

## MEMORANDUM

**TO:** Melinda Coleman, City Manager

**FROM:** Chris Swanson, Environmental and City Code Specialist

**DATE:** March 30, 2016

**SUBJECT:** Consider Approval Tennis Sanitation Recycling Collection Annual Review

- a. 2015 Recycling Year End Report
- b. 2016 Recycling Work Plan

### **Introduction**

Maplewood's contract with Tennis Sanitation, LLC for city-wide residential recycling collection requires the contractor to have an annual recycling performance review with the Environmental and Natural Resources Commission and the City Council. As part of the review process, the contractor is required to submit a recycling report for the previous year and a work plan for the coming year. The report includes data on last year's recycling program including quantity of recyclable materials collected, marketed, and stored; quantity of process residual disposed; log of all education tags left because of non-targeted materials set out for recycling; and log of all complaints/compliments. The work plan includes proposals for recycling system improvements.

### **Discussion**

#### **2015 Recycling Report**

The 2015 Recycling Report summarizes the City's single and multiple family recycling programs (Attachment 1). Following is a comparison of the 2014 and 2015 average pounds per household per month and annual net tons of materials collected:

Average pounds of recycling collected per month	2014	2015
Single-family	53.48 lbs	53.48 lbs
Multi-family	12.95 lbs	13.04 lbs
Annual net tons of recycling collected		
Single-family	2949.92 tons	2949.94 tons
Multi-family	312.64 tons	314.66 tons
Businesses/churches	15.08 tons	22.95 tons

Observations regarding the City's recycling program in 2015:

- Average pounds per single family households have flattened in the last year.
- In the future smaller growth is expected in recycling weights. Most of the Twin City Metro area has seen this trend in recent years as residents use less paper and companies switch to lighter plastics.
- The average participation rate for 2015 for single family households is 92%. Participation is counted if a household places recyclables out at least once a month.

- Total net tons collected in multi-family units have increased by 2.02 tons.
- At the end of 2015 there were 20 small businesses and churches that opted into the City's recycling program and the total weight collected from these sites has increased by 52% from 2014.
- The 2015 Composition Study reflects that a majority of Maplewood's recyclables is still comprised of paper (46.28%) and cardboard (22.63%).
- Maplewood's 2015 recycling residuals (items in the recycling that cannot be recycled) totaled 29.39 tons, or .9% of recyclables.
- There has been an increase in educational tags as people place items in the recycling cart that can't be recycled. This practice is called wish cycling and involves tossing questionable items in the recycling cart hoping they can somehow be recycled.

### **Review of 2015 Recycling Work Plan**

Following is an update of items accomplished in 2015 from last year's Recycling Work Plan:

1. **Recycling Cart and Household Audit:** In March 2014, Tennis rolled out 65 gallon recycling carts to all single-family homes and 32 gallon recycling carts to townhomes and manufactured homes with curbside recycling. Tennis now offers three recycling cart options for the City's recycling program including a 95 gallon recycling cart in addition to the two sizes originally rolled out to residents. The recycling cart audit reflected that there are 2,307 – 32 gallon carts, 8,937 – 65 gallon carts, and 53 – 95 gallon carts in the City's recycling program. There are 42 households that have requested not to have any recycling cart.
2. **Small Business and Church Outreach:** At the end of 2015 there were 20 small businesses and churches that opted into the City's recycling program. A total of 45,885 pounds of recyclables were collected at these facilities. That is a 52% increase from 2014. This was possible through outreach efforts by the City, Tennis, and Waste Wise, a nonprofit affiliate of the Minnesota Chamber of Commerce. As part of this outreach, Tennis representatives attended an event in January that was hosted by the White Bear Area Chamber of Commerce to promote recycling to local businesses.
3. **Education to Low and Non-Participating Residents:** Tennis' monthly reports include information on low and non-participating residents. Education and outreach in 2015 included identifying formerly vacant/foreclosed properties that are now occupied, and delivering recycling cart and recycling education to these properties.
4. **Expanded Recycling Education Materials to Different Languages:** In 2015, Tennis made translations of their recycling guide available in Spanish.
5. **Recycling Education for Multi-Family Homes:** In 2015 Tennis provided a year-end recycling summary to all multi-family properties and followed up with a phone call to the property management company. Based on feedback from the managers, Tennis and the City provided additional recycling educational material including posters, brochures, and multi-family recycling bags.
6. **End Market Tour:** In the Fall of 2015, Tennis organized a tour of Strategic Materials, the glass processor used by Tennis. The glass processing tour was videotaped and edited for the City's Spotlight on Maplewood cable show.

## **2016 Recycling Work Plan**

Tennis' 2016 Work Plan (Attachment 2) includes additional outreach to small business and church recycling, targeted education to low and non-participating residents, market tours when available, and increasing public space recycling.

### **Commission Review**

The Environmental and Natural Resources Commission reviewed Tennis Sanitation's 2015 Annual Recycling Report and 2016 Recycling Work Plan on March 21, 2016. During the review the Commission made recommendations and comments regarding the City's recycling program. Changes were made to the reports based on their recommendations.

### **Budget Impact**

None

### **Recommendations**

Approve Tennis Sanitation's Recycling Collection Annual Performance Review including:

1. 2015 Recycling Year End Report
2. 2016 Recycling Work Plan

### **Attachments**

1. 2015 Recycling Year End Report
2. 2016 Recycling Work Plan
3. April 11 2016 Recycling Powerpoint

2015

# Maplewood Recycling Report



Greg & Willie Tennis

Tennis Sanitation

1/29/2016



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January 29, 2016

City of Maplewood  
Maplewood, MN 55109  
1830 County Road B E

RE: LETTER OF PURPOSE

Dear City of Maplewood,

This Year-end recycling report has been prepared for the City of Maplewood.

The report contains summaries of recycling data for both single family and multi-family dwellings, inquiries, composite study information, environmental impact report and a market report, along with a report summary.

This year's report we have also included four years of comparison data to help measure the success of the recycling program.

The data in this report has been utilized over the years to assist us in understanding past, present and future progress of the recycling program as well as helping us develop future strategies to enhance the recycling programs already in place.

Sincerely,

*Greg & Willie Tennis*

Greg and Willie Tennis  
Tennis Sanitation

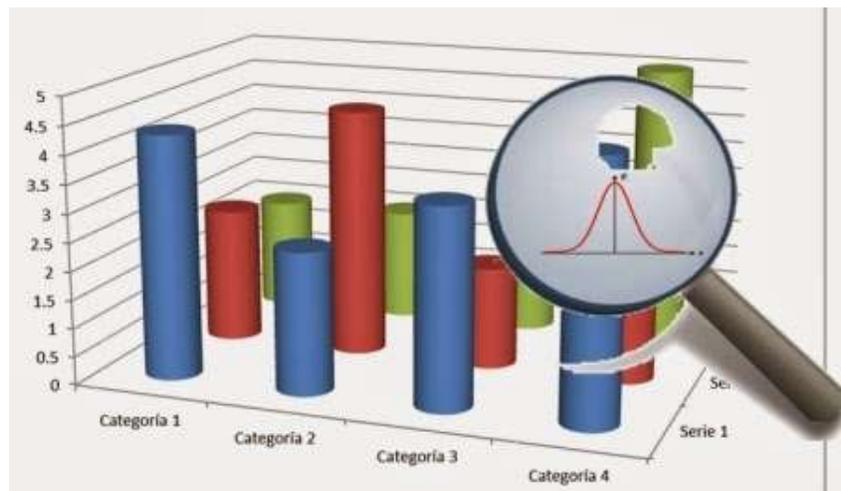


## RECYCLING DATA SUMMARY

In this report we have compiled annual data from both single family and multi-family dwellings (SEE APPENDIX A). This data includes:

- Break-out of single family tonnage (yellow)
- Break-out of multi-family tonnage (blue)
- Separate measurement of weights for cardboard and linens (bottom of APPENDIX A)
- Break-out of single family recycling materials by type and weight (yellow)
- Break-out of multi-family recycling materials by type and weight (blue)
- Break-out of combined tonnages (green)
- Inquiries tracked per month (bottom of APPENDIX A)
- Also business volume, parks and cardboard are included
- Participation data is also included

The data is compiled from recyclable materials collected from our drivers on designated Maplewood routes. Loads are weighed; weights are then compiled over a month's period of time. Weights are broken out based on a composite ratio of the entire load.



RECYCLING DATA (SINGLE FAMILY)

The Single Family Data in APPENDIX A (yellow) was compiled from the single family homes after taking out the multi-family weights. From this data – we are able to illustrate the weight per home (in lbs.) per month. We also have tracked the number of residents who participated on a monthly basis.

