine & Spirits Wholesalers start new stewardship organization or join existing stewardship organization

- Wholesalers expressed concern that this pathway would amount to an expansion of the bottle bill.
- NWRA noted concerns about increasing product costs and suggested that the private sector is already addressing the problem of wine and spirits glass recovery.
- Glass Packaging Institute suggested a stewardship organization as an alternative for the wine and spirits wholesalers to avoid collecting the material themselves and have example models for successful bar and restaurant glass collection systems that could be achieved through a stewardship organization.

6. Adjust CGS 22a-208z, which allows for some collected glass to be used as alternate daily cover at landfills

- Strategic Materials believes prohibiting the use of glass as alternate daily cover without DEEP approval would be a viable way to increase the amount of glass processed.
- Glass Packaging Institute would be opposed to increasing the allowable amount of alternate daily cover and believes that separating glass will provide a positive market value for the material.
- *Note:* In suggesting this pathway, DEEP contemplated reducing the allowable amount of alternate daily cover or eliminating alternative daily cover as an option to facilitate more glass being sent to processing facilities.

III. Data Limitations

During the January 7, 2022 stakeholder meeting, several stakeholders asked if DEEP had existing data to understand the percentage of wine and liquor glass is currently processed in-state. Some stakeholders estimated the percentage might already be close to the 80% statutory goal, and some suggested the

percentage was far below the goal. DEEP devoted a significant portion of the January 25, 2022 stakeholder meeting to discussing the data we currently have, the data we would need to successfully calculate the percentage processed, and the limitations and barriers that exist to collecting that data.

To determine compliance with the requirement of "...not less than 80% of the wine and liquor beverage containers sold in this state into furnace-ready cullet or byproduct...", data for the following equation would be needed:

$$\frac{\textbf{Weight of wine \& spirits glass containers processed in CT}}{\textbf{Weight of wine \& spirits glass containers sold in CT}}$$

Data related to the weight all glass **processed** in Connecticut could be gathered from the two processing facilities in Connecticut, Strategic Materials and Urban Mining Northeast, but wine & spirits glass is not segregated and would be an unknown subtotal of the total amount of glass received at these two facilities.

Data related to the weight of wine & spirits glass **sold** in Connecticut could possibly be projected from information compiled by the Wine & Spirits Wholesales of Connecticut (WSWC) and all other wine & spirits wholesalers that are not members of WSWC. This data would capture the number of containers sold, but it is not yet clear how this number of containers sold, once determined, would be converted to weight of containers sold.

The Container Recycling Institute (RCI) also compiles state-level data sets that do estimate weight of wine & spirits containers sold annually, but their most recent data set usually lags a few years behind the current year.

Additional glass-related data includes the information reported to DEEP from recycling facilities in Connecticut (i.e, those facilities accepting single stream recyclables directly from the material generators, such as households). These facilities are required to report the total amount of glass marketed, but wine & spirits glass is an unknown subtotal of the total glass marketed. Of all glass marketed by these facilities in 2020, very little of it went to Strategic Materials or Urban Mining Northeast, so very little was "processed in-state" as defined in Public Act 21-58.

Lastly, DEEP periodically conducts Waste Characterizations that analyze the various materials found in both the MSW stream and the recycling stream. While there is glass-related information captured in these characterizations, it isn't refined enough to provide useful insight on the amount of wine and spirits glass in those streams.

After reviewing available sources of glass related data, DEEP has determined that there are no currently existing sources of data that would definitively demonstrate compliance (or non-compliance) with the 80% requirement of P.A. 21-58.

Please refer to Appendix B for additional details related to the data sources noted above.

IV. Conclusion

No proposed pathway was endorsed by all or even a majority of the stakeholders. As discussed in Section III of this report, there was disagreement about the current level of wine and liquor glass processing in the state and based on the data currently gathered and reported to DEEP. While we are unable to definitively determine compliance with the 80% in-state processing goal for wine and liquor glass, the available data seems to indicate that it is likely the 80% goal is not currently being met. Most of the stakeholders advocated for continuance of the current recycling system, citing the operation of Urban Mining as key to reaching the 80% goal.

