



TO: Mayor and City Council

FROM: Howard S. Lazarus, City Administrator

DATE: June 2, 2017

SUBJECT: Follow-Up Items Regarding Ann Arbor MRF Interim Operations Contract Award

Staff has performed a review of Recycle Ann Arbor’s (RAA) Third (and fourth) Option Proposal(s) dated April 28, 2017 and submitted to the City for its consideration in the determination of award of contract for the MRF Interim Operations contract, which was presented to City Council on April 17, 2017 and postponed to the June 5, 2017 regular meeting of City Council. In addition, Waste Management of Michigan (WMM) has offered the City revised pricing for their proposal for review and consideration. The findings of this review are summarized as follows:

MONTHLY COSTS/BENEFITS COMPARISON (WMM New Offered Pricing)										
	WMM: New Price		RAA: New Hybrid		RAA: Loose Load		RAA: New Baling		RAA: Old Baling	
	Low Revenue/ Credit	High Revenue/ Credit	Low Revenue/ Credit	High Revenue/ Credit	Low Revenue/ Credit	High Revenue/ Credit	Low Revenue/ Credit	High Revenue/ Credit	Low Revenue/ Credit	High Revenue/ Credit
Base Cost	\$88,151.57	\$57,298.24	\$94,592.87	\$72,825.77	\$106,126.14	\$86,820.89	\$98,624.87	\$69,268.60	\$108,167.87	\$81,249.10
Cost Difference	\$0	\$0	\$6,441.30	\$15,527.53	\$17,974.57	\$29,522.65	\$10,473.30	\$11,970.36	\$20,016.30	\$23,950.86
GHG/ Residuals Credit	\$0	\$0	(\$1,679.76)	(\$4,899.30)	(\$1,523.16)	(\$4,442.55)	(\$51.12)	(\$149.10)	\$132.12	\$385.35
Adjusted Value Difference	\$0	\$0	\$4,761.54	\$10,628.23	\$16,451.41	\$25,080.10	\$10,422.18	\$11,821.26	\$20,148.42	\$24,336.21

MONTHLY COSTS/BENEFITS COMPARISON (WMM Original Pricing)										
	WMM: Original		RAA: New Hybrid		RAA: Loose Load		RAA: New Baling		RAA: Old Baling	
	Low Revenue/ Credit	High Revenue/ Credit	Low Revenue/ Credit	High Revenue/ Credit	Low Revenue/ Credit	High Revenue/ Credit	Low Revenue/ Credit	High Revenue/ Credit	Low Revenue/ Credit	High Revenue/ Credit
Base Cost	\$92,447.03	\$61,631.53	\$94,592.87	\$72,825.77	\$106,126.14	\$86,820.89	\$98,624.87	\$69,268.60	\$108,167.87	\$81,249.10
Cost Difference	\$0	\$0	\$2,145.84	\$11,194.24	\$13,679.11	\$25,189.36	\$6,177.84	\$7,637.07	\$15,720.84	\$19,617.57
GHG/ Residuals Credit	\$0	\$0	(\$1,679.76)	(\$4,899.30)	(\$1,523.16)	(\$4,442.55)	(\$51.12)	(\$149.10)	\$132.12	\$385.35
Adjusted Value Difference	\$0	\$0	\$466.08	\$6,294.94	\$12,155.95	\$20,746.81	\$6,126.72	\$7,487.97	\$15,852.96	\$20,002.92

The data used to derive this summarization is attached, including cost comparison spreadsheets and a greenhouse gas (GHG) comparison table. The cost comparison was performed using the specific recycling market indices, and resulting revenue shares included in all of the proposed options. The analysis was performed for four months from the current fiscal year - - November, 2016 when market index values were lowest; March, 2017 when market index values were at their highest; and February and April, 2017 as mid-range months.

In addition to the cost/GHG benefit analysis, in review of the collection of proposals staff has identified the following risk factors that Council needs to consider in its deliberation on contractor selection for the Ann Arbor MRF Interim Operations Contract.

Market Conditions and Revenue Share/Net Costs

As indicated in the summary table above, the volatility of the market for recyclable materials and the resulting effect on revenues creates a range of net costs that can be incurred by the City. The two contractors have taken different approaches to sharing the benefit of higher market conditions.

The WMM proposal will provide the City the full benefit of their “blended value” of the material as a credit up to an amount (\$132.00/ton) slightly higher than their processing fee (\$128.75). If their blended value was to exceed \$132.00/ton, then the City would be credited the base \$132.00/ton plus 60% of the portion above \$132.00/ton.

The RAA proposal provides a similar “blended value” to the WMM proposal as it uses the same market index tables, but three of the material types use different index value “lines” (e.g., “average price” rather than “low cost”), and in three of their four methods a portion of the material is fully allocated as high value OCC (old corrugated cardboard). All of the methods included in RAA’s proposal will provide the City the full benefit of their blended value up to an amount that is less than their processing fee for that method, and less than WMM’s full credit threshold value; and, if their blended value exceeds the indicated threshold, the City would be credited the base credit amount plus either 25% or 50% of the additional, depending on the material and the method.

With the blended value threshold for full credit to the City being lower in RAA’s proposal, and the percentage of credit value above this lower threshold being lower than WMM’s, the result is that as market values improve the net cost to the City increases under the RAA proposals compared to the WMM proposal.

Achieving GHG Benefit

As noted on the attached *Greenhouse Gas Comparison Analysis*, the attainment of the GHG benefit with RAA's Hybrid or Loose Load methods is dependent on these methods producing no more than 10% residual material. If this residual reduction is not achieved by these methods, then the GHG emissions for these methods would be approaching, meeting or exceeding the GHG emissions of WMM's baling methods depending on the amount of residual material.

City Council Resolution R-17-070 directed the City Administrator to negotiate a contract with RAA based on loose loading with defined measures of benefit, and that if the benefit is not achieved to have an option for baling at a cost that is competitive with WMM's proposal. The major measure of this benefit is the GHG benefit, and if the City were to move to one of RAA's baling options the costs to the City as indicated in the summary table above will be greater than WMM's costs to the City.

Performance Risk

It has been previously noted that part of staff's evaluation of the original proposals in response to the City's Request for Proposals (RFP) No. 980 for these services was on the level of experience of the submitting contractors, and the lack of experience by RAA on contracts of this scale is seen by staff to put the City at risk. As a result, as part of the contracts under consideration, the contractor must provide to the City a performance bond to protect the City in the event that the contractor is not able to provide the contracted services to the levels specified and a replacement contractor is needed to perform those services.

Under the new Hybrid and New Baled methods proposed by RAA, a new subcontractor (Taylor Recycling) has been identified as a member of the RAA team that was not included in the original proposal submitted in response to RFP No. 980. Staff has requested background information, references and resumes for key staff members from this new team member, consistent with the requirements of RFP No. 980. This complete information has not yet been submitted for review and consideration by staff. This further increases staff's concern of the performance risk to the City if the contract is awarded to RAA, and the potential need of the City to invoke the terms of the performance bond and the potential financial impacts to RAA resulting from such an action.