In analyzing the single family data, we are able to provide the following observations:

- 2015 Average lbs. per household per month = 53.48 lbs. per month  
Single Family comparison data average lbs. per household per month: 2011 = 38.91 lbs. per month, 2012 = 41.95 lbs. per month, 2013 = 43.78 lbs. per month, 2014 = 53.48 lbs. per month.
- Average lbs. per household remained the same from last year.
- 2015 Annual Net total tons collected for single family were 2,949.94  
SF comparison data Annual Net Total Tons:  
2011 = 2,146.06 tons, 2012 = 2,313.61 tons, 2013 = 2,414.62 tons, 2014 = 2,949.92 tons
- Total tons increased by .06 tons from last year.

Other Data Collected: Participation Percentage of Residents

TOTAL PARTICIPATON %

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	AVRG
2013	83%	80%	81%	83%	84%	84%	84%	87%	85%	84%	83%	88%	84%
2014	87%	84%	91%	93%	93%	97%	92%	92%	92%	92%	91%	92%	91%
2015	92%	91%	92%	93%	93%	93%	93%	92%	92%	92%	91%	93%	92%

Additional Trends: 2015 participation was very consistent for Single Family recycling.



## RECYCLING DATA (MULTI-FAMILY)

The Data in APPENDIX A (Blue) is the actual data compiled from net total weight family homes after factoring-out the multi-family weights. From this data – we are able to illustrate the weight per unit (in lbs.) per month. To assist us in providing accurate data, we compile weights on a quarterly basis. This weight is then used to provide us with a fair average of weight generated by each multi-family unit. Our drivers then documented the number of carts dumped at each location on a weekly basis (see APPENDIX D). These weights are then added at the end of each month to provide us with a net total. From the report we are able to calculate the weight per unit per month.

In analyzing the multi-family data, we are able to provide the following observations:

- 2015 Average lbs. per unit per month = 13.04 lbs. per month  
**2011 comparison data: Average lbs. per unit per month = 12.96 lbs. per month**  
**2012 comparison data: Average lbs. per unit per month = 11.47 lbs. per month**  
**2013 comparison data: Average lbs. per unit per month = 13.24 lbs. per month**  
**2014 comparison data: Average lbs. per unit per month = 12.95 lbs. per month**
  
- Overall tonnage volumes were very consistent over the last four years.
- 2015 Annual Net total tons collected for multi-family (ANTMF) was 314.66 tons  
**2011 comparison data: ANTMF was 312.73 tons**  
**2012 comparison data: ANTMF was 276.88 tons**  
**2013 comparison data: ANTMF was 319.56 tons**  
**2014 comparison data: ANTMF was 312.64 tons**

How are the weights determined for the multi-family data? On a quarterly basis – we use one truck to collect all multi-family dwellings. The total weight is then divided by the number of carts emptied to get an average weight per cart. This data is then entered into multi-family spreadsheet. See APPENDIX D for an example of this report.

This data is significant because we are able to easily separate this data from the total tons collected on each day of collection. The remaining tonnage is then the actual tonnage which comes from the single family homes.



MULTI-FAMILY INDIVIDUAL SUMMARY LETTER

From the data compiled over the twelve months we are able to provide each multi-housing property with an accurate summary report of their recycling volumes (APPENDIX B). We also provide them with some information on how their efforts help with the environment along with additional information to assist them in enhancing their recycling efforts.

<b>ENVIRONMENTAL IMPACT ANALYSIS</b>	<b>TENNIS SANITATION</b>	
Property: Maplewood Apartments	<b>ESTIMATED TOTAL TONS RECYCLED:</b>	<b>22.61</b>

Dear Property Manager,

Below is a recap of your recycling efforts for 2015. Please notice the amount of recycling materials your tenants recycled and the estimated resources you saved from each category.

Also, please contact us if you would like further information on ways to enhance your recycling. You can contact us at 651-459-1887. Awesome job on recycling!!

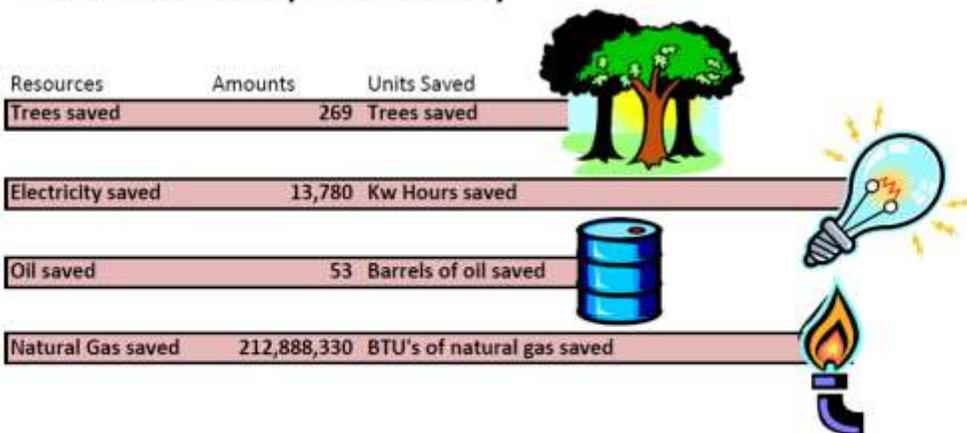
Thank you for recycling,

**Greg & Willie Tennis**

Sincerely, Greg and Willie Tennis

Recycling Type	MW total Tons	Units	Resource Saved	Calc/ Resource	Total Resources Saved	Type
Paper	15.80	tons	Trees	1 ton = 17 Trees	268.6	trees
Paper	15.80	tons	Electricity	1 ton = 601 Kw Hours	9,497	Kw hours of electricity
Paper	15.80	tons	Oil	1 ton = 1.7 barrels of oil	26.86	barrels of oil
Aluminum	0.27	tons	Ore	1 ton = 4 tons of ore	1.09	tons of ore
Aluminum	0.27	tons	Electricity	1 ton = 14,000 Kw Hours	3,798	Kw hours of electricity
Aluminum	0.27	tons	Oil	1 ton = 40 barrels of oil	10.85	barrels of oil
Tin/bi-metal	0.52	tons	Ore	1 ton = 1.49 tons of ore	0.77	tons of ore
Tin/bi-metal	0.52	tons	Electricity	1 ton = 642 Kw Hours	334	Kw hours of electricity
Tin/bi-metal	0.52	tons	Oil	1 ton = 1.8 barrels of oil	0.94	barrels of oil
Plastics	2.15	tons	Oil	1 ton = 6.3 barrels of oil	13.53	barrels of oil
Plastics	2.15	tons	Electricity	1 ton = 5,774 Kw Hours	9	Kw hours of electricity
Plastics	2.15	tons	Natural Gas	1 ton = 98,000,000 btu's	210,467,167	BTU's of fuel
Glass	3.39	tons	Sand	1 ton = 1,330 tons of sand	4,510	tons of sand
Glass	3.39	tons	Electricity	1 ton = 42 Kw Hours	142	Kw hours of electricity
Glass	3.39	tons	Oil	1 ton = .12 gallons of oil	0.41	barrels of oil
Glass	3.39	tons	Natural Gas	1 ton = 714,000 btu's	2,421,164	BTU's of fuel

**Environmental Impact Summary**



\*\*Disclaimer: The above numbers represent conversions from industrial and recycling markets. These numbers are ESTIMATED resources saved. All calculations are taken from annual total tons from Maplewood Final Recycling Report.

## INQUIRIES SUMMARY

Below are twelve months of data documenting the number of residents that called into our office. This year the most common calls were comprised of what additional items they could recycle and when they could start services (move-ins).

We are confident that our Customer Service Staff (CSRs) resolved all inquiries to the resident's satisfaction.

### TOTAL INQUIRIES FOR 2015

JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
11	13	32	33	13	46	59	42	44	45	36	48	422

### 2011 TOTAL INQUIRIES (Comparison Data)

JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
87	64	70	38	16	16	11	15	5	5	5	12	344

### 2012 TOTAL INQUIRIES (Comparison Data)

JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
39	16	24	13	22	14	19	21	30	29	23	10	260

### 2013 TOTAL INQUIRIES (Comparison Data)

JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
35	14	7	14	8	10	14	11	19	44	35	22	233

### 2014 TOTAL INQUIRIES (Comparison Data)

JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
76	76	852	150	58	78	51	51	59	47	23	31	1,552

## LINENS AND SHOES SUMMARY

Linens and shoes for the year 2015 totaled 5,917 pounds

**Year 2011 = 6,217 lbs., Year 2012 = 3,692 lbs., Year 2013 = 8,641 lbs., Year 2014 = 6,270 lbs.,**



## CARDBOARD SUMMARY

Cardboard collected for 2015 from city facilities and buildings totaled 125,020 pounds.