As a new facility, Urban Mining is currently operating well below permitted capacity, but expects to ramp up over time. Some Materials Recovery Facilities (MRFs) that accept and market recyclable materials have invested in technology upgrades to meet the specifications required by Urban Mining to process single-stream glass. Strategic Materials has historically been unable to accept curbside single-stream glass because it is too contaminated. Strategic Materials and/or the MRFs could potentially upgrade their own infrastructure to be able to accept and/or process single-stream glass, however those costs would be substantial and ultimately borne by municipalities and taxpayers. It is unknown how such infrastructure improvements would affect recycling, recovery, or processing rates.

In 2021, the legislature – in response to increasing demand by manufacturers to make containers from recycled content – asked DEEP to report recommendations for recycled content requirements for products sold in the state. DEEP was asked to consult regionally with retailers, manufacturers, recycling businesses and organizations like the Northeast Recycling Council (NERC) in preparing this report, which is due by December 1, 2022. If the legislature wishes to act on recycled content standards, there will need to be a balance between clean glass streams (e.g., bottle bill glass) that can currently be processed at Strategic Materials and used as a feedstock for new glass containers, and single-stream processing of wine and liquor glass, like what can be processed at Urban Mining, that produce other, non-glass products such as pozzolans.

Appendix A

Full list of meeting registrants below. Please note that registration may not reflect actual attendance.

First Name	Last Name	Organization	January 7	January 25
James	Albis	CT DEEP	x	x
Paul	Balavender	O&G Industries, Inc./Urban Mining CT	x	x
Keith	Bishop	Bishop's Orchards		x
Michelle	Blanchard	Casella Waste Systems	x	x
Alexis	Bourassa	FOCUS Gov. Affairs	x	x
Peter	Brunelli	CT DEEP		x
Curt	Bucey	Strategic Materials	x	x
Larry	Cafero	Wine and Spirits Wholesalers of CT, Inc.	x	x
Andrea	Calarco	Casella Waste Systems	x	
Julie	Cammarata	Cammarata Government Affairs/Strategic Materials		x
Bob	Cappadona	Casella Waste Systems		x
Steve	Changaris	CT Chapter NWRA	x	
Susan	Collins	Container Recycling Institute	x	x
Jean	Cronin	Hughes & Cronin/CT Package Stores Assn	x	x
Mallory	Daley	Hughes & Cronin/CT Package Stores Assn	x	x
John	Decker	Oak Ridge Waste & Recycling		x
Scott	DeFife	Glass Packaging Institute		x
Peggy	Diaz	CT DEEP	x	x
Brendan	Fox	Gaffney, Bennett & Associates/Murphy Road Recycling	x	x
Gabrielle	Frigon	CT DEEP	x	
Thomas	Gaffey	MIRA		x
Anne	Germain	NWRA	x	
Allison	Goldsmith	Container Recycling Institute	x	x
Patrick	Grasso	Urban Mining Industries	x	x
Nicole	Griffin	Wine & Spirits Wholesalers of CT	x	x
Chelsey	Hahn	CT DEEP	x	
Jennifer	Heaton-Jones	Housatonic Resources Recovery Authority	x	x
Laura	Hennemann	Strategic Materials	x	x
Josh	Hughes	Capitol Consulting/National Waste & Recycling Assn	x	x
Sean	Hughes	Connecticut Package Store Association	x	x
Robert	Isner	CT DEEP	x	x
Kevin	Kranzler	Brescome Barton, Inc.	x	x
James	Leahy	Liberty Square Group/Urban Mining	x	x
Mike	Martone	Focus Government Affairs/Brescome Barton	x	x

Mark	Messier	Brescome Barton, Inc.	x	x
Tom	Metzner	CT DEEP	x	x
Elly	Moore	CT DEEP	x	x
Harrison	Nantz	CT DEEP	x	x
Chris	Nelson	CT DEEP	x	x
Mike	Paine	Paine's Incorporated and NWRA		x
James	Paolino	Focus Government Affairs/Brescome Barton		x
Doug	Rankin	Missing Link Wine Company		x
April	Regan	USA Hauling	x	x
Michael	Rell	International Government Strategies/ CT Vineyard and Wine Assn		x
Joe	Sardone	Oak Ridge Waste and Recycling		x
Edward	Spinella	Law Offices of Edward F Spinella Esq., LLC/Murphy Road Recycling	x	x
Kevin	Spinella	Gaffney, Bennett & Associates/Murphy Road Recycling	x	x