	WM (Baling)	Recycle Ann Arbor (Loose Load)	Recycle Ann Arbor (Baling)	Recycle Ann Arbor (New Hybrid)	Recycle Ann Arbor (New Baling)
Residential Single-Stream	1200	1200	1050	1050	1050
Hauling & Processing Recyclables per ton	\$128.75	\$154.76	\$161.14	\$157.30	\$161.14
Recyclable Material Revenue per ton	\$62.05	\$66.32	\$66.32	\$66.32	\$66.32
Net Cost per ton	\$66.70	\$88.44	\$94.82	\$90.98	\$94.82
Sub-Total Invoice Amount	\$80,035.93	\$106,126.14	\$99,559.37	\$95,527.37	\$99,559.37
Commercial Single Stream			150	150	150
Hauling & Processing Commercial Recyclables			\$131.14	\$87.54	\$87.54
Commercial Material Revenue per ton			\$73.75	\$93.77	\$93.77
Net Cost per ton			\$57.39	-\$6.23	-\$6.23
Sub-Total Invoice Amount	n/a	n/a	\$8,608.50	-\$934.50	-\$934.50
Total Recycled Tons	1200	1200	1200	1200	1200
Total Cost for Hauling/Processing	\$80,035.93	\$106,126.14	\$108,167.87	\$94,592.87	\$98,624.87
Fuel Adjustment	\$8,115.64				
Total Monthly Invoice to City	\$88,151.57	\$106,126.14	\$108,167.87	\$94,592.87	\$98,624.87
Total Invoiced Amount if applied to July 2017-July 2018	\$1,057,818.84	\$1,273,513.68	\$1,298,014.47	\$1,135,114.47	\$1,183,498.47
Other City Costs - Baler amortization	\$6,999.03	\$250.00	\$6,999.03	\$6,999.03	\$6,999.03
Total Monthly City Cost	\$95,150.60	\$106,376.14	\$115,166.91	\$101,591.91	\$105,623.91
Total Cost if applied to July 2017 - July 2018	\$1,141,807.26	\$1,276,513.68	\$1,382,002.89	\$1,219,102.89	\$1,267,486.89

INDICE VALUES FOR REVENUE SHARES

Sample Date:	Nov-16
WM Fuel Adjustment:	0.1014
WM Blended Value:	\$62.05
RAA Loose Load (Base Market Value):	\$66.32
RAA Original Baled (Base Market Value):	\$66.32
RAA Original Baled (Commercial Market Value):	\$100.00
RAA New Hybrid (Base Market Value):	\$66.32
RAA New Hybrid (Commercial Market Value):	\$100.00
RAA New Baled (Base Market Value):	\$66.32
RAA New Baled (Commercial Market Value):	\$100.00

RAA COST PROPOSAL INDICES

RAA Residential Single-Stream Categories	Allocation	Index Price Formula	Index Price Rate	Market Value
Cardboard #11	19.60%	PP&W - OCC - Midwest, High Side	\$ 100.00	\$ 19.60
#8 News	12.16%	PP&W - #8 - Midwest, High Side	\$ 87.50	\$ 10.64
Mixed paper	36.47%	PP&W - Mixed paper - Midwest, High Side	\$ 70.00	\$ 25.53
Steel Cans	1.30%	SMP.com - Chicago Average	\$ 127.50	\$ 1.66
Aluminum Cans	0.25%	SMP.com - Chicago Average	\$ 1,230.00	\$ 3.08
HDPE (Natural)	0.69%	SMP.com - Chicago Average	\$ 555.00	\$ 3.83
HDPE (Color)	0.51%	SMP.com - Chicago Average	\$ 450.00	\$ 2.30
PET	2.48%	SMP.com - Chicago Average	\$ 180.00	\$ 4.46
#3 - #7 Plastic mixed	2.35%	SMP.com - Chicago Average	\$ 50.00	\$ 1.18
Aseptic Containers	0.07%	PP&W - SOP - Midwest, High Side, less 50%	\$ 82.50	\$ 0.06
Mixed Glass (3-Mix)	13.06%	Actual	\$ (12.50)	\$ (1.63)
Residuals	11.06%	Actual	\$ (39.50)	\$ (4.37)
	100.00%		RAA Base Market Value	\$ 66.32
RAA Commercial Single-Stream Categories	Allocation	Index Price Formula	Index Price Rate	Market Value
High OCC Content				
Commercial Strea	100.00%	PP&W - OCC - Midwest, High Side	\$ 100.00	\$ 100.00
			RAA Commercial Market Value	\$ 100.00

WMM COST PROPOSAL INDICES

WMM Single-Stream Categories	Allocation	Index Price Formula	Index Price Rate	Market Value
Cardboard #11	19.60%	PP&W - OCC - Midwest, High Side	\$ 100.00	\$ 19.60
#8 News	12.13%	PP&W - #2 Mixed Paper - Midwest, High Side	\$ 70.00	\$ 8.49
Mixed paper	36.47%	PP&W - #2 Mixed Paper - Midwest, High Side	\$ 70.00	\$ 25.53
Steel Cans	1.30%	SMP.com - Low Price	\$ 125.00	\$ 1.63
Aluminum Cans	0.25%	SMP.com - Low Price	\$ 1,180.00	\$ 2.95
HDPE (Natural)	0.69%	SMP.com - Chicago Average	\$ 555.00	\$ 3.83
HDPE (Color)	0.51%	SMP.com - Chicago Average	\$ 450.00	\$ 2.30
#1 PET	2.48%	SMP.com - Chicago Average	\$ 180.00	\$ 4.46
#3 - #7 Plastic mixed	2.35%	SMP.com - Chicago Average	\$ 50.00	\$ 1.18
Aseptic Containers	0.07%	Actual Value	\$ -	\$ -
Rigid #2	0.03%	Actual	\$ 5.00	\$ 0.00
Mixed Glass (3-Mix)	13.06%	Actual	\$ (22.00)	\$ (2.87)
Residuals	11.06%	Actual	\$ (45.51)	\$ (5.03)
	100.00%		WMM Blended Value	\$ 62.05

	WM (Baling)	Recycle Ann Arbor (Loose Load)	Recycle Ann Arbor (Baling)	Recycle Ann Arbor (New Hybrid)	Recycle Ann Arbor (New Baling)
Residential Single-Stream	1200	1200	1050	1050	1050
Hauling & Processing Recyclables per ton	\$128.75	\$154.76	\$161.14	\$157.30	\$161.14
Recyclable Material Revenue per ton	\$72.33	\$76.19	\$76.19	\$76.19	\$76.19
Net Cost per ton	\$56.42	\$78.57	\$84.95	\$81.11	\$84.95
Sub-Total Invoice Amount	\$67,698.73	\$94,280.94	\$89,194.82	\$85,162.82	\$89,194.82
Commercial Single Stream			150	150	150
Hauling & Processing Commercial Recyclables			\$131.14	\$87.54	\$87.54
Commercial Material Revenue per ton			\$81.25	\$108.77	\$108.77
Net Cost per ton			\$49.89	-\$21.23	-\$21.23
Sub-Total Invoice Amount	n/a	n/a	\$7,483.50	-\$3,184.50	-\$3,184.50
Total Recycled Tons	1200	1200	1200	1200	1200
Total Cost for Hauling/Processing	\$67,698.73	\$94,280.94	\$96,678.32	\$81,978.32	\$86,010.32
Fuel Adjustment	\$7,616.11				
Total Monthly Invoice to City	\$75,314.83	\$94,280.94	\$96,678.32	\$81,978.32	\$86,010.32
Total Invoiced Amount if applied to July 2017-July 2018	\$903,778.01	\$1,131,371.28	\$1,160,139.87	\$983,739.87	\$1,032,123.87
Other City Costs - Baler amortization	\$6,999.03	\$250.00	\$6,999.03	\$6,999.03	\$6,999.03
Total Monthly City Cost	\$82,313.87	\$94,530.94	\$103,677.36	\$88,977.36	\$93,009.36
Total Cost if applied to July 2017 - July 2018	\$987,766.42	\$1,134,371.28	\$1,244,128.29	\$1,067,728.29	\$1,116,112.29

