



MEMORANDUM

TO: Diana McCarthy-Bercury,
Sustainability and Compliance Manager
Town of Branford, CT

DATE: March 8, 2022

CC: Jamie Cosgrove, First Selectman
Paul Muniz, Solid Waste Management Commission Chair

FROM: Kate Vasquez, Director of Planning & Advisory Services – Solid Waste
RRT Design & Construction

SUBJECT: Executive Summary of Solid Waste Planning Project

This memorandum serves to transmit to the Town of Branford the technical details used to inform our recommended course of action for providing a successful solid waste management program. The contents are:

1. The outputs of a cost estimator tool showing projected cost differences between collecting garbage and recyclables using a two-pass method (one for garbage and one for recyclables) and using a three-pass method (one for garbage and two for recyclables).
2. Information on the MRF processing services available to the Town.
3. The outputs of a cost estimator tool showing theoretical pricing for four scenarios of recyclables processing:
 - a. Delivering dual-stream recyclables to a single-stream or dual-stream MRF in a fixed-price contract (no rebates paid);
 - b. Delivering single-stream recyclables to a single-stream MRF in a fixed-price contract;
 - c. Delivering dual-stream recyclables to a single-stream or dual-stream MRF in a shared-risk contract (fixed price for processing with rebates paid based on quality and market values); and,
 - d. Delivering single-stream recyclables to a single-stream MRF in a shared-risk contract.
4. Requested technical information regarding the economics of using carts for curbside collection; a previously-provided (but unpublished) decision tree for evaluating curbside collection methodologies; a table showing and comparing the cost centers of curbside collection several collection methodologies.

5. Details related to RRT’s recommendations regarding how to structure a request for proposals (RFP) procurement to get the best results.

1. Collection operations

All things being equal, and using the Town’s operating costs plus Federal standards as inputs, RRT estimated the operational costs for performing collection of garbage and recyclables in two different methodologies: 2 passes, wherein recyclables are collected in a single vehicle (either single stream in a single-body truck or dual-stream in a split-body truck); and, 3 passes, wherein recyclables are collected dual stream using single-body trucks. Cost inputs included labor and benefits; operational details such as uniforms, tools, and technology; hourly operating costs associated with collection vehicles; and an appropriate outreach program. The estimator was not projected or escalated into the future—it is a “snapshot” using present-year values.

Assumptions: It is critical to note that these costs estimates are based on the Town performing the services, and not an estimate of private-sector costs or prices. Importantly, RRT believes that most collectors who would respond to an RFP to provide collection services would be able to provide the service as a marginal expansion of their current operations—i.e., they likely would not need to add and maintain a full fleet in order to collect the customers in Branford. Furthermore, labor prices remain volatile and unpredictable. By far, the largest cost element in collection is labor, and labor prices (especially for drivers) are currently at all time highs and being greatly influenced by the COVID-19 pandemic. For this and other reasons, these estimates should only be used to understand the cost ramifications of a dual stream recycling program and the magnitude of effect it might have on proposed pricing.

These values should not be used for budgeting, and they should not be used to approximate what collectors responding to an RFP might propose.

COLLECTION OPERATIONS & CAPITAL EXPENDITURES

	2 passes	3 passes
Total Salaries & Wages PLUS Total Benefits	\$ 1,430,316.02	\$ 2,036,665.52
Travel and Training	\$ 5,000.00	\$ 5,000.00
Materials/Supplies General	\$ 3,000.00	\$ 3,000.00
Cell Phones	\$ 1,000.00	\$ 1,000.00
Uniforms and Boots	\$ 13,650.00	\$ 19,500.00
Vehicle Operations (Federal hourly cost)	\$ 277,513.78	\$ 435,140.20
Annual Amortization of Sanitation Trucks	\$ -	\$ -
Annual Interest Expenses on Sanitation Trucks Purchase	\$ -	\$ -
Recycling Outreach and Education	\$ 34,236.00	\$ 34,236.00
Operations and Capital Costs	\$ 1,764,715.79	\$ 2,534,541.72

Per Household Costs

Operations and Capital Costs, per unit, per Year	\$ 206.18	\$ 296.13
Operations and Capital Costs, per unit, per Month	\$ 17.18	\$ 24.68

Magnitude of differences

Dollars difference per unit, per month	\$ 7.50
Percentage difference in costs (approximate)	43%

As shown in the tables, for a Town operation to add a third pass would increase costs considerably as a percentage of the cost. Although the difference for a private firm responding to an RFP may not be as significant, it illustrates why the Town should require proposers to provide pricing to collect dual stream recyclables AND allow alternative proposals. The requirement for the “base case” proposals will allow the Town to clearly compare the alternative proposals to a baseline price.

