

Improving Oregon Recycling Systems Infrastructure Research

Alternative Scenario Selection (Phase 2 Task 6)

August 6, 2020

Alternative Recycling Infrastructure Scenario Definitions

This document summarized the four initial alternative recycling infrastructure scenarios analyzed in Phase 2 Task 5 and four additional alternative recycling infrastructure scenarios to be analyzed in Phase 2 Task 6. These scenarios represent a range of infrastructure system alternatives, focusing mainly on variations in the collection and processing infrastructure and to some extent on the accepted materials lists by groupings provided by DEQ — Metro Area; Willamette Valley, etc.; Other Areas with Curbside: and Areas Without Curbside¹. Cascadia limited variations in other system parts so the varying effects of collection and processing elements could be compared more directly. The more elements that are changed in a scenario, the more difficult it is to determine the effects of individual changes.

- **Original Baseline: Pre-Disruption List (S0):** Baseline system with an accepted materials list based on pre-National Sword lists based on 2017 recovery data provided by DEQ. For example, outside of Metro, tubs and accepted other steel are accepted.
- **REVISED Baseline: Post-Disruption List (S5):** Baseline system with a post-National Sword list of accepted materials, informed by 2018 recovery data provided by DEQ.
- **+ Customer Engagement (S6/A-):** Baseline system with a post-National Sword list of accepted materials and additional contamination reduction efforts on inbound collection and no improvements in other areas.
- **Engagement + Improved MRFs (S1/A):** Single-Stream with Modern MRFs — Single-stream/glass on side — same list as current and modernized MRFs in Metro Area (paper). Please note that the accepted materials list is reduced compared to the baseline, which was based on pre-National Sword accepted lists. For example, Scenario A models not accepting PET thermoforms, tubs outside of Metro, and accepted other steel outside of Metro.
- **Engagement + MRFs + Expanded Lists (S2/A+):** Single-Stream with Modern MRFs and Expanded List — Single-stream/glass on side — expanded list that varies by grouping and modernized MRFs in Metro Area (paper/containers).
- **Engagement + MRFs + Expanded + Statewide List (S7/A++):** Single-Stream with Modern MRFs and Expanded Statewide List — Single-stream/glass on side — expanded list that is standardized statewide and modernized MRFs in Metro Area (paper/containers).
- **+Container Recovery Facility (S3/B):** Single-Stream with CRF — Single-stream/glass on side — expanded list and modernized MRFs in Metro Area plus out-of-state CRF.
- **Dual-Stream Collection (S3/C):** Dual-stream/glass on side everywhere — expanded list, modernize and create dual-stream fiber MRFs in Metro Area; add/upgrade one or two container lines in Metro Area, modernize fiber MRF in Eugene-area.
- **Engagement + MRFs + Expanded + Statewide List + Expanded Collection (S8-10/D):** Single-Stream with Modern MRFs, Expanded Statewide List, and Expanded On-Route Collection — Single-stream/glass on side — expanded list that is standardized statewide and modernized MRFs in Metro Area (paper/containers). On-route collection is expanded in Grouping 4 to customers that currently have garbage collection (single-family, multi-family, and commercial) and in Groupings 1, 2, and 3, to additional multifamily customers. Multiple scenario numbers represent the uncertainty with how many customers will have recycling added (high, medium and low estimates).

¹ Grouping descriptions can be found in the “FINAL Phase 2 Task 4 Research Plan” at www.oregon.gov/deq/recycling/Documents/BaseCaseModelingPlan.pdf.

Scenario Summaries

Oregon Baseline	Scenario A-: Base Case with Contamination Reduction	Scenario A: Single-Stream with Modern MRFs	Scenario A+/A++: Single-Stream with Modern MRFs and Expanded List	Scenario D: Single-Stream, Modern MRFs, Expanded List, Expanded Collection	Scenario B: Single-Stream with CRF	Scenario C: Dual-Stream Statewide
ORIGINAL: Base-case using pre-National Sword accepted materials list REVISED: Base-case using post-National Sword accepted materials list	Contamination reduction: direct feedback, refusal to collect, monitoring inbound quality at MRFs On-route material list: reduce compared to original baseline to reflect post-National Sword list On-route collection method: no change Depot list: no change Depot type(s): no change Sortation: no change	Contamination reduction: direct feedback, refusal to collect, monitoring inbound and outbound quality at MRFs On-route material list: reduce compared to original baseline to reflect post-National Sword list On-route collection method: no change Depot list: expand to “emerging” in Metro Area grouping; expand to variable elsewhere Depot type(s): no change Sortation: modernize MRF paper-lines	Contamination reduction: direct feedback, refusal to collect, monitoring inbound and outbound quality at MRFs On-route material list: original: widely expand, vary by grouping / A++: also standardize statewide with expanded list On-route collection method: no change Depot list: original: widely expand in Metro Area grouping; moderately expand elsewhere / A++: also standardize statewide with expanded list Depot type(s): no change Sortation: modernize MRF paper-lines and add/upgrade one or two container lines in Metro Area grouping	Contamination reduction: direct feedback, refusal to collect, monitoring inbound and outbound quality at MRFs On-route material list: widely expand and standardize statewide On-route collection method: no change in method but expanded to all on-route garbage customers in Grouping 4 and to additional multifamily customers in Groupings 1, 2, & 3 Depot list: widely expand and standardize statewide Depot type(s): no change Sortation: modernize MRF paper-lines and add/upgrade one or two container lines in Metro Area grouping. Expand capacity to accommodate expanded collection	Contamination reduction: direct feedback, refusal to collect, monitoring inbound and outbound quality at MRFs On-route material list: widely expand except in Other Areas with Curbside grouping On-route collection method: no change Depot list: widely expand in Metro Area and Willamette Valley, etc. groupings Depot type(s): no change Sortation: modernize paper-lines of MRFs in Metro Area grouping and send containers to CRF outside state	Contamination reduction: direct feedback, refusal to collect, monitoring inbound and outbound quality at MRFs On-route material list: widely expand On-route collection method: all on-route collection is dual-stream with glass on side Depot list: widely expand in Metro Area and Willamette Valley, etc. groupings Depot type(s): no change Sortation: modernize paper-lines of MRFs to accept dual-stream paper and add/upgrade one or two container lines in Metro Area grouping — Sort all containers in Metro Area. For non-Metro dual-stream fiber: sort half in Eugene and the other half in Metro Area

Improving Oregon Recycling Systems Infrastructure Research

Additional Alternative Scenario Analysis - Evaluation Criteria Summary

August 7, 2020

IMPORTANT NOTE: Please take the following factors into account when reviewing this summary.
Figures in this report represent the consultant team's best modeling estimates given available data.
Data were especially limited regarding current processing costs, revenues, bales produced, and bale quality.
Figures represent 2025. Dollars are 2025\$ and weights are in short tons (2,000 pounds).

	Original Baseline: Pre- Disruption List (S0)	Baseline: Post- Disruption List (S5)	+ Engagement (S6/A-)	+ Improved MRFs (S1/A)	+ Expanded Lists (S2/A+)	+ CRF (S3/B)	Dual-Stream (S4/C)	+ Statewide List (S7/A++)	+ Expanded Collection (S8/D- low)	+ Expanded Collection (S9/D- mid)	+ Expanded Collection (S10/D- hi)
Access to Recycling											

Alternative scenarios A, A+, A++, B expanded material lists but did not include changes to participation or recycling access in general.
In alternative scenario C (dual-stream), all single-family residential customers have effectively weekly collection (fiber one week, containers the next).
In alternative scenario D (low, mid, and high), on-route collected is expanded to more multifamily properties in Groupings 1, 2, and 3 and to single-family, multifamily, and commercial garbage customers in Grouping 4.

Number of Customers (participation rates)											
On-Route Single-Family Residential (weekly)	515,884	515,884	515,884	515,884	515,884	515,884	995,572	515,884	515,884	515,884	515,884
On-Route Single-Family Residential (not weekly)	479,688	479,688	479,688	479,688	479,688	479,688	-	479,688	532,076	558,270	584,463
On-Route Multifamily Residential Customers	17,726	17,726	17,726	17,726	17,726	17,726	17,726	17,726	23,544	31,640	36,022
On-Route Commercial Customers	68,407	68,407	68,407	68,407	68,407	68,407	68,407	68,407	73,974	74,956	75,611
Depot	NA (see population)	No change	No change	No change	No change	No change	No change	No change	No change	No change	No change
Population with Access											
On-Route and Depot Collection	3,856,631	3,856,631	3,856,631	3,856,631	3,856,631	3,856,631	3,856,631	3,856,631	4,511,478	4,511,478	4,511,478
Depot Collection Only	654,847	654,847	654,847	654,847	654,847	654,847	654,847	654,847	-	-	-

	Original Baseline: Pre- Disruption List (S0)	Baseline: Post- Disruption List (S5)	+ Engagement (S6/A-)	+ Improved MRFs (S1/A)	+ Expanded Lists (S2/A+)	+ CRF (S3/B)	Dual-Stream (S4/C)	+ Statewide List (S7/A++)	+ Expanded Collection (S8/D- low)	+ Expanded Collection (S9/D- mid)	+ Expanded Collection (S10/D- hi)
Materials Collected											

This section summarizes in-scope materials collected, including those collected commingled and source-separated. Tonnages include contamination in collection, which largely drives the reduction in collected tons between the baselines and Scenario A-.

Inbound Collection Quantities (total tons)	576,235	554,695	541,085	541,085	615,969	615,969	617,501	618,603	630,952	649,395	663,559
Single-Family Residential	243,032	227,057	216,083	216,083	254,703	254,703	255,877	255,873	262,872	270,084	277,007
Multifamily Residential	23,376	22,987	22,454	22,454	26,373	26,373	26,397	26,403	31,299	43,032	51,175
Commercial	231,207	228,717	226,977	226,977	251,786	251,786	252,121	252,118	255,505	258,341	260,776
Depot	78,621	75,933	75,571	75,571	83,108	83,108	83,106	84,209	81,276	77,938	74,600

Customer engagement methods include providing direct feedback to customers, with refusal to collect from customers with repeated contamination.
While customers appreciate clear instructions, there may be negative feedback from customers who habitually contaminate recycling.

Contamination Rates in Commingled SS and DS Collection											
Single-Family Residential	14.0%	12.5%	7.2%	7.2%	7.6%	7.6%	7.5%	7.5%	7.7%	8.0%	8.2%
Multifamily Residential	22.4%	21.2%	18.8%	18.8%	17.3%	17.3%	17.2%	17.2%	15.8%	16.3%	16.5%
Commercial	13.5%	13.0%	11.5%	11.5%	11.2%	11.2%	11.1%	11.1%	11.3%	11.6%	11.8%
Depot	15.8%	13.7%	8.1%	8.1%	5.3%	5.3%	5.3%	4.9%	4.9%	5.0%	5.0%

Bale/Commodity Tonnages	Original										
	Baseline: Pre-Disruption List (S0)	Baseline: Post-Disruption List (S5)	+ Engagement (S6/A-)	+ Improved MRFs (S1/A)	+ Expanded Lists (S2/A+)	+ CRF (S3/B)	Dual-Stream (S4/C)	+ Statewide List (S7/A++)	+ Expanded Collection (S8/D-low)	+ Expanded Collection (S9/D-mid)	+ Expanded Collection (S10/D-hi)
This section presents bale/commodity tonnages for all in-scope recyclables, including materials collected commingled and source-separated. Tonnages include bale contamination, such as PET bottles in corrugated cardboard bales. Reductions in total baled tonnages between Scenario A-/A and the baselines are due to reduced accepted material lists to reflect current lists as well as reduced contamination.											
Total Bale Weights	534,050	516,484	512,921	504,670	570,171	570,052	575,644	572,620	582,613	597,156	608,230
Paper Bales	387,787	374,696	372,157	363,547	396,787	396,823	401,668	398,284	405,511	416,137	423,714
OCC (corrugated cardboard)	221,925	221,243	220,908	234,269	237,282	237,269	240,443	237,321	239,434	244,374	246,636
Sorted clean newsprint	1,211	1,211	1,211	1,211	1,211	1,211	1,211	1,211	1,169	1,127	1,086
Sorted residential paper and news	14,576	13,668	13,524	81,973	91,833	91,805	93,646	91,832	94,548	97,307	100,031
Mixed paper	148,385	137,884	135,827	45,320	63,799	63,877	63,510	65,256	67,690	70,607	73,205
Paperboard/old boxboard	1,022	447	447	447	1,022	1,022	1,022	1,022	987	952	916
Aseptic and gable-top cartons	669	243	240	327	1,640	1,639	1,836	1,641	1,683	1,771	1,839
Plastics Bales	23,231	19,856	19,266	18,957	40,858	40,706	41,841	41,799	43,655	46,269	48,381
PET #1 bottles and jars	7,000	6,885	6,568	6,728	6,877	7,705	7,379	6,905	7,270	7,817	8,247
PET #1 thermoforms and tubs	24	1	1	1	2,509	1,742	2,724	2,712	2,887	3,108	3,301
HDPE #2 natural bottles	2,115	2,124	2,073	2,036	2,059	2,047	2,149	2,059	2,145	2,243	2,335
HDPE #2 colored bottles	3,080	3,101	2,983	2,866	2,894	2,877	3,006	2,896	3,015	3,153	3,280
HDPE #2 and PP #5 tubs	410	208	201	189	1,413	1,389	1,444	1,414	1,476	1,606	1,693
PE clear film	3,684	3,684	3,684	3,684	3,707	3,707	3,707	4,257	4,208	4,158	4,109
Mixed bulky rigid plastics (mainly PE and PP)	2,439	1,541	1,481	1,397	14,403	14,427	14,054	14,417	15,140	16,092	16,879
PP #5 bottles and jars	68	33	32	29	196	190	215	197	205	217	226
PP #5 small rigid plastic	910	443	427	410	6,073	5,923	6,295	6,077	6,411	6,935	7,335
Solid PS #6 (rigid)	0	-	-	7	569	540	710	706	750	806	853
Foam PS #6 (transport block and shape, densified)	1	-	-	-	134	134	134	134	124	114	103
#3-7 bottles and small rigid plastics	3,498	1,835	1,817	1,609	25	25	25	25	23	21	19
Glass	58,421	58,421	58,421	58,421	64,552	64,552	64,552	64,552	66,000	67,057	68,768
Container glass	58,421	58,421	58,421	58,421	64,552	64,552	64,552	64,552	66,000	67,057	68,768
Metal Bales	64,611	63,512	63,077	63,746	67,974	67,971	67,583	67,985	67,447	67,693	67,367
Aluminum cans and foil	1,478	1,367	1,347	1,373	1,530	1,530	1,546	1,530	1,574	1,646	1,697
Steel cans	33,714	33,738	33,503	33,758	35,858	35,852	35,662	35,868	35,130	34,575	33,883
Scrap metal	29,420	28,407	28,227	28,615	30,586	30,588	30,375	30,586	30,743	31,472	31,787

	Original Baseline: Pre- Disruption List (S0)	Baseline: Post- Disruption List (S5)	+ Engagement (S6/A-)	+ Improved MRFs (S1/A)	+ Expanded Lists (S2/A+)	+ CRF (S3/B)	Dual-Stream (S4/C)	+ Statewide List (S7/A++)	+ Expanded Collection (S8/D- low)	+ Expanded Collection (S9/D- mid)	+ Expanded Collection (S10/D- hi)
Material Quality: Bale Contamination Rates											
This section presents bale contamination rates for materials that are sorted at MRFs.											
Paper Bales	4.4%	4.1%	3.2%	1.2%	1.6%	1.5%	1.4%	1.6%	1.6%	1.6%	1.7%
OCC (corrugated cardboard)	2.0%	2.0%	1.7%	0.8%	1.3%	1.3%	1.8%	1.3%	1.3%	1.3%	1.3%
Sorted residential paper and news	4.8%	4.5%	3.2%	1.3%	1.6%	1.5%	0.7%	1.6%	1.6%	1.7%	1.7%
Mixed paper	6.1%	5.8%	4.3%	1.8%	2.1%	2.0%	1.7%	2.0%	2.1%	2.2%	2.2%
Aseptic and gable-top cartons	7.7%	7.8%	6.7%	2.9%	4.5%	4.4%	3.8%	4.5%	4.6%	4.6%	4.7%
Plastics Bales	15.2%	15.2%	11.9%	6.2%	4.8%	4.7%	3.4%	4.8%	4.9%	5.0%	5.0%
PET #1 bottles and jars	15.2%	16.0%	11.7%	6.1%	4.3%	4.7%	3.4%	4.3%	4.4%	4.5%	4.7%
PET #1 thermoforms and tubs					3.4%	3.0%	2.8%	3.5%	3.6%	3.7%	3.8%
HDPE #2 natural bottles	8.0%	8.4%	6.1%	3.0%	2.8%	2.8%	2.1%	2.9%	2.9%	2.9%	3.0%
HDPE #2 colored bottles	12.7%	13.3%	9.7%	5.0%	4.6%	4.6%	3.4%	4.7%	4.7%	4.8%	4.8%
HDPE #2 and PP #5 tubs	13.3%	13.7%	10.4%	4.0%	4.8%	4.5%	3.5%	4.9%	5.0%	5.0%	5.0%
Mixed bulky rigid plastics (mainly PE and PP)	12.9%	13.4%	9.9%	4.5%	5.7%	5.7%	3.6%	5.9%	5.9%	5.9%	5.9%
PP #5 bottles and jars	13.3%	13.7%	10.4%	4.0%	4.9%	4.6%	3.6%	5.0%	5.0%	5.0%	5.1%
PP #5 small rigid plastic	13.6%	13.8%	10.5%	4.1%	4.6%	3.9%	3.5%	4.6%	4.7%	4.8%	4.8%
Solid PS #6 (rigid)				4.0%	4.8%	4.4%	3.4%	4.8%	4.9%	4.9%	5.0%
#3-7 bottles and small rigid plastics	23.4%	24.8%	24.1%	14.6%							
Metal Bales	6.0%	6.8%	4.8%	2.5%	2.9%	2.9%	1.8%	3.0%	3.0%	3.0%	3.0%
Aluminum cans and foil	5.3%	5.7%	2.4%	0.8%	0.5%	0.5%	0.1%	0.5%	0.5%	0.5%	0.5%
Steel cans	10.7%	11.2%	8.1%	4.2%	5.2%	5.2%	3.2%	5.3%	5.3%	5.3%	5.3%
Scrap metal	0.1%	0.1%	0.1%	0.0%	0.0%	0.0%	0.2%	0.0%	0.0%	0.0%	0.0%

Material Quantities Baled Excluding Contamination (tons)	Original										
	Baseline: Pre-Disruption List (S0)	Baseline: Post-Disruption List (S5)	+ Engagement (S6/A-)	+ Improved MRFs (S1/A)	+ Expanded Lists (S2/A+)	+ CRF (S3/B)	Dual-Stream (S4/C)	+ Statewide List (S7/A++)	+ Expanded Collection (S8/D-low)	+ Expanded Collection (S9/D-mid)	+ Expanded Collection (S10/D-hi)
Total Materials	514,933	499,016	498,834	496,945	560,058	560,028	566,431	561,843	571,534	585,586	596,278
Paper Materials	375,963	364,080	364,080	360,706	392,466	392,560	397,620	393,900	400,929	411,221	418,544
Corrugated cardboard	235,674	235,674	235,674	233,395	233,958	233,968	236,325	233,958	235,921	240,821	242,920
Newspaper	42,232	42,232	42,232	42,232	43,396	43,399	43,377	43,396	43,837	44,086	44,466
Printing and writing paper	51,056	48,813	48,813	48,301	56,895	56,932	58,796	56,897	59,268	61,842	64,270
Other paper recyclable with newspaper	2,681	2,178	2,178	2,154	4,319	4,322	4,345	4,319	4,580	4,840	5,092
Paperboard	36,289	29,525	29,525	28,925	39,020	39,024	38,991	39,020	40,183	41,354	42,573
Other paper not recyclable with newspaper	5,287	4,325	4,325	4,325	5,846	5,862	5,739	5,847	6,013	6,185	6,362
Gable tops & aseptics	1,100	516	516	536	1,703	1,703	1,768	1,703	1,745	1,835	1,905
Polycoated containers & cups	1,645	817	817	838	7,330	7,350	8,278	8,759	9,382	10,257	10,955
Plastic Materials	16,708	13,805	13,805	14,369	35,538	35,413	36,967	35,889	37,668	40,163	42,178
PET bottles (BB)	1,394	1,394	1,394	1,501	1,630	1,630	1,724	1,630	1,737	1,965	2,113
HDPE bottles (BB)	15	15	15	15	17	16	17	17	18	20	21
PP bottles (BB)	5	2	2	2	15	15	17	15	16	19	20
Other deposit plastic bottles	-	-	-	-	-	-	-	-	-	-	-
Other PET bottles & jars	4,414	4,414	4,414	4,756	4,815	4,846	5,124	4,815	5,036	5,308	5,548
HDPE bottles & jars	4,646	4,646	4,646	4,693	4,754	4,728	4,999	4,754	4,947	5,168	5,374
PP bottles & jars	55	26	26	26	172	167	191	172	179	188	195
Other other bottles	-	-	-	-	-	-	-	-	-	-	-
PET tubs	37	16	16	40	191	191	203	201	209	227	239
HDPE tubs	1,118	599	599	605	1,348	1,329	1,396	1,348	1,405	1,528	1,610
PP tubs and small rigids	1,683	877	877	877	1,941	1,914	2,011	1,941	2,021	2,217	2,338
Other accepted tubs & pails	76	40	40	41	6	6	6	6	5	5	4
PP rigid products	1,144	693	693	693	4,028	4,028	4,027	4,028	4,225	4,485	4,699
Other bulky rigids	1,038	672	672	672	9,718	9,718	9,723	9,718	10,195	10,822	11,339
PET thermoforms	216	21	21	51	2,385	2,385	2,736	2,594	2,763	2,969	3,152
Other other rigid plastic containers	-	-	-	-	-	-	-	-	-	-	-
PP rigid packaging and products	867	390	390	390	3,842	3,790	3,974	3,842	4,070	4,361	4,609
Polystyrene foam	1	-	-	-	134	134	134	134	124	114	103
Solid polystyrene	0	-	-	7	542	517	686	675	716	769	813
PE film	3,684	3,684	3,684	3,684	3,707	3,707	3,707	4,257	4,208	4,158	4,109
Glass Materials	58,421	58,421	58,421	58,421	64,552	64,552	64,552	64,552	66,000	67,057	68,768
Deposit glass bottles	10,516	10,516	10,516	10,516	11,731	11,731	11,731	11,731	12,154	12,649	13,144
Container glass	47,905	47,905	47,905	47,905	52,821	52,821	52,821	52,821	53,846	54,408	55,625
Metal Materials	63,841	62,710	62,528	63,449	67,502	67,504	67,292	67,502	66,937	67,144	66,788
Deposit and accepted aluminum cans	499	499	499	531	570	570	578	570	600	657	695
Accepted other aluminum	941	834	834	838	957	957	967	957	970	984	996
Deposit and accepted steel cans	7,333	7,333	7,333	7,806	9,735	9,736	9,729	9,735	10,197	10,818	11,318
Accepted other steel	30,563	29,539	29,539	29,924	31,862	31,863	31,858	31,862	30,726	30,033	29,007
Scrap metals	24,505	24,505	24,323	24,350	24,378	24,378	24,160	24,378	24,445	24,652	24,770

Figures in this report represent the consultant team's best modeling estimates based on available data.
Cascadia Consulting Group, Inc. | Circular Matters, LLC | Bell & Associates

Transactional Costs	Original		Baseline: Pre-		Baseline: Post-		+ Engagement		+ Improved MRFs		+ Expanded Lists		Dual-Stream	+ Statewide List	+ Expanded	+ Expanded	+ Expanded
	Baseline: Pre-	Disruption List	Baseline: Post-	Disruption List	+ Engagement	+ Improved MRFs	+ Expanded Lists	+ CRF (S3/B)	(S1/A)	(S2/A+)	(S4/C)	(S7/A++)	Collection (S8/D-	Collection (S9/D-	Collection (S10/D-		
	(S0)	(S5)	(S6/A-)	(S1/A)	(S2/A+)	(S3/B)	(S4/C)	(S5/A)	(S6/B)	(S7/C)	(S8/D-)	(S9/D-)	(S10/D-)	(S11/D-)	(S12/D-)	(S13/D-)	(S14/D-)

This section presents the transactional costs and revenues from recycling in-scope materials. It includes direct costs, avoided disposal, and bale sales. Alternative scenarios include MRF capital investments to allow for sorting more materials with a long accepted materials list and less sort-line labor. Alternative scenarios also include costs for contamination reduction through customer engagement, refusal to collect contaminated load, inbound load monitoring at MRFs and outbound bale quality monitoring through artificial intelligence visioning before the balers. Costs in the dual-stream scenario are largely driven by the increase in single-family customers receiving collection effectively weekly instead of less than weekly. Commodity values in alternative MRF scenario are not increased due to cleaner bales to offset potential decreases due to using only responsible markets.

Total System Dollar Costs and Avoided Disposal		\$	213,978,550	\$	211,768,564	\$	242,942,950	\$	243,865,423	\$	249,373,839	\$	248,549,401	\$	293,224,940	\$	249,436,170	\$	288,856,823	\$	311,900,946	\$	328,766,218	
Per ton (excluding commodity revenues)		\$	416	\$	424	\$	487	\$	491	\$	445	\$	444	\$	518	\$	444	\$	505	\$	533	\$	551	
Customer Engagement Costs		\$	6,086,162	\$	6,086,162	\$	37,010,805	\$	37,010,805	\$	37,010,805	\$	37,010,805	\$	37,010,805	\$	37,010,805	\$	40,947,838	\$	44,026,615	\$	45,780,407	
Collection Engagement Labor and Expenses		\$	1,210,256	\$	1,210,256	\$	32,134,898	\$	32,134,898	\$	32,134,898	\$	32,134,898	\$	32,134,898	\$	32,134,898	\$	36,071,932	\$	39,150,709	\$	40,904,501	
Local Government Engagement Labor and Expenses		\$	4,875,906	\$	4,875,906	\$	4,875,906	\$	4,875,906	\$	4,875,906	\$	4,875,906	\$	4,875,906	\$	4,875,906	\$	4,875,906	\$	4,875,906	\$	4,875,906	
Multifamily Property Improvements		\$	-	\$	-	\$	-	\$	-	\$	-	\$	-	\$	-	\$	-	\$	15,182,938	\$	20,404,194	\$	23,230,127	
Service level adjustments (included above)																			NA		NA		NA	
Signage, labels, and container color (included above)																			NA		NA		NA	
Collection area adjustments																			\$	8,119,776	\$	10,912,084	\$	12,423,382
Bulky collection																			\$	7,063,161	\$	9,492,110	\$	10,806,745
Collection		\$	196,324,428	\$	195,683,620	\$	197,905,213	\$	197,905,213	\$	201,047,225	\$	201,047,225	\$	246,818,998	\$	201,386,695	\$	219,615,288	\$	232,210,888	\$	241,237,762	
Collection Capital - Containers		\$	4,164,865	\$	4,130,348	\$	4,126,132	\$	4,126,132	\$	5,004,628	\$	5,004,628	\$	17,244,454	\$	5,034,184	\$	5,271,216	\$	5,377,494	\$	5,439,189	
Collection Capital - Trucks		\$	15,433,133	\$	15,433,133	\$	15,433,133	\$	15,433,133	\$	15,433,133	\$	15,433,133	\$	24,835,097	\$	15,433,133	\$	16,895,673	\$	17,874,542	\$	18,672,178	
Collection Labor		\$	81,837,254	\$	81,372,505	\$	83,620,142	\$	83,620,142	\$	85,530,224	\$	85,530,224	\$	96,045,436	\$	85,784,055	\$	92,424,251	\$	97,116,235	\$	100,366,507	
Collection Operations		\$	39,382,715	\$	39,278,927	\$	39,264,241	\$	39,264,241	\$	39,511,200	\$	39,511,200	\$	44,683,325	\$	39,553,607	\$	43,654,372	\$	46,567,693	\$	48,682,503	
Collection Administrative		\$	32,906,324	\$	32,868,569	\$	32,861,427	\$	32,861,427	\$	32,967,902	\$	32,967,902	\$	34,822,963	\$	32,981,579	\$	36,404,712	\$	38,587,920	\$	40,103,677	
Collection Margin and Franchise Fee		\$	22,600,137	\$	22,600,137	\$	22,600,137	\$	22,600,137	\$	22,600,137	\$	22,600,137	\$	29,187,724	\$	22,600,137	\$	24,965,065	\$	26,687,004	\$	27,973,708	
Cost Savings from Reduced Garbage Disposal		\$	(59,010,438)	\$	(57,236,089)	\$	(55,795,682)	\$	(55,795,682)	\$	(62,046,835)	\$	(62,046,835)	\$	(62,046,835)	\$	(62,236,542)	\$	(63,105,935)	\$	(64,870,144)	\$	(66,149,454)	
Initial Transfer Transport		\$	11,309,039	\$	10,817,762	\$	10,697,689	\$	10,697,689	\$	12,457,582	\$	12,457,582	\$	12,457,582	\$	12,627,152	\$	13,508,394	\$	14,304,459	\$	15,067,059	
Sortation		\$	59,269,359	\$	56,417,109	\$	53,124,925	\$	54,047,399	\$	60,905,063	\$	60,080,624	\$	58,984,391	\$	60,648,060	\$	62,708,299	\$	65,824,933	\$	69,600,317	
Sortation Labor		\$	31,319,707	\$	29,797,060	\$	28,662,238	\$	24,623,909	\$	27,066,869	\$	26,491,280	\$	26,364,012	\$	27,220,501	\$	28,408,178	\$	30,167,497	\$	32,345,710	
Sortation Capital		\$	1,947,466	\$	1,947,466	\$	1,947,466	\$	5,519,062	\$	5,888,844	\$	5,412,536	\$	5,620,928	\$	5,888,844	\$	5,888,844	\$	5,888,844	\$	6,332,560	
Sortation Facility		\$	8,728,792	\$	8,217,125	\$	7,869,139	\$	7,869,139	\$	9,525,488	\$	9,501,780	\$	9,558,958	\$	9,563,520	\$	9,894,936	\$	10,369,887	\$	10,719,026	
Glass and Container Transfer		\$	442,772	\$	442,772	\$	442,772	\$	442,772	\$	959,711	\$	1,716,474	\$	480,721	\$	480,721	\$	483,480	\$	485,017	\$	491,356	
Sortation Residual Disposal		\$	6,608,583	\$	6,001,925	\$	4,436,416	\$	5,757,290	\$	7,159,240	\$	6,770,771	\$	6,761,653	\$	7,173,120	\$	7,559,102	\$	8,209,182	\$	8,727,969	
Sortation Administrative & Marketing		\$	5,864,513	\$	5,864,513	\$	5,864,513	\$	5,864,513	\$	5,864,513	\$	5,864,513	\$	5,864,513	\$	5,864,513	\$	5,864,513	\$	5,864,513	\$	5,864,513	
Sortation Margin		\$	4,357,525	\$	4,146,247	\$	3,902,382	\$	3,970,713	\$	4,440,396	\$	4,323,270	\$	4,333,605	\$	4,456,840	\$	4,609,246	\$	4,839,994	\$	5,119,182	
Sensitivity Analysis of Total System Dollar Costs and Avoided Disposal																								
Lower Range		\$	174,851,671	\$	173,502,779	\$	202,177,026	\$	202,915,005	\$	205,936,582	\$	205,277,031	\$	245,594,640	\$	205,980,438	\$	230,400,605	\$	246,803,577	\$	259,361,376	
-10%	Customer Engagement Costs	\$	5,477,545	\$	5,477,545	\$	33,309,724	\$	33,309,724	\$	33,309,724	\$	33,309,724	\$	33,309,724	\$	33,309,724	\$	36,853,054	\$	39,623,954	\$	41,202,367	
-10%	Collection	\$	176,691,986	\$	176,115,258	\$	178,114,692	\$	178,114,692	\$	180,942,503	\$	180,942,503	\$	222,137,098	\$	181,248,025	\$	197,653,759	\$	208,989,800	\$	217,113,986	
Custom	Multifamily Property Improvements																		\$	2,986,125	\$	4,013,023	\$	4,568,817
+10%	Cost Savings from Reduced Garbage Disposal	\$	(64,911,482)	\$	(62,959,698)	\$	(61,375,250)	\$	(61,375,250)	\$	(68,251,519)	\$	(68,251,519)	\$	(68,251,519)	\$	(68,460,196)	\$	(69,416,528)	\$	(71,357,159)	\$	(72,764,399)	
-10%	Initial Transfer Transport	\$	10,178,135	\$	9,735,986	\$	9,627,920	\$	9,627,920	\$	11,211,824	\$	11,211,824	\$	11,211,824	\$	11,364,436	\$	12,157,555	\$	12,874,013	\$	13,560,353	
-20%	Sortation	\$	47,415,487	\$	45,133,687	\$	42,499,940	\$	43,237,919	\$	48,724,050	\$	48,064,499	\$	47,187,513	\$	48,518,448	\$	50,166,639	\$	52,659,947	\$	55,680,254	
Upper Range		\$	253,105,428	\$	250,034,349	\$	283,708,874	\$	284,815,842	\$	292,811,097	\$	291,821,770	\$	340,855,240	\$	292,891,901	\$	347,313,041	\$	376,998,315	\$	398,171,059	
+10%	Customer Engagement Costs	\$	6,694,778	\$	6,694,778	\$	40,711,885	\$	40,711,885	\$	40,711,885	\$	40,711,885	\$	40,711,885	\$	40,711,885	\$	45,042,622	\$	48,429,277	\$	50,358,448	
+10%	Collection	\$	215,956,871	\$	215,251,982	\$	217,695,734	\$	217,695,734	\$	221,151,948	\$	221,151,948	\$	271,500,898	\$	221,525,364	\$	241,576,817	\$	255,431,977	\$	265,361,538	
Custom	Multifamily Property Improvements																		\$	27,379,750	\$	36,795,366	\$	41,891,437
-10%	Cost Savings from Reduced Garbage Disposal	\$	(53,109,394)	\$	(51,512,480)	\$	(50,216,114)	\$	(50,216,114)	\$	(55,842,152)	\$	(55,842,152)	\$	(55,842,152)	\$	(56,012,887)	\$	(56,795,341)	\$	(58,383,130)	\$	(59,534,508)	
+10%	Initial Transfer Transport	\$	12,439,943	\$	11,899,538	\$	11,767,458	\$	11,767,458	\$	13,703,340	\$	13,703,340	\$	13,703,340	\$	13,889,867	\$	14,859,234	\$	15,734,905	\$	16,573,765	
+20%	Sortation	\$	71,123,230	\$	67,700,530	\$	63,749,910	\$	64,856,878	\$	73,086,075	\$	72,096,749	\$	70,781,269	\$	72,777,672	\$	75,249,959	\$	78,989,920	\$	83,520,380	

Commodity Revenues																						
Commodity Revenues																						
Commodity Sales (lower range)	\$	11,935,690	\$	11,979,648	\$	11,788,777	\$	14,979,902	\$	16,701,383	\$	14,682,818	\$	16,823,932	\$	18,245,754	\$	18,615,932	\$	19,298,449	\$	19,926,141
Commodity Sales (mid-point)	\$	44,226,893	\$	44,399,610	\$	43,785,417	\$	42,834,551	\$	48,093,815	\$	44,361,568	\$	47,782,672	\$	51,575,325	\$	52,616,084	\$	54,400,812	\$	56,219,089
Commodity Sales (upper range)	\$	76,518,096	\$	76,819,571	\$	75,782,058	\$	70,689,201	\$	79,486,247	\$	74,040,318	\$	78,741,413	\$	84,904,895	\$	86,616,236	\$	89,503,176	\$	92,512,036
Total System Cost net of Revenues (mid-point)	\$	169,751,656	\$	167,368,954	\$	199,157,533	\$	201,030,872	\$	201,280,024	\$	204,187,833	\$	245,442,268	\$	197,860,845	\$	236,240,739	\$	257,500,134	\$	272,547,129
Per ton	\$	330	\$	335	\$	399	\$	405	\$	359	\$	365	\$	433	\$	352	\$	413	\$	440	\$	457

Employment	Original Baseline: Pre- Disruption List (S0)	Baseline: Post- Disruption List (S5)	+ Engagement (S6/A-)	+ Improved MRFs (S1/A)	+ Expanded Lists (S2/A+)	+ CRF (S3/B)	Dual-Stream (S4/C)	+ Statewide List (S7/A++)	+ Expanded Collection (S8/D- low)	+ Expanded Collection (S9/D- mid)	+ Expanded Collection (S10/D- hi)
Full-Time Equivalent (FTE) Employees	1,362	1,328	1,605	1,543	1,628	1,619	1,735	1,636	1,713	1,783	1,838
Recycling Customer Engagement	61	61	358	358	366	366	366	367	394	415	425
Local Government Engagement	61	61	61	61	61	61	61	61	61	61	61
New Engagement (costs listed in collection)	-	-	297	297	305	305	305	306	333	354	364
Recycling Collection	762	750	749	749	788	788	905	793	823	845	856
Route Drivers and Operations	430	430	430	430	430	430	527	430	468	500	522
Depot Operations	242	231	229	229	268	268	268	273	260	245	230
Management and Administrative	90	90	90	90	90	90	110	90	96	100	103
Sortation	540	516	499	436	474	465	464	477	496	523	558
Sorting Labor	406	382	366	302	333	326	317	335	352	376	404
Equipment Operators, Supervisors, Maintenance	89	89	88	89	96	95	102	97	99	103	109
Admininstrative and Marketing	45	45	45	45	45	45	45	45	45	45	45

Other Qualitative Criteria
Worker Safety Worker safety will improve because wrap-resistant screens will require less frequent cleaning and removal of tangles, which is a dangerous task. Optical sorters and robots will replace some manual sorters, reducing the prevalence of repetitive motion injuries and needle sticks. Fewer manual sorters will also reduce the potential for the spread of infectious diseases among the workers.
Equity Considerations Alternative scenarios A-C do not address equity beyond standardizing materials collected in geographic groupings and increasing worker safety. Alternative scenario D expands access to on-route recycling to Grouping 4 and expands effective access to more multifamily customers in Groupings 1-3. For single-family customers with recycling collected less than weekly, the substantial increase in collection costs in Scenario C (dual-stream) may affect affordability of waste collection or worsen other affordability issues, which has equity implications.
Resiliency/Adaptability Multiple Scenarios Investments in fiber cleanup in all of the MRFs in all of the scenarios provided greatly improved bale quality and thus provide more market resiliency. Fiber-line optical sorters can also change the grades being produced to either make sorted residential paper and news, mixed paper, or sorted office paper when running commercial fiber in response to market pricing and demand shifts. Scenarios A+, B, and C also provide advanced sorting of containers that meets end-market specifications and avoids producing mixed plastic bales. + Improved MRFs (S1/A) See above. + Expanded Lists (S2/A+), + Statewide List (S7/A++), + Expanded Collection (S8/D-low), + Expanded Collection (S9/D-mid), + Expanded Collection (S10/D-hi) These scenarios include high-technology container sorting at one MRF in Portland, in lieu of making investments in all Oregon MRFs. If this MRF could not receive and sort loose containers for a period of time, contingency measures would be needed, which could include: (1) Baling and storing the mixed containers at the source MRFs until container sorting line is returned to operation. (2) Placing temporary manual sorters at the source MRFs to manually sort the material as is the case today. (3) Baling and sending the mixed containers to container-sorting facilities in British Columbia or California. Scenario D (high) includes two MRFs with high-technology container sorting lines. + CRF (S3/B) Scenario B (out-of-state CRF) has similar adaptability options as Scenario A+. The existing in-state MRFs can resume sorting containers manually if there is a disruption to an out-of-state plastics recycling facility. Dual-Stream (S4/C) Scenario C sends all collected containers to a container-sorting facility. If there were a disruption to that facility, the container stream could be blended into the residential fiber on the tip floors of the MRFs and sorted temporarily as single-stream recyclables.
Stranded Assets To prevent stranded assets, capital investment inputs assume that capital equipment with remaining lifespans will continue to be used. Capital equipment includes assumptions regarding current equipment and planned upgrades that have been publicly announced. Capital investments largely replace sort-line labor or allow MRFs to sort addition materials or commodities.
Social and Environmental Outcomes Social and environmental outcomes will be presented separately by DEQ.

Additional Alternative Scenario Analysis - Processing Modeling Results

August 7, 2020

Material	Original Baseline: Pre-Disruption List (S0)											
	REVISED - Statewide 2025: On-Route Residential & Commercial, Self-Haul (excluding Bottle Bill)											
	Generation	Collection for Recycling and Composting					Bales for Marketing			Disposal (Landfill and Other)		
	Generated (tons)	Collected for Organics (tons)	Collected for Recycling (tons)	Recycling Collection Rate (inbound)	Recycling Collected Separately: glass and depot (tons)	Recycling Collected Commingled or Dual-stream (tons)	Bales: target materials and contamination (tons)	Bales: only target materials (tons)	Recycling Capture Rate (baled for marketing)	Disposed as Residue: originally collected for recycling (tons)	Directly disposed: originally collected as garbage (tons)	Total Disposed (tons)
Paper	594,947	-	386,221	64.9%	120,012	266,209	378,359	375,963	63.2%	7,862	208,726	216,588
Corrugated cardboard	319,486	-	237,064	74.2%	114,757	122,307	235,841	235,674	73.8%	1,223	82,422	83,646
Newspaper	51,635	-	43,500	84.2%	1,211	42,289	42,443	42,232	81.8%	1,057	8,135	9,192
Printing and writing paper	110,233	-	55,835	50.7%	2,735	53,100	52,118	51,056	46.3%	3,717	54,398	58,115
Paperboard	65,019	-	37,379	57.5%	1,022	36,358	36,652	36,289	55.8%	727	27,640	28,367
Other paper recyclable with newspaper	8,983	-	2,939	32.7%	81	2,858	2,739	2,681	29.9%	200	6,044	6,244
Other paper not recyclable with newspaper	9,449	-	5,856	62.0%	161	5,695	5,743	5,287	55.9%	114	3,593	3,707
Gable tops & aseptics	4,564	-	1,820	39.9%	46	1,774	1,106	1,100	24.1%	714	2,744	3,458
Polycoated containers & cups	25,577	-	1,828	7.1%	-	1,828	1,718	1,645	6.4%	110	23,750	23,859
Plastic	180,565	-	27,247	15.1%	4,544	22,703	22,114	20,392	11.3%	5,132	153,318	158,451
PET bottles (BB)	7,582	-	1,625	21.4%	82	1,543	1,486	1,394	18.4%	139	5,957	6,096
Other PET bottles & jars	13,355	-	5,146	38.5%	262	4,884	4,707	4,414	33.0%	440	8,209	8,648
PET tubs	714	-	191	26.7%	10	181	64	37	5.2%	126	523	649
PET thermoforms	7,872	-	1,356	17.2%	14	1,342	417	216	2.7%	939	6,515	7,455
HDPE bottles & jars	11,090	-	4,927	44.4%	251	4,676	4,787	4,646	41.9%	140	6,164	6,304
HDPE bottles (BB)	73	-	16	21.5%	1	15	15	15	20.3%	0	57	58
HDPE tubs	4,459	-	1,185	26.6%	61	1,124	1,152	1,118	25.1%	34	3,274	3,308
Other deposit plastic bottles	146	-	31	21.5%	2	30	9	-	0.0%	22	115	137
Other other bottles	834	-	327	39.2%	16	311	93	-	0.0%	233	507	741
Other accepted tubs & pails	414	-	111	26.7%	6	105	87	76	18.4%	23	303	326
Other bulky rigids	27,871	-	1,038	3.7%	29	1,010	1,038	1,038	3.7%	-	26,833	26,833
Other other rigid plastic containers	10,512	-	898	8.5%	22	876	263	-	0.0%	636	9,614	10,250
PP bottles & jars	442	-	188	42.5%	10	178	96	55	12.5%	92	254	346
PP bottles (BB)	73	-	16	21.5%	1	15	8	5	6.3%	8	57	65
PP rigid packaging and products	11,523	-	913	7.9%	1	912	885	867	7.5%	27	10,610	10,637
PP rigid products	11,551	-	1,144	9.9%	12	1,132	1,144	1,144	9.9%	-	10,407	10,407
PP tubs and small rigids	5,747	-	1,767	30.7%	79	1,688	1,716	1,683	29.3%	51	3,980	4,031
Solid polystyrene	2,406	-	125	5.2%	0	125	38	0	0.0%	87	2,281	2,368
Polystyrene foam	5,311	-	200	3.8%	1	199	71	1	0.0%	129	5,110	5,240
PE film	57,781	-	6,043	10.5%	3,684	2,359	4,038	3,684	6.4%	2,005	51,738	53,743
Other recoverable film	809	-	-	0.0%	-	-	-	-	0.0%	-	809	809
Metals	126,841	-	65,193	51.4%	51,748	13,445	65,058	63,841	50.3%	134	61,648	61,783
Deposit and accepted aluminum cans	4,127	-	553	13.4%	105	448	549	499	12.1%	4	3,574	3,579
Deposit and accepted steel cans	25,842	-	7,941	30.7%	1,186	6,755	7,874	7,333	28.4%	68	17,901	17,969
Accepted other aluminum	5,397	-	977	18.1%	680	297	974	941	17.4%	3	4,420	4,423
Accepted other steel	44,141	-	31,161	70.6%	25,726	5,434	31,106	30,563	69.2%	54	12,980	13,035
Scrap metals	47,333	-	24,561	51.9%	24,050	510	24,556	24,505	51.8%	5	22,773	22,778
Glass	94,109	-	62,634	66.6%	58,421	4,214	58,505	58,421	62.1%	4,130	31,474	35,604
Deposit glass bottles	23,584	-	11,623	49.3%	10,516	1,107	10,538	10,516	44.6%	1,085	11,961	13,046
Container glass	70,525	-	51,012	72.3%	47,905	3,107	47,967	47,905	67.9%	3,045	19,513	22,558
Other	2,646,776	452,888	34,940		129	34,812	10,014	-		24,927	2,158,948	2,183,875
Compostables	1,287,783	452,888	9,301		-	9,301	2,425	-		6,875	825,595	832,470
Other recoverables	256,809	-	-		-	-	-	-		-	256,809	256,809
Other materials	1,102,184	-	25,640		129	25,511	7,588	-		18,052	1,076,544	1,094,596
Total in-scope materials	3,643,237	452,888	576,235	15.8%	234,853	341,382	534,050	518,617	14.2%	42,185	2,614,115	2,656,300
Total in-scope recoverables	996,461	-	541,295	54.3%	234,725	306,570	524,036	518,617	52.0%	17,258	455,167	472,425
Total MRF inbound contamination tons						48,975						
Total MRF inbound contamination rate						14.3%						

Figures in this report represent the consultant team's best modeling estimates based on available data.
Cascadia Consulting Group, Inc. | Circular Matters, LLC | Bell & Associates

Material	Revised Baseline: Post-Disruption List (S5)											
	REVISED - Statewide 2025: On-Route Residential & Commercial, Self-Haul (excluding Bottle Bill)											
	Generation	Collection for Recycling and Composting					Bales for Marketing			Disposal (Landfill and Other)		
	Generated (tons)	Collected for Organics (tons)	Collected for Recycling (tons)	Recycling Collection Rate (inbound)	Recycling Collected Separately: glass and depot (tons)	Recycling Collected Commingled or Dual-stream (tons)	Bales: target materials and contamination (tons)	Bales: only target materials (tons)	Recycling Capture Rate (baled for marketing)	Disposed as Residue: originally collected for recycling (tons)	Directly disposed: originally collected as garbage (tons)	Total Disposed (tons)
Paper	594,947	-	373,594	62.8%	118,736	254,859	366,248	364,080	61.2%	7,346	221,353	228,699
Corrugated cardboard	319,486	-	237,064	74.2%	114,757	122,307	235,841	235,674	73.8%	1,223	82,422	83,646
Newspaper	51,635	-	43,500	84.2%	1,211	42,289	42,443	42,232	81.8%	1,057	8,135	9,192
Printing and writing paper	110,233	-	53,423	48.5%	2,208	51,214	49,838	48,813	44.3%	3,585	56,810	60,395
Paperboard	65,019	-	30,424	46.8%	447	29,978	29,825	29,525	45.4%	600	34,595	35,195
Other paper recyclable with newspaper	8,983	-	2,390	26.6%	35	2,354	2,225	2,178	24.2%	165	6,593	6,758
Other paper not recyclable with newspaper	9,449	-	4,797	50.8%	70	4,728	4,703	4,325	45.8%	95	4,652	4,747
Gable tops & aseptics	4,564	-	1,088	23.8%	7	1,081	520	516	11.3%	568	3,476	4,043
Polyc coated containers & cups	25,577	-	908	3.6%	-	908	854	817	3.2%	54	24,669	24,723
Plastic	180,565	-	21,909	12.1%	4,293	17,616	18,610	17,490	9.7%	3,299	158,656	161,955
PET bottles (BB)	7,582	-	1,625	21.4%	82	1,543	1,486	1,394	18.4%	139	5,957	6,096
Other PET bottles & jars	13,355	-	5,146	38.5%	262	4,884	4,707	4,414	33.0%	440	8,209	8,648
PET tubs	714	-	104	14.5%	0	103	31	16	2.2%	72	610	682
PET thermoforms	7,872	-	135	1.7%	1	134	41	21	0.3%	94	7,736	7,830
HDPE bottles & jars	11,090	-	4,927	44.4%	251	4,676	4,787	4,646	41.9%	140	6,164	6,304
HDPE bottles (BB)	73	-	16	21.5%	1	15	15	15	20.3%	0	57	58
HDPE tubs	4,459	-	637	14.3%	3	634	618	599	13.4%	19	3,823	3,842
Other deposit plastic bottles	146	-	16	11.0%	0	16	5	-	0.0%	11	130	141
Other other bottles	834	-	171	20.5%	1	171	51	-	0.0%	120	663	783
Other accepted tubs & pails	414	-	61	14.7%	0	60	47	40	9.7%	14	353	367
Other bulky rigids	27,871	-	672	2.4%	2	670	672	672	2.4%	-	27,199	27,199
Other other rigid plastic containers	10,512	-	88	0.8%	-	88	26	-	0.0%	61	10,425	10,486
PP bottles & jars	442	-	96	21.7%	0	95	47	26	5.9%	48	346	394
PP bottles (BB)	73	-	9	12.5%	0	9	5	2	3.4%	5	64	69
PP rigid packaging and products	11,523	-	411	3.6%	-	411	398	390	3.4%	12	11,112	11,124
PP rigid products	11,551	-	693	6.0%	1	692	693	693	6.0%	-	10,857	10,857
PP tubs and small rigids	5,747	-	923	16.1%	3	920	896	877	15.3%	28	4,824	4,852
Solid polystyrene	2,406	-	27	1.1%	-	27	8	-	0.0%	19	2,379	2,398
Polystyrene foam	5,311	-	110	2.1%	-	110	38	-	0.0%	71	5,201	5,272
PE film	57,781	-	6,043	10.5%	3,684	2,359	4,038	3,684	6.4%	2,005	51,738	53,743
Other recoverable film	809	-	-	0.0%	-	-	-	-	0.0%	-	809	809
Metals	126,841	-	63,920	50.4%	51,748	12,172	63,798	62,710	49.4%	122	62,921	63,043
Deposit and accepted aluminum cans	4,127	-	553	13.4%	105	448	549	499	12.1%	4	3,574	3,579
Deposit and accepted steel cans	25,842	-	7,941	30.7%	1,186	6,755	7,874	7,333	28.4%	68	17,901	17,969
Accepted other aluminum	5,397	-	855	15.8%	680	175	853	834	15.5%	2	4,541	4,543
Accepted other steel	44,141	-	30,010	68.0%	25,726	4,283	29,967	29,539	66.9%	43	14,131	14,174
Scrap metals	47,333	-	24,561	51.9%	24,050	510	24,556	24,505	51.8%	5	22,773	22,778
Glass	94,109	-	62,634	66.6%	58,421	4,214	58,505	58,421	62.1%	4,130	31,474	35,604
Deposit glass bottles	23,584	-	11,623	49.3%	10,516	1,107	10,538	10,516	44.6%	1,085	11,961	13,046
Container glass	70,525	-	51,012	72.3%	47,905	3,107	47,967	47,905	67.9%	3,045	19,513	22,558
Other	2,646,776	452,888	32,637		127	32,509	9,323	-		23,314	2,161,252	2,184,566
Compostables	1,287,783	452,888	9,301		-	9,301	2,425	-		6,875	825,595	832,470
Other recoverables	256,809	-	-		-	-	-	-		-	256,809	256,809
Other materials	1,102,184	-	23,336		127	23,209	6,898	-		16,439	1,078,848	1,095,287
Total in-scope materials	3,643,237	452,888	554,695	15.2%	233,324	321,370	516,484	502,700	13.8%	38,211	2,635,655	2,673,866
Total in-scope recoverables	996,461	-	522,058	52.4%	233,197	288,861	507,161	502,700	50.4%	14,897	474,403	489,300
Total MRF inbound contamination tons						42,281						
Total MRF inbound contamination rate						13.2%						

Figures in this report represent the consultant team's best modeling estimates based on available data.
Cascadia Consulting Group, Inc. | Circular Matters, LLC | Bell & Associates