INDICE VALUES FOR REVENUE SHARES

Sample Date:	Feb-17
WM Fuel Adjustment:	0.1125
WM Blended Value:	\$72.33
RAA Loose Load (Base Market Value):	\$76.19
RAA Original Baled (Base Market Value):	\$76.19
RAA Original Baled (Commercial Market Value):	\$130.00
RAA New Hybrid (Base Market Value):	\$76.19
RAA New Hybrid (Commercial Market Value):	\$130.00
RAA New Baled (Base Market Value):	\$76.19
RAA New Baled (Commercial Market Value):	\$130.00

RAA COST PROPOSAL INDICES

RAA Residential Single-Stream Categories	Allocation	Index Price Formula	Index Price Formula Rate	Market Value
Cardboard #11	19.60%	PP&W - OCC - Midwest, High Side	\$ 130.00	\$ 25.48
#8 News	12.16%	PP&W - #8 - Midwest, High Side	\$ 92.50	\$ 11.25
Mixed paper	36.47%	PP&W - Mixed paper - Midwest, High Side	\$ 80.00	\$ 29.18
Steel Cans	1.30%	SMP.com - Chicago Average	\$ 167.50	\$ 2.18
Aluminum Cans	0.25%	SMP.com - Chicago Average	\$ 1,350.00	\$ 3.38
HDPE (Natural)	0.69%	SMP.com - Chicago Average	\$ 510.00	\$ 3.52
HDPE (Color)	0.51%	SMP.com - Chicago Average	\$ 315.00	\$ 1.61
PET	2.48%	SMP.com - Chicago Average	\$ 205.00	\$ 5.08
#3 - #7 Plastic mixed	2.35%	SMP.com - Chicago Average	\$ 20.00	\$ 0.47
Aseptic Containers	0.07%	PP&W - SOP - Midwest, High Side, less 50%	\$ 82.50	\$ 0.06
Mixed Glass (3-Mix)	13.06%	Actual	\$ (12.50)	\$ (1.63)
Residuals	11.06%	Actual	\$ (39.50)	\$ (4.37)
	100.00%		RAA Base Market Value	\$ 76.19
RAA Commercial Single-Stream Categories	Allocation	Index Price Formula	Index Price Formula Rate	Market Value
High OCC Content				
Commercial Strea	100.00%	PP&W - OCC - Midwest, High Side	\$ 130.00	\$ 130.00
			RAA Commercial Market Value	\$ 130.00

WMM COST PROPOSAL INDICES

WMM Single-Stream Categories	Allocation	Index Price Formula	Index Price Formula Rate	Market Value
Cardboard #11	19.60%	PP&W - OCC - Midwest, High Side	\$ 130.00	\$ 25.48
#8 News	12.13%	PP&W - #2 Mixed Paper - Midwest, High Side	\$ 80.00	\$ 9.70
Mixed paper	36.47%	PP&W - #2 Mixed Paper - Midwest, High Side	\$ 80.00	\$ 29.18
Steel Cans	1.30%	SMP.com - Low Price	\$ 150.00	\$ 1.95
Aluminum Cans	0.25%	SMP.com - Low Price	\$ 1,300.00	\$ 3.25
HDPE (Natural)	0.69%	SMP.com - Chicago Average	\$ 510.00	\$ 3.52
HDPE (Color)	0.51%	SMP.com - Chicago Average	\$ 315.00	\$ 1.61
#1 PET	2.48%	SMP.com - Chicago Average	\$ 205.00	\$ 5.08
#3 - #7 Plastic mixed	2.35%	SMP.com - Chicago Average	\$ 20.00	\$ 0.47
Aseptic Containers	0.07%	Actual Value	\$ -	\$ -
Rigid #2	0.03%	Actual	\$ 5.00	\$ 0.00
Mixed Glass (3-Mix)	13.06%	Actual	\$ (22.00)	\$ (2.87)
Residuals	11.06%	Actual	\$ (45.51)	\$ (5.03)
	100.00%		WMM Blended Value	\$ 72.33

	WM (Baling)	Recycle Ann Arbor (Loose Load)	Recycle Ann Arbor (Baling)	Recycle Ann Arbor (New Hybrid)	Recycle Ann Arbor (New Baling)
Residential Single-Stream	1200	1200	1050	1050	1050
Hauling & Processing Recyclables per ton	\$128.75	\$154.76	\$161.14	\$157.30	\$161.14
Recyclable Material Revenue per ton	\$85.78	\$82.41	\$89.64	\$82.41	\$89.64
Net Cost per ton	\$42.97	\$72.35	\$71.50	\$74.89	\$71.50
Sub-Total Invoice Amount	\$51,568.93	\$86,820.89	\$75,078.10	\$78,635.27	\$75,078.10
Commercial Single Stream			150	150	150
Hauling & Processing Commercial Recyclables			\$131.14	\$87.54	\$87.54
Commercial Material Revenue per ton			\$90.00	\$126.27	\$126.27
Net Cost per ton			\$41.14	-\$38.73	-\$38.73
Sub-Total Invoice Amount	n/a	n/a	\$6,171.00	-\$5,809.50	-\$5,809.50
Total Recycled Tons	1200	1200	1200	1200	1200
Total Cost for Hauling/Processing	\$51,568.93	\$86,820.89	\$81,249.10	\$72,825.77	\$69,268.60
Fuel Adjustment	\$5,729.31				
Total Monthly Invoice to City	\$57,298.24	\$86,820.89	\$81,249.10	\$72,825.77	\$69,268.60
Total Invoiced Amount if applied to July 2017-July 2018	\$687,578.82	\$1,041,850.62	\$974,989.17	\$873,909.29	\$831,223.17
Other City Costs - Baler amortization	\$6,999.03	\$250.00	\$6,999.03	\$6,999.03	\$6,999.03
Total Monthly City Cost	\$64,297.27	\$87,070.89	\$88,248.13	\$79,824.81	\$76,267.63
Total Cost if applied to July 2017 - July 2018	\$771,567.24	\$1,044,850.62	\$1,058,977.59	\$957,897.71	\$915,211.59

INDICE VALUES FOR REVENUE SHARES

Sample Date:	Mar-17
WM Fuel Adjustment:	0.1111
WM Blended Value:	\$85.78
RAA Loose Load (Base Market Value):	\$89.64
RAA Original Baled (Base Market Value):	\$89.64
RAA Original Baled (Commercial Market Value):	\$165.00
RAA New Hybrid (Base Market Value):	\$89.64
RAA New Hybrid (Commercial Market Value):	\$165.00
RAA New Baled (Base Market Value):	\$89.64
RAA New Baled (Commercial Market Value):	\$165.00

