

# **Waste Audit and Energy and Greenhouse Gas Emissions Evaluation of Alternative Waste Management Options at a College Football Stadium**

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Tables: 13

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The following tables include the output from the EPA's Waste Reduction Model for the eleven scenarios modeled in the accompanying manuscript.

**Table S1. Landfill original mix of materials - basecase**

<b>Material</b>	<b>Total MTCO2E</b>	<b>Total Million BTU</b>	<b>MJ</b>
Aluminum Cans	0.02	0.29	304.8
Glass	0.05	0.67	708.8
LDPE	0.07	0.96	1016.1
PP	0.07	0.96	1016.1
PS	0.07	0.96	1016.1
Corrugated Containers	-0.48	-0.97	-1022.3
Food Waste (non-meat)	0.86	0.02	24.5
Beef	0.96	0.03	27.3
Poultry	1.73	0.05	49.4
Bread	2.26	0.06	64.5
Fruits and Vegetables	5.15	0.14	147.1
Dairy Products	0.71	0.02	20.4
Mixed Paper (general)	-0.34	-0.50	-527.4
Mixed Plastics	0.04	0.58	606.7
<i>Total:</i>	<i>11.18</i>	<i>3.27</i>	<i>3452.2</i>

**Table S2. Scenario 1: Landfill/Recycle**

<b>Material</b>	<b>Total MTCO2E</b>	<b>Total Million BTU</b>	<b>MJ</b>
Aluminum Cans	-5.17	-86.76	-91533.3
Glass	-0.37	-2.83	-2988.3
LDPE	0.07	0.96	1016.1
PP	0.07	0.96	1016.1
PS	0.07	0.96	1016.1
Corrugated Containers	-11.59	-55.97	-59054.2
Food Waste (non-meat)	0.86	0.02	24.5
Beef	0.96	0.03	27.3
Poultry	1.73	0.05	49.4
Bread	2.26	0.06	64.5
Fruits and Vegetables	5.15	0.14	147.1
Dairy Products	0.71	0.02	20.4
Mixed Paper (general)	-7.10	-41.02	-43281.4
Mixed Plastics	-1.17	-44.39	-46832.4
<i>Total</i>	<i>-13.50</i>	<i>-227.77</i>	<i>-240308.0</i>

*difference compared to basecase*      -24.69      -231.04      -243760.2

**Table S3. Scenario 2a: Landfill/Recycle & Compost (Paper is recycled)**

<b>Material</b>	<b>Total MTCO2 E</b>	<b>Total Million BTU</b>	<b>MJ</b>
Aluminum Cans	-5.17	-86.76	-91533.1
Glass	-0.37	-2.83	-2987.7
LDPE	0.07	0.96	1016.1
PP	0.07	0.96	1016.1
PS	0.07	0.96	1016.1
Corrugated Containers	-11.59	-55.97	-59052.7
Food Waste (non-meat)	-0.37	1.36	1438.6
Beef	-0.41	1.52	1604.3
Poultry	-0.75	2.75	2901.8
Bread	-0.98	3.59	3785.2
Fruits and Vegetables	-2.23	8.18	8633.4
Dairy Products	-0.31	1.13	1196.3
Mixed Paper (general)	-7.10	-41.02	-43280.6
Mixed Plastics	-1.17	-44.39	-46831.9
<i>Total</i>	<i>-30.23</i>	<i>-209.54</i>	<i>-221078.1</i>

*difference compared to basecase*      -41.41              -212.8              -224,530.4

**Table S4. Scenario 2b: Landfill/Recycle & Compost (Paper is composted as "mixed organics")**

<b>Material</b>	<b>Total MTCO2E</b>	<b>Total Million BTU</b>	<b>MJ</b>
Aluminum Cans	-5.17	-86.76	-91533.1
Glass	-0.37	-2.83	-2987.7
LDPE	0.07	0.96	1016.1
PP	0.07	0.96	1016.1
PS	0.07	0.96	1016.1
Food Waste (non-meat)	-0.37	1.36	1438.6
Beef	-0.41	1.52	1604.3
Poultry	-0.75	2.75	2901.8
Bread	-0.98	3.59	3785.2
Fruits and Vegetables	-2.23	8.18	8633.4
Dairy Products	-0.31	1.13	1196.3
Mixed Plastics	-1.17	-44.39	-46831.9
Mixed Organics	-0.80	3.24	3414.6
<i>Total</i>	<i>-12.35</i>	<i>-109.31</i>	<i>-115330.2</i>

*difference compared to basecase*      -23.53              -112.58              -118,782.42