Appendix B

Data from Strategic Materials

Data SMI collects the following weight-based information:

- Deposit glass generated in CT and accepted in S. Windsor
- Deposit glass generated outside of CT and accepted in S. Windsor
- Deposit glass (unknown origin) accepted in S. Windsor
- CT MRF glass accepted in S. Windsor
- CT MRF glass shipped out of state

Data from Urban Mining Northeast (Q4 2021)

- ~1,600 tons = amount of ALL glass received during the quarter
- ~1,480 tons = amount of CT MRF glass taken in during the quarter
- ~20 tons = amount of non-CT MRF glass taken in during the quarter
- ~100 tons = amount of other CT-generated glass taken in (e.g., HRRA pilot glass)
- ~250 tons = amount of non-glass materials sent off for disposal

Annualizing the above quarterly numbers, this glass intake represents less than 15% of UMN's projected stabilized volume and less than 6% of their permitted volume.

Data from Container Recycling Institute (CRI):

The Container Recycling Institute periodically produces a Beverage Market Data Analysis (BMDA). The BDMA can be used by government agencies and recycling industries to assess sales and recycling of beverage containers. CRI generates separate data sets for the United States as a whole and for individual states.

The BMDA is a compilation of information derived from over 20 different industry and government sources, and is an easily modifiable analytical tool for government agencies and recycling industries to assess sales and recycling.

2017 BMDA Glass Bottle Data for CT (source: CRI)

	2017 Sales (units)	2017 Sales (units per capita)	2017 Sales (tons)	2017 Sales (lbs per capita)	containers per ton
A. Carbonated Beverages					
Carbonated Soft Drinks	9,563,179	2.7	2,843	1.6	3,364.1
Beer & Hard Cider	257,129,596	71.7	62,607	34.9	4,107.0
Energy Drinks	0	0.0	0	0.0	3,462.3
Domestic Sparkling Water	6,751,914	1.9	2,593	1.4	2,603.5
Carbonated subtotal	**273,444,689**	**76.2**	**68,043**	**37.9**	
B. Non-carbonated Beverages					
Domestic Non-Sparkling Water (≤1 gal)	4,732,498	1.3	1,547	0.9	3,059.7
Sports Drinks	0	0.0	0	0.0	0.0
Fruit & Vegetable Beverages	14,671,657	4.1	5,839	3.3	2,512.9
Ready-to-drink Tea & Coffee	37,788,352	10.5	11,785	6.6	3,206.5
Wellness & Functional	5,779,839	1.6	1,795	1.0	3,219.5
Non-carbonated subtotal	**62,972,346**	**17.5**	**20,966**	**11.7**	
C. Wine & Spirits					
Wine	79,230,471	22.1	49,706	27.7	1,594.0
Spirits (Liquor)	31,521,445	8.8	23,553	13.1	1,338.3
Wine & Spririts Subtotal	**110,751,916**	**30.9**	**73,259**	**40.8**	
D. Milk & Dairy Alternatives Subtotal	**1,001,504**	**0.3**	**856**	**0.5**	**1,169.9**
Total	**448,170,455**	**125**	**163,123**	**90.9**	

Source (for citation purposes): "2017 Beverage Market Data Analysis," The Container Recycling Institute, 2020.

Data from Wine & Spirits Wholesalers of CT (WSWC):

- WSWC member companies don't segregate their data by container type (i.e., glass, plastic or cardboard);
- Members would be able to extrapolate the number [of glass containers] from the data they do have, which will provide very accurate estimates. They would do this by adjusting their data and reporting it by the 9 liters case configuration. This will allow DEEP to translate the amount of 9 liter cases sold to a weight, and thereby determine the weight amount of wine and spirits glass sold per year.
- Data will be coming from the following members of WSWC: CDI, Hartley & Parker, Eder Bros., Allan S. Goodman, Slocum and Sons, Northeast Beverage and Opici Family Distributors

Data reporting to CT DEEP by CT Materials Recovery Facilities (MRFs) - 2020:

Permitted Solid Waste Facilities (SWFs) in Connect are required to report annual data to DEEP. The following table illustrates where Materials Recovery Facilities (MRFs) have reported as "marketed glass" in 2020. The colored facilities in this table are the primary MRFs that accept and process mixed recyclables into sorted materials. In 2020, very little of the MRF-generated glass was sent to "in-state processors" that would meet the intent of P.A. 21-28.