2. Availability of shared-risk recyclables processing contracts

RRT has researched and recommended that the Town should be able to obtain a shared-risk contract with a recyclables processor. RRT has been able to interview three of the four firms operating in the marketplace—including the current vendor—and confirmed that they operate in this format. The fourth has not been reached but RRT believes that as a major company and the actions of their competitors, they would also be amenable. The CT DEEP also confirmed in an interview that the agency recommends and endorses shared-risk contracts.

3. Recyclable processing cost estimates

At the request of the Solid Waste Management Commission, RRT prepared comparisons of how overall costs to the Town for processing of recyclables might vary for dual-stream and single-stream, and for the cost-saving potential of shared-risk versus fixed-price processing. Based on our familiarity with the recyclables processing marketplace, we are not confident that any processor would be willing or able to “discount” their per-ton processing prices in exchange for not sharing revenues to the Town, and therefore are using the same per-ton processing costs regardless of contract type. The per-ton costs for processing of recyclables have increased significantly in recent years. The cost increases are due in part to labor prices, the sophistication of the equipment used for processing, and the increasing complexity of the waste stream. Therefore, the four scenarios provided are primarily useful for comparing single-stream to dual-stream. The first table shows estimates reflective of commodity pricing in Q4 of 2021.

Assumptions: For the purposes of estimating composition of curbside recyclables collected dual-stream, data was used from a study conducted by RRT of the Rockland County, NY, dual stream recycling study in December 2020. For the composition of single-stream recyclables, a waste composition study performed by CT DEEP in 2015 was used. Per-ton pricing for fiber, bottles and cans, and single-stream recyclables was based on RRT’s experience in the Northeast.

Commodity pricing came from recent published industry reports. These costs do NOT include trucking or transfer of recyclables from the Transfer Station to a MRF.

These values should not be used for budgeting, and they should not be used to approximate what processors responding to an RFP might propose.

Q4 2021 Pricing

	Revenue (Cost) w/ Shared Risk	Per HH	Revenue (Cost) w/Fixed Price	Per HH
Dual Stream + OCC compactor	\$ 61,714.35	\$ 7.21	\$ (162,750.00)	\$ (19.02)
Single Stream + OCC compactor	\$ (171,982.50)	\$ (20.09)	\$ (172,500.00)	\$ (20.15)
Impact of Dual Stream/HH/year		\$ 27.30		\$ 1.14
Impact of Dual Stream/HH/month		\$ 2.28		\$ 0.09

As noted in previous correspondence and conversation, the pricing for recycled commodities increased steeply in Q3 of 2021. It remained elevated in Q4 of 2021 as compared to the end of 2020 and the first half of 2021. In particular, value for HDPE is at a record high but appears it may be “bubble bursting” in the coming quarters. Therefore, by way of comparison, the same calculations were performed based on the average commodity pricing across Q4 2020, Q1 2021, and Q2 2021.

2020-21 Pricing

	Revenue (Cost) w/Shared Risk	Per Unit	Revenue (Cost) w/Fixed Price	Per Unit
Dual Stream + OCC	\$ (30,857.85)	\$ (3.61)	\$ (162,750.00)	\$ (19.02)
Single Stream + OCC	\$ (132,243.41)	\$ (15.45)	\$ (172,500.00)	\$ (20.15)
Impact of Dual Stream/HH/year		\$ 11.85		\$ (1.14)
Impact of Dual Stream/HH/month		\$ 0.99		\$ (0.09)

Comparing the two tables shows how current pricing affects the net cost and benefit to customers who receive shared-risk rebates, allowing them to reap the rewards of good recycling and good markets.

4. Additional technical information

The Commission requested information on the costs associated with utilizing rolling carts for the collection of waste. RRT prepared a cost estimate based on industry experience, regional product costs, and Town labor costs. It is important to note that recent plastic resin prices have led to volatility in the prices charged for durable plastic goods. The Town has experienced recent sharp increases in the price of the recycling bins it purchases, for example. The table below itemizes the prices associated with providing one cart per household for the purpose of setting out garbage.