Material	+ Customer Engagement (S6/A-)											
	REVISED - Statewide 2025: On-Route Residential & Commercial, Self-Haul (excluding Bottle Bill)											
	Generation	Collection for Recycling and Composting					Bales for Marketing			Disposal (Landfill and Other)		
	Generated (tons)	Collected for Organics (tons)	Collected for Recycling (tons)	Recycling Collection Rate (inbound)	Recycling Collected Separately: glass and depot (tons)	Recycling Collected Commingled or Dual-stream (tons)	Bales: target materials and contamination (tons)	Bales: only target materials (tons)	Recycling Capture Rate (baled for marketing)	Disposed as Residue: originally collected for recycling (tons)	Directly disposed: originally collected as garbage (tons)	Total Disposed (tons)
Paper	594,947	-	373,594	62.8%	118,736	254,859	366,248	364,080	61.2%	7,346	221,353	228,699
Corrugated cardboard	319,486	-	237,064	74.2%	114,757	122,307	235,841	235,674	73.8%	1,223	82,422	83,646
Newspaper	51,635	-	43,500	84.2%	1,211	42,289	42,443	42,232	81.8%	1,057	8,135	9,192
Printing and writing paper	110,233	-	53,423	48.5%	2,208	51,214	49,838	48,813	44.3%	3,585	56,810	60,395
Paperboard	65,019	-	30,424	46.8%	447	29,978	29,825	29,525	45.4%	600	34,595	35,195
Other paper recyclable with newspaper	8,983	-	2,390	26.6%	35	2,354	2,225	2,178	24.2%	165	6,593	6,758
Other paper not recyclable with newspaper	9,449	-	4,797	50.8%	70	4,728	4,703	4,325	45.8%	95	4,652	4,747
Gable tops & aseptics	4,564	-	1,088	23.8%	7	1,081	520	516	11.3%	568	3,476	4,043
Polyc coated containers & cups	25,577	-	908	3.6%	-	908	854	817	3.2%	54	24,669	24,723
Plastic	180,565	-	21,084	11.7%	4,293	16,791	18,486	17,490	9.7%	2,598	159,481	162,078
PET bottles (BB)	7,582	-	1,625	21.4%	82	1,543	1,486	1,394	18.4%	139	5,957	6,096
Other PET bottles & jars	13,355	-	5,146	38.5%	262	4,884	4,707	4,414	33.0%	440	8,209	8,648
PET tubs	714	-	104	14.5%	0	103	31	16	2.2%	72	610	682
PET thermoforms	7,872	-	135	1.7%	1	134	41	21	0.3%	94	7,736	7,830
HDPE bottles & jars	11,090	-	4,927	44.4%	251	4,676	4,787	4,646	41.9%	140	6,164	6,304
HDPE bottles (BB)	73	-	16	21.5%	1	15	15	15	20.3%	0	57	58
HDPE tubs	4,459	-	637	14.3%	3	634	618	599	13.4%	19	3,823	3,842
Other deposit plastic bottles	146	-	16	11.0%	0	16	5	-	0.0%	11	130	141
Other other bottles	834	-	171	20.5%	1	171	51	-	0.0%	120	663	783
Other accepted tubs & pails	414	-	61	14.7%	0	60	47	40	9.7%	14	353	367
Other bulky rigids	27,871	-	672	2.4%	2	670	672	672	2.4%	-	27,199	27,199
Other other rigid plastic containers	10,512	-	88	0.8%	-	88	26	-	0.0%	61	10,425	10,486
PP bottles & jars	442	-	96	21.7%	0	95	47	26	5.9%	48	346	394
PP bottles (BB)	73	-	9	12.5%	0	9	5	2	3.4%	5	64	69
PP rigid packaging and products	11,523	-	411	3.6%	-	411	398	390	3.4%	12	11,112	11,124
PP rigid products	11,551	-	693	6.0%	1	692	693	693	6.0%	-	10,857	10,857
PP tubs and small rigids	5,747	-	923	16.1%	3	920	896	877	15.3%	28	4,824	4,852
Solid polystyrene	2,406	-	27	1.1%	-	27	8	-	0.0%	19	2,379	2,398
Polystyrene foam	5,311	-	110	2.1%	-	110	38	-	0.0%	71	5,201	5,272
PE film	57,781	-	5,218	9.0%	3,684	1,534	3,914	3,684	6.4%	1,304	52,563	53,867
Other recoverable film	809	-	-	0.0%	-	-	-	-	0.0%	-	809	809
Metals	126,841	-	63,716	50.2%	51,748	11,968	63,596	62,528	49.3%	120	63,125	63,245
Deposit and accepted aluminum cans	4,127	-	553	13.4%	105	448	549	499	12.1%	4	3,574	3,579
Deposit and accepted steel cans	25,842	-	7,941	30.7%	1,186	6,755	7,874	7,333	28.4%	68	17,901	17,969
Accepted other aluminum	5,397	-	855	15.8%	680	175	853	834	15.5%	2	4,541	4,543
Accepted other steel	44,141	-	30,010	68.0%	25,726	4,283	29,967	29,539	66.9%	43	14,131	14,174
Scrap metals	47,333	-	24,357	51.5%	24,050	306	24,353	24,323	51.4%	3	22,977	22,980
Glass	94,109	-	61,221	65.1%	58,421	2,801	58,477	58,421	62.1%	2,745	32,888	35,632
Deposit glass bottles	23,584	-	11,258	47.7%	10,516	742	10,531	10,516	44.6%	727	12,326	13,053
Container glass	70,525	-	49,963	70.8%	47,905	2,058	47,946	47,905	67.9%	2,017	20,561	22,579
Other	2,646,776	452,888	21,470		127	21,342	6,114	-		15,356	2,172,419	2,187,775
Compostables	1,287,783	452,888	5,429		-	5,429	1,380	-		4,048	829,467	833,515
Other recoverables	256,809	-	-		-	-	-	-		-	256,809	256,809
Other materials	1,102,184	-	16,041		127	15,914	4,734	-		11,308	1,086,143	1,097,451
Total in-scope materials	3,643,237	452,888	541,085	14.9%	233,324	307,761	512,921	502,518	13.8%	28,164	2,649,265	2,677,429
Total in-scope recoverables	996,461	-	519,615	52.1%	233,197	286,418	506,807	502,518	50.4%	12,808	476,846	489,654
Total MRF inbound contamination tons						28,672						
Total MRF inbound contamination rate						9.3%						

Figures in this report represent the consultant team's best modeling estimates based on available data.
Cascadia Consulting Group, Inc. | Circular Matters, LLC | Bell & Associates

Material	Engagement + Improved MRFs (S1/A)											
	REVISED - Statewide 2025: On-Route Residential & Commercial, Self-Haul (excluding Bottle Bill)											
	Generation	Collection for Recycling and Composting					Bales for Marketing			Disposal (Landfill and Other)		
	Generated (tons)	Collected for Organics (tons)	Collected for Recycling (tons)	Recycling Collection Rate (inbound)	Recycling Collected Separately: glass and depot (tons)	Recycling Collected Commingled or Dual-stream (tons)	Bales: target materials and contamination (tons)	Bales: only target materials (tons)	Recycling Capture Rate (baled for marketing)	Disposed as Residue: originally collected for recycling (tons)	Directly disposed: originally collected as garbage (tons)	Total Disposed (tons)
Paper	594,947	-	373,594	62.8%	118,736	254,859	362,054	360,706	60.6%	11,541	221,353	232,893
Corrugated cardboard	319,486	-	237,064	74.2%	114,757	122,307	233,622	233,395	73.1%	3,442	82,422	85,865
Newspaper	51,635	-	43,500	84.2%	1,211	42,289	42,316	42,232	81.8%	1,184	8,135	9,319
Printing and writing paper	110,233	-	53,423	48.5%	2,208	51,214	48,765	48,301	43.8%	4,657	56,810	61,468
Paperboard	65,019	-	30,424	46.8%	447	29,978	28,985	28,925	44.5%	1,439	34,595	36,034
Other paper recyclable with newspaper	8,983	-	2,390	26.6%	35	2,354	2,201	2,154	24.0%	188	6,593	6,782
Other paper not recyclable with newspaper	9,449	-	4,797	50.8%	70	4,728	4,703	4,325	45.8%	95	4,652	4,747
Gable tops & aseptics	4,564	-	1,088	23.8%	7	1,081	579	536	11.7%	509	3,476	3,985
Polyc coated containers & cups	25,577	-	908	3.6%	-	908	882	838	3.3%	26	24,669	24,695
Plastic	180,565	-	21,084	11.7%	4,293	16,791	18,589	18,053	10.0%	2,495	159,481	161,976
PET bottles (BB)	7,582	-	1,625	21.4%	82	1,543	1,553	1,501	19.8%	72	5,957	6,029
Other PET bottles & jars	13,355	-	5,146	38.5%	262	4,884	4,902	4,756	35.6%	244	8,209	8,453
PET tubs	714	-	104	14.5%	0	103	44	40	5.6%	60	610	669
PET thermoforms	7,872	-	135	1.7%	1	134	57	51	0.6%	78	7,736	7,815
HDPE bottles & jars	11,090	-	4,927	44.4%	251	4,676	4,787	4,693	42.3%	140	6,164	6,304
HDPE bottles (BB)	73	-	16	21.5%	1	15	15	15	20.5%	0	57	58
HDPE tubs	4,459	-	637	14.3%	3	634	618	605	13.6%	19	3,823	3,842
Other deposit plastic bottles	146	-	16	11.0%	0	16	2	-	0.0%	15	130	145
Other other bottles	834	-	171	20.5%	1	171	16	-	0.0%	155	663	818
Other accepted tubs & pails	414	-	61	14.7%	0	60	43	41	9.8%	18	353	371
Other bulky rigids	27,871	-	672	2.4%	2	670	672	672	2.4%	-	27,199	27,199
Other other rigid plastic containers	10,512	-	88	0.8%	-	88	8	-	0.0%	79	10,425	10,504
PP bottles & jars	442	-	96	21.7%	0	95	34	26	5.9%	62	346	408
PP bottles (BB)	73	-	9	12.5%	0	9	3	2	3.4%	6	64	70
PP rigid packaging and products	11,523	-	411	3.6%	-	411	398	390	3.4%	12	11,112	11,124
PP rigid products	11,551	-	693	6.0%	1	692	693	693	6.0%	-	10,857	10,857
PP tubs and small rigids	5,747	-	923	16.1%	3	920	896	877	15.3%	28	4,824	4,852
Solid polystyrene	2,406	-	27	1.1%	-	27	9	7	0.3%	18	2,379	2,397
Polystyrene foam	5,311	-	110	2.1%	-	110	10	-	0.0%	99	5,201	5,300
PE film	57,781	-	5,218	9.0%	3,684	1,534	3,829	3,684	6.4%	1,390	52,563	53,952
Other recoverable film	809	-	-	0.0%	-	-	-	-	0.0%	-	809	809
Metals	126,841	-	63,716	50.2%	51,748	11,968	63,594	63,449	50.0%	121	63,125	63,247
Deposit and accepted aluminum cans	4,127	-	553	13.4%	105	448	549	531	12.9%	4	3,574	3,579
Deposit and accepted steel cans	25,842	-	7,941	30.7%	1,186	6,755	7,874	7,806	30.2%	68	17,901	17,969
Accepted other aluminum	5,397	-	855	15.8%	680	175	852	838	15.5%	4	4,541	4,545
Accepted other steel	44,141	-	30,010	68.0%	25,726	4,283	29,967	29,924	67.8%	43	14,131	14,174
Scrap metals	47,333	-	24,357	51.5%	24,050	306	24,353	24,350	51.4%	3	22,977	22,980
Glass	94,109	-	61,221	65.1%	58,421	2,801	58,477	58,421	62.1%	2,745	32,888	35,632
Deposit glass bottles	23,584	-	11,258	47.7%	10,516	742	10,531	10,516	44.6%	727	12,326	13,053
Container glass	70,525	-	49,963	70.8%	47,905	2,058	47,946	47,905	67.9%	2,017	20,561	22,579
Other	2,646,776	452,888	21,470		127	21,342	1,956	-		19,513	2,172,419	2,191,932
Compostables	1,287,783	452,888	5,429		-	5,429	460	-		4,969	829,467	834,436
Other recoverables	256,809	-	-		-	-	-	-		-	256,809	256,809
Other materials	1,102,184	-	16,041		127	15,914	1,497	-		14,544	1,086,143	1,100,687
Total in-scope materials	3,643,237	452,888	541,085	14.9%	233,324	307,761	504,670	500,629	13.7%	36,415	2,649,265	2,685,680
Total in-scope recoverables	996,461	-	519,615	52.1%	233,197	286,418	502,714	500,629	50.2%	16,901	476,846	493,747
Total MRF inbound contamination tons						28,672						
Total MRF inbound contamination rate						9.3%						

Figures in this report represent the consultant team's best modeling estimates based on available data.
Cascadia Consulting Group, Inc. | Circular Matters, LLC | Bell & Associates

Material	Engagement + MRFs + Expanded Lists (S2/A+)											
	REVISED - Statewide 2025: On-Route Residential & Commercial, Self-Haul (excluding Bottle Bill)											
	Generation	Collection for Recycling and Composting					Bales for Marketing			Disposal (Landfill and Other)		
	Generated (tons)	Collected for Organics (tons)	Collected for Recycling (tons)	Recycling Collection Rate (inbound)	Recycling Collected Separately: glass and depot (tons)	Recycling Collected Commingled or Dual-stream (tons)	Bales: target materials and contamination (tons)	Bales: only target materials (tons)	Recycling Capture Rate (baled for marketing)	Disposed as Residue: originally collected for recycling (tons)	Directly disposed: originally collected as garbage (tons)	Total Disposed (tons)
Paper	594,947	-	406,912	68.4%	120,133	286,779	394,737	392,466	66.0%	12,174	188,035	200,209
Corrugated cardboard	319,486	-	237,553	74.4%	114,757	122,796	234,090	233,958	73.2%	3,463	81,934	85,396
Newspaper	51,635	-	44,681	86.5%	1,211	43,470	43,463	43,396	84.0%	1,219	6,954	8,172
Printing and writing paper	110,233	-	62,624	56.8%	2,735	59,889	57,813	56,895	51.6%	4,811	47,609	52,420
Paperboard	65,019	-	40,989	63.0%	1,022	39,968	39,069	39,020	60.0%	1,921	24,030	25,951
Other paper recyclable with newspaper	8,983	-	4,762	53.0%	131	4,631	4,390	4,319	48.1%	372	4,221	4,593
Other paper not recyclable with newspaper	9,449	-	6,359	67.3%	161	6,198	6,227	5,846	61.9%	132	3,090	3,222
Gable tops & aseptics	4,564	-	1,960	42.9%	46	1,914	1,871	1,703	37.3%	89	2,604	2,693
Polycoated containers & cups	25,577	-	7,983	31.2%	71	7,913	7,815	7,330	28.7%	169	17,594	17,763
Plastic	180,565	-	45,433	25.2%	7,053	38,381	40,738	39,244	21.7%	4,695	135,132	139,827
PET bottles (BB)	7,582	-	1,866	24.6%	82	1,784	1,719	1,630	21.5%	148	5,715	5,863
Other PET bottles & jars	13,355	-	5,546	41.5%	262	5,284	5,110	4,815	36.1%	436	7,809	8,245
PET tubs	714	-	225	31.5%	1	225	207	191	26.8%	19	488	507
PET thermoforms	7,872	-	2,809	35.7%	4	2,805	2,558	2,385	30.3%	251	5,062	5,313
HDPE bottles & jars	11,090	-	5,249	47.3%	251	4,998	4,968	4,754	42.9%	281	5,842	6,123
HDPE bottles (BB)	73	-	18	24.6%	1	17	17	17	22.6%	1	55	56
HDPE tubs	4,459	-	1,466	32.9%	61	1,405	1,395	1,348	30.2%	71	2,993	3,064
Other deposit plastic bottles	146	-	36	24.6%	2	34	4	-	0.0%	32	110	142
Other other bottles	834	-	344	41.3%	1	344	36	-	0.0%	308	489	798
Other accepted tubs & pails	414	-	136	32.9%	6	130	19	6	1.4%	117	278	394
Other bulky rigids	27,871	-	9,718	34.9%	1,519	8,199	9,718	9,718	34.9%	-	18,154	18,154
Other other rigid plastic containers	10,512	-	909	8.6%	6	903	95	-	0.0%	814	9,604	10,418
PP bottles & jars	442	-	201	45.4%	10	191	186	172	38.9%	15	241	256
PP bottles (BB)	73	-	18	24.6%	1	17	17	15	21.1%	1	55	56
PP rigid packaging and products	11,523	-	4,169	36.2%	288	3,880	3,973	3,842	33.3%	196	7,354	7,550
PP rigid products	11,551	-	4,028	34.9%	629	3,398	4,028	4,028	34.9%	-	7,523	7,523
PP tubs and small rigids	5,747	-	2,112	36.8%	79	2,033	2,010	1,941	33.8%	102	3,635	3,738
Solid polystyrene	2,406	-	712	29.6%	10	702	655	542	22.5%	57	1,694	1,751
Polystyrene foam	5,311	-	330	6.2%	134	196	157	134	2.5%	173	4,981	5,154
PE film	57,781	-	5,542	9.6%	3,707	1,836	3,867	3,707	6.4%	1,675	52,239	53,914
Other recoverable film	809	-	-	0.0%	-	-	-	-	0.0%	-	809	809
Metals	126,841	-	67,850	53.5%	51,748	16,102	67,686	67,502	53.2%	164	58,991	59,155
Deposit and accepted aluminum cans	4,127	-	593	14.4%	105	488	588	570	13.8%	5	3,535	3,539
Deposit and accepted steel cans	25,842	-	9,903	38.3%	1,186	8,718	9,816	9,735	37.7%	87	15,939	16,026
Accepted other aluminum	5,397	-	986	18.3%	680	306	980	957	17.7%	6	4,411	4,417
Accepted other steel	44,141	-	31,983	72.5%	25,726	6,257	31,920	31,862	72.2%	63	12,158	12,221
Scrap metals	47,333	-	24,385	51.5%	24,050	334	24,381	24,378	51.5%	3	22,949	22,952
Glass	94,109	-	67,402	71.6%	64,552	2,850	64,605	64,552	68.6%	2,797	26,707	29,504
Deposit glass bottles	23,584	-	12,482	52.9%	11,731	751	11,745	11,731	49.7%	737	11,102	11,839
Container glass	70,525	-	54,919	77.9%	52,821	2,099	52,860	52,821	74.9%	2,060	15,605	17,665
Other	2,646,776	452,888	28,373		166	28,206	2,405	-		25,967	2,165,516	2,191,484
Compostables	1,287,783	452,888	6,762		-	6,762	437	-		6,325	828,133	834,458
Other recoverables	256,809	-	-		-	-	-	-		-	256,809	256,809
Other materials	1,102,184	-	21,610		166	21,444	1,968	-		19,642	1,080,574	1,100,216
Total in-scope materials	3,643,237	452,888	615,969	16.9%	243,652	372,318	570,171	563,764	15.5%	45,798	2,574,381	2,620,179
Total in-scope recoverables	996,461	-	587,597	59.0%	243,485	344,111	567,766	563,764	56.6%	19,831	408,865	428,695
Total MRF inbound contamination tons						34,702						
Total MRF inbound contamination rate						9.3%						

Figures in this report represent the consultant team's best modeling estimates based on available data.
Cascadia Consulting Group, Inc. | Circular Matters, LLC | Bell & Associates

Material	Engagement + MRFs + Expanded + Statewide List (S7/A++)											
	REVISED - Statewide 2025: On-Route Residential & Commercial, Self-Haul (excluding Bottle Bill)											
	Generation	Collection for Recycling and Composting					Bales for Marketing			Disposal (Landfill and Other)		
	Generated (tons)	Collected for Organics (tons)	Collected for Recycling (tons)	Recycling Collection Rate (inbound)	Recycling Collected Separately: glass and depot (tons)	Recycling Collected Commingled or Dual-stream (tons)	Bales: target materials and contamination (tons)	Bales: only target materials (tons)	Recycling Capture Rate (baled for marketing)	Disposed as Residue: originally collected for recycling (tons)	Directly disposed: originally collected as garbage (tons)	Total Disposed (tons)
Paper	594,947	-	408,454	68.7%	120,301	288,152	396,250	393,900	66.2%	12,204	186,493	198,697
Corrugated cardboard	319,486	-	237,553	74.4%	114,757	122,796	234,090	233,958	73.2%	3,463	81,934	85,396
Newspaper	51,635	-	44,681	86.5%	1,211	43,470	43,463	43,396	84.0%	1,219	6,954	8,172
Printing and writing paper	110,233	-	62,624	56.8%	2,735	59,889	57,813	56,897	51.6%	4,811	47,609	52,420
Paperboard	65,019	-	40,989	63.0%	1,022	39,968	39,069	39,020	60.0%	1,921	24,030	25,951
Other paper recyclable with newspaper	8,983	-	4,762	53.0%	131	4,631	4,390	4,319	48.1%	372	4,221	4,593
Other paper not recyclable with newspaper	9,449	-	6,359	67.3%	161	6,198	6,227	5,847	61.9%	132	3,090	3,222
Gable tops & aseptics	4,564	-	1,960	42.9%	46	1,914	1,871	1,703	37.3%	89	2,604	2,693
Polyc coated containers & cups	25,577	-	9,525	37.2%	239	9,286	9,327	8,759	34.2%	198	16,052	16,250
Plastic	180,565	-	46,525	25.8%	7,766	38,760	41,675	40,146	22.2%	4,850	134,040	138,890
PET bottles (BB)	7,582	-	1,866	24.6%	82	1,784	1,719	1,630	21.5%	148	5,715	5,863
Other PET bottles & jars	13,355	-	5,546	41.5%	262	5,284	5,110	4,815	36.1%	436	7,809	8,245
PET tubs	714	-	235	32.9%	10	225	216	201	28.1%	19	479	498
PET thermoforms	7,872	-	3,056	38.8%	4	3,051	2,783	2,594	33.0%	273	4,816	5,089
HDPE bottles & jars	11,090	-	5,249	47.3%	251	4,998	4,968	4,754	42.9%	281	5,842	6,123
HDPE bottles (BB)	73	-	18	24.6%	1	17	17	17	22.6%	1	55	56
HDPE tubs	4,459	-	1,466	32.9%	61	1,405	1,395	1,348	30.2%	71	2,993	3,064
Other deposit plastic bottles	146	-	36	24.6%	2	34	4	-	0.0%	32	110	142
Other other bottles	834	-	359	43.1%	16	344	36	-	0.0%	323	475	798
Other accepted tubs & pails	414	-	136	32.9%	6	130	19	6	1.4%	117	278	394
Other bulky rigids	27,871	-	9,718	34.9%	1,519	8,199	9,718	9,718	34.9%	-	18,154	18,154
Other other rigid plastic containers	10,512	-	1,021	9.7%	94	927	97	-	0.0%	923	9,492	10,415
PP bottles & jars	442	-	201	45.4%	10	191	186	172	38.9%	15	241	256
PP bottles (BB)	73	-	18	24.6%	1	17	17	15	21.1%	1	55	56
PP rigid packaging and products	11,523	-	4,169	36.2%	288	3,880	3,973	3,842	33.3%	196	7,354	7,550
PP rigid products	11,551	-	4,028	34.9%	629	3,398	4,028	4,028	34.9%	-	7,523	7,523
PP tubs and small rigids	5,747	-	2,112	36.8%	79	2,033	2,010	1,941	33.8%	102	3,635	3,738
Solid polystyrene	2,406	-	871	36.2%	60	811	806	675	28.1%	65	1,535	1,600
Polystyrene foam	5,311	-	330	6.2%	134	196	157	134	2.5%	173	4,981	5,154
PE film	57,781	-	6,092	10.5%	4,257	1,836	4,418	4,257	7.4%	1,675	51,689	53,363
Other recoverable film	809	-	-	0.0%	-	-	-	-	0.0%	-	809	809
Metals	126,841	-	67,850	53.5%	51,748	16,102	67,686	67,502	53.2%	164	58,991	59,155
Deposit and accepted aluminum cans	4,127	-	593	14.4%	105	488	588	570	13.8%	5	3,535	3,539
Deposit and accepted steel cans	25,842	-	9,903	38.3%	1,186	8,718	9,816	9,735	37.7%	87	15,939	16,026
Accepted other aluminum	5,397	-	986	18.3%	680	306	980	957	17.7%	6	4,411	4,417
Accepted other steel	44,141	-	31,983	72.5%	25,726	6,257	31,920	31,862	72.2%	63	12,158	12,221
Scrap metals	47,333	-	24,385	51.5%	24,050	334	24,381	24,378	51.5%	3	22,949	22,952
Glass	94,109	-	67,402	71.6%	64,552	2,850	64,605	64,552	68.6%	2,797	26,707	29,504
Deposit glass bottles	23,584	-	12,482	52.9%	11,731	751	11,745	11,731	49.7%	737	11,102	11,839
Container glass	70,525	-	54,919	77.9%	52,821	2,099	52,860	52,821	74.9%	2,060	15,605	17,665
Other	2,646,776	452,888	28,373		166	28,206	2,405	-		25,968	2,165,516	2,191,484
Compostables	1,287,783	452,888	6,762		-	6,762	436	-		6,326	828,133	834,459
Other recoverables	256,809	-	-		-	-	-	-		-	256,809	256,809
Other materials	1,102,184	-	21,610		166	21,444	1,968	-		19,642	1,080,574	1,100,216
Total in-scope materials	3,643,237	452,888	618,603	17.0%	244,533	374,070	572,620	566,100	15.5%	45,983	2,571,747	2,617,730
Total in-scope recoverables	996,461	-	590,230	59.2%	244,367	345,863	570,215	566,100	56.8%	20,015	406,231	426,246
Total MRF inbound contamination tons						34,286						
Total MRF inbound contamination rate						9.2%						

Figures in this report represent the consultant team's best modeling estimates based on available data.
Cascadia Consulting Group, Inc. | Circular Matters, LLC | Bell & Associates

Material	+Container Recovery Facility (S3/B)											
	REVISED - Statewide 2025: On-Route Residential & Commercial, Self-Haul (excluding Bottle Bill)											
	Generation	Collection for Recycling and Composting					Bales for Marketing			Disposal (Landfill and Other)		
	Generated (tons)	Collected for Organics (tons)	Collected for Recycling (tons)	Recycling Collection Rate (inbound)	Recycling Collected Separately: glass and depot (tons)	Recycling Collected Commingled or Dual-stream (tons)	Bales: target materials and contamination (tons)	Bales: only target materials (tons)	Recycling Capture Rate (baled for marketing)	Disposed as Residue: originally collected for recycling (tons)	Directly disposed: originally collected as garbage (tons)	Total Disposed (tons)
Paper	594,947	-	406,912	68.4%	120,133	286,779	394,730	392,560	66.0%	12,181	188,035	200,217
Corrugated cardboard	319,486	-	237,553	74.4%	114,757	122,796	234,089	233,968	73.2%	3,463	81,934	85,397
Newspaper	51,635	-	44,681	86.5%	1,211	43,470	43,463	43,399	84.0%	1,219	6,954	8,173
Printing and writing paper	110,233	-	62,624	56.8%	2,735	59,889	57,810	56,932	51.6%	4,814	47,609	52,423
Paperboard	65,019	-	40,989	63.0%	1,022	39,968	39,068	39,024	60.0%	1,921	24,030	25,951
Other paper recyclable with newspaper	8,983	-	4,762	53.0%	131	4,631	4,390	4,322	48.1%	372	4,221	4,593
Other paper not recyclable with newspaper	9,449	-	6,359	67.3%	161	6,198	6,226	5,862	62.0%	133	3,090	3,223
Gable tops & aseptics	4,564	-	1,960	42.9%	46	1,914	1,871	1,703	37.3%	89	2,604	2,693
Polyc coated containers & cups	25,577	-	7,983	31.2%	71	7,913	7,813	7,350	28.7%	170	17,594	17,764
Plastic	180,565	-	45,433	25.2%	7,053	38,381	40,642	39,120	21.7%	4,791	135,132	139,922
PET bottles (BB)	7,582	-	1,866	24.6%	82	1,784	1,719	1,630	21.5%	148	5,715	5,863
Other PET bottles & jars	13,355	-	5,546	41.5%	262	5,284	5,109	4,846	36.3%	438	7,809	8,246
PET tubs	714	-	225	31.5%	1	225	207	191	26.8%	19	488	507
PET thermoforms	7,872	-	2,809	35.7%	4	2,805	2,558	2,385	30.3%	251	5,062	5,313
HDPE bottles & jars	11,090	-	5,249	47.3%	251	4,998	4,929	4,728	42.6%	320	5,842	6,161
HDPE bottles (BB)	73	-	18	24.6%	1	17	17	16	22.3%	1	55	56
HDPE tubs	4,459	-	1,466	32.9%	61	1,405	1,384	1,329	29.8%	82	2,993	3,076
Other deposit plastic bottles	146	-	36	24.6%	2	34	4	-	0.0%	32	110	142
Other other bottles	834	-	344	41.3%	1	344	40	-	0.0%	305	489	794
Other accepted tubs & pails	414	-	136	32.9%	6	130	21	6	1.4%	115	278	393
Other bulky rigids	27,871	-	9,718	34.9%	1,519	8,199	9,718	9,718	34.9%	-	18,154	18,154
Other other rigid plastic containers	10,512	-	909	8.6%	6	903	104	-	0.0%	805	9,604	10,409
PP bottles & jars	442	-	201	45.4%	10	191	184	167	37.8%	17	241	258
PP bottles (BB)	73	-	18	24.6%	1	17	16	15	20.5%	2	55	57
PP rigid packaging and products	11,523	-	4,169	36.2%	288	3,880	3,942	3,790	32.9%	227	7,354	7,581
PP rigid products	11,551	-	4,028	34.9%	629	3,398	4,028	4,028	34.9%	-	7,523	7,523
PP tubs and small rigids	5,747	-	2,112	36.8%	79	2,033	1,993	1,914	33.3%	119	3,635	3,754
Solid polystyrene	2,406	-	712	29.6%	10	702	647	517	21.5%	65	1,694	1,759
Polystyrene foam	5,311	-	330	6.2%	134	196	160	134	2.5%	170	4,981	5,151
PE film	57,781	-	5,542	9.6%	3,707	1,836	3,866	3,707	6.4%	1,676	52,239	53,915
Other recoverable film	809	-	-	0.0%	-	-	-	-	0.0%	-	809	809
Metals	126,841	-	67,850	53.5%	51,748	16,102	67,686	67,504	53.2%	164	58,991	59,155
Deposit and accepted aluminum cans	4,127	-	593	14.4%	105	488	588	570	13.8%	5	3,535	3,539
Deposit and accepted steel cans	25,842	-	9,903	38.3%	1,186	8,718	9,816	9,736	37.7%	87	15,939	16,026
Accepted other aluminum	5,397	-	986	18.3%	680	306	980	957	17.7%	6	4,411	4,417
Accepted other steel	44,141	-	31,983	72.5%	25,726	6,257	31,920	31,863	72.2%	63	12,158	12,221
Scrap metals	47,333	-	24,385	51.5%	24,050	334	24,381	24,378	51.5%	3	22,949	22,952
Glass	94,109	-	67,402	71.6%	64,552	2,850	64,604	64,552	68.6%	2,797	26,707	29,504
Deposit glass bottles	23,584	-	12,482	52.9%	11,731	751	11,745	11,731	49.7%	737	11,102	11,839
Container glass	70,525	-	54,919	77.9%	52,821	2,099	52,859	52,821	74.9%	2,060	15,605	17,665
Other	2,646,776	452,888	28,373		166	28,206	2,389	-		25,984	2,165,516	2,191,500
Compostables	1,287,783	452,888	6,762		-	6,762	426	-		6,336	828,133	834,469
Other recoverables	256,809	-	-		-	-	-	-		-	256,809	256,809
Other materials	1,102,184	-	21,610		166	21,444	1,962	-		19,648	1,080,574	1,100,222
Total in-scope materials	3,643,237	452,888	615,969	16.9%	243,652	372,318	570,052	563,735	15.5%	45,918	2,574,381	2,620,298
Total in-scope recoverables	996,461	-	587,597	59.0%	243,485	344,111	567,663	563,735	56.6%	19,934	408,865	428,799
Total MRF inbound contamination tons						34,702						
Total MRF inbound contamination rate						9.3%						

Figures in this report represent the consultant team's best modeling estimates based on available data.
Cascadia Consulting Group, Inc. | Circular Matters, LLC | Bell & Associates

Material	Dual-Stream Collection (S4/C)											
	REVISED - Statewide 2025: On-Route Residential & Commercial, Self-Haul (excluding Bottle Bill)											
	Generation	Collection for Recycling and Composting					Bales for Marketing			Disposal (Landfill and Other)		
	Generated (tons)	Collected for Organics (tons)	Collected for Recycling (tons)	Recycling Collection Rate (inbound)	Recycling Collected Separately: glass and depot (tons)	Recycling Collected Commingled or Dual-stream (tons)	Bales: target materials and contamination (tons)	Bales: only target materials (tons)	Recycling Capture Rate (baled for marketing)	Disposed as Residue: originally collected for recycling (tons)	Directly disposed: originally collected as garbage (tons)	Total Disposed (tons)
Paper	594,947	-	408,121	68.6%	120,133	287,988	400,055	397,620	66.8%	8,066	186,826	194,892
Corrugated cardboard	319,486	-	237,553	74.4%	114,757	122,796	236,325	236,325	74.0%	1,228	81,934	83,161
Newspaper	51,635	-	44,681	86.5%	1,211	43,470	43,508	43,377	84.0%	1,174	6,954	8,127
Printing and writing paper	110,233	-	62,624	56.8%	2,735	59,889	59,993	58,796	53.3%	2,630	47,609	50,239
Paperboard	65,019	-	40,989	63.0%	1,022	39,968	38,991	38,991	60.0%	1,998	24,030	26,028
Other paper recyclable with newspaper	8,983	-	4,764	53.0%	131	4,634	4,438	4,345	48.4%	326	4,219	4,545
Other paper not recyclable with newspaper	9,449	-	6,359	67.3%	161	6,198	6,235	5,739	60.7%	124	3,090	3,214
Gable tops & aseptics	4,564	-	1,960	42.9%	46	1,914	1,921	1,768	38.7%	38	2,604	2,642
Polycoated containers & cups	25,577	-	9,190	35.9%	71	9,119	8,643	8,278	32.4%	547	16,387	16,934
Plastic	180,565	-	45,756	25.3%	7,053	38,703	41,646	40,674	22.5%	4,110	134,809	138,919
PET bottles (BB)	7,582	-	1,866	24.6%	82	1,784	1,777	1,724	22.7%	89	5,715	5,805
Other PET bottles & jars	13,355	-	5,546	41.5%	262	5,284	5,282	5,124	38.4%	264	7,809	8,073
PET tubs	714	-	225	31.5%	1	225	214	203	28.4%	11	488	500
PET thermoforms	7,872	-	3,040	38.6%	4	3,036	2,888	2,736	34.8%	152	4,832	4,984
HDPE bottles & jars	11,090	-	5,249	47.3%	251	4,998	5,099	4,999	45.1%	150	5,842	5,991
HDPE bottles (BB)	73	-	18	24.6%	1	17	17	17	23.4%	1	55	56
HDPE tubs	4,459	-	1,466	32.9%	61	1,405	1,424	1,396	31.3%	42	2,993	3,036
Other deposit plastic bottles	146	-	36	24.6%	2	34	3	-	0.0%	33	110	143
Other other bottles	834	-	344	41.3%	1	344	34	-	0.0%	310	489	799
Other accepted tubs & pails	414	-	136	32.9%	6	130	19	6	1.4%	117	278	395
Other bulky rigids	27,871	-	9,723	34.9%	1,519	8,204	9,723	9,723	34.9%	-	18,148	18,148
Other other rigid plastic containers	10,512	-	903	8.6%	6	897	90	-	0.0%	813	9,610	10,423
PP bottles & jars	442	-	201	45.4%	10	191	195	191	43.2%	6	241	247
PP bottles (BB)	73	-	18	24.6%	1	17	17	17	23.4%	1	55	56
PP rigid packaging and products	11,523	-	4,168	36.2%	288	3,880	4,052	3,974	34.5%	116	7,354	7,470
PP rigid products	11,551	-	4,027	34.9%	629	3,398	4,027	4,027	34.9%	-	7,523	7,523
PP tubs and small rigids	5,747	-	2,112	36.8%	79	2,033	2,051	2,011	35.0%	61	3,635	3,696
Solid polystyrene	2,406	-	805	33.4%	10	795	765	686	28.5%	40	1,601	1,641
Polystyrene foam	5,311	-	330	6.2%	134	196	154	134	2.5%	176	4,981	5,157
PE film	57,781	-	5,542	9.6%	3,707	1,836	3,813	3,707	6.4%	1,729	52,239	53,968
Other recoverable film	809	-	-	0.0%	-	-	-	-	0.0%	-	809	809
Metals	126,841	-	67,850	53.5%	51,748	16,102	67,487	67,292	53.1%	362	58,991	59,354
Deposit and accepted aluminum cans	4,127	-	593	14.4%	105	488	588	578	14.0%	5	3,535	3,539
Deposit and accepted steel cans	25,842	-	9,903	38.3%	1,186	8,718	9,816	9,729	37.6%	87	15,939	16,026
Accepted other aluminum	5,397	-	986	18.3%	680	306	980	967	17.9%	6	4,411	4,417
Accepted other steel	44,141	-	31,983	72.5%	25,726	6,257	31,920	31,858	72.2%	63	12,158	12,221
Scrap metals	47,333	-	24,385	51.5%	24,050	334	24,183	24,160	51.0%	202	22,949	23,151
Glass	94,109	-	67,402	71.6%	64,552	2,850	64,609	64,552	68.6%	2,793	26,707	29,500
Deposit glass bottles	23,584	-	12,482	52.9%	11,731	751	11,746	11,731	49.7%	736	11,102	11,838
Container glass	70,525	-	54,919	77.9%	52,821	2,099	52,863	52,821	74.9%	2,057	15,605	17,662
Other	2,646,776	452,888	28,373		166	28,206	1,847	-		26,526	2,165,516	2,192,042
Compostables	1,287,783	452,888	6,762		-	6,762	387	-		6,375	828,133	834,508
Other recoverables	256,809	-	-		-	-	-	-		-	256,809	256,809
Other materials	1,102,184	-	21,610		166	21,444	1,460	-		20,151	1,080,574	1,100,725
Total in-scope materials	3,643,237	452,888	617,501	16.9%	243,652	373,849	575,644	570,138	15.6%	41,857	2,572,849	2,614,706
Total in-scope recoverables	996,461	-	589,128	59.1%	243,485	345,643	573,797	570,138	57.2%	15,331	407,333	422,664
Total MRF inbound contamination tons						34,304						
Total MRF inbound contamination rate						9.2%						

Figures in this report represent the consultant team's best modeling estimates based on available data.
Cascadia Consulting Group, Inc. | Circular Matters, LLC | Bell & Associates

Material	Engagement + MRFs + Expanded + Statewide List + Expanded Collection (S8/D-low)											
	REVISED - Statewide 2025: On-Route Residential & Commercial, Self-Haul (excluding Bottle Bill)											
	Generation	Collection for Recycling and Composting					Bales for Marketing			Disposal (Landfill and Other)		
	Generated (tons)	Collected for Organics (tons)	Collected for Recycling (tons)	Recycling Collection Rate (inbound)	Recycling Collected Separately: glass and depot (tons)	Recycling Collected Commingled or Dual-stream (tons)	Bales: target materials and contamination (tons)	Bales: only target materials (tons)	Recycling Capture Rate (baled for marketing)	Disposed as Residue: originally collected for recycling (tons)	Directly disposed: originally collected as garbage (tons)	Total Disposed (tons)
Paper	594,947	-	416,038	69.9%	119,106	296,932	403,413	400,929	67.4%	12,625	178,909	191,534
Corrugated cardboard	319,486	-	239,608	75.0%	113,714	125,894	236,057	235,921	73.8%	3,551	79,878	83,429
Newspaper	51,635	-	45,137	87.4%	1,169	43,967	43,904	43,837	84.9%	1,233	6,499	7,731
Printing and writing paper	110,233	-	65,261	59.2%	2,682	62,579	60,234	59,268	53.8%	5,026	44,972	49,998
Paperboard	65,019	-	42,215	64.9%	987	41,229	40,234	40,183	61.8%	1,981	22,804	24,786
Other paper recyclable with newspaper	8,983	-	5,051	56.2%	126	4,926	4,656	4,580	51.0%	396	3,931	4,327
Other paper not recyclable with newspaper	9,449	-	6,543	69.2%	155	6,388	6,407	6,013	63.6%	136	2,906	3,042
Gable tops & aseptics	4,564	-	2,007	44.0%	44	1,963	1,917	1,745	38.2%	90	2,557	2,646
Polyc coated containers & cups	25,577	-	10,216	39.9%	228	9,988	10,004	9,382	36.7%	212	15,361	15,574
Plastic	180,565	-	48,496	26.9%	7,443	41,053	43,464	41,876	23.2%	5,033	132,069	137,101
PET bottles (BB)	7,582	-	1,984	26.2%	75	1,909	1,830	1,737	22.9%	155	5,598	5,752
Other PET bottles & jars	13,355	-	5,793	43.4%	239	5,554	5,342	5,036	37.7%	452	7,562	8,013
PET tubs	714	-	244	34.2%	9	235	225	209	29.3%	19	469	489
PET thermoforms	7,872	-	3,246	41.2%	4	3,242	2,963	2,763	35.1%	284	4,625	4,909
HDPE bottles & jars	11,090	-	5,457	49.2%	229	5,228	5,167	4,947	44.6%	290	5,633	5,923
HDPE bottles (BB)	73	-	19	26.1%	1	18	18	18	24.1%	1	54	55
HDPE tubs	4,459	-	1,527	34.2%	56	1,471	1,454	1,405	31.5%	73	2,933	3,005
Other deposit plastic bottles	146	-	38	26.1%	1	37	4	-	0.0%	34	108	142
Other other bottles	834	-	375	45.0%	14	361	38	-	0.0%	338	458	796
Other accepted tubs & pails	414	-	141	34.2%	5	136	19	5	1.3%	122	272	394
Other bulky rigids	27,871	-	10,195	36.6%	1,405	8,790	10,195	10,195	36.6%	-	17,676	17,676
Other other rigid plastic containers	10,512	-	1,061	10.1%	86	975	101	-	0.0%	959	9,452	10,411
PP bottles & jars	442	-	209	47.3%	9	200	194	179	40.6%	15	233	248
PP bottles (BB)	73	-	19	26.1%	1	18	18	16	22.4%	1	54	55
PP rigid packaging and products	11,523	-	4,412	38.3%	267	4,145	4,207	4,070	35.3%	205	7,111	7,316
PP rigid products	11,551	-	4,225	36.6%	582	3,643	4,225	4,225	36.6%	-	7,326	7,326
PP tubs and small rigids	5,747	-	2,196	38.2%	72	2,124	2,091	2,021	35.2%	105	3,551	3,657
Solid polystyrene	2,406	-	922	38.3%	56	866	853	716	29.8%	68	1,485	1,553
Polystyrene foam	5,311	-	331	6.2%	124	207	148	124	2.3%	183	4,980	5,163
PE film	57,781	-	6,101	10.6%	4,208	1,893	4,373	4,208	7.3%	1,728	51,680	53,408
Other recoverable film	809	-	-	0.0%	-	-	-	-	0.0%	-	809	809
Metals	126,841	-	67,302	53.1%	50,503	16,798	67,130	66,937	52.8%	171	59,539	59,711
Deposit and accepted aluminum cans	4,127	-	625	15.1%	102	523	620	600	14.5%	5	3,503	3,508
Deposit and accepted steel cans	25,842	-	10,375	40.1%	1,166	9,209	10,283	10,197	39.5%	92	15,467	15,559
Accepted other aluminum	5,397	-	1,001	18.5%	676	325	994	970	18.0%	7	4,396	4,402
Accepted other steel	44,141	-	30,848	69.9%	24,510	6,338	30,785	30,726	69.6%	63	13,293	13,357
Scrap metals	47,333	-	24,453	51.7%	24,050	403	24,449	24,445	51.6%	4	22,880	22,884
Glass	94,109	-	68,865	73.2%	66,000	2,865	66,054	66,000	70.1%	2,811	25,244	28,055
Deposit glass bottles	23,584	-	12,918	54.8%	12,154	764	12,168	12,154	51.5%	750	10,666	11,416
Container glass	70,525	-	55,946	79.3%	53,846	2,100	53,885	53,846	76.4%	2,061	14,578	16,639
Other	2,646,776	452,888	30,251		173	30,078	2,552	-		27,699	2,163,637	2,191,337
Compostables	1,287,783	452,888	7,102		-	7,102	459	-		6,643	827,793	834,436
Other recoverables	256,809	-	-		-	-	-	-		-	256,809	256,809
Other materials	1,102,184	-	23,149		173	22,976	2,093	-		21,056	1,079,035	1,100,091
Total in-scope materials	3,643,237	452,888	630,952	17.3%	243,226	387,726	582,613	575,742	15.8%	48,339	2,559,398	2,607,737
Total in-scope recoverables	996,461	-	600,701	60.3%	243,052	357,648	580,061	575,742	57.8%	20,640	395,761	416,400
Total MRF inbound contamination tons						36,355						
Total MRF inbound contamination rate						9.4%						

Figures in this report represent the consultant team's best modeling estimates based on available data.
Cascadia Consulting Group, Inc. | Circular Matters, LLC | Bell & Associates

Material	Engagement + MRFs + Expanded + Statewide List + Expanded Collection (S9/D-mid)											
	REVISED - Statewide 2025: On-Route Residential & Commercial, Self-Haul (excluding Bottle Bill)											
	Generation	Collection for Recycling and Composting					Bales for Marketing			Disposal (Landfill and Other)		
	Generated (tons)	Collected for Organics (tons)	Collected for Recycling (tons)	Recycling Collection Rate (inbound)	Recycling Collected Separately: glass and depot (tons)	Recycling Collected Commingled or Dual-stream (tons)	Bales: target materials and contamination (tons)	Bales: only target materials (tons)	Recycling Capture Rate (baled for marketing)	Disposed as Residue: originally collected for recycling (tons)	Directly disposed: originally collected as garbage (tons)	Total Disposed (tons)
Paper	594,947	-	427,022	71.8%	117,902	309,120	413,870	411,221	69.1%	13,152	167,924	181,077
Corrugated cardboard	319,486	-	244,688	76.6%	112,671	132,017	240,965	240,821	75.4%	3,724	74,798	78,522
Newspaper	51,635	-	45,395	87.9%	1,127	44,268	44,154	44,086	85.4%	1,241	6,240	7,481
Printing and writing paper	110,233	-	68,123	61.8%	2,630	65,493	62,863	61,842	56.1%	5,260	42,110	47,370
Paperboard	65,019	-	43,449	66.8%	952	42,498	41,407	41,354	63.6%	2,042	21,570	23,612
Other paper recyclable with newspaper	8,983	-	5,342	59.5%	118	5,223	4,922	4,840	53.9%	419	3,641	4,061
Other paper not recyclable with newspaper	9,449	-	6,734	71.3%	150	6,584	6,594	6,185	65.5%	140	2,716	2,856
Gable tops & aseptics	4,564	-	2,109	46.2%	42	2,067	2,016	1,835	40.2%	93	2,454	2,548
Polyc coated containers & cups	25,577	-	11,183	43.7%	212	10,971	10,950	10,257	40.1%	232	14,395	14,627
Plastic	180,565	-	51,248	28.4%	7,105	44,143	45,993	44,321	24.5%	5,255	129,316	134,571
PET bottles (BB)	7,582	-	2,242	29.6%	68	2,175	2,069	1,965	25.9%	173	5,340	5,513
Other PET bottles & jars	13,355	-	6,098	45.7%	216	5,882	5,626	5,308	39.7%	472	7,257	7,729
PET tubs	714	-	265	37.2%	8	257	245	227	31.9%	21	448	469
PET thermoforms	7,872	-	3,479	44.2%	4	3,475	3,181	2,969	37.7%	299	4,392	4,691
HDPE bottles & jars	11,090	-	5,695	51.4%	206	5,489	5,395	5,168	46.6%	300	5,395	5,695
HDPE bottles (BB)	73	-	22	29.5%	1	21	21	20	27.2%	1	51	52
HDPE tubs	4,459	-	1,659	37.2%	50	1,608	1,580	1,528	34.3%	78	2,801	2,879
Other deposit plastic bottles	146	-	43	29.5%	1	42	4	-	0.0%	39	103	142
Other other bottles	834	-	400	48.0%	13	387	40	-	0.0%	360	434	794
Other accepted tubs & pails	414	-	154	37.2%	5	149	20	5	1.1%	134	260	394
Other bulky rigids	27,871	-	10,822	38.8%	1,284	9,538	10,822	10,822	38.8%	-	17,049	17,049
Other other rigid plastic containers	10,512	-	1,072	10.2%	78	994	102	-	0.0%	969	9,441	10,410
PP bottles & jars	442	-	219	49.5%	8	211	203	188	42.5%	16	223	239
PP bottles (BB)	73	-	22	29.5%	1	21	20	19	25.4%	2	51	53
PP rigid packaging and products	11,523	-	4,723	41.0%	244	4,480	4,506	4,361	37.8%	217	6,799	7,017
PP rigid products	11,551	-	4,485	38.8%	532	3,953	4,485	4,485	38.8%	-	7,066	7,066
PP tubs and small rigids	5,747	-	2,408	41.9%	65	2,343	2,294	2,217	38.6%	114	3,339	3,454
Solid polystyrene	2,406	-	987	41.0%	51	936	914	769	31.9%	73	1,420	1,492
Polystyrene foam	5,311	-	355	6.7%	114	241	141	114	2.1%	214	4,956	5,170
PE film	57,781	-	6,100	10.6%	4,158	1,942	4,327	4,158	7.2%	1,773	51,682	53,455
Other recoverable film	809	-	-	0.0%	-	-	-	-	0.0%	-	809	809
Metals	126,841	-	67,541	53.2%	49,259	18,282	67,354	67,144	52.9%	186	59,300	59,487
Deposit and accepted aluminum cans	4,127	-	685	16.6%	98	587	680	657	15.9%	6	3,442	3,448
Deposit and accepted steel cans	25,842	-	11,008	42.6%	1,146	9,863	10,910	10,818	41.9%	99	14,834	14,933
Accepted other aluminum	5,397	-	1,017	18.8%	671	346	1,010	984	18.2%	7	4,380	4,387
Accepted other steel	44,141	-	30,166	68.3%	23,294	6,872	30,097	30,033	68.0%	69	13,975	14,044
Scrap metals	47,333	-	24,664	52.1%	24,050	614	24,658	24,652	52.1%	6	22,670	22,676
Glass	94,109	-	69,966	74.3%	67,057	2,909	67,111	67,057	71.3%	2,855	24,142	26,997
Deposit glass bottles	23,584	-	13,430	56.9%	12,649	781	12,664	12,649	53.6%	766	10,154	10,920
Container glass	70,525	-	56,536	80.2%	54,408	2,128	54,448	54,408	77.1%	2,089	13,988	16,077
Other	2,646,776	452,888	33,617		181	33,437	2,827	-		30,790	2,160,271	2,191,062
Compostables	1,287,783	452,888	7,917		-	7,917	523	-		7,393	826,979	834,372
Other recoverables	256,809	-	-		-	-	-	-		-	256,809	256,809
Other materials	1,102,184	-	25,701		181	25,520	2,304	-		23,397	1,076,483	1,099,880
Total in-scope materials	3,643,237	452,888	649,395	17.8%	241,504	407,891	597,156	589,743	16.2%	52,238	2,540,955	2,593,194
Total in-scope recoverables	996,461	-	615,778	61.8%	241,324	374,454	594,329	589,743	59.2%	21,448	380,684	402,132
Total MRF inbound contamination tons						40,074						
Total MRF inbound contamination rate						9.8%						

Figures in this report represent the consultant team's best modeling estimates based on available data.
Cascadia Consulting Group, Inc. | Circular Matters, LLC | Bell & Associates

Material	Engagement + MRFs + Expanded + Statewide List + Expanded Collection (S10/D-hi)											
	REVISED - Statewide 2025: On-Route Residential & Commercial, Self-Haul (excluding Bottle Bill)											
	Generation	Collection for Recycling and Composting					Bales for Marketing			Disposal (Landfill and Other)		
	Generated (tons)	Collected for Organics (tons)	Collected for Recycling (tons)	Recycling Collection Rate (inbound)	Recycling Collected Separately: glass and depot (tons)	Recycling Collected Commingled or Dual-stream (tons)	Bales: target materials and contamination (tons)	Bales: only target materials (tons)	Recycling Capture Rate (baled for marketing)	Disposed as Residue: originally collected for recycling (tons)	Directly disposed: originally collected as garbage (tons)	Total Disposed (tons)
Paper	594,947	-	434,921	73.1%	116,699	318,222	421,336	418,544	70.3%	13,585	160,026	173,611
Corrugated cardboard	319,486	-	246,884	77.3%	111,628	135,255	243,068	242,920	76.0%	3,815	72,603	76,418
Newspaper	51,635	-	45,788	88.7%	1,086	44,702	44,535	44,466	86.1%	1,253	5,847	7,100
Printing and writing paper	110,233	-	70,821	64.2%	2,577	68,244	65,341	64,270	58.3%	5,480	39,412	44,892
Paperboard	65,019	-	44,734	68.8%	916	43,818	42,629	42,573	65.5%	2,106	20,285	22,391
Other paper recyclable with newspaper	8,983	-	5,621	62.6%	111	5,511	5,179	5,092	56.7%	442	3,361	3,804
Other paper not recyclable with newspaper	9,449	-	6,929	73.3%	144	6,785	6,785	6,362	67.3%	144	2,520	2,665
Gable tops & aseptics	4,564	-	2,188	48.0%	41	2,148	2,093	1,905	41.7%	96	2,375	2,471
Polyc coated containers & cups	25,577	-	11,956	46.7%	196	11,760	11,707	10,955	42.8%	249	13,622	13,870
Plastic	180,565	-	53,491	29.6%	6,769	46,723	48,028	46,287	25.6%	5,463	127,074	132,537
PET bottles (BB)	7,582	-	2,406	31.7%	60	2,346	2,223	2,113	27.9%	183	5,176	5,359
Other PET bottles & jars	13,355	-	6,366	47.7%	192	6,174	5,877	5,548	41.5%	489	6,989	7,478
PET tubs	714	-	279	39.1%	7	272	258	239	33.6%	21	435	456
PET thermoforms	7,872	-	3,686	46.8%	4	3,682	3,375	3,152	40.0%	311	4,186	4,497
HDPE bottles & jars	11,090	-	5,917	53.3%	184	5,733	5,608	5,374	48.5%	309	5,174	5,483
HDPE bottles (BB)	73	-	23	31.7%	1	23	22	21	29.2%	1	50	51
HDPE tubs	4,459	-	1,746	39.2%	45	1,701	1,665	1,610	36.1%	82	2,713	2,795
Other deposit plastic bottles	146	-	46	31.7%	1	45	5	-	0.0%	42	100	141
Other other bottles	834	-	419	50.3%	11	408	42	-	0.0%	377	415	792
Other accepted tubs & pails	414	-	162	39.1%	4	157	20	4	1.0%	141	252	393
Other bulky rigids	27,871	-	11,339	40.7%	1,163	10,175	11,339	11,339	40.7%	-	16,533	16,533
Other other rigid plastic containers	10,512	-	1,096	10.4%	69	1,027	105	-	0.0%	991	9,416	10,407
PP bottles & jars	442	-	228	51.5%	7	220	211	195	44.2%	16	214	231
PP bottles (BB)	73	-	23	31.7%	1	23	21	20	27.2%	2	50	52
PP rigid packaging and products	11,523	-	4,989	43.3%	221	4,768	4,761	4,609	40.0%	228	6,534	6,761
PP rigid products	11,551	-	4,699	40.7%	482	4,217	4,699	4,699	40.7%	-	6,852	6,852
PP tubs and small rigids	5,747	-	2,537	44.1%	58	2,479	2,417	2,338	40.7%	119	3,211	3,330
Solid polystyrene	2,406	-	1,042	43.3%	46	996	966	813	33.8%	76	1,364	1,440
Polystyrene foam	5,311	-	362	6.8%	103	259	132	103	1.9%	230	4,949	5,179
PE film	57,781	-	6,126	10.6%	4,109	2,018	4,284	4,109	7.1%	1,843	51,655	53,498
Other recoverable film	809	-	-	0.0%	-	-	-	-	0.0%	-	809	809
Metals	126,841	-	67,205	53.0%	48,014	19,190	67,009	66,788	52.7%	196	59,636	59,832
Deposit and accepted aluminum cans	4,127	-	726	17.6%	94	631	719	695	16.8%	6	3,402	3,408
Deposit and accepted steel cans	25,842	-	11,519	44.6%	1,125	10,394	11,415	11,318	43.8%	104	14,323	14,427
Accepted other aluminum	5,397	-	1,031	19.1%	667	365	1,024	996	18.5%	7	4,365	4,373
Accepted other steel	44,141	-	29,144	66.0%	22,078	7,066	29,073	29,007	65.7%	71	14,997	15,068
Scrap metals	47,333	-	24,785	52.4%	24,050	734	24,777	24,770	52.3%	7	22,549	22,556
Glass	94,109	-	71,721	76.2%	68,768	2,952	68,823	68,768	73.1%	2,897	22,388	25,285
Deposit glass bottles	23,584	-	13,945	59.1%	13,144	801	13,159	13,144	55.7%	786	9,639	10,425
Container glass	70,525	-	57,776	81.9%	55,625	2,152	55,665	55,625	78.9%	2,111	12,749	14,860
Other	2,646,776	452,888	36,221		188	36,033	3,034	-		33,187	2,157,668	2,190,855
Compostables	1,287,783	452,888	8,418		-	8,418	558	-		7,859	826,478	834,337
Other recoverables	256,809	-	-		-	-	-	-		-	256,809	256,809
Other materials	1,102,184	-	27,803		188	27,615	2,476	-		25,327	1,074,381	1,099,709
Total in-scope materials	3,643,237	452,888	663,559	18.2%	240,438	423,121	608,230	600,387	16.5%	55,328	2,526,791	2,582,119
Total in-scope recoverables	996,461	-	627,338	63.0%	240,250	387,088	605,196	600,387	60.3%	22,141	369,123	391,265
Total MRF inbound contamination tons						42,964						
Total MRF inbound contamination rate						10.2%						

Figures in this report represent the consultant team's best modeling estimates based on available data.
Cascadia Consulting Group, Inc. | Circular Matters, LLC | Bell & Associates

Additional Alternative Scenario Analysis - Collection Tonnage Modeling Results

August 7, 2020

August 7, 2020	REVISED - Statewide 2025											
	Available for on-route and depot collection (excludes Other Commercial and Bottle Bill collection)	Original Baseline: Pre-Disruption List (\$0)	Revised Baseline: Post-Disruption List (\$5)	+ Customer Engagement (\$6/A-)	Engagement + Improved MRFs (\$1/A)	Engagement + MRFs + Expanded Lists (\$2/A+)	Engagement + MRFs + Expanded + Statewide List (\$7/A++)	+Container Recovery Facility (\$3/B)	Dual-Stream Collection (\$4/C)	Engagement + MRFs + Expanded + Statewide List + Expanded Collection (\$8/D-low)	Engagement + MRFs + Expanded + Statewide List + Expanded Collection (\$9/D-mid)	Engagement + MRFs + Expanded + Statewide List + Expanded Collection (\$10/D-hi)
Material	Generated (tons)	Collected in Recycling (tons)										
Paper	594,947	386,221	373,594	373,594	373,594	406,912	408,454	406,912	408,121	416,038	427,022	434,921
Recycling collection rate		65%	63%	63%	63%	68%	69%	68%	69%	70%	72%	73%
Change in tons from revised baseline		3.4%	0.0%	0.0%	0.0%	8.9%	9.3%	8.9%	9.2%	11.4%	14.3%	16.4%
Plastic	180,565	27,247	21,909	21,084	21,084	45,433	46,525	45,433	45,756	48,496	51,248	53,491
Recycling collection rate		15%	12%	12%	12%	25%	26%	25%	25%	27%	28%	30%
Change in tons from revised baseline		24.4%	0.0%	-3.8%	-3.8%	107.4%	112.4%	107.4%	108.8%	121.4%	133.9%	144.1%
Metals	126,841	65,193	63,920	63,716	63,716	67,850	67,850	67,850	67,850	67,302	67,541	67,205
Recycling collection rate		51%	50%	50%	50%	53%	53%	53%	53%	53%	53%	53%
Change in tons from revised baseline		2.0%	0.0%	-0.3%	-0.3%	6.1%	6.1%	6.1%	6.1%	5.3%	5.7%	5.1%
Glass	94,109	62,634	62,634	61,221	61,221	67,402	67,402	67,402	67,402	68,865	69,966	71,721
Recycling collection rate		67%	67%	65%	65%	72%	72%	72%	72%	73%	74%	76%
Change in tons from revised baseline		0.0%	0.0%	-2.3%	-2.3%	7.6%	7.6%	7.6%	7.6%	9.9%	11.7%	14.5%
Other	2,646,776	34,940	32,637	21,470	21,470	28,373	28,373	28,373	28,373	30,251	33,617	36,221
Recycling collection rate		1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%
Change in tons from revised baseline		7.1%	0.0%	-34.2%	-34.2%	-13.1%	-13.1%	-13.1%	-13.1%	-7.3%	3.0%	11.0%
Overall Tonnages	3,643,237	576,235	554,695	541,085	541,085	615,969	618,603	615,969	617,501	630,952	649,395	663,559
Change in tons from revised baseline		3.9%	0.0%	-2.5%	-2.5%	11.0%	11.5%	11.0%	11.3%	13.7%	17.1%	19.6%
Total in-scope recoverables	996,461	541,295	522,058	519,615	519,615	587,597	590,230	587,597	589,128	600,701	615,778	627,338
Recycling collection rate		54%	52%	52%	52%	59%	59%	59%	59%	60%	62%	63%
Change in tons from revised baseline		3.7%	0.0%	-0.5%	-0.5%	12.6%	13.1%	12.6%	12.8%	15.1%	18.0%	20.2%
Total MRF inbound contamination tons		49,664	87,231	73,621	73,621	34,325	34,348	34,325	34,325	36,420	40,137	43,023
Change in tons from revised baseline		-43.1%	0.0%	-15.6%	-15.6%	-60.7%	-60.6%	-60.7%	-60.7%	-58.2%	-54.0%	-50.7%
Total MRF inbound contamination rate		14.3%	17.5%	13.9%	13.9%	9.3%	9.2%	9.3%	9.2%	9.4%	9.8%	10.2%

* Note: the MRF inbound contamination rate is calculated based on what materials are listed as not accepted. Tons increase in the revised baseline because materials previously accepted but dropped from the list are considered contamination.