RAA COST PROPOSAL INDICES

RAA Residential Single-Stream Categories	Allocation	Index Price Formula	Index Price Formula Rate	Market Value
Cardboard #11	19.60%	PP&W - OCC - Midwest, High Side	\$ 165.00	\$ 32.34
#8 News	12.16%	PP&W - #8 - Midwest, High Side	\$ 102.50	\$ 12.46
Mixed paper	36.47%	PP&W - Mixed paper - Midwest, High Side	\$ 90.00	\$ 32.82
Steel Cans	1.30%	SMP.com - Chicago Average	\$ 167.50	\$ 2.18
Aluminum Cans	0.25%	SMP.com - Chicago Average	\$ 1,350.00	\$ 3.38
HDPE (Natural)	0.69%	SMP.com - Chicago Average	\$ 610.00	\$ 4.21
HDPE (Color)	0.51%	SMP.com - Chicago Average	\$ 420.00	\$ 2.14
PET	2.48%	SMP.com - Chicago Average	\$ 225.00	\$ 5.58
#3 - #7 Plastic mixed	2.35%	SMP.com - Chicago Average	\$ 20.00	\$ 0.47
Aseptic Containers	0.07%	PP&W - SOP - Midwest, High Side, less 50%	\$ 82.50	\$ 0.06
Mixed Glass (3-Mix)	13.06%	Actual	\$ (12.50)	\$ (1.63)
Residuals	11.06%	Actual	\$ (39.50)	\$ (4.37)
	100.00%		RAA Base Market Value	\$ 89.64
RAA Commercial Single-Stream Categories	Allocation	Index Price Formula	Index Price Formula Rate	Market Value
High OCC Content				
Commercial Strea	100.00%	PP&W - OCC - Midwest, High Side	\$ 165.00	\$ 165.00
			RAA Commercial Market Value	\$ 165.00

WMM COST PROPOSAL INDICES

WMM Single-Stream Categories	Allocation	Index Price Formula	Index Price Formula Rate	Market Value
Cardboard #11	19.60%	PP&W - OCC - Midwest, High Side	\$ 165.00	\$ 32.34
#8 News	12.13%	PP&W - #2 Mixed Paper - Midwest, High Side	\$ 90.00	\$ 10.92
Mixed paper	36.47%	PP&W - #2 Mixed Paper - Midwest, High Side	\$ 90.00	\$ 32.82
Steel Cans	1.30%	SMP.com - Low Price	\$ 150.00	\$ 1.95
Aluminum Cans	0.25%	SMP.com - Low Price	\$ 1,300.00	\$ 3.25
HDPE (Natural)	0.69%	SMP.com - Chicago Average	\$ 610.00	\$ 4.21
HDPE (Color)	0.51%	SMP.com - Chicago Average	\$ 420.00	\$ 2.14
#1 PET	2.48%	SMP.com - Chicago Average	\$ 225.00	\$ 5.58
#3 - #7 Plastic mixed	2.35%	SMP.com - Chicago Average	\$ 20.00	\$ 0.47
Aseptic Containers	0.07%	Actual Value	\$ -	\$ -
Rigid #2	0.03%	Actual	\$ 5.00	\$ 0.00
Mixed Glass (3-Mix)	13.06%	Actual	\$ (22.00)	\$ (2.87)
Residuals	11.06%	Actual	\$ (45.51)	\$ (5.03)
	100.00%		WMM Blended Value	\$ 85.78

	WM (Baling)	Recycle Ann Arbor (Loose Load)	Recycle Ann Arbor (Baling)	Recycle Ann Arbor (New Hybrid)	Recycle Ann Arbor (New Baling)
Residential Single-Stream	1200	1200	1050	1050	1050
Hauling & Processing Recyclables per ton	\$128.75	\$154.76	\$161.14	\$157.30	\$161.14
Recyclable Material Revenue per ton	\$81.69	\$81.67	\$86.70	\$81.67	\$86.70
Net Cost per ton	\$47.06	\$73.09	\$74.44	\$75.63	\$74.44
Sub-Total Invoice Amount	\$56,473.95	\$87,702.74	\$78,164.59	\$79,406.90	\$78,164.59
Commercial Single Stream			150	150	150
Hauling & Processing Commercial Recyclables			\$131.14	\$87.54	\$87.54
Commercial Material Revenue per ton			\$88.75	\$123.77	\$123.77
Net Cost per ton			\$42.39	-\$36.23	-\$36.23
Sub-Total Invoice Amount	n/a	n/a	\$6,358.50	-\$5,434.50	-\$5,434.50
Total Recycled Tons	1200	1200	1200	1200	1200
Total Cost for Hauling/Processing	\$56,473.95	\$87,702.74	\$84,523.09	\$73,972.40	\$72,730.09
Fuel Adjustment	\$6,353.32				
Total Monthly Invoice to City	\$62,827.27	\$87,702.74	\$84,523.09	\$73,972.40	\$72,730.09
Total Invoiced Amount if applied to July 2017-July 2018	\$753,927.25	\$1,052,432.89	\$1,014,277.12	\$887,668.78	\$872,761.12
Other City Costs - Baler amortization	\$6,999.03	\$250.00	\$6,999.03	\$6,999.03	\$6,999.03
Total Monthly City Cost	\$69,826.31	\$87,952.74	\$91,522.13	\$80,971.43	\$79,729.13
Total Cost if applied to July 2017 - July 2018	\$837,915.66	\$1,055,432.89	\$1,098,265.54	\$971,657.20	\$956,749.54

INDICE VALUES FOR REVENUE SHARES

Sample Date:	Apr-17
WM Fuel Adjustment:	0.1125
WM Blended Value:	\$81.69
RAA Loose Load (Base Market Value):	\$86.70
RAA Original Baled (Base Market Value):	\$86.70
RAA Original Baled (Commercial Market Value):	\$160.00
RAA New Hybrid (Base Market Value):	\$86.70
RAA New Hybrid (Commercial Market Value):	\$160.00
RAA New Baled (Base Market Value):	\$86.70
RAA New Baled (Commercial Market Value):	\$160.00