**Table S5. Scenario 3: Materials replacement for non-recyclables, Recycle and Compost**

<b>Material</b>	<b>Total MTCO2E</b>	<b>Total Million BTU</b>	<b>MJ</b>
Aluminum Cans	-5.17	-86.76	-91533.1
Glass	-0.37	-2.83	-2987.7
PLA	-0.72	3.21	3387.6
Corrugated Containers	-11.59	-55.97	-59052.7
Food Waste (non-meat)	-0.37	1.36	1438.6
Beef	-0.41	1.52	1604.3
Poultry	-0.75	2.75	2901.8
Bread	-0.98	3.59	3785.2
Fruits and Vegetables	-2.23	8.18	8633.4
Dairy Products	-0.31	1.13	1196.3
Mixed Paper (general)	-7.10	-41.02	-43280.6
Mixed Plastics	-1.17	-44.39	-46831.9
<i>Total</i>	<i>-31.16</i>	<i>-209.22</i>	<i>-220738.9</i>

*diff w/ original base case*      -42.35                      -212.49                      -224191.17

**Table S6. Scenario 4: Materials replacement for all materials, Compost Everything**

<b>Material</b>	<b>Total MTCO2E</b>	<b>Total Million BTU</b>	<b>MJ</b>
PLA	-1.10	4.92	5188.2
Food Waste (non-meat)	-0.37	1.36	1438.6
Beef	-0.41	1.52	1604.3
Poultry	-0.75	2.75	2901.8
Bread	-0.98	3.59	3785.2
Fruits and Vegetables	-2.23	8.18	8633.4
Dairy Products	-0.31	1.13	1196.3
Mixed Organics	-0.80	3.24	3414.6
<i>Total</i>	<i>-6.95</i>	<i>26.69</i>	<i>28162.3</i>

*diff w/ original base case*      -18.14                      23.42                      24710.03

**Table S7. Scenario 5a: reduce the edible food waste, landfill everything else**

<b>Material</b>	<b>Total MTCO2E</b>	<b>Total Million BTU</b>	<b>MJ</b>
Aluminum Cans	0.02	0.29	304.8
Glass	0.05	0.67	708.8
LDPE	0.07	0.96	1016.1
PP	0.07	0.96	1016.1
PS	0.07	0.96	1016.1
Corrugated Containers	-0.48	-0.97	-1022.3
Food Waste (non-meat)	-1.83	-17.36	-18315.8
Beef	-80.84	-171.84	-181296.9
Poultry	-12.04	-128.84	-135935.5
Bread	-4.24	-41.29	-43559.5
Fruits and Vegetables	-0.68	-37.08	-39123.5
Dairy Products	-3.50	-28.62	-30194.3
Mixed Paper (general)	-0.34	-0.50	-527.4
Mixed Plastics	0.04	0.58	606.7
<i>Total</i>	<i>-103.61</i>	<i>-422.07</i>	<i>-445306.6</i>

*diff w/ original base case*      -114.80      -425.34      -448758.85

**Table S8. Scenario 5b: reduce the edible food waste, recycle and compost (like 2a)**

<b>Material</b>	<b>Total MTCO2E</b>	<b>Total Million BTU</b>	<b>MJ</b>
Aluminum Cans	-5.17	-86.76	-91533.1
Glass	-0.37	-2.83	-2987.7
LDPE	0.07	0.96	1016.1
PP	0.07	0.96	1016.1
PS	0.07	0.96	1016.1
Corrugated Containers	-11.59	-55.97	-59052.7
Food Waste (non-meat)	-1.83	-17.36	-18315.8
Beef	-80.84	-171.84	-181296.9
Poultry	-12.04	-128.84	-135935.5
Bread	-4.24	-41.29	-43559.5
Fruits and Vegetables	-4.32	-33.11	-34933.6
Dairy Products	-3.50	-28.62	-30194.3
Mixed Paper (general)	-7.10	-41.02	-43280.6
Mixed Plastics	-1.17	-44.39	-46831.9
<i>Total</i>	<i>-131.95</i>	<i>-649.13</i>	<i>-684873.4</i>

*diff w/ original base case*      -143.13      -652.41      -688325.63

**Table S9. Scenario 5c: reduce the edible food waste, Landfill/Recycle & Compost (Paper is composted as "mixed organics") like 2b**

<b>Material</b>	<b>Total MTCO2E</b>	<b>Total Million BTU</b>	<b>MJ</b>
Aluminum Cans	-5.17	-86.76	-91533.1
Glass	-0.37	-2.83	-2987.7
LDPE	0.07	0.96	1016.1
PP	0.07	0.96	1016.1
PS	0.07	0.96	1016.1
Food Waste (non-meat)	-1.83	-17.36	-18315.8
Beef	-80.84	-171.84	-181296.9
Poultry	-12.04	-128.84	-135935.5
Bread	-4.24	-41.29	-43559.5
Fruits and Vegetables	-4.32	-33.11	-34933.6
Dairy Products	-3.50	-28.62	-30194.3
Mixed Plastics	-1.17	-44.39	-46831.9
Mixed Organics	-0.80	3.24	3414.6
<i>Total</i>	<i>-114.06</i>	<i>-548.90</i>	<i>-579125.4</i>

*diff w/ original base case*      -125.25              -552.18              -582577.69