Additional Alternative Scenario Analysis - Cost Modeling Results

REVISED - Statewide 2025 Tables

August 7, 2020

Original Baseline: Pre-Disruption List (S0)						
REVISED - Statewide 2025						
	SF Res. (on-route)	MF Res. (on-route)	Commercial (on-route)	Self-haul (excluding Bottle Bill)	Total	
Recycling System Costs						
Customer Engagement Costs	\$ 2,657,886	\$ 1,060,354	\$ 2,367,922	\$ -	\$ 6,086,162	
Collection Engagement Labor and Expenses	\$ 1,113,886	\$ 19,833	\$ 76,537	NA	\$ 1,210,256	
Local Government Engagement Labor and Expenses	\$ 1,544,000	\$ 1,040,521	\$ 2,291,385	NA	\$ 4,875,906	
Multifamily Property Improvements	\$ -	\$ -	\$ -	\$ -	\$ -	
Service level adjustments (included above)	NA	NA	NA	NA	\$ -	
Signage, labels, and container color (included above)	NA	NA	NA	NA	\$ -	
Collection area adjustments	NA	NA	NA	NA	\$ -	
Bulky collection	NA	NA	NA	NA	\$ -	
Collection	\$ 95,386,631	\$ 17,222,768	\$ 70,027,588	\$ 13,687,441	\$ 196,324,428	
Direct Collection Costs	\$ 67,897,979	\$ 11,920,748	\$ 48,248,719	\$ 12,750,521	\$ 140,817,967	
Collection Capital - Containers	\$ 2,317,462	\$ 210,715	\$ 898,452	\$ 738,235	\$ 4,164,865	
Collection Capital - Trucks	\$ 9,664,982	\$ 1,070,588	\$ 4,697,564	NA	\$ 15,433,133	
Collection Labor	\$ 37,451,369	\$ 6,903,202	\$ 27,765,814	\$ 9,716,869	\$ 81,837,254	
Collection Operations	\$ 18,464,166	\$ 3,736,243	\$ 14,886,889	\$ 2,295,416	\$ 39,382,715	
Indirect Collection Costs	\$ 27,488,653	\$ 5,302,020	\$ 21,778,869	\$ 936,920	\$ 55,506,462	
Collection Administrative	\$ 15,506,657	\$ 3,198,358	\$ 13,264,390	\$ 936,920	\$ 32,906,324	
Collection Margin and Franchise Fee	\$ 11,981,996	\$ 2,103,661	\$ 8,514,480	NA	\$ 22,600,137	
Cost Savings from Reduced Garbage Disposal	\$ (25,588,011)	\$ (2,903,308)	\$ (24,550,691)	\$ (5,968,428)	\$ (59,010,438)	
Avoided Disposal Tip Fees	\$ (25,588,011)	\$ (2,903,308)	\$ (24,550,691)	\$ (5,968,428)	\$ (59,010,438)	
Initial Transfer Transport	\$ 2,499,930	\$ 166,486	\$ 4,149,284	\$ 4,493,339	\$ 11,309,039	
Consolidation and Transfer to MRF	\$ 2,499,930	\$ 166,486	\$ 4,149,284	\$ 4,493,339	\$ 11,309,039	
Sortation	\$ 36,268,072	\$ 3,138,221	\$ 18,619,407	\$ 1,243,659	\$ 59,269,359	
Sortation Labor	\$ 19,165,137	\$ 1,658,330	\$ 9,839,053	\$ 657,187	\$ 31,319,707	
Sortation Capital	\$ 1,191,692	\$ 103,115	\$ 611,794	\$ 40,864	\$ 1,947,466	
Sortation Facility	\$ 5,341,317	\$ 462,176	\$ 2,742,141	\$ 183,158	\$ 8,728,792	
Glass and Unsorted Container Transfer	\$ 270,941	\$ 23,444	\$ 139,096	\$ 9,291	\$ 442,772	
Sortation Residual Disposal	\$ 4,043,920	\$ 349,914	\$ 2,076,080	\$ 138,669	\$ 6,608,583	
Sortation Administrative & Marketing	\$ 3,588,610	\$ 310,517	\$ 1,842,331	\$ 123,056	\$ 5,864,513	
Sortation Margin	\$ 2,666,454	\$ 230,724	\$ 1,368,912	\$ 91,435	\$ 4,357,525	
Overall System Costs						
Total Costs	\$ 111,224,508	\$ 18,684,521	\$ 70,613,510	\$ 13,456,011	\$ 213,978,550	
Tons Collected for Recycling	243,032	23,376	231,207	78,621	576,235	
Tons Collected Commingled	208,898	18,076	107,245	7,163	341,382	
Tons Collected Source-Separated	34,133	5,300	123,962	71,458	234,853	
Tons Marketed	218,731	21,038	208,088	70,759	518,617	
Tons Marketed (excluding bale contamination)	218,731	21,038	208,088	70,759	518,617	
Total Cost per Ton Collected	\$ 458	\$ 799	\$ 305	\$ 171	\$ 371	
Total Cost per Ton Marketed	\$ 508	\$ 888	\$ 339	\$ 190	\$ 413	
Customers	995,572	17,726	68,407	NA	NA	
Annual pounds per customer	488	2,637	6,760	NA	NA	
Commodity Revenues						
Commodity Revenues						
Commodity Sales (lower range)	\$ 19,165,137	\$ 1,658,330	\$ 9,839,053	\$ 657,187	\$ 11,935,690	
Commodity Sales (mid-point)	\$ 1,191,692	\$ 103,115	\$ 611,794	\$ 40,864	\$ 44,226,893	
Commodity Sales (upper range)	\$ 5,341,317	\$ 462,176	\$ 2,742,141	\$ 183,158	\$ 76,518,096	
Full-Time Equivalent (FTE) Employment						
	SF Res. (on-route)	MF Res. (on-route)	Commercial (on-route)	Self-haul (excluding Bottle Bill)	Total	
Recycling Customer Engagement	20	13	28	-	61	
Local Government Engagement	20	13	28	-	61	
New Engagement (costs listed in collection)	-	-	-	-	-	
Recycling Collection	250	54	216	242	762	
Route Drivers and Operations	187	48	194	242	672	
Management and Administrative	63	5	22	NA	90	
Sortation	330	29	170	11	540	
Sorting Labor	248	21	128	9	406	
Equipment Operators, Supervisors, Maintenance	54	5	28	2	89	
Admininstrative and Marketing	28	2	14	1	45	
Overall Recycling Svsstem FTEs	600	96	414	253	1,362	

Figures in this report represent the consultant team's best modeling estimates based on available data.

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Revised Baseline: Post-Disruption List (\$5)						
REVISED - Statewide 2025						
	SF Res. (on-route)	MF Res. (on-route)	Commercial (on-route)	Self-haul (excluding Bottle Bill)	Total	
Recycling System Costs						
Customer Engagement Costs	\$ 2,657,886	\$ 1,060,354	\$ 2,367,922	\$ -	\$ 6,086,162	
Collection Engagement Labor and Expenses	\$ 1,113,886	\$ 19,833	\$ 76,537	NA	\$ 1,210,256	
Local Government Engagement Labor and Expenses	\$ 1,544,000	\$ 1,040,521	\$ 2,291,385	NA	\$ 4,875,906	
Multifamily Property Improvements	\$ -	\$ -	\$ -	\$ -	\$ -	
Service level adjustments (included above)	NA	NA	NA	NA	\$ -	
Signage, labels, and container color (included above)	NA	NA	NA	NA	\$ -	
Collection area adjustments	NA	NA	NA	NA	\$ -	
Bulky collection	NA	NA	NA	NA	\$ -	
Collection	\$ 95,386,631	\$ 17,222,768	\$ 70,027,588	\$ 13,046,632	\$ 195,683,620	
Direct Collection Costs	\$ 67,897,979	\$ 11,920,748	\$ 48,248,719	\$ 12,147,467	\$ 140,214,913	
Collection Capital - Containers	\$ 2,317,462	\$ 210,715	\$ 898,452	\$ 703,719	\$ 4,130,348	
Collection Capital - Trucks	\$ 9,664,982	\$ 1,070,588	\$ 4,697,564	NA	\$ 15,433,133	
Collection Labor	\$ 37,451,369	\$ 6,903,202	\$ 27,765,814	\$ 9,252,120	\$ 81,372,505	
Collection Operations	\$ 18,464,166	\$ 3,736,243	\$ 14,886,889	\$ 2,191,629	\$ 39,278,927	
Indirect Collection Costs	\$ 27,488,653	\$ 5,302,020	\$ 21,778,869	\$ 899,165	\$ 55,468,707	
Collection Administrative	\$ 15,506,657	\$ 3,198,358	\$ 13,264,390	\$ 899,165	\$ 32,868,569	
Collection Margin and Franchise Fee	\$ 11,981,996	\$ 2,103,661	\$ 8,514,480	NA	\$ 22,600,137	
Cost Savings from Reduced Garbage Disposal	\$ (24,286,277)	\$ (2,861,664)	\$ (24,314,753)	\$ (5,773,395)	\$ (57,236,089)	
Avoided Disposal Tip Fees	\$ (24,286,277)	\$ (2,861,664)	\$ (24,314,753)	\$ (5,773,395)	\$ (57,236,089)	
Initial Transfer Transport	\$ 2,206,413	\$ 163,711	\$ 4,123,845	\$ 4,323,792	\$ 10,817,762	
Consolidation and Transfer to MRF	\$ 2,206,413	\$ 163,711	\$ 4,123,845	\$ 4,323,792	\$ 10,817,762	
Sortation	\$ 33,868,060	\$ 3,104,874	\$ 18,390,142	\$ 1,054,032	\$ 56,417,109	
Sortation Labor	\$ 17,887,635	\$ 1,639,859	\$ 9,712,873	\$ 556,694	\$ 29,797,060	
Sortation Capital	\$ 1,169,094	\$ 107,177	\$ 634,810	\$ 36,384	\$ 1,947,466	
Sortation Facility	\$ 4,932,867	\$ 452,223	\$ 2,678,515	\$ 153,519	\$ 8,217,125	
Glass and Unsorted Container Transfer	\$ 265,803	\$ 24,368	\$ 144,329	\$ 8,272	\$ 442,772	
Sortation Residual Disposal	\$ 3,603,048	\$ 330,312	\$ 1,956,432	\$ 112,133	\$ 6,001,925	
Sortation Administrative & Marketing	\$ 3,520,558	\$ 322,749	\$ 1,911,641	\$ 109,566	\$ 5,864,513	
Sortation Margin	\$ 2,489,056	\$ 228,186	\$ 1,351,542	\$ 77,464	\$ 4,146,247	
Overall System Costs						
Total Costs	\$ 109,832,713	\$ 18,690,043	\$ 70,594,745	\$ 12,651,062	\$ 211,768,564	
Tons Collected for Recycling						
Tons Collected Commingled	227,057	22,987	228,717	75,933	554,695	
Tons Collected Source-Separated	192,924	17,686	104,756	6,004	321,370	
Tons Collected	34,133	5,300	123,961	69,929	233,324	
Tons Marketed	205,774	20,832	207,278	68,816	502,700	
Tons Marketed (excluding bale contamination)	205,774	20,832	207,278	68,816	502,700	
Total Cost per Ton Collected	\$ 484	\$ 813	\$ 309	\$ 167	\$ 382	
Total Cost per Ton Marketed	\$ 534	\$ 897	\$ 341	\$ 184	\$ 421	
Customers	995,572	17,726	68,407	NA	NA	
Annual pounds per customer	456	2,594	6,687	NA	NA	
Commodity Revenues						
Commodity Revenues						
Commodity Sales (lower range)	\$ 17,887,635	\$ 1,639,859	\$ 9,712,873	\$ 556,694	\$ 11,979,648	
Commodity Sales (mid-point)	\$ 1,169,094	\$ 107,177	\$ 634,810	\$ 36,384	\$ 44,399,610	
Commodity Sales (upper range)	\$ 4,932,867	\$ 452,223	\$ 2,678,515	\$ 153,519	\$ 76,819,571	
Full-Time Equivalent (FTE) Employment						
	SF Res. (on-route)	MF Res. (on-route)	Commercial (on-route)	Self-haul (excluding Bottle Bill)	Total	
Recycling Customer Engagement	20	13	28	-	61	
Local Government Engagement	20	13	28	-	61	
New Engagement (costs listed in collection)	-	-	-	-	-	
Recycling Collection	250	54	216	231	750	
Route Drivers and Operations	187	48	194	231	660	
Management and Administrative	63	5	22	NA	90	
Sortation	310	28	168	10	516	
Sorting Labor	229	21	125	7	382	
Equipment Operators, Supervisors, Maintenance	54	5	29	2	89	
Admininstrative and Marketing	27	2	15	1	45	
Overall Recycling System FTEs	580	95	412	240	1,328	

Figures in this report represent the consultant team's best modeling estimates based on available data.

+ Customer Engagement (S6/A-)						
REVISED - Statewide 2025						
	SF Res. (on-route)	MF Res. (on-route)	Commercial (on-route)	Self-haul (excluding Bottle Bill)	Total	
Recycling System Costs						
Customer Engagement Costs	\$ 5,442,601	\$ 6,851,506	\$ 24,716,698	\$ -	\$	37,010,805
Collection Engagement Labor and Expenses	\$ 3,898,601	\$ 5,810,985	\$ 22,425,313	NA	\$	32,134,898
Local Government Engagement Labor and Expenses	\$ 1,544,000	\$ 1,040,521	\$ 2,291,385	NA	\$	4,875,906
Multifamily Property Improvements	\$ -	\$ -	\$ -	\$ -	\$	-
Service level adjustments (included above)	NA	NA	NA	NA	\$	-
Signage, labels, and container color (included above)	NA	NA	NA	NA	\$	-
Collection area adjustments	NA	NA	NA	NA	\$	-
Bulky collection	NA	NA	NA	NA	\$	-
Collection	\$ 95,386,631	\$ 17,222,768	\$ 70,027,588	\$ 15,268,226	\$	197,905,213
Direct Collection Costs	\$ 67,897,979	\$ 11,920,748	\$ 48,248,719	\$ 14,376,203	\$	142,443,649
Collection Capital - Containers	\$ 2,317,462	\$ 210,715	\$ 898,452	\$ 699,503	\$	4,126,132
Collection Capital - Trucks	\$ 9,664,982	\$ 1,070,588	\$ 4,697,564	NA	\$	15,433,133
Collection Labor	\$ 37,451,369	\$ 6,903,202	\$ 27,765,814	\$ 11,499,758	\$	83,620,142
Collection Operations	\$ 18,464,166	\$ 3,736,243	\$ 14,886,889	\$ 2,176,942	\$	39,264,241
Indirect Collection Costs	\$ 27,488,653	\$ 5,302,020	\$ 21,778,869	\$ 892,023	\$	55,461,564
Collection Administrative	\$ 15,506,657	\$ 3,198,358	\$ 13,264,390	\$ 892,023	\$	32,861,427
Collection Margin and Franchise Fee	\$ 11,981,996	\$ 2,103,661	\$ 8,514,480	NA	\$	22,600,137
Cost Savings from Reduced Garbage Disposal	\$ (23,139,497)	\$ (2,795,432)	\$ (24,114,600)	\$ (5,746,152)	\$	(55,795,682)
Avoided Disposal Tip Fees	\$ (23,139,497)	\$ (2,795,432)	\$ (24,114,600)	\$ (5,746,152)	\$	(55,795,682)
Initial Transfer Transport	\$ 2,102,841	\$ 161,756	\$ 4,116,373	\$ 4,316,719	\$	10,697,689
Consolidation and Transfer to MRF	\$ 2,102,841	\$ 161,756	\$ 4,116,373	\$ 4,316,719	\$	10,697,689
Sortation	\$ 31,407,754	\$ 2,961,069	\$ 17,782,299	\$ 973,803	\$	53,124,925
Sortation Labor	\$ 16,945,276	\$ 1,597,571	\$ 9,593,999	\$ 525,392	\$	28,662,238
Sortation Capital	\$ 1,151,353	\$ 108,548	\$ 651,868	\$ 35,698	\$	1,947,466
Sortation Facility	\$ 4,652,279	\$ 438,609	\$ 2,634,006	\$ 144,245	\$	7,869,139
Glass and Unsorted Container Transfer	\$ 261,769	\$ 24,679	\$ 148,207	\$ 8,116	\$	442,772
Sortation Residual Disposal	\$ 2,622,834	\$ 247,276	\$ 1,484,984	\$ 81,321	\$	4,436,416
Sortation Administrative & Marketing	\$ 3,467,133	\$ 326,875	\$ 1,963,006	\$ 107,499	\$	5,864,513
Sortation Margin	\$ 2,307,110	\$ 217,510	\$ 1,306,229	\$ 71,532	\$	3,902,382
Overall System Costs						
Total Costs	\$ 111,200,329	\$ 24,401,666	\$ 92,528,358	\$ 14,812,596	\$	242,942,950
Tons Collected for Recycling	216,083	22,454	226,977	75,571		541,085
Tons Collected Commingled	181,950	17,154	103,016	5,641		307,761
Tons Collected Source-Separated	34,133	5,300	123,961	69,929		233,324
Tons Marketed	200,682	20,854	210,799	70,184		502,518
Tons Marketed (excluding bale contamination)	200,682	20,854	210,799	70,184		502,518
Total Cost per Ton Collected	\$ 515	\$ 1,087	\$ 408	\$ 196	\$	449
Total Cost per Ton Marketed	\$ 554	\$ 1,170	\$ 439	\$ 211	\$	483
Customers	995,572	17,726	68,407	NA		NA
Annual pounds per customer	434	2,533	6,636	NA		NA
Commodity Revenues						
Commodity Revenues						
Commodity Sales (lower range)	\$ 16,945,276	\$ 1,597,571	\$ 9,593,999	\$ 525,392	\$	11,788,777
Commodity Sales (mid-point)	\$ 1,151,353	\$ 108,548	\$ 651,868	\$ 35,698	\$	43,785,417
Commodity Sales (upper range)	\$ 4,652,279	\$ 438,609	\$ 2,634,006	\$ 144,245	\$	75,782,058
Full-Time Equivalent (FTE) Employment						
	SF Res. (on-route)	MF Res. (on-route)	Commercial (on-route)	Self-haul (excluding Bottle Bill)	Total	
Recycling Customer Engagement	32	60	209	57	358	
Local Government Engagement	20	13	28	-	61	
New Engagement (costs listed in collection)	12	47	181	57	297	
Recycling Collection	250	54	216	229	749	
Route Drivers and Operations	187	48	194	229	659	
Management and Administrative	63	5	22	NA	90	
Sortation	295	28	167	9	499	
Sorting Labor	216	20	123	7	366	
Equipment Operators, Supervisors, Maintenance	52	5	29	2	88	
Admininstrative and Marketing	27	3	15	1	45	
Overall Recycling System FTEs	576	142	592	296	1,605	

Figures in this report represent the consultant team's best modeling estimates based on available data.

Engagement + Improved MRFs (S1/A)						
REVISED - Statewide 2025						
	SF Res. (on-route)	MF Res. (on-route)	Commercial (on-route)	Self-haul (excluding Bottle Bill)	Total	
Recycling System Costs						
Customer Engagement Costs	\$ 5,442,601	\$ 6,851,506	\$ 24,716,698	\$ -	\$ 37,010,805	
Collection Engagement Labor and Expenses	\$ 3,898,601	\$ 5,810,985	\$ 22,425,313	NA	\$ 32,134,898	
Local Government Engagement Labor and Expenses	\$ 1,544,000	\$ 1,040,521	\$ 2,291,385	NA	\$ 4,875,906	
Multifamily Property Improvements	\$ -	\$ -	\$ -	\$ -	\$ -	
Service level adjustments (included above)	NA	NA	NA	NA	\$ -	
Signage, labels, and container color (included above)	NA	NA	NA	NA	\$ -	
Collection area adjustments	NA	NA	NA	NA	\$ -	
Bulky collection	NA	NA	NA	NA	\$ -	
Collection	\$ 95,386,631	\$ 17,222,768	\$ 70,027,588	\$ 15,268,226	\$ 197,905,213	
Direct Collection Costs	\$ 67,897,979	\$ 11,920,748	\$ 48,248,719	\$ 14,376,203	\$ 142,443,649	
Collection Capital - Containers	\$ 2,317,462	\$ 210,715	\$ 898,452	\$ 699,503	\$ 4,126,132	
Collection Capital - Trucks	\$ 9,664,982	\$ 1,070,588	\$ 4,697,564	NA	\$ 15,433,133	
Collection Labor	\$ 37,451,369	\$ 6,903,202	\$ 27,765,814	\$ 11,499,758	\$ 83,620,142	
Collection Operations	\$ 18,464,166	\$ 3,736,243	\$ 14,886,889	\$ 2,176,942	\$ 39,264,241	
Indirect Collection Costs	\$ 27,488,653	\$ 5,302,020	\$ 21,778,869	\$ 892,023	\$ 55,461,564	
Collection Administrative	\$ 15,506,657	\$ 3,198,358	\$ 13,264,390	\$ 892,023	\$ 32,861,427	
Collection Margin and Franchise Fee	\$ 11,981,996	\$ 2,103,661	\$ 8,514,480	NA	\$ 22,600,137	
Cost Savings from Reduced Garbage Disposal	\$ (23,139,497)	\$ (2,795,432)	\$ (24,114,600)	\$ (5,746,152)	\$ (55,795,682)	
Avoided Disposal Tip Fees	\$ (23,139,497)	\$ (2,795,432)	\$ (24,114,600)	\$ (5,746,152)	\$ (55,795,682)	
Initial Transfer Transport	\$ 2,102,841	\$ 161,756	\$ 4,116,373	\$ 4,316,719	\$ 10,697,689	
Consolidation and Transfer to MRF	\$ 2,102,841	\$ 161,756	\$ 4,116,373	\$ 4,316,719	\$ 10,697,689	
Sortation	\$ 31,953,125	\$ 3,012,485	\$ 18,091,075	\$ 990,713	\$ 54,047,399	
Sortation Labor	\$ 14,557,793	\$ 1,372,484	\$ 8,242,265	\$ 451,367	\$ 24,623,909	
Sortation Capital	\$ 3,262,900	\$ 307,621	\$ 1,847,374	\$ 101,167	\$ 5,519,062	
Sortation Facility	\$ 4,652,279	\$ 438,609	\$ 2,634,006	\$ 144,245	\$ 7,869,139	
Glass and Unsorted Container Transfer	\$ 261,769	\$ 24,679	\$ 148,207	\$ 8,116	\$ 442,772	
Sortation Residual Disposal	\$ 3,403,742	\$ 320,899	\$ 1,927,115	\$ 105,534	\$ 5,757,290	
Sortation Administrative & Marketing	\$ 3,467,133	\$ 326,875	\$ 1,963,006	\$ 107,499	\$ 5,864,513	
Sortation Margin	\$ 2,347,508	\$ 221,319	\$ 1,329,101	\$ 72,785	\$ 3,970,713	
Overall System Costs						
Total Costs	\$ 111,745,701	\$ 24,453,083	\$ 92,837,134	\$ 14,829,505	\$ 243,865,423	
Tons Collected for Recycling	216,083	22,454	226,977	75,571	541,085	
Tons Collected Commingled	181,950	17,154	103,016	5,641	307,761	
Tons Collected Source-Separated	34,133	5,300	123,961	69,929	233,324	
Tons Marketed	199,927	20,775	210,006	69,920	500,629	
Tons Marketed (excluding bale contamination)	199,927	20,775	210,006	69,920	500,629	
Total Cost per Ton Collected	\$ 517	\$ 1,089	\$ 409	\$ 196	\$ 451	
Total Cost per Ton Marketed	\$ 559	\$ 1,177	\$ 442	\$ 212	\$ 487	
Customers	995,572	17,726	68,407	NA	NA	
Annual pounds per customer	434	2,533	6,636	NA	NA	
Commodity Revenues						
Commodity Revenues						
Commodity Sales (lower range)	\$ 14,557,793	\$ 1,372,484	\$ 8,242,265	\$ 451,367	\$ 14,979,902	
Commodity Sales (mid-point)	\$ 3,262,900	\$ 307,621	\$ 1,847,374	\$ 101,167	\$ 42,834,551	
Commodity Sales (upper range)	\$ 4,652,279	\$ 438,609	\$ 2,634,006	\$ 144,245	\$ 70,689,201	
Full-Time Equivalent (FTE) Employment						
	SF Res. (on-route)	MF Res. (on-route)	Commercial (on-route)	Self-haul (excluding Bottle Bill)	Total	
Recycling Customer Engagement	32	60	209	57	358	
Local Government Engagement	20	13	28	-	61	
New Engagement (costs listed in collection)	12	47	181	57	297	
Recycling Collection	250	54	216	229	749	
Route Drivers and Operations	187	48	194	229	659	
Management and Administrative	63	5	22	NA	90	
Sortation	258	24	146	8	436	
Sorting Labor	178	17	101	6	302	
Equipment Operators, Supervisors, Maintenance	53	5	30	2	89	
Admininstrative and Marketing	27	3	15	1	45	
Overall Recycling System FTEs	539	138	571	295	1,543	

Figures in this report represent the consultant team's best modeling estimates based on available data.

Engagement + MRFs + Expanded Lists (S2/A+)						
REVISED - Statewide 2025						
	SF Res. (on-route)	MF Res. (on-route)	Commercial (on-route)	Self-haul (excluding Bottle Bill)	Total	
Recycling System Costs						
Customer Engagement Costs	\$ 5,442,601	\$ 6,851,506	\$ 24,716,698	\$ -	\$ 37,010,805	
Collection Engagement Labor and Expenses	\$ 3,898,601	\$ 5,810,985	\$ 22,425,313	NA	\$ 32,134,898	
Local Government Engagement Labor and Expenses	\$ 1,544,000	\$ 1,040,521	\$ 2,291,385	NA	\$ 4,875,906	
Multifamily Property Improvements	\$ -	\$ -	\$ -	\$ -	\$ -	
Service level adjustments (included above)	NA	NA	NA	NA	\$ -	
Signage, labels, and container color (included above)	NA	NA	NA	NA	\$ -	
Collection area adjustments	NA	NA	NA	NA	\$ -	
Bulky collection	NA	NA	NA	NA	\$ -	
Collection	\$ 95,386,631	\$ 17,222,768	\$ 70,027,588	\$ 18,410,238	\$ 201,047,225	
Direct Collection Costs	\$ 67,897,979	\$ 11,920,748	\$ 48,248,719	\$ 17,411,740	\$ 145,479,186	
Collection Capital - Containers	\$ 2,317,462	\$ 210,715	\$ 898,452	\$ 1,577,999	\$ 5,004,628	
Collection Capital - Trucks	\$ 9,664,982	\$ 1,070,588	\$ 4,697,564	NA	\$ 15,433,133	
Collection Labor	\$ 37,451,369	\$ 6,903,202	\$ 27,765,814	\$ 13,409,839	\$ 85,530,224	
Collection Operations	\$ 18,464,166	\$ 3,736,243	\$ 14,886,889	\$ 2,423,902	\$ 39,511,200	
Indirect Collection Costs	\$ 27,488,653	\$ 5,302,020	\$ 21,778,869	\$ 998,498	\$ 55,568,039	
Collection Administrative	\$ 15,506,657	\$ 3,198,358	\$ 13,264,390	\$ 998,498	\$ 32,967,902	
Collection Margin and Franchise Fee	\$ 11,981,996	\$ 2,103,661	\$ 8,514,480	NA	\$ 22,600,137	
Cost Savings from Reduced Garbage Disposal	\$ (26,243,156)	\$ (3,167,812)	\$ (26,250,347)	\$ (6,385,521)	\$ (62,046,835)	
Avoided Disposal Tip Fees	\$ (26,243,156)	\$ (3,167,812)	\$ (26,250,347)	\$ (6,385,521)	\$ (62,046,835)	
Initial Transfer Transport	\$ 3,006,867	\$ 219,021	\$ 4,516,403	\$ 4,715,291	\$ 12,457,582	
Consolidation and Transfer to MRF	\$ 3,006,867	\$ 219,021	\$ 4,516,403	\$ 4,715,291	\$ 12,457,582	
Sortation	\$ 35,264,470	\$ 3,421,090	\$ 20,743,590	\$ 1,475,913	\$ 60,905,063	
Sortation Labor	\$ 15,671,912	\$ 1,520,369	\$ 9,218,676	\$ 655,912	\$ 27,066,869	
Sortation Capital	\$ 3,409,683	\$ 330,781	\$ 2,005,675	\$ 142,704	\$ 5,888,844	
Sortation Facility	\$ 5,515,326	\$ 535,055	\$ 3,244,276	\$ 230,831	\$ 9,525,488	
Glass and Unsorted Container Transfer	\$ 555,680	\$ 53,908	\$ 326,867	\$ 23,257	\$ 959,711	
Sortation Residual Disposal	\$ 4,145,252	\$ 402,141	\$ 2,438,358	\$ 173,490	\$ 7,159,240	
Sortation Administrative & Marketing	\$ 3,395,595	\$ 329,415	\$ 1,997,388	\$ 142,115	\$ 5,864,513	
Sortation Margin	\$ 2,571,021	\$ 249,421	\$ 1,512,350	\$ 107,604	\$ 4,440,396	
Overall System Costs						
Total Costs	\$ 112,857,413	\$ 24,546,573	\$ 93,753,932	\$ 18,215,922	\$ 249,373,839	
Tons Collected for Recycling 254,703 26,373 251,786 83,108 615,969						
Tons Collected Commingled 215,575 20,913 126,807 9,022 372,318						
Tons Collected Source-Separated 39,128 5,459 124,979 74,085 243,652						
Tons Marketed 240,432 24,895 237,679 78,451 581,458						
Tons Marketed (excluding bale contamination) 240,432 24,895 237,679 78,451 581,458						
Total Cost per Ton Collected	\$ 443	\$ 931	\$ 372	\$ 219	\$ 405	
Total Cost per Ton Marketed	\$ 469	\$ 986	\$ 394	\$ 232	\$ 429	
Customers	995,572	17,726	68,407	NA	NA	
Annual pounds per customer	512	2,976	7,361	NA	NA	
Commodity Revenues						
Commodity Revenues						
Commodity Sales (lower range)	\$ 15,671,912	\$ 1,520,369	\$ 9,218,676	\$ 655,912	\$ 16,701,383	
Commodity Sales (mid-point)	\$ 3,409,683	\$ 330,781	\$ 2,005,675	\$ 142,704	\$ 48,093,815	
Commodity Sales (upper range)	\$ 5,515,326	\$ 535,055	\$ 3,244,276	\$ 230,831	\$ 79,486,247	
Full-Time Equivalent (FTE) Employment						
	SF Res. (on-route)	MF Res. (on-route)	Commercial (on-route)	Self-haul (excluding Bottle Bill)	Total	
Recycling Customer Engagement	32	60	209	65	366	
Local Government Engagement	20	13	28	-	61	
New Engagement (costs listed in collection)	12	47	181	65	305	
Recycling Collection	250	54	216	268	788	
Route Drivers and Operations	187	48	194	268	698	
Management and Administrative	63	5	22	NA	90	
Sortation	275	27	162	11	474	
Sorting Labor	193	19	114	8	333	
Equipment Operators, Supervisors, Maintenance	56	5	33	2	96	
Admininstrative and Marketing	26	3	15	1	45	
Overall Recycling Svsstem FTEs	556	140	586	345	1,628	

Figures in this report represent the consultant team's best modeling estimates based on available data.

Engagement + MRFs + Expanded + Statewide List (S7/A++)						
REVISED - Statewide 2025						
	SF Res. (on-route)	MF Res. (on-route)	Commercial (on-route)	Self-haul (excluding Bottle Bill)	Total	
Recycling System Costs						
Customer Engagement Costs	\$ 5,442,601	\$ 6,851,506	\$ 24,716,698	\$ -	\$ 37,010,805	
Collection Engagement Labor and Expenses	\$ 3,898,601	\$ 5,810,985	\$ 22,425,313	NA	\$ 32,134,898	
Local Government Engagement Labor and Expenses	\$ 1,544,000	\$ 1,040,521	\$ 2,291,385	NA	\$ 4,875,906	
Multifamily Property Improvements	\$ -	\$ -	\$ -	\$ -	\$ -	
Service level adjustments (included above)	NA	NA	NA	NA	\$ -	
Signage, labels, and container color (included above)	NA	NA	NA	NA	\$ -	
Collection area adjustments	NA	NA	NA	NA	\$ -	
Bulky collection	NA	NA	NA	NA	\$ -	
Collection	\$ 95,386,631	\$ 17,222,768	\$ 70,027,588	\$ 18,749,707	\$ 201,386,695	
Direct Collection Costs	\$ 67,897,979	\$ 11,920,748	\$ 48,248,719	\$ 17,737,533	\$ 145,804,979	
Collection Capital - Containers	\$ 2,317,462	\$ 210,715	\$ 898,452	\$ 1,607,554	\$ 5,034,184	
Collection Capital - Trucks	\$ 9,664,982	\$ 1,070,588	\$ 4,697,564	NA	\$ 15,433,133	
Collection Labor	\$ 37,451,369	\$ 6,903,202	\$ 27,765,814	\$ 13,663,670	\$ 85,784,055	
Collection Operations	\$ 18,464,166	\$ 3,736,243	\$ 14,886,889	\$ 2,466,308	\$ 39,553,607	
Indirect Collection Costs	\$ 27,488,653	\$ 5,302,020	\$ 21,778,869	\$ 1,012,174	\$ 55,581,716	
Collection Administrative	\$ 15,506,657	\$ 3,198,358	\$ 13,264,390	\$ 1,012,174	\$ 32,981,579	
Collection Margin and Franchise Fee	\$ 11,981,996	\$ 2,103,661	\$ 8,514,480	NA	\$ 22,600,137	
Cost Savings from Reduced Garbage Disposal	\$ (26,327,443)	\$ (3,169,960)	\$ (26,274,309)	\$ (6,464,829)	\$ (62,236,542)	
Avoided Disposal Tip Fees	\$ (26,327,443)	\$ (3,169,960)	\$ (26,274,309)	\$ (6,464,829)	\$ (62,236,542)	
Initial Transfer Transport	\$ 3,068,300	\$ 220,587	\$ 4,533,868	\$ 4,804,397	\$ 12,627,152	
Consolidation and Transfer to MRF	\$ 3,068,300	\$ 220,587	\$ 4,533,868	\$ 4,804,397	\$ 12,627,152	
Sortation	\$ 35,140,887	\$ 3,395,532	\$ 20,613,235	\$ 1,498,405	\$ 60,648,060	
Sortation Labor	\$ 15,772,187	\$ 1,524,007	\$ 9,251,781	\$ 672,525	\$ 27,220,501	
Sortation Capital	\$ 3,412,132	\$ 329,702	\$ 2,001,517	\$ 145,493	\$ 5,888,844	
Sortation Facility	\$ 5,541,325	\$ 535,437	\$ 3,250,477	\$ 236,282	\$ 9,563,520	
Glass and Unsorted Container Transfer	\$ 278,541	\$ 26,914	\$ 163,389	\$ 11,877	\$ 480,721	
Sortation Residual Disposal	\$ 4,156,272	\$ 401,605	\$ 2,438,021	\$ 177,223	\$ 7,173,120	
Sortation Administrative & Marketing	\$ 3,398,035	\$ 328,339	\$ 1,993,247	\$ 144,892	\$ 5,864,513	
Sortation Margin	\$ 2,582,396	\$ 249,527	\$ 1,514,803	\$ 110,113	\$ 4,456,840	
Overall System Costs						
Total Costs	\$ 112,710,976	\$ 24,520,433	\$ 93,617,080	\$ 18,587,681	\$ 249,436,170	
Tons Collected for Recycling						
Tons Collected Commingled	255,873	26,403	252,118	84,209	618,603	
Tons Collected Source-Separated	216,745	20,943	127,140	9,242	374,070	
Tons Collected	39,128	5,459	124,979	74,967	244,533	
Tons Marketed						
Tons Marketed (excluding bale contamination)	241,574	24,927	238,029	79,503	584,033	
Total Cost per Ton Collected	\$ 440	\$ 929	\$ 371	\$ 221	\$ 403	
Total Cost per Ton Marketed	\$ 467	\$ 984	\$ 393	\$ 234	\$ 427	
Customers	995,572	17,726	68,407	NA	NA	
Annual pounds per customer	514	2,979	7,371	NA	NA	
Commodity Revenues						
Commodity Revenues						
Commodity Sales (lower range)	\$ 15,772,187	\$ 1,524,007	\$ 9,251,781	\$ 672,525	\$ 18,245,754	
Commodity Sales (mid-point)	\$ 3,412,132	\$ 329,702	\$ 2,001,517	\$ 145,493	\$ 51,575,325	
Commodity Sales (upper range)	\$ 5,541,325	\$ 535,437	\$ 3,250,477	\$ 236,282	\$ 84,904,895	
Full-Time Equivalent (FTE) Employment						
	SF Res. (on-route)	MF Res. (on-route)	Commercial (on-route)	Self-haul (excluding Bottle Bill)	Total	
Recycling Customer Engagement	32	60	209	66	367	
Local Government Engagement	20	13	28	-	61	
New Engagement (costs listed in collection)	12	47	181	66	306	
Recycling Collection	250	54	216	273	793	
Route Drivers and Operations	187	48	194	273	703	
Management and Administrative	63	5	22	NA	90	
Sortation	276	27	162	12	477	
Sorting Labor	194	19	114	8	335	
Equipment Operators, Supervisors, Maintenance	56	5	33	2	97	
Admininstrative and Marketing	26	3	15	1	45	
Overall Recycling System FTEs	558	141	587	351	1,636	

Figures in this report represent the consultant team's best modeling estimates based on available data.

+Container Recovery Facility (S3/B)						
REVISED - Statewide 2025						
	SF Res. (on-route)	MF Res. (on-route)	Commercial (on-route)	Self-haul (excluding Bottle Bill)	Total	
Recycling System Costs						
Customer Engagement Costs	\$ 5,442,601	\$ 6,851,506	\$ 24,716,698	\$ -	\$ 37,010,805	
Collection Engagement Labor and Expenses	\$ 3,898,601	\$ 5,810,985	\$ 22,425,313	NA	\$ 32,134,898	
Local Government Engagement Labor and Expenses	\$ 1,544,000	\$ 1,040,521	\$ 2,291,385	NA	\$ 4,875,906	
Multifamily Property Improvements	\$ -	\$ -	\$ -	\$ -	\$ -	
Service level adjustments (included above)	NA	NA	NA	NA	\$ -	
Signage, labels, and container color (included above)	NA	NA	NA	NA	\$ -	
Collection area adjustments	NA	NA	NA	NA	\$ -	
Bulky collection	NA	NA	NA	NA	\$ -	
Collection	\$ 95,386,631	\$ 17,222,768	\$ 70,027,588	\$ 18,410,238	\$ 201,047,225	
Direct Collection Costs	\$ 67,897,979	\$ 11,920,748	\$ 48,248,719	\$ 17,411,740	\$ 145,479,186	
Collection Capital - Containers	\$ 2,317,462	\$ 210,715	\$ 898,452	\$ 1,577,999	\$ 5,004,628	
Collection Capital - Trucks	\$ 9,664,982	\$ 1,070,588	\$ 4,697,564	NA	\$ 15,433,133	
Collection Labor	\$ 37,451,369	\$ 6,903,202	\$ 27,765,814	\$ 13,409,839	\$ 85,530,224	
Collection Operations	\$ 18,464,166	\$ 3,736,243	\$ 14,886,889	\$ 2,423,902	\$ 39,511,200	
Indirect Collection Costs	\$ 27,488,653	\$ 5,302,020	\$ 21,778,869	\$ 998,498	\$ 55,568,039	
Collection Administrative	\$ 15,506,657	\$ 3,198,358	\$ 13,264,390	\$ 998,498	\$ 32,967,902	
Collection Margin and Franchise Fee	\$ 11,981,996	\$ 2,103,661	\$ 8,514,480	NA	\$ 22,600,137	
Cost Savings from Reduced Garbage Disposal	\$ (26,243,156)	\$ (3,167,812)	\$ (26,250,347)	\$ (6,385,521)	\$ (62,046,835)	
Avoided Disposal Tip Fees	\$ (26,243,156)	\$ (3,167,812)	\$ (26,250,347)	\$ (6,385,521)	\$ (62,046,835)	
Initial Transfer Transport	\$ 3,006,867	\$ 219,021	\$ 4,516,403	\$ 4,715,291	\$ 12,457,582	
Consolidation and Transfer to MRF	\$ 3,006,867	\$ 219,021	\$ 4,516,403	\$ 4,715,291	\$ 12,457,582	
Sortation	\$ 34,787,114	\$ 3,374,780	\$ 20,462,796	\$ 1,455,935	\$ 60,080,624	
Sortation Labor	\$ 15,338,642	\$ 1,488,038	\$ 9,022,637	\$ 641,964	\$ 26,491,280	
Sortation Capital	\$ 3,133,897	\$ 304,027	\$ 1,843,450	\$ 131,162	\$ 5,412,536	
Sortation Facility	\$ 5,501,599	\$ 533,723	\$ 3,236,201	\$ 230,257	\$ 9,501,780	
Glass and Unsorted Container Transfer	\$ 993,851	\$ 96,416	\$ 584,612	\$ 41,595	\$ 1,716,474	
Sortation Residual Disposal	\$ 3,920,325	\$ 380,320	\$ 2,306,050	\$ 164,076	\$ 6,770,771	
Sortation Administrative & Marketing	\$ 3,395,595	\$ 329,415	\$ 1,997,388	\$ 142,115	\$ 5,864,513	
Sortation Margin	\$ 2,503,205	\$ 242,842	\$ 1,472,458	\$ 104,766	\$ 4,323,270	
Overall System Costs						
Total Costs	\$ 112,380,057	\$ 24,500,263	\$ 93,473,137	\$ 18,195,943	\$ 248,549,401	
Tons Collected for Recycling 254,703 26,373 251,786 83,108 615,969						
Tons Collected Commingled 215,575 20,913 126,807 9,022 372,318						
Tons Collected Source-Separated 39,128 5,459 124,979 74,085 243,652						
Tons Marketed 241,509 25,007 238,743 78,803 584,062						
Tons Marketed (excluding bale contamination) 241,509 25,007 238,743 78,803 584,062						
Total Cost per Ton Collected	\$ 441	\$ 929	\$ 371	\$ 219	\$ 404	
Total Cost per Ton Marketed	\$ 465	\$ 980	\$ 392	\$ 231	\$ 426	
Customers	995,572	17,726	68,407	NA	NA	
Annual pounds per customer	512	2,976	7,361	NA	NA	
Commodity Revenues						
Commodity Revenues						
Commodity Sales (lower range)	\$ 15,338,642	\$ 1,488,038	\$ 9,022,637	\$ 641,964	\$ 14,682,818	
Commodity Sales (mid-point)	\$ 3,133,897	\$ 304,027	\$ 1,843,450	\$ 131,162	\$ 44,361,568	
Commodity Sales (upper range)	\$ 5,501,599	\$ 533,723	\$ 3,236,201	\$ 230,257	\$ 74,040,318	
Full-Time Equivalent (FTE) Employment						
	SF Res. (on-route)	MF Res. (on-route)	Commercial (on-route)	Self-haul (excluding Bottle Bill)	Total	
Recycling Customer Engagement	32	60	209	65	366	
Local Government Engagement	20	13	28	-	61	
New Engagement (costs listed in collection)	12	47	181	65	305	
Recycling Collection	250	54	216	268	788	
Route Drivers and Operations	187	48	194	268	698	
Management and Administrative	63	5	22	NA	90	
Sortation	269	26	159	11	465	
Sorting Labor	189	18	111	8	326	
Equipment Operators, Supervisors, Maintenance	55	5	32	2	95	
Admininstrative and Marketing	26	3	15	1	45	
Overall Recycling System FTEs	551	140	583	345	1,619	

Figures in this report represent the consultant team's best modeling estimates based on available data.

Dual-Stream Collection (S4/C)						
REVISED - Statewide 2025						
	SF Res. (on-route)	MF Res. (on-route)	Commercial (on-route)	Self-haul (excluding Bottle Bill)	Total	
Recycling System Costs						
Customer Engagement Costs	\$ 5,442,601	\$ 6,851,506	\$ 24,716,698	\$ -	\$ 37,010,805	
Collection Engagement Labor and Expenses	\$ 3,898,601	\$ 5,810,985	\$ 22,425,313	NA	\$ 32,134,898	
Local Government Engagement Labor and Expenses	\$ 1,544,000	\$ 1,040,521	\$ 2,291,385	NA	\$ 4,875,906	
Multifamily Property Improvements	\$ -	\$ -	\$ -	\$ -	\$ -	
Service level adjustments (included above)	NA	NA	NA	NA	\$ -	
Signage, labels, and container color (included above)	NA	NA	NA	NA	\$ -	
Collection area adjustments	NA	NA	NA	NA	\$ -	
Bulky collection	NA	NA	NA	NA	\$ -	
Collection	\$ 134,350,236	\$ 18,642,599	\$ 75,416,475	\$ 18,409,688	\$ 246,818,998	
Direct Collection Costs	\$ 99,440,104	\$ 13,127,641	\$ 52,829,356	\$ 17,411,210	\$ 182,808,311	
Collection Capital - Containers	\$ 8,776,081	\$ 1,417,700	\$ 5,472,722	\$ 1,577,951	\$ 17,244,454	
Collection Capital - Trucks	\$ 19,088,871	\$ 1,066,082	\$ 4,680,145	NA	\$ 24,835,097	
Collection Labor	\$ 47,928,665	\$ 6,911,281	\$ 27,796,066	\$ 13,409,424	\$ 96,045,436	
Collection Operations	\$ 23,646,488	\$ 3,732,579	\$ 14,880,423	\$ 2,423,835	\$ 44,683,325	
Indirect Collection Costs	\$ 34,910,132	\$ 5,514,958	\$ 22,587,119	\$ 998,478	\$ 64,010,687	
Collection Administrative	\$ 17,361,878	\$ 3,198,315	\$ 13,264,292	\$ 998,478	\$ 34,822,963	
Collection Margin and Franchise Fee	\$ 17,548,254	\$ 2,316,643	\$ 9,322,828	NA	\$ 29,187,724	
Cost Savings from Reduced Garbage Disposal	\$ (26,243,156)	\$ (3,167,812)	\$ (26,250,347)	\$ (6,385,521)	\$ (62,046,835)	
Avoided Disposal Tip Fees	\$ (26,243,156)	\$ (3,167,812)	\$ (26,250,347)	\$ (6,385,521)	\$ (62,046,835)	
Initial Transfer Transport	\$ 3,006,867	\$ 219,021	\$ 4,516,403	\$ 4,715,291	\$ 12,457,582	
Consolidation and Transfer to MRF	\$ 3,006,867	\$ 219,021	\$ 4,516,403	\$ 4,715,291	\$ 12,457,582	
Sortation	\$ 34,152,387	\$ 3,313,204	\$ 20,089,431	\$ 1,429,370	\$ 58,984,391	
Sortation Labor	\$ 15,264,953	\$ 1,480,889	\$ 8,979,291	\$ 638,879	\$ 26,364,012	
Sortation Capital	\$ 3,254,558	\$ 315,732	\$ 1,914,426	\$ 136,212	\$ 5,620,928	
Sortation Facility	\$ 5,534,705	\$ 536,935	\$ 3,255,675	\$ 231,642	\$ 9,558,958	
Glass and Unsorted Container Transfer	\$ 278,341	\$ 27,003	\$ 163,728	\$ 11,649	\$ 480,721	
Sortation Residual Disposal	\$ 3,915,045	\$ 379,808	\$ 2,302,944	\$ 163,855	\$ 6,761,653	
Sortation Administrative & Marketing	\$ 3,395,595	\$ 329,415	\$ 1,997,388	\$ 142,115	\$ 5,864,513	
Sortation Margin	\$ 2,509,189	\$ 243,422	\$ 1,475,978	\$ 105,016	\$ 4,333,605	
Overall System Costs						
Total Costs	\$ 150,708,935	\$ 25,858,518	\$ 98,488,659	\$ 18,168,828	\$ 293,224,940	
Tons Collected for Recycling 254,703 26,373 251,786 83,108 615,969						
Tons Collected Commingled 215,575 20,913 126,807 9,022 372,318						
Tons Collected Source-Separated 39,128 5,459 124,979 74,085 243,652						
Tons Marketed 235,752 24,410 233,052 76,924 570,138						
Tons Marketed (excluding bale contamination) 235,752 24,410 233,052 76,924 570,138						
Total Cost per Ton Collected	\$ 592	\$ 981	\$ 391	\$ 219	\$ 476	
Total Cost per Ton Marketed	\$ 639	\$ 1,059	\$ 423	\$ 236	\$ 514	
Customers	995,572	17,726	68,407	NA	NA	
Annual pounds per customer	512	2,976	7,361	NA	NA	
Commodity Revenues						
Commodity Revenues						
Commodity Sales (lower range)	\$ 15,264,953	\$ 1,480,889	\$ 8,979,291	\$ 638,879	\$ 16,823,932	
Commodity Sales (mid-point)	\$ 3,254,558	\$ 315,732	\$ 1,914,426	\$ 136,212	\$ 47,782,672	
Commodity Sales (upper range)	\$ 5,534,705	\$ 536,935	\$ 3,255,675	\$ 231,642	\$ 78,741,413	
Full-Time Equivalent (FTE) Employment						
	SF Res. (on-route)	MF Res. (on-route)	Commercial (on-route)	Self-haul (excluding Bottle Bill)	Total	
Recycling Customer Engagement	32	60	209	65	366	
Local Government Engagement	20	13	28	-	61	
New Engagement (costs listed in collection)	12	47	181	65	305	
Recycling Collection	367	54	216	268	905	
Route Drivers and Operations	284	48	194	268	795	
Management and Administrative	83	5	22	NA	110	
Sortation	269	26	158	11	464	
Sorting Labor	184	18	108	8	317	
Equipment Operators, Supervisors, Maintenance	59	6	35	2	102	
Admininstrative and Marketing	26	3	15	1	45	
Overall Recycling Svstem FTEs	668	140	583	345	1,735	

Figures in this report represent the consultant team's best modeling estimates based on available data.