RAA COST PROPOSAL INDICES

RAA Residential Single-Stream Categories	Allocation	Index Price Formula	Index Price Formula Rate	Market Value
Cardboard #11	19.60%	PP&W - OCC - Midwest, High Side	\$ 160.00	\$ 31.36
#8 News	12.16%	PP&W - #8 - Midwest, High Side	\$ 102.50	\$ 12.46
Mixed paper	36.47%	PP&W - Mixed paper - Midwest, High Side	\$ 80.00	\$ 29.18
Steel Cans	1.30%	SMP.com - Chicago Average	\$ 187.50	\$ 2.44
Aluminum Cans	0.25%	SMP.com - Chicago Average	\$ 1,350.00	\$ 3.38
HDPE (Natural)	0.69%	SMP.com - Chicago Average	\$ 695.00	\$ 4.80
HDPE (Color)	0.51%	SMP.com - Chicago Average	\$ 475.00	\$ 2.42
PET	2.48%	SMP.com - Chicago Average	\$ 247.60	\$ 6.14
#3 - #7 Plastic mixed	2.35%	SMP.com - Chicago Average	\$ 20.00	\$ 0.47
Aseptic Containers	0.07%	PP&W - SOP - Midwest, High Side, less 50%	\$ 82.50	\$ 0.06
Mixed Glass (3-Mix)	13.06%	Actual	\$ (12.50)	\$ (1.63)
Residuals	11.06%	Actual	\$ (39.50)	\$ (4.37)
	100.00%		RAA Base Market Value	\$ 86.70
RAA Commercial Single-Stream Categories	Allocation	Index Price Formula	Index Price Formula Rate	Market Value
High OCC Content				
Commercial Strea	100.00%	PP&W - OCC - Midwest, High Side	\$ 160.00	\$ 160.00
			RAA Commercial Market Value	\$ 160.00

WMM COST PROPOSAL INDICES

WMM Single-Stream Categories	Allocation	Index Price Formula	Index Price Formula Rate	Market Value
Cardboard #11	19.60%	PP&W - OCC - Midwest, High Side	\$ 160.00	\$ 31.36
#8 News	12.13%	PP&W - #2 Mixed Paper - Midwest, High Side	\$ 80.00	\$ 9.70
Mixed paper	36.47%	PP&W - #2 Mixed Paper - Midwest, High Side	\$ 80.00	\$ 29.18
Steel Cans	1.30%	SMP.com - Low Price	\$ 175.00	\$ 2.28
Aluminum Cans	0.25%	SMP.com - Low Price	\$ 1,300.00	\$ 3.25
HDPE (Natural)	0.69%	SMP.com - Chicago Average	\$ 695.00	\$ 4.80
HDPE (Color)	0.51%	SMP.com - Chicago Average	\$ 475.00	\$ 2.42
#1 PET	2.48%	SMP.com - Chicago Average	\$ 247.60	\$ 6.14
#3 - #7 Plastic mixed	2.35%	SMP.com - Chicago Average	\$ 20.00	\$ 0.47
Aseptic Containers	0.07%	Actual Value	\$ -	\$ -
Rigid #2	0.03%	Actual	\$ 5.00	\$ 0.00
Mixed Glass (3-Mix)	13.06%	Actual	\$ (22.00)	\$ (2.87)
Residuals	11.06%	Actual	\$ (45.51)	\$ (5.03)
	100.00%		WMM Blended Value	\$ 81.69

Cost Comparison Analysis for Ann Arbor MRF Interim Operations - WMM Original Price

	WM (Baling)	Recycle Ann Arbor (Loose Load)	Recycle Ann Arbor (Baling)	Recycle Ann Arbor (New Hybrid)	Recycle Ann Arbor (New Baling)
Residential Single-Stream	1200	1200	1050	1050	1050
Hauling & Processing Recyclables per ton	\$132.00	\$154.76	\$161.14	\$157.30	\$161.14
Recyclable Material Revenue per ton	\$62.05	\$66.32	\$66.32	\$66.32	\$66.32
Net Cost per ton	\$69.95	\$88.44	\$94.82	\$90.98	\$94.82
Sub-Total Invoice Amount	\$83,935.93	\$106,126.14	\$99,559.37	\$95,527.37	\$99,559.37
Commercial Single Stream			150	150	150
Hauling & Processing Commercial Recyclables			\$131.14	\$87.54	\$87.54
Commercial Material Revenue per ton			\$73.75	\$93.77	\$93.77
Net Cost per ton			\$57.39	-\$6.23	-\$6.23
Sub-Total Invoice Amount	n/a	n/a	\$8,608.50	-\$934.50	-\$934.50
Total Recycled Tons	1200	1200	1200	1200	1200
Total Cost for Hauling/Processing	\$83,935.93	\$106,126.14	\$108,167.87	\$94,592.87	\$98,624.87
Fuel Adjustment	\$8,511.10				
Total Monthly Invoice to City	\$92,447.03	\$106,126.14	\$108,167.87	\$94,592.87	\$98,624.87
Total Invoiced Amount if applied to July 2017-July 2018	\$1,109,364.36	\$1,273,513.68	\$1,298,014.47	\$1,135,114.47	\$1,183,498.47
Other City Costs - Baler amortization	\$6,999.03	\$250.00	\$6,999.03	\$6,999.03	\$6,999.03
Total Monthly City Cost	\$99,446.06	\$106,376.14	\$115,166.91	\$101,591.91	\$105,623.91
Total Cost if applied to July 2017 - July 2018	\$1,193,352.78	\$1,276,513.68	\$1,382,002.89	\$1,219,102.89	\$1,267,486.89

INDICE VALUES FOR REVENUE SHARES

Sample Date:	Nov-16
WM Fuel Adjustment:	0.1014
WM Blended Value:	\$62.05
RAA Loose Load (Base Market Value):	\$66.32
RAA Original Baled (Base Market Value):	\$66.32
RAA Original Baled (Commercial Market Value):	\$100.00
RAA New Hybrid (Base Market Value):	\$66.32
RAA New Hybrid (Commercial Market Value):	\$100.00
RAA New Baled (Base Market Value):	\$66.32
RAA New Baled (Commercial Market Value):	\$100.00

RAA COST PROPOSAL INDICES

RAA Residential Single-Stream Categories	Allocation	Index Price Formula	Index Price Formula Rate	Market Value
Cardboard #11	19.60%	PP&W - OCC - Midwest, High Side	\$ 100.00	\$ 19.60
#8 News	12.16%	PP&W - #8 - Midwest, High Side	\$ 87.50	\$ 10.64
Mixed paper	36.47%	PP&W - Mixed paper - Midwest, High Side	\$ 70.00	\$ 25.53
Steel Cans	1.30%	SMP.com - Chicago Average	\$ 127.50	\$ 1.66
Aluminum Cans	0.25%	SMP.com - Chicago Average	\$ 1,230.00	\$ 3.08
HDPE (Natural)	0.69%	SMP.com - Chicago Average	\$ 555.00	\$ 3.83
HDPE (Color)	0.51%	SMP.com - Chicago Average	\$ 450.00	\$ 2.30
PET	2.48%	SMP.com - Chicago Average	\$ 180.00	\$ 4.46
#3 - #7 Plastic mixed	2.35%	SMP.com - Chicago Average	\$ 50.00	\$ 1.18
Aseptic Containers	0.07%	PP&W - SOP - Midwest, High Side, less 50%	\$ 82.50	\$ 0.06
Mixed Glass (3-Mix)	13.06%	Actual	\$ (12.50)	\$ (1.63)
Residuals	11.06%	Actual	\$ (39.50)	\$ (4.37)
	100.00%		RAA Base Market Value	\$ 66.32
RAA Commercial Single-Stream Categories	Allocation	Index Price Formula	Index Price Formula Rate	Market Value
High OCC Content				
Commercial Strea	100.00%	PP&W - OCC - Midwest, High Side	\$ 100.00	\$ 100.00
			RAA Commercial Market Value	\$ 100.00