**Year 2011 = 105,615 lbs., Year 2012 = 92,850 lbs., Year 2013 = 140,650 lbs., Year 2014 = 131,346 lbs.,**



## BUSINESS and PARKS WEIGHTS

We also collect data from some businesses that started recycling

TOTAL POUNDS FOR 2015 **BUSINESSES: 45,885 lbs** **CITY PARKS: 8,350 lbs**

TOTAL POUNDS FOR 2013 **BUSINESSES: 2,855 lbs** **CITY PARKS: 9,140 lbs**

TOTAL POUNDS FOR 2014 **BUSINESSES: 30,157 lbs** **CITY PARKS: 11,180 lbs**

## RECYCLING COMPOSITE STUDY

For the composite study we kept all loads from the entire week's worth of material and processed only Maplewood's material through our MRF. The sorting floor was cleared and the recycling was sorted into the categories (as listed below). All of the categories were then weighed and documented. The results of the composite study were then entered back into the monthly report.

**Why do a composite study?**

Having a good understanding of the recycling composition provides us with data that may assist us in adjusting it to fit the needs of the Residents of Maplewood. With on-going changes in the economy, cultural and even changes in the home we can develop more available markets, increase processing technologies to handle more items and enhance educational materials to instruct residents on proper recycling procedures.

## Tennis Sanitation, L.L.C.

**651-459-1887**

RE: COMPOSITE BREAK-OUT PERCENTAGE

Dear City of Maplewood Recycling Coordinator,

Tennis Sanitation is pleased to provide the following composite sample break-out detailing the percentage ratios of each type of recycling category.

TYPE	RATIO %
Cardboard:	22.63%
Paper:	46.28%
Scrap Metal:	0.29%
Large Plastic:	0.39%
Plastic Bags:	0.56%
Z-Bale Plastic:	3.07%
PET Plastic:	4.96%
Tin:	2.95%
Colored Glass:	2.15%
Clear Glass:	1.52%
Chipped Glass:	11.34%
Aluminum:	2.48%
Milk Cartons:	0.22%
Residuals (Trash):	1.16%
<b>100.00%</b>	

The above percentage break-out of recycling material was based on the following sample Study done in November 2015. Our processing team had taken loads of recycling and had weighed the entire load then items were broken out into specific types as listed above and re-weighed to get the final percentage data of each type of material.

Sincerely,

*Willie Tennis*

Willie Tennis

Tennis Sanitation

## ENVIRONMENTAL IMPACT ANALYSIS

From the detailed recycling data from this report, we are able to provide the City of Maplewood with some unique ways that the residents recycling efforts have made a difference. Over the years, recycling markets have been able to recycle more and more items out of the waste stream. They have also been able to determine what resources are saved by recycling various materials.

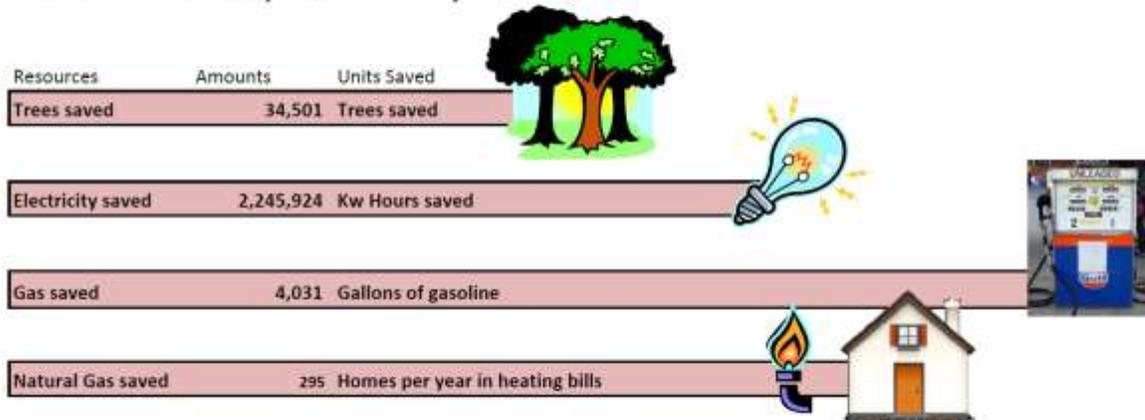
In this report we were able to convert the break-out of types of recycling materials into resources saved.

### ENVIRONMENTAL IMPACT ANALYSIS

#### CITY OF MAPLEWOOD RECYCLING 2015

Recycling Type	MW total Tons	Units	Resource Saved	Calc/ Resource	Convert unit	Total Resources Saved	Type
Paper	2,029	tons	Trees	1 ton = 17 Trees	17	34,501	trees
Paper	2,029	tons	Electricity	1 ton = 601 Kw Hours	601	1,219,727	Kw hours of electricity
Paper	2,029	tons	Oil	1 ton = 1.7 barrels of oil	1.7	3,450	barrels of oil
Aluminum	67	tons	Ore	1 ton = 4 tons of ore	4	269	tons of ore
Aluminum	67	tons	Electricity	1 ton = 14,000 Kw Hours	14,000	942,788	Kw hours of electricity
Aluminum	67	tons	Oil	1 ton = 40 barrels of oil	40	2,694	barrels of oil
Tin/bi-metal	96	tons	Ore	1 ton = 1.49 tons of ore	1	143	tons of ore
Tin/bi-metal	96	tons	Electricity	1 ton = 642 Kw Hours	642	61,790	Kw hours of electricity
Tin/bi-metal	96	tons	Oil	1 ton = 1.8 barrels of oil	1.8	173	barrels of oil
Plastics	268	tons	Oil	1 ton = 6.3 barrels of oil	6.3	1,686	barrels of oil
Plastics	268	tons	Electricity	1 ton = 5,774 Kw Hours	4	1,070	Kw hours of electricity
Plastics	268	tons	Natural Gas	1 ton = 98,000,000 btu's	98,000,000	26,222,847,397	BTU's of fuel
Glass	489	tons	Sand	1 ton = 1,330 tons of sand	1,330	650,732	tons of sand
Glass	489	tons	Electricity	1 ton = 42 Kw Hours	42	20,549	Kw hours of electricity
Glass	489	tons	Oil	1 ton = .12 gallons of oil	0.12	59	barrels of oil
Glass	489	tons	Natural Gas	1 ton = 714,000 btu's	714,000	349,340,389	BTU's of fuel

### Environmental Impact Summary



\*\*Disclaimer: The above numbers represent conversions from industrial and recycling markets. These numbers are ESTIMATED resources saved. All calculations are taken from annual total tons from Maplewood Final Recycling Report.

<http://www.quora.com/How-many-gallons-of-crude-oil-does-it-take-to-make-a-gallon-of-gasoline>

<http://www.eia.gov/todayinenergy/detail.cfm?id=6570>

## GLASS RECYCLING PROCESSORS

Tennis Sanitation has managed mixed broken glass utilizing Strategic Materials as our glass processor. This is in response to the City's request to create a glass contingency plan that achieves the overall goal of recycling 100% of the material into the original raw material.

We are excited to announce that Strategic Materials has developed a technology that optically sorts broken glass mechanically without manual sorting. This results in minimizing the amount of glass being used for aggregate material. *See Strategic Materials endorsement letter below.*



January 21, 2015

Tennis Sanitation LLC

720 4<sup>th</sup> Street

Saint Paul Park, MN

David Domack

Dear David,

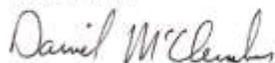
Strategic Materials, Inc. (SMI) in St Paul processes the glass supplied by your company, Tennis Sanitation. To process your material, we use an integrated series of high technology equipment to remove all non-glass items and fines. When possible, these non-glass items and fines are recycled or used in a beneficial use application. The end product of our process is high quality glass cullet. The glass cullet is available for the container industry to process into new glass containers and also for the fiberglass industry for the production of new fiberglass materials.

SMI sends most of this glass cullet to these high-value end customers to help promote and sustain the best possible recycling usage. To meet the rigid specification requirements these customers demand, we use advanced optical sortation equipment. This equipment allows us to produce some of the highest quality sorted glass in the industry. By using our recycled cullet, container/fiberglass manufacturers reduce their energy usage and also their emissions as compared with using virgin raw materials.

SMI places a high value on producing top quality glass cullet to the recycling industry. All material received from Tennis Sanitation undergoes our stringent processes and inspections to allow us to continue supplying this glass cullet to our end customers.