Engagement + MRFs + Expanded + Statewide List + Expanded Collection (S8/D-low)						
REVISED - Statewide 2025						
	SF Res. (on-route)	MF Res. (on-route)	Commercial (on-route)	Self-haul (excluding Bottle Bill)	Total	
Recycling System Costs						
Customer Engagement Costs	\$ 5,647,748	\$ 8,758,678	\$ 26,541,412	\$ -	\$ 40,947,838	
Collection Engagement Labor and Expenses	\$ 4,103,748	\$ 7,718,157	\$ 24,250,027	NA	\$ 36,071,932	
Local Government Engagement Labor and Expenses	\$ 1,544,000	\$ 1,040,521	\$ 2,291,385	NA	\$ 4,875,906	
Multifamily Property Improvements	\$ -	\$ 15,182,938	\$ -	\$ -	\$ 15,182,938	
Service level adjustments (included above)	NA	NA	NA	NA	\$ -	
Signage, labels, and container color (included above)	NA	NA	NA	NA	\$ -	
Collection area adjustments	NA	\$ 8,119,776	NA	NA	\$ 8,119,776	
Bulky collection	NA	\$ 7,063,161	NA	NA	\$ 7,063,161	
Collection	\$ 101,303,222	\$ 23,845,478	\$ 76,712,263	\$ 17,754,325	\$ 219,615,288	
Direct Collection Costs	\$ 71,831,007	\$ 16,712,776	\$ 52,924,920	\$ 16,776,808	\$ 158,245,511	
Collection Capital - Containers	\$ 2,413,796	\$ 311,548	\$ 1,021,415	\$ 1,524,457	\$ 5,271,216	
Collection Capital - Trucks	\$ 10,347,573	\$ 1,401,538	\$ 5,146,562	NA	\$ 16,895,673	
Collection Labor	\$ 39,508,408	\$ 9,707,117	\$ 30,306,722	\$ 12,902,003	\$ 92,424,251	
Collection Operations	\$ 19,561,230	\$ 5,292,573	\$ 16,450,221	\$ 2,350,348	\$ 43,654,372	
Indirect Collection Costs	\$ 29,472,215	\$ 7,132,702	\$ 23,787,343	\$ 977,517	\$ 61,369,777	
Collection Administrative	\$ 16,796,155	\$ 4,183,389	\$ 14,447,651	\$ 977,517	\$ 36,404,712	
Collection Margin and Franchise Fee	\$ 12,676,060	\$ 2,949,313	\$ 9,339,692	NA	\$ 24,965,065	
Cost Savings from Reduced Garbage Disposal	\$ (26,831,552)	\$ (3,502,551)	\$ (26,518,232)	\$ (6,253,599)	\$ (63,105,935)	
Avoided Disposal Tip Fees	\$ (26,831,552)	\$ (3,502,551)	\$ (26,518,232)	\$ (6,253,599)	\$ (63,105,935)	
Initial Transfer Transport	\$ 3,713,446	\$ 405,386	\$ 4,870,775	\$ 4,518,788	\$ 13,508,394	
Consolidation and Transfer to MRF	\$ 3,713,446	\$ 405,386	\$ 4,870,775	\$ 4,518,788	\$ 13,508,394	
Sortation	\$ 35,990,158	\$ 4,119,147	\$ 21,104,257	\$ 1,494,738	\$ 62,708,299	
Sortation Labor	\$ 16,304,298	\$ 1,866,060	\$ 9,560,672	\$ 677,148	\$ 28,408,178	
Sortation Capital	\$ 3,379,783	\$ 386,823	\$ 1,981,870	\$ 140,369	\$ 5,888,844	
Sortation Facility	\$ 5,678,998	\$ 649,973	\$ 3,330,106	\$ 235,859	\$ 9,894,936	
Glass and Unsorted Container Transfer	\$ 277,484	\$ 31,759	\$ 162,713	\$ 11,524	\$ 483,480	
Sortation Residual Disposal	\$ 4,338,393	\$ 496,538	\$ 2,543,989	\$ 180,182	\$ 7,559,102	
Sortation Administrative & Marketing	\$ 3,365,819	\$ 385,225	\$ 1,973,681	\$ 139,789	\$ 5,864,513	
Sortation Margin	\$ 2,645,383	\$ 302,769	\$ 1,551,225	\$ 109,868	\$ 4,609,246	
Overall System Costs						
Total Costs	\$ 119,823,022	\$ 48,809,075	\$ 102,710,474	\$ 17,514,252	\$ 288,856,823	
Tons Collected for Recycling262,87231,299255,50581,276630,952						
Tons Collected Commingled222,52825,469130,4889,242387,726						
Tons Collected Source-Separated40,3445,831125,01772,034243,226						
Tons Marketed247,41929,459240,48576,499593,862						
Tons Marketed (excluding bale contamination)247,41929,459240,48576,499593,862						
Total Cost per Ton Collected	\$ 456	\$ 1,559	\$ 402	\$ 215	\$ 458	
Total Cost per Ton Marketed	\$ 484	\$ 1,657	\$ 427	\$ 229	\$ 486	
Customers	1,047,960	23,544	73,974	NA	NA	
Annual pounds per customer	502	2,659	6,908	NA	NA	
Commodity Revenues						
Commodity Revenues						
Commodity Sales (lower range)	\$ 16,304,298	\$ 1,866,060	\$ 9,560,672	\$ 677,148	\$ 18,615,932	
Commodity Sales (mid-point)	\$ 3,379,783	\$ 386,823	\$ 1,981,870	\$ 140,369	\$ 52,616,084	
Commodity Sales (upper range)	\$ 5,678,998	\$ 649,973	\$ 3,330,106	\$ 235,859	\$ 86,616,236	
Full-Time Equivalent (FTE) Employment						
	SF Res. (on-route)	MF Res. (on-route)	Commercial (on-route)	Self-haul (excluding Bottle Bill)	Total	
Recycling Customer Engagement	32	75	224	63	394	
Local Government Engagement	20	13	28	-	61	
New Engagement (costs listed in collection)	13	62	196	63	333	
Recycling Collection	254	75	234	260	823	
Route Drivers and Operations	190	68	210	260	727	
Management and Administrative	65	8	24	NA	96	
Sortation	284	33	167	12	496	
Sorting Labor	202	23	118	8	352	
Equipment Operators, Supervisors, Maintenance	57	7	33	2	99	
Admininstrative and Marketing	26	3	15	1	45	
Overall Recycling Svstem FTEs	571	183	624	335	1,713	

Figures in this report represent the consultant team's best modeling estimates based on available data.

Engagement + MRFs + Expanded + Statewide List + Expanded Collection (S9/D-mid)						
REVISED - Statewide 2025						
	SF Res. (on-route)	MF Res. (on-route)	Commercial (on-route)	Self-haul (excluding Bottle Bill)	Total	
Recycling System Costs						
Customer Engagement Costs	\$ 5,750,322	\$ 11,412,873	\$ 26,863,420	\$ -	\$ 44,026,615	
Collection Engagement Labor and Expenses	\$ 4,206,322	\$ 10,372,352	\$ 24,572,035	NA	\$ 39,150,709	
Local Government Engagement Labor and Expenses	\$ 1,544,000	\$ 1,040,521	\$ 2,291,385	NA	\$ 4,875,906	
Multifamily Property Improvements	\$ -	\$ 20,404,194	\$ -	\$ -	\$ 20,404,194	
Service level adjustments (included above)	NA	NA	NA	NA	\$ -	
Signage, labels, and container color (included above)	NA	NA	NA	NA	\$ -	
Collection area adjustments	NA	\$ 10,912,084	NA	NA	\$ 10,912,084	
Bulky collection	NA	\$ 9,492,110	NA	NA	\$ 9,492,110	
Collection	\$ 104,261,518	\$ 33,412,608	\$ 77,891,912	\$ 16,644,851	\$ 232,210,888	
Direct Collection Costs	\$ 73,797,521	\$ 23,678,703	\$ 53,750,132	\$ 15,709,608	\$ 166,935,964	
Collection Capital - Containers	\$ 2,461,963	\$ 440,810	\$ 1,043,114	\$ 1,431,607	\$ 5,377,494	
Collection Capital - Trucks	\$ 10,688,869	\$ 1,959,876	\$ 5,225,797	NA	\$ 17,874,542	
Collection Labor	\$ 40,536,928	\$ 13,763,908	\$ 30,755,118	\$ 12,060,281	\$ 97,116,235	
Collection Operations	\$ 20,109,761	\$ 7,514,108	\$ 16,726,103	\$ 2,217,721	\$ 46,567,693	
Indirect Collection Costs	\$ 30,463,997	\$ 9,733,906	\$ 24,141,779	\$ 935,243	\$ 65,274,924	
Collection Administrative	\$ 17,440,905	\$ 5,555,311	\$ 14,656,462	\$ 935,243	\$ 38,587,920	
Collection Margin and Franchise Fee	\$ 13,023,092	\$ 4,178,595	\$ 9,485,317	NA	\$ 26,687,004	
Cost Savings from Reduced Garbage Disposal	\$ (27,351,045)	\$ (4,783,435)	\$ (26,722,553)	\$ (6,013,112)	\$ (64,870,144)	
Avoided Disposal Tip Fees	\$ (27,351,045)	\$ (4,783,435)	\$ (26,722,553)	\$ (6,013,112)	\$ (64,870,144)	
Initial Transfer Transport	\$ 4,379,819	\$ 566,185	\$ 5,140,367	\$ 4,218,088	\$ 14,304,459	
Consolidation and Transfer to MRF	\$ 4,379,819	\$ 566,185	\$ 5,140,367	\$ 4,218,088	\$ 14,304,459	
Sortation	\$ 36,878,484	\$ 6,003,727	\$ 21,465,313	\$ 1,477,410	\$ 65,824,933	
Sortation Labor	\$ 16,901,370	\$ 2,751,501	\$ 9,837,530	\$ 677,095	\$ 30,167,497	
Sortation Capital	\$ 3,299,231	\$ 537,107	\$ 1,920,334	\$ 132,172	\$ 5,888,844	
Sortation Facility	\$ 5,809,739	\$ 945,811	\$ 3,381,589	\$ 232,747	\$ 10,369,887	
Glass and Unsorted Container Transfer	\$ 271,731	\$ 44,237	\$ 158,163	\$ 10,886	\$ 485,017	
Sortation Residual Disposal	\$ 4,599,202	\$ 748,739	\$ 2,676,989	\$ 184,251	\$ 8,209,182	
Sortation Administrative & Marketing	\$ 3,285,599	\$ 534,888	\$ 1,912,400	\$ 131,626	\$ 5,864,513	
Sortation Margin	\$ 2,711,611	\$ 441,444	\$ 1,578,307	\$ 108,631	\$ 4,839,994	
Overall System Costs						
Total Costs	\$ 123,919,098	\$ 67,016,152	\$ 104,638,459	\$ 16,327,237	\$ 311,900,946	
Tons Collected for Recycling 270,084 43,032 258,341 77,938 649,395						
Tons Collected Commingled 228,521 37,203 133,012 9,155 407,891						
Tons Collected Source-Separated 41,563 5,830 125,330 68,783 241,504						
Tons Marketed 253,057 40,319 242,055 73,024 608,456						
Tons Marketed (excluding bale contamination) 253,057 40,319 242,055 73,024 608,456						
Total Cost per Ton Collected	\$ 459	\$ 1,557	\$ 405	\$ 209	\$ 480	
Total Cost per Ton Marketed	\$ 490	\$ 1,662	\$ 432	\$ 224	\$ 513	
Customers	1,074,154	31,640	74,956	NA	NA	
Annual pounds per customer	503	2,720	6,893	NA	NA	
Commodity Revenues						
Commodity Revenues						
Commodity Sales (lower range)	\$ 16,901,370	\$ 2,751,501	\$ 9,837,530	\$ 677,095	\$ 19,298,449	
Commodity Sales (mid-point)	\$ 3,299,231	\$ 537,107	\$ 1,920,334	\$ 132,172	\$ 54,400,812	
Commodity Sales (upper range)	\$ 5,809,739	\$ 945,811	\$ 3,381,589	\$ 232,747	\$ 89,503,176	
Full-Time Equivalent (FTE) Employment						
	SF Res. (on-route)	MF Res. (on-route)	Commercial (on-route)	Self-haul (excluding Bottle Bill)	Total	
Recycling Customer Engagement	32	97	226	59	415	
Local Government Engagement	20	13	28	-	61	
New Engagement (costs listed in collection)	13	84	198	59	354	
Recycling Collection	257	107	237	245	845	
Route Drivers and Operations	191	96	213	245	745	
Management and Administrative	65	11	24	NA	100	
Sortation	293	48	171	12	523	
Sorting Labor	210	34	122	8	376	
Equipment Operators, Supervisors, Maintenance	58	9	33	2	103	
Admininstrative and Marketing	25	4	15	1	45	
Overall Recycling Svsstem FTEs	582	251	634	316	1,783	

Figures in this report represent the consultant team's best modeling estimates based on available data.

Engagement + MRFs + Expanded + Statewide List + Expanded Collection (S10/D-hi)						
REVISED - Statewide 2025						
	SF Res. (on-route)	MF Res. (on-route)	Commercial (on-route)	Self-haul (excluding Bottle Bill)	Total	
Recycling System Costs						
Customer Engagement Costs	\$ 5,852,896	\$ 12,849,419	\$ 27,078,092	\$ -	\$ 45,780,407	
Collection Engagement Labor and Expenses	\$ 4,308,896	\$ 11,808,898	\$ 24,786,707	NA	\$ 40,904,501	
Local Government Engagement Labor and Expenses	\$ 1,544,000	\$ 1,040,521	\$ 2,291,385	NA	\$ 4,875,906	
Multifamily Property Improvements	\$ -	\$ 23,230,127	\$ -	\$ -	\$ 23,230,127	
Service level adjustments (included above)	NA	NA	NA	NA	\$ -	
Signage, labels, and container color (included above)	NA	NA	NA	NA	\$ -	
Collection area adjustments	NA	\$ 12,423,382	NA	NA	\$ 12,423,382	
Bulky collection	NA	\$ 10,806,745	NA	NA	\$ 10,806,745	
Collection	\$ 107,219,813	\$ 39,803,929	\$ 78,678,344	\$ 15,535,676	\$ 241,237,762	
Direct Collection Costs	\$ 75,764,035	\$ 28,453,371	\$ 54,300,273	\$ 14,642,697	\$ 173,160,377	
Collection Capital - Containers	\$ 2,510,130	\$ 532,697	\$ 1,057,580	\$ 1,338,782	\$ 5,439,189	
Collection Capital - Trucks	\$ 11,030,165	\$ 2,363,393	\$ 5,278,620	NA	\$ 18,672,178	
Collection Labor	\$ 41,565,447	\$ 16,528,226	\$ 31,054,049	\$ 11,218,785	\$ 100,366,507	
Collection Operations	\$ 20,658,293	\$ 9,029,055	\$ 16,910,025	\$ 2,085,130	\$ 48,682,503	
Indirect Collection Costs	\$ 31,455,778	\$ 11,350,558	\$ 24,378,070	\$ 892,979	\$ 68,077,385	
Collection Administrative	\$ 18,085,654	\$ 6,329,375	\$ 14,795,669	\$ 892,979	\$ 40,103,677	
Collection Margin and Franchise Fee	\$ 13,370,124	\$ 5,021,183	\$ 9,582,401	NA	\$ 27,973,708	
Cost Savings from Reduced Garbage Disposal	\$ (27,849,758)	\$ (5,629,061)	\$ (26,897,929)	\$ (5,772,705)	\$ (66,149,454)	
Avoided Disposal Tip Fees	\$ (27,849,758)	\$ (5,629,061)	\$ (26,897,929)	\$ (5,772,705)	\$ (66,149,454)	
Initial Transfer Transport	\$ 5,019,538	\$ 759,884	\$ 5,370,190	\$ 3,917,447	\$ 15,067,059	
Consolidation and Transfer to MRF	\$ 5,019,538	\$ 759,884	\$ 5,370,190	\$ 3,917,447	\$ 15,067,059	
Sortation	\$ 38,536,546	\$ 7,342,073	\$ 22,230,102	\$ 1,491,595	\$ 69,600,317	
Sortation Labor	\$ 17,909,285	\$ 3,412,119	\$ 10,331,109	\$ 693,197	\$ 32,345,710	
Sortation Capital	\$ 3,506,234	\$ 668,016	\$ 2,022,598	\$ 135,712	\$ 6,332,560	
Sortation Facility	\$ 5,934,948	\$ 1,130,740	\$ 3,423,620	\$ 229,718	\$ 10,719,026	
Glass and Unsorted Container Transfer	\$ 272,056	\$ 51,833	\$ 156,937	\$ 10,530	\$ 491,356	
Sortation Residual Disposal	\$ 4,832,532	\$ 920,705	\$ 2,787,683	\$ 187,048	\$ 8,727,969	
Sortation Administrative & Marketing	\$ 3,247,084	\$ 618,642	\$ 1,873,105	\$ 125,682	\$ 5,864,513	
Sortation Margin	\$ 2,834,407	\$ 540,018	\$ 1,635,049	\$ 109,709	\$ 5,119,182	
Overall System Costs						
Total Costs	\$ 128,779,034	\$ 78,356,371	\$ 106,458,799	\$ 15,172,013	\$ 328,766,218	
Tons Collected for Recycling	277,007	51,175	260,776	74,600	663,559	
Tons Collected Commingled	234,275	44,635	135,143	9,068	423,121	
Tons Collected Source-Separated	42,732	6,541	125,633	65,532	240,438	
Tons Marketed	258,579	47,771	243,428	69,637	619,415	
Tons Marketed (excluding bale contamination)	258,579	47,771	243,428	69,637	619,415	
Total Cost per Ton Collected	\$ 465	\$ 1,531	\$ 408	\$ 203	\$ 495	
Total Cost per Ton Marketed	\$ 498	\$ 1,640	\$ 437	\$ 218	\$ 531	
Customers	1,100,348	36,022	75,611	NA	NA	
Annual pounds per customer	503	2,841	6,898	NA	NA	
Commodity Revenues						
Commodity Revenues						
Commodity Sales (lower range)	\$ 17,909,285	\$ 3,412,119	\$ 10,331,109	\$ 693,197	\$ 19,926,141	
Commodity Sales (mid-point)	\$ 3,506,234	\$ 668,016	\$ 2,022,598	\$ 135,712	\$ 56,219,089	
Commodity Sales (upper range)	\$ 5,934,948	\$ 1,130,740	\$ 3,423,620	\$ 229,718	\$ 92,512,036	
Full-Time Equivalent (FTE) Employment						
	SF Res. (on-route)	MF Res. (on-route)	Commercial (on-route)	Self-haul (excluding Bottle Bill)	Total	
Recycling Customer Engagement	33	108	228	56	425	
Local Government Engagement	20	13	28	-	61	
New Engagement (costs listed in collection)	13	95	200	56	364	
Recycling Collection	259	128	239	230	856	
Route Drivers and Operations	193	115	215	230	752	
Management and Administrative	66	13	24	NA	103	
Sortation	309	59	178	12	558	
Sorting Labor	224	43	129	9	404	
Equipment Operators, Supervisors, Maintenance	60	11	35	2	109	
Admininstrative and Marketing	25	5	14	1	45	
Overall Recycling Svstem FTEs	600	295	645	298	1,838	

Figures in this report represent the consultant team's best modeling estimates based on available data.

Additional Alternative Scenario Analysis - Cost Modeling Results

REVISED - 1 - Metro Area 2025 Tables

August 7, 2020

Original Baseline: Pre-Disruption List (\$0)					
REVISED - 1 - Metro Area 2025					
	SF Res. (on-route)	MF Res. (on-route)	Commercial (on-route)	Self-haul (excluding Bottle Bill)	Total
Recycling System Costs					
Customer Engagement Costs	\$ 2,065,229	\$ 1,048,601	\$ 2,331,116	\$ -	\$ 5,444,946
Collection Engagement Labor and Expenses	\$ 521,229	\$ 8,080	\$ 39,731	NA	\$ 569,040
Local Government Engagement Labor and Expenses	\$ 1,544,000	\$ 1,040,521	\$ 2,291,385	NA	\$ 4,875,906
Multifamily Property Improvements	\$ -	\$ -	\$ -	\$ -	\$ -
Service level adjustments (included above)	NA	NA	NA	NA	\$ -
Signage, labels, and container color (included above)	NA	NA	NA	NA	\$ -
Collection area adjustments	NA	NA	NA	NA	\$ -
Bulky collection	NA	NA	NA	NA	\$ -
Collection	\$ 43,936,438	\$ 8,285,644	\$ 40,744,055	\$ 205,320	\$ 93,171,457
Direct Collection Costs	\$ 31,521,899	\$ 5,646,739	\$ 27,767,432	\$ 154,309	\$ 65,090,380
Collection Capital - Containers	\$ 1,082,732	\$ 98,918	\$ 486,422	\$ 12,080	\$ 1,680,152
Collection Capital - Trucks	\$ 5,133,308	\$ 700,660	\$ 3,445,442	NA	\$ 9,279,410
Collection Labor	\$ 18,066,088	\$ 3,161,137	\$ 15,544,664	\$ 114,719	\$ 36,886,608
Collection Operations	\$ 7,239,771	\$ 1,686,025	\$ 8,290,904	\$ 27,510	\$ 17,244,209
Indirect Collection Costs	\$ 12,414,539	\$ 2,638,905	\$ 12,976,623	\$ 51,010	\$ 28,081,077
Collection Administrative	\$ 6,851,851	\$ 1,642,421	\$ 8,076,488	\$ 51,010	\$ 16,621,771
Collection Margin and Franchise Fee	\$ 5,562,688	\$ 996,483	\$ 4,900,135	NA	\$ 11,459,307
Cost Savings from Reduced Garbage Disposal	\$ (17,374,781)	\$ (2,621,674)	\$ (16,975,815)	\$ (656,317)	\$ (37,628,587)
Avoided Disposal Tip Fees	\$ (17,374,781)	\$ (2,621,674)	\$ (16,975,815)	\$ (656,317)	\$ (37,628,587)
Initial Transfer Transport	\$ 280,371	\$ 98,474	\$ 268,145	\$ 24,363	\$ 671,353
Consolidation and Transfer to MRF	\$ 280,371	\$ 98,474	\$ 268,145	\$ 24,363	\$ 671,353
Sortation	\$ 18,721,876	\$ 2,609,467	\$ 12,764,961	\$ 61,021	\$ 34,157,326
Sortation Labor	\$ 9,893,201	\$ 1,378,921	\$ 6,745,389	\$ 32,245	\$ 18,049,756
Sortation Capital	\$ 615,161	\$ 85,742	\$ 419,430	\$ 2,005	\$ 1,122,337
Sortation Facility	\$ 2,757,232	\$ 384,305	\$ 1,879,938	\$ 8,987	\$ 5,030,461
Glass and Unsorted Container Transfer	\$ 139,862	\$ 19,494	\$ 95,361	\$ 456	\$ 255,172
Sortation Residual Disposal	\$ 2,087,505	\$ 290,958	\$ 1,423,304	\$ 6,804	\$ 3,808,571
Sortation Administrative & Marketing	\$ 1,852,470	\$ 258,198	\$ 1,263,052	\$ 6,038	\$ 3,379,758
Sortation Margin	\$ 1,376,446	\$ 191,850	\$ 938,489	\$ 4,486	\$ 2,511,271
Overall System Costs					
Total Costs	\$ 47,629,133	\$ 9,420,513	\$ 39,132,463	\$ (365,614)	\$ 95,816,494
<i>Tons Collected for Recycling</i>	129,008	19,466	126,046	4,873	279,393
<i>Tons Collected Commingled</i>	107,835	15,030	73,524	351	196,741
<i>Tons Collected Source-Separated</i>	21,173	4,436	52,521	4,522	82,652
<i>Tons Marketed</i>	116,108	17,520	113,442	4,386	251,456
<i>Tons Marketed (excluding bale contamination)</i>	116,108	17,520	113,442	4,386	251,456
Total Cost per Ton Collected	\$ 369	\$ 484	\$ 310	\$ (75)	\$ 343
Total Cost per Ton Marketed	\$ 410	\$ 538	\$ 345	\$ (83)	\$ 381
Customers	465,865	7,221	35,511	NA	NA
Annual pounds per customer	554	5,391	7,099	NA	NA
Commodity Revenues					
Commodity Revenues					
Commodity Sales (lower range)	\$ 9,893,201	\$ 1,378,921	\$ 6,745,389	\$ 32,245	\$ 5,787,122
Commodity Sales (mid-point)	\$ 615,161	\$ 85,742	\$ 419,430	\$ 2,005	\$ 21,443,788
Commodity Sales (upper range)	\$ 2,757,232	\$ 384,305	\$ 1,879,938	\$ 8,987	\$ 37,100,454
Full-Time Equivalent (FTE) Employment					
	SF Res. (on-route)	MF Res. (on-route)	Commercial (on-route)	Self-haul (excluding Bottle Bill)	Total
Recycling Customer Engagement	20	13	28	-	61
Local Government Engagement	20	13	28	-	61
New Engagement (costs listed in collection)	-	-	-	-	-
Recycling Collection	148	25	122	14	308
Route Drivers and Operations	113	22	110	14	259
Management and Administrative	35	3	12	NA	50
Sortation	171	24	116	1	311
Sorting Labor	128	18	87	0	234
Equipment Operators, Supervisors, Maintenance	28	4	19	0	51
Administrative and Marketing	14	2	10	0	26
Overall Recycling System FTEs	338	62	267	14	680

Figures in this report represent the consultant team's best modeling estimates based on available data.

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Revised Baseline: Post-Disruption List (\$5)					
REVISED - 1 - Metro Area 2025					
	SF Res. (on-route)	MF Res. (on-route)	Commercial (on-route)	Self-haul (excluding Bottle Bill)	Total
Recycling System Costs					
Customer Engagement Costs	\$ 2,065,229	\$ 1,048,601	\$ 2,331,116	\$ -	\$ 5,444,946
Collection Engagement Labor and Expenses	\$ 521,229	\$ 8,080	\$ 39,731	NA	\$ 569,040
Local Government Engagement Labor and Expenses	\$ 1,544,000	\$ 1,040,521	\$ 2,291,385	NA	\$ 4,875,906
Multifamily Property Improvements	\$ -	\$ -	\$ -	\$ -	\$ -
Service level adjustments (included above)	NA	NA	NA	NA	\$ -
Signage, labels, and container color (included above)	NA	NA	NA	NA	\$ -
Collection area adjustments	NA	NA	NA	NA	\$ -
Bulky collection	NA	NA	NA	NA	\$ -
Collection	\$ 43,936,438	\$ 8,285,644	\$ 40,744,055	\$ 203,986	\$ 93,170,123
Direct Collection Costs	\$ 31,521,899	\$ 5,646,739	\$ 27,767,432	\$ 153,301	\$ 65,089,371
Collection Capital - Containers	\$ 1,082,732	\$ 98,918	\$ 486,422	\$ 12,003	\$ 1,680,075
Collection Capital - Trucks	\$ 5,133,308	\$ 700,660	\$ 3,445,442	NA	\$ 9,279,410
Collection Labor	\$ 18,066,088	\$ 3,161,137	\$ 15,544,664	\$ 113,963	\$ 36,885,852
Collection Operations	\$ 7,239,771	\$ 1,686,025	\$ 8,290,904	\$ 27,334	\$ 17,244,034
Indirect Collection Costs	\$ 12,414,539	\$ 2,638,905	\$ 12,976,623	\$ 50,685	\$ 28,080,752
Collection Administrative	\$ 6,851,851	\$ 1,642,421	\$ 8,076,488	\$ 50,685	\$ 16,621,446
Collection Margin and Franchise Fee	\$ 5,562,688	\$ 996,483	\$ 4,900,135	NA	\$ 11,459,307
Cost Savings from Reduced Garbage Disposal	\$ (17,049,998)	\$ (2,592,422)	\$ (16,854,123)	\$ (653,171)	\$ (37,149,714)
Avoided Disposal Tip Fees	\$ (17,049,998)	\$ (2,592,422)	\$ (16,854,123)	\$ (653,171)	\$ (37,149,714)
Initial Transfer Transport	\$ 274,101	\$ 98,039	\$ 267,063	\$ 24,306	\$ 663,509
Consolidation and Transfer to MRF	\$ 274,101	\$ 98,039	\$ 267,063	\$ 24,306	\$ 663,509
Sortation	\$ 18,507,248	\$ 2,600,430	\$ 12,748,850	\$ 57,903	\$ 33,914,431
Sortation Labor	\$ 9,774,723	\$ 1,373,434	\$ 6,733,387	\$ 30,582	\$ 17,912,126
Sortation Capital	\$ 638,853	\$ 89,764	\$ 440,078	\$ 1,999	\$ 1,170,694
Sortation Facility	\$ 2,695,572	\$ 378,751	\$ 1,856,864	\$ 8,434	\$ 4,939,621
Glass and Unsorted Container Transfer	\$ 145,248	\$ 20,409	\$ 100,055	\$ 454	\$ 266,167
Sortation Residual Disposal	\$ 1,968,891	\$ 276,646	\$ 1,356,284	\$ 6,160	\$ 3,607,982
Sortation Administrative & Marketing	\$ 1,923,814	\$ 270,313	\$ 1,325,233	\$ 6,019	\$ 3,525,378
Sortation Margin	\$ 1,360,148	\$ 191,113	\$ 936,948	\$ 4,255	\$ 2,492,464
Overall System Costs					
Total Costs	\$ 47,733,018	\$ 9,440,292	\$ 39,236,960	\$ (366,976)	\$ 96,043,295
<i>Tons Collected for Recycling</i>	126,596	19,249	125,142	4,850	275,837
<i>Tons Collected Commingled</i>	105,423	14,813	72,622	330	193,188
<i>Tons Collected Source-Separated</i>	21,173	4,436	52,520	4,520	82,649
<i>Tons Marketed</i>	114,730	17,444	113,412	4,395	249,981
<i>Tons Marketed (excluding bale contamination)</i>	114,730	17,444	113,412	4,395	249,981
Total Cost per Ton Collected	\$ 377	\$ 490	\$ 314	\$ (76)	\$ 348
Total Cost per Ton Marketed	\$ 416	\$ 541	\$ 346	\$ (83)	\$ 384
Customers	465,865	7,221	35,511	NA	NA
Annual pounds per customer	543	5,331	7,048	NA	NA
Commodity Revenues					
Commodity Revenues					
Commodity Sales (lower range)	\$ 9,774,723	\$ 1,373,434	\$ 6,733,387	\$ 30,582	\$ 5,957,206
Commodity Sales (mid-point)	\$ 638,853	\$ 89,764	\$ 440,078	\$ 1,999	\$ 22,078,912
Commodity Sales (upper range)	\$ 2,695,572	\$ 378,751	\$ 1,856,864	\$ 8,434	\$ 38,200,618
Full-Time Equivalent (FTE) Employment					
	SF Res. (on-route)	MF Res. (on-route)	Commercial (on-route)	Self-haul (excluding Bottle Bill)	Total
Recycling Customer Engagement	20	13	28	-	61
Local Government Engagement	20	13	28	-	61
New Engagement (costs listed in collection)	-	-	-	-	-
Recycling Collection	148	25	122	13	308
Route Drivers and Operations	113	22	110	13	259
Management and Administrative	35	3	12	NA	50
Sortation	169	24	117	1	310
Sorting Labor	125	18	86	0	230
Equipment Operators, Supervisors, Maintenance	29	4	20	0	54
Administrative and Marketing	15	2	10	0	27
Overall Recycling System FTEs	337	62	267	14	679

Figures in this report represent the consultant team's best modeling estimates based on available data.

+ Customer Engagement (S6/A-)						
REVISED - 1 - Metro Area 2025						
	SF Res. (on-route)	MF Res. (on-route)	Commercial (on-route)	Self-haul (excluding Bottle Bill)	Total	
Recycling System Costs						
Customer Engagement Costs	\$ 3,368,301	\$ 3,407,849	\$ 13,932,547	\$ -	\$ 20,708,697	
Collection Engagement Labor and Expenses	\$ 1,824,301	\$ 2,367,328	\$ 11,641,162	NA	\$ 15,832,791	
Local Government Engagement Labor and Expenses	\$ 1,544,000	\$ 1,040,521	\$ 2,291,385	NA	\$ 4,875,906	
Multifamily Property Improvements	\$ -	\$ -	\$ -	\$ -	\$ -	
Service level adjustments (included above)	NA	NA	NA	NA	\$ -	
Signage, labels, and container color (included above)	NA	NA	NA	NA	\$ -	
Collection area adjustments	NA	NA	NA	NA	\$ -	
Bulky collection	NA	NA	NA	NA	\$ -	
Collection	\$ 43,936,438	\$ 8,285,644	\$ 40,744,055	\$ 231,340	\$ 93,197,478	
Direct Collection Costs	\$ 31,521,899	\$ 5,646,739	\$ 27,767,432	\$ 180,903	\$ 65,116,973	
Collection Capital - Containers	\$ 1,082,732	\$ 98,918	\$ 486,422	\$ 11,945	\$ 1,680,016	
Collection Capital - Trucks	\$ 5,133,308	\$ 700,660	\$ 3,445,442	NA	\$ 9,279,410	
Collection Labor	\$ 18,066,088	\$ 3,161,137	\$ 15,544,664	\$ 141,757	\$ 36,913,646	
Collection Operations	\$ 7,239,771	\$ 1,686,025	\$ 8,290,904	\$ 27,201	\$ 17,243,900	
Indirect Collection Costs	\$ 12,414,539	\$ 2,638,905	\$ 12,976,623	\$ 50,437	\$ 28,080,505	
Collection Administrative	\$ 6,851,851	\$ 1,642,421	\$ 8,076,488	\$ 50,437	\$ 16,621,198	
Collection Margin and Franchise Fee	\$ 5,562,688	\$ 996,483	\$ 4,900,135	NA	\$ 11,459,307	
Cost Savings from Reduced Garbage Disposal	\$ (16,283,972)	\$ (2,532,492)	\$ (16,693,396)	\$ (650,774)	\$ (36,160,634)	
Avoided Disposal Tip Fees	\$ (16,283,972)	\$ (2,532,492)	\$ (16,693,396)	\$ (650,774)	\$ (36,160,634)	
Initial Transfer Transport	\$ 259,313	\$ 97,149	\$ 265,631	\$ 24,260	\$ 646,353	
Consolidation and Transfer to MRF	\$ 259,313	\$ 97,149	\$ 265,631	\$ 24,260	\$ 646,353	
Sortation	\$ 17,216,126	\$ 2,480,157	\$ 12,329,771	\$ 53,863	\$ 32,079,917	
Sortation Labor	\$ 9,288,534	\$ 1,338,107	\$ 6,652,223	\$ 29,060	\$ 17,307,925	
Sortation Capital	\$ 631,113	\$ 90,918	\$ 451,988	\$ 1,975	\$ 1,175,993	
Sortation Facility	\$ 2,550,142	\$ 367,374	\$ 1,826,350	\$ 7,978	\$ 4,751,844	
Glass and Unsorted Container Transfer	\$ 143,488	\$ 20,671	\$ 102,763	\$ 449	\$ 267,371	
Sortation Residual Disposal	\$ 1,437,704	\$ 207,116	\$ 1,029,648	\$ 4,498	\$ 2,678,966	
Sortation Administrative & Marketing	\$ 1,900,505	\$ 273,787	\$ 1,361,096	\$ 5,946	\$ 3,541,334	
Sortation Margin	\$ 1,264,640	\$ 182,184	\$ 905,704	\$ 3,957	\$ 2,356,485	
Overall System Costs						
Total Costs	\$ 48,496,206	\$ 11,738,307	\$ 50,578,609	\$ (341,311)	\$ 110,471,811	
Tons Collected for Recycling	120,909	18,804	123,949	4,832	268,493	
Tons Collected Commingled	99,736	14,368	71,428	312	185,844	
Tons Collected Source-Separated	21,173	4,436	52,520	4,520	82,649	
Tons Marketed	112,291	17,464	115,114	4,488	249,356	
Tons Marketed (excluding bale contamination)	112,291	17,464	115,114	4,488	249,356	
Total Cost per Ton Collected	\$ 401	\$ 624	\$ 408	\$ (71)	\$ 411	
Total Cost per Ton Marketed	\$ 432	\$ 672	\$ 439	\$ (76)	\$ 443	
Customers	465,865	7,221	35,511	NA	NA	
Annual pounds per customer	519	5,208	6,981	NA	NA	
Commodity Revenues						
Commodity Revenues						
Commodity Sales (lower range)	\$ 9,288,534	\$ 1,338,107	\$ 6,652,223	\$ 29,060	\$ 5,849,737	
Commodity Sales (mid-point)	\$ 631,113	\$ 90,918	\$ 451,988	\$ 1,975	\$ 21,726,865	
Commodity Sales (upper range)	\$ 2,550,142	\$ 367,374	\$ 1,826,350	\$ 7,978	\$ 37,603,993	
Full-Time Equivalent (FTE) Employment						
	SF Res. (on-route)	MF Res. (on-route)	Commercial (on-route)	Self-haul (excluding Bottle Bill)	Total	
Recycling Customer Engagement	25	32	122	3	183	
Local Government Engagement	20	13	28	-	61	
New Engagement (costs listed in collection)	6	19	94	3	122	
Recycling Collection	148	25	122	13	308	
Route Drivers and Operations	113	22	110	13	259	
Management and Administrative	35	3	12	NA	50	
Sortation	162	23	116	1	301	
Sorting Labor	119	17	85	0	221	
Equipment Operators, Supervisors, Maintenance	28	4	20	0	53	
Admininstrative and Marketing	15	2	10	0	27	
Overall Recycling Svsstem FTEs	335	80	360	17	792	

Figures in this report represent the consultant team's best modeling estimates based on available data.

Engagement + Improved MRFs (S1/A)						
REVISED - 1 - Metro Area 2025						
	SF Res. (on-route)	MF Res. (on-route)	Commercial (on-route)	Self-haul (excluding Bottle Bill)	Total	
Recycling System Costs						
Customer Engagement Costs	\$ 3,368,301	\$ 3,407,849	\$ 13,932,547	\$ -	\$ 20,708,697	
Collection Engagement Labor and Expenses	\$ 1,824,301	\$ 2,367,328	\$ 11,641,162	NA	\$ 15,832,791	
Local Government Engagement Labor and Expenses	\$ 1,544,000	\$ 1,040,521	\$ 2,291,385	NA	\$ 4,875,906	
Multifamily Property Improvements	\$ -	\$ -	\$ -	\$ -	\$ -	
Service level adjustments (included above)	NA	NA	NA	NA	\$ -	
Signage, labels, and container color (included above)	NA	NA	NA	NA	\$ -	
Collection area adjustments	NA	NA	NA	NA	\$ -	
Bulky collection	NA	NA	NA	NA	\$ -	
Collection	\$ 43,936,438	\$ 8,285,644	\$ 40,744,055	\$ 231,340	\$ 93,197,478	
Direct Collection Costs	\$ 31,521,899	\$ 5,646,739	\$ 27,767,432	\$ 180,903	\$ 65,116,973	
Collection Capital - Containers	\$ 1,082,732	\$ 98,918	\$ 486,422	\$ 11,945	\$ 1,680,016	
Collection Capital - Trucks	\$ 5,133,308	\$ 700,660	\$ 3,445,442	NA	\$ 9,279,410	
Collection Labor	\$ 18,066,088	\$ 3,161,137	\$ 15,544,664	\$ 141,757	\$ 36,913,646	
Collection Operations	\$ 7,239,771	\$ 1,686,025	\$ 8,290,904	\$ 27,201	\$ 17,243,900	
Indirect Collection Costs	\$ 12,414,539	\$ 2,638,905	\$ 12,976,623	\$ 50,437	\$ 28,080,505	
Collection Administrative	\$ 6,851,851	\$ 1,642,421	\$ 8,076,488	\$ 50,437	\$ 16,621,198	
Collection Margin and Franchise Fee	\$ 5,562,688	\$ 996,483	\$ 4,900,135	NA	\$ 11,459,307	
Cost Savings from Reduced Garbage Disposal	\$ (16,283,972)	\$ (2,532,492)	\$ (16,693,396)	\$ (650,774)	\$ (36,160,634)	
Avoided Disposal Tip Fees	\$ (16,283,972)	\$ (2,532,492)	\$ (16,693,396)	\$ (650,774)	\$ (36,160,634)	
Initial Transfer Transport	\$ 259,313	\$ 97,149	\$ 265,631	\$ 24,260	\$ 646,353	
Consolidation and Transfer to MRF	\$ 259,313	\$ 97,149	\$ 265,631	\$ 24,260	\$ 646,353	
Sortation	\$ 17,515,071	\$ 2,523,223	\$ 12,543,868	\$ 54,798	\$ 32,636,961	
Sortation Labor	\$ 7,979,839	\$ 1,149,576	\$ 5,714,966	\$ 24,966	\$ 14,869,347	
Sortation Capital	\$ 1,788,555	\$ 257,659	\$ 1,280,920	\$ 5,596	\$ 3,332,730	
Sortation Facility	\$ 2,550,142	\$ 367,374	\$ 1,826,350	\$ 7,978	\$ 4,751,844	
Glass and Unsorted Container Transfer	\$ 143,488	\$ 20,671	\$ 102,763	\$ 449	\$ 267,371	
Sortation Residual Disposal	\$ 1,865,758	\$ 268,781	\$ 1,336,210	\$ 5,837	\$ 3,476,586	
Sortation Administrative & Marketing	\$ 1,900,505	\$ 273,787	\$ 1,361,096	\$ 5,946	\$ 3,541,334	
Sortation Margin	\$ 1,286,784	\$ 185,374	\$ 921,563	\$ 4,026	\$ 2,397,747	
Overall System Costs						
Total Costs	\$ 48,795,151	\$ 11,781,373	\$ 50,792,706	\$ (340,375)	\$ 111,028,854	
Tons Collected for Recycling	120,909	18,804	123,949	4,832	268,493	
Tons Collected Commingled	99,736	14,368	71,428	312	185,844	
Tons Collected Source-Separated	21,173	4,436	52,520	4,520	82,649	
Tons Marketed	111,868	17,398	114,681	4,471	248,418	
Tons Marketed (excluding bale contamination)	111,868	17,398	114,681	4,471	248,418	
Total Cost per Ton Collected	\$ 404	\$ 627	\$ 410	\$ (70)	\$ 414	
Total Cost per Ton Marketed	\$ 436	\$ 677	\$ 443	\$ (76)	\$ 447	
Customers	465,865	7,221	35,511	NA	NA	
Annual pounds per customer	519	5,208	6,981	NA	NA	
Commodity Revenues						
Commodity Revenues						
Commodity Sales (lower range)	\$ 7,979,839	\$ 1,149,576	\$ 5,714,966	\$ 24,966	\$ 7,433,212	
Commodity Sales (mid-point)	\$ 1,788,555	\$ 257,659	\$ 1,280,920	\$ 5,596	\$ 21,255,033	
Commodity Sales (upper range)	\$ 2,550,142	\$ 367,374	\$ 1,826,350	\$ 7,978	\$ 35,076,854	
Full-Time Equivalent (FTE) Employment						
	SF Res. (on-route)	MF Res. (on-route)	Commercial (on-route)	Self-haul (excluding Bottle Bill)	Total	
Recycling Customer Engagement	25	32	122	3	183	
Local Government Engagement	20	13	28	-	61	
New Engagement (costs listed in collection)	6	19	94	3	122	
Recycling Collection	148	25	122	13	308	
Route Drivers and Operations	113	22	110	13	259	
Management and Administrative	35	3	12	NA	50	
Sortation	141	20	101	0	263	
Sorting Labor	98	14	70	0	182	
Equipment Operators, Supervisors, Maintenance	29	4	21	0	54	
Admininstrative and Marketing	15	2	10	0	27	
Overall Recycling Svsstem FTEs	314	77	345	17	754	

Figures in this report represent the consultant team's best modeling estimates based on available data.

Engagement + MRFs + Expanded Lists (S2/A+)						
REVISED - 1 - Metro Area 2025						
	SF Res. (on-route)	MF Res. (on-route)	Commercial (on-route)	Self-haul (excluding Bottle Bill)	Total	
Recycling System Costs						
Customer Engagement Costs	\$ 3,368,301	\$ 3,407,849	\$ 13,932,547	\$ -	\$ 20,708,697	
Collection Engagement Labor and Expenses	\$ 1,824,301	\$ 2,367,328	\$ 11,641,162	NA	\$ 15,832,791	
Local Government Engagement Labor and Expenses	\$ 1,544,000	\$ 1,040,521	\$ 2,291,385	NA	\$ 4,875,906	
Multifamily Property Improvements	\$ -	\$ -	\$ -	\$ -	\$ -	
Service level adjustments (included above)	NA	NA	NA	NA	\$ -	
Signage, labels, and container color (included above)	NA	NA	NA	NA	\$ -	
Collection area adjustments	NA	NA	NA	NA	\$ -	
Bulky collection	NA	NA	NA	NA	\$ -	
Collection	\$ 43,936,438	\$ 8,285,644	\$ 40,744,055	\$ 423,163	\$ 93,389,300	
Direct Collection Costs	\$ 31,521,899	\$ 5,646,739	\$ 27,767,432	\$ 351,289	\$ 65,287,360	
Collection Capital - Containers	\$ 1,082,732	\$ 98,918	\$ 486,422	\$ 35,773	\$ 1,703,844	
Collection Capital - Trucks	\$ 5,133,308	\$ 700,660	\$ 3,445,442	NA	\$ 9,279,410	
Collection Labor	\$ 18,066,088	\$ 3,161,137	\$ 15,544,664	\$ 276,755	\$ 37,048,645	
Collection Operations	\$ 7,239,771	\$ 1,686,025	\$ 8,290,904	\$ 38,761	\$ 17,255,461	
Indirect Collection Costs	\$ 12,414,539	\$ 2,638,905	\$ 12,976,623	\$ 71,873	\$ 28,101,941	
Collection Administrative	\$ 6,851,851	\$ 1,642,421	\$ 8,076,488	\$ 71,873	\$ 16,642,634	
Collection Margin and Franchise Fee	\$ 5,562,688	\$ 996,483	\$ 4,900,135	NA	\$ 11,459,307	
Cost Savings from Reduced Garbage Disposal	\$ (16,975,877)	\$ (2,726,232)	\$ (17,443,053)	\$ (858,169)	\$ (38,003,330)	
Avoided Disposal Tip Fees	\$ (16,975,877)	\$ (2,726,232)	\$ (17,443,053)	\$ (858,169)	\$ (38,003,330)	
Initial Transfer Transport	\$ 272,670	\$ 100,026	\$ 272,309	\$ 26,778	\$ 671,783	
Consolidation and Transfer to MRF	\$ 272,670	\$ 100,026	\$ 272,309	\$ 26,778	\$ 671,783	
Sortation	\$ 17,155,512	\$ 2,585,675	\$ 12,594,843	\$ 209,463	\$ 32,545,493	
Sortation Labor	\$ 7,624,095	\$ 1,149,102	\$ 5,597,285	\$ 93,088	\$ 14,463,570	
Sortation Capital	\$ 1,658,748	\$ 250,006	\$ 1,217,782	\$ 20,253	\$ 3,146,788	
Sortation Facility	\$ 2,683,104	\$ 404,397	\$ 1,969,820	\$ 32,760	\$ 5,090,081	
Glass and Unsorted Container Transfer	\$ 270,328	\$ 40,744	\$ 198,463	\$ 3,301	\$ 512,835	
Sortation Residual Disposal	\$ 2,016,588	\$ 303,940	\$ 1,480,493	\$ 24,622	\$ 3,825,643	
Sortation Administrative & Marketing	\$ 1,651,894	\$ 248,973	\$ 1,212,750	\$ 20,169	\$ 3,133,787	
Sortation Margin	\$ 1,250,754	\$ 188,513	\$ 918,250	\$ 15,271	\$ 2,372,789	
Overall System Costs						
Total Costs	\$ 47,757,044	\$ 11,652,963	\$ 50,100,702	\$ (198,765)	\$ 109,311,944	
Tons Collected for Recycling 126,046 20,242 129,515 6,372 282,175						
Tons Collected Commingled 104,873 15,806 76,993 1,280 198,953						
Tons Collected Source-Separated 21,173 4,436 52,521 5,091 83,222						
Tons Marketed 118,984 19,108 122,258 6,015 266,365						
Tons Marketed (excluding bale contamination) 118,984 19,108 122,258 6,015 266,365						
Total Cost per Ton Collected	\$ 379	\$ 576	\$ 387	\$ (31)	\$ 387	
Total Cost per Ton Marketed	\$ 401	\$ 610	\$ 410	\$ (33)	\$ 410	
Customers	465,865	7,221	35,511	NA	NA	
Annual pounds per customer	541	5,606	7,294	NA	NA	
Commodity Revenues						
Commodity Revenues						
Commodity Sales (lower range)	\$ 7,624,095	\$ 1,149,102	\$ 5,597,285	\$ 93,088	\$ 7,650,891	
Commodity Sales (mid-point)	\$ 1,658,748	\$ 250,006	\$ 1,217,782	\$ 20,253	\$ 22,031,741	
Commodity Sales (upper range)	\$ 2,683,104	\$ 404,397	\$ 1,969,820	\$ 32,760	\$ 36,412,591	
Full-Time Equivalent (FTE) Employment						
	SF Res. (on-route)	MF Res. (on-route)	Commercial (on-route)	Self-haul (excluding Bottle Bill)	Total	
Recycling Customer Engagement	25	32	122	5	184	
Local Government Engagement	20	13	28	-	61	
New Engagement (costs listed in collection)	6	19	94	5	123	
Recycling Collection	148	25	122	20	315	
Route Drivers and Operations	113	22	110	20	265	
Management and Administrative	35	3	12	NA	50	
Sortation	134	20	98	2	254	
Sorting Labor	94	14	69	1	178	
Equipment Operators, Supervisors, Maintenance	27	4	20	0	51	
Admininstrative and Marketing	13	2	9	0	24	
Overall Recycling System FTEs	307	77	342	27	753	

Figures in this report represent the consultant team's best modeling estimates based on available data.

Engagement + MRFs + Expanded + Statewide List (S7/A++)						
REVISED - 1 - Metro Area 2025						
	SF Res. (on-route)	MF Res. (on-route)	Commercial (on-route)	Self-haul (excluding Bottle Bill)	Total	
Recycling System Costs						
Customer Engagement Costs	\$ 3,368,301	\$ 3,407,849	\$ 13,932,547	\$ -	\$ 20,708,697	
Collection Engagement Labor and Expenses	\$ 1,824,301	\$ 2,367,328	\$ 11,641,162	NA	\$ 15,832,791	
Local Government Engagement Labor and Expenses	\$ 1,544,000	\$ 1,040,521	\$ 2,291,385	NA	\$ 4,875,906	
Multifamily Property Improvements	\$ -	\$ -	\$ -	\$ -	\$ -	
Service level adjustments (included above)	NA	NA	NA	NA	\$ -	
Signage, labels, and container color (included above)	NA	NA	NA	NA	\$ -	
Collection area adjustments	NA	NA	NA	NA	\$ -	
Bulky collection	NA	NA	NA	NA	\$ -	
Collection	\$ 43,936,438	\$ 8,285,644	\$ 40,744,055	\$ 423,163	\$ 93,389,300	
Direct Collection Costs	\$ 31,521,899	\$ 5,646,739	\$ 27,767,432	\$ 351,289	\$ 65,287,360	
Collection Capital - Containers	\$ 1,082,732	\$ 98,918	\$ 486,422	\$ 35,773	\$ 1,703,844	
Collection Capital - Trucks	\$ 5,133,308	\$ 700,660	\$ 3,445,442	NA	\$ 9,279,410	
Collection Labor	\$ 18,066,088	\$ 3,161,137	\$ 15,544,664	\$ 276,755	\$ 37,048,645	
Collection Operations	\$ 7,239,771	\$ 1,686,025	\$ 8,290,904	\$ 38,761	\$ 17,255,461	
Indirect Collection Costs	\$ 12,414,539	\$ 2,638,905	\$ 12,976,623	\$ 71,873	\$ 28,101,941	
Collection Administrative	\$ 6,851,851	\$ 1,642,421	\$ 8,076,488	\$ 71,873	\$ 16,642,634	
Collection Margin and Franchise Fee	\$ 5,562,688	\$ 996,483	\$ 4,900,135	NA	\$ 11,459,307	
Cost Savings from Reduced Garbage Disposal	\$ (16,975,877)	\$ (2,726,232)	\$ (17,443,053)	\$ (858,169)	\$ (38,003,330)	
Avoided Disposal Tip Fees	\$ (16,975,877)	\$ (2,726,232)	\$ (17,443,053)	\$ (858,169)	\$ (38,003,330)	
Initial Transfer Transport	\$ 272,670	\$ 100,026	\$ 272,309	\$ 26,778	\$ 671,783	
Consolidation and Transfer to MRF	\$ 272,670	\$ 100,026	\$ 272,309	\$ 26,778	\$ 671,783	
Sortation	\$ 17,003,098	\$ 2,562,704	\$ 12,482,948	\$ 207,602	\$ 32,256,352	
Sortation Labor	\$ 7,631,453	\$ 1,150,211	\$ 5,602,687	\$ 93,177	\$ 14,477,529	
Sortation Capital	\$ 1,650,978	\$ 248,835	\$ 1,212,077	\$ 20,158	\$ 3,132,048	
Sortation Facility	\$ 2,681,198	\$ 404,110	\$ 1,968,421	\$ 32,737	\$ 5,086,466	
Glass and Unsorted Container Transfer	\$ 134,774	\$ 20,313	\$ 98,945	\$ 1,646	\$ 255,677	
Sortation Residual Disposal	\$ 2,011,033	\$ 303,103	\$ 1,476,415	\$ 24,554	\$ 3,815,105	
Sortation Administrative & Marketing	\$ 1,644,156	\$ 247,807	\$ 1,207,069	\$ 20,075	\$ 3,119,107	
Sortation Margin	\$ 1,249,506	\$ 188,325	\$ 917,334	\$ 15,256	\$ 2,370,420	
Overall System Costs						
Total Costs	\$ 47,604,630	\$ 11,629,991	\$ 49,988,806	\$ (200,626)	\$ 109,022,802	
Tons Collected for Recycling	126,046	20,242	129,515	6,372	282,175	
Tons Collected Commingled	104,873	15,806	76,993	1,280	198,953	
Tons Collected Source-Separated	21,173	4,436	52,521	5,091	83,222	
Tons Marketed	119,002	19,111	122,277	6,016	266,406	
Tons Marketed (excluding bale contamination)	119,002	19,111	122,277	6,016	266,406	
Total Cost per Ton Collected	\$ 378	\$ 575	\$ 386	\$ (31)	\$ 386	
Total Cost per Ton Marketed	\$ 400	\$ 609	\$ 409	\$ (33)	\$ 409	
Customers	465,865	7,221	35,511	NA	NA	
Annual pounds per customer	541	5,606	7,294	NA	NA	
Commodity Revenues						
Commodity Revenues						
Commodity Sales (lower range)	\$ 7,631,453	\$ 1,150,211	\$ 5,602,687	\$ 93,177	\$ 8,322,781	
Commodity Sales (mid-point)	\$ 1,650,978	\$ 248,835	\$ 1,212,077	\$ 20,158	\$ 23,526,028	
Commodity Sales (upper range)	\$ 2,681,198	\$ 404,110	\$ 1,968,421	\$ 32,737	\$ 38,729,276	
Full-Time Equivalent (FTE) Employment						
	SF Res. (on-route)	MF Res. (on-route)	Commercial (on-route)	Self-haul (excluding Bottle Bill)	Total	
Recycling Customer Engagement	25	32	122	5	184	
Local Government Engagement	20	13	28	-	61	
New Engagement (costs listed in collection)	6	19	94	5	123	
Recycling Collection	148	25	122	20	315	
Route Drivers and Operations	113	22	110	20	265	
Management and Administrative	35	3	12	NA	50	
Sortation	134	20	98	2	254	
Sorting Labor	94	14	69	1	178	
Equipment Operators, Supervisors, Maintenance	27	4	20	0	51	
Admininstrative and Marketing	13	2	9	0	24	
Overall Recycling System FTEs	307	77	342	27	753	

Figures in this report represent the consultant team's best modeling estimates based on available data.