Assumptions: The maintenance costs are based on industry experience and represent the labor and supplies to service, repair, remove, and replace carts at customers’ locations. It typically consists of one FTE and their needed supplies and equipment. The cost estimator assumes that any purchase contract would include the stipulation that the Town could purchase additional future carts for a set period at the same price per cart as in the original purchase. If this provision could not be obtained, the Town would need to purchase and store a larger number of carts in the initial procurement to account for growth and damage in the future. A period of seven years is shown to coincide with the recommended length of a collection contract.

These values should not be used for budgeting, and they should not be used to approximate what collectors responding to an RFP might propose.

Costs to purchase and own a cart fleet		First 7 years
Number of carts needed in initial purchase	Customer count +5%	8,987
Cart purchase (total)	FOB \$60 per cart	\$ 539,217
Interest costs (total)	4.00%	\$ 21,568.68
Annual refresh	10% of fleet	\$ 53,922
Annual maintenance per cart	\$7.00 per year	\$ 62,909
Monthly cost to Town for refresh and maintenance	Per cart	\$ 1.08
Total cost of ownership over 7 years	Total	\$ 1,378,598.13
Average cost of ownership per unit first 7 years	Per month	\$ 1.83

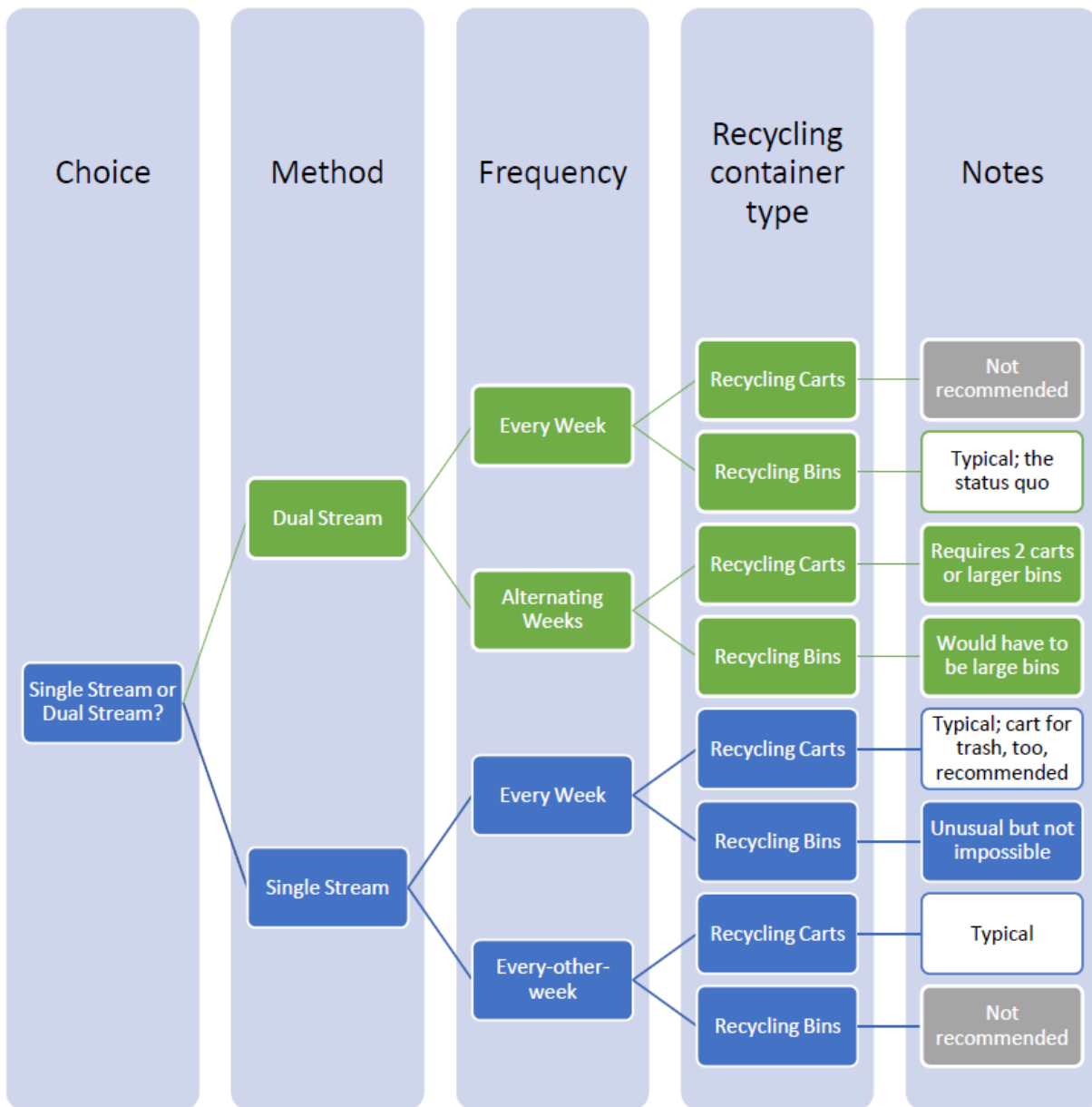
Many municipalities do prefer to purchase and manage their own carts rather than paying marginally more per customer per month essentially to rent them because the useful life of most carts will exceed the life of the collection contract—i.e., the carts are an asset that can be used long after their purchase price is depreciated. Other benefits include choosing the style, design, and color it prefers for the carts, and controlling how many carts an individual customer can have. Challenges include the initial capital outlay, which is significant, along with the operational burden and budgeting impacts of managing the cart fleet, which could exceed \$100,000 per year.