Please feel free to contact us if you have any additional questions.

Respectfully,



Daniel McClenahan

SMI Area Manager

## MARKET REPORT

2015 was a very challenging year for most commodities. Fiber, plastics, tin and aluminum took their largest drop in five years – which has been driven down by the lower costs in crude oil.

The glass market is somewhat limited because there is only one processor available to sort glass in the Twin Cities. Their newest technology sorts broken glass using computerized optical sorters and a complex but innovative blower system. 90% of the broken glass is now being processed into post-consumer food and beverage containers.

The outlook for 2016

Future markets are looking like they will remain weak. The markets project the values to be flat for 2016.



**ADDITIONAL ITEMS****RESIDUALS:**

2015 Residuals (in tons) from recycling was as follows:

<u>JAN</u>	<u>FEB</u>	<u>MAR</u>	<u>APR</u>	<u>MAY</u>	<u>JUN</u>	<u>JUL</u>	<u>AUG</u>	<u>SEP</u>	<u>OCT</u>	<u>NOV</u>	<u>DEC</u>	<u>TOTAL</u>
.9 %	.9 %	.9 %	.9 %	.9 %	.9 %	.9 %	.9 %	.9 %	.9 %	.9 %	.9 %	
2.35 tons	1.84 tons	2.31 tons	2.40 tons	2.55 tons	2.52 tons	2.35 tons	2.39 tons	2.51 tons	2.43 tons	2.90 tons	2.83 tons	<b>29.38 tons</b>

Residuals consisted of items such as Styrofoam, packing peanuts, soiled materials and general garbage.

*In comparison to 2011: Residuals are 26.88 tons*

*In comparison to 2012: Residuals are 55.55 tons*

*In comparison to 2013: Residuals are 49.30 tons*

*In comparison to 2014: Residuals are 29.36 tons*

**TRUCK WEIGHTS:**

During the 2015 Calendar - none of our vehicles exceeded the maximum loaded weight of 40,000 pounds when hauling the recyclables collected from the residents of Maplewood. Weight tickets are available upon request.

**RECYCLING SERVICE FEE:**

The recycling service fee is \$2.75 per unit per month which is based upon the contracted price.

**STORAGE OF EXTRA RECYCLABLE MATERIALS:**

During the 2015 calendar year our recycling facility had sorted all recyclable materials within 45 days of processing to recycling markets. The only exception are the milk cartons - which are baled and stored until there is enough volume to meet the vendor's minimum shipping requirements and "rare-type" plastics which are stored until a larger enough quantity is available to make a mill size bale.

## SUMMARY OF YEAR-END RECYCLING REPORT

The 2015 Maplewood Year-end Recycling Report provides up-to-date information from the City's recycling activities over the past year. Each section of this report reflects the various ways data was collected, entered and calculated to contribute to meeting our combined goals.

In the report we have illustrated the composition of recyclables, itemized volumes of recyclables from both single family and multi-family dwellings as they relate to each break-out of each separate commodity. We also provide information on how the City's recycling efforts will impact our environment. As we evaluate the four years of data history, we are seeing a consistent pattern of strong recycling volumes and good participation. All of these results point towards success through education and expansion of recycling materials.



# APPENDIX A - 2015 RECYCLING DATA SUMMARY

## APPENDIX A - RECYCLING DATA SUMMARY

2015 MAPLEWOOD RECYCLE TONNAGE DATA														
MONTHLY DATA/RTE	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	2015 TOTALS	
	UNITS	TYPE												
<b>Single Family</b>														
Percentage Break-out														
<b>RECYCLED MATERIALS</b>	Tons	Description												
Cardboard:	51.08	38.87	49.29	51.21	55.35	55.85	52.38	51.41	53.17	52.44	63.81	61.62	636.47	TONS
Paper:	111.16	84.59	107.25	111.42	120.43	121.52	113.98	111.88	115.70	114.11	138.85	134.08	1384.98	TONS
Scrap Metal:	0.93	0.71	0.90	0.93	1.01	1.02	0.96	0.94	0.97	0.96	1.17	1.13	11.62	TONS
Large Plastic:	1.15	0.87	1.11	1.15	1.24	1.25	1.18	1.16	1.19	1.18	1.43	1.38	14.30	TONS
Plastic Bags:	1.63	1.24	1.57	1.63	1.76	1.78	1.67	1.64	1.69	1.67	2.03	1.96	20.26	TONS
Z-Bale Plastic:	7.41	5.64	7.15	7.43	8.03	8.11	7.60	7.46	7.72	7.61	9.26	8.94	92.37	TONS
PET Plastic:	11.29	8.59	10.89	11.32	12.23	12.34	11.57	11.36	11.75	11.59	14.10	13.62	140.64	TONS
Tin:	6.79	5.17	6.55	6.81	7.36	7.43	6.96	6.84	7.07	6.97	8.48	8.19	84.62	TONS
Colored Glass:	5.86	4.46	5.65	5.87	6.35	6.41	6.01	5.90	6.10	6.02	7.32	7.07	73.00	TONS
Clear Glass:	3.83	2.91	3.69	3.84	4.15	4.18	3.92	3.85	3.98	3.93	4.78	4.62	47.68	TONS
Chipped Glass:	29.58	22.51	28.54	29.65	32.05	32.34	30.33	29.78	30.79	30.37	36.95	35.68	368.59	TONS
Aluminum:	5.40	4.11	5.21	5.42	5.86	5.91	5.54	5.44	5.63	5.55	6.75	6.52	67.34	TONS
Milk Cartons:	0.65	0.49	0.62	0.65	0.70	0.71	0.66	0.65	0.67	0.66	0.81	0.78	8.05	TONS
<b>TOTAL TONS</b>	236.76	180.18	228.44	237.33	256.52	258.84	242.77	238.30	246.43	243.06	295.75	285.58	2949.94	TONS
<b># of HOMES ON ROUTE</b>	9,193	9,193	9,193	9,193	9,193	9,193	9,193	9,193	9,193	9,193	9,193	9,193	9,193	
<b>AVERAGE LBS / HOME /</b>	51.51	39.20	49.70	51.63	55.81	56.31	52.82	51.84	53.61	52.88	64.34	62.13	53.48	AvgLbs /Un
<b>Multi- Family</b>														
Percentage Break-out														
<b>RECYCLED MATERIALS</b>	Tons	Description												
Cardboard:	5.26	5.26	6.06	6.22	5.85	4.62	4.06	5.91	6.92	5.79	5.73	6.21	67.89	TONS
Paper:	11.44	11.44	13.19	13.54	12.73	10.06	8.83	12.86	15.06	12.60	12.48	13.51	147.73	TONS
Scrap Metal:	0.10	0.10	0.11	0.11	0.11	0.08	0.07	0.11	0.13	0.11	0.10	0.11	1.24	TONS
Large Plastic:	0.12	0.12	0.14	0.14	0.13	0.10	0.09	0.13	0.16	0.13	0.13	0.14	1.53	TONS
Plastic Bags:	0.17	0.17	0.19	0.20	0.19	0.15	0.13	0.19	0.22	0.18	0.18	0.20	2.16	TONS
Z-Bale Plastic:	0.76	0.76	0.88	0.90	0.85	0.67	0.59	0.86	1.00	0.84	0.83	0.90	9.85	TONS
PET Plastic:	1.16	1.16	1.34	1.37	1.29	1.02	0.90	1.31	1.53	1.28	1.27	1.37	15.00	TONS
Tin:	0.70	0.70	0.81	0.83	0.78	0.61	0.54	0.79	0.92	0.77	0.76	0.83	9.03	TONS
Colored Glass:	0.60	0.60	0.70	0.71	0.67	0.53	0.47	0.68	0.79	0.66	0.66	0.71	7.79	TONS
Clear Glass:	0.39	0.39	0.45	0.47	0.44	0.35	0.30	0.44	0.52	0.43	0.43	0.46	5.09	TONS
Chipped Glass:	3.04	3.04	3.51	3.60	3.39	2.68	2.35	3.42	4.01	3.35	3.32	3.59	39.32	TONS
Aluminum:	0.56	0.56	0.64	0.66	0.62	0.49	0.43	0.63	0.73	0.61	0.61	0.66	7.18	TONS
Milk Cartons:	0.07	0.07	0.08	0.08	0.07	0.06	0.05	0.07	0.09	0.07	0.07	0.08	0.86	TONS
<b>TOTAL TONS</b>	24.36	24.37	28.09	28.83	27.12	21.43	18.81	27.40	32.07	26.84	26.57	28.77	314.66	TONS
<b># of MF UNITS ON</b>	4,023	4,023	4,023	4,023	4,023	4,023	4,023	4,023	4,023	4,023	4,023	4,023	4,023	
<b>AVERAGE LBS / HOME /</b>	12.11	12.11	13.96	14.33	13.48	10.65	9.35	13.62	15.94	13.34	13.21	14.30	13.04	Avg Lbs /Un
<b>COMBINED BREAK-OUT</b>														
<b>RECYCLED MATERIALS</b>	Tons	Description												
Cardboard:	56.34	44.13	55.35	57.43	61.20	60.47	56.44	57.33	60.09	58.23	69.54	67.82	704.36	TONS
Paper:	122.59	96.03	120.44	124.96	133.16	131.58	122.81	124.74	130.76	126.72	151.33	147.58	1532.71	TONS
Scrap Metal:	1.03	0.81	1.01	1.05	1.12	1.10	1.03	1.05	1.10	1.06	1.27	1.24	12.86	TONS
Large Plastic:	1.27	0.99	1.24	1.29	1.38	1.36	1.27	1.29	1.35	1.31	1.56	1.52	15.83	TONS
Plastic Bags:	1.79	1.40	1.76	1.83	1.95	1.93	1.80	1.83	1.91	1.85	2.21	2.16	22.42	TONS
Z-Bale Plastic:	8.18	6.41	8.03	8.33	8.88	8.78	8.19	8.32	8.72	8.45	10.09	9.84	102.22	TONS
PET Plastic:	12.45	9.75	12.23	12.69	13.52	13.36	12.47	12.67	13.28	12.87	15.37	14.99	155.65	TONS
Tin:	7.49	5.87	7.36	7.64	8.14	8.04	7.50	7.62	7.99	7.74	9.25	9.02	93.65	TONS
Colored Glass:	6.46	5.06	6.35	6.59	7.02	6.94	6.47	6.58	6.89	6.68	7.98	7.78	80.79	TONS
Clear Glass:	4.22	3.31	4.15	4.30	4.58	4.53	4.23	4.29	4.50	4.36	5.21	5.08	52.76	TONS
Chipped Glass:	32.63	25.56	32.05	33.26	35.44	35.02	32.68	33.20	34.80	33.72	40.27	39.28	407.91	TONS
Aluminum:	5.96	4.67	5.86	6.08	6.47	6.40	5.97	6.07	6.36	6.16	7.36	7.18	74.53	TONS
Milk Cartons:	0.71	0.56	0.70	0.73	0.77	0.76	0.71	0.72	0.76	0.74	0.88	0.86	8.90	TONS
<b>TOTAL TONS</b>	261.12	204.55	256.53	266.16	283.63	280.27	261.58	265.70	278.50	269.90	322.32	314.35	3264.59	TONS
<b>CARDBOARD &amp; LINENS</b>														
CARDBOARD	9,872	9,410	11,012	15,170	9,726	9,840	8,990	9,400	8,580	11,740	8,540	12,740	125,020	LBS
LINENS	-	700	846	595	342	-	894	529	443	569	511	488	5,917	LBS
<b>TOTAL INQUIRIES</b>	11	13	32	33	13	46	59	42	44	45	36	48	422	
Business Volume lbs	2,165	2,599	3,179	4,322	4,096	3,653	2,938	4,100	4,901	5,323	5,024	3,585	45,885	
Parks Volume lbs	440	0	0	1,500	840	940	1,710	1,300	960	560	100	0	8,350	
% of contamination	0.9%	0.9%	0.9%	0.9%	0.9%	0.9%	0.9%	0.9%	0.9%	0.9%	0.9%	0.9%		
Residuals (Tons)	2.35	1.84	2.31	2.40	2.55	2.52	2.35	2.39	2.51	2.43	2.90	2.83	29.38	TONS
Participation %	92%	91%	92%	93%	93%	93%	93%	92%	92%	92%	91%	93%	92%	AVG. %
Nonparticipants #	737	874	771	644	613	616	660	723	694	723	789	648	708	AVG. Nonpart.