WMM COST PROPOSAL INDICES

WMM Single-Stream Categories	Allocation	Index Price Formula	Index Price Formula Rate	Market Value
Cardboard #11	19.60%	PP&W - OCC - Midwest, High Side	\$ 100.00	\$ 19.60
#8 News	12.13%	PP&W - #2 Mixed Paper - Midwest, High Side	\$ 70.00	\$ 8.49
Mixed paper	36.47%	PP&W - #2 Mixed Paper - Midwest, High Side	\$ 70.00	\$ 25.53
Steel Cans	1.30%	SMP.com - Low Price	\$ 125.00	\$ 1.63
Aluminum Cans	0.25%	SMP.com - Low Price	\$ 1,180.00	\$ 2.95
HDPE (Natural)	0.69%	SMP.com - Chicago Average	\$ 555.00	\$ 3.83
HDPE (Color)	0.51%	SMP.com - Chicago Average	\$ 450.00	\$ 2.30
#1 PET	2.48%	SMP.com - Chicago Average	\$ 180.00	\$ 4.46
#3 - #7 Plastic mixed	2.35%	SMP.com - Chicago Average	\$ 50.00	\$ 1.18
Aseptic Containers	0.07%	Actual Value	\$ -	\$ -
Rigid #2	0.03%	Actual	\$ 5.00	\$ 0.00
Mixed Glass (3-Mix)	13.06%	Actual	\$ (22.00)	\$ (2.87)
Residuals	11.06%	Actual	\$ (45.51)	\$ (5.03)
	100.00%		WMM Blended Value	\$ 62.05

Cost Comparison Analysis for Ann Arbor MRF Interim Operations - WMM Original Price

	WM (Baling)	Recycle Ann Arbor (Loose Load)	Recycle Ann Arbor (Baling)	Recycle Ann Arbor (New Hybrid)	Recycle Ann Arbor (New Baling)
Residential Single-Stream	1200	1200	1050	1050	1050
Hauling & Processing Recyclables per ton	\$132.00	\$154.76	\$161.14	\$157.30	\$161.14
Recyclable Material Revenue per ton	\$72.33	\$76.19	\$76.19	\$76.19	\$76.19
Net Cost per ton	\$59.67	\$78.57	\$84.95	\$81.11	\$84.95
Sub-Total Invoice Amount	\$71,598.73	\$94,280.94	\$89,194.82	\$85,162.82	\$89,194.82
Commercial Single Stream			150	150	150
Hauling & Processing Commercial Recyclables			\$131.14	\$87.54	\$87.54
Commercial Material Revenue per ton			\$81.25	\$108.77	\$108.77
Net Cost per ton			\$49.89	-\$21.23	-\$21.23
Sub-Total Invoice Amount	n/a	n/a	\$7,483.50	-\$3,184.50	-\$3,184.50
Total Recycled Tons	1200	1200	1200	1200	1200
Total Cost for Hauling/Processing	\$71,598.73	\$94,280.94	\$96,678.32	\$81,978.32	\$86,010.32
Fuel Adjustment	\$8,054.86				
Total Monthly Invoice to City	\$79,653.58	\$94,280.94	\$96,678.32	\$81,978.32	\$86,010.32
Total Invoiced Amount if applied to July 2017-July 2018	\$955,843.01	\$1,131,371.28	\$1,160,139.87	\$983,739.87	\$1,032,123.87
Other City Costs - Baler amortization	\$6,999.03	\$250.00	\$6,999.03	\$6,999.03	\$6,999.03
Total Monthly City Cost	\$86,652.62	\$94,530.94	\$103,677.36	\$88,977.36	\$93,009.36
Total Cost if applied to July 2017 - July 2018	\$1,039,831.42	\$1,134,371.28	\$1,244,128.29	\$1,067,728.29	\$1,116,112.29

INDICE VALUES FOR REVENUE SHARES

Sample Date:	Feb-17
WM Fuel Adjustment:	0.1125
WM Blended Value:	\$72.33
RAA Loose Load (Base Market Value):	\$76.19
RAA Original Baled (Base Market Value):	\$76.19
RAA Original Baled (Commercial Market Value):	\$130.00
RAA New Hybrid (Base Market Value):	\$76.19
RAA New Hybrid (Commercial Market Value):	\$130.00
RAA New Baled (Base Market Value):	\$76.19
RAA New Baled (Commercial Market Value):	\$130.00

RAA COST PROPOSAL INDICES

RAA Residential Single-Stream Categories	Allocation	Index Price Formula	Index Price Formula Rate	Market Value
Cardboard #11	19.60%	PP&W - OCC - Midwest, High Side	\$ 130.00	\$ 25.48
#8 News	12.16%	PP&W - #8 - Midwest, High Side	\$ 92.50	\$ 11.25
Mixed paper	36.47%	PP&W - Mixed paper - Midwest, High Side	\$ 80.00	\$ 29.18
Steel Cans	1.30%	SMP.com - Chicago Average	\$ 167.50	\$ 2.18
Aluminum Cans	0.25%	SMP.com - Chicago Average	\$ 1,350.00	\$ 3.38
HDPE (Natural)	0.69%	SMP.com - Chicago Average	\$ 510.00	\$ 3.52
HDPE (Color)	0.51%	SMP.com - Chicago Average	\$ 315.00	\$ 1.61
PET	2.48%	SMP.com - Chicago Average	\$ 205.00	\$ 5.08
#3 - #7 Plastic mixed	2.35%	SMP.com - Chicago Average	\$ 20.00	\$ 0.47
Aseptic Containers	0.07%	PP&W - SOP - Midwest, High Side, less 50%	\$ 82.50	\$ 0.06
Mixed Glass (3-Mix)	13.06%	Actual	\$ (12.50)	\$ (1.63)
Residuals	11.06%	Actual	\$ (39.50)	\$ (4.37)
	100.00%		RAA Base Market Value	\$ 76.19
RAA Commercial Single-Stream Categories	Allocation	Index Price Formula	Index Price Formula Rate	Market Value
High OCC Content				
Commercial Strea	100.00%	PP&W - OCC - Midwest, High Side	\$ 130.00	\$ 130.00
			RAA Commercial Market Value	\$ 130.00

WMM COST PROPOSAL INDICES

WMM Single-Stream Categories	Allocation	Index Price Formula	Index Price Formula Rate	Market Value
Cardboard #11	19.60%	PP&W - OCC - Midwest, High Side	\$ 130.00	\$ 25.48
#8 News	12.13%	PP&W - #2 Mixed Paper - Midwest, High Side	\$ 80.00	\$ 9.70
Mixed paper	36.47%	PP&W - #2 Mixed Paper - Midwest, High Side	\$ 80.00	\$ 29.18
Steel Cans	1.30%	SMP.com - Low Price	\$ 150.00	\$ 1.95
Aluminum Cans	0.25%	SMP.com - Low Price	\$ 1,300.00	\$ 3.25
HDPE (Natural)	0.69%	SMP.com - Chicago Average	\$ 510.00	\$ 3.52
HDPE (Color)	0.51%	SMP.com - Chicago Average	\$ 315.00	\$ 1.61
#1 PET	2.48%	SMP.com - Chicago Average	\$ 205.00	\$ 5.08
#3 - #7 Plastic mixed	2.35%	SMP.com - Chicago Average	\$ 20.00	\$ 0.47
Aseptic Containers	0.07%	Actual Value	\$ -	\$ -
Rigid #2	0.03%	Actual	\$ 5.00	\$ 0.00
Mixed Glass (3-Mix)	13.06%	Actual	\$ (22.00)	\$ (2.87)
Residuals	11.06%	Actual	\$ (45.51)	\$ (5.03)
	100.00%		WMM Blended Value	\$ 72.33