**Table S10. Scenario 5d: reduce the edible food waste, materials replacement for plastic 3-6, recycle and compost**

<b>Material</b>	<b>Total MTCO2E</b>	<b>Total Million BTU</b>	<b>MJ</b>
Aluminum Cans	-5.17	-86.76	-91533.1
Glass	-0.37	-2.83	-2987.7
PLA	-0.72	3.21	3387.6
Corrugated Containers	-11.59	-55.97	-59052.7
Food Waste (non-meat)	-1.83	-17.36	-18315.8
Beef	-80.84	-171.84	-181296.9
Poultry	-12.04	-128.84	-135935.5
Bread	-4.24	-41.29	-43559.5
Fruits and Vegetables	-4.32	-33.11	-34933.6
Dairy Products	-3.50	-28.62	-30194.3
Mixed Paper (general)	-7.10	-41.02	-43280.6
Mixed Plastics	-1.17	-44.39	-46831.9
<i>Total</i>	<i>-132.88</i>	<i>-648.81</i>	<i>-684534.2</i>

*diff w/ original base case*      -144.06              -652.09              -687986.44

**Table S11. Scenario 5e: reduce the edible food waste, materials replacement, compost**

Material	Total MTCO2E	Total Million BTU	MJ
PLA	-1.10	4.92	5188.2
Food Waste (non-meat)	-1.83	-17.36	-18315.8
Beef	-80.84	-171.84	-181296.9
Poultry	-12.04	-128.84	-135935.5
Bread	-4.24	-41.29	-43559.5
Fruits and Vegetables	-4.32	-33.11	-34933.6
Dairy Products	-3.50	-28.62	-30194.3
Mixed Organics	-0.80	3.24	3414.6
<i>Total</i>	<i>-108.67</i>	<i>-412.90</i>	<i>-435633.0</i>

*diff w/ original base case*      -119.85      -416.17      -439085.24

**Table S12. Data corresponding to Figure 2 Food waste, by type, from pre-consumer and un-sold food waste audit.**

	Total										
	Food Waste	Grain	Fruit	Vegetable	Poultry	Pork	Beef	Fish	Dairy	Eggs	Other <sup>1</sup>
	metric tons										
S Dakota 8/30/2014	6.48	1.2	2.1	0.95	0.08	0.94	0.37	0.007	0.18	0.15	0.49
Central Florida 9/13/2014	3.29	0.62	1.1	0.48	0.04	0.48	0.19	0.004	0.09	0.07	0.25
Indiana 9/20/2014	2.76	0.52	0.89	0.40	0.04	0.40	0.16	0.003	0.08	0.06	0.21
Georgia 10/11/2014	4.02	0.75	1.3	0.59	0.05	0.58	0.23	0.004	0.11	0.09	0.31
Vanderbilt 10/25/2014	3.02	0.57	0.98	0.44	0.04	0.44	0.17	0.003	0.08	0.07	0.23
Kentucky 11/1/2014	8.13	1.5	2.63	1.2	0.10	1.2	0.46	0	0.23	0.18	0.62
Arkansas 11/28/2014	0.82	0.15	0.27	0.12	0.01	0.12	0.05	0.001	0.02	0.02	0.06
<b>TOTAL</b>	<b>28.52</b>	<b>5.35</b>	<b>9.22</b>	<b>4.17</b>	<b>0.36</b>	<b>4.14</b>	<b>1.63</b>	<b>0.03</b>	<b>0.79</b>	<b>0.65</b>	<b>2.18</b>

**Table S13. Data corresponding to Figure 3: Approximate weights by major category of pre-consumer, un-sold and post-consumer food waste.**

	<b>Total waste (tons)</b>	<b>Food waste</b>	<b>Recyclables</b>	<b>Landfill</b>
S Dakota 8/30/2014	9.45	7.14	1.20	1.11
Central Florida 9/13/2014	5.31	3.75	0.83	0.73
Indiana 9/20/2014	5.17	3.32	1.01	0.84
Georgia 10/11/2014	6.80	4.66	1.15	0.99
Vanderbilt 10/25/2014	6.40	3.81	1.43	1.16
Kentucky 11/1/2014	10.59	8.65	0.95	0.99
Arkansas 11/28/2014	3.51	1.47	1.16	0.88
<b>TOTAL</b>	<b>47.23</b>	<b>32.8</b>	<b>7.73</b>	<b>6.7</b>



**Food Waste Project Data Form – Stadium Waste**

Circle location: (East CanDo) (West CanDo) (South CanDo) (East Concourse) (West Concourse)

Name of person(s) sorting/sampling:

Date and time of bag collection:

Non-food Materials:

<b>Material</b>	<b>Weight (kg)</b>	<b>Description</b>
<b>Recyclables</b>		
# 1 and 2 plastic		
Aluminum		
Glass		
Other		
<b>Compostable non-food materials</b>		
<b>Landfill trash</b>		
#3-6 plastic		
<b>Other</b>		

**Food Materials** Sort the material into the primary ingredients, by edible and inedible, and weigh each:

<b>Category</b>	<b>Edible (g)</b>	<b>Inedible (g)</b>	<b>Description of Organic Material</b>
Grains			
Beef			
Other meats			
Dairy			
Fruit			
Vegetables			
Other			
Other			