# APPENDIX B - MONTHLY RECYCLING REPORT MULTI-FAMILY

APPENDIX B RECYCLING DATA SUMMARY (MULTI-FAMILY)

2015 Annual Weight RECAP REPORT Multi-Family	Units	January		February		March		April		May		June		July		August		September		October		November		December		2015 TOTALS			
		Total Wgt	Wp/Unit	Total Wgt	Average																								
		for use	Month	for use	Month	for use	Month																						
1426 Frost Avenue	7	182	26	167	24	227	32	321	46	299	43	214	31	150	21	342	49	192	27	150	21	235	34	136	19	2614	31		
Maplewood Comforts of Home	42	364	9	606	14	606	14	641	15	727	17	855	20	641	15	1154	27	855	20	770	18	983	23	517	12	8719	17		
Emmas Place	13	0	0	91	7	121	9	0	0	0	0	0	0	0	21	2	0	0	43	3	0	0	0	0	276	2			
English Manor Apartments	37	561	15	576	16	621	17	791	21	748	20	898	24	599	16	1069	29	812	22	770	21	1047	28	517	14	9008	20		
Homestead at Maplewood	62	424	7	727	12	667	11	770	12	599	10	492	8	428	7	684	11	470	8	556	9	770	12	354	6	6939	9		
Maplewood Mobile Homes	17	197	12	167	10	227	13	214	13	321	19	342	20	299	18	257	15	235	14	214	13	214	13	60	4	2754	13		
Park Edge Apartments	51	364	7	515	10	546	11	684	13	641	13	684	13	428	8	770	15	684	13	599	12	770	15	517	10	7200	12		
Parkview Court Apartments	72	667	9	667	9	909	13	1026	14	983	14	1026	14	791	11	1240	17	1026	14	1026	14	1283	18	653	9	11296	13		
Phoenix Treatment Center	1	242	242	273	273	364	364	428	428	385	385	171	171	257	257	299	299	342	342	257	257	342	342	272	272	3630	303		
Sherwood Glen	96	2000	21	2091	22	2637	27	3035	32	3677	38	2736	29	2009	21	3848	40	8465	88	2907	30	3292	34	2013	21	38709	34		
Greengate Apartments	108	1303	12	1121	10	1516	14	1667	15	1625	15	1368	13	1069	10	1924	18	1539	14	1454	13	1796	17	1088	10	17469	13		
Maple Pond Homes	168	1182	7	1182	7	1819	11	1924	11	1667	10	1753	10	1112	7	2052	12	1154	7	1667	10	1881	11	1115	7	18508	9		
Maplewood Apartments	240	2819	12	2910	12	3637	15	4019	17	4147	17	3848	16	2864	12	4617	19	4275	18	4190	17	5087	21	2802	12	45213	16		
Maplewood Manor	18	455	25	485	27	606	34	684	38	684	38	684	38	556	31	983	55	684	38	684	38	812	45	490	27	7807	36		
Saint Paul's Monastery	70	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Maplewood Community Center	1	303	303	273	273	303	303	428	428	363	363	342	342	257	257	534	534	342	342	406	406	534	534	245	245	4330	361		
Maplewood City Hall	1	515	515	697	697	970	970	727	727	727	727	556	556	342	342	1454	1454	770	770	684	684	898	898	422	422	8760	738		
Maplewood Public Works	1	455	455	576	576	970	970	898	898	663	663	663	663	406	406	919	919	1197	1197	791	791	748	748	449	449	8734	728		
Fire Station 2	1	182	182	242	242	303	303	342	342	342	342	214	214	171	171	385	385	299	299	214	214	385	385	163	163	3242	270		
East Metro Fire Training Facility	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Cobblestone Court Apartments	74	469	6	440	6	557	8	433	6	379	5	406	5	298	4	379	5	542	7	379	5	406	5	607	8	5297	6		
Silver Ridge Apartments	186	1730	9	1613	9	2229	12	1734	9	1652	9	1761	9	1652	9	1761	9	2628	14	1761	9	1896	10	2938	16	23356	10		
Summer Hills Of Maplewood	45	821	18	821	18	1056	23	759	17	759	17	759	17	569	13	786	17	948	21	759	17	759	17	1118	25	9911	18		
Beaver Creek Condos	60	1144	19	1379	23	1672	28	1165	19	1111	19	813	14	840	14	1002	17	1300	22	1002	17	1002	17	1660	28	14090	20		
Century Trails Apartments	40	235	6	352	9	440	11	244	6	203	5	298	7	217	5	298	7	406	10	325	8	325	8	479	12	3822	8		
Lakeview Commons	98	264	3	205	2	293	3	163	2	135	1	203	2	149	2	217	2	230	2	190	2	203	2	319	3	2572	2		
Pondview Apartments	180	1818	10	1789	10	2229	12	1571	9	1517	8	1598	9	1192	7	1463	8	1869	10	1463	8	1273	7	2299	13	20082	9		
Nature Center	1	59	59	59	59	88	88	352	352	81	81	81	81	54	54	108	108	108	108	81	81	54	54	32	32	1158	97		
Fire Station 1	1	88	88	88	88	117	117	108	108	108	108	108	108	81	81	81	81	108	108	81	81	81	81	81	81	96	96	1148	96
Birch Glen Apartments(Maplewood)	60	515	9	515	9	629	10	519	9	393	7	378	6	519	9	629	10	441	7	472	8	781	13	6307	9				
Cardinal Pointe	108	644	6	644	6	787	7	566	5	441	4	472	4	598	6	787	7	629	6	629	6	629	6	976	9	7817	6		
Carefree Cottages	254	3961	16	3993	16	4379	17	5004	20	3997	16	3084	12	3116	12	3965	16	5035	20	4437	17	4186	16	6754	27	51910	17		
Concordia Arms	125	1803	14	1803	14	1803	14	2203	18	1794	14	1164	9	1259	10	1605	13	2171	17	1636	13	1322	11	2694	22	21258	14		
Heritage Square Condos (7100 Madison)	18	515	29	515	29	644	36	755	42	535	30	378	21	378	21	504	28	629	35	504	28	504	28	898	50	6758	31		
Heritage Square Condos (1244 Co Rd D)	12	258	21	258	21	258	21	315	26	252	21	189	16	189	16	252	21	283	24	252	21	252	21	390	33	3146	22		
Heritage Square Condos (1256 Co Rd D)	12	258	21	258	21	258	21	315	26	252	21	189	16	189	16	252	21	315	26	252	21	252	21	390	33	3177	22		
Maple Knoll Townhomes	57	612	11	467	8	419	7	692	12	504	9	409	7	346	6	362	6	2817	49	614	11	504	9	664	12	8408	12		
Maple Ridge Apartments	100	773	8	741	7	773	8	976	10	787	8	566	6	598	6	787	8	850	8	850	8	850	8	1171	12	9626	8		
Maplewood Townhomes	31	32	1	0	0	64	2	0	0	31	1	16	1	31	1	79	3	94	3	157	5	79	3	39	1	623	2		
Norgard Apartments	60	354	6	403	7	354	6	472	8	409	7	252	4	315	5	441	7	535	9	378	6	409	7	664	11	4985	7		
Seasons at Maplewood	150	741	5	676	5	612	4	598	4	535	4	220	1	189	1	205	1	346	2	16	0	252	2	820	5	5209	3		
Sibley Cove Apartments	80	902	11	773	10	1030	13	1070	13	755	9	393	5	504	6	661	8	976	12	755	9	629	8	1015	13	9463	10		
Town and Country Mobile Home Park	120	1030	9	1030	9	1127	9	1385	12	1070	9	818	7	850	7	1133	9	1416	12	1133	9	1133	9	1757	15	13882	10		
Village on Woodlynn	60	998	17	1095	18	1159	19	1322	22	1070	18	755	13	724	12	1070	18	1290	22	1070	18	1039	17	1718	29	13310	18		
Walker at Hazel Ridge	75	934	12	934	12	869	12	1259	17	1039	14	598	8	661	9	944	13	1101	15	913	12	1007	13	1444	19	11703	13		
Fire Station # 3	1	72	72	48	48	40	40	24	24	39	39	31	31	39	39	16	16	94	94	47	47	71	71	78	78	601	50		
Wyngate Apartments	50	934	19	966	19	1030	21	1227	25	976	20	755	15	661	13	724	14	1133	23	881	18	755	15	1484	30	11526	19		
1860 McMenemy Street																													