+Container Recovery Facility (S3/B)						
REVISED - 1 - Metro Area 2025						
	SF Res. (on-route)	MF Res. (on-route)	Commercial (on-route)	Self-haul (excluding Bottle Bill)	Total	
Recycling System Costs						
Customer Engagement Costs	\$ 3,368,301	\$ 3,407,849	\$ 13,932,547	\$ -	\$ 20,708,697	
Collection Engagement Labor and Expenses	\$ 1,824,301	\$ 2,367,328	\$ 11,641,162	NA	\$ 15,832,791	
Local Government Engagement Labor and Expenses	\$ 1,544,000	\$ 1,040,521	\$ 2,291,385	NA	\$ 4,875,906	
Multifamily Property Improvements	\$ -	\$ -	\$ -	\$ -	\$ -	
Service level adjustments (included above)	NA	NA	NA	NA	\$ -	
Signage, labels, and container color (included above)	NA	NA	NA	NA	\$ -	
Collection area adjustments	NA	NA	NA	NA	\$ -	
Bulky collection	NA	NA	NA	NA	\$ -	
Collection	\$ 43,936,438	\$ 8,285,644	\$ 40,744,055	\$ 423,163	\$ 93,389,300	
Direct Collection Costs	\$ 31,521,899	\$ 5,646,739	\$ 27,767,432	\$ 351,289	\$ 65,287,360	
Collection Capital - Containers	\$ 1,082,732	\$ 98,918	\$ 486,422	\$ 35,773	\$ 1,703,844	
Collection Capital - Trucks	\$ 5,133,308	\$ 700,660	\$ 3,445,442	NA	\$ 9,279,410	
Collection Labor	\$ 18,066,088	\$ 3,161,137	\$ 15,544,664	\$ 276,755	\$ 37,048,645	
Collection Operations	\$ 7,239,771	\$ 1,686,025	\$ 8,290,904	\$ 38,761	\$ 17,255,461	
Indirect Collection Costs	\$ 12,414,539	\$ 2,638,905	\$ 12,976,623	\$ 71,873	\$ 28,101,941	
Collection Administrative	\$ 6,851,851	\$ 1,642,421	\$ 8,076,488	\$ 71,873	\$ 16,642,634	
Collection Margin and Franchise Fee	\$ 5,562,688	\$ 996,483	\$ 4,900,135	NA	\$ 11,459,307	
Cost Savings from Reduced Garbage Disposal	\$ (16,975,877)	\$ (2,726,232)	\$ (17,443,053)	\$ (858,169)	\$ (38,003,330)	
Avoided Disposal Tip Fees	\$ (16,975,877)	\$ (2,726,232)	\$ (17,443,053)	\$ (858,169)	\$ (38,003,330)	
Initial Transfer Transport	\$ 272,670	\$ 100,026	\$ 272,309	\$ 26,778	\$ 671,783	
Consolidation and Transfer to MRF	\$ 272,670	\$ 100,026	\$ 272,309	\$ 26,778	\$ 671,783	
Sortation	\$ 16,923,287	\$ 2,550,675	\$ 12,424,354	\$ 206,628	\$ 32,104,943	
Sortation Labor	\$ 7,461,965	\$ 1,124,666	\$ 5,478,256	\$ 91,108	\$ 14,155,995	
Sortation Capital	\$ 1,524,583	\$ 229,785	\$ 1,119,284	\$ 18,615	\$ 2,892,266	
Sortation Facility	\$ 2,676,426	\$ 403,390	\$ 1,964,918	\$ 32,678	\$ 5,077,412	
Glass and Unsorted Container Transfer	\$ 483,490	\$ 72,872	\$ 354,958	\$ 5,903	\$ 917,222	
Sortation Residual Disposal	\$ 1,907,166	\$ 287,448	\$ 1,400,160	\$ 23,286	\$ 3,618,059	
Sortation Administrative & Marketing	\$ 1,651,894	\$ 248,973	\$ 1,212,750	\$ 20,169	\$ 3,133,787	
Sortation Margin	\$ 1,217,763	\$ 183,541	\$ 894,029	\$ 14,868	\$ 2,310,202	
Overall System Costs						
Total Costs	\$ 47,524,819	\$ 11,617,962	\$ 49,930,212	\$ (201,600)	\$ 108,871,393	
Tons Collected for Recycling126,04620,242129,5156,372282,175						
Tons Collected Commingled104,87315,80676,9931,280198,953						
Tons Collected Source-Separated21,1734,43652,5215,09183,222						
Tons Marketed119,51719,194122,8066,042267,558						
Tons Marketed (excluding bale contamination)119,51719,194122,8066,042267,558						
Total Cost per Ton Collected	\$ 377	\$ 574	\$ 386	\$ (32)	\$ 386	
Total Cost per Ton Marketed	\$ 398	\$ 605	\$ 407	\$ (33)	\$ 407	
Customers	465,865	7,221	35,511	NA	NA	
Annual pounds per customer	541	5,606	7,294	NA	NA	
Commodity Revenues						
Commodity Revenues						
Commodity Sales (lower range)	\$ 7,461,965	\$ 1,124,666	\$ 5,478,256	\$ 91,108	\$ 6,726,188	
Commodity Sales (mid-point)	\$ 1,524,583	\$ 229,785	\$ 1,119,284	\$ 18,615	\$ 20,322,001	
Commodity Sales (upper range)	\$ 2,676,426	\$ 403,390	\$ 1,964,918	\$ 32,678	\$ 33,917,815	
Full-Time Equivalent (FTE) Employment						
	SF Res. (on-route)	MF Res. (on-route)	Commercial (on-route)	Self-haul (excluding Bottle Bill)	Total	
Recycling Customer Engagement	25	32	122	5	184	
Local Government Engagement	20	13	28	-	61	
New Engagement (costs listed in collection)	6	19	94	5	123	
Recycling Collection	148	25	122	20	315	
Route Drivers and Operations	113	22	110	20	265	
Management and Administrative	35	3	12	NA	50	
Sortation	131	20	96	2	249	
Sorting Labor	92	14	67	1	174	
Equipment Operators, Supervisors, Maintenance	27	4	20	0	51	
Admininstrative and Marketing	13	2	9	0	24	
Overall Recycling Svstem FTEs	304	77	340	27	748	

Figures in this report represent the consultant team's best modeling estimates based on available data.

Dual-Stream Collection (S4/C)						
REVISED - 1 - Metro Area 2025						
	SF Res. (on-route)	MF Res. (on-route)	Commercial (on-route)	Self-haul (excluding Bottle Bill)	Total	
Recycling System Costs						
Customer Engagement Costs	\$ 3,368,301	\$ 3,407,849	\$ 13,932,547	\$ -	\$ 20,708,697	
Collection Engagement Labor and Expenses	\$ 1,824,301	\$ 2,367,328	\$ 11,641,162	NA	\$ 15,832,791	
Local Government Engagement Labor and Expenses	\$ 1,544,000	\$ 1,040,521	\$ 2,291,385	NA	\$ 4,875,906	
Multifamily Property Improvements	\$ -	\$ -	\$ -	\$ -	\$ -	
Service level adjustments (included above)	NA	NA	NA	NA	\$ -	
Signage, labels, and container color (included above)	NA	NA	NA	NA	\$ -	
Collection area adjustments	NA	NA	NA	NA	\$ -	
Bulky collection	NA	NA	NA	NA	\$ -	
Collection	\$ 56,484,164	\$ 8,851,745	\$ 43,527,813	\$ 423,163	\$ 109,286,885	
Direct Collection Costs	\$ 41,808,915	\$ 6,127,922	\$ 30,133,614	\$ 351,289	\$ 78,421,740	
Collection Capital - Containers	\$ 4,065,586	\$ 578,155	\$ 2,843,034	\$ 35,773	\$ 7,522,548	
Collection Capital - Trucks	\$ 8,605,894	\$ 698,442	\$ 3,434,536	NA	\$ 12,738,872	
Collection Labor	\$ 21,146,985	\$ 3,164,096	\$ 15,559,211	\$ 276,755	\$ 40,147,047	
Collection Operations	\$ 7,990,450	\$ 1,687,230	\$ 8,296,832	\$ 38,761	\$ 18,013,273	
Indirect Collection Costs	\$ 14,675,250	\$ 2,723,822	\$ 13,394,200	\$ 71,873	\$ 30,865,145	
Collection Administrative	\$ 7,297,206	\$ 1,642,424	\$ 8,076,503	\$ 71,873	\$ 17,088,007	
Collection Margin and Franchise Fee	\$ 7,378,044	\$ 1,081,398	\$ 5,317,697	NA	\$ 13,777,138	
Cost Savings from Reduced Garbage Disposal	\$ (16,975,877)	\$ (2,726,232)	\$ (17,443,053)	\$ (858,169)	\$ (38,003,330)	
Avoided Disposal Tip Fees	\$ (16,975,877)	\$ (2,726,232)	\$ (17,443,053)	\$ (858,169)	\$ (38,003,330)	
Initial Transfer Transport	\$ 272,670	\$ 100,026	\$ 272,309	\$ 26,778	\$ 671,783	
Consolidation and Transfer to MRF	\$ 272,670	\$ 100,026	\$ 272,309	\$ 26,778	\$ 671,783	
Sortation	\$ 16,614,504	\$ 2,504,135	\$ 12,197,658	\$ 202,858	\$ 31,519,155	
Sortation Labor	\$ 7,426,117	\$ 1,119,263	\$ 5,451,938	\$ 90,670	\$ 14,087,988	
Sortation Capital	\$ 1,583,282	\$ 238,632	\$ 1,162,378	\$ 19,331	\$ 3,003,624	
Sortation Facility	\$ 2,692,532	\$ 405,818	\$ 1,976,742	\$ 32,875	\$ 5,107,966	
Glass and Unsorted Container Transfer	\$ 135,408	\$ 20,409	\$ 99,411	\$ 1,653	\$ 256,880	
Sortation Residual Disposal	\$ 1,904,597	\$ 287,061	\$ 1,398,274	\$ 23,254	\$ 3,613,186	
Sortation Administrative & Marketing	\$ 1,651,894	\$ 248,973	\$ 1,212,750	\$ 20,169	\$ 3,133,787	
Sortation Margin	\$ 1,220,674	\$ 183,980	\$ 896,167	\$ 14,904	\$ 2,315,724	
Overall System Costs						
Total Costs	\$ 59,763,762	\$ 12,137,523	\$ 52,487,275	\$ (205,371)	\$ 124,183,189	
Tons Collected for Recycling						
Tons Collected Commingled	126,046	20,242	129,515	6,372	282,175	
Tons Collected Source-Separated	104,873	15,806	76,993	1,280	198,953	
Tons Collected	21,173	4,436	52,521	5,091	83,222	
Tons Marketed	116,668	18,736	119,878	5,898	261,180	
Tons Marketed (excluding bale contamination)	116,668	18,736	119,878	5,898	261,180	
Total Cost per Ton Collected	\$ 474	\$ 600	\$ 405	\$ (32)	\$ 440	
Total Cost per Ton Marketed	\$ 512	\$ 648	\$ 438	\$ (35)	\$ 475	
Customers	465,865	7,221	35,511	NA	NA	
Annual pounds per customer	541	5,606	7,294	NA	NA	
Commodity Revenues						
Commodity Revenues						
Commodity Sales (lower range)	\$ 7,426,117	\$ 1,119,263	\$ 5,451,938	\$ 90,670	\$ 7,707,031	
Commodity Sales (mid-point)	\$ 1,583,282	\$ 238,632	\$ 1,162,378	\$ 19,331	\$ 21,889,207	
Commodity Sales (upper range)	\$ 2,692,532	\$ 405,818	\$ 1,976,742	\$ 32,875	\$ 36,071,383	
Full-Time Equivalent (FTE) Employment						
	SF Res. (on-route)	MF Res. (on-route)	Commercial (on-route)	Self-haul (excluding Bottle Bill)	Total	
Recycling Customer Engagement	25	32	122	5	184	
Local Government Engagement	20	13	28	-	61	
New Engagement (costs listed in collection)	6	19	94	5	123	
Recycling Collection	172	25	122	20	339	
Route Drivers and Operations	133	22	110	20	285	
Management and Administrative	39	3	12	NA	54	
Sortation	131	20	96	2	248	
Sorting Labor	89	13	66	1	169	
Equipment Operators, Supervisors, Maintenance	29	4	21	0	54	
Admininstrative and Marketing	13	2	9	0	24	
Overall Recycling System FTEs	328	77	340	27	771	

Figures in this report represent the consultant team's best modeling estimates based on available data.

Engagement + MRFs + Expanded + Statewide List + Expanded Collection (S8/D-low)						
REVISED - 1 - Metro Area 2025						
	SF Res. (on-route)	MF Res. (on-route)	Commercial (on-route)	Self-haul (excluding Bottle Bill)	Total	
Recycling System Costs						
Customer Engagement Costs	\$ 3,368,301	\$ 3,417,729	\$ 13,932,547	\$ -	\$ 20,718,577	
Collection Engagement Labor and Expenses	\$ 1,824,301	\$ 2,377,207	\$ 11,641,162	NA	\$ 15,842,671	
Local Government Engagement Labor and Expenses	\$ 1,544,000	\$ 1,040,521	\$ 2,291,385	NA	\$ 4,875,906	
Multifamily Property Improvements	\$ -	\$ 4,676,374	\$ -	\$ -	\$ 4,676,374	
Service level adjustments (included above)	NA	NA	NA	NA	\$ -	
Signage, labels, and container color (included above)	NA	NA	NA	NA	\$ -	
Collection area adjustments	NA	\$ 2,500,907	NA	NA	\$ 2,500,907	
Bulky collection	NA	\$ 2,175,468	NA	NA	\$ 2,175,468	
Collection	\$ 43,936,438	\$ 8,320,223	\$ 40,744,055	\$ 423,301	\$ 93,424,018	
Direct Collection Costs	\$ 31,521,899	\$ 5,670,305	\$ 27,767,432	\$ 351,428	\$ 65,311,065	
Collection Capital - Containers	\$ 1,082,732	\$ 99,331	\$ 486,422	\$ 35,912	\$ 1,704,396	
Collection Capital - Trucks	\$ 5,133,308	\$ 703,584	\$ 3,445,442	NA	\$ 9,282,334	
Collection Labor	\$ 18,066,088	\$ 3,174,330	\$ 15,544,664	\$ 276,755	\$ 37,061,837	
Collection Operations	\$ 7,239,771	\$ 1,693,061	\$ 8,290,904	\$ 38,761	\$ 17,262,497	
Indirect Collection Costs	\$ 12,414,539	\$ 2,649,918	\$ 12,976,623	\$ 71,873	\$ 28,112,954	
Collection Administrative	\$ 6,851,851	\$ 1,649,276	\$ 8,076,488	\$ 71,873	\$ 16,649,488	
Collection Margin and Franchise Fee	\$ 5,562,688	\$ 1,000,642	\$ 4,900,135	NA	\$ 11,463,465	
Cost Savings from Reduced Garbage Disposal	\$ (16,975,877)	\$ (2,682,960)	\$ (17,443,053)	\$ (858,169)	\$ (37,960,058)	
Avoided Disposal Tip Fees	\$ (16,975,877)	\$ (2,682,960)	\$ (17,443,053)	\$ (858,169)	\$ (37,960,058)	
Initial Transfer Transport	\$ 272,670	\$ 99,384	\$ 272,309	\$ 26,778	\$ 671,140	
Consolidation and Transfer to MRF	\$ 272,670	\$ 99,384	\$ 272,309	\$ 26,778	\$ 671,140	
Sortation	\$ 16,961,482	\$ 2,504,467	\$ 12,452,395	\$ 207,094	\$ 32,125,439	
Sortation Labor	\$ 7,683,908	\$ 1,134,576	\$ 5,641,197	\$ 93,818	\$ 14,553,499	
Sortation Capital	\$ 1,592,828	\$ 235,191	\$ 1,169,386	\$ 19,448	\$ 3,016,853	
Sortation Facility	\$ 2,676,405	\$ 395,188	\$ 1,964,902	\$ 32,678	\$ 5,069,172	
Glass and Unsorted Container Transfer	\$ 130,773	\$ 19,309	\$ 96,008	\$ 1,597	\$ 247,687	
Sortation Residual Disposal	\$ 2,044,603	\$ 301,898	\$ 1,501,060	\$ 24,964	\$ 3,872,525	
Sortation Administrative & Marketing	\$ 1,586,247	\$ 234,219	\$ 1,164,555	\$ 19,368	\$ 3,004,388	
Sortation Margin	\$ 1,246,719	\$ 184,086	\$ 915,288	\$ 15,222	\$ 2,361,315	
Overall System Costs						
Total Costs	\$ 47,563,015	\$ 16,335,218	\$ 49,958,254	\$ (200,995)	\$ 113,655,491	
Tons Collected for Recycling	126,046	19,921	129,515	6,372	281,854	
Tons Collected Commingled	104,873	15,485	76,993	1,280	198,632	
Tons Collected Source-Separated	21,173	4,436	52,521	5,091	83,222	
Tons Marketed	118,637	18,750	121,901	5,997	265,285	
Tons Marketed (excluding bale contamination)	118,637	18,750	121,901	5,997	265,285	
Total Cost per Ton Collected	\$ 377	\$ 820	\$ 386	\$ (32)	\$ 403	
Total Cost per Ton Marketed	\$ 401	\$ 871	\$ 410	\$ (34)	\$ 428	
Customers	465,865	7,252	35,511	NA	NA	
Annual pounds per customer	541	5,494	7,294	NA	NA	
Commodity Revenues						
Commodity Revenues						
Commodity Sales (lower range)	\$ 7,683,908	\$ 1,134,576	\$ 5,641,197	\$ 93,818	\$ 8,315,957	
Commodity Sales (mid-point)	\$ 1,592,828	\$ 235,191	\$ 1,169,386	\$ 19,448	\$ 23,504,227	
Commodity Sales (upper range)	\$ 2,676,405	\$ 395,188	\$ 1,964,902	\$ 32,678	\$ 38,692,496	
Full-Time Equivalent (FTE) Employment						
	SF Res. (on-route)	MF Res. (on-route)	Commercial (on-route)	Self-haul (excluding Bottle Bill)	Total	
Recycling Customer Engagement	25	32	122	5	184	
Local Government Engagement	20	13	28	-	61	
New Engagement (costs listed in collection)	6	19	94	5	123	
Recycling Collection	148	25	122	20	315	
Route Drivers and Operations	113	22	110	20	265	
Management and Administrative	35	3	12	NA	50	
Sortation	134	20	98	2	254	
Sorting Labor	95	14	70	1	180	
Equipment Operators, Supervisors, Maintenance	27	4	20	0	51	
Admininstrative and Marketing	12	2	9	0	23	
Overall Recycling System FTEs	307	77	343	27	753	

Figures in this report represent the consultant team's best modeling estimates based on available data.

Engagement + MRFs + Expanded + Statewide List + Expanded Collection (S9/D-mid)					
REVISED - 1 - Metro Area 2025					
	SF Res. (on-route)	MF Res. (on-route)	Commercial (on-route)	Self-haul (excluding Bottle Bill)	Total
Recycling System Costs					
Customer Engagement Costs	\$ 3,368,301	\$ 3,939,555	\$ 13,932,547	\$ -	\$ 21,240,403
Collection Engagement Labor and Expenses	\$ 1,824,301	\$ 2,899,033	\$ 11,641,162	NA	\$ 16,364,497
Local Government Engagement Labor and Expenses	\$ 1,544,000	\$ 1,040,521	\$ 2,291,385	NA	\$ 4,875,906
Multifamily Property Improvements	\$ -	\$ 5,702,896	\$ -	\$ -	\$ 5,702,896
Service level adjustments (included above)	NA	NA	NA	NA	\$ -
Signage, labels, and container color (included above)	NA	NA	NA	NA	\$ -
Collection area adjustments	NA	\$ 3,049,887	NA	NA	\$ 3,049,887
Bulky collection	NA	\$ 2,653,009	NA	NA	\$ 2,653,009
Collection	\$ 43,936,438	\$ 10,960,144	\$ 40,744,055	\$ 423,479	\$ 96,064,116
Direct Collection Costs	\$ 31,521,899	\$ 7,606,507	\$ 27,767,432	\$ 351,605	\$ 67,247,444
Collection Capital - Containers	\$ 1,082,732	\$ 133,249	\$ 486,422	\$ 36,089	\$ 1,738,491
Collection Capital - Trucks	\$ 5,133,308	\$ 943,832	\$ 3,445,442	NA	\$ 9,522,583
Collection Labor	\$ 18,066,088	\$ 4,258,248	\$ 15,544,664	\$ 276,755	\$ 38,145,755
Collection Operations	\$ 7,239,771	\$ 2,271,179	\$ 8,290,904	\$ 38,761	\$ 17,840,616
Indirect Collection Costs	\$ 12,414,539	\$ 3,353,637	\$ 12,976,623	\$ 71,873	\$ 28,816,673
Collection Administrative	\$ 6,851,851	\$ 2,011,312	\$ 8,076,488	\$ 71,873	\$ 17,011,525
Collection Margin and Franchise Fee	\$ 5,562,688	\$ 1,342,325	\$ 4,900,135	NA	\$ 11,805,148
Cost Savings from Reduced Garbage Disposal	\$ (16,975,877)	\$ (3,619,721)	\$ (17,443,053)	\$ (858,169)	\$ (38,896,819)
Avoided Disposal Tip Fees	\$ (16,975,877)	\$ (3,619,721)	\$ (17,443,053)	\$ (858,169)	\$ (38,896,819)
Initial Transfer Transport	\$ 272,670	\$ 112,659	\$ 272,309	\$ 26,778	\$ 684,416
Consolidation and Transfer to MRF	\$ 272,670	\$ 112,659	\$ 272,309	\$ 26,778	\$ 684,416
Sortation	\$ 16,924,296	\$ 3,631,010	\$ 12,425,095	\$ 206,640	\$ 33,187,042
Sortation Labor	\$ 7,756,387	\$ 1,664,088	\$ 5,694,408	\$ 94,703	\$ 15,209,586
Sortation Capital	\$ 1,514,085	\$ 324,838	\$ 1,111,576	\$ 18,486	\$ 2,968,986
Sortation Facility	\$ 2,666,209	\$ 572,020	\$ 1,957,417	\$ 32,554	\$ 5,228,199
Glass and Unsorted Container Transfer	\$ 124,703	\$ 26,754	\$ 91,552	\$ 1,523	\$ 244,532
Sortation Residual Disposal	\$ 2,110,669	\$ 452,832	\$ 1,549,563	\$ 25,771	\$ 4,138,834
Sortation Administrative & Marketing	\$ 1,507,829	\$ 323,496	\$ 1,106,984	\$ 18,410	\$ 2,956,719
Sortation Margin	\$ 1,244,414	\$ 266,982	\$ 913,596	\$ 15,194	\$ 2,440,186
Overall System Costs					
Total Costs	\$ 47,525,829	\$ 20,726,544	\$ 49,930,953	\$ (201,272)	\$ 117,982,053
<i>Tons Collected for Recycling</i>	126,046	26,876	129,515	6,372	288,809
<i>Tons Collected Commingled</i>	104,873	22,500	76,993	1,280	205,647
<i>Tons Collected Source-Separated</i>	21,173	4,377	52,521	5,091	83,162
<i>Tons Marketed</i>	118,100	25,182	121,350	5,970	270,602
<i>Tons Marketed (excluding bale contamination)</i>	118,100	25,182	121,350	5,970	270,602
Total Cost per Ton Collected	\$ 377	\$ 771	\$ 386	\$ (32)	\$ 409
Total Cost per Ton Marketed	\$ 402	\$ 823	\$ 411	\$ (34)	\$ 436
Customers	465,865	8,843	35,511	NA	NA
Annual pounds per customer	541	6,078	7,294	NA	NA
Commodity Revenues					
Commodity Revenues					
Commodity Sales (lower range)	\$ 7,756,387	\$ 1,664,088	\$ 5,694,408	\$ 94,703	\$ 8,582,712
Commodity Sales (mid-point)	\$ 1,514,085	\$ 324,838	\$ 1,111,576	\$ 18,486	\$ 24,193,991
Commodity Sales (upper range)	\$ 2,666,209	\$ 572,020	\$ 1,957,417	\$ 32,554	\$ 39,805,270
Full-Time Equivalent (FTE) Employment					
	SF Res. (on-route)	MF Res. (on-route)	Commercial (on-route)	Self-haul (excluding Bottle Bill)	Total
Recycling Customer Engagement	25	36	122	5	188
Local Government Engagement	20	13	28	-	61
New Engagement (costs listed in collection)	6	23	94	5	128
Recycling Collection	148	33	122	20	324
Route Drivers and Operations	113	30	110	20	273
Management and Administrative	35	3	12	NA	50
Sortation	135	29	99	2	264
Sorting Labor	97	21	71	1	189
Equipment Operators, Supervisors, Maintenance	26	6	19	0	52
Administrative and Marketing	12	2	8	0	23
Overall Recycling System FTEs	307	99	343	27	776

Figures in this report represent the consultant team's best modeling estimates based on available data.

Engagement + MRFs + Expanded + Statewide List + Expanded Collection (S10/D-hi)						
REVISED - 1 - Metro Area 2025						
	SF Res. (on-route)	MF Res. (on-route)	Commercial (on-route)	Self-haul (excluding Bottle Bill)	Total	
Recycling System Costs						
Customer Engagement Costs	\$ 3,368,301	\$ 4,229,458	\$ 13,932,547	\$ -	\$	21,530,306
Collection Engagement Labor and Expenses	\$ 1,824,301	\$ 3,188,937	\$ 11,641,162	NA	\$	16,654,400
Local Government Engagement Labor and Expenses	\$ 1,544,000	\$ 1,040,521	\$ 2,291,385	NA	\$	4,875,906
Multifamily Property Improvements	\$ -	\$ 6,273,185	\$ -	\$ -	\$	6,273,185
Service level adjustments (included above)	NA	NA	NA	NA	\$	-
Signage, labels, and container color (included above)	NA	NA	NA	NA	\$	-
Collection area adjustments	NA	\$ 3,354,875	NA	NA	\$	3,354,875
Bulky collection	NA	\$ 2,918,310	NA	NA	\$	2,918,310
Collection	\$ 43,936,438	\$ 12,951,042	\$ 40,744,055	\$ 423,693	\$	98,055,228
Direct Collection Costs	\$ 31,521,899	\$ 9,127,809	\$ 27,767,432	\$ 351,819	\$	68,768,959
Collection Capital - Containers	\$ 1,082,732	\$ 159,898	\$ 486,422	\$ 36,303	\$	1,765,355
Collection Capital - Trucks	\$ 5,133,308	\$ 1,132,598	\$ 3,445,442	NA	\$	9,711,349
Collection Labor	\$ 18,066,088	\$ 5,109,897	\$ 15,544,664	\$ 276,755	\$	38,997,404
Collection Operations	\$ 7,239,771	\$ 2,725,415	\$ 8,290,904	\$ 38,761	\$	18,294,852
Indirect Collection Costs	\$ 12,414,539	\$ 3,823,233	\$ 12,976,623	\$ 71,873	\$	29,286,269
Collection Administrative	\$ 6,851,851	\$ 2,212,443	\$ 8,076,488	\$ 71,873	\$	17,212,656
Collection Margin and Franchise Fee	\$ 5,562,688	\$ 1,610,790	\$ 4,900,135	NA	\$	12,073,613
Cost Savings from Reduced Garbage Disposal	\$ (16,975,877)	\$ (4,176,678)	\$ (17,443,053)	\$ (858,169)	\$	(39,453,776)
Avoided Disposal Tip Fees	\$ (16,975,877)	\$ (4,176,678)	\$ (17,443,053)	\$ (858,169)	\$	(39,453,776)
Initial Transfer Transport	\$ 272,670	\$ 126,780	\$ 272,309	\$ 26,778	\$	698,536
Consolidation and Transfer to MRF	\$ 272,670	\$ 126,780	\$ 272,309	\$ 26,778	\$	698,536
Sortation	\$ 17,250,866	\$ 4,291,542	\$ 12,664,848	\$ 210,627	\$	34,417,883
Sortation Labor	\$ 8,017,083	\$ 1,994,430	\$ 5,885,799	\$ 97,886	\$	15,995,198
Sortation Capital	\$ 1,569,564	\$ 390,464	\$ 1,152,307	\$ 19,164	\$	3,131,499
Sortation Facility	\$ 2,656,777	\$ 660,933	\$ 1,950,492	\$ 32,438	\$	5,300,640
Glass and Unsorted Container Transfer	\$ 121,786	\$ 30,297	\$ 89,410	\$ 1,487	\$	242,979
Sortation Residual Disposal	\$ 2,163,281	\$ 538,165	\$ 1,588,188	\$ 26,413	\$	4,316,047
Sortation Administrative & Marketing	\$ 1,453,556	\$ 361,605	\$ 1,067,138	\$ 17,747	\$	2,900,046
Sortation Margin	\$ 1,268,821	\$ 315,648	\$ 931,514	\$ 15,492	\$	2,531,474
Overall System Costs						
Total Costs	\$ 47,852,398	\$ 23,695,329	\$ 50,170,707	\$ (197,071)	\$	121,521,363
Tons Collected for Recycling	126,046	31,012	129,515	6,372		292,945
Tons Collected Commingled	104,873	26,090	76,993	1,280		209,236
Tons Collected Source-Separated	21,173	4,922	52,521	5,091		83,708
Tons Marketed	117,661	28,949	120,899	5,948		273,456
Tons Marketed (excluding bale contamination)	117,661	28,949	120,899	5,948		273,456
Total Cost per Ton Collected	\$ 380	\$ 764	\$ 387	\$ (31)	\$	415
Total Cost per Ton Marketed	\$ 407	\$ 819	\$ 415	\$ (33)	\$	444
Customers	465,865	9,728	35,511	NA		NA
Annual pounds per customer	541	6,376	7,294	NA		NA
Commodity Revenues						
Commodity Revenues						
Commodity Sales (lower range)	\$ 8,017,083	\$ 1,994,430	\$ 5,885,799	\$ 97,886	\$	8,796,894
Commodity Sales (mid-point)	\$ 1,569,564	\$ 390,464	\$ 1,152,307	\$ 19,164	\$	24,819,325
Commodity Sales (upper range)	\$ 2,656,777	\$ 660,933	\$ 1,950,492	\$ 32,438	\$	40,841,757
Full-Time Equivalent (FTE) Employment						
	SF Res. (on-route)	MF Res. (on-route)	Commercial (on-route)	Self-haul (excluding Bottle Bill)	Total	
Recycling Customer Engagement	25	39	122	5	191	
Local Government Engagement	20	13	28	-	61	
New Engagement (costs listed in collection)	6	26	94	5	130	
Recycling Collection	148	40	122	20	330	
Route Drivers and Operations	113	36	110	20	279	
Management and Administrative	35	4	12	NA	51	
Sortation	138	34	101	2	276	
Sorting Labor	100	25	73	1	200	
Equipment Operators, Supervisors, Maintenance	27	7	20	0	54	
Admininstrative and Marketing	11	3	8	0	22	
Overall Recycling Svsstem FTEs	311	113	346	27	797	

Figures in this report represent the consultant team's best modeling estimates based on available data.

Additional Alternative Scenario Analysis - Cost Modeling Results

REVISED - 2 - Willamette Valley, etc. 2025 Tables

August 7, 2020

Original Baseline: Pre-Disruption List (\$0)						
REVISED - 2 - Willamette Valley, etc. 2025						
	SF Res. (on-route)	MF Res. (on-route)	Commercial (on-route)	Self-haul (excluding Bottle Bill)	Total	
Recycling System Costs						
Customer Engagement Costs	\$ 423,868	\$ 10,136	\$ 26,523	\$ -	\$ 460,528	
Collection Engagement Labor and Expenses	\$ 423,868	\$ 10,136	\$ 26,523	NA	\$ 460,528	
Local Government Engagement Labor and Expenses	\$ -	\$ -	\$ -	NA	\$ -	
Multifamily Property Improvements	\$ -	\$ -	\$ -	\$ -	\$ -	
Service level adjustments (included above)	NA	NA	NA	NA	\$ -	
Signage, labels, and container color (included above)	NA	NA	NA	NA	\$ -	
Collection area adjustments	NA	NA	NA	NA	\$ -	
Bulky collection	NA	NA	NA	NA	\$ -	
Collection	\$ 32,601,311	\$ 7,361,507	\$ 19,262,609	\$ 4,191,289	\$ 63,416,715	
Direct Collection Costs	\$ 23,409,367	\$ 5,188,266	\$ 13,575,963	\$ 3,723,647	\$ 45,897,243	
Collection Capital - Containers	\$ 909,021	\$ 79,875	\$ 209,007	\$ 224,716	\$ 1,422,620	
Collection Capital - Trucks	\$ 2,571,785	\$ 294,022	\$ 769,357	NA	\$ 3,635,164	
Collection Labor	\$ 12,559,081	\$ 3,093,068	\$ 8,093,528	\$ 2,630,523	\$ 26,376,200	
Collection Operations	\$ 7,369,481	\$ 1,721,301	\$ 4,504,070	\$ 868,408	\$ 14,463,260	
Indirect Collection Costs	\$ 9,191,943	\$ 2,173,241	\$ 5,686,646	\$ 467,641	\$ 17,519,472	
Collection Administrative	\$ 5,060,878	\$ 1,257,664	\$ 3,290,888	\$ 467,641	\$ 10,077,072	
Collection Margin and Franchise Fee	\$ 4,131,065	\$ 915,576	\$ 2,395,758	NA	\$ 7,442,399	
Cost Savings from Reduced Garbage Disposal	\$ (6,587,942)	\$ (239,236)	\$ (4,911,500)	\$ (1,696,052)	\$ (13,434,731)	
Avoided Disposal Tip Fees	\$ (6,587,942)	\$ (239,236)	\$ (4,911,500)	\$ (1,696,052)	\$ (13,434,731)	
Initial Transfer Transport	\$ 1,057,816	\$ 38,441	\$ 1,339,559	\$ 667,279	\$ 3,103,095	
Consolidation and Transfer to MRF	\$ 1,057,816	\$ 38,441	\$ 1,339,559	\$ 667,279	\$ 3,103,095	
Sortation	\$ 13,993,633	\$ 478,365	\$ 5,403,445	\$ 768,842	\$ 20,644,285	
Sortation Labor	\$ 7,394,655	\$ 252,783	\$ 2,855,342	\$ 406,279	\$ 10,909,059	
Sortation Capital	\$ 459,801	\$ 15,718	\$ 177,546	\$ 25,263	\$ 678,327	
Sortation Facility	\$ 2,060,888	\$ 70,450	\$ 795,783	\$ 113,230	\$ 3,040,351	
Glass and Unsorted Container Transfer	\$ 104,539	\$ 3,574	\$ 40,366	\$ 5,744	\$ 154,223	
Sortation Residual Disposal	\$ 1,560,302	\$ 53,338	\$ 602,489	\$ 85,727	\$ 2,301,855	
Sortation Administrative & Marketing	\$ 1,384,625	\$ 47,333	\$ 534,654	\$ 76,074	\$ 2,042,686	
Sortation Margin	\$ 1,028,822	\$ 35,170	\$ 397,265	\$ 56,526	\$ 1,517,782	
Overall System Costs						
Total Costs	\$ 41,488,685	\$ 7,649,213	\$ 21,120,636	\$ 3,931,358	\$ 74,189,892	
Tons Collected for Recycling 91,460 3,321 68,186 23,546 186,513						
Tons Collected Commingled 80,601 2,755 31,123 4,428 118,908						
Tons Collected Source-Separated 10,859 566 37,063 19,118 67,606						
Tons Marketed 82,315 2,989 61,368 21,192 167,864						
Tons Marketed (excluding bale contamination) 82,315 2,989 61,368 21,192 167,864						
Total Cost per Ton Collected	\$ 454	\$ 2,303	\$ 310	\$ 167	\$ 398	
Total Cost per Ton Marketed	\$ 504	\$ 2,559	\$ 344	\$ 186	\$ 442	
Customers	378,846	9,060	23,706	NA	NA	
Annual pounds per customer	483	733	5,753	NA	NA	
Commodity Revenues						
Commodity Revenues						
Commodity Sales (lower range)	\$ 7,394,655	\$ 252,783	\$ 2,855,342	\$ 406,279	\$ 3,863,293	
Commodity Sales (mid-point)	\$ 459,801	\$ 15,718	\$ 177,546	\$ 25,263	\$ 14,315,173	
Commodity Sales (upper range)	\$ 2,060,888	\$ 70,450	\$ 795,783	\$ 113,230	\$ 24,767,052	
Full-Time Equivalent (FTE) Employment						
	SF Res. (on-route)	MF Res. (on-route)	Commercial (on-route)	Self-haul (excluding Bottle Bill)	Total	
Recycling Customer Engagement	-	-	-	-	-	
Local Government Engagement	-	-	-	-	-	
New Engagement (costs listed in collection)	-	-	-	-	-	
Recycling Collection	70	24	64	68	226	
Route Drivers and Operations	50	22	57	68	197	
Management and Administrative	20	2	6	NA	29	
Sortation	127	4	49	7	188	
Sorting Labor	96	3	37	5	141	
Equipment Operators, Supervisors, Maintenance	21	1	8	1	31	
Admininstrative and Marketing	11	0	4	1	16	
Overall Recycling System FTEs	197	29	113	75	414	

Figures in this report represent the consultant team's best modeling estimates based on available data.

Cascadia Consulting Group, Inc. | Circular Matters, LLC | Bell & Associates

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Revised Baseline: Post-Disruption List (\$5)						
REVISED - 2 - Willamette Valley, etc. 2025						
	SF Res. (on-route)	MF Res. (on-route)	Commercial (on-route)	Self-haul (excluding Bottle Bill)	Total	
Recycling System Costs						
Customer Engagement Costs	\$ 423,868	\$ 10,136	\$ 26,523	\$ -	\$ 460,528	
Collection Engagement Labor and Expenses	\$ 423,868	\$ 10,136	\$ 26,523	NA	\$ 460,528	
Local Government Engagement Labor and Expenses	\$ -	\$ -	\$ -	NA	\$ -	
Multifamily Property Improvements	\$ -	\$ -	\$ -	\$ -	\$ -	
Service level adjustments (included above)	NA	NA	NA	NA	\$ -	
Signage, labels, and container color (included above)	NA	NA	NA	NA	\$ -	
Collection area adjustments	NA	NA	NA	NA	\$ -	
Bulky collection	NA	NA	NA	NA	\$ -	
Collection	\$ 32,601,311	\$ 7,361,507	\$ 19,262,609	\$ 4,061,078	\$ 63,286,504	
Direct Collection Costs	\$ 23,409,367	\$ 5,188,266	\$ 13,575,963	\$ 3,607,961	\$ 45,781,556	
Collection Capital - Containers	\$ 909,021	\$ 79,875	\$ 209,007	\$ 217,737	\$ 1,415,641	
Collection Capital - Trucks	\$ 2,571,785	\$ 294,022	\$ 769,357	NA	\$ 3,635,164	
Collection Labor	\$ 12,559,081	\$ 3,093,068	\$ 8,093,528	\$ 2,548,786	\$ 26,294,463	
Collection Operations	\$ 7,369,481	\$ 1,721,301	\$ 4,504,070	\$ 841,437	\$ 14,436,289	
Indirect Collection Costs	\$ 9,191,943	\$ 2,173,241	\$ 5,686,646	\$ 453,118	\$ 17,504,948	
Collection Administrative	\$ 5,060,878	\$ 1,257,664	\$ 3,290,888	\$ 453,118	\$ 10,062,549	
Collection Margin and Franchise Fee	\$ 4,131,065	\$ 915,576	\$ 2,395,758	NA	\$ 7,442,399	
Cost Savings from Reduced Garbage Disposal	\$ (5,902,368)	\$ (228,497)	\$ (4,816,725)	\$ (1,655,035)	\$ (12,602,625)	
Avoided Disposal Tip Fees	\$ (5,902,368)	\$ (228,497)	\$ (4,816,725)	\$ (1,655,035)	\$ (12,602,625)	
Initial Transfer Transport	\$ 985,861	\$ 37,314	\$ 1,329,611	\$ 665,074	\$ 3,017,860	
Consolidation and Transfer to MRF	\$ 985,861	\$ 37,314	\$ 1,329,611	\$ 665,074	\$ 3,017,860	
Sortation	\$ 12,478,777	\$ 457,526	\$ 5,232,708	\$ 680,629	\$ 18,849,641	
Sortation Labor	\$ 6,590,747	\$ 241,645	\$ 2,763,689	\$ 359,479	\$ 9,955,560	
Sortation Capital	\$ 430,756	\$ 15,793	\$ 180,628	\$ 23,495	\$ 650,672	
Sortation Facility	\$ 1,817,528	\$ 66,638	\$ 762,141	\$ 99,133	\$ 2,745,441	
Glass and Unsorted Container Transfer	\$ 97,936	\$ 3,591	\$ 41,067	\$ 5,342	\$ 147,935	
Sortation Residual Disposal	\$ 1,327,553	\$ 48,674	\$ 556,681	\$ 72,409	\$ 2,005,316	
Sortation Administrative & Marketing	\$ 1,297,159	\$ 47,559	\$ 543,936	\$ 70,751	\$ 1,959,405	
Sortation Margin	\$ 917,099	\$ 33,625	\$ 384,566	\$ 50,021	\$ 1,385,312	
Overall System Costs						
Total Costs	\$ 40,587,450	\$ 7,637,986	\$ 21,034,727	\$ 3,751,746	\$ 73,011,909	
Tons Collected for Recycling	81,942	3,172	66,870	22,977	174,961	
Tons Collected Commingled	71,083	2,606	29,807	3,877	107,374	
Tons Collected Source-Separated	10,859	566	37,063	19,100	67,588	
Tons Marketed	74,261	2,875	60,602	20,823	158,561	
Tons Marketed (excluding bale contamination)	74,261	2,875	60,602	20,823	158,561	
Total Cost per Ton Collected	\$ 495	\$ 2,408	\$ 315	\$ 163	\$ 417	
Total Cost per Ton Marketed	\$ 547	\$ 2,657	\$ 347	\$ 180	\$ 460	
Customers	378,846	9,060	23,706	NA	NA	
Annual pounds per customer	433	700	5,642	NA	NA	
Commodity Revenues						
Commodity Revenues						
Commodity Sales (lower range)	\$ 6,590,747	\$ 241,645	\$ 2,763,689	\$ 359,479	\$ 3,778,611	
Commodity Sales (mid-point)	\$ 430,756	\$ 15,793	\$ 180,628	\$ 23,495	\$ 14,004,488	
Commodity Sales (upper range)	\$ 1,817,528	\$ 66,638	\$ 762,141	\$ 99,133	\$ 24,230,365	
Full-Time Equivalent (FTE) Employment						
	SF Res. (on-route)	MF Res. (on-route)	Commercial (on-route)	Self-haul (excluding Bottle Bill)	Total	
Recycling Customer Engagement	-	-	-	-	-	
Local Government Engagement	-	-	-	-	-	
New Engagement (costs listed in collection)	-	-	-	-	-	
Recycling Collection	70	24	64	66	224	
Route Drivers and Operations	50	22	57	66	195	
Management and Administrative	20	2	6	NA	29	
Sortation	114	4	48	6	173	
Sorting Labor	85	3	35	5	128	
Equipment Operators, Supervisors, Maintenance	20	1	8	1	30	
Admininstrative and Marketing	10	0	4	1	15	
Overall Recycling System FTEs	184	29	112	72	396	

Figures in this report represent the consultant team's best modeling estimates based on available data.

+ Customer Engagement (S6/A-)						
REVISED - 2 - Willamette Valley, etc. 2025						
	SF Res. (on-route)	MF Res. (on-route)	Commercial (on-route)	Self-haul (excluding Bottle Bill)	Total	
Recycling System Costs						
Customer Engagement Costs	\$ 1,483,538	\$ 2,969,949	\$ 7,771,366	\$ -	\$	12,224,854
Collection Engagement Labor and Expenses	\$ 1,483,538	\$ 2,969,949	\$ 7,771,366	NA	\$	12,224,854
Local Government Engagement Labor and Expenses	\$ -	\$ -	\$ -	NA	\$	-
Multifamily Property Improvements	\$ -	\$ -	\$ -	\$ -	\$	-
Service level adjustments (included above)	NA	NA	NA	NA	\$	-
Signage, labels, and container color (included above)	NA	NA	NA	NA	\$	-
Collection area adjustments	NA	NA	NA	NA	\$	-
Bulky collection	NA	NA	NA	NA	\$	-
Collection	\$ 32,601,311	\$ 7,361,507	\$ 19,262,609	\$ 4,638,972	\$	63,864,398
Direct Collection Costs	\$ 23,409,367	\$ 5,188,266	\$ 13,575,963	\$ 4,191,573	\$	46,365,169
Collection Capital - Containers	\$ 909,021	\$ 79,875	\$ 209,007	\$ 214,989	\$	1,412,893
Collection Capital - Trucks	\$ 2,571,785	\$ 294,022	\$ 769,357	NA	\$	3,635,164
Collection Labor	\$ 12,559,081	\$ 3,093,068	\$ 8,093,528	\$ 3,145,768	\$	26,891,445
Collection Operations	\$ 7,369,481	\$ 1,721,301	\$ 4,504,070	\$ 830,816	\$	14,425,668
Indirect Collection Costs	\$ 9,191,943	\$ 2,173,241	\$ 5,686,646	\$ 447,398	\$	17,499,228
Collection Administrative	\$ 5,060,878	\$ 1,257,664	\$ 3,290,888	\$ 447,398	\$	10,056,829
Collection Margin and Franchise Fee	\$ 4,131,065	\$ 915,576	\$ 2,395,758	NA	\$	7,442,399
Cost Savings from Reduced Garbage Disposal	\$ (5,598,823)	\$ (222,840)	\$ (4,780,337)	\$ (1,638,883)	\$	(12,240,883)
Avoided Disposal Tip Fees	\$ (5,598,823)	\$ (222,840)	\$ (4,780,337)	\$ (1,638,883)	\$	(12,240,883)
Initial Transfer Transport	\$ 954,003	\$ 36,720	\$ 1,325,792	\$ 664,383	\$	2,980,898
Consolidation and Transfer to MRF	\$ 954,003	\$ 36,720	\$ 1,325,792	\$ 664,383	\$	2,980,898
Sortation	\$ 11,542,791	\$ 436,322	\$ 5,058,051	\$ 630,546	\$	17,667,710
Sortation Labor	\$ 6,227,627	\$ 235,407	\$ 2,728,946	\$ 340,195	\$	9,532,175
Sortation Capital	\$ 423,138	\$ 15,995	\$ 185,419	\$ 23,115	\$	647,667
Sortation Facility	\$ 1,709,778	\$ 64,630	\$ 749,225	\$ 93,400	\$	2,617,033
Glass and Unsorted Container Transfer	\$ 96,204	\$ 3,637	\$ 42,157	\$ 5,255	\$	147,252
Sortation Residual Disposal	\$ 963,928	\$ 36,437	\$ 422,393	\$ 52,656	\$	1,475,415
Sortation Administrative & Marketing	\$ 1,274,220	\$ 48,166	\$ 558,363	\$ 69,607	\$	1,950,356
Sortation Margin	\$ 847,895	\$ 32,051	\$ 371,548	\$ 46,318	\$	1,297,812
Overall System Costs						
Total Costs	\$ 40,982,819	\$ 10,581,658	\$ 28,637,482	\$ 4,295,018	\$	84,496,977
Tons Collected for Recycling	77,728	3,094	66,365	22,752		169,939
Tons Collected Commingled	66,869	2,528	29,302	3,653		102,352
Tons Collected Source-Separated	10,859	566	37,063	19,100		67,588
Tons Marketed	72,188	2,873	61,635	21,131		157,827
Tons Marketed (excluding bale contamination)	72,188	2,873	61,635	21,131		157,827
Total Cost per Ton Collected	\$ 527	\$ 3,420	\$ 432	\$ 189	\$	497
Total Cost per Ton Marketed	\$ 568	\$ 3,683	\$ 465	\$ 203	\$	535
Customers	378,846	9,060	23,706	NA		NA
Annual pounds per customer	410	683	5,599	NA		NA
Commodity Revenues						
Commodity Revenues						
Commodity Sales (lower range)	\$ 6,227,627	\$ 235,407	\$ 2,728,946	\$ 340,195	\$	3,702,517
Commodity Sales (mid-point)	\$ 423,138	\$ 15,995	\$ 185,419	\$ 23,115	\$	13,751,745
Commodity Sales (upper range)	\$ 1,709,778	\$ 64,630	\$ 749,225	\$ 93,400	\$	23,800,973
Full-Time Equivalent (FTE) Employment						
	SF Res. (on-route)	MF Res. (on-route)	Commercial (on-route)	Self-haul (excluding Bottle Bill)	Total	
Recycling Customer Engagement	5	24	63	16	107	
Local Government Engagement	-	-	-	-	-	
New Engagement (costs listed in collection)	5	24	63	16	107	
Recycling Collection	70	24	64	65	223	
Route Drivers and Operations	50	22	57	65	194	
Management and Administrative	20	2	6	NA	29	
Sortation	108	4	47	6	166	
Sorting Labor	80	3	35	4	122	
Equipment Operators, Supervisors, Maintenance	19	1	8	1	29	
Admininstrative and Marketing	10	0	4	1	15	
Overall Recycling Svsstem FTEs	183	52	174	87	496	

Figures in this report represent the consultant team's best modeling estimates based on available data.

Engagement + Improved MRFs (S1/A)						
REVISED - 2 - Willamette Valley, etc. 2025						
	SF Res. (on-route)	MF Res. (on-route)	Commercial (on-route)	Self-haul (excluding Bottle Bill)	Total	
Recycling System Costs						
Customer Engagement Costs	\$ 1,483,538	\$ 2,969,949	\$ 7,771,366	\$ -	\$	12,224,854
Collection Engagement Labor and Expenses	\$ 1,483,538	\$ 2,969,949	\$ 7,771,366	NA	\$	12,224,854
Local Government Engagement Labor and Expenses	\$ -	\$ -	\$ -	NA	\$	-
Multifamily Property Improvements	\$ -	\$ -	\$ -	\$ -	\$	-
Service level adjustments (included above)	NA	NA	NA	NA	\$	-
Signage, labels, and container color (included above)	NA	NA	NA	NA	\$	-
Collection area adjustments	NA	NA	NA	NA	\$	-
Bulky collection	NA	NA	NA	NA	\$	-
Collection	\$ 32,601,311	\$ 7,361,507	\$ 19,262,609	\$ 4,638,972	\$	63,864,398
Direct Collection Costs	\$ 23,409,367	\$ 5,188,266	\$ 13,575,963	\$ 4,191,573	\$	46,365,169
Collection Capital - Containers	\$ 909,021	\$ 79,875	\$ 209,007	\$ 214,989	\$	1,412,893
Collection Capital - Trucks	\$ 2,571,785	\$ 294,022	\$ 769,357	NA	\$	3,635,164
Collection Labor	\$ 12,559,081	\$ 3,093,068	\$ 8,093,528	\$ 3,145,768	\$	26,891,445
Collection Operations	\$ 7,369,481	\$ 1,721,301	\$ 4,504,070	\$ 830,816	\$	14,425,668
Indirect Collection Costs	\$ 9,191,943	\$ 2,173,241	\$ 5,686,646	\$ 447,398	\$	17,499,228
Collection Administrative	\$ 5,060,878	\$ 1,257,664	\$ 3,290,888	\$ 447,398	\$	10,056,829
Collection Margin and Franchise Fee	\$ 4,131,065	\$ 915,576	\$ 2,395,758	NA	\$	7,442,399
Cost Savings from Reduced Garbage Disposal	\$ (5,598,823)	\$ (222,840)	\$ (4,780,337)	\$ (1,638,883)	\$	(12,240,883)
Avoided Disposal Tip Fees	\$ (5,598,823)	\$ (222,840)	\$ (4,780,337)	\$ (1,638,883)	\$	(12,240,883)
Initial Transfer Transport	\$ 954,003	\$ 36,720	\$ 1,325,792	\$ 664,383	\$	2,980,898
Consolidation and Transfer to MRF	\$ 954,003	\$ 36,720	\$ 1,325,792	\$ 664,383	\$	2,980,898
Sortation	\$ 11,743,222	\$ 443,899	\$ 5,145,880	\$ 641,495	\$	17,974,496
Sortation Labor	\$ 5,350,194	\$ 202,239	\$ 2,344,455	\$ 292,264	\$	8,189,152
Sortation Capital	\$ 1,199,162	\$ 45,329	\$ 525,473	\$ 65,506	\$	1,835,470
Sortation Facility	\$ 1,709,778	\$ 64,630	\$ 749,225	\$ 93,400	\$	2,617,033
Glass and Unsorted Container Transfer	\$ 96,204	\$ 3,637	\$ 42,157	\$ 5,255	\$	147,252
Sortation Residual Disposal	\$ 1,250,923	\$ 47,285	\$ 548,154	\$ 68,334	\$	1,914,697
Sortation Administrative & Marketing	\$ 1,274,220	\$ 48,166	\$ 558,363	\$ 69,607	\$	1,950,356
Sortation Margin	\$ 862,742	\$ 32,612	\$ 378,054	\$ 47,129	\$	1,320,537
Overall System Costs						
Total Costs	\$ 41,183,251	\$ 10,589,234	\$ 28,725,311	\$ 4,305,967	\$	84,803,763
Tons Collected for Recycling 77,728 3,094 66,365 22,752 169,939						
Tons Collected Commingled 66,869 2,528 29,302 3,653 102,352						
Tons Collected Source-Separated 10,859 566 37,063 19,100 67,588						
Tons Marketed 71,916 2,862 61,403 21,051 157,233						
Tons Marketed (excluding bale contamination) 71,916 2,862 61,403 21,051 157,233						
Total Cost per Ton Collected	\$ 530	\$ 3,423	\$ 433	\$ 189	\$	499
Total Cost per Ton Marketed	\$ 573	\$ 3,699	\$ 468	\$ 205	\$	539
Customers	378,846	9,060	23,706	NA	NA	NA
Annual pounds per customer	410	683	5,599	NA	NA	NA
Commodity Revenues						
Commodity Revenues						
Commodity Sales (lower range)	\$ 5,350,194	\$ 202,239	\$ 2,344,455	\$ 292,264	\$	4,704,758
Commodity Sales (mid-point)	\$ 1,199,162	\$ 45,329	\$ 525,473	\$ 65,506	\$	13,453,105
Commodity Sales (upper range)	\$ 1,709,778	\$ 64,630	\$ 749,225	\$ 93,400	\$	22,201,452
Full-Time Equivalent (FTE) Employment						
	SF Res. (on-route)	MF Res. (on-route)	Commercial (on-route)	Self-haul (excluding Bottle Bill)	Total	
Recycling Customer Engagement	5	24	63	16	107	
Local Government Engagement	-	-	-	-	-	
New Engagement (costs listed in collection)	5	24	63	16	107	
Recycling Collection	70	24	64	65	223	
Route Drivers and Operations	50	22	57	65	194	
Management and Administrative	20	2	6	NA	29	
Sortation	95	4	41	5	145	
Sorting Labor	66	2	29	4	100	
Equipment Operators, Supervisors, Maintenance	19	1	9	1	30	
Admininstrative and Marketing	10	0	4	1	15	
Overall Recycling Svstem FTEs	169	52	168	86	475	

Figures in this report represent the consultant team's best modeling estimates based on available data.

Engagement + MRFs + Expanded Lists (S2/A+)						
REVISED - 2 - Willamette Valley, etc. 2025						
	SF Res. (on-route)	MF Res. (on-route)	Commercial (on-route)	Self-haul (excluding Bottle Bill)	Total	
Recycling System Costs						
Customer Engagement Costs	\$ 1,483,538	\$ 2,969,949	\$ 7,771,366	\$ -	\$	12,224,854
Collection Engagement Labor and Expenses	\$ 1,483,538	\$ 2,969,949	\$ 7,771,366	NA	\$	12,224,854
Local Government Engagement Labor and Expenses	\$ -	\$ -	\$ -	NA	\$	-
Multifamily Property Improvements	\$ -	\$ -	\$ -	\$ -	\$	-
Service level adjustments (included above)	NA	NA	NA	NA	\$	-
Signage, labels, and container color (included above)	NA	NA	NA	NA	\$	-
Collection area adjustments	NA	NA	NA	NA	\$	-
Bulky collection	NA	NA	NA	NA	\$	-
Collection	\$ 32,601,311	\$ 7,361,507	\$ 19,262,609	\$ 5,227,469	\$	64,452,896
Direct Collection Costs	\$ 23,409,367	\$ 5,188,266	\$ 13,575,963	\$ 4,747,071	\$	46,920,667
Collection Capital - Containers	\$ 909,021	\$ 79,875	\$ 209,007	\$ 462,043	\$	1,659,947
Collection Capital - Trucks	\$ 2,571,785	\$ 294,022	\$ 769,357	NA	\$	3,635,164
Collection Labor	\$ 12,559,081	\$ 3,093,068	\$ 8,093,528	\$ 3,392,930	\$	27,138,606
Collection Operations	\$ 7,369,481	\$ 1,721,301	\$ 4,504,070	\$ 892,098	\$	14,486,950
Indirect Collection Costs	\$ 9,191,943	\$ 2,173,241	\$ 5,686,646	\$ 480,399	\$	17,532,229
Collection Administrative	\$ 5,060,878	\$ 1,257,664	\$ 3,290,888	\$ 480,399	\$	10,089,830
Collection Margin and Franchise Fee	\$ 4,131,065	\$ 915,576	\$ 2,395,758	NA	\$	7,442,399
Cost Savings from Reduced Garbage Disposal	\$ (7,070,647)	\$ (352,971)	\$ (5,779,048)	\$ (1,732,080)	\$	(14,934,746)
Avoided Disposal Tip Fees	\$ (7,070,647)	\$ (352,971)	\$ (5,779,048)	\$ (1,732,080)	\$	(14,934,746)
Initial Transfer Transport	\$ 1,196,288	\$ 55,744	\$ 1,445,887	\$ 671,026	\$	3,368,944
Consolidation and Transfer to MRF	\$ 1,196,288	\$ 55,744	\$ 1,445,887	\$ 671,026	\$	3,368,944
Sortation	\$ 13,855,505	\$ 682,999	\$ 6,987,368	\$ 791,753	\$	22,317,625
Sortation Labor	\$ 6,157,536	\$ 303,532	\$ 3,105,262	\$ 351,864	\$	9,918,194
Sortation Capital	\$ 1,339,674	\$ 66,038	\$ 675,601	\$ 76,554	\$	2,157,867
Sortation Facility	\$ 2,166,987	\$ 106,820	\$ 1,092,817	\$ 123,829	\$	3,490,453
Glass and Unsorted Container Transfer	\$ 218,328	\$ 10,762	\$ 110,103	\$ 12,476	\$	351,670
Sortation Residual Disposal	\$ 1,628,680	\$ 80,285	\$ 821,348	\$ 93,069	\$	2,623,382
Sortation Administrative & Marketing	\$ 1,334,139	\$ 65,766	\$ 672,810	\$ 76,237	\$	2,148,951
Sortation Margin	\$ 1,010,161	\$ 49,795	\$ 509,427	\$ 57,724	\$	1,627,108
Overall System Costs						
Total Costs	\$ 42,065,994	\$ 10,717,228	\$ 29,688,182	\$ 4,958,168	\$	87,429,572
Tons Collected for Recycling 98,161 4,900 80,230 24,046 207,338						
Tons Collected Commingled 84,700 4,175 42,714 4,840 136,429						
Tons Collected Source-Separated 13,461 725 37,516 19,206 70,908						
Tons Marketed 92,661 4,626 75,735 22,699 195,721						
Tons Marketed (excluding bale contamination) 92,661 4,626 75,735 22,699 195,721						
Total Cost per Ton Collected	\$ 429	\$ 2,187	\$ 370	\$ 206	\$	422
Total Cost per Ton Marketed	\$ 454	\$ 2,317	\$ 392	\$ 218	\$	447
Customers	378,846	9,060	23,706	NA		NA
Annual pounds per customer	518	1,082	6,769	NA		NA
Commodity Revenues						
Commodity Revenues						
Commodity Sales (lower range)	\$ 6,157,536	\$ 303,532	\$ 3,105,262	\$ 351,864	\$	5,621,759
Commodity Sales (mid-point)	\$ 1,339,674	\$ 66,038	\$ 675,601	\$ 76,554	\$	16,188,590
Commodity Sales (upper range)	\$ 2,166,987	\$ 106,820	\$ 1,092,817	\$ 123,829	\$	26,755,422
Full-Time Equivalent (FTE) Employment						
	SF Res. (on-route)	MF Res. (on-route)	Commercial (on-route)	Self-haul (excluding Bottle Bill)	Total	
Recycling Customer Engagement	5	24	63	17	109	
Local Government Engagement	-	-	-	-	-	
New Engagement (costs listed in collection)	5	24	63	17	109	
Recycling Collection	70	24	64	70	228	
Route Drivers and Operations	50	22	57	70	199	
Management and Administrative	20	2	6	NA	29	
Sortation	108	5	54	6	174	
Sorting Labor	76	4	38	4	122	
Equipment Operators, Supervisors, Maintenance	22	1	11	1	35	
Admininstrative and Marketing	10	1	5	1	16	
Overall Recycling Svstem FTEs	182	54	181	94	511	

Figures in this report represent the consultant team's best modeling estimates based on available data.