There is more to consider than cost when contemplating carts—namely, programmatic impacts. As discussed previously, carts have been shown to encourage contamination. Residents feel compelled to “fill up” a recycling cart and end up including non-program materials to do so. Others become skeptical about commingling materials they previously separated, leading to mistrust and negative attitudes.

The decision tree below lays out how to consider the possible options for curbside collection methods, including set-out method, frequency, and the use of carts or bins. In the diagram, “Alternating weeks” was a methodology RRT was asked to consider in which the two components of dual-stream recyclables—fiber, and bottles and cans—would be collected on alternating weeks. For example, fiber would be collected on an “A” week and bottles and cans

would be collected on the alternating “B” weeks. Use of the word “Typical” means the method is well-established in communities across the United States but does not necessarily endorse the method for Branford. As shown, RRT recommended against considering two of the possibilities on the decision tree any further because they would be unnecessarily expensive or operationally unworkable.

The graphic that follows the decision tree was included to show what the containers used at the curb for the six methods that were considered further might look like.



How the options might look at the curb



Dual Weekly with Carts



Dual Weekly with bins



Dual Alternating weeks with Carts



Dual Alternating with Bins



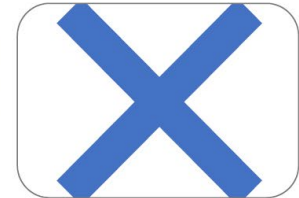
SS Weekly with Carts



SS Weekly with bins



SS EOW with Carts



SS EOW with Bins

The six methods that came out of the decision tree process were expounded upon in a table which described the cost centers and program impacts of each one. In the case where dollar amounts were given, these reflect transportation costs to known MRFs in Connecticut. In other cases, words reflecting the relative magnitude of one method to another are used because exact prices cannot be projected.

Upon further consideration of the six methods, RRT does not recommend the three which reduce collection frequency. They are shown with gray shading. The two methods that involve alternating weeks by material are highly unusual and likely to create undue difficulty for residents. For example, if a resident missed their fiber collection on an “A” week, they would have to store their fiber for two more weeks in addition to storing up to two weeks’ worth of bottles and cans at a time. Besides forgetfulness, common reasons for missing collection set-outs include travel, illness, and confusion about how to participate. Residents of Branford participate in recycling well; there is no compelling reason to completely overhaul and upset the current methodology in this way. For similar reasons, RRT does not recommend reducing recycling collection frequency to every-other-week. The technique is often used to drastically reduce costs or improve the economics of programs with lower participation rates—to “save” the program. This is not the case in Branford.