# APPENDIX C - MONTHLY RECYCLING REPORT LETTER

## Tennis Sanitation, L.L.C.

651-459-1887

"Recycling is Everyone's Future"

January 15th, 2015

RE: December 2015 - RECYCLING REPORT

Dear City of Maplewood Recycling Coordinator,

Tennis Sanitation is pleased to provide the following monthly recycling report detailing the materials that were collected, processed and delivered to recycling markets from both single family and multi-family dwellings.

### The Community of Maplewood Recycled:

TYPE	Single Family Weight (tons)	Multi-Family Weight (tons)	NET Total Wgt	UNIT	DESCRIPTION
Cardboard: 21.36%	61.62	6.21	67.82	tons	Includes all cardboard boxes.
Paper: 46.48%	134.08	13.51	147.58	tons	Includes cardboard, paper, newspaper, junk mail
Scrap Metal: 0.39%	1.13	0.11	1.24	tons	
Large Plastic: 0.48%	1.38	0.14	1.52	tons	Toys and parts
Plastic Bags: 0.68%	1.96	0.20	2.16	tons	Includes retail plastic bags
Z-Bale Plastic: 3.10%	8.94	0.90	9.84	tons	
PET Plastic: 4.72%	13.62	1.37	14.99	tons	
Tin: 2.84%	8.19	0.83	9.02	tons	Includes all bi-metal and tin cans
Colored Glass: 2.45%	7.07	0.71	7.78	tons	Includes green, clear and brown colors
Clear Glass: 1.60%	4.62	0.46	5.08	tons	
Chipped Glass: 12.37%	35.68	3.59	39.28	tons	
Aluminum: 2.26%	6.52	0.66	7.18	tons	Includes all aluminum cans
Milk Cartons: 0.27%	0.78	0.08	0.86	tons	Beverage cartons
<b>Total Tons:</b>	<b>285.58</b>	<b>28.77</b>	<b>314.35</b>	<b>Tons</b>	<b>Net total recycling for the month</b>

### Other fun facts:

TYPE	Single Family Weight (lbs)	Multi-Family Weight (lbs)	NET Calcs.	
Units:	9193	4023	13216	Units collected per week
Wgt/home:	62.13	14.30	38.22	lbs Average pounds per unit collected per month
**Linens:	Combined	Combined	488.00	lbs Includes all clothing, garments and other linens
Cardboard:	Combined	Combined	12740.00	lbs Includes all accounts that have dumpster service

Average % of serviced accounts (SF)	75%	Average % of participation (SF)	92%
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This month's homes that did not participate in weekly recycling collection were 723 residents

Total inquiries for this month were:	48	Business volume of recycling (in lbs)	3,585
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PARK WEIGHTS	Name	lbs per month
	Harvest Park	0 lbs
	Wakefield Park	0 lbs
	Comm. Garden	0 lbs
	Goodrich Park	0 lbs
	Hazelwood Pk	0 lbs

Summary of report: This month illustrates resident's recycling efforts for both SF and MF Dwellings and Businesses. Contamination was minimal with only .98 % that could not be recycled.

The above recycling break-out reflects the new composite study done in December 2014.

Great job on your recycling efforts.

Sincerely,

*Willie Tennis*

Willie Tennis

Tennis Sanitation



# APPENDIX E - MONTHLY SINGLE FAMILY REPORT DATA

## Maplewood 2015 December

MON RTE # 1						
Week 1	Week 2	Week 3	Week 4	Week 5		
Tons - Load 1	6.15	5.46	6.54	6.86	0.00	
Tons - Load 2	0.00	0.00	0.00	0.00	0.00	
<b>TOTAL Tons</b>	<b>6.15</b>	<b>5.46</b>	<b>6.54</b>	<b>6.86</b>	<b>0.00</b>	<b>Net Total</b>
						<b>25.01</b>
# of Stops	933	933	933	933	933	<b>Averages</b>
Not outs	273	267	255	242	0	191
% of Participation	71%	71%	73%	74%	100%	80%
<b>Lbs per Stop Recycled</b>	<b>18.64</b>	<b>16.40</b>	<b>19.29</b>	<b>19.86</b>	<b>0.00</b>	<b>14</b>

MONDAY						
Week 1	Week 2	Week 3	Week 4	Week 5		
<b>TOTAL Tons</b>	17.08	17.58	15.29	13.33	0.00	<b>Net Total</b>
						<b>63.28</b>
# of Stops	2510	2510	2510	2510	2510	<b>Averages</b>
Not outs	690	730	707	687	0	563
% of Set-outs	73%	71%	72%	73%	100%	78%
<b>Lbs per Stop Recycled</b>	<b>18.77</b>	<b>19.75</b>	<b>16.96</b>	<b>14.62</b>	<b>0.00</b>	<b>14</b>