Engagement + MRFs + Expanded + Statewide List (S7/A++)						
REVISED - 2 - Willamette Valley, etc. 2025						
	SF Res. (on-route)	MF Res. (on-route)	Commercial (on-route)	Self-haul (excluding Bottle Bill)	Total	
Recycling System Costs						
Customer Engagement Costs	\$ 1,483,538	\$ 2,969,949	\$ 7,771,366	\$ -	\$ 12,224,854	
Collection Engagement Labor and Expenses	\$ 1,483,538	\$ 2,969,949	\$ 7,771,366	NA	\$ 12,224,854	
Local Government Engagement Labor and Expenses	\$ -	\$ -	\$ -	NA	\$ -	
Multifamily Property Improvements	\$ -	\$ -	\$ -	\$ -	\$ -	
Service level adjustments (included above)	NA	NA	NA	NA	\$ -	
Signage, labels, and container color (included above)	NA	NA	NA	NA	\$ -	
Collection area adjustments	NA	NA	NA	NA	\$ -	
Bulky collection	NA	NA	NA	NA	\$ -	
Collection	\$ 32,601,311	\$ 7,361,507	\$ 19,262,609	\$ 5,251,917	\$ 64,477,344	
Direct Collection Costs	\$ 23,409,367	\$ 5,188,266	\$ 13,575,963	\$ 4,769,265	\$ 46,942,861	
Collection Capital - Containers	\$ 909,021	\$ 79,875	\$ 209,007	\$ 464,209	\$ 1,662,113	
Collection Capital - Trucks	\$ 2,571,785	\$ 294,022	\$ 769,357	NA	\$ 3,635,164	
Collection Labor	\$ 12,559,081	\$ 3,093,068	\$ 8,093,528	\$ 3,408,774	\$ 27,154,450	
Collection Operations	\$ 7,369,481	\$ 1,721,301	\$ 4,504,070	\$ 896,283	\$ 14,491,134	
Indirect Collection Costs	\$ 9,191,943	\$ 2,173,241	\$ 5,686,646	\$ 482,652	\$ 17,534,482	
Collection Administrative	\$ 5,060,878	\$ 1,257,664	\$ 3,290,888	\$ 482,652	\$ 10,092,083	
Collection Margin and Franchise Fee	\$ 4,131,065	\$ 915,576	\$ 2,395,758	NA	\$ 7,442,399	
Cost Savings from Reduced Garbage Disposal	\$ (7,070,647)	\$ (352,971)	\$ (5,779,048)	\$ (1,738,444)	\$ (14,941,110)	
Avoided Disposal Tip Fees	\$ (7,070,647)	\$ (352,971)	\$ (5,779,048)	\$ (1,738,444)	\$ (14,941,110)	
Initial Transfer Transport	\$ 1,196,288	\$ 55,744	\$ 1,445,887	\$ 671,298	\$ 3,369,216	
Consolidation and Transfer to MRF	\$ 1,196,288	\$ 55,744	\$ 1,445,887	\$ 671,298	\$ 3,369,216	
Sortation	\$ 13,732,409	\$ 676,931	\$ 6,925,291	\$ 799,043	\$ 22,133,674	
Sortation Labor	\$ 6,163,479	\$ 303,825	\$ 3,108,259	\$ 358,632	\$ 9,934,196	
Sortation Capital	\$ 1,333,398	\$ 65,729	\$ 672,436	\$ 77,586	\$ 2,149,150	
Sortation Facility	\$ 2,165,447	\$ 106,745	\$ 1,092,041	\$ 126,000	\$ 3,490,233	
Glass and Unsorted Container Transfer	\$ 108,849	\$ 5,366	\$ 54,893	\$ 6,334	\$ 175,441	
Sortation Residual Disposal	\$ 1,624,194	\$ 80,064	\$ 819,085	\$ 94,506	\$ 2,617,850	
Sortation Administrative & Marketing	\$ 1,327,889	\$ 65,458	\$ 669,658	\$ 77,265	\$ 2,140,270	
Sortation Margin	\$ 1,009,153	\$ 49,746	\$ 508,918	\$ 58,719	\$ 1,626,536	
Overall System Costs						
Total Costs	\$ 41,942,898	\$ 10,711,160	\$ 29,626,105	\$ 4,983,814	\$ 87,263,978	
Tons Collected for Recycling	98,161	4,900	80,230	24,135	207,426	
Tons Collected Commingled	84,700	4,175	42,714	4,928	136,518	
Tons Collected Source-Separated	13,461	725	37,516	19,206	70,908	
Tons Marketed	92,676	4,626	75,746	22,786	195,834	
Tons Marketed (excluding bale contamination)	92,676	4,626	75,746	22,786	195,834	
Total Cost per Ton Collected	\$ 427	\$ 2,186	\$ 369	\$ 207	\$ 421	
Total Cost per Ton Marketed	\$ 453	\$ 2,315	\$ 391	\$ 219	\$ 446	
Customers	378,846	9,060	23,706	NA	NA	
Annual pounds per customer	518	1,082	6,769	NA	NA	
Commodity Revenues						
Commodity Revenues						
Commodity Sales (lower range)	\$ 6,163,479	\$ 303,825	\$ 3,108,259	\$ 358,632	\$ 6,118,060	
Commodity Sales (mid-point)	\$ 1,333,398	\$ 65,729	\$ 672,436	\$ 77,586	\$ 17,293,936	
Commodity Sales (upper range)	\$ 2,165,447	\$ 106,745	\$ 1,092,041	\$ 126,000	\$ 28,469,813	
Full-Time Equivalent (FTE) Employment						
	SF Res. (on-route)	MF Res. (on-route)	Commercial (on-route)	Self-haul (excluding Bottle Bill)	Total	
Recycling Customer Engagement	5	24	63	18	109	
Local Government Engagement	-	-	-	-	-	
New Engagement (costs listed in collection)	5	24	63	18	109	
Recycling Collection	70	24	64	70	228	
Route Drivers and Operations	50	22	57	70	200	
Management and Administrative	20	2	6	NA	29	
Sortation	108	5	54	6	174	
Sorting Labor	76	4	38	4	122	
Equipment Operators, Supervisors, Maintenance	22	1	11	1	35	
Admininstrative and Marketing	10	1	5	1	16	
Overall Recycling Svsstem FTEs	182	54	181	94	511	

Figures in this report represent the consultant team's best modeling estimates based on available data.

+Container Recovery Facility (S3/B)						
REVISED - 2 - Willamette Valley, etc. 2025						
	SF Res. (on-route)	MF Res. (on-route)	Commercial (on-route)	Self-haul (excluding Bottle Bill)	Total	
Recycling System Costs						
Customer Engagement Costs	\$ 1,483,538	\$ 2,969,949	\$ 7,771,366	\$ -	\$	12,224,854
Collection Engagement Labor and Expenses	\$ 1,483,538	\$ 2,969,949	\$ 7,771,366	NA	\$	12,224,854
Local Government Engagement Labor and Expenses	\$ -	\$ -	\$ -	NA	\$	-
Multifamily Property Improvements	\$ -	\$ -	\$ -	\$ -	\$	-
Service level adjustments (included above)	NA	NA	NA	NA	\$	-
Signage, labels, and container color (included above)	NA	NA	NA	NA	\$	-
Collection area adjustments	NA	NA	NA	NA	\$	-
Bulky collection	NA	NA	NA	NA	\$	-
Collection	\$ 32,601,311	\$ 7,361,507	\$ 19,262,609	\$ 5,227,469	\$	64,452,896
Direct Collection Costs	\$ 23,409,367	\$ 5,188,266	\$ 13,575,963	\$ 4,747,071	\$	46,920,667
Collection Capital - Containers	\$ 909,021	\$ 79,875	\$ 209,007	\$ 462,043	\$	1,659,947
Collection Capital - Trucks	\$ 2,571,785	\$ 294,022	\$ 769,357	NA	\$	3,635,164
Collection Labor	\$ 12,559,081	\$ 3,093,068	\$ 8,093,528	\$ 3,392,930	\$	27,138,606
Collection Operations	\$ 7,369,481	\$ 1,721,301	\$ 4,504,070	\$ 892,098	\$	14,486,950
Indirect Collection Costs	\$ 9,191,943	\$ 2,173,241	\$ 5,686,646	\$ 480,399	\$	17,532,229
Collection Administrative	\$ 5,060,878	\$ 1,257,664	\$ 3,290,888	\$ 480,399	\$	10,089,830
Collection Margin and Franchise Fee	\$ 4,131,065	\$ 915,576	\$ 2,395,758	NA	\$	7,442,399
Cost Savings from Reduced Garbage Disposal	\$ (7,070,647)	\$ (352,971)	\$ (5,779,048)	\$ (1,732,080)	\$	(14,934,746)
Avoided Disposal Tip Fees	\$ (7,070,647)	\$ (352,971)	\$ (5,779,048)	\$ (1,732,080)	\$	(14,934,746)
Initial Transfer Transport	\$ 1,196,288	\$ 55,744	\$ 1,445,887	\$ 671,026	\$	3,368,944
Consolidation and Transfer to MRF	\$ 1,196,288	\$ 55,744	\$ 1,445,887	\$ 671,026	\$	3,368,944
Sortation	\$ 13,667,950	\$ 673,754	\$ 6,892,784	\$ 781,035	\$	22,015,523
Sortation Labor	\$ 6,026,593	\$ 297,078	\$ 3,039,227	\$ 344,381	\$	9,707,279
Sortation Capital	\$ 1,231,317	\$ 60,697	\$ 620,956	\$ 70,362	\$	1,983,332
Sortation Facility	\$ 2,161,593	\$ 106,555	\$ 1,090,097	\$ 123,521	\$	3,481,766
Glass and Unsorted Container Transfer	\$ 390,487	\$ 19,249	\$ 196,923	\$ 22,314	\$	628,973
Sortation Residual Disposal	\$ 1,540,306	\$ 75,929	\$ 776,781	\$ 88,019	\$	2,481,034
Sortation Administrative & Marketing	\$ 1,334,139	\$ 65,766	\$ 672,810	\$ 76,237	\$	2,148,951
Sortation Margin	\$ 983,516	\$ 48,482	\$ 495,990	\$ 56,202	\$	1,584,189
Overall System Costs						
Total Costs	\$ 41,878,440	\$ 10,707,983	\$ 29,593,598	\$ 4,947,451	\$	87,127,471
Tons Collected for Recycling 98,161 4,900 80,230 24,046 207,338						
Tons Collected Commingled 84,700 4,175 42,714 4,840 136,429						
Tons Collected Source-Separated 13,461 725 37,516 19,206 70,908						
Tons Marketed 93,076 4,646 76,074 22,801 196,598						
Tons Marketed (excluding bale contamination) 93,076 4,646 76,074 22,801 196,598						
Total Cost per Ton Collected	\$ 427	\$ 2,185	\$ 369	\$ 206	\$	420
Total Cost per Ton Marketed	\$ 450	\$ 2,305	\$ 389	\$ 217	\$	443
Customers	378,846	9,060	23,706	NA		NA
Annual pounds per customer	518	1,082	6,769	NA		NA
Commodity Revenues						
Commodity Revenues						
Commodity Sales (lower range)	\$ 6,026,593	\$ 297,078	\$ 3,039,227	\$ 344,381	\$	4,942,301
Commodity Sales (mid-point)	\$ 1,231,317	\$ 60,697	\$ 620,956	\$ 70,362	\$	14,932,299
Commodity Sales (upper range)	\$ 2,161,593	\$ 106,555	\$ 1,090,097	\$ 123,521	\$	24,922,298
Full-Time Equivalent (FTE) Employment						
	SF Res. (on-route)	MF Res. (on-route)	Commercial (on-route)	Self-haul (excluding Bottle Bill)	Total	
Recycling Customer Engagement	5	24	63	17	109	
Local Government Engagement	-	-	-	-	-	
New Engagement (costs listed in collection)	5	24	63	17	109	
Recycling Collection	70	24	64	70	228	
Route Drivers and Operations	50	22	57	70	199	
Management and Administrative	20	2	6	NA	29	
Sortation	106	5	53	6	171	
Sorting Labor	74	4	37	4	119	
Equipment Operators, Supervisors, Maintenance	22	1	11	1	35	
Admininstrative and Marketing	10	1	5	1	16	
Overall Recycling System FTEs	180	54	180	93	507	

Figures in this report represent the consultant team's best modeling estimates based on available data.

Dual-Stream Collection (S4/C)						
REVISED - 2 - Willamette Valley, etc. 2025						
	SF Res. (on-route)	MF Res. (on-route)	Commercial (on-route)	Self-haul (excluding Bottle Bill)	Total	
Recycling System Costs						
Customer Engagement Costs	\$ 1,483,538	\$ 2,969,949	\$ 7,771,366	\$ -	\$	12,224,854
Collection Engagement Labor and Expenses	\$ 1,483,538	\$ 2,969,949	\$ 7,771,366	NA	\$	12,224,854
Local Government Engagement Labor and Expenses	\$ -	\$ -	\$ -	NA	\$	-
Multifamily Property Improvements	\$ -	\$ -	\$ -	\$ -	\$	-
Service level adjustments (included above)	NA	NA	NA	NA	\$	-
Signage, labels, and container color (included above)	NA	NA	NA	NA	\$	-
Collection area adjustments	NA	NA	NA	NA	\$	-
Bulky collection	NA	NA	NA	NA	\$	-
Collection	\$ 51,151,625	\$ 8,116,074	\$ 21,237,060	\$ 5,227,469	\$	85,732,228
Direct Collection Costs	\$ 37,905,227	\$ 5,829,689	\$ 15,254,353	\$ 4,747,071	\$	63,736,340
Collection Capital - Containers	\$ 3,306,171	\$ 723,905	\$ 1,894,219	\$ 462,043	\$	6,386,339
Collection Capital - Trucks	\$ 7,231,670	\$ 291,874	\$ 763,737	NA	\$	8,287,281
Collection Labor	\$ 17,403,929	\$ 3,097,572	\$ 8,105,312	\$ 3,392,930	\$	31,999,742
Collection Operations	\$ 9,963,457	\$ 1,716,338	\$ 4,491,085	\$ 892,098	\$	17,062,978
Indirect Collection Costs	\$ 13,246,398	\$ 2,286,385	\$ 5,982,707	\$ 480,399	\$	21,995,888
Collection Administrative	\$ 6,557,240	\$ 1,257,616	\$ 3,290,763	\$ 480,399	\$	11,586,017
Collection Margin and Franchise Fee	\$ 6,689,158	\$ 1,028,769	\$ 2,691,945	NA	\$	10,409,871
Cost Savings from Reduced Garbage Disposal	\$ (7,070,647)	\$ (352,971)	\$ (5,779,048)	\$ (1,732,080)	\$	(14,934,746)
Avoided Disposal Tip Fees	\$ (7,070,647)	\$ (352,971)	\$ (5,779,048)	\$ (1,732,080)	\$	(14,934,746)
Initial Transfer Transport	\$ 1,196,288	\$ 55,744	\$ 1,445,887	\$ 671,026	\$	3,368,944
Consolidation and Transfer to MRF	\$ 1,196,288	\$ 55,744	\$ 1,445,887	\$ 671,026	\$	3,368,944
Sortation	\$ 13,418,564	\$ 661,461	\$ 6,767,018	\$ 766,785	\$	21,613,827
Sortation Labor	\$ 5,997,641	\$ 295,650	\$ 3,024,626	\$ 342,727	\$	9,660,644
Sortation Capital	\$ 1,278,725	\$ 63,034	\$ 644,864	\$ 73,071	\$	2,059,694
Sortation Facility	\$ 2,174,601	\$ 107,196	\$ 1,096,657	\$ 124,264	\$	3,502,718
Glass and Unsorted Container Transfer	\$ 109,361	\$ 5,391	\$ 55,151	\$ 6,249	\$	176,152
Sortation Residual Disposal	\$ 1,538,232	\$ 75,826	\$ 775,734	\$ 87,900	\$	2,477,693
Sortation Administrative & Marketing	\$ 1,334,139	\$ 65,766	\$ 672,810	\$ 76,237	\$	2,148,951
Sortation Margin	\$ 985,867	\$ 48,598	\$ 497,175	\$ 56,336	\$	1,587,976
Overall System Costs						
Total Costs	\$ 60,179,368	\$ 11,450,257	\$ 31,442,283	\$ 4,933,200	\$	108,005,107
Tons Collected for Recycling 98,161 4,900 80,230 24,046 207,338						
Tons Collected Commingled 84,700 4,175 42,714 4,840 136,429						
Tons Collected Source-Separated 13,461 725 37,516 19,206 70,908						
Tons Marketed 90,858 4,536 74,261 22,257 191,911						
Tons Marketed (excluding bale contamination) 90,858 4,536 74,261 22,257 191,911						
Total Cost per Ton Collected	\$ 613	\$ 2,337	\$ 392	\$ 205	\$	521
Total Cost per Ton Marketed	\$ 662	\$ 2,524	\$ 423	\$ 222	\$	563
Customers	378,846	9,060	23,706	NA		NA
Annual pounds per customer	518	1,082	6,769	NA		NA
Commodity Revenues						
Commodity Revenues						
Commodity Sales (lower range)	\$ 5,997,641	\$ 295,650	\$ 3,024,626	\$ 342,727	\$	5,663,010
Commodity Sales (mid-point)	\$ 1,278,725	\$ 63,034	\$ 644,864	\$ 73,071	\$	16,083,858
Commodity Sales (upper range)	\$ 2,174,601	\$ 107,196	\$ 1,096,657	\$ 124,264	\$	26,504,707
Full-Time Equivalent (FTE) Employment						
	SF Res. (on-route)	MF Res. (on-route)	Commercial (on-route)	Self-haul (excluding Bottle Bill)	Total	
Recycling Customer Engagement	5	24	63	17	109	
Local Government Engagement	-	-	-	-	-	
New Engagement (costs listed in collection)	5	24	63	17	109	
Recycling Collection	140	24	64	70	298	
Route Drivers and Operations	108	22	57	70	258	
Management and Administrative	32	2	6	NA	40	
Sortation	106	5	53	6	170	
Sorting Labor	72	4	36	4	116	
Equipment Operators, Supervisors, Maintenance	23	1	12	1	37	
Admininstrative and Marketing	10	1	5	1	16	
Overall Recycling Svsstem FTEs	250	54	180	93	577	

Figures in this report represent the consultant team's best modeling estimates based on available data.

Engagement + MRFs + Expanded + Statewide List + Expanded Collection (S8/D-low)						
REVISED - 2 - Willamette Valley, etc. 2025						
	SF Res. (on-route)	MF Res. (on-route)	Commercial (on-route)	Self-haul (excluding Bottle Bill)	Total	
Recycling System Costs						
Customer Engagement Costs	\$ 1,483,538	\$ 4,058,930	\$ 7,771,366	\$ -	\$	13,313,835
Collection Engagement Labor and Expenses	\$ 1,483,538	\$ 4,058,930	\$ 7,771,366	NA	\$	13,313,835
Local Government Engagement Labor and Expenses	\$ -	\$ -	\$ -	NA	\$	-
Multifamily Property Improvements	\$ -	\$ 7,984,611	\$ -	\$ -	\$	7,984,611
Service level adjustments (included above)	NA	NA	NA	NA	\$	-
Signage, labels, and container color (included above)	NA	NA	NA	NA	\$	-
Collection area adjustments	NA	\$ 4,270,139	NA	NA	\$	4,270,139
Bulky collection	NA	\$ 3,714,472	NA	NA	\$	3,714,472
Collection	\$ 32,601,311	\$ 10,886,141	\$ 19,262,609	\$ 5,251,946	\$	68,002,006
Direct Collection Costs	\$ 23,409,367	\$ 7,792,233	\$ 13,575,963	\$ 4,769,293	\$	49,546,856
Collection Capital - Containers	\$ 909,021	\$ 120,079	\$ 209,007	\$ 464,237	\$	1,702,345
Collection Capital - Trucks	\$ 2,571,785	\$ 442,013	\$ 769,357	NA	\$	3,783,155
Collection Labor	\$ 12,559,081	\$ 4,649,912	\$ 8,093,528	\$ 3,408,774	\$	28,711,295
Collection Operations	\$ 7,369,481	\$ 2,580,229	\$ 4,504,070	\$ 896,283	\$	15,350,062
Indirect Collection Costs	\$ 9,191,943	\$ 3,093,908	\$ 5,686,646	\$ 482,652	\$	18,455,150
Collection Administrative	\$ 5,060,878	\$ 1,718,808	\$ 3,290,888	\$ 482,652	\$	10,553,227
Collection Margin and Franchise Fee	\$ 4,131,065	\$ 1,375,100	\$ 2,395,758	NA	\$	7,901,923
Cost Savings from Reduced Garbage Disposal	\$ (7,070,647)	\$ (579,128)	\$ (5,779,048)	\$ (1,738,444)	\$	(15,167,267)
Avoided Disposal Tip Fees	\$ (7,070,647)	\$ (579,128)	\$ (5,779,048)	\$ (1,738,444)	\$	(15,167,267)
Initial Transfer Transport	\$ 1,196,288	\$ 87,364	\$ 1,445,887	\$ 671,298	\$	3,400,836
Consolidation and Transfer to MRF	\$ 1,196,288	\$ 87,364	\$ 1,445,887	\$ 671,298	\$	3,400,836
Sortation	\$ 13,698,799	\$ 1,145,285	\$ 6,908,341	\$ 797,087	\$	22,549,511
Sortation Labor	\$ 6,205,844	\$ 518,838	\$ 3,129,624	\$ 361,097	\$	10,215,403
Sortation Capital	\$ 1,286,434	\$ 107,552	\$ 648,752	\$ 74,853	\$	2,117,591
Sortation Facility	\$ 2,161,576	\$ 180,718	\$ 1,090,088	\$ 125,775	\$	3,558,157
Glass and Unsorted Container Transfer	\$ 105,618	\$ 8,830	\$ 53,263	\$ 6,146	\$	173,856
Sortation Residual Disposal	\$ 1,651,306	\$ 138,057	\$ 832,758	\$ 96,084	\$	2,718,206
Sortation Administrative & Marketing	\$ 1,281,119	\$ 107,108	\$ 646,072	\$ 74,544	\$	2,108,842
Sortation Margin	\$ 1,006,902	\$ 84,182	\$ 507,784	\$ 58,588	\$	1,657,456
Overall System Costs						
Total Costs	\$ 41,909,288	\$ 23,583,203	\$ 29,609,155	\$ 4,981,887	\$	100,083,532
Tons Collected for Recycling	98,161	8,040	80,230	24,135		210,566
Tons Collected Commingled	84,700	7,081	42,714	4,928		139,424
Tons Collected Source-Separated	13,461	959	37,516	19,206		71,142
Tons Marketed	92,391	7,567	75,514	22,716		198,188
Tons Marketed (excluding bale contamination)	92,391	7,567	75,514	22,716		198,188
Total Cost per Ton Collected	\$ 427	\$ 2,933	\$ 369	\$ 206	\$	475
Total Cost per Ton Marketed	\$ 454	\$ 3,116	\$ 392	\$ 219	\$	505
Customers	378,846	12,382	23,706	NA		NA
Annual pounds per customer	518	1,299	6,769	NA		NA
Commodity Revenues						
Commodity Revenues						
Commodity Sales (lower range)	\$ 6,205,844	\$ 518,838	\$ 3,129,624	\$ 361,097	\$	6,212,648
Commodity Sales (mid-point)	\$ 1,286,434	\$ 107,552	\$ 648,752	\$ 74,853	\$	17,559,432
Commodity Sales (upper range)	\$ 2,161,576	\$ 180,718	\$ 1,090,088	\$ 125,775	\$	28,906,217
Full-Time Equivalent (FTE) Employment						
	SF Res. (on-route)	MF Res. (on-route)	Commercial (on-route)	Self-haul (excluding Bottle Bill)	Total	
Recycling Customer Engagement	5	33	63	18	117	
Local Government Engagement	-	-	-	-	-	
New Engagement (costs listed in collection)	5	33	63	18	117	
Recycling Collection	70	37	64	70	241	
Route Drivers and Operations	50	33	57	70	211	
Management and Administrative	20	4	6	NA	30	
Sortation	108	9	55	6	178	
Sorting Labor	77	6	39	4	126	
Equipment Operators, Supervisors, Maintenance	22	2	11	1	36	
Admininstrative and Marketing	10	1	5	1	16	
Overall Recycling System FTEs	183	78	181	94	536	

Figures in this report represent the consultant team's best modeling estimates based on available data.

Engagement + MRFs + Expanded + Statewide List + Expanded Collection (S9/D-mid)						
REVISED - 2 - Willamette Valley, etc. 2025						
	SF Res. (on-route)	MF Res. (on-route)	Commercial (on-route)	Self-haul (excluding Bottle Bill)	Total	
Recycling System Costs						
Customer Engagement Costs	\$ 1,483,538	\$ 5,692,402	\$ 7,771,366	\$ -	\$ 14,947,307	
Collection Engagement Labor and Expenses	\$ 1,483,538	\$ 5,692,402	\$ 7,771,366	NA	\$ 14,947,307	
Local Government Engagement Labor and Expenses	\$ -	\$ -	\$ -	NA	\$ -	
Multifamily Property Improvements	\$ -	\$ 11,197,931	\$ -	\$ -	\$ 11,197,931	
Service level adjustments (included above)	NA	NA	NA	NA	\$ -	
Signage, labels, and container color (included above)	NA	NA	NA	NA	\$ -	
Collection area adjustments	NA	\$ 5,988,610	NA	NA	\$ 5,988,610	
Bulky collection	NA	\$ 5,209,321	NA	NA	\$ 5,209,321	
Collection	\$ 32,601,311	\$ 15,851,541	\$ 19,262,609	\$ 5,186,935	\$ 72,902,395	
Direct Collection Costs	\$ 23,409,367	\$ 11,424,865	\$ 13,575,963	\$ 4,710,207	\$ 53,120,401	
Collection Capital - Containers	\$ 909,021	\$ 176,059	\$ 209,007	\$ 458,559	\$ 1,752,646	
Collection Capital - Trucks	\$ 2,571,785	\$ 648,073	\$ 769,357	NA	\$ 3,989,215	
Collection Labor	\$ 12,559,081	\$ 6,817,637	\$ 8,093,528	\$ 3,366,366	\$ 30,836,612	
Collection Operations	\$ 7,369,481	\$ 3,783,096	\$ 4,504,070	\$ 885,282	\$ 16,541,929	
Indirect Collection Costs	\$ 9,191,943	\$ 4,426,676	\$ 5,686,646	\$ 476,728	\$ 19,781,994	
Collection Administrative	\$ 5,060,878	\$ 2,410,523	\$ 3,290,888	\$ 476,728	\$ 11,239,018	
Collection Margin and Franchise Fee	\$ 4,131,065	\$ 2,016,153	\$ 2,395,758	NA	\$ 8,542,976	
Cost Savings from Reduced Garbage Disposal	\$ (7,070,647)	\$ (803,057)	\$ (5,779,048)	\$ (1,721,714)	\$ (15,374,467)	
Avoided Disposal Tip Fees	\$ (7,070,647)	\$ (803,057)	\$ (5,779,048)	\$ (1,721,714)	\$ (15,374,467)	
Initial Transfer Transport	\$ 1,196,288	\$ 111,138	\$ 1,445,887	\$ 663,465	\$ 3,416,777	
Consolidation and Transfer to MRF	\$ 1,196,288	\$ 111,138	\$ 1,445,887	\$ 663,465	\$ 3,416,777	
Sortation	\$ 13,668,766	\$ 1,643,165	\$ 6,893,195	\$ 788,223	\$ 22,993,349	
Sortation Labor	\$ 6,264,381	\$ 753,061	\$ 3,159,144	\$ 361,242	\$ 10,537,827	
Sortation Capital	\$ 1,222,838	\$ 147,001	\$ 616,680	\$ 70,516	\$ 2,057,036	
Sortation Facility	\$ 2,153,341	\$ 258,860	\$ 1,085,936	\$ 124,175	\$ 3,622,312	
Glass and Unsorted Container Transfer	\$ 100,715	\$ 12,107	\$ 50,791	\$ 5,808	\$ 169,422	
Sortation Residual Disposal	\$ 1,704,664	\$ 204,923	\$ 859,666	\$ 98,301	\$ 2,867,554	
Sortation Administrative & Marketing	\$ 1,217,786	\$ 146,394	\$ 614,133	\$ 70,225	\$ 2,048,537	
Sortation Margin	\$ 1,005,041	\$ 120,819	\$ 506,845	\$ 57,957	\$ 1,690,661	
Overall System Costs						
Total Costs	\$ 41,879,255	\$ 33,693,120	\$ 29,594,009	\$ 4,916,909	\$ 110,083,293	
Tons Collected for Recycling 98,161 11,149 80,230 23,902 213,443						
Tons Collected Commingled 84,700 10,182 42,714 4,884 142,481						
Tons Collected Source-Separated 13,461 967 37,516 19,018 70,962						
Tons Marketed 91,973 10,446 75,172 22,396 199,987						
Tons Marketed (excluding bale contamination) 91,973 10,446 75,172 22,396 199,987						
Total Cost per Ton Collected	\$ 427	\$ 3,022	\$ 369	\$ 206	\$ 516	
Total Cost per Ton Marketed	\$ 455	\$ 3,225	\$ 394	\$ 220	\$ 550	
Customers	378,846	17,364	23,706	NA	NA	
Annual pounds per customer	518	1,284	6,769	NA	NA	
Commodity Revenues						
Commodity Revenues						
Commodity Sales (lower range)	\$ 6,264,381	\$ 753,061	\$ 3,159,144	\$ 361,242	\$ 6,342,997	
Commodity Sales (mid-point)	\$ 1,222,838	\$ 147,001	\$ 616,680	\$ 70,516	\$ 17,880,412	
Commodity Sales (upper range)	\$ 2,153,341	\$ 258,860	\$ 1,085,936	\$ 124,175	\$ 29,417,827	
Full-Time Equivalent (FTE) Employment						
	SF Res. (on-route)	MF Res. (on-route)	Commercial (on-route)	Self-haul (excluding Bottle Bill)	Total	
Recycling Customer Engagement	5	46	63	17	130	
Local Government Engagement	-	-	-	-	-	
New Engagement (costs listed in collection)	5	46	63	17	130	
Recycling Collection	70	54	64	69	257	
Route Drivers and Operations	50	48	57	69	225	
Management and Administrative	20	5	6	NA	32	
Sortation	109	13	55	6	183	
Sorting Labor	78	9	39	4	131	
Equipment Operators, Supervisors, Maintenance	21	3	11	1	36	
Admininstrative and Marketing	9	1	5	1	16	
Overall Recycling Svstem FTEs	183	113	181	93	570	

Figures in this report represent the consultant team's best modeling estimates based on available data.

Engagement + MRFs + Expanded + Statewide List + Expanded Collection (S10/D-hi)						
REVISED - 2 - Willamette Valley, etc. 2025						
	SF Res. (on-route)	MF Res. (on-route)	Commercial (on-route)	Self-haul (excluding Bottle Bill)	Total	
Recycling System Costs						
Customer Engagement Costs	\$ 1,483,538	\$ 6,434,889	\$ 7,771,366	\$ -	\$ 15,689,794	
Collection Engagement Labor and Expenses	\$ 1,483,538	\$ 6,434,889	\$ 7,771,366	NA	\$ 15,689,794	
Local Government Engagement Labor and Expenses	\$ -	\$ -	\$ -	NA	\$ -	
Multifamily Property Improvements	\$ -	\$ 12,658,530	\$ -	\$ -	\$ 12,658,530	
Service level adjustments (included above)	NA	NA	NA	NA	\$ -	
Signage, labels, and container color (included above)	NA	NA	NA	NA	\$ -	
Collection area adjustments	NA	\$ 6,769,733	NA	NA	\$ 6,769,733	
Bulky collection	NA	\$ 5,888,797	NA	NA	\$ 5,888,797	
Collection	\$ 32,601,311	\$ 18,579,750	\$ 19,262,609	\$ 5,121,928	\$ 75,565,597	
Direct Collection Costs	\$ 23,409,367	\$ 13,476,589	\$ 13,575,963	\$ 4,651,123	\$ 55,113,042	
Collection Capital - Containers	\$ 909,021	\$ 207,676	\$ 209,007	\$ 452,884	\$ 1,778,589	
Collection Capital - Trucks	\$ 2,571,785	\$ 764,457	\$ 769,357	NA	\$ 4,105,599	
Collection Labor	\$ 12,559,081	\$ 8,041,977	\$ 8,093,528	\$ 3,323,958	\$ 32,018,543	
Collection Operations	\$ 7,369,481	\$ 4,462,479	\$ 4,504,070	\$ 874,282	\$ 17,210,312	
Indirect Collection Costs	\$ 9,191,943	\$ 5,103,161	\$ 5,686,646	\$ 470,804	\$ 20,452,555	
Collection Administrative	\$ 5,060,878	\$ 2,724,939	\$ 3,290,888	\$ 470,804	\$ 11,547,510	
Collection Margin and Franchise Fee	\$ 4,131,065	\$ 2,378,222	\$ 2,395,758	NA	\$ 8,905,045	
Cost Savings from Reduced Garbage Disposal	\$ (7,070,647)	\$ (952,643)	\$ (5,779,048)	\$ (1,704,985)	\$ (15,507,323)	
Avoided Disposal Tip Fees	\$ (7,070,647)	\$ (952,643)	\$ (5,779,048)	\$ (1,704,985)	\$ (15,507,323)	
Initial Transfer Transport	\$ 1,196,288	\$ 130,437	\$ 1,445,887	\$ 655,631	\$ 3,428,243	
Consolidation and Transfer to MRF	\$ 1,196,288	\$ 130,437	\$ 1,445,887	\$ 655,631	\$ 3,428,243	
Sortation	\$ 13,932,517	\$ 1,998,927	\$ 7,026,205	\$ 796,179	\$ 23,753,828	
Sortation Labor	\$ 6,474,929	\$ 928,971	\$ 3,265,324	\$ 370,012	\$ 11,039,237	
Sortation Capital	\$ 1,267,645	\$ 181,872	\$ 639,277	\$ 72,440	\$ 2,161,234	
Sortation Facility	\$ 2,145,723	\$ 307,851	\$ 1,082,094	\$ 122,618	\$ 3,658,287	
Glass and Unsorted Container Transfer	\$ 98,359	\$ 14,112	\$ 49,603	\$ 5,621	\$ 167,694	
Sortation Residual Disposal	\$ 1,747,156	\$ 250,668	\$ 881,095	\$ 99,842	\$ 2,978,761	
Sortation Administrative & Marketing	\$ 1,173,952	\$ 168,429	\$ 592,027	\$ 67,086	\$ 2,001,494	
Sortation Margin	\$ 1,024,752	\$ 147,023	\$ 516,785	\$ 58,560	\$ 1,747,121	
Overall System Costs						
Total Costs	\$ 42,143,006	\$ 38,849,890	\$ 29,727,019	\$ 4,868,753	\$ 115,588,669	
Tons Collected for Recycling 98,161 13,225 80,230 23,670 215,287						
Tons Collected Commingled 84,700 12,152 42,714 4,840 144,406						
Tons Collected Source-Separated 13,461 1,073 37,516 18,830 70,881						
Tons Marketed 91,631 12,346 74,893 22,095 200,965						
Tons Marketed (excluding bale contamination) 91,631 12,346 74,893 22,095 200,965						
Total Cost per Ton Collected	\$ 429	\$ 2,938	\$ 371	\$ 206	\$ 537	
Total Cost per Ton Marketed	\$ 460	\$ 3,147	\$ 397	\$ 220	\$ 575	
Customers	378,846	19,629	23,706	NA	NA	
Annual pounds per customer	518	1,348	6,769	NA	NA	
Commodity Revenues						
Commodity Revenues						
Commodity Sales (lower range)	\$ 6,474,929	\$ 928,971	\$ 3,265,324	\$ 370,012	\$ 6,464,898	
Commodity Sales (mid-point)	\$ 1,267,645	\$ 181,872	\$ 639,277	\$ 72,440	\$ 18,239,892	
Commodity Sales (upper range)	\$ 2,145,723	\$ 307,851	\$ 1,082,094	\$ 122,618	\$ 30,014,886	
Full-Time Equivalent (FTE) Employment						
	SF Res. (on-route)	MF Res. (on-route)	Commercial (on-route)	Self-haul (excluding Bottle Bill)	Total	
Recycling Customer Engagement	5	52	63	17	136	
Local Government Engagement	-	-	-	-	-	
New Engagement (costs listed in collection)	5	52	63	17	136	
Recycling Collection	70	63	64	69	266	
Route Drivers and Operations	50	57	57	69	233	
Management and Administrative	20	6	6	NA	32	
Sortation	112	16	56	6	190	
Sorting Labor	81	12	41	5	138	
Equipment Operators, Supervisors, Maintenance	22	3	11	1	37	
Admininstrative and Marketing	9	1	5	1	15	
Overall Recycling Svstem FTEs	186	131	183	92	592	

Figures in this report represent the consultant team's best modeling estimates based on available data.

Additional Alternative Scenario Analysis - Cost Modeling Results

REVISED - 3 - Other Areas with Curbside 2025 Tables

August 7, 2020

Original Baseline: Pre-Disruption List (S0)						
REVISED - 3 - Other Areas with Curbside 2025						
	SF Res. (on-route)	MF Res. (on-route)	Commercial (on-route)	Self-haul (excluding Bottle Bill)	Total	
Recycling System Costs						
Customer Engagement Costs	\$ 168,789	\$ 1,617	\$ 10,283	\$ -	\$ 180,688	
Collection Engagement Labor and Expenses	\$ 168,789	\$ 1,617	\$ 10,283	NA	\$ 180,688	
Local Government Engagement Labor and Expenses	\$ -	\$ -	\$ -	NA	\$ -	
Multifamily Property Improvements	\$ -	\$ -	\$ -	\$ -	\$ -	
Service level adjustments (included above)	NA	NA	NA	NA	\$ -	
Signage, labels, and container color (included above)	NA	NA	NA	NA	\$ -	
Collection area adjustments	NA	NA	NA	NA	\$ -	
Bulky collection	NA	NA	NA	NA	\$ -	
Collection	\$ 18,848,882	\$ 1,575,617	\$ 10,020,924	\$ 2,259,734	\$ 32,705,157	
Direct Collection Costs	\$ 12,966,712	\$ 1,085,743	\$ 6,905,324	\$ 2,157,997	\$ 23,115,776	
Collection Capital - Containers	\$ 325,709	\$ 31,922	\$ 203,023	\$ 121,967	\$ 682,621	
Collection Capital - Trucks	\$ 1,959,889	\$ 75,906	\$ 482,764	NA	\$ 2,518,559	
Collection Labor	\$ 6,826,200	\$ 648,997	\$ 4,127,622	\$ 1,695,625	\$ 13,298,444	
Collection Operations	\$ 3,854,914	\$ 328,918	\$ 2,091,915	\$ 340,405	\$ 6,616,152	
Indirect Collection Costs	\$ 5,882,170	\$ 489,874	\$ 3,115,600	\$ 101,737	\$ 9,589,381	
Collection Administrative	\$ 3,593,927	\$ 298,272	\$ 1,897,013	\$ 101,737	\$ 5,890,950	
Collection Margin and Franchise Fee	\$ 2,288,243	\$ 191,602	\$ 1,218,587	NA	\$ 3,698,432	
Cost Savings from Reduced Garbage Disposal	\$ (1,607,236)	\$ (41,543)	\$ (1,707,643)	\$ (845,354)	\$ (4,201,776)	
Avoided Disposal Tip Fees	\$ (1,607,236)	\$ (41,543)	\$ (1,707,643)	\$ (845,354)	\$ (4,201,776)	
Initial Transfer Transport	\$ 1,136,810	\$ 28,461	\$ 1,240,175	\$ 557,350	\$ 2,962,796	
Consolidation and Transfer to MRF	\$ 1,136,810	\$ 28,461	\$ 1,240,175	\$ 557,350	\$ 2,962,796	
Sortation	\$ 3,509,548	\$ 50,217	\$ 449,286	\$ 413,797	\$ 4,422,848	
Sortation Labor	\$ 1,854,550	\$ 26,536	\$ 237,416	\$ 218,663	\$ 2,337,165	
Sortation Capital	\$ 115,316	\$ 1,650	\$ 14,763	\$ 13,596	\$ 145,325	
Sortation Facility	\$ 516,863	\$ 7,396	\$ 66,168	\$ 60,941	\$ 651,367	
Glass and Unsorted Container Transfer	\$ 26,218	\$ 375	\$ 3,356	\$ 3,091	\$ 33,041	
Sortation Residual Disposal	\$ 391,318	\$ 5,599	\$ 50,096	\$ 46,139	\$ 493,151	
Sortation Administrative & Marketing	\$ 347,258	\$ 4,969	\$ 44,455	\$ 40,944	\$ 437,627	
Sortation Margin	\$ 258,024	\$ 3,692	\$ 33,032	\$ 30,423	\$ 325,171	
Overall System Costs						
Total Costs	\$ 22,056,794	\$ 1,614,369	\$ 10,013,024	\$ 2,385,527	\$ 36,069,714	
Tons Collected for Recycling						
Tons Collected Commingled	22,313	577	23,707	11,736	58,333	
Tons Collected Source-Separated	20,214	289	2,588	2,383	25,475	
Tons Collected Source-Separated	2,099	287	21,119	9,353	32,858	
Tons Marketed						
Tons Marketed (excluding bale contamination)	20,082	519	21,337	10,562	52,500	
Tons Marketed (excluding bale contamination)	20,082	519	21,337	10,562	52,500	
Total Cost per Ton Collected	\$ 989	\$ 2,799	\$ 422	\$ 203	\$ 618	
Total Cost per Ton Marketed	\$ 1,098	\$ 3,110	\$ 469	\$ 226	\$ 687	
Customers	150,861	1,445	9,190	NA	NA	
Annual pounds per customer	296	798	5,159	NA	NA	
Commodity Revenues						
Commodity Revenues						
Commodity Sales (lower range)	\$ 1,854,550	\$ 26,536	\$ 237,416	\$ 218,663	\$ 1,208,263	
Commodity Sales (mid-point)	\$ 115,316	\$ 1,650	\$ 14,763	\$ 13,596	\$ 4,477,139	
Commodity Sales (upper range)	\$ 516,863	\$ 7,396	\$ 66,168	\$ 60,941	\$ 7,746,014	
Full-Time Equivalent (FTE) Employment						
	SF Res. (on-route)	MF Res. (on-route)	Commercial (on-route)	Self-haul (excluding Bottle Bill)	Total	
Recycling Customer Engagement	-	-	-	-	-	
Local Government Engagement	-	-	-	-	-	
New Engagement (costs listed in collection)	-	-	-	-	-	
Recycling Collection	33	5	30	45	112	
Route Drivers and Operations	24	4	27	45	100	
Management and Administrative	9	0	3	NA	12	
Sortation	32	0	4	4	40	
Sorting Labor	24	0	3	3	30	
Equipment Operators, Supervisors, Maintenance	5	0	1	1	7	
Admininstrative and Marketing	3	0	0	0	3	
Overall Recycling Svsstem FTEs	65	5	34	49	152	

Figures in this report represent the consultant team's best modeling estimates based on available data.

Cascadia Consulting Group, Inc. | Circular Matters, LLC | Bell & Associates

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Revised Baseline: Post-Disruption List (\$5)						
REVISED - 3 - Other Areas with Curbside 2025						
	SF Res. (on-route)	MF Res. (on-route)	Commercial (on-route)	Self-haul (excluding Bottle Bill)	Total	
Recycling System Costs						
Customer Engagement Costs	\$ 168,789	\$ 1,617	\$ 10,283	\$ -	\$ 180,688	
Collection Engagement Labor and Expenses	\$ 168,789	\$ 1,617	\$ 10,283	NA	\$ 180,688	
Local Government Engagement Labor and Expenses	\$ -	\$ -	\$ -	NA	\$ -	
Multifamily Property Improvements	\$ -	\$ -	\$ -	\$ -	\$ -	
Service level adjustments (included above)	NA	NA	NA	NA	\$ -	
Signage, labels, and container color (included above)	NA	NA	NA	NA	\$ -	
Collection area adjustments	NA	NA	NA	NA	\$ -	
Bulky collection	NA	NA	NA	NA	\$ -	
Collection	\$ 18,848,882	\$ 1,575,617	\$ 10,020,924	\$ 2,067,736	\$ 32,513,160	
Direct Collection Costs	\$ 12,966,712	\$ 1,085,743	\$ 6,905,324	\$ 1,974,643	\$ 22,932,422	
Collection Capital - Containers	\$ 325,709	\$ 31,922	\$ 203,023	\$ 111,604	\$ 672,259	
Collection Capital - Trucks	\$ 1,959,889	\$ 75,906	\$ 482,764	NA	\$ 2,518,559	
Collection Labor	\$ 6,826,200	\$ 648,997	\$ 4,127,622	\$ 1,551,554	\$ 13,154,374	
Collection Operations	\$ 3,854,914	\$ 328,918	\$ 2,091,915	\$ 311,484	\$ 6,587,231	
Indirect Collection Costs	\$ 5,882,170	\$ 489,874	\$ 3,115,600	\$ 93,093	\$ 9,580,738	
Collection Administrative	\$ 3,593,927	\$ 298,272	\$ 1,897,013	\$ 93,093	\$ 5,882,306	
Collection Margin and Franchise Fee	\$ 2,288,243	\$ 191,602	\$ 1,218,587	NA	\$ 3,698,432	
Cost Savings from Reduced Garbage Disposal	\$ (1,320,289)	\$ (39,901)	\$ (1,688,501)	\$ (781,410)	\$ (3,830,102)	
Avoided Disposal Tip Fees	\$ (1,320,289)	\$ (39,901)	\$ (1,688,501)	\$ (781,410)	\$ (3,830,102)	
Initial Transfer Transport	\$ 927,669	\$ 27,264	\$ 1,226,223	\$ 510,744	\$ 2,691,901	
Consolidation and Transfer to MRF	\$ 927,669	\$ 27,264	\$ 1,226,223	\$ 510,744	\$ 2,691,901	
Sortation	\$ 2,849,337	\$ 46,776	\$ 407,651	\$ 315,500	\$ 3,619,263	
Sortation Labor	\$ 1,504,896	\$ 24,705	\$ 215,303	\$ 166,634	\$ 1,911,537	
Sortation Capital	\$ 98,356	\$ 1,615	\$ 14,072	\$ 10,891	\$ 124,934	
Sortation Facility	\$ 415,005	\$ 6,813	\$ 59,374	\$ 45,952	\$ 527,144	
Glass and Unsorted Container Transfer	\$ 22,362	\$ 367	\$ 3,199	\$ 2,476	\$ 28,405	
Sortation Residual Disposal	\$ 303,126	\$ 4,976	\$ 43,368	\$ 33,564	\$ 385,035	
Sortation Administrative & Marketing	\$ 296,186	\$ 4,862	\$ 42,375	\$ 32,796	\$ 376,220	
Sortation Margin	\$ 209,406	\$ 3,438	\$ 29,959	\$ 23,187	\$ 265,990	
Overall System Costs						
Total Costs	\$ 21,474,387	\$ 1,611,372	\$ 9,976,579	\$ 2,112,571	\$ 35,174,909	
Tons Collected for Recycling	18,329	554	23,441	10,848	53,173	
Tons Collected Commingled	16,231	266	2,322	1,797	20,617	
Tons Collected Source-Separated	2,099	287	21,119	9,051	32,557	
Tons Marketed	16,611	502	21,244	9,831	48,189	
Tons Marketed (excluding bale contamination)	16,611	502	21,244	9,831	48,189	
Total Cost per Ton Collected	\$ 1,172	\$ 2,909	\$ 426	\$ 195	\$ 662	
Total Cost per Ton Marketed	\$ 1,293	\$ 3,210	\$ 470	\$ 215	\$ 730	
Customers	150,861	1,445	9,190	NA	NA	
Annual pounds per customer	243	767	5,101	NA	NA	
Commodity Revenues						
Commodity Revenues						
Commodity Sales (lower range)	\$ 1,504,896	\$ 24,705	\$ 215,303	\$ 166,634	\$ 1,148,369	
Commodity Sales (mid-point)	\$ 98,356	\$ 1,615	\$ 14,072	\$ 10,891	\$ 4,256,147	
Commodity Sales (upper range)	\$ 415,005	\$ 6,813	\$ 59,374	\$ 45,952	\$ 7,363,924	
Full-Time Equivalent (FTE) Employment						
	SF Res. (on-route)	MF Res. (on-route)	Commercial (on-route)	Self-haul (excluding Bottle Bill)	Total	
Recycling Customer Engagement	-	-	-	-	-	
Local Government Engagement	-	-	-	-	-	
New Engagement (costs listed in collection)	-	-	-	-	-	
Recycling Collection	33	5	30	41	108	
Route Drivers and Operations	24	4	27	41	96	
Management and Administrative	9	0	3	NA	12	
Sortation	26	0	4	3	33	
Sorting Labor	19	0	3	2	25	
Equipment Operators, Supervisors, Maintenance	5	0	1	0	6	
Admininstrative and Marketing	2	0	0	0	3	
Overall Recycling Svstem FTEs	59	5	33	44	141	

Figures in this report represent the consultant team's best modeling estimates based on available data.

+ Customer Engagement (S6/A-)						
REVISED - 3 - Other Areas with Curbside 2025						
	SF Res. (on-route)	MF Res. (on-route)	Commercial (on-route)	Self-haul (excluding Bottle Bill)	Total	
Recycling System Costs						
Customer Engagement Costs	\$ 590,761	\$ 473,708	\$ 3,012,784	\$ -	\$	4,077,254
Collection Engagement Labor and Expenses	\$ 590,761	\$ 473,708	\$ 3,012,784	NA	\$	4,077,254
Local Government Engagement Labor and Expenses	\$ -	\$ -	\$ -	NA	\$	-
Multifamily Property Improvements	\$ -	\$ -	\$ -	\$ -	\$	-
Service level adjustments (included above)	NA	NA	NA	NA	\$	-
Signage, labels, and container color (included above)	NA	NA	NA	NA	\$	-
Collection area adjustments	NA	NA	NA	NA	\$	-
Bulky collection	NA	NA	NA	NA	\$	-
Collection	\$ 18,848,882	\$ 1,575,617	\$ 10,020,924	\$ 2,424,628	\$	32,870,051
Direct Collection Costs	\$ 12,966,712	\$ 1,085,743	\$ 6,905,324	\$ 2,332,709	\$	23,290,489
Collection Capital - Containers	\$ 325,709	\$ 31,922	\$ 203,023	\$ 110,196	\$	670,850
Collection Capital - Trucks	\$ 1,959,889	\$ 75,906	\$ 482,764	NA	\$	2,518,559
Collection Labor	\$ 6,826,200	\$ 648,997	\$ 4,127,622	\$ 1,914,961	\$	13,517,781
Collection Operations	\$ 3,854,914	\$ 328,918	\$ 2,091,915	\$ 307,552	\$	6,583,299
Indirect Collection Costs	\$ 5,882,170	\$ 489,874	\$ 3,115,600	\$ 91,918	\$	9,579,562
Collection Administrative	\$ 3,593,927	\$ 298,272	\$ 1,897,013	\$ 91,918	\$	5,881,131
Collection Margin and Franchise Fee	\$ 2,288,243	\$ 191,602	\$ 1,218,587	NA	\$	3,698,432
Cost Savings from Reduced Garbage Disposal	\$ (1,244,067)	\$ (39,259)	\$ (1,685,476)	\$ (772,717)	\$	(3,741,519)
Avoided Disposal Tip Fees	\$ (1,244,067)	\$ (39,259)	\$ (1,685,476)	\$ (772,717)	\$	(3,741,519)
Initial Transfer Transport	\$ 872,114	\$ 26,796	\$ 1,224,018	\$ 504,408	\$	2,627,336
Consolidation and Transfer to MRF	\$ 872,114	\$ 26,796	\$ 1,224,018	\$ 504,408	\$	2,627,336
Sortation	\$ 2,619,053	\$ 44,454	\$ 393,587	\$ 289,394	\$	3,346,489
Sortation Labor	\$ 1,413,045	\$ 23,984	\$ 212,350	\$ 156,136	\$	1,805,515
Sortation Capital	\$ 96,010	\$ 1,630	\$ 14,428	\$ 10,609	\$	122,676
Sortation Facility	\$ 387,948	\$ 6,585	\$ 58,300	\$ 42,867	\$	495,699
Glass and Unsorted Container Transfer	\$ 21,829	\$ 371	\$ 3,280	\$ 2,412	\$	27,891
Sortation Residual Disposal	\$ 218,715	\$ 3,712	\$ 32,868	\$ 24,167	\$	279,462
Sortation Administrative & Marketing	\$ 289,120	\$ 4,907	\$ 43,448	\$ 31,947	\$	369,422
Sortation Margin	\$ 192,387	\$ 3,265	\$ 28,912	\$ 21,258	\$	245,822
Overall System Costs						
Total Costs	\$ 21,686,743	\$ 2,081,317	\$ 12,965,837	\$ 2,445,713	\$	39,179,611
Tons Collected for Recycling 17,271 545 23,399 10,728 51,943						
Tons Collected Commingled 15,173 258 2,280 1,677 19,387						
Tons Collected Source-Separated 2,099 287 21,119 9,051 32,557						
Tons Marketed 16,040 506 21,732 9,963 48,241						
Tons Marketed (excluding bale contamination) 16,040 506 21,732 9,963 48,241						
Total Cost per Ton Collected	\$ 1,256	\$ 3,819	\$ 554	\$ 228	\$	754
Total Cost per Ton Marketed	\$ 1,352	\$ 4,112	\$ 597	\$ 245	\$	812
Customers	150,861	1,445	9,190	NA	NA	NA
Annual pounds per customer	229	754	5,092	NA	NA	NA
Commodity Revenues						
Commodity Revenues						
Commodity Sales (lower range)	\$ 1,413,045	\$ 23,984	\$ 212,350	\$ 156,136	\$	1,131,702
Commodity Sales (mid-point)	\$ 96,010	\$ 1,630	\$ 14,428	\$ 10,609	\$	4,203,325
Commodity Sales (upper range)	\$ 387,948	\$ 6,585	\$ 58,300	\$ 42,867	\$	7,274,948
Full-Time Equivalent (FTE) Employment						
	SF Res. (on-route)	MF Res. (on-route)	Commercial (on-route)	Self-haul (excluding Bottle Bill)	Total	
Recycling Customer Engagement	2	4	24	10	40	
Local Government Engagement	-	-	-	-	-	
New Engagement (costs listed in collection)	2	4	24	10	40	
Recycling Collection	33	5	30	41	108	
Route Drivers and Operations	24	4	27	41	96	
Management and Administrative	9	0	3	NA	12	
Sortation	25	0	4	3	31	
Sorting Labor	18	0	3	2	23	
Equipment Operators, Supervisors, Maintenance	4	0	1	0	6	
Admininstrative and Marketing	2	0	0	0	3	
Overall Recycling Svsstem FTEs	59	9	58	54	179	

Figures in this report represent the consultant team's best modeling estimates based on available data.