Much of this MRF glass ended up being sent to another in-state facility before being shipped to a landfill out-of-state, likely with other fines (small pieces of various materials) and Construction & Demolition (C&D) wastes.

Connecticut IPC	City	Destination Facility	State	Destination Type	Item Type	Annual Tons
A M H - BPT (WM - RECYCLE AMERICA)	BRIDGEPORT	STRATFORD BALING - (RECYC)	CT	Recycling Facility (Includes clean wood VRF's)	GLASS - CONTAINERS	221.20
A M H - BPT (WM - RECYCLE AMERICA)	BRIDGEPORT	STRATFORD BALING - (VRF)	CT	VRF-Bulky	GLASS - MIXED AGGREGATE	466.82
A M H - KENSINGTON (BERLIN - MURPHY RD RECY	KENSINGTON	MURPHY RD - HARTFORD (RECY)	CT	Recycling Facility (Includes clean wood VRF's)	GLASS - CONTAINERS	5,388.94
A M H - KENSINGTON (BERLIN - MURPHY RD RECY	KENSINGTON	MURPHY RD - HARTFORD (VRF)	CT	VRF-Bulky	GLASS - CONTAINERS	2,799.75
A M H - KENSINGTON (BERLIN - MURPHY RD RECY	KENSINGTON	NO FACILITY SELECTED	OOS	No Facility Type	GLASS - CONTAINERS	0.00
A M H - KENSINGTON (BERLIN - MURPHY RD RECY	KENSINGTON	PACE INC.	NJ	End User	GLASS - CONTAINERS	122.19
A M H - KENSINGTON (BERLIN - MURPHY RD RECY	KENSINGTON	STRATEGIC MATERIALS	CT	Recycling Facility (Includes clean wood VRF's)	GLASS - CONTAINERS	270.80
CITY RECYCLING - STAMFORD VRF (RECYC)	STAMFORD	CAP GLASS INC	PA	End User	GLASS - CONTAINERS	3,764.76
CITY RECYCLING - STAMFORD VRF (RECYC)	STAMFORD	CAP GLASS INC	PA	End User	GLASS AGGREGATE - ADC	2,751.95
CITY RECYCLING - STAMFORD VRF (RECYC)	STAMFORD	UNIDENTIFIED - (CT) - END USER	CT	End User	GLASS AGGREGATE - ADC	19.77
CITY RECYCLING - STAMFORD VRF (RECYC)	STAMFORD	UNIDENTIFIED - (CT) RECY FACILITY	CT	End User	GLASS - CONTAINERS	554.18
IPC - HARTFORD RECYCLING (MID-CT)	HARTFORD	MURPHY RD - HARTFORD (RECY)	CT	Recycling Facility (Includes clean wood VRF's)	GLASS - MIXED AGGREGATE	64.80
IPC - HARTFORD RECYCLING (MID-CT)	HARTFORD	UNIDENTIFIED - (O-O-S) RECY FACILITY	OOS	Recycling Facility (Includes clean wood VRF's)	GLASS - CONTAINERS	4,067.55
IPC - HARTFORD RECYCLING (MID-CT)	HARTFORD	UNIDENTIFIED - (O-O-S) RECY FACILITY	OOS	Recycling Facility (Includes clean wood VRF's)	GLASS - MIXED AGGREGATE	8,969.08
MURPHY RD - CAPITOL RECYCLING	HARTFORD	MURPHY RD - HARTFORD (RECY)	CT	Recycling Facility (Includes clean wood VRF's)	GLASS - CONTAINERS	922.37
MURPHY RD - CAPITOL RECYCLING	HARTFORD	MURPHY RD - HARTFORD (VRF)	CT	VRF-Bulky	GLASS - MIXED AGGREGATE	528.06
MURPHY RD - NEW MILFORD TS (OLD ASTI)	NEW MILFORD	A M H - BPT (WM - RECYCLE AMERICA)	CT	Recycling Facility (Includes clean wood VRF's)	GLASS - CONTAINERS	4.68
MURPHY RD - NEW MILFORD TS (OLD ASTI)	NEW MILFORD	STRATFORD BALING - (RECYC)	CT	Recycling Facility (Includes clean wood VRF's)	GLASS - CONTAINERS	200.63
WILLIMANTIC WASTE (RECYCLE-PAPER)	WILLIMANTIC	CANUSA HERSHMAN RECYCLING	CT	Broker	GLASS - CONTAINERS	2,038.67