Cost Comparison Analysis for Ann Arbor MRF Interim Operations - WMM Original Price

	WM (Baling)	Recycle Ann Arbor (Loose Load)	Recycle Ann Arbor (Baling)	Recycle Ann Arbor (New Hybrid)	Recycle Ann Arbor (New Baling)
Residential Single-Stream	1200	1200	1050	1050	1050
Hauling & Processing Recyclables per ton	\$132.00	\$154.76	\$161.14	\$157.30	\$161.14
Recyclable Material Revenue per ton	\$85.78	\$82.41	\$89.64	\$82.41	\$89.64
Net Cost per ton	\$46.22	\$72.35	\$71.50	\$74.89	\$71.50
Sub-Total Invoice Amount	\$55,468.93	\$86,820.89	\$75,078.10	\$78,635.27	\$75,078.10
Commercial Single Stream			150	150	150
Hauling & Processing Commercial Recyclables			\$131.14	\$87.54	\$87.54
Commercial Material Revenue per ton			\$90.00	\$126.27	\$126.27
Net Cost per ton			\$41.14	-\$38.73	-\$38.73
Sub-Total Invoice Amount	n/a	n/a	\$6,171.00	-\$5,809.50	-\$5,809.50
Total Recycled Tons	1200	1200	1200	1200	1200
Total Cost for Hauling/Processing	\$55,468.93	\$86,820.89	\$81,249.10	\$72,825.77	\$69,268.60
Fuel Adjustment	\$6,162.60				
Total Monthly Invoice to City	\$61,631.53	\$86,820.89	\$81,249.10	\$72,825.77	\$69,268.60
Total Invoiced Amount if applied to July 2017-July 2018	\$739,578.30	\$1,041,850.62	\$974,989.17	\$873,909.29	\$831,223.17
Other City Costs - Baler amortization	\$6,999.03	\$250.00	\$6,999.03	\$6,999.03	\$6,999.03
Total Monthly City Cost	\$68,630.56	\$87,070.89	\$88,248.13	\$79,824.81	\$76,267.63
Total Cost if applied to July 2017 - July 2018	\$823,566.72	\$1,044,850.62	\$1,058,977.59	\$957,897.71	\$915,211.59

INDICE VALUES FOR REVENUE SHARES

Sample Date:	Mar-17
WM Fuel Adjustment:	0.1111
WM Blended Value:	\$85.78
RAA Loose Load (Base Market Value):	\$89.64
RAA Original Baled (Base Market Value):	\$89.64
RAA Original Baled (Commercial Market Value):	\$165.00
RAA New Hybrid (Base Market Value):	\$89.64
RAA New Hybrid (Commercial Market Value):	\$165.00
RAA New Baled (Base Market Value):	\$89.64
RAA New Baled (Commercial Market Value):	\$165.00

RAA COST PROPOSAL INDICES

RAA Residential Single-Stream Categories	Allocation	Index Price Formula	Index Price Formula Rate	Market Value
Cardboard #11	19.60%	PP&W - OCC - Midwest, High Side	\$ 165.00	\$ 32.34
#8 News	12.16%	PP&W - #8 - Midwest, High Side	\$ 102.50	\$ 12.46
Mixed paper	36.47%	PP&W - Mixed paper - Midwest, High Side	\$ 90.00	\$ 32.82
Steel Cans	1.30%	SMP.com - Chicago Average	\$ 167.50	\$ 2.18
Aluminum Cans	0.25%	SMP.com - Chicago Average	\$ 1,350.00	\$ 3.38
HDPE (Natural)	0.69%	SMP.com - Chicago Average	\$ 610.00	\$ 4.21
HDPE (Color)	0.51%	SMP.com - Chicago Average	\$ 420.00	\$ 2.14
PET	2.48%	SMP.com - Chicago Average	\$ 225.00	\$ 5.58
#3 - #7 Plastic mixed	2.35%	SMP.com - Chicago Average	\$ 20.00	\$ 0.47
Aseptic Containers	0.07%	PP&W - SOP - Midwest, High Side, less 50%	\$ 82.50	\$ 0.06
Mixed Glass (3-Mix)	13.06%	Actual	\$ (12.50)	\$ (1.63)
Residuals	11.06%	Actual	\$ (39.50)	\$ (4.37)
	100.00%		RAA Base Market Value	\$ 89.64
RAA Commercial Single-Stream Categories	Allocation	Index Price Formula	Index Price Formula Rate	Market Value
High OCC Content				
Commercial Strea	100.00%	PP&W - OCC - Midwest, High Side	\$ 165.00	\$ 165.00
			RAA Commercial Market Value	\$ 165.00

WMM COST PROPOSAL INDICES

WMM Single-Stream Categories	Allocation	Index Price Formula	Index Price Formula Rate	Market Value
Cardboard #11	19.60%	PP&W - OCC - Midwest, High Side	\$ 165.00	\$ 32.34
#8 News	12.13%	PP&W - #2 Mixed Paper - Midwest, High Side	\$ 90.00	\$ 10.92
Mixed paper	36.47%	PP&W - #2 Mixed Paper - Midwest, High Side	\$ 90.00	\$ 32.82
Steel Cans	1.30%	SMP.com - Low Price	\$ 150.00	\$ 1.95
Aluminum Cans	0.25%	SMP.com - Low Price	\$ 1,300.00	\$ 3.25
HDPE (Natural)	0.69%	SMP.com - Chicago Average	\$ 610.00	\$ 4.21
HDPE (Color)	0.51%	SMP.com - Chicago Average	\$ 420.00	\$ 2.14
#1 PET	2.48%	SMP.com - Chicago Average	\$ 225.00	\$ 5.58
#3 - #7 Plastic mixed	2.35%	SMP.com - Chicago Average	\$ 20.00	\$ 0.47
Aseptic Containers	0.07%	Actual Value	\$ -	\$ -
Rigid #2	0.03%	Actual	\$ 5.00	\$ 0.00
Mixed Glass (3-Mix)	13.06%	Actual	\$ (22.00)	\$ (2.87)
Residuals	11.06%	Actual	\$ (45.51)	\$ (5.03)
	100.00%		WMM Blended Value	\$ 85.78

Cost Comparison Analysis for Ann Arbor MRF Interim Operations - WMM Original Price