Engagement + Improved MRFs (S1/A)						
REVISED - 3 - Other Areas with Curbside 2025						
	SF Res. (on-route)	MF Res. (on-route)	Commercial (on-route)	Self-haul (excluding Bottle Bill)	Total	
Recycling System Costs						
Customer Engagement Costs	\$ 590,761	\$ 473,708	\$ 3,012,784	\$ -	\$ 4,077,254	
Collection Engagement Labor and Expenses	\$ 590,761	\$ 473,708	\$ 3,012,784	NA	\$ 4,077,254	
Local Government Engagement Labor and Expenses	\$ -	\$ -	\$ -	NA	\$ -	
Multifamily Property Improvements	\$ -	\$ -	\$ -	\$ -	\$ -	
Service level adjustments (included above)	NA	NA	NA	NA	\$ -	
Signage, labels, and container color (included above)	NA	NA	NA	NA	\$ -	
Collection area adjustments	NA	NA	NA	NA	\$ -	
Bulky collection	NA	NA	NA	NA	\$ -	
Collection	\$ 18,848,882	\$ 1,575,617	\$ 10,020,924	\$ 2,424,628	\$ 32,870,051	
Direct Collection Costs	\$ 12,966,712	\$ 1,085,743	\$ 6,905,324	\$ 2,332,709	\$ 23,290,489	
Collection Capital - Containers	\$ 325,709	\$ 31,922	\$ 203,023	\$ 110,196	\$ 670,850	
Collection Capital - Trucks	\$ 1,959,889	\$ 75,906	\$ 482,764	NA	\$ 2,518,559	
Collection Labor	\$ 6,826,200	\$ 648,997	\$ 4,127,622	\$ 1,914,961	\$ 13,517,781	
Collection Operations	\$ 3,854,914	\$ 328,918	\$ 2,091,915	\$ 307,552	\$ 6,583,299	
Indirect Collection Costs	\$ 5,882,170	\$ 489,874	\$ 3,115,600	\$ 91,918	\$ 9,579,562	
Collection Administrative	\$ 3,593,927	\$ 298,272	\$ 1,897,013	\$ 91,918	\$ 5,881,131	
Collection Margin and Franchise Fee	\$ 2,288,243	\$ 191,602	\$ 1,218,587	NA	\$ 3,698,432	
Cost Savings from Reduced Garbage Disposal	\$ (1,244,067)	\$ (39,259)	\$ (1,685,476)	\$ (772,717)	\$ (3,741,519)	
Avoided Disposal Tip Fees	\$ (1,244,067)	\$ (39,259)	\$ (1,685,476)	\$ (772,717)	\$ (3,741,519)	
Initial Transfer Transport	\$ 872,114	\$ 26,796	\$ 1,224,018	\$ 504,408	\$ 2,627,336	
Consolidation and Transfer to MRF	\$ 872,114	\$ 26,796	\$ 1,224,018	\$ 504,408	\$ 2,627,336	
Sortation	\$ 2,664,531	\$ 45,226	\$ 400,421	\$ 294,420	\$ 3,404,598	
Sortation Labor	\$ 1,213,956	\$ 20,605	\$ 182,431	\$ 134,137	\$ 1,551,129	
Sortation Capital	\$ 272,089	\$ 4,618	\$ 40,889	\$ 30,065	\$ 347,661	
Sortation Facility	\$ 387,948	\$ 6,585	\$ 58,300	\$ 42,867	\$ 495,699	
Glass and Unsorted Container Transfer	\$ 21,829	\$ 371	\$ 3,280	\$ 2,412	\$ 27,891	
Sortation Residual Disposal	\$ 283,834	\$ 4,818	\$ 42,654	\$ 31,362	\$ 362,668	
Sortation Administrative & Marketing	\$ 289,120	\$ 4,907	\$ 43,448	\$ 31,947	\$ 369,422	
Sortation Margin	\$ 195,756	\$ 3,323	\$ 29,418	\$ 21,630	\$ 250,126	
Overall System Costs						
Total Costs	\$ 21,732,221	\$ 2,082,089	\$ 12,972,672	\$ 2,450,739	\$ 39,237,720	
Tons Collected for Recycling 17,271 545 23,399 10,728 51,943						
Tons Collected Commingled 15,173 258 2,280 1,677 19,387						
Tons Collected Source-Separated 2,099 287 21,119 9,051 32,557						
Tons Marketed 15,980 504 21,650 9,925 48,060						
Tons Marketed (excluding bale contamination) 15,980 504 21,650 9,925 48,060						
Total Cost per Ton Collected	\$ 1,258	\$ 3,820	\$ 554	\$ 228	\$ 755	
Total Cost per Ton Marketed	\$ 1,360	\$ 4,129	\$ 599	\$ 247	\$ 816	
Customers	150,861	1,445	9,190	NA	NA	
Annual pounds per customer	229	754	5,092	NA	NA	
Commodity Revenues						
Commodity Revenues						
Commodity Sales (lower range)	\$ 1,213,956	\$ 20,605	\$ 182,431	\$ 134,137	\$ 1,438,045	
Commodity Sales (mid-point)	\$ 272,089	\$ 4,618	\$ 40,889	\$ 30,065	\$ 4,112,044	
Commodity Sales (upper range)	\$ 387,948	\$ 6,585	\$ 58,300	\$ 42,867	\$ 6,786,043	
Full-Time Equivalent (FTE) Employment						
	SF Res. (on-route)	MF Res. (on-route)	Commercial (on-route)	Self-haul (excluding Bottle Bill)	Total	
Recycling Customer Engagement	2	4	24	10	40	
Local Government Engagement	-	-	-	-	-	
New Engagement (costs listed in collection)	2	4	24	10	40	
Recycling Collection	33	5	30	41	108	
Route Drivers and Operations	24	4	27	41	96	
Management and Administrative	9	0	3	NA	12	
Sortation	21	0	3	2	27	
Sorting Labor	15	0	2	2	19	
Equipment Operators, Supervisors, Maintenance	4	0	1	0	6	
Admininstrative and Marketing	2	0	0	0	3	
Overall Recycling System FTEs	56	9	57	53	175	

Figures in this report represent the consultant team's best modeling estimates based on available data.

Engagement + MRFs + Expanded Lists (S2/A+)						
REVISED - 3 - Other Areas with Curbside 2025						
	SF Res. (on-route)	MF Res. (on-route)	Commercial (on-route)	Self-haul (excluding Bottle Bill)	Total	
Recycling System Costs						
Customer Engagement Costs	\$ 590,761	\$ 473,708	\$ 3,012,784	\$ -	\$	4,077,254
Collection Engagement Labor and Expenses	\$ 590,761	\$ 473,708	\$ 3,012,784	NA	\$	4,077,254
Local Government Engagement Labor and Expenses	\$ -	\$ -	\$ -	NA	\$	-
Multifamily Property Improvements	\$ -	\$ -	\$ -	\$ -	\$	-
Service level adjustments (included above)	NA	NA	NA	NA	\$	-
Signage, labels, and container color (included above)	NA	NA	NA	NA	\$	-
Collection area adjustments	NA	NA	NA	NA	\$	-
Bulky collection	NA	NA	NA	NA	\$	-
Collection	\$ 18,848,882	\$ 1,575,617	\$ 10,020,924	\$ 3,040,648	\$	33,486,072
Direct Collection Costs	\$ 12,966,712	\$ 1,085,743	\$ 6,905,324	\$ 2,932,145	\$	23,889,924
Collection Capital - Containers	\$ 325,709	\$ 31,922	\$ 203,023	\$ 261,254	\$	821,908
Collection Capital - Trucks	\$ 1,959,889	\$ 75,906	\$ 482,764	NA	\$	2,518,559
Collection Labor	\$ 6,826,200	\$ 648,997	\$ 4,127,622	\$ 2,307,845	\$	13,910,665
Collection Operations	\$ 3,854,914	\$ 328,918	\$ 2,091,915	\$ 363,046	\$	6,638,792
Indirect Collection Costs	\$ 5,882,170	\$ 489,874	\$ 3,115,600	\$ 108,503	\$	9,596,148
Collection Administrative	\$ 3,593,927	\$ 298,272	\$ 1,897,013	\$ 108,503	\$	5,897,716
Collection Margin and Franchise Fee	\$ 2,288,243	\$ 191,602	\$ 1,218,587	NA	\$	3,698,432
Cost Savings from Reduced Garbage Disposal	\$ (2,179,771)	\$ (87,756)	\$ (2,072,530)	\$ (895,411)	\$	(5,235,468)
Avoided Disposal Tip Fees	\$ (2,179,771)	\$ (87,756)	\$ (2,072,530)	\$ (895,411)	\$	(5,235,468)
Initial Transfer Transport	\$ 1,514,630	\$ 62,143	\$ 1,496,825	\$ 593,834	\$	3,667,432
Consolidation and Transfer to MRF	\$ 1,514,630	\$ 62,143	\$ 1,496,825	\$ 593,834	\$	3,667,432
Sortation	\$ 4,215,629	\$ 152,259	\$ 1,159,799	\$ 474,697	\$	6,002,385
Sortation Labor	\$ 1,873,471	\$ 67,666	\$ 515,427	\$ 210,961	\$	2,667,525
Sortation Capital	\$ 407,605	\$ 14,722	\$ 112,140	\$ 45,898	\$	580,364
Sortation Facility	\$ 659,320	\$ 23,813	\$ 181,391	\$ 74,242	\$	938,767
Glass and Unsorted Container Transfer	\$ 66,428	\$ 2,399	\$ 18,276	\$ 7,480	\$	94,583
Sortation Residual Disposal	\$ 495,537	\$ 17,898	\$ 136,332	\$ 55,799	\$	705,566
Sortation Administrative & Marketing	\$ 405,920	\$ 14,661	\$ 111,676	\$ 45,708	\$	577,966
Sortation Margin	\$ 307,348	\$ 11,101	\$ 84,557	\$ 34,609	\$	437,615
Overall System Costs						
Total Costs	\$ 22,990,132	\$ 2,175,971	\$ 13,617,802	\$ 3,213,769	\$	41,997,674
Tons Collected for Recycling	30,262	1,218	28,773	12,431		72,684
Tons Collected Commingled	25,770	931	7,090	2,902		36,693
Tons Collected Source-Separated	4,491	288	21,683	9,529		35,991
Tons Marketed	28,566	1,150	27,161	11,734		68,611
Tons Marketed (excluding bale contamination)	28,566	1,150	27,161	11,734		68,611
Total Cost per Ton Collected	\$ 760	\$ 1,786	\$ 473	\$ 259	\$	578
Total Cost per Ton Marketed	\$ 805	\$ 1,892	\$ 501	\$ 274	\$	612
Customers	150,861	1,445	9,190	NA		NA
Annual pounds per customer	401	1,686	6,262	NA		NA
Commodity Revenues						
Commodity Revenues						
Commodity Sales (lower range)	\$ 1,873,471	\$ 67,666	\$ 515,427	\$ 210,961	\$	1,970,743
Commodity Sales (mid-point)	\$ 407,605	\$ 14,722	\$ 112,140	\$ 45,898	\$	5,675,011
Commodity Sales (upper range)	\$ 659,320	\$ 23,813	\$ 181,391	\$ 74,242	\$	9,379,279
Full-Time Equivalent (FTE) Employment						
	SF Res. (on-route)	MF Res. (on-route)	Commercial (on-route)	Self-haul (excluding Bottle Bill)	Total	
Recycling Customer Engagement	2	4	24	12	42	
Local Government Engagement	-	-	-	-	-	
New Engagement (costs listed in collection)	2	4	24	12	42	
Recycling Collection	33	5	30	49	116	
Route Drivers and Operations	24	4	27	49	104	
Management and Administrative	9	0	3	NA	12	
Sortation	33	1	9	4	47	
Sorting Labor	23	1	6	3	33	
Equipment Operators, Supervisors, Maintenance	7	0	2	1	9	
Admininstrative and Marketing	3	0	1	0	4	
Overall Recycling System FTEs	67	10	63	64	205	

Figures in this report represent the consultant team's best modeling estimates based on available data.

Engagement + MRFs + Expanded + Statewide List (S7/A++)						
REVISED - 3 - Other Areas with Curbside 2025						
	SF Res. (on-route)	MF Res. (on-route)	Commercial (on-route)	Self-haul (excluding Bottle Bill)	Total	
Recycling System Costs						
Customer Engagement Costs	\$ 590,761	\$ 473,708	\$ 3,012,784	\$ -	\$	4,077,254
Collection Engagement Labor and Expenses	\$ 590,761	\$ 473,708	\$ 3,012,784	NA	\$	4,077,254
Local Government Engagement Labor and Expenses	\$ -	\$ -	\$ -	NA	\$	-
Multifamily Property Improvements	\$ -	\$ -	\$ -	\$ -	\$	-
Service level adjustments (included above)	NA	NA	NA	NA	\$	-
Signage, labels, and container color (included above)	NA	NA	NA	NA	\$	-
Collection area adjustments	NA	NA	NA	NA	\$	-
Bulky collection	NA	NA	NA	NA	\$	-
Collection	\$ 18,848,882	\$ 1,575,617	\$ 10,020,924	\$ 3,110,942	\$	33,556,366
Direct Collection Costs	\$ 12,966,712	\$ 1,085,743	\$ 6,905,324	\$ 2,999,890	\$	23,957,669
Collection Capital - Containers	\$ 325,709	\$ 31,922	\$ 203,023	\$ 267,366	\$	828,020
Collection Capital - Trucks	\$ 1,959,889	\$ 75,906	\$ 482,764	NA	\$	2,518,559
Collection Labor	\$ 6,826,200	\$ 648,997	\$ 4,127,622	\$ 2,360,950	\$	13,963,769
Collection Operations	\$ 3,854,914	\$ 328,918	\$ 2,091,915	\$ 371,574	\$	6,647,321
Indirect Collection Costs	\$ 5,882,170	\$ 489,874	\$ 3,115,600	\$ 111,052	\$	9,598,697
Collection Administrative	\$ 3,593,927	\$ 298,272	\$ 1,897,013	\$ 111,052	\$	5,900,265
Collection Margin and Franchise Fee	\$ 2,288,243	\$ 191,602	\$ 1,218,587	NA	\$	3,698,432
Cost Savings from Reduced Garbage Disposal	\$ (2,264,057)	\$ (89,905)	\$ (2,096,493)	\$ (914,268)	\$	(5,364,723)
Avoided Disposal Tip Fees	\$ (2,264,057)	\$ (89,905)	\$ (2,096,493)	\$ (914,268)	\$	(5,364,723)
Initial Transfer Transport	\$ 1,576,063	\$ 63,709	\$ 1,514,290	\$ 607,578	\$	3,761,640
Consolidation and Transfer to MRF	\$ 1,576,063	\$ 63,709	\$ 1,514,290	\$ 607,578	\$	3,761,640
Sortation	\$ 4,367,892	\$ 155,743	\$ 1,203,431	\$ 491,760	\$	6,218,826
Sortation Labor	\$ 1,960,429	\$ 69,902	\$ 540,132	\$ 220,715	\$	2,791,179
Sortation Capital	\$ 424,116	\$ 15,122	\$ 116,851	\$ 47,749	\$	603,840
Sortation Facility	\$ 688,768	\$ 24,559	\$ 189,768	\$ 77,545	\$	980,639
Glass and Unsorted Container Transfer	\$ 34,622	\$ 1,234	\$ 9,539	\$ 3,898	\$	49,293
Sortation Residual Disposal	\$ 516,610	\$ 18,420	\$ 142,335	\$ 58,163	\$	735,529
Sortation Administrative & Marketing	\$ 422,364	\$ 15,060	\$ 116,369	\$ 47,552	\$	601,345
Sortation Margin	\$ 320,983	\$ 11,445	\$ 88,436	\$ 36,138	\$	457,002
Overall System Costs						
Total Costs	\$ 23,119,541	\$ 2,178,873	\$ 13,654,937	\$ 3,296,013	\$	42,249,363
Tons Collected for Recycling	31,432	1,248	29,105	12,693		74,478
Tons Collected Commingled	26,941	961	7,423	3,033		38,357
Tons Collected Source-Separated	4,491	288	21,683	9,660		36,121
Tons Marketed	29,675	1,178	27,479	11,983		70,316
Tons Marketed (excluding bale contamination)	29,675	1,178	27,479	11,983		70,316
Total Cost per Ton Collected	\$ 736	\$ 1,746	\$ 469	\$ 260	\$	567
Total Cost per Ton Marketed	\$ 779	\$ 1,849	\$ 497	\$ 275	\$	601
Customers	150,861	1,445	9,190	NA		NA
Annual pounds per customer	417	1,728	6,334	NA		NA
Commodity Revenues						
Commodity Revenues						
Commodity Sales (lower range)	\$ 1,960,429	\$ 69,902	\$ 540,132	\$ 220,715	\$	2,196,737
Commodity Sales (mid-point)	\$ 424,116	\$ 15,122	\$ 116,851	\$ 47,749	\$	6,209,524
Commodity Sales (upper range)	\$ 688,768	\$ 24,559	\$ 189,768	\$ 77,545	\$	10,222,310
Full-Time Equivalent (FTE) Employment						
	SF Res. (on-route)	MF Res. (on-route)	Commercial (on-route)	Self-haul (excluding Bottle Bill)	Total	
Recycling Customer Engagement	2	4	24	12	42	
Local Government Engagement	-	-	-	-	-	
New Engagement (costs listed in collection)	2	4	24	12	42	
Recycling Collection	33	5	30	50	117	
Route Drivers and Operations	24	4	27	50	105	
Management and Administrative	9	0	3	NA	12	
Sortation	34	1	9	4	49	
Sorting Labor	24	1	7	3	34	
Equipment Operators, Supervisors, Maintenance	7	0	2	1	10	
Admininstrative and Marketing	3	0	1	0	5	
Overall Recycling System FTEs	69	10	64	66	208	

Figures in this report represent the consultant team's best modeling estimates based on available data.

+Container Recovery Facility (S3/B)						
REVISED - 3 - Other Areas with Curbside 2025						
	SF Res. (on-route)	MF Res. (on-route)	Commercial (on-route)	Self-haul (excluding Bottle Bill)	Total	
Recycling System Costs						
Customer Engagement Costs	\$ 590,761	\$ 473,708	\$ 3,012,784	\$ -	\$	4,077,254
Collection Engagement Labor and Expenses	\$ 590,761	\$ 473,708	\$ 3,012,784	NA	\$	4,077,254
Local Government Engagement Labor and Expenses	\$ -	\$ -	\$ -	NA	\$	-
Multifamily Property Improvements	\$ -	\$ -	\$ -	\$ -	\$	-
Service level adjustments (included above)	NA	NA	NA	NA	\$	-
Signage, labels, and container color (included above)	NA	NA	NA	NA	\$	-
Collection area adjustments	NA	NA	NA	NA	\$	-
Bulky collection	NA	NA	NA	NA	\$	-
Collection	\$ 18,848,882	\$ 1,575,617	\$ 10,020,924	\$ 3,040,648	\$	33,486,072
Direct Collection Costs	\$ 12,966,712	\$ 1,085,743	\$ 6,905,324	\$ 2,932,145	\$	23,889,924
Collection Capital - Containers	\$ 325,709	\$ 31,922	\$ 203,023	\$ 261,254	\$	821,908
Collection Capital - Trucks	\$ 1,959,889	\$ 75,906	\$ 482,764	NA	\$	2,518,559
Collection Labor	\$ 6,826,200	\$ 648,997	\$ 4,127,622	\$ 2,307,845	\$	13,910,665
Collection Operations	\$ 3,854,914	\$ 328,918	\$ 2,091,915	\$ 363,046	\$	6,638,792
Indirect Collection Costs	\$ 5,882,170	\$ 489,874	\$ 3,115,600	\$ 108,503	\$	9,596,148
Collection Administrative	\$ 3,593,927	\$ 298,272	\$ 1,897,013	\$ 108,503	\$	5,897,716
Collection Margin and Franchise Fee	\$ 2,288,243	\$ 191,602	\$ 1,218,587	NA	\$	3,698,432
Cost Savings from Reduced Garbage Disposal	\$ (2,179,771)	\$ (87,756)	\$ (2,072,530)	\$ (895,411)	\$	(5,235,468)
Avoided Disposal Tip Fees	\$ (2,179,771)	\$ (87,756)	\$ (2,072,530)	\$ (895,411)	\$	(5,235,468)
Initial Transfer Transport	\$ 1,514,630	\$ 62,143	\$ 1,496,825	\$ 593,834	\$	3,667,432
Consolidation and Transfer to MRF	\$ 1,514,630	\$ 62,143	\$ 1,496,825	\$ 593,834	\$	3,667,432
Sortation	\$ 4,158,564	\$ 150,198	\$ 1,144,099	\$ 468,272	\$	5,921,134
Sortation Labor	\$ 1,833,631	\$ 66,227	\$ 504,466	\$ 206,474	\$	2,610,799
Sortation Capital	\$ 374,636	\$ 13,531	\$ 103,069	\$ 42,186	\$	533,422
Sortation Facility	\$ 657,679	\$ 23,754	\$ 180,940	\$ 74,057	\$	936,430
Glass and Unsorted Container Transfer	\$ 118,808	\$ 4,291	\$ 32,686	\$ 13,378	\$	169,164
Sortation Residual Disposal	\$ 468,648	\$ 16,927	\$ 128,934	\$ 52,772	\$	667,281
Sortation Administrative & Marketing	\$ 405,920	\$ 14,661	\$ 111,676	\$ 45,708	\$	577,966
Sortation Margin	\$ 299,241	\$ 10,808	\$ 82,327	\$ 33,696	\$	426,072
Overall System Costs						
Total Costs	\$ 22,933,067	\$ 2,173,910	\$ 13,602,103	\$ 3,207,343	\$	41,916,423
Tons Collected for Recycling 30,262 1,218 28,773 12,431 72,684						
Tons Collected Commingled 25,770 931 7,090 2,902 36,693						
Tons Collected Source-Separated 4,491 288 21,683 9,529 35,991						
Tons Marketed 28,694 1,155 27,282 11,787 68,919						
Tons Marketed (excluding bale contamination) 28,694 1,155 27,282 11,787 68,919						
Total Cost per Ton Collected	\$ 758	\$ 1,784	\$ 473	\$ 258	\$	577
Total Cost per Ton Marketed	\$ 799	\$ 1,882	\$ 499	\$ 272	\$	608
Customers	150,861	1,445	9,190	NA		NA
Annual pounds per customer	401	1,686	6,262	NA		NA
Commodity Revenues						
Commodity Revenues						
Commodity Sales (lower range)	\$ 1,833,631	\$ 66,227	\$ 504,466	\$ 206,474	\$	1,732,554
Commodity Sales (mid-point)	\$ 374,636	\$ 13,531	\$ 103,069	\$ 42,186	\$	5,234,610
Commodity Sales (upper range)	\$ 657,679	\$ 23,754	\$ 180,940	\$ 74,057	\$	8,736,666
Full-Time Equivalent (FTE) Employment						
	SF Res. (on-route)	MF Res. (on-route)	Commercial (on-route)	Self-haul (excluding Bottle Bill)	Total	
Recycling Customer Engagement	2	4	24	12	42	
Local Government Engagement	-	-	-	-	-	
New Engagement (costs listed in collection)	2	4	24	12	42	
Recycling Collection	33	5	30	49	116	
Route Drivers and Operations	24	4	27	49	104	
Management and Administrative	9	0	3	NA	12	
Sortation	32	1	9	4	46	
Sorting Labor	23	1	6	3	32	
Equipment Operators, Supervisors, Maintenance	7	0	2	1	9	
Admininstrative and Marketing	3	0	1	0	4	
Overall Recycling System FTEs	67	10	63	64	204	

Figures in this report represent the consultant team's best modeling estimates based on available data.

Dual-Stream Collection (S4/C)						
REVISED - 3 - Other Areas with Curbside 2025						
	SF Res. (on-route)	MF Res. (on-route)	Commercial (on-route)	Self-haul (excluding Bottle Bill)	Total	
Recycling System Costs						
Customer Engagement Costs	\$ 590,761	\$ 473,708	\$ 3,012,784	\$ -	\$ 4,077,254	
Collection Engagement Labor and Expenses	\$ 590,761	\$ 473,708	\$ 3,012,784	NA	\$ 4,077,254	
Local Government Engagement Labor and Expenses	\$ -	\$ -	\$ -	NA	\$ -	
Multifamily Property Improvements	\$ -	\$ -	\$ -	\$ -	\$ -	
Service level adjustments (included above)	NA	NA	NA	NA	\$ -	
Signage, labels, and container color (included above)	NA	NA	NA	NA	\$ -	
Collection area adjustments	NA	NA	NA	NA	\$ -	
Bulky collection	NA	NA	NA	NA	\$ -	
Collection	\$ 26,714,447	\$ 1,674,780	\$ 10,651,602	\$ 3,040,098	\$ 42,080,927	
Direct Collection Costs	\$ 19,725,962	\$ 1,170,030	\$ 7,441,390	\$ 2,931,615	\$ 31,268,996	
Collection Capital - Containers	\$ 1,404,323	\$ 115,640	\$ 735,469	\$ 261,206	\$ 2,516,638	
Collection Capital - Trucks	\$ 3,251,307	\$ 75,766	\$ 481,871	NA	\$ 3,808,945	
Collection Labor	\$ 9,377,751	\$ 649,614	\$ 4,131,543	\$ 2,307,430	\$ 16,466,338	
Collection Operations	\$ 5,692,581	\$ 329,010	\$ 2,092,506	\$ 362,979	\$ 8,477,076	
Indirect Collection Costs	\$ 6,988,485	\$ 504,750	\$ 3,210,212	\$ 108,483	\$ 10,811,931	
Collection Administrative	\$ 3,507,433	\$ 298,275	\$ 1,897,026	\$ 108,483	\$ 5,811,217	
Collection Margin and Franchise Fee	\$ 3,481,052	\$ 206,476	\$ 1,313,186	NA	\$ 5,000,714	
Cost Savings from Reduced Garbage Disposal	\$ (2,179,771)	\$ (87,756)	\$ (2,072,530)	\$ (895,411)	\$ (5,235,468)	
Avoided Disposal Tip Fees	\$ (2,179,771)	\$ (87,756)	\$ (2,072,530)	\$ (895,411)	\$ (5,235,468)	
Initial Transfer Transport	\$ 1,514,630	\$ 62,143	\$ 1,496,825	\$ 593,834	\$ 3,667,432	
Consolidation and Transfer to MRF	\$ 1,514,630	\$ 62,143	\$ 1,496,825	\$ 593,834	\$ 3,667,432	
Sortation	\$ 4,082,687	\$ 147,458	\$ 1,123,224	\$ 459,727	\$ 5,813,096	
Sortation Labor	\$ 1,824,822	\$ 65,909	\$ 502,043	\$ 205,483	\$ 2,598,256	
Sortation Capital	\$ 389,060	\$ 14,052	\$ 107,038	\$ 43,810	\$ 553,960	
Sortation Facility	\$ 661,637	\$ 23,897	\$ 182,029	\$ 74,503	\$ 942,065	
Glass and Unsorted Container Transfer	\$ 33,274	\$ 1,202	\$ 9,154	\$ 3,747	\$ 47,377	
Sortation Residual Disposal	\$ 468,017	\$ 16,904	\$ 128,760	\$ 52,701	\$ 666,382	
Sortation Administrative & Marketing	\$ 405,920	\$ 14,661	\$ 111,676	\$ 45,708	\$ 577,966	
Sortation Margin	\$ 299,957	\$ 10,834	\$ 82,524	\$ 33,776	\$ 427,090	
Overall System Costs						
Total Costs	\$ 30,722,755	\$ 2,270,333	\$ 14,211,905	\$ 3,198,249	\$ 50,403,242	
Tons Collected for Recycling	30,262	1,218	28,773	12,431	72,684	
Tons Collected Commingled	25,770	931	7,090	2,902	36,693	
Tons Collected Source-Separated	4,491	288	21,683	9,529	35,991	
Tons Marketed	28,010	1,128	26,632	11,506	67,276	
Tons Marketed (excluding bale contamination)	28,010	1,128	26,632	11,506	67,276	
Total Cost per Ton Collected	\$ 1,015	\$ 1,864	\$ 494	\$ 257	\$ 693	
Total Cost per Ton Marketed	\$ 1,097	\$ 2,013	\$ 534	\$ 278	\$ 749	
Customers	150,861	1,445	9,190	NA	NA	
Annual pounds per customer	401	1,686	6,262	NA	NA	
Commodity Revenues						
Commodity Revenues						
Commodity Sales (lower range)	\$ 1,824,822	\$ 65,909	\$ 502,043	\$ 205,483	\$ 1,985,203	
Commodity Sales (mid-point)	\$ 389,060	\$ 14,052	\$ 107,038	\$ 43,810	\$ 5,638,296	
Commodity Sales (upper range)	\$ 661,637	\$ 23,897	\$ 182,029	\$ 74,503	\$ 9,291,390	
Full-Time Equivalent (FTE) Employment						
	SF Res. (on-route)	MF Res. (on-route)	Commercial (on-route)	Self-haul (excluding Bottle Bill)	Total	
Recycling Customer Engagement	2	4	24	12	42	
Local Government Engagement	-	-	-	-	-	
New Engagement (costs listed in collection)	2	4	24	12	42	
Recycling Collection	56	5	30	49	139	
Route Drivers and Operations	43	4	27	49	123	
Management and Administrative	13	0	3	NA	16	
Sortation	32	1	9	4	46	
Sorting Labor	22	1	6	2	31	
Equipment Operators, Supervisors, Maintenance	7	0	2	1	10	
Admininstrative and Marketing	3	0	1	0	4	
Overall Recycling System FTEs	90	10	63	64	227	

Figures in this report represent the consultant team's best modeling estimates based on available data.

Engagement + MRFs + Expanded + Statewide List + Expanded Collection (S8/D-low)						
REVISED - 3 - Other Areas with Curbside 2025						
	SF Res. (on-route)	MF Res. (on-route)	Commercial (on-route)	Self-haul (excluding Bottle Bill)	Total	
Recycling System Costs						
Customer Engagement Costs	\$ 590,761	\$ 852,675	\$ 3,012,784	\$ -	\$	4,456,220
Collection Engagement Labor and Expenses	\$ 590,761	\$ 852,675	\$ 3,012,784	NA	\$	4,456,220
Local Government Engagement Labor and Expenses	\$ -	\$ -	\$ -	NA	\$	-
Multifamily Property Improvements	\$ -	\$ 1,677,358	\$ -	\$ -	\$	1,677,358
Service level adjustments (included above)	NA	NA	NA	NA	\$	-
Signage, labels, and container color (included above)	NA	NA	NA	NA	\$	-
Collection area adjustments	NA	\$ 897,044	NA	NA	\$	897,044
Bulky collection	NA	\$ 780,313	NA	NA	\$	780,313
Collection	\$ 18,848,882	\$ 3,066,249	\$ 10,020,924	\$ 3,111,030	\$	35,047,086
Direct Collection Costs	\$ 12,966,712	\$ 2,149,955	\$ 6,905,324	\$ 2,999,978	\$	25,021,969
Collection Capital - Containers	\$ 325,709	\$ 63,205	\$ 203,023	\$ 267,453	\$	859,391
Collection Capital - Trucks	\$ 1,959,889	\$ 150,294	\$ 482,764	NA	\$	2,592,947
Collection Labor	\$ 6,826,200	\$ 1,285,014	\$ 4,127,622	\$ 2,360,950	\$	14,599,786
Collection Operations	\$ 3,854,914	\$ 651,441	\$ 2,091,915	\$ 371,574	\$	6,969,844
Indirect Collection Costs	\$ 5,882,170	\$ 916,294	\$ 3,115,600	\$ 111,052	\$	10,025,117
Collection Administrative	\$ 3,593,927	\$ 536,890	\$ 1,897,013	\$ 111,052	\$	6,138,883
Collection Margin and Franchise Fee	\$ 2,288,243	\$ 379,404	\$ 1,218,587	NA	\$	3,886,234
Cost Savings from Reduced Garbage Disposal	\$ (2,264,057)	\$ (165,343)	\$ (2,096,493)	\$ (914,268)	\$	(5,440,161)
Avoided Disposal Tip Fees	\$ (2,264,057)	\$ (165,343)	\$ (2,096,493)	\$ (914,268)	\$	(5,440,161)
Initial Transfer Transport	\$ 1,576,063	\$ 117,577	\$ 1,514,290	\$ 607,578	\$	3,815,508
Consolidation and Transfer to MRF	\$ 1,576,063	\$ 117,577	\$ 1,514,290	\$ 607,578	\$	3,815,508
Sortation	\$ 4,357,201	\$ 313,810	\$ 1,200,485	\$ 490,557	\$	6,362,053
Sortation Labor	\$ 1,973,904	\$ 142,162	\$ 543,845	\$ 222,232	\$	2,882,144
Sortation Capital	\$ 409,178	\$ 29,469	\$ 112,736	\$ 46,067	\$	597,451
Sortation Facility	\$ 687,536	\$ 49,517	\$ 189,428	\$ 77,406	\$	1,003,888
Glass and Unsorted Container Transfer	\$ 33,594	\$ 2,419	\$ 9,256	\$ 3,782	\$	49,051
Sortation Residual Disposal	\$ 525,234	\$ 37,828	\$ 144,711	\$ 59,134	\$	766,907
Sortation Administrative & Marketing	\$ 407,488	\$ 29,348	\$ 112,270	\$ 45,877	\$	594,983
Sortation Margin	\$ 320,267	\$ 23,066	\$ 88,239	\$ 36,057	\$	467,630
Overall System Costs						
Total Costs	\$ 23,108,850	\$ 5,862,325	\$ 13,651,991	\$ 3,294,897	\$	45,918,063
Tons Collected for Recycling 31,432 2,295 29,105 12,693 75,525						
Tons Collected Commingled 26,941 1,940 7,423 3,033 39,337						
Tons Collected Source-Separated 4,491 355 21,683 9,660 36,189						
Tons Marketed 29,584 2,161 27,395 11,947 71,086						
Tons Marketed (excluding bale contamination) 29,584 2,161 27,395 11,947 71,086						
Total Cost per Ton Collected	\$ 735	\$ 2,554	\$ 469	\$ 260	\$	608
Total Cost per Ton Marketed	\$ 781	\$ 2,713	\$ 498	\$ 276	\$	646
Customers	150,861	2,601	9,190	NA		NA
Annual pounds per customer	417	1,765	6,334	NA		NA
Commodity Revenues						
Commodity Revenues						
Commodity Sales (lower range)	\$ 1,973,904	\$ 142,162	\$ 543,845	\$ 222,232	\$	2,228,338
Commodity Sales (mid-point)	\$ 409,178	\$ 29,469	\$ 112,736	\$ 46,067	\$	6,298,177
Commodity Sales (upper range)	\$ 687,536	\$ 49,517	\$ 189,428	\$ 77,406	\$	10,368,016
Full-Time Equivalent (FTE) Employment						
	SF Res. (on-route)	MF Res. (on-route)	Commercial (on-route)	Self-haul (excluding Bottle Bill)	Total	
Recycling Customer Engagement	2	7	24	12	45	
Local Government Engagement	-	-	-	-	-	
New Engagement (costs listed in collection)	2	7	24	12	45	
Recycling Collection	33	9	30	50	122	
Route Drivers and Operations	24	8	27	50	109	
Management and Administrative	9	1	3	NA	13	
Sortation	34	2	9	4	50	
Sorting Labor	24	2	7	3	36	
Equipment Operators, Supervisors, Maintenance	7	0	2	1	10	
Admininstrative and Marketing	3	0	1	0	5	
Overall Recycling Svstem FTEs	69	19	64	66	217	

Figures in this report represent the consultant team's best modeling estimates based on available data.

Engagement + MRFs + Expanded + Statewide List + Expanded Collection (S9/D-mid)						
REVISED - 3 - Other Areas with Curbside 2025						
	SF Res. (on-route)	MF Res. (on-route)	Commercial (on-route)	Self-haul (excluding Bottle Bill)	Total	
Recycling System Costs						
Customer Engagement Costs	\$ 590,761	\$ 1,136,900	\$ 3,012,784	\$ -	\$ 4,740,445	
Collection Engagement Labor and Expenses	\$ 590,761	\$ 1,136,900	\$ 3,012,784	NA	\$ 4,740,445	
Local Government Engagement Labor and Expenses	\$ -	\$ -	\$ -	NA	\$ -	
Multifamily Property Improvements	\$ -	\$ 2,236,477	\$ -	\$ -	\$ 2,236,477	
Service level adjustments (included above)	NA	NA	NA	NA	\$ -	
Signage, labels, and container color (included above)	NA	NA	NA	NA	\$ -	
Collection area adjustments	NA	\$ 1,196,059	NA	NA	\$ 1,196,059	
Bulky collection	NA	\$ 1,040,418	NA	NA	\$ 1,040,418	
Collection	\$ 18,848,882	\$ 4,241,626	\$ 10,020,924	\$ 3,062,011	\$ 36,173,444	
Direct Collection Costs	\$ 12,966,712	\$ 2,996,907	\$ 6,905,324	\$ 2,952,652	\$ 25,821,595	
Collection Capital - Containers	\$ 325,709	\$ 88,104	\$ 203,023	\$ 263,441	\$ 880,277	
Collection Capital - Trucks	\$ 1,959,889	\$ 209,501	\$ 482,764	NA	\$ 2,652,154	
Collection Labor	\$ 6,826,200	\$ 1,791,232	\$ 4,127,622	\$ 2,323,303	\$ 15,068,357	
Collection Operations	\$ 3,854,914	\$ 908,069	\$ 2,091,915	\$ 365,908	\$ 7,220,807	
Indirect Collection Costs	\$ 5,882,170	\$ 1,244,720	\$ 3,115,600	\$ 109,359	\$ 10,351,849	
Collection Administrative	\$ 3,593,927	\$ 715,854	\$ 1,897,013	\$ 109,359	\$ 6,316,153	
Collection Margin and Franchise Fee	\$ 2,288,243	\$ 528,866	\$ 1,218,587	NA	\$ 4,035,696	
Cost Savings from Reduced Garbage Disposal	\$ (2,264,057)	\$ (227,033)	\$ (2,096,493)	\$ (901,741)	\$ (5,489,323)	
Avoided Disposal Tip Fees	\$ (2,264,057)	\$ (227,033)	\$ (2,096,493)	\$ (901,741)	\$ (5,489,323)	
Initial Transfer Transport	\$ 1,576,063	\$ 162,641	\$ 1,514,290	\$ 600,321	\$ 3,853,316	
Consolidation and Transfer to MRF	\$ 1,576,063	\$ 162,641	\$ 1,514,290	\$ 600,321	\$ 3,853,316	
Sortation	\$ 4,347,649	\$ 452,329	\$ 1,197,853	\$ 482,546	\$ 6,480,377	
Sortation Labor	\$ 1,992,523	\$ 207,302	\$ 548,975	\$ 221,151	\$ 2,969,950	
Sortation Capital	\$ 388,950	\$ 40,466	\$ 107,163	\$ 43,170	\$ 579,749	
Sortation Facility	\$ 684,917	\$ 71,259	\$ 188,707	\$ 76,019	\$ 1,020,902	
Glass and Unsorted Container Transfer	\$ 32,035	\$ 3,333	\$ 8,826	\$ 3,556	\$ 47,749	
Sortation Residual Disposal	\$ 542,205	\$ 56,411	\$ 149,387	\$ 60,179	\$ 808,183	
Sortation Administrative & Marketing	\$ 387,343	\$ 40,299	\$ 106,720	\$ 42,991	\$ 577,354	
Sortation Margin	\$ 319,675	\$ 33,259	\$ 88,076	\$ 35,481	\$ 476,491	
Overall System Costs						
Total Costs	\$ 23,099,298	\$ 8,002,940	\$ 13,649,359	\$ 3,243,138	\$ 47,994,736	
Tons Collected for Recycling 31,432 3,152 29,105 12,519 76,208						
Tons Collected Commingled 26,941 2,803 7,423 2,990 40,156						
Tons Collected Source-Separated 4,491 349 21,683 9,529 36,052						
Tons Marketed 29,450 2,953 27,271 11,730 71,404						
Tons Marketed (excluding bale contamination) 29,450 2,953 27,271 11,730 71,404						
Total Cost per Ton Collected	\$ 735	\$ 2,539	\$ 469	\$ 259	\$ 630	
Total Cost per Ton Marketed	\$ 784	\$ 2,710	\$ 501	\$ 276	\$ 672	
Customers	150,861	3,468	9,190	NA	NA	
Annual pounds per customer	417	1,818	6,334	NA	NA	
Commodity Revenues						
Commodity Revenues						
Commodity Sales (lower range)	\$ 1,992,523	\$ 207,302	\$ 548,975	\$ 221,151	\$ 2,264,714	
Commodity Sales (mid-point)	\$ 388,950	\$ 40,466	\$ 107,163	\$ 43,170	\$ 6,384,050	
Commodity Sales (upper range)	\$ 684,917	\$ 71,259	\$ 188,707	\$ 76,019	\$ 10,503,386	
Full-Time Equivalent (FTE) Employment						
	SF Res. (on-route)	MF Res. (on-route)	Commercial (on-route)	Self-haul (excluding Bottle Bill)	Total	
Recycling Customer Engagement	2	9	24	12	47	
Local Government Engagement	-	-	-	-	-	
New Engagement (costs listed in collection)	2	9	24	12	47	
Recycling Collection	33	13	30	49	124	
Route Drivers and Operations	24	12	27	49	111	
Management and Administrative	9	1	3	NA	13	
Sortation	35	4	10	4	52	
Sorting Labor	25	3	7	3	37	
Equipment Operators, Supervisors, Maintenance	7	1	2	1	10	
Admininstrative and Marketing	3	0	1	0	4	
Overall Recycling System FTEs	69	26	64	65	223	

Figures in this report represent the consultant team's best modeling estimates based on available data.

Engagement + MRFs + Expanded + Statewide List + Expanded Collection (S10/D-hi)						
REVISED - 3 - Other Areas with Curbside 2025						
	SF Res. (on-route)	MF Res. (on-route)	Commercial (on-route)	Self-haul (excluding Bottle Bill)	Total	
Recycling System Costs						
Customer Engagement Costs	\$ 590,761	\$ 1,326,383	\$ 3,012,784	\$ -	\$ 4,929,928	
Collection Engagement Labor and Expenses	\$ 590,761	\$ 1,326,383	\$ 3,012,784	NA	\$ 4,929,928	
Local Government Engagement Labor and Expenses	\$ -	\$ -	\$ -	NA	\$ -	
Multifamily Property Improvements	\$ -	\$ 2,609,223	\$ -	\$ -	\$ 2,609,223	
Service level adjustments (included above)	NA	NA	NA	NA	\$ -	
Signage, labels, and container color (included above)	NA	NA	NA	NA	\$ -	
Collection area adjustments	NA	\$ 1,395,402	NA	NA	\$ 1,395,402	
Bulky collection	NA	\$ 1,213,821	NA	NA	\$ 1,213,821	
Collection	\$ 18,848,882	\$ 5,127,408	\$ 10,020,924	\$ 3,013,302	\$ 37,010,516	
Direct Collection Costs	\$ 12,966,712	\$ 3,648,408	\$ 6,905,324	\$ 2,905,625	\$ 26,426,070	
Collection Capital - Containers	\$ 325,709	\$ 107,258	\$ 203,023	\$ 259,464	\$ 895,454	
Collection Capital - Trucks	\$ 1,959,889	\$ 255,045	\$ 482,764	NA	\$ 2,697,698	
Collection Labor	\$ 6,826,200	\$ 2,180,631	\$ 4,127,622	\$ 2,285,883	\$ 15,420,335	
Collection Operations	\$ 3,854,914	\$ 1,105,475	\$ 2,091,915	\$ 360,279	\$ 7,412,583	
Indirect Collection Costs	\$ 5,882,170	\$ 1,479,000	\$ 3,115,600	\$ 107,677	\$ 10,584,446	
Collection Administrative	\$ 3,593,927	\$ 835,163	\$ 1,897,013	\$ 107,677	\$ 6,433,780	
Collection Margin and Franchise Fee	\$ 2,288,243	\$ 643,837	\$ 1,218,587	NA	\$ 4,150,667	
Cost Savings from Reduced Garbage Disposal	\$ (2,264,057)	\$ (274,434)	\$ (2,096,493)	\$ (889,294)	\$ (5,524,278)	
Avoided Disposal Tip Fees	\$ (2,264,057)	\$ (274,434)	\$ (2,096,493)	\$ (889,294)	\$ (5,524,278)	
Initial Transfer Transport	\$ 1,576,063	\$ 196,561	\$ 1,514,290	\$ 593,123	\$ 3,880,037	
Consolidation and Transfer to MRF	\$ 1,576,063	\$ 196,561	\$ 1,514,290	\$ 593,123	\$ 3,880,037	
Sortation	\$ 4,431,540	\$ 563,031	\$ 1,220,967	\$ 484,789	\$ 6,700,328	
Sortation Labor	\$ 2,059,492	\$ 261,660	\$ 567,426	\$ 225,298	\$ 3,113,877	
Sortation Capital	\$ 403,202	\$ 51,227	\$ 111,089	\$ 44,108	\$ 609,627	
Sortation Facility	\$ 682,494	\$ 86,711	\$ 188,039	\$ 74,662	\$ 1,031,906	
Glass and Unsorted Container Transfer	\$ 31,285	\$ 3,975	\$ 8,620	\$ 3,422	\$ 47,302	
Sortation Residual Disposal	\$ 555,721	\$ 70,605	\$ 153,111	\$ 60,793	\$ 840,230	
Sortation Administrative & Marketing	\$ 373,401	\$ 47,441	\$ 102,879	\$ 40,848	\$ 564,569	
Sortation Margin	\$ 325,945	\$ 41,412	\$ 89,804	\$ 35,657	\$ 492,817	
Overall System Costs						
Total Costs	\$ 23,183,189	\$ 9,548,171	\$ 13,672,473	\$ 3,201,920	\$ 49,605,754	
Tons Collected for Recycling	31,432	3,810	29,105	12,346	76,693	
Tons Collected Commingled	26,941	3,423	7,423	2,947	40,733	
Tons Collected Source-Separated	4,491	387	21,683	9,399	35,960	
Tons Marketed	29,341	3,556	27,169	11,525	71,591	
Tons Marketed (excluding bale contamination)	29,341	3,556	27,169	11,525	71,591	
Total Cost per Ton Collected	\$ 738	\$ 2,506	\$ 470	\$ 259	\$ 647	
Total Cost per Ton Marketed	\$ 790	\$ 2,685	\$ 503	\$ 278	\$ 693	
Customers	150,861	4,046	9,190	NA	NA	
Annual pounds per customer	417	1,883	6,334	NA	NA	
Commodity Revenues						
Commodity Revenues						
Commodity Sales (lower range)	\$ 2,059,492	\$ 261,660	\$ 567,426	\$ 225,298	\$ 2,303,034	
Commodity Sales (mid-point)	\$ 403,202	\$ 51,227	\$ 111,089	\$ 44,108	\$ 6,497,720	
Commodity Sales (upper range)	\$ 682,494	\$ 86,711	\$ 188,039	\$ 74,662	\$ 10,692,405	
Full-Time Equivalent (FTE) Employment						
	SF Res. (on-route)	MF Res. (on-route)	Commercial (on-route)	Self-haul (excluding Bottle Bill)	Total	
Recycling Customer Engagement	2	11	24	12	49	
Local Government Engagement	-	-	-	-	-	
New Engagement (costs listed in collection)	2	11	24	12	49	
Recycling Collection	33	16	30	48	126	
Route Drivers and Operations	24	14	27	48	113	
Management and Administrative	9	2	3	NA	13	
Sortation	36	5	10	4	54	
Sorting Labor	26	3	7	3	39	
Equipment Operators, Supervisors, Maintenance	7	1	2	1	10	
Admininstrative and Marketing	3	0	1	0	4	
Overall Recycling Svstem FTEs	70	31	64	64	229	

Figures in this report represent the consultant team's best modeling estimates based on available data.

Additional Alternative Scenario Analysis - Cost Modeling Results

REVISED - 4 - Areas Without Curbside 2025 Tables

August 7, 2020

Original Baseline: Pre-Disruption List (S0)						
REVISED - 4 - Areas Without Curbside 2025						
	SF Res. (on-route)	MF Res. (on-route)	Commercial (on-route)	Self-haul (excluding Bottle Bill)	Total	
Recycling System Costs						
Customer Engagement Costs	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Collection Engagement Labor and Expenses	\$ -	\$ -	\$ -	NA	\$ -	\$ -
Local Government Engagement Labor and Expenses	\$ -	\$ -	\$ -	NA	\$ -	\$ -
Multifamily Property Improvements	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Service level adjustments (included above)	NA	NA	NA	NA	\$ -	\$ -
Signage, labels, and container color (included above)	NA	NA	NA	NA	\$ -	\$ -
Collection area adjustments	NA	NA	NA	NA	\$ -	\$ -
Bulky collection	NA	NA	NA	NA	\$ -	\$ -
Collection	\$ -	\$ -	\$ -	\$ 7,031,099	\$ 7,031,099	\$ 7,031,099
Direct Collection Costs	\$ -	\$ -	\$ -	\$ 6,714,568	\$ 6,714,568	\$ 6,714,568
Collection Capital - Containers	\$ -	\$ -	\$ -	\$ 379,472	\$ 379,472	\$ 379,472
Collection Capital - Trucks	\$ -	\$ -	\$ -	NA	\$ -	\$ -
Collection Labor	\$ -	\$ -	\$ -	\$ 5,276,002	\$ 5,276,002	\$ 5,276,002
Collection Operations	\$ -	\$ -	\$ -	\$ 1,059,094	\$ 1,059,094	\$ 1,059,094
Indirect Collection Costs	\$ -	\$ -	\$ -	\$ 316,531	\$ 316,531	\$ 316,531
Collection Administrative	\$ -	\$ -	\$ -	\$ 316,531	\$ 316,531	\$ 316,531
Collection Margin and Franchise Fee	\$ -	\$ -	\$ -	NA	\$ -	\$ -
Cost Savings from Reduced Garbage Disposal	\$ (18,052)	\$ (855)	\$ (955,732)	\$ (2,770,705)	\$ (3,745,344)	\$ (3,745,344)
Avoided Disposal Tip Fees	\$ (18,052)	\$ (855)	\$ (955,732)	\$ (2,770,705)	\$ (3,745,344)	\$ (3,745,344)
Initial Transfer Transport	\$ 24,933	\$ 1,111	\$ 1,301,404	\$ 3,244,347	\$ 4,571,795	\$ 4,571,795
Consolidation and Transfer to MRF	\$ 24,933	\$ 1,111	\$ 1,301,404	\$ 3,244,347	\$ 4,571,795	\$ 4,571,795
Sortation	\$ 43,015	\$ 171	\$ 1,715	\$ -	\$ 44,900	\$ 44,900
Sortation Labor	\$ 22,730	\$ 90	\$ 906	\$ -	\$ 23,727	\$ 23,727
Sortation Capital	\$ 1,413	\$ 6	\$ 56	\$ -	\$ 1,475	\$ 1,475
Sortation Facility	\$ 6,335	\$ 25	\$ 253	\$ -	\$ 6,613	\$ 6,613
Glass and Unsorted Container Transfer	\$ 321	\$ 1	\$ 13	\$ -	\$ 335	\$ 335
Sortation Residual Disposal	\$ 4,796	\$ 19	\$ 191	\$ -	\$ 5,006	\$ 5,006
Sortation Administrative & Marketing	\$ 4,256	\$ 17	\$ 170	\$ -	\$ 4,443	\$ 4,443
Sortation Margin	\$ 3,162	\$ 13	\$ 126	\$ -	\$ 3,301	\$ 3,301
Overall System Costs						
Total Costs	\$ 49,896	\$ 426	\$ 347,387	\$ 7,504,741	\$ 7,902,450	\$ 7,902,450
Tons Collected for Recycling	251	12	13,268	38,465	51,996	51,996
Tons Collected Commingled	248	1	10	-	259	259
Tons Collected Source-Separated	3	11	13,258	38,465	51,738	51,738
Tons Marketed	226	11	11,942	34,619	46,797	46,797
Tons Marketed (excluding bale contamination)	226	11	11,942	34,619	46,797	46,797
Total Cost per Ton Collected	\$ 199	\$ 36	\$ 26	\$ 195	\$ 152	\$ 152
Total Cost per Ton Marketed	\$ 221	\$ 40	\$ 29	\$ 217	\$ 169	\$ 169
Customers	-	-	-	NA	NA	NA
Annual pounds per customer	NA	NA	NA	NA	NA	NA
Commodity Revenues						
Commodity Revenues						
Commodity Sales (lower range)	\$ 22,730	\$ 90	\$ 906	\$ -	\$ 1,077,012	\$ 1,077,012
Commodity Sales (mid-point)	\$ 1,413	\$ 6	\$ 56	\$ -	\$ 3,990,794	\$ 3,990,794
Commodity Sales (upper range)	\$ 6,335	\$ 25	\$ 253	\$ -	\$ 6,904,577	\$ 6,904,577
Full-Time Equivalent (FTE) Employment						
	SF Res. (on-route)	MF Res. (on-route)	Commercial (on-route)	Self-haul (excluding Bottle Bill)	Total	
Recycling Customer Engagement	-	-	-	-	-	
Local Government Engagement	-	-	-	-	-	
New Engagement (costs listed in collection)	-	-	-	-	-	
Recycling Collection	-	-	-	115	115	
Route Drivers and Operations	-	-	-	115	115	
Management and Administrative	-	-	-	NA	-	
Sortation	0	0	0	-	0	
Sorting Labor	0	0	0	-	0	
Equipment Operators, Supervisors, Maintenance	0	0	0	-	0	
Admininstrative and Marketing	0	0	0	-	0	
Overall Recycling System FTEs	0	0	0	115	116	

Figures in this report represent the consultant team's best modeling estimates based on available data.