The following table provides more detail for two of Connecticut's MRFs. Total tons received is the weight of all mixed recyclables accepted at the MRF. Note that the Oak Ridge facility in Shelton did not report any MRF glass as being marketed (and thus does not appear in the previous table). All MRF glass from this facility was sent out as residue.

2020	AMH - Kensington	Oak Ridge - Shelton
Total Tons Received	91,102	72,314
Total Tons Materials Marketed	70,590	40,011
Total Tons Glass Marketed (subtotal)	8,582	0
Total Tons Residue Disposed	18,407	33,729
% Marketed	77	55
% Glass Marketed	9	0
% Residue	20	47

The following two tables provide more detail on the AMH facility (also referred to as the Murphy Road Recycling facility in Berlin). This first table shows how much total glass was marketed as a subtotal of the total amount of material marketed. The second table shows that approximately 4.6% of the sorted MRF glass is sent to receiving facilities that will recycle the glass in some way. The remaining 95.4% of the MRF glass is sent to other facilities, from which it will be shipped out for disposal.

AMH Kensington Marketed - ALL

CT IPC Name	City	Item Type	Tons
A M H - KENSINGTON (BERLIN - MURPHY RD RECY	KENSINGTON	CORRUGATED	18715.01
A M H - KENSINGTON (BERLIN - MURPHY RD RECY	KENSINGTON	GLASS - CONTAINERS	8581.68
A M H - KENSINGTON (BERLIN - MURPHY RD RECY	KENSINGTON	METAL CONTAINERS	318.25
A M H - KENSINGTON (BERLIN - MURPHY RD RECY	KENSINGTON	NEWSPAPER	150.95
A M H - KENSINGTON (BERLIN - MURPHY RD RECY	KENSINGTON	OFFICE - PAPER	3228.83
A M H - KENSINGTON (BERLIN - MURPHY RD RECY	KENSINGTON	PAPER - MIXED	33088.85
A M H - KENSINGTON (BERLIN - MURPHY RD RECY	KENSINGTON	BOXBOARD	411.10
A M H - KENSINGTON (BERLIN - MURPHY RD RECY	KENSINGTON	PLASTIC - HDPE - MIXED OR PIGMENT	532.87
A M H - KENSINGTON (BERLIN - MURPHY RD RECY	KENSINGTON	PLASTIC - HDPE - NATURAL	619.64
A M H - KENSINGTON (BERLIN - MURPHY RD RECY	KENSINGTON	PLASTIC - PET - CLEAR	1221.98
A M H - KENSINGTON (BERLIN - MURPHY RD RECY	KENSINGTON	PLASTIC - PET - MIXED OR PIGMENT	276.17
A M H - KENSINGTON (BERLIN - MURPHY RD RECY	KENSINGTON	FILM - PLASTIC	116.00
A M H - KENSINGTON (BERLIN - MURPHY RD RECY	KENSINGTON	PLASTICS - MIXED PLASTICS	131.64
A M H - KENSINGTON (BERLIN - MURPHY RD RECY	KENSINGTON	PLASTICS MIXED #1 - #7	774.10
A M H - KENSINGTON (BERLIN - MURPHY RD RECY	KENSINGTON	ALUMINUM	391.94
A M H - KENSINGTON (BERLIN - MURPHY RD RECY	KENSINGTON	SCRAP METAL MSW	1257.36
A M H - KENSINGTON (BERLIN - MURPHY RD RECY	KENSINGTON	SCRAP METAL - FERROUS	386.30
A M H - KENSINGTON (BERLIN - MURPHY RD RECY	KENSINGTON	WOOD/WOOD CHIP-CLEAN	91.63
A M H - KENSINGTON (BERLIN - MURPHY RD RECY	KENSINGTON	WOOD - NON-TREATED	85.91
A M H - KENSINGTON (BERLIN - MURPHY RD RECY	KENSINGTON	WOOD CHIPS FROM YARD WASTE	69.49
A M H - KENSINGTON (BERLIN - MURPHY RD RECY	KENSINGTON	WOOD - BRUSH MULCH	140.05
		Total Tons	**70589.75**