MON RTE # 2						
Week 1	Week 2	Week 3	Week 4	Week 5		
Tons - Load 1	5.08	5.41	4.11	10.67	0.00	
Tons - Load 2	0.00	0.00	0.00	0.00	0.00	
<b>TOTAL Tons</b>	<b>5.08</b>	<b>5.41</b>	<b>4.11</b>	<b>10.67</b>	<b>0.00</b>	<b>Net Total</b>
						<b>14.60</b>
# of Stops	553	553	553	553	553	<b>Averages</b>
Not outs	174	163	170	146	0	120
% of Participation	69%	71%	69%	74%	100%	78%
<b>Lbs per Stop Recycled</b>	<b>26.81</b>	<b>27.74</b>	<b>21.46</b>	<b>0.00</b>	<b>0.00</b>	<b>12</b>

TUE RTE # 1						
Week 1	Week 2	Week 3	Week 4	Week 5		
Tons - Load 1	6.45	5.68	4.36	5.19	6.03	
Tons - Load 2	0.00	0.00	0.00	0.00	0.00	
<b>TOTAL Tons</b>	<b>6.45</b>	<b>5.68</b>	<b>4.36</b>	<b>5.19</b>	<b>6.03</b>	<b>Net Total</b>
						<b>27.71</b>
# of Stops	736	736	736	736	736	<b>Averages</b>
Not outs	219	205	244	228	212	226
% of Participation	70%	72%	67%	69%	71%	69%
<b>Lbs per Stop Recycled</b>	<b>24.95</b>	<b>21.39</b>	<b>17.72</b>	<b>20.43</b>	<b>23.02</b>	<b>20</b>

TUE RTE # 2						
Week 1	Week 2	Week 3	Week 4	Week 5		
Tons - Load 1	7.02	5.81	5.14	3.96	5.50	
Tons - Load 2	0.00	0.00	0.00	0.00	0.00	
<b>TOTAL Tons</b>	<b>7.02</b>	<b>5.81</b>	<b>5.14</b>	<b>3.96</b>	<b>5.50</b>	<b>Net Total</b>
						<b>27.43</b>
# of Stops	469	469	469	469	469	<b>Averages</b>
Not outs	112	75	103	93	95	90
% of Participation	76%	84%	78%	80%	80%	81%
<b>Lbs per Stop Recycled</b>	<b>39.33</b>	<b>29.49</b>	<b>28.09</b>	<b>21.06</b>	<b>29.41</b>	<b>26</b>

WED RTE # 1						
Week 1	Week 2	Week 3	Week 4	Week 5		
Tons - Load 1	7.20	4.70	4.75	6.04	6.78	
Tons - Load 2	0.00	0.00	0.00	0.00	0.00	
<b>TOTAL Tons</b>	<b>7.20</b>	<b>4.70</b>	<b>4.75</b>	<b>6.04</b>	<b>6.78</b>	<b>Net Total</b>
						<b>29.47</b>
# of Stops	516	516	516	516	516	<b>Averages</b>
Not outs	103	112	103	107	107	106
% of Participation	80%	78%	80%	79%	79%	79%
<b>Lbs per Stop Recycled</b>	<b>34.87</b>	<b>23.27</b>	<b>23.00</b>	<b>29.54</b>	<b>33.15</b>	<b>28</b>

WED RTE # 2						
Week 1	Week 2	Week 3	Week 4	Week 5		
Tons - Load 1	5.85	5.45	4.80	5.45	6.19	
Tons - Load 2	0.00	0.00	0.00	0.00	0.00	
<b>TOTAL Tons</b>	<b>5.85</b>	<b>5.45</b>	<b>4.80</b>	<b>5.45</b>	<b>6.19</b>	<b>Net Total</b>
						<b>27.74</b>
# of Stops	707	707	707	707	707	<b>Averages</b>
Not outs	220	183	177	233	214	203
% of Participation	69%	74%	75%	67%	70%	71%
<b>Lbs per Stop Recycled</b>	<b>24.02</b>	<b>20.80</b>	<b>18.11</b>	<b>23.00</b>	<b>25.11</b>	<b>21</b>

WED RTE # 3						
Week 1	Week 2	Week 3	Week 4	Week 5		
Tons - Load 1	6.37	5.64	4.80	5.45	6.19	
Tons - Load 2	0.00	0.00	0.00	0.00	0.00	
<b>TOTAL Tons</b>	<b>6.37</b>	<b>5.64</b>	<b>4.80</b>	<b>5.45</b>	<b>6.19</b>	<b>Net Total</b>
						<b>28.45</b>
# of Stops	766	766	766	766	766	<b>Averages</b>
Not outs	220	183	177	233	214	203
% of Participation	71%	76%	77%	70%	72%	73%
<b>Lbs per Stop Recycled</b>	<b>23.33</b>	<b>19.35</b>	<b>16.30</b>	<b>20.45</b>	<b>22.43</b>	<b>20</b>

WEDNESDAY						
Week 1	Week 2	Week 3	Week 4	Week 5		
<b>TOTAL Tons</b>	19.42	15.79	14.35	16.94	19.16	<b>Net Total</b>
						<b>85.66</b>
# of Stops	1989	1989	1989	1989	1989	<b>Averages</b>
Not outs	543	478	457	573	535	513
% of Set-outs	73%	76%	77%	71%	73%	74%
<b>Lbs per Stop Recycled</b>	<b>26.86</b>	<b>20.90</b>	<b>18.73</b>	<b>23.93</b>	<b>26.35</b>	<b>23</b>

# APPENDIX E - MONTHLY SINGLE FAMILY REPORT DATA (CONTINUED)

THUR RTE # 1	Week 1	Week 2	Week 3	Week 4	Week 5	
Tons - Load 1	3.25	2.99	2.57	2.44	3.38	
Tons - Load 2	0.00	0.00	0.00	0.00	0.00	
<b>TOTAL Tons</b>	<b>3.25</b>	<b>2.99</b>	<b>2.57</b>	<b>2.44</b>	<b>3.38</b>	<b>Net Total</b>
# of Stops	333	333	333	333	333	<b>14.63</b>
Not outs	99	64	101	125	100	<b>Averages</b>
% of Participation	70%	81%	70%	62%	70%	<b>97</b>
<b>Lbs per Stop Recycled</b>	<b>27.78</b>	<b>22.23</b>	<b>22.16</b>	<b>23.46</b>	<b>29.01</b>	<b>71%</b>
						<b>24</b>

THUR RTE # 2	Week 1	Week 2	Week 3	Week 4	Week 5	
Tons - Load 1	5.92	5.76	5.47	4.71	6.23	
Tons - Load 2	0.00	0.00	0.00	0.00	0.00	
<b>TOTAL Tons</b>	<b>5.92</b>	<b>5.76</b>	<b>5.47</b>	<b>4.71</b>	<b>6.23</b>	<b>Net Total</b>
# of Stops	780	780	780	780	780	<b>28.09</b>
Not outs	246	211	217	279	205	<b>Averages</b>
% of Participation	68%	73%	72%	64%	74%	<b>238</b>
<b>Lbs per Stop Recycled</b>	<b>22.17</b>	<b>20.25</b>	<b>19.43</b>	<b>18.80</b>	<b>21.67</b>	<b>69%</b>
						<b>20</b>

THUR RTE # 3	Week 1	Week 2	Week 3	Week 4	Week 5	
Tons - Load 1	3.25	2.99	2.57	2.44	3.38	
Tons - Load 2	0.00	0.00	0.00	0.00	0.00	
<b>TOTAL Tons</b>	<b>3.25</b>	<b>2.99</b>	<b>2.57</b>	<b>2.44</b>	<b>3.38</b>	<b>Net Total</b>
# of Stops	482	482	482	482	482	<b>14.63</b>
Not outs	118	94	128	151	125	<b>Averages</b>
% of Participation	76%	80%	73%	69%	74%	<b>123</b>
<b>Lbs per Stop Recycled</b>	<b>17.86</b>	<b>15.41</b>	<b>14.52</b>	<b>14.74</b>	<b>18.94</b>	<b>75%</b>
						<b>16</b>

FRI RTE # 1	Week 1	Week 2	Week 3	Week 4	Week 5	
Tons - Load 1	2.88	2.63	3.94	5.94	0.00	
Tons - Load 2	0.00	0.00	0.00	0.00	0.00	
<b>TOTAL Tons</b>	<b>2.88</b>	<b>2.63</b>	<b>3.94</b>	<b>5.94</b>	<b>0.00</b>	<b>Net Total</b>
# of Stops	348	348	348	348	348	<b>15.39</b>
Not outs	98	89	99	107	0	<b>Averages</b>
% of Participation	72%	74%	72%	69%	100%	<b>98</b>
<b>Lbs per Stop Recycled</b>	<b>23.04</b>	<b>20.31</b>	<b>31.65</b>	<b>49.29</b>	<b>0.00</b>	<b>72%</b>
						<b>31</b>