	WM (Baling)	Recycle Ann Arbor (Loose Load)	Recycle Ann Arbor (Baling)	Recycle Ann Arbor (New Hybrid)	Recycle Ann Arbor (New Baling)
Residential Single-Stream	1200	1200	1050	1050	1050
Hauling & Processing Recyclables per ton	\$132.00	\$154.76	\$161.14	\$157.30	\$161.14
Recyclable Material Revenue per ton	\$81.69	\$81.67	\$86.70	\$81.67	\$86.70
Net Cost per ton	\$50.31	\$73.09	\$74.44	\$75.63	\$74.44
Sub-Total Invoice Amount	\$60,373.95	\$87,702.74	\$78,164.59	\$79,406.90	\$78,164.59
Commercial Single Stream			150	150	150
Hauling & Processing Commercial Recyclables			\$131.14	\$87.54	\$87.54
Commercial Material Revenue per ton			\$88.75	\$123.77	\$123.77
Net Cost per ton			\$42.39	-\$36.23	-\$36.23
Sub-Total Invoice Amount	n/a	n/a	\$6,358.50	-\$5,434.50	-\$5,434.50
Total Recycled Tons	1200	1200	1200	1200	1200
Total Cost for Hauling/Processing	\$60,373.95	\$87,702.74	\$84,523.09	\$73,972.40	\$72,730.09
Fuel Adjustment	\$6,792.07				
Total Monthly Invoice to City	\$67,166.02	\$87,702.74	\$84,523.09	\$73,972.40	\$72,730.09
Total Invoiced Amount if applied to July 2017-July 2018	\$805,992.25	\$1,052,432.89	\$1,014,277.12	\$887,668.78	\$872,761.12
Other City Costs - Baler amortization	\$6,999.03	\$250.00	\$6,999.03	\$6,999.03	\$6,999.03
Total Monthly City Cost	\$74,165.06	\$87,952.74	\$91,522.13	\$80,971.43	\$79,729.13
Total Cost if applied to July 2017 - July 2018	\$889,980.66	\$1,055,432.89	\$1,098,265.54	\$971,657.20	\$956,749.54

INDICE VALUES FOR REVENUE SHARES

Sample Date:	Apr-17
WM Fuel Adjustment:	0.1125
WM Blended Value:	\$81.69
RAA Loose Load (Base Market Value):	\$86.70
RAA Original Baled (Base Market Value):	\$86.70
RAA Original Baled (Commercial Market Value):	\$160.00
RAA New Hybrid (Base Market Value):	\$86.70
RAA New Hybrid (Commercial Market Value):	\$160.00
RAA New Baled (Base Market Value):	\$86.70
RAA New Baled (Commercial Market Value):	\$160.00

RAA COST PROPOSAL INDICES

RAA Residential Single-Stream Categories	Allocation	Index Price Formula	Index Price Formula Rate	Market Value
Cardboard #11	19.60%	PP&W - OCC - Midwest, High Side	\$ 160.00	\$ 31.36
#8 News	12.16%	PP&W - #8 - Midwest, High Side	\$ 102.50	\$ 12.46
Mixed paper	36.47%	PP&W - Mixed paper - Midwest, High Side	\$ 80.00	\$ 29.18
Steel Cans	1.30%	SMP.com - Chicago Average	\$ 187.50	\$ 2.44
Aluminum Cans	0.25%	SMP.com - Chicago Average	\$ 1,350.00	\$ 3.38
HDPE (Natural)	0.69%	SMP.com - Chicago Average	\$ 695.00	\$ 4.80
HDPE (Color)	0.51%	SMP.com - Chicago Average	\$ 475.00	\$ 2.42
PET	2.48%	SMP.com - Chicago Average	\$ 247.60	\$ 6.14
#3 - #7 Plastic mixed	2.35%	SMP.com - Chicago Average	\$ 20.00	\$ 0.47
Aseptic Containers	0.07%	PP&W - SOP - Midwest, High Side, less 50%	\$ 82.50	\$ 0.06
Mixed Glass (3-Mix)	13.06%	Actual	\$ (12.50)	\$ (1.63)
Residuals	11.06%	Actual	\$ (39.50)	\$ (4.37)
	100.00%		RAA Base Market Value	\$ 86.70
RAA Commercial Single-Stream Categories	Allocation	Index Price Formula	Index Price Formula Rate	Market Value
High OCC Content Commercial Strea	100.00%	PP&W - OCC - Midwest, High Side	\$ 160.00	\$ 160.00
			RAA Commercial Market Value	\$ 160.00

WMM COST PROPOSAL INDICES

WMM Single-Stream Categories	Allocation	Index Price Formula	Index Price Formula Rate	Market Value
Cardboard #11	19.60%	PP&W - OCC - Midwest, High Side	\$ 160.00	\$ 31.36
#8 News	12.13%	PP&W - #2 Mixed Paper - Midwest, High Side	\$ 80.00	\$ 9.70
Mixed paper	36.47%	PP&W - #2 Mixed Paper - Midwest, High Side	\$ 80.00	\$ 29.18
Steel Cans	1.30%	SMP.com - Low Price	\$ 175.00	\$ 2.28
Aluminum Cans	0.25%	SMP.com - Low Price	\$ 1,300.00	\$ 3.25
HDPE (Natural)	0.69%	SMP.com - Chicago Average	\$ 695.00	\$ 4.80
HDPE (Color)	0.51%	SMP.com - Chicago Average	\$ 475.00	\$ 2.42
#1 PET	2.48%	SMP.com - Chicago Average	\$ 247.60	\$ 6.14
#3 - #7 Plastic mixed	2.35%	SMP.com - Chicago Average	\$ 20.00	\$ 0.47
Aseptic Containers	0.07%	Actual Value	\$ -	\$ -
Rigid #2	0.03%	Actual	\$ 5.00	\$ 0.00
Mixed Glass (3-Mix)	13.06%	Actual	\$ (22.00)	\$ (2.87)
Residuals	11.06%	Actual	\$ (45.51)	\$ (5.03)
	100.00%		WMM Blended Value	\$ 81.69

Greenhouse Gas Comparison Analysis for Ann Arbor MRF Interim Operations

MONTHLY GHG CALCULATIONS		
Scenario	Factor	MTCE/month
WMM		
Recyclables to Akron	192 miles	36.68
Recyclables to Saginaw	95 miles	2.59
Glass Transport	148 miles	3.16
Baler Power	12 KWHR/ton	3.99
Baler Wire	2,000 bales	7.63
Total		54.05
RAA - Hybrid		
Recyclables to Cincinnati	237 miles	45.33
Recyclables to Taylor	28 miles	0.67
Glass Transport	56 miles	1.20
Baler Power	12 KWHR/ton	0.50
Baler Wire	250 bales	0.96
Residue Benefit	1% reduction	-41.27*
Total		7.39
RAA – Loose Load		
Recyclables to Cincinnati	237 miles	51.81
Glass Transport	56 miles	1.20
Residue Benefit	1% reduction	-41.27*
Total		11.74
RAA – Original Baling		
Recyclables to Dayton	182 miles	46.10
Baler Power	12 KWHR/ton	3.99
Baler Wire	2,000 bales	7.63
Total		57.72
RAA – New Baling		
Recyclables to Dayton	182 miles	40.34
Recyclables to Taylor	28 miles	0.67
Baler Power	12 KWHR/ton	3.99
Baler Wire	2,000 bales	7.63
Total		52.63

*Will be achieved provided that RAA's methods produce no more than 10% residual material (WMM's measured residual using baling is 11.06%). If this residual reduction is not achieved, then the GHG emissions for RAA's methods would be approaching, meeting or exceeding the GHG emissions of WMM's baling methods depending on the amount of residual material.