CT IPC Name	Receving destination	Item Type	Total Tons
A M H - KENSINGTON (BERLIN - MURPHY RD RECY	MURPHY RD - HARTFORD (RECY)	GLASS - CONTAINERS	5,388.94
A M H - KENSINGTON (BERLIN - MURPHY RD RECY	MURPHY RD - HARTFORD (VRF)	GLASS - CONTAINERS	2,799.75
A M H - KENSINGTON (BERLIN - MURPHY RD RECY	PACE INC.	GLASS - CONTAINERS	122.19
A M H - KENSINGTON (BERLIN - MURPHY RD RECY	STRATEGIC MATERIALS	GLASS - CONTAINERS	270.8
		Total Tons	**8,581.68**

The following table is another report from the DEEP database that illustrates that of all the mixed recyclables received at the Oak Ridge facility in 2020, none of the MRF glass was sent on for recycling elsewhere.

OakRidge Shelton Marketed - All

CT IPC Name	City	Item Description	Tons
WINTERS BROS - 90 (GREY) (UNIT RECYC)	SHELTON	CORRUGATED	15084.02
WINTERS BROS - 90 (GREY) (UNIT RECYC)	SHELTON	METAL CONTAINERS	1609.56
WINTERS BROS - 90 (GREY) (UNIT RECYC)	SHELTON	NEWSPAPER	18996.98
WINTERS BROS - 90 (GREY) (UNIT RECYC)	SHELTON	PLASTIC CONT. (1, 2)	484.53
WINTERS BROS - 90 (GREY) (UNIT RECYC)	SHELTON	PLASTIC CONT. (1, 2)	356.08
WINTERS BROS - 90 (GREY) (UNIT RECYC)	SHELTON	PLASTIC CONT. (1, 2)	1000.88
WINTERS BROS - 90 (GREY) (UNIT RECYC)	SHELTON	PLASTIC CONT. (1, 2)	961.01
WINTERS BROS - 90 (GREY) (UNIT RECYC)	SHELTON	PLASTICS MIXED #1 - #7	452.75
WINTERS BROS - 90 (GREY) (UNIT RECYC)	SHELTON	SCRAP METAL	972.29
WINTERS BROS - 90 (GREY) (UNIT RECYC)	SHELTON	WOOD - NON-TREATED	92.97
		Total Tons	**40011.07**

Glass data in the 2015 Waste Characterization:

2015 Statewide Waste Characterization Study

Glass in MSW (from table 3-1 in the Study):

Glass	Est. % (by weight) 2.5%	Conf. Int (+/-)	Tons 58,512
Non-deposit Clear/Amber Glass	1.1%	0.2%	25,100
Non-deposit Green/Other Colored Glass	0.2%	0.1%	4,513
Deposit Glass	0.3%	0.1%	7,311
Flat Glass	0.1%	0.1%	1,841
Remainder/Composite Glass	0.8%	0.3%	19,746

Glass in Mixed Recycling Stream (from table 4-3 in the Study):

Glass	Est. % (by weight) 17.7%	Conf. Int (+/-)
Non-deposit Clear/Amber Glass	5.4%	0.9%
Non-deposit Green/Other Colored Glass	2.1%	0.6%
CT Deposit Glass Beverage Containers	2.0%	0.4%
Flat Glass	0.2%	0.1%
Broken Glass	8.0%	1.5%