D. McCarthy-Bercury
 March 8, 2022
 Executive Summary of Solid Waste Planning Project

Program considerations Scenario	Financial Considerations (Cost centers)					Programmatic Considerations		
	Recyclables Processing fees (\$/ton)	Potential \$ of Profit sharing or rebate	Container costs (bins, carts, etc.)	Collection Costs	Transportation costs (from TS to MRF) at \$1.50 per ton, per mile	Purity impacts	Customer Experience and behavior	Town Staffing Impacts
Dual-stream Weekly with bins	Lower	Higher	Lowest	Higher	Up to \$78 each way if go to a DS MRF	Best	More effort, more confidence	Requires more education, enforcement
Dual-stream Alternating weeks with Carts	Lower	Higher	Highest, \$2/month or more	Lower	Up to \$78 each way if go to a DS MRF	Better	New task to keep up with the weeks	Constant education, greater enforcement
Dual-stream Alternating with Bins	Lower	Higher	Medium-Low	Lower	Up to \$78 each way if go to a DS MRF	Best	New task to keep up with the weeks, difficulty carrying 2 weeks' worth of material	Constant education, greater enforcement
Single-stream Weekly with Carts	Higher	Lower	Highest, \$2/month or more	Lower	\$35 to \$70 per ton to SS MRFs	Worst	Easy to comply; carts may bring negativity	New activity to manage "back-door" customers, education is simpler
Single-stream Weekly with bins	Medium-High	Lower	Medium-Low	Lower	\$35 to \$70 per ton to SS MRFs	Medium-worse	Easy to comply; familiar with bins	Simple education
Single-stream EOW with Carts	Higher	Lower	Medium to Highest	Lower	\$35 to \$70 per ton to SS MRFs	Worse	Easy to comply; New task to keep up with the weeks; carts may bring negativity	Simple education

5. Details related to RRT's recommendations regarding how to structure a request for proposals (RFP) procurement to get the best results.

RRT recommends that the Town of Branford release a multi-faceted, multi-scope RFP for the contracts related to collection of garbage, collection of recyclables, seasonal collection of leaves, and processing of recyclables. This is a process which has proven successful at allowing flexibility for proposers to make and price options, while being clear what the expected level of service is. Below is a recommendation for the scopes to procure in one RFP process, along with suggestions of instructions for proposers.

SCOPES OF WORK: Propose plan and pricing on one or more scopes. Pricing for one scope may not be dependent on award of any other scope.

1. Processing of curbside program recyclables.
2. Curbside collection:
 - Weekly curbside collection of garbage, not including yard waste, leaves, or bulky items.
 - Weekly curbside collection of dual stream recyclables.
3. Bundled service of curbside collection of recyclables WITH processing.
4. Seasonal collection of leaves
 - Respondents may propose to collect the leaves in paper bags or loose via vacuum.
5. Service of Town's FEL containers
 - Collection of garbage from Town's FEL containers
 - Collection of recyclables and cardboard from Town's FEL containers
 - Bundled service to collect and process recyclables and cardboard from the Town's FEL containers.

REQUIREMENTS FOR PROPOSALS

- Proposers may respond to one, some, or all of the scopes of work.
- Proposers must meet the requirement to provide a business and operations plan for EACH scope of work proposed.
- Any respondents proposing to collect residential garbage or recyclables MUST provide a base price for use of customer-provided cans or Town-provided bins; alternate proposals using carts or other set-out methodology ARE ALLOWED.
- Proposals for collection of garbage must be for once-weekly service, exactly. Proposals for more- or less-frequent collection of garbage will not be considered.
- All collection pricing must be provided in a per-customer (or per-unit) format. Respondents should consider the pricing as per "front-door," meaning for example that one "stop" at a duplex would include two "front doors." Proposals for bundled service of curbside collection and processing of recyclables must use the per-customer price format.
- When proposed as a singular service, pricing for recyclables processing must be provided in a per-ton format.

D. McCarthy-Bercury

March 8, 2022

Executive Summary of Solid Waste Planning Project

- Any rebates related to recyclables commodity values should be itemized and described separately from per-ton or per-unit pricing—i.e., they must not be “netted” into the per-ton processing or per-unit bundled service pricing. The values and units (e.g., \$ per ton, blended value, percentage, etc.) should be spelled out clearly. A sample illustrating any rebates is required.
- No bundling of scopes of work other than as described in the RFP is implied or allowed.
- In the interest of fairness and stability, pricing stipulations that depend on multiple awards will not be considered. For example, a proposal of a discounted price for recyclables collection if the proposer is awarded both garbage and recycling will not be considered when scoring the proposals.

RRT recommends that allowing respondents to the RFP to write their own alternative proposals, rather than giving them a list of methodologies to price, will encourage more responses overall. A list of three or more collection scenarios to price will be daunting or discouraging to some firms; however, one required base price and the opportunity to make their best offer will be more appealing.