Revised Baseline: Post-Disruption List (S5)						
REVISED - 4 - Areas Without Curbside 2025						
	SF Res. (on-route)	MF Res. (on-route)	Commercial (on-route)	Self-haul (excluding Bottle Bill)	Total	
Recycling System Costs						
Customer Engagement Costs	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Collection Engagement Labor and Expenses	\$ -	\$ -	\$ -	NA	\$ -	\$ -
Local Government Engagement Labor and Expenses	\$ -	\$ -	\$ -	NA	\$ -	\$ -
Multifamily Property Improvements	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Service level adjustments (included above)	NA	NA	NA	NA	\$ -	\$ -
Signage, labels, and container color (included above)	NA	NA	NA	NA	\$ -	\$ -
Collection area adjustments	NA	NA	NA	NA	\$ -	\$ -
Bulky collection	NA	NA	NA	NA	\$ -	\$ -
Collection	\$ -	\$ -	\$ -	\$ 6,713,832	\$ 6,713,832	\$ 6,713,832
Direct Collection Costs	\$ -	\$ -	\$ -	\$ 6,411,563	\$ 6,411,563	\$ 6,411,563
Collection Capital - Containers	\$ -	\$ -	\$ -	\$ 362,374	\$ 362,374	\$ 362,374
Collection Capital - Trucks	\$ -	\$ -	\$ -	NA	\$ -	\$ -
Collection Labor	\$ -	\$ -	\$ -	\$ 5,037,816	\$ 5,037,816	\$ 5,037,816
Collection Operations	\$ -	\$ -	\$ -	\$ 1,011,373	\$ 1,011,373	\$ 1,011,373
Indirect Collection Costs	\$ -	\$ -	\$ -	\$ 302,269	\$ 302,269	\$ 302,269
Collection Administrative	\$ -	\$ -	\$ -	\$ 302,269	\$ 302,269	\$ 302,269
Collection Margin and Franchise Fee	\$ -	\$ -	\$ -	NA	\$ -	\$ -
Cost Savings from Reduced Garbage Disposal	\$ (13,622)	\$ (843)	\$ (955,404)	\$ (2,683,779)	\$ (3,653,647)	\$ (3,653,647)
Avoided Disposal Tip Fees	\$ (13,622)	\$ (843)	\$ (955,404)	\$ (2,683,779)	\$ (3,653,647)	\$ (3,653,647)
Initial Transfer Transport	\$ 18,783	\$ 1,093	\$ 1,300,948	\$ 3,123,668	\$ 4,444,492	\$ 4,444,492
Consolidation and Transfer to MRF	\$ 18,783	\$ 1,093	\$ 1,300,948	\$ 3,123,668	\$ 4,444,492	\$ 4,444,492
Sortation	\$ 32,697	\$ 142	\$ 934	\$ -	\$ 33,773	\$ 33,773
Sortation Labor	\$ 17,269	\$ 75	\$ 493	\$ -	\$ 17,838	\$ 17,838
Sortation Capital	\$ 1,129	\$ 5	\$ 32	\$ -	\$ 1,166	\$ 1,166
Sortation Facility	\$ 4,762	\$ 21	\$ 136	\$ -	\$ 4,919	\$ 4,919
Glass and Unsorted Container Transfer	\$ 257	\$ 1	\$ 7	\$ -	\$ 265	\$ 265
Sortation Residual Disposal	\$ 3,479	\$ 15	\$ 99	\$ -	\$ 3,593	\$ 3,593
Sortation Administrative & Marketing	\$ 3,399	\$ 15	\$ 97	\$ -	\$ 3,511	\$ 3,511
Sortation Margin	\$ 2,403	\$ 10	\$ 69	\$ -	\$ 2,482	\$ 2,482
Overall System Costs						
Total Costs	\$ 37,858	\$ 393	\$ 346,479	\$ 7,153,722	\$ 7,538,451	\$ 7,538,451
Tons Collected for Recycling1891213,26437,25950,723						
Tons Collected Commingled18615-192						
Tons Collected Source-Separated31113,25837,25950,531						
Tons Marketed1711112,02133,76645,969						
Tons Marketed (excluding bale contamination)1711112,02133,76645,969						
Total Cost per Ton Collected	\$ 200	\$ 34	\$ 26	\$ 192	\$ 149	\$ 149
Total Cost per Ton Marketed	\$ 221	\$ 37	\$ 29	\$ 212	\$ 164	\$ 164
Customers	-	-	-	NA	NA	NA
Annual pounds per customer	NA	NA	NA	NA	NA	NA
Commodity Revenues						
Commodity Revenues						
Commodity Sales (lower range)	\$ 17,269	\$ 75	\$ 493	\$ -	\$ 1,095,463	\$ 1,095,463
Commodity Sales (mid-point)	\$ 1,129	\$ 5	\$ 32	\$ -	\$ 4,060,063	\$ 4,060,063
Commodity Sales (upper range)	\$ 4,762	\$ 21	\$ 136	\$ -	\$ 7,024,664	\$ 7,024,664
Full-Time Equivalent (FTE) Employment						
	SF Res. (on-route)	MF Res. (on-route)	Commercial (on-route)	Self-haul (excluding Bottle Bill)	Total	
Recycling Customer Engagement	-	-	-	-	-	
Local Government Engagement	-	-	-	-	-	
New Engagement (costs listed in collection)	-	-	-	-	-	
Recycling Collection	-	-	-	110	110	
Route Drivers and Operations	-	-	-	110	110	
Management and Administrative	-	-	-	NA	-	
Sortation	0	0	0	-	0	
Sorting Labor	0	0	0	-	0	
Equipment Operators, Supervisors, Maintenance	0	0	0	-	0	
Admininstrative and Marketing	0	0	0	-	0	
Overall Recycling Svstem FTEs	0	0	0	110	111	

Figures in this report represent the consultant team's best modeling estimates based on available data.

+ Customer Engagement (S6/A-)						
REVISED - 4 - Areas Without Curbside 2025						
	SF Res. (on-route)	MF Res. (on-route)	Commercial (on-route)	Self-haul (excluding Bottle Bill)	Total	
Recycling System Costs						
Customer Engagement Costs	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Collection Engagement Labor and Expenses	\$ -	\$ -	\$ -	NA	\$ -	\$ -
Local Government Engagement Labor and Expenses	\$ -	\$ -	\$ -	NA	\$ -	\$ -
Multifamily Property Improvements	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Service level adjustments (included above)	NA	NA	NA	NA	\$ -	\$ -
Signage, labels, and container color (included above)	NA	NA	NA	NA	\$ -	\$ -
Collection area adjustments	NA	NA	NA	NA	\$ -	\$ -
Bulky collection	NA	NA	NA	NA	\$ -	\$ -
Collection	\$ -	\$ -	\$ -	\$ 7,973,286	\$ 7,973,286	\$ 7,973,286
Direct Collection Costs	\$ -	\$ -	\$ -	\$ 7,671,017	\$ 7,671,017	\$ 7,671,017
Collection Capital - Containers	\$ -	\$ -	\$ -	\$ 362,374	\$ 362,374	\$ 362,374
Collection Capital - Trucks	\$ -	\$ -	\$ -	NA	\$ -	\$ -
Collection Labor	\$ -	\$ -	\$ -	\$ 6,297,270	\$ 6,297,270	\$ 6,297,270
Collection Operations	\$ -	\$ -	\$ -	\$ 1,011,373	\$ 1,011,373	\$ 1,011,373
Indirect Collection Costs	\$ -	\$ -	\$ -	\$ 302,269	\$ 302,269	\$ 302,269
Collection Administrative	\$ -	\$ -	\$ -	\$ 302,269	\$ 302,269	\$ 302,269
Collection Margin and Franchise Fee	\$ -	\$ -	\$ -	NA	\$ -	\$ -
Cost Savings from Reduced Garbage Disposal	\$ (12,634)	\$ (841)	\$ (955,392)	\$ (2,683,779)	\$ (3,652,646)	\$ (3,652,646)
Avoided Disposal Tip Fees	\$ (12,634)	\$ (841)	\$ (955,392)	\$ (2,683,779)	\$ (3,652,646)	\$ (3,652,646)
Initial Transfer Transport	\$ 17,411	\$ 1,091	\$ 1,300,932	\$ 3,123,668	\$ 4,443,102	\$ 4,443,102
Consolidation and Transfer to MRF	\$ 17,411	\$ 1,091	\$ 1,300,932	\$ 3,123,668	\$ 4,443,102	\$ 4,443,102
Sortation	\$ 29,784	\$ 135	\$ 891	\$ -	\$ 30,809	\$ 30,809
Sortation Labor	\$ 16,069	\$ 73	\$ 480	\$ -	\$ 16,622	\$ 16,622
Sortation Capital	\$ 1,092	\$ 5	\$ 33	\$ -	\$ 1,129	\$ 1,129
Sortation Facility	\$ 4,412	\$ 20	\$ 132	\$ -	\$ 4,564	\$ 4,564
Glass and Unsorted Container Transfer	\$ 248	\$ 1	\$ 7	\$ -	\$ 257	\$ 257
Sortation Residual Disposal	\$ 2,487	\$ 11	\$ 74	\$ -	\$ 2,573	\$ 2,573
Sortation Administrative & Marketing	\$ 3,288	\$ 15	\$ 98	\$ -	\$ 3,401	\$ 3,401
Sortation Margin	\$ 2,188	\$ 10	\$ 65	\$ -	\$ 2,263	\$ 2,263
Overall System Costs						
Total Costs	\$ 34,561	\$ 385	\$ 346,431	\$ 8,413,176	\$ 8,794,552	\$ 8,794,552
Tons Collected for Recycling 175 12 13,264 37,259 50,709						
Tons Collected Commingled 173 1 5 - 178						
Tons Collected Source-Separated 3 11 13,258 37,259 50,531						
Tons Marketed 163 11 12,318 34,603 47,095						
Tons Marketed (excluding bale contamination) 163 11 12,318 34,603 47,095						
Total Cost per Ton Collected	\$ 197	\$ 33	\$ 26	\$ 226	\$ 173	\$ 173
Total Cost per Ton Marketed	\$ 212	\$ 35	\$ 28	\$ 243	\$ 187	\$ 187
Customers	-	-	-	NA	NA	NA
Annual pounds per customer	NA	NA	NA	NA	NA	NA
Commodity Revenues						
Commodity Revenues						
Commodity Sales (lower range)	\$ 16,069	\$ 73	\$ 480	\$ -	\$ 1,104,821	\$ 1,104,821
Commodity Sales (mid-point)	\$ 1,092	\$ 5	\$ 33	\$ -	\$ 4,103,483	\$ 4,103,483
Commodity Sales (upper range)	\$ 4,412	\$ 20	\$ 132	\$ -	\$ 7,102,144	\$ 7,102,144
Full-Time Equivalent (FTE) Employment						
	SF Res. (on-route)	MF Res. (on-route)	Commercial (on-route)	Self-haul (excluding Bottle Bill)	Total	
Recycling Customer Engagement	-	-	-	28	28	
Local Government Engagement	-	-	-	-	-	
New Engagement (costs listed in collection)	-	-	-	28	28	
Recycling Collection	-	-	-	110	110	
Route Drivers and Operations	-	-	-	110	110	
Management and Administrative	-	-	-	NA	-	
Sortation	0	0	0	-	0	
Sorting Labor	0	0	0	-	0	
Equipment Operators, Supervisors, Maintenance	0	0	0	-	0	
Admininstrative and Marketing	0	0	0	-	0	
Overall Recycling Svsstem FTEs	0	0	0	138	138	

Figures in this report represent the consultant team's best modeling estimates based on available data.

Engagement + Improved MRFs (S1/A)						
REVISED - 4 - Areas Without Curbside 2025						
	SF Res. (on-route)	MF Res. (on-route)	Commercial (on-route)	Self-haul (excluding Bottle Bill)	Total	
Recycling System Costs						
Customer Engagement Costs	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Collection Engagement Labor and Expenses	\$ -	\$ -	\$ -	NA	\$ -	\$ -
Local Government Engagement Labor and Expenses	\$ -	\$ -	\$ -	NA	\$ -	\$ -
Multifamily Property Improvements	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Service level adjustments (included above)	NA	NA	NA	NA	\$ -	\$ -
Signage, labels, and container color (included above)	NA	NA	NA	NA	\$ -	\$ -
Collection area adjustments	NA	NA	NA	NA	\$ -	\$ -
Bulky collection	NA	NA	NA	NA	\$ -	\$ -
Collection	\$ -	\$ -	\$ -	\$ 7,973,286	\$ 7,973,286	\$ 7,973,286
Direct Collection Costs	\$ -	\$ -	\$ -	\$ 7,671,017	\$ 7,671,017	\$ 7,671,017
Collection Capital - Containers	\$ -	\$ -	\$ -	\$ 362,374	\$ 362,374	\$ 362,374
Collection Capital - Trucks	\$ -	\$ -	\$ -	NA	\$ -	\$ -
Collection Labor	\$ -	\$ -	\$ -	\$ 6,297,270	\$ 6,297,270	\$ 6,297,270
Collection Operations	\$ -	\$ -	\$ -	\$ 1,011,373	\$ 1,011,373	\$ 1,011,373
Indirect Collection Costs	\$ -	\$ -	\$ -	\$ 302,269	\$ 302,269	\$ 302,269
Collection Administrative	\$ -	\$ -	\$ -	\$ 302,269	\$ 302,269	\$ 302,269
Collection Margin and Franchise Fee	\$ -	\$ -	\$ -	NA	\$ -	\$ -
Cost Savings from Reduced Garbage Disposal	\$ (12,634)	\$ (841)	\$ (955,392)	\$ (2,683,779)	\$ (3,652,646)	\$ (3,652,646)
Avoided Disposal Tip Fees	\$ (12,634)	\$ (841)	\$ (955,392)	\$ (2,683,779)	\$ (3,652,646)	\$ (3,652,646)
Initial Transfer Transport	\$ 17,411	\$ 1,091	\$ 1,300,932	\$ 3,123,668	\$ 4,443,102	\$ 4,443,102
Consolidation and Transfer to MRF	\$ 17,411	\$ 1,091	\$ 1,300,932	\$ 3,123,668	\$ 4,443,102	\$ 4,443,102
Sortation	\$ 30,301	\$ 137	\$ 906	\$ -	\$ 31,344	\$ 31,344
Sortation Labor	\$ 13,805	\$ 63	\$ 413	\$ -	\$ 14,280	\$ 14,280
Sortation Capital	\$ 3,094	\$ 14	\$ 93	\$ -	\$ 3,201	\$ 3,201
Sortation Facility	\$ 4,412	\$ 20	\$ 132	\$ -	\$ 4,564	\$ 4,564
Glass and Unsorted Container Transfer	\$ 248	\$ 1	\$ 7	\$ -	\$ 257	\$ 257
Sortation Residual Disposal	\$ 3,228	\$ 15	\$ 97	\$ -	\$ 3,339	\$ 3,339
Sortation Administrative & Marketing	\$ 3,288	\$ 15	\$ 98	\$ -	\$ 3,401	\$ 3,401
Sortation Margin	\$ 2,226	\$ 10	\$ 67	\$ -	\$ 2,303	\$ 2,303
Overall System Costs						
Total Costs	\$ 35,078	\$ 387	\$ 346,446	\$ 8,413,176	\$ 8,795,087	\$ 8,795,087
Tons Collected for Recycling1751213,26437,25950,709						
Tons Collected Commingled17315-						
Tons Collected Source-Separated31113,25837,25950,531						
Tons Marketed1621112,27234,47346,918						
Tons Marketed (excluding bale contamination)1621112,27234,47346,918						
Total Cost per Ton Collected	\$ 200	\$ 33	\$ 26	\$ 226	\$ 173	\$ 173
Total Cost per Ton Marketed	\$ 216	\$ 36	\$ 28	\$ 244	\$ 187	\$ 187
Customers	-	-	-	NA	NA	NA
Annual pounds per customer	NA	NA	NA	NA	NA	NA
Commodity Revenues						
Commodity Revenues						
Commodity Sales (lower range)	\$ 13,805	\$ 63	\$ 413	\$ -	\$ 1,403,887	\$ 1,403,887
Commodity Sales (mid-point)	\$ 3,094	\$ 14	\$ 93	\$ -	\$ 4,014,369	\$ 4,014,369
Commodity Sales (upper range)	\$ 4,412	\$ 20	\$ 132	\$ -	\$ 6,624,852	\$ 6,624,852
Full-Time Equivalent (FTE) Employment						
	SF Res. (on-route)	MF Res. (on-route)	Commercial (on-route)	Self-haul (excluding Bottle Bill)	Total	
Recycling Customer Engagement	-	-	-	28	28	
Local Government Engagement	-	-	-	-	-	
New Engagement (costs listed in collection)	-	-	-	28	28	
Recycling Collection	-	-	-	110	110	
Route Drivers and Operations	-	-	-	110	110	
Management and Administrative	-	-	-	NA	-	
Sortation	0	0	0	-	0	
Sorting Labor	0	0	0	-	0	
Equipment Operators, Supervisors, Maintenance	0	0	0	-	0	
Admininstrative and Marketing	0	0	0	-	0	
Overall Recycling Svstem FTEs	0	0	0	138	138	

Figures in this report represent the consultant team's best modeling estimates based on available data.

Engagement + MRFs + Expanded Lists (S2/A+)						
REVISED - 4 - Areas Without Curbside 2025						
	SF Res. (on-route)	MF Res. (on-route)	Commercial (on-route)	Self-haul (excluding Bottle Bill)	Total	
Recycling System Costs						
Customer Engagement Costs	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Collection Engagement Labor and Expenses	\$ -	\$ -	\$ -	NA	\$ -	\$ -
Local Government Engagement Labor and Expenses	\$ -	\$ -	\$ -	NA	\$ -	\$ -
Multifamily Property Improvements	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Service level adjustments (included above)	NA	NA	NA	NA	\$ -	\$ -
Signage, labels, and container color (included above)	NA	NA	NA	NA	\$ -	\$ -
Collection area adjustments	NA	NA	NA	NA	\$ -	\$ -
Bulky collection	NA	NA	NA	NA	\$ -	\$ -
Collection	\$ -	\$ -	\$ -	\$ 9,718,958	\$ 9,718,958	\$ 9,718,958
Direct Collection Costs	\$ -	\$ -	\$ -	\$ 9,381,235	\$ 9,381,235	\$ 9,381,235
Collection Capital - Containers	\$ -	\$ -	\$ -	\$ 818,929	\$ 818,929	\$ 818,929
Collection Capital - Trucks	\$ -	\$ -	\$ -	NA	\$ -	\$ -
Collection Labor	\$ -	\$ -	\$ -	\$ 7,432,309	\$ 7,432,309	\$ 7,432,309
Collection Operations	\$ -	\$ -	\$ -	\$ 1,129,997	\$ 1,129,997	\$ 1,129,997
Indirect Collection Costs	\$ -	\$ -	\$ -	\$ 337,722	\$ 337,722	\$ 337,722
Collection Administrative	\$ -	\$ -	\$ -	\$ 337,722	\$ 337,722	\$ 337,722
Collection Margin and Franchise Fee	\$ -	\$ -	\$ -	NA	\$ -	\$ -
Cost Savings from Reduced Garbage Disposal	\$ (16,861)	\$ (853)	\$ (955,716)	\$ (2,899,861)	\$ (3,873,291)	\$ (3,873,291)
Avoided Disposal Tip Fees	\$ (16,861)	\$ (853)	\$ (955,716)	\$ (2,899,861)	\$ (3,873,291)	\$ (3,873,291)
Initial Transfer Transport	\$ 23,280	\$ 1,107	\$ 1,301,382	\$ 3,423,653	\$ 4,749,423	\$ 4,749,423
Consolidation and Transfer to MRF	\$ 23,280	\$ 1,107	\$ 1,301,382	\$ 3,423,653	\$ 4,749,423	\$ 4,749,423
Sortation	\$ 37,824	\$ 155	\$ 1,580	\$ -	\$ 39,560	\$ 39,560
Sortation Labor	\$ 16,810	\$ 69	\$ 702	\$ -	\$ 17,581	\$ 17,581
Sortation Capital	\$ 3,657	\$ 15	\$ 153	\$ -	\$ 3,825	\$ 3,825
Sortation Facility	\$ 5,916	\$ 24	\$ 247	\$ -	\$ 6,187	\$ 6,187
Glass and Unsorted Container Transfer	\$ 596	\$ 2	\$ 25	\$ -	\$ 623	\$ 623
Sortation Residual Disposal	\$ 4,446	\$ 18	\$ 186	\$ -	\$ 4,650	\$ 4,650
Sortation Administrative & Marketing	\$ 3,642	\$ 15	\$ 152	\$ -	\$ 3,809	\$ 3,809
Sortation Margin	\$ 2,758	\$ 11	\$ 115	\$ -	\$ 2,884	\$ 2,884
Overall System Costs						
Total Costs	\$ 44,243	\$ 410	\$ 347,246	\$ 10,242,750	\$ 10,634,649	\$ 10,634,649
Tons Collected for Recycling2341213,26840,25953,773						
Tons Collected Commingled231110-242						
Tons Collected Source-Separated31113,25840,25953,531						
Tons Marketed2211112,52538,00350,760						
Tons Marketed (excluding bale contamination)2211112,52538,00350,760						
Total Cost per Ton Collected	\$ 189	\$ 35	\$ 26	\$ 254	\$ 198	\$ 198
Total Cost per Ton Marketed	\$ 200	\$ 37	\$ 28	\$ 270	\$ 210	\$ 210
Customers	-	-	-	NA	NA	NA
Annual pounds per customer	NA	NA	NA	NA	NA	NA
Commodity Revenues						
Commodity Revenues						
Commodity Sales (lower range)	\$ 16,810	\$ 69	\$ 702	\$ -	\$ 1,457,990	\$ 1,457,990
Commodity Sales (mid-point)	\$ 3,657	\$ 15	\$ 153	\$ -	\$ 4,198,473	\$ 4,198,473
Commodity Sales (upper range)	\$ 5,916	\$ 24	\$ 247	\$ -	\$ 6,938,956	\$ 6,938,956
Full-Time Equivalent (FTE) Employment						
	SF Res. (on-route)	MF Res. (on-route)	Commercial (on-route)	Self-haul (excluding Bottle Bill)	Total	
Recycling Customer Engagement	-	-	-	31	31	31
Local Government Engagement	-	-	-	-	-	-
New Engagement (costs listed in collection)	-	-	-	31	31	31
Recycling Collection	-	-	-	129	129	129
Route Drivers and Operations	-	-	-	129	129	129
Management and Administrative	-	-	-	NA	-	-
Sortation	0	0	0	-	0	0
Sorting Labor	0	0	0	-	0	0
Equipment Operators, Supervisors, Maintenance	0	0	0	-	0	0
Admininstrative and Marketing	0	0	0	-	0	0
Overall Recycling System FTEs	0	0	0	160	160	160

Figures in this report represent the consultant team's best modeling estimates based on available data.

Engagement + MRFs + Expanded + Statewide List (S7/A++)						
REVISED - 4 - Areas Without Curbside 2025						
	SF Res. (on-route)	MF Res. (on-route)	Commercial (on-route)	Self-haul (excluding Bottle Bill)	Total	
Recycling System Costs						
Customer Engagement Costs	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Collection Engagement Labor and Expenses	\$ -	\$ -	\$ -	NA	\$ -	\$ -
Local Government Engagement Labor and Expenses	\$ -	\$ -	\$ -	NA	\$ -	\$ -
Multifamily Property Improvements	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Service level adjustments (included above)	NA	NA	NA	NA	\$ -	\$ -
Signage, labels, and container color (included above)	NA	NA	NA	NA	\$ -	\$ -
Collection area adjustments	NA	NA	NA	NA	\$ -	\$ -
Bulky collection	NA	NA	NA	NA	\$ -	\$ -
Collection	\$ -	\$ -	\$ -	\$ 9,963,685	\$ 9,963,685	\$ 9,963,685
Direct Collection Costs	\$ -	\$ -	\$ -	\$ 9,617,089	\$ 9,617,089	\$ 9,617,089
Collection Capital - Containers	\$ -	\$ -	\$ -	\$ 840,207	\$ 840,207	\$ 840,207
Collection Capital - Trucks	\$ -	\$ -	\$ -	NA	\$ -	\$ -
Collection Labor	\$ -	\$ -	\$ -	\$ 7,617,191	\$ 7,617,191	\$ 7,617,191
Collection Operations	\$ -	\$ -	\$ -	\$ 1,159,690	\$ 1,159,690	\$ 1,159,690
Indirect Collection Costs	\$ -	\$ -	\$ -	\$ 346,597	\$ 346,597	\$ 346,597
Collection Administrative	\$ -	\$ -	\$ -	\$ 346,597	\$ 346,597	\$ 346,597
Collection Margin and Franchise Fee	\$ -	\$ -	\$ -	NA	\$ -	\$ -
Cost Savings from Reduced Garbage Disposal	\$ (16,861)	\$ (853)	\$ (955,716)	\$ (2,953,949)	\$ (3,927,379)	\$ (3,927,379)
Avoided Disposal Tip Fees	\$ (16,861)	\$ (853)	\$ (955,716)	\$ (2,953,949)	\$ (3,927,379)	\$ (3,927,379)
Initial Transfer Transport	\$ 23,280	\$ 1,107	\$ 1,301,382	\$ 3,498,743	\$ 4,824,512	\$ 4,824,512
Consolidation and Transfer to MRF	\$ 23,280	\$ 1,107	\$ 1,301,382	\$ 3,498,743	\$ 4,824,512	\$ 4,824,512
Sortation	\$ 37,488	\$ 154	\$ 1,566	\$ -	\$ 39,209	\$ 39,209
Sortation Labor	\$ 16,826	\$ 69	\$ 703	\$ -	\$ 17,598	\$ 17,598
Sortation Capital	\$ 3,640	\$ 15	\$ 152	\$ -	\$ 3,807	\$ 3,807
Sortation Facility	\$ 5,911	\$ 24	\$ 247	\$ -	\$ 6,183	\$ 6,183
Glass and Unsorted Container Transfer	\$ 297	\$ 1	\$ 12	\$ -	\$ 311	\$ 311
Sortation Residual Disposal	\$ 4,434	\$ 18	\$ 185	\$ -	\$ 4,637	\$ 4,637
Sortation Administrative & Marketing	\$ 3,625	\$ 15	\$ 151	\$ -	\$ 3,791	\$ 3,791
Sortation Margin	\$ 2,755	\$ 11	\$ 115	\$ -	\$ 2,881	\$ 2,881
Overall System Costs						
Total Costs	\$ 43,907	\$ 408	\$ 347,232	\$ 10,508,480	\$ 10,900,027	\$ 10,900,027
Tons Collected for Recycling	234	12	13,268	41,009	54,524	54,524
Tons Collected Commingled	231	1	10	-	242	242
Tons Collected Source-Separated	3	11	13,258	41,009	54,282	54,282
Tons Marketed	221	11	12,527	38,718	51,476	51,476
Tons Marketed (excluding bale contamination)	221	11	12,527	38,718	51,476	51,476
Total Cost per Ton Collected	\$ 188	\$ 34	\$ 26	\$ 256	\$ 200	\$ 200
Total Cost per Ton Marketed	\$ 199	\$ 37	\$ 28	\$ 271	\$ 212	\$ 212
Customers	-	-	-	NA	NA	NA
Annual pounds per customer	NA	NA	NA	NA	NA	NA
Commodity Revenues						
Commodity Revenues						
Commodity Sales (lower range)	\$ 16,826	\$ 69	\$ 703	\$ -	\$ 1,608,176	\$ 1,608,176
Commodity Sales (mid-point)	\$ 3,640	\$ 15	\$ 152	\$ -	\$ 4,545,836	\$ 4,545,836
Commodity Sales (upper range)	\$ 5,911	\$ 24	\$ 247	\$ -	\$ 7,483,497	\$ 7,483,497
Full-Time Equivalent (FTE) Employment						
	SF Res. (on-route)	MF Res. (on-route)	Commercial (on-route)	Self-haul (excluding Bottle Bill)	Total	
Recycling Customer Engagement	-	-	-	32	32	32
Local Government Engagement	-	-	-	-	-	-
New Engagement (costs listed in collection)	-	-	-	32	32	32
Recycling Collection	-	-	-	133	133	133
Route Drivers and Operations	-	-	-	133	133	133
Management and Administrative	-	-	-	NA	-	-
Sortation	0	0	0	-	0	0
Sorting Labor	0	0	0	-	0	0
Equipment Operators, Supervisors, Maintenance	0	0	0	-	0	0
Admininstrative and Marketing	0	0	0	-	0	0
Overall Recycling Svstem FTEs	0	0	0	164	164	164

Figures in this report represent the consultant team's best modeling estimates based on available data.

+Container Recovery Facility (S3/B)						
REVISED - 4 - Areas Without Curbside 2025						
	SF Res. (on-route)	MF Res. (on-route)	Commercial (on-route)	Self-haul (excluding Bottle Bill)	Total	
Recycling System Costs						
Customer Engagement Costs	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Collection Engagement Labor and Expenses	\$ -	\$ -	\$ -		NA	\$ -
Local Government Engagement Labor and Expenses	\$ -	\$ -	\$ -		NA	\$ -
Multifamily Property Improvements	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Service level adjustments (included above)	NA	NA	NA	NA	NA	\$ -
Signage, labels, and container color (included above)	NA	NA	NA	NA	NA	\$ -
Collection area adjustments	NA	NA	NA	NA	NA	\$ -
Bulky collection	NA	NA	NA	NA	NA	\$ -
Collection	\$ -	\$ -	\$ -	\$ -	9,718,958	\$ 9,718,958
Direct Collection Costs	\$ -	\$ -	\$ -	\$ -	9,381,235	\$ 9,381,235
Collection Capital - Containers	\$ -	\$ -	\$ -	\$ -	818,929	\$ 818,929
Collection Capital - Trucks	\$ -	\$ -	\$ -	\$ -	NA	\$ -
Collection Labor	\$ -	\$ -	\$ -	\$ -	7,432,309	\$ 7,432,309
Collection Operations	\$ -	\$ -	\$ -	\$ -	1,129,997	\$ 1,129,997
Indirect Collection Costs	\$ -	\$ -	\$ -	\$ -	337,722	\$ 337,722
Collection Administrative	\$ -	\$ -	\$ -	\$ -	337,722	\$ 337,722
Collection Margin and Franchise Fee	\$ -	\$ -	\$ -	\$ -	NA	\$ -
Cost Savings from Reduced Garbage Disposal	\$ (16,861)	\$ (853)	\$ (955,716)	\$ (2,899,861)	\$ (3,873,291)	\$ (3,873,291)
Avoided Disposal Tip Fees	\$ (16,861)	\$ (853)	\$ (955,716)	\$ (2,899,861)	\$ (3,873,291)	\$ (3,873,291)
Initial Transfer Transport	\$ 23,280	\$ 1,107	\$ 1,301,382	\$ 3,423,653	\$ 4,749,423	\$ 4,749,423
Consolidation and Transfer to MRF	\$ 23,280	\$ 1,107	\$ 1,301,382	\$ 3,423,653	\$ 4,749,423	\$ 4,749,423
Sortation	\$ 37,312	\$ 153	\$ 1,559	\$ -	\$ 39,025	\$ 39,025
Sortation Labor	\$ 16,452	\$ 68	\$ 687	\$ -	\$ 17,207	\$ 17,207
Sortation Capital	\$ 3,361	\$ 14	\$ 140	\$ -	\$ 3,516	\$ 3,516
Sortation Facility	\$ 5,901	\$ 24	\$ 247	\$ -	\$ 6,172	\$ 6,172
Glass and Unsorted Container Transfer	\$ 1,066	\$ 4	\$ 45	\$ -	\$ 1,115	\$ 1,115
Sortation Residual Disposal	\$ 4,205	\$ 17	\$ 176	\$ -	\$ 4,398	\$ 4,398
Sortation Administrative & Marketing	\$ 3,642	\$ 15	\$ 152	\$ -	\$ 3,809	\$ 3,809
Sortation Margin	\$ 2,685	\$ 11	\$ 112	\$ -	\$ 2,808	\$ 2,808
Overall System Costs						
Total Costs	\$ 43,731	\$ 408	\$ 347,225	\$ 10,242,750	\$ 10,634,114	\$ 10,634,114
Tons Collected for Recycling	234	12	13,268	40,259	53,773	53,773
Tons Collected Commingled	231	1	10	-	242	242
Tons Collected Source-Separated	3	11	13,258	40,259	53,531	53,531
Tons Marketed	222	11	12,581	38,173	50,987	50,987
Tons Marketed (excluding bale contamination)	222	11	12,581	38,173	50,987	50,987
Total Cost per Ton Collected	\$ 187	\$ 34	\$ 26	\$ 254	\$ 198	\$ 198
Total Cost per Ton Marketed	\$ 197	\$ 36	\$ 28	\$ 268	\$ 209	\$ 209
Customers	-	-	-	NA	NA	NA
Annual pounds per customer	NA	NA	NA	NA	NA	NA
Commodity Revenues						
Commodity Revenues						
Commodity Sales (lower range)	\$ 16,452	\$ 68	\$ 687	\$ -	\$ 1,281,774	\$ 1,281,774
Commodity Sales (mid-point)	\$ 3,361	\$ 14	\$ 140	\$ -	\$ 3,872,657	\$ 3,872,657
Commodity Sales (upper range)	\$ 5,901	\$ 24	\$ 247	\$ -	\$ 6,463,539	\$ 6,463,539
Full-Time Equivalent (FTE) Employment						
	SF Res. (on-route)	MF Res. (on-route)	Commercial (on-route)	Self-haul (excluding Bottle Bill)	Total	
Recycling Customer Engagement	-	-	-	31	31	31
Local Government Engagement	-	-	-	-	-	-
New Engagement (costs listed in collection)	-	-	-	31	31	31
Recycling Collection	-	-	-	129	129	129
Route Drivers and Operations	-	-	-	129	129	129
Management and Administrative	-	-	-	NA	-	-
Sortation	0	0	0	-	0	0
Sorting Labor	0	0	0	-	0	0
Equipment Operators, Supervisors, Maintenance	0	0	0	-	0	0
Admininstrative and Marketing	0	0	0	-	0	0
Overall Recycling System FTEs	0	0	0	160	160	160

Figures in this report represent the consultant team's best modeling estimates based on available data.

Dual-Stream Collection (S4/C)						
REVISED - 4 - Areas Without Curbside 2025						
	SF Res. (on-route)	MF Res. (on-route)	Commercial (on-route)	Self-haul (excluding Bottle Bill)	Total	
Recycling System Costs						
Customer Engagement Costs	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Collection Engagement Labor and Expenses	\$ -	\$ -	\$ -	NA	\$ -	\$ -
Local Government Engagement Labor and Expenses	\$ -	\$ -	\$ -	NA	\$ -	\$ -
Multifamily Property Improvements	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Service level adjustments (included above)	NA	NA	NA	NA	\$ -	\$ -
Signage, labels, and container color (included above)	NA	NA	NA	NA	\$ -	\$ -
Collection area adjustments	NA	NA	NA	NA	\$ -	\$ -
Bulky collection	NA	NA	NA	NA	\$ -	\$ -
Collection	\$ -	\$ -	\$ -	\$ 9,718,958	\$ 9,718,958	\$ 9,718,958
Direct Collection Costs	\$ -	\$ -	\$ -	\$ 9,381,235	\$ 9,381,235	\$ 9,381,235
Collection Capital - Containers	\$ -	\$ -	\$ -	\$ 818,929	\$ 818,929	\$ 818,929
Collection Capital - Trucks	\$ -	\$ -	\$ -	NA	\$ -	\$ -
Collection Labor	\$ -	\$ -	\$ -	\$ 7,432,309	\$ 7,432,309	\$ 7,432,309
Collection Operations	\$ -	\$ -	\$ -	\$ 1,129,997	\$ 1,129,997	\$ 1,129,997
Indirect Collection Costs	\$ -	\$ -	\$ -	\$ 337,722	\$ 337,722	\$ 337,722
Collection Administrative	\$ -	\$ -	\$ -	\$ 337,722	\$ 337,722	\$ 337,722
Collection Margin and Franchise Fee	\$ -	\$ -	\$ -	NA	\$ -	\$ -
Cost Savings from Reduced Garbage Disposal	\$ (16,861)	\$ (853)	\$ (955,716)	\$ (2,899,861)	\$ (3,873,291)	\$ (3,873,291)
Avoided Disposal Tip Fees	\$ (16,861)	\$ (853)	\$ (955,716)	\$ (2,899,861)	\$ (3,873,291)	\$ (3,873,291)
Initial Transfer Transport	\$ 23,280	\$ 1,107	\$ 1,301,382	\$ 3,423,653	\$ 4,749,423	\$ 4,749,423
Consolidation and Transfer to MRF	\$ 23,280	\$ 1,107	\$ 1,301,382	\$ 3,423,653	\$ 4,749,423	\$ 4,749,423
Sortation	\$ 36,632	\$ 151	\$ 1,530	\$ -	\$ 38,313	\$ 38,313
Sortation Labor	\$ 16,373	\$ 67	\$ 684	\$ -	\$ 17,124	\$ 17,124
Sortation Capital	\$ 3,491	\$ 14	\$ 146	\$ -	\$ 3,651	\$ 3,651
Sortation Facility	\$ 5,936	\$ 24	\$ 248	\$ -	\$ 6,209	\$ 6,209
Glass and Unsorted Container Transfer	\$ 299	\$ 1	\$ 12	\$ -	\$ 312	\$ 312
Sortation Residual Disposal	\$ 4,199	\$ 17	\$ 175	\$ -	\$ 4,392	\$ 4,392
Sortation Administrative & Marketing	\$ 3,642	\$ 15	\$ 152	\$ -	\$ 3,809	\$ 3,809
Sortation Margin	\$ 2,691	\$ 11	\$ 112	\$ -	\$ 2,815	\$ 2,815
Overall System Costs						
Total Costs	\$ 43,050	\$ 405	\$ 347,197	\$ 10,242,750	\$ 10,633,401	\$ 10,633,401
Tons Collected for Recycling	234	12	13,268	40,259	53,773	53,773
Tons Collected Commingled	231	1	10	-	242	242
Tons Collected Source-Separated	3	11	13,258	40,259	53,531	53,531
Tons Marketed	217	11	12,281	37,263	49,772	49,772
Tons Marketed (excluding bale contamination)	217	11	12,281	37,263	49,772	49,772
Total Cost per Ton Collected	\$ 184	\$ 34	\$ 26	\$ 254	\$ 198	\$ 198
Total Cost per Ton Marketed	\$ 199	\$ 37	\$ 28	\$ 275	\$ 214	\$ 214
Customers	-	-	-	NA	NA	NA
Annual pounds per customer	NA	NA	NA	NA	NA	NA
Commodity Revenues						
Commodity Revenues						
Commodity Sales (lower range)	\$ 16,373	\$ 67	\$ 684	\$ -	\$ 1,468,688	\$ 1,468,688
Commodity Sales (mid-point)	\$ 3,491	\$ 14	\$ 146	\$ -	\$ 4,171,311	\$ 4,171,311
Commodity Sales (upper range)	\$ 5,936	\$ 24	\$ 248	\$ -	\$ 6,873,933	\$ 6,873,933
Full-Time Equivalent (FTE) Employment						
	SF Res. (on-route)	MF Res. (on-route)	Commercial (on-route)	Self-haul (excluding Bottle Bill)	Total	
Recycling Customer Engagement	-	-	-	31	31	31
Local Government Engagement	-	-	-	-	-	-
New Engagement (costs listed in collection)	-	-	-	31	31	31
Recycling Collection	-	-	-	129	129	129
Route Drivers and Operations	-	-	-	129	129	129
Management and Administrative	-	-	-	NA	-	-
Sortation	0	0	0	-	0	0
Sorting Labor	0	0	0	-	0	0
Equipment Operators, Supervisors, Maintenance	0	0	0	-	0	0
Admininstrative and Marketing	0	0	0	-	0	0
Overall Recycling Svstem FTEs	0	0	0	160	160	160

Figures in this report represent the consultant team's best modeling estimates based on available data.

Engagement + MRFs + Expanded + Statewide List + Expanded Collection (S8/D-low)						
REVISED - 4 - Areas Without Curbside 2025						
	SF Res. (on-route)	MF Res. (on-route)	Commercial (on-route)	Self-haul (excluding Bottle Bill)	Total	
Recycling System Costs						
Customer Engagement Costs	\$ 205,148	\$ 429,344	\$ 1,824,714	\$ -	\$	2,459,206
Collection Engagement Labor and Expenses	\$ 205,148	\$ 429,344	\$ 1,824,714	NA	\$	2,459,206
Local Government Engagement Labor and Expenses	\$ -	\$ -	\$ -	NA	\$	-
Multifamily Property Improvements	\$ -	\$ 844,594	\$ -	\$ -	\$	844,594
Service level adjustments (included above)	NA	NA	NA	NA	\$	-
Signage, labels, and container color (included above)	NA	NA	NA	NA	\$	-
Collection area adjustments	NA	\$ 451,686	NA	NA	\$	451,686
Bulky collection	NA	\$ 392,908	NA	NA	\$	392,908
Collection	\$ 5,916,591	\$ 1,572,865	\$ 6,684,675	\$ 8,968,048	\$	23,142,178
Direct Collection Costs	\$ 3,933,028	\$ 1,100,283	\$ 4,676,201	\$ 8,656,109	\$	18,365,621
Collection Capital - Containers	\$ 96,334	\$ 28,932	\$ 122,962	\$ 756,855	\$	1,005,084
Collection Capital - Trucks	\$ 682,591	\$ 105,647	\$ 448,998	NA	\$	1,237,236
Collection Labor	\$ 2,057,039	\$ 597,861	\$ 2,540,909	\$ 6,855,524	\$	12,051,333
Collection Operations	\$ 1,097,063	\$ 367,843	\$ 1,563,332	\$ 1,043,730	\$	4,071,968
Indirect Collection Costs	\$ 1,983,562	\$ 472,582	\$ 2,008,474	\$ 311,939	\$	4,776,557
Collection Administrative	\$ 1,289,499	\$ 278,414	\$ 1,183,262	\$ 311,939	\$	3,063,114
Collection Margin and Franchise Fee	\$ 694,064	\$ 194,168	\$ 825,212	NA	\$	1,713,443
Cost Savings from Reduced Garbage Disposal	\$ (520,971)	\$ (75,121)	\$ (1,199,639)	\$ (2,742,718)	\$	(4,538,449)
Avoided Disposal Tip Fees	\$ (520,971)	\$ (75,121)	\$ (1,199,639)	\$ (2,742,718)	\$	(4,538,449)
Initial Transfer Transport	\$ 668,426	\$ 101,062	\$ 1,638,289	\$ 3,213,133	\$	5,620,910
Consolidation and Transfer to MRF	\$ 668,426	\$ 101,062	\$ 1,638,289	\$ 3,213,133	\$	5,620,910
Sortation	\$ 972,676	\$ 155,585	\$ 543,036	\$ -	\$	1,671,297
Sortation Labor	\$ 440,642	\$ 70,483	\$ 246,007	\$ -	\$	757,133
Sortation Capital	\$ 91,343	\$ 14,611	\$ 50,996	\$ -	\$	156,949
Sortation Facility	\$ 153,481	\$ 24,550	\$ 85,687	\$ -	\$	263,719
Glass and Unsorted Container Transfer	\$ 7,499	\$ 1,200	\$ 4,187	\$ -	\$	12,886
Sortation Residual Disposal	\$ 117,250	\$ 18,755	\$ 65,460	\$ -	\$	201,465
Sortation Administrative & Marketing	\$ 90,965	\$ 14,550	\$ 50,785	\$ -	\$	156,301
Sortation Margin	\$ 71,495	\$ 11,436	\$ 39,915	\$ -	\$	122,845
Overall System Costs						
Total Costs	\$ 7,241,869	\$ 3,028,330	\$ 9,491,075	\$ 9,438,463	\$	29,199,737
Tons Collected for Recycling 7,233 1,043 16,654 38,077 63,007						
Tons Collected Commingled 6,014 962 3,358 - 10,334						
Tons Collected Source-Separated 1,219 81 13,297 38,077 52,673						
Tons Marketed 6,807 982 15,675 35,839 59,303						
Tons Marketed (excluding bale contamination) 6,807 982 15,675 35,839 59,303						
Total Cost per Ton Collected	\$ 1,001	\$ 2,904	\$ 570	\$ 248	\$	463
Total Cost per Ton Marketed	\$ 1,064	\$ 3,085	\$ 605	\$ 263	\$	492
Customers	52,388	1,310	5,566	NA		NA
Annual pounds per customer	276	1,593	5,984	NA		NA
Commodity Revenues						
Commodity Revenues						
Commodity Sales (lower range)	\$ 440,642	\$ 70,483	\$ 246,007	\$ -	\$	1,858,989
Commodity Sales (mid-point)	\$ 91,343	\$ 14,611	\$ 50,996	\$ -	\$	5,254,248
Commodity Sales (upper range)	\$ 153,481	\$ 24,550	\$ 85,687	\$ -	\$	8,649,507
Full-Time Equivalent (FTE) Employment						
	SF Res. (on-route)	MF Res. (on-route)	Commercial (on-route)	Self-haul (excluding Bottle Bill)	Total	
Recycling Customer Engagement	1	3	15	28	47	
Local Government Engagement	-	-	-	-	-	
New Engagement (costs listed in collection)	1	3	15	28	47	
Recycling Collection	4	4	18	119	146	
Route Drivers and Operations	3	4	16	119	142	
Management and Administrative	2	0	2	NA	4	
Sortation	8	1	4	-	13	
Sorting Labor	5	1	3	-	9	
Equipment Operators, Supervisors, Maintenance	2	0	1	-	3	
Admininstrative and Marketing	1	0	0	-	1	
Overall Recycling Svsstem FTEs	13	9	37	148	206	

Figures in this report represent the consultant team's best modeling estimates based on available data.

Engagement + MRFs + Expanded + Statewide List + Expanded Collection (S9/D-mid)						
REVISED - 4 - Areas Without Curbside 2025						
	SF Res. (on-route)	MF Res. (on-route)	Commercial (on-route)	Self-haul (excluding Bottle Bill)	Total	
Recycling System Costs						
Customer Engagement Costs	\$ 307,721	\$ 644,017	\$ 2,146,722	\$ -	\$	3,098,460
Collection Engagement Labor and Expenses	\$ 307,721	\$ 644,017	\$ 2,146,722	NA	\$	3,098,460
Local Government Engagement Labor and Expenses	\$ -	\$ -	\$ -	NA	\$	-
Multifamily Property Improvements	\$ -	\$ 1,266,891	\$ -	\$ -	\$	1,266,891
Service level adjustments (included above)	NA	NA	NA	NA	\$	-
Signage, labels, and container color (included above)	NA	NA	NA	NA	\$	-
Collection area adjustments	NA	\$ 677,528	NA	NA	\$	677,528
Bulky collection	NA	\$ 589,363	NA	NA	\$	589,363
Collection	\$ 8,874,886	\$ 2,359,297	\$ 7,864,323	\$ 7,972,426	\$	27,070,933
Direct Collection Costs	\$ 5,899,542	\$ 1,650,424	\$ 5,501,413	\$ 7,695,144	\$	20,746,524
Collection Capital - Containers	\$ 144,501	\$ 43,399	\$ 144,662	\$ 673,518	\$	1,006,080
Collection Capital - Trucks	\$ 1,023,887	\$ 158,470	\$ 528,233	NA	\$	1,710,590
Collection Labor	\$ 3,085,559	\$ 896,791	\$ 2,989,304	\$ 6,093,857	\$	13,065,511
Collection Operations	\$ 1,645,595	\$ 551,764	\$ 1,839,214	\$ 927,769	\$	4,964,342
Indirect Collection Costs	\$ 2,975,344	\$ 708,873	\$ 2,362,910	\$ 277,282	\$	6,324,409
Collection Administrative	\$ 1,934,248	\$ 417,622	\$ 1,392,072	\$ 277,282	\$	4,021,224
Collection Margin and Franchise Fee	\$ 1,041,096	\$ 291,251	\$ 970,838	NA	\$	2,303,185
Cost Savings from Reduced Garbage Disposal	\$ (1,040,463)	\$ (133,624)	\$ (1,403,960)	\$ (2,531,488)	\$	(5,109,536)
Avoided Disposal Tip Fees	\$ (1,040,463)	\$ (133,624)	\$ (1,403,960)	\$ (2,531,488)	\$	(5,109,536)
Initial Transfer Transport	\$ 1,334,799	\$ 179,746	\$ 1,907,882	\$ 2,927,524	\$	6,349,951
Consolidation and Transfer to MRF	\$ 1,334,799	\$ 179,746	\$ 1,907,882	\$ 2,927,524	\$	6,349,951
Sortation	\$ 1,937,774	\$ 277,222	\$ 949,170	\$ -	\$	3,164,165
Sortation Labor	\$ 888,080	\$ 127,051	\$ 435,003	\$ -	\$	1,450,133
Sortation Capital	\$ 173,358	\$ 24,801	\$ 84,915	\$ -	\$	283,073
Sortation Facility	\$ 305,272	\$ 43,673	\$ 149,530	\$ -	\$	498,474
Glass and Unsorted Container Transfer	\$ 14,278	\$ 2,043	\$ 6,994	\$ -	\$	23,314
Sortation Residual Disposal	\$ 241,664	\$ 34,573	\$ 118,373	\$ -	\$	394,610
Sortation Administrative & Marketing	\$ 172,641	\$ 24,698	\$ 84,564	\$ -	\$	281,904
Sortation Margin	\$ 142,481	\$ 20,384	\$ 69,791	\$ -	\$	232,656
Overall System Costs						
Total Costs	\$ 11,414,717	\$ 4,593,549	\$ 11,464,137	\$ 8,368,462	\$	35,840,864
Tons Collected for Recycling 14,445 1,855 19,491 35,144 70,935						
Tons Collected Commingled 12,008 1,718 5,882 - 19,607						
Tons Collected Source-Separated 2,437 137 13,609 35,144 51,328						
Tons Marketed 13,534 1,738 18,262 32,929 66,463						
Tons Marketed (excluding bale contamination) 13,534 1,738 18,262 32,929 66,463						
Total Cost per Ton Collected	\$ 790	\$ 2,476	\$ 588	\$ 238	\$	505
Total Cost per Ton Marketed	\$ 843	\$ 2,643	\$ 628	\$ 254	\$	539
Customers	78,582	1,965	6,548	NA		NA
Annual pounds per customer	368	1,889	5,953	NA		NA
Commodity Revenues						
Commodity Revenues						
Commodity Sales (lower range)	\$ 888,080	\$ 127,051	\$ 435,003	\$ -	\$	2,108,026
Commodity Sales (mid-point)	\$ 173,358	\$ 24,801	\$ 84,915	\$ -	\$	5,942,359
Commodity Sales (upper range)	\$ 305,272	\$ 43,673	\$ 149,530	\$ -	\$	9,776,693
Full-Time Equivalent (FTE) Employment						
	SF Res. (on-route)	MF Res. (on-route)	Commercial (on-route)	Self-haul (excluding Bottle Bill)	Total	
Recycling Customer Engagement	1	5	17	25	49	
Local Government Engagement	-	-	-	-	-	
New Engagement (costs listed in collection)	1	5	17	25	49	
Recycling Collection	6	6	21	106	140	
Route Drivers and Operations	4	6	19	106	135	
Management and Administrative	2	1	2	NA	5	
Sortation	15	2	8	-	25	
Sorting Labor	11	2	5	-	18	
Equipment Operators, Supervisors, Maintenance	3	0	1	-	5	
Admininstrative and Marketing	1	0	1	-	2	
Overall Recycling System FTEs	23	14	46	131	214	

Figures in this report represent the consultant team's best modeling estimates based on available data.

Engagement + MRFs + Expanded + Statewide List + Expanded Collection (S10/D-hi)						
REVISED - 4 - Areas Without Curbside 2025						
	SF Res. (on-route)	MF Res. (on-route)	Commercial (on-route)	Self-haul (excluding Bottle Bill)	Total	
Recycling System Costs						
Customer Engagement Costs	\$ 410,295	\$ 858,689	\$ 2,361,394	\$ -	\$	3,630,378
Collection Engagement Labor and Expenses	\$ 410,295	\$ 858,689	\$ 2,361,394	NA	\$	3,630,378
Local Government Engagement Labor and Expenses	\$ -	\$ -	\$ -	NA	\$	-
Multifamily Property Improvements	\$ -	\$ 1,689,188	\$ -	\$ -	\$	1,689,188
Service level adjustments (included above)	NA	NA	NA	NA	\$	-
Signage, labels, and container color (included above)	NA	NA	NA	NA	\$	-
Collection area adjustments	NA	\$ 903,371	NA	NA	\$	903,371
Bulky collection	NA	\$ 785,817	NA	NA	\$	785,817
Collection	\$ 11,833,182	\$ 3,145,729	\$ 8,650,756	\$ 6,976,754	\$	30,606,421
Direct Collection Costs	\$ 7,866,057	\$ 2,200,565	\$ 6,051,554	\$ 6,734,129	\$	22,852,305
Collection Capital - Containers	\$ 192,668	\$ 57,865	\$ 159,128	\$ 590,131	\$	999,792
Collection Capital - Trucks	\$ 1,365,183	\$ 211,293	\$ 581,057	NA	\$	2,157,533
Collection Labor	\$ 4,114,078	\$ 1,195,722	\$ 3,288,235	\$ 5,332,189	\$	13,930,224
Collection Operations	\$ 2,194,127	\$ 735,686	\$ 2,023,135	\$ 811,808	\$	5,764,756
Indirect Collection Costs	\$ 3,967,125	\$ 945,164	\$ 2,599,201	\$ 242,625	\$	7,754,115
Collection Administrative	\$ 2,578,997	\$ 556,829	\$ 1,531,280	\$ 242,625	\$	4,909,731
Collection Margin and Franchise Fee	\$ 1,388,128	\$ 388,335	\$ 1,067,921	NA	\$	2,844,384
Cost Savings from Reduced Garbage Disposal	\$ (1,539,176)	\$ (225,306)	\$ (1,579,336)	\$ (2,320,258)	\$	(5,664,076)
Avoided Disposal Tip Fees	\$ (1,539,176)	\$ (225,306)	\$ (1,579,336)	\$ (2,320,258)	\$	(5,664,076)
Initial Transfer Transport	\$ 1,974,517	\$ 306,106	\$ 2,137,705	\$ 2,641,914	\$	7,060,243
Consolidation and Transfer to MRF	\$ 1,974,517	\$ 306,106	\$ 2,137,705	\$ 2,641,914	\$	7,060,243
Sortation	\$ 2,921,623	\$ 488,574	\$ 1,318,082	\$ -	\$	4,728,279
Sortation Labor	\$ 1,357,781	\$ 227,057	\$ 612,559	\$ -	\$	2,197,397
Sortation Capital	\$ 265,823	\$ 44,453	\$ 119,925	\$ -	\$	430,201
Sortation Facility	\$ 449,954	\$ 75,244	\$ 202,996	\$ -	\$	728,194
Glass and Unsorted Container Transfer	\$ 20,626	\$ 3,449	\$ 9,305	\$ -	\$	33,380
Sortation Residual Disposal	\$ 366,375	\$ 61,268	\$ 165,289	\$ -	\$	592,932
Sortation Administrative & Marketing	\$ 246,176	\$ 41,167	\$ 111,061	\$ -	\$	398,404
Sortation Margin	\$ 214,889	\$ 35,935	\$ 96,946	\$ -	\$	347,770
Overall System Costs						
Total Costs	\$ 15,600,441	\$ 6,262,981	\$ 12,888,600	\$ 7,298,411	\$	42,050,432
Tons Collected for Recycling	21,368	3,128	21,926	32,212		78,634
Tons Collected Commingled	17,761	2,970	8,013	-		28,745
Tons Collected Source-Separated	3,607	158	13,913	32,212		49,889
Tons Marketed	19,947	2,920	20,467	30,069		73,403
Tons Marketed (excluding bale contamination)	19,947	2,920	20,467	30,069		73,403
Total Cost per Ton Collected	\$ 730	\$ 2,002	\$ 588	\$ 227	\$	535
Total Cost per Ton Marketed	\$ 782	\$ 2,145	\$ 630	\$ 243	\$	573
Customers	104,776	2,619	7,203	NA		NA
Annual pounds per customer	408	2,388	6,088	NA		NA
Commodity Revenues						
Commodity Revenues						
Commodity Sales (lower range)	\$ 1,357,781	\$ 227,057	\$ 612,559	\$ -	\$	2,361,315
Commodity Sales (mid-point)	\$ 265,823	\$ 44,453	\$ 119,925	\$ -	\$	6,662,152
Commodity Sales (upper range)	\$ 449,954	\$ 75,244	\$ 202,996	\$ -	\$	10,962,988
Full-Time Equivalent (FTE) Employment						
	SF Res. (on-route)	MF Res. (on-route)	Commercial (on-route)	Self-haul (excluding Bottle Bill)	Total	
Recycling Customer Engagement	1	7	19	22	49	
Local Government Engagement	-	-	-	-	-	
New Engagement (costs listed in collection)	1	7	19	22	49	
Recycling Collection	9	8	23	93	133	
Route Drivers and Operations	5	8	21	93	127	
Management and Administrative	3	1	2	NA	6	
Sortation	23	4	11	-	38	
Sorting Labor	17	3	8	-	27	
Equipment Operators, Supervisors, Maintenance	5	1	2	-	7	
Admininstrative and Marketing	2	0	1	-	3	
Overall Recycling System FTEs	33	19	53	115	220	

Figures in this report represent the consultant team's best modeling estimates based on available data.