FRI RTE # 2	Week 1	Week 2	Week 3	Week 4	Week 5	
Tons - Load 1	5.86	5.85	5.00	5.67	0.00	
Tons - Load 2	0.00	0.00	0.00	0.00	0.00	
<b>TOTAL Tons</b>	<b>5.86</b>	<b>5.85</b>	<b>5.00</b>	<b>5.67</b>	<b>0.00</b>	<b>Net Total</b>
# of Stops	511	511	511	511	511	<b>22.38</b>
Not outs	109	98	92	127	0	<b>Averages</b>
% of Participation	79%	81%	82%	75%	100%	<b>107</b>
<b>Lbs per Stop Recycled</b>	<b>29.15</b>	<b>28.33</b>	<b>23.87</b>	<b>29.53</b>	<b>0.00</b>	<b>79%</b>
						<b>28</b>

FRI RTE # 3	Week 1	Week 2	Week 3	Week 4	Week 5	
Tons - Load 1	6.63	7.12	5.11	2.35	0.00	
Tons - Load 2	0.00	0.00	0.00	0.00	0.00	
<b>TOTAL Tons</b>	<b>6.63</b>	<b>7.12</b>	<b>5.11</b>	<b>2.35</b>	<b>0.00</b>	<b>Net Total</b>
# of Stops	1035	1035	1035	1035	1035	<b>21.21</b>
Not outs	226	192	182	306	0	<b>Averages</b>
% of Participation	78%	81%	82%	70%	100%	<b>227</b>
<b>Lbs per Stop Recycled</b>	<b>16.39</b>	<b>16.89</b>	<b>11.98</b>	<b>6.44</b>	<b>0.00</b>	<b>78%</b>
						<b>13</b>

THURSDAY ROUTE SUMMARY FOR						December	2015	
THURSDAY	Week 1	Week 2	Week 3	Week 4	Week 5			
<b>TOTAL Tons</b>	<b>12.42</b>	<b>11.74</b>	<b>10.61</b>	<b>9.59</b>	<b>12.99</b>		<b>Net Total</b>	<b>57.35</b>
# of Stops	1595	1595	1595	1595	1595		<b>Averages</b>	
Not outs	463	369	446	555	430			<b>458</b>
% of Set-outs	71%	77%	72%	65%	73%			<b>71%</b>
<b>Lbs per Stop Recycled</b>	<b>21.94</b>	<b>19.15</b>	<b>18.47</b>	<b>18.44</b>	<b>22.30</b>			<b>20</b>

FRIDAY ROUTE SUMMARY FOR						December	2015	
FRIDAY	Week 1	Week 2	Week 3	Week 4	Week 5			
<b>TOTAL Tons</b>	<b>15.37</b>	<b>15.60</b>	<b>14.05</b>	<b>13.96</b>	<b>0.00</b>		<b>Net Total</b>	<b>58.98</b>
# of Stops	1894	1894	1894	1894	1894		<b>Averages</b>	
Not outs	433	379	373	540	0			<b>431</b>
% of Set-outs	77%	80%	80%	71%	100%			<b>77%</b>
<b>Lbs per Stop Recycled</b>	<b>21.04</b>	<b>20.59</b>	<b>18.47</b>	<b>20.62</b>	<b>0.00</b>			<b>20</b>

Other Recycling Materials:						
	Week 1	Week 2	Week 3	Week 4	Week 5	Net Total
Total Cardboard (lbs)	2500	2500	2520	2600	2620	<b>12740</b>
**Total Linens (lbs)	100	150	100	138	0	<b>488</b>

# City of Maplewood Recycling

## 2016 Work Plan



Prepared by Tennis Sanitation, L.L.C.



## 2016 Maplewood Recycling Work Plan

### A. **Promote Small Business and Church Recycling:**

Tennis will continue to work with the City to promote business recycling when opportunities arise. This includes:

1. Work with the City to add ten more businesses to business recycling program
2. Attend business outreach events when needed. This may include, but is not limited to HEDC meetings, City Council meetings, and Chamber of Commerce events.
3. Notify the City when Maplewood businesses contact Tennis and provide single-sort recycling information to businesses that want to participate in the City of Maplewood recycling program
4. Supply 95 gallon carts to all businesses and organizations that opt into the City's recycling program.
5. Explore the option of providing a larger dumpster to commercial recycling accounts.

### B. **Expand Recycling Education Materials in Bilingual Languages and Magnets:**

In 2015, Tennis made translations of their recycling guide available in Spanish. In 2016, Tennis will work with the city to develop additional recycling educational materials including fridge magnets. These new educational pieces will be based on images so that recent Hmong and East African immigrants can understand what is accepted in the program. The City will contact multi-unit managers to see if they would like any of the translated educational materials.

### C. **Targeted Education to Low and Non-Participating Residents with Behavior Survey:**

Tennis maintains a list of residents who do not participate in the City's recycling program. The nonparticipation list is based upon the number of "Not Outs" per year that the drivers record during their routes.

1. Tennis will send out a survey to a group of residents who do not participate in the Maplewood recycling program. The participation survey will try to determine what barriers exist to participating in the recycling program and the larger question of why a small amount of residents are not recycling.
2. Based on responses from the survey, Tennis will work with the City to fine tune outreach efforts to the residents who are not participating.

**D. Arrange End-Market Tours:**

Tennis will schedule a tour of end-market recycling vendors for the Environmental and Natural Resources Commission and City Council. The tours will spotlight how recyclable materials from Maplewood's recycling program are made into usable items.

**E. Explore Options Available for Processing and Recycling Styrofoam:**

Tennis will reach out to existing companies that collect and recycle Styrofoam and determine if there are sufficient markets and infrastructure available. Based on feedback from the various companies, Tennis will develop a feasibility study to determine if Styrofoam is reasonable to collect in the Maplewood recycling program.

**F. Increase Public Space Recycling:**

When opportunities arise, Tennis will provide recommendations and feedback to City staff on best practices for public space recycling. This includes providing feedback on recycling opportunities in City parks and at special events.

## Tennis Sanitation Annual Recycling Performance Review

April 11<sup>th</sup> 2016 City Council




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- Tennis Sanitation, Maplewood's Residential Recycling Contractor since 2011
- Current contract: Four Years (2014-2017)
- Contract Requires an Annual Review
  - Recycling Report
  - Recycling Work Plan



**Annual Review**

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### 2015 Recycling Report

	2014	2015
Average pounds per single family household per month	53.48 lbs	53.48 lbs
Annual net total tons collected for single family households	2,949.92 tons	2949.94 tons
Average pounds per multi-family household per month	12.95 lbs	13.04 lbs
Annual net tons collected at multi-family households	312.64 tons	314.66 tons

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### 2015 Recycling Work Plan

- Recycling cart and household audit.
- Promote business recycling.
- Targeting education to low and non-participating residents.
- Expanded recycling education materials to languages besides english.
- Recycling education for multi-family homes.
- Arrange end-market tours.
- Promote the "name that skunk" activity.




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### Recycling education for multi-family homes.

- Tennis worked with City staff to provide education and recycling supplies to multiunit managers.
- Direct mailers with annual recycling weight sent to managers along with a follow up call.
- Outreach included promoting materials in spanish.



### 2015 Recycling Work Plan

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### Small Businesses and Churches

- Small businesses collection weights
  - 2013 - 2,855 lbs
  - 2014 - 30,157 lbs
  - 2015 - 45,885 lbs
- 22 businesses currently in the program
- Partnership between Tennis, Waste Wise, and the City has produced results!

### 2015 Recycling Work Plan

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## 2016 Work Plan Update

- **Promote Small Business and Church Recycling.**  
Businesses in Ramsey County are now required to recycle at least 4 types of material (plastic, paper, cardboard, metal, or organics etc.)
- **Expanded Recycling Education Materials to other Languages and Provide Magnets.**  
Work with the county to get more translated material. The educational material will be targeted to Hmong and East African immigrants.
- **Arrange End-Market Tours**  
City representatives toured Strategic Materials last year and wish to see where more of our recycled material goes.

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## 2016 Work Plan Update

- **Targeting Education to Low and Non-Participating Residents with Behavior Survey**  
Tennis maintains a list of nonparticipants. A survey will be sent to the residents who currently do not recycle to determine what barriers there may be to participating in the recycling program.




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## 2016 Work Plan Update

- **Explore Options Available for Processing and Recycling Styrofoam**  
Tennis will develop a feasibility study to determine if Styrofoam is reasonable to include in the Maplewood recycling program.
- **Increase Public Space Recycling**  
Tennis will provide feedback to staff about public space (special events and parks) recycling when warranted.




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Questions?

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