

# FINAL RECYCLING REPORT



## *ONE the north end*

Milwaukee, WI

**Mandel Group, Inc.**

September 2009

### **WasteCap Resource Solutions**

131 West Seeboth St.

Milwaukee, WI 53204

414.961.1100

wastecap@wastecap.org

www.wastecap.org



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# I n t r o d u c t i o n

Successful waste reduction, reuse and recycling on the ONE the north end project in Milwaukee, WI was made possible through the cooperation of every person on this project and many off the site – the owner, contractor, subcontractors, hauler, local resource people, and many others. The project had the cooperation of hundreds of individuals all working to separate and recover resources that became new products instead of waste. Crews from all trades were extremely cooperative with the reuse and recycling program. Crews diverted **1,841 cubic yards** equaling **389 tons** of reusables and recyclables, diverting **87.42%** of the construction waste by reusing and recycling – exceeding our goal of 75%.

WasteCap Resource Solutions provided the following services for this project:

- Provided a Construction Waste Management Plan.
- Provided Construction Waste Management Language for subcontractors.
- Provided technical assistance, market information, and research support.
- Instructed and educated subcontractors about their role in the program.
- Organized presentations for workers.
- Developed educational materials for job site crews.
- Conducted monthly waste audits and monitored the recycling program.
- Documented recycling results and provided monthly reports.
- Celebrated success of the program.

## T h e D o c u m e n t a t i o n o f M a t e r i a l s

WasteCap collected hauling invoices monthly from United Disposal and City Wide Recycling to document the weight and volume of trash and recyclable materials from the project site. For some materials we were not able to get the actual weight from the hauler, so WasteCap used conversion numbers from the EPA.

WasteCap entered the information into a database that documented all materials leaving the site, and their weight and volume. WasteCap created monthly summaries to report the quantity of each material recycled and reused. We also documented the recycling process through photographs and monthly reports.

We provided monthly reports to the Mandel Group of our observations, improvements made or needing to be made, progress on issues such as market development, and a summary of waste and recycled materials. The summary of waste listed each material reused, recycled and disposed, the total tons of each material generated to date, the total tons of each material generated for that month, and the diversion rate for that month and to date.



**Mandel Group/ KBS Construction**  
**ONE- the north end Milwaukee, WI**

**Monthly Report**  
**April 2009**

WasteCap Wisconsin, Inc. is providing recycling planning assistance, educational assistance, monitoring support and document results of construction waste management efforts for Mandel Group, Inc. during construction of the ONE in Milwaukee, WI. Construction will occur for approximately 10 months from July 15, 2008 – Summer, 2009. The project is seeking LEED ND and has a goal to achieve a 75% recycling rate.

**1. Conduct Waste Audit and Monitor Program**

One site visit was performed on April 22, 2009 – Earth Day. The following was observed:

- The drywall dumpster had no contamination. It is located near the building, which provides a very convenient location for loading.
- The trash dumpster had a small amount of cardboard. WasteCap witnessed the home theater subcontractor putting his cardboard into this dumpster. The sign for this dumpster was on the opposite end so it was not visible. KM staff will most likely correct this contamination.
- The wood dumpsters had no contamination.

**2. Recycling Results**

**March Recycling Results (Actual)**

Material	March 2009 Volume (yd <sup>3</sup> )	March 2009 Weight (tons)	July 2008 through March 2009 Volume (yd <sup>3</sup> )	July 2008 through March 2009 Weight (tons)
Cardboard	30	1.82	30	1.82
Mixed C&D Recycled	340.20	60.61	891	146.89
Concrete	60	16.38	204	138.32
Drywall	0	0	0	0
Metal	0	0	0	0
Reuse	0	0	0	0
Wood	30	2.62	150	20.83
<b>Total Recycled</b>	<b>460.20</b>	<b>81.43</b>	<b>1275</b>	<b>308</b>
<b>Mixed C&amp;D Landfilled</b>	<b>79.80</b>	<b>14.22</b>	<b>261</b>	<b>45.11</b>
<b>% Recycled</b>	<b>85.22%</b>	<b>85.14%</b>	<b>83.01%</b>	<b>87%</b>

Please put the Total Recycled and % Recycled numbers (Large & bold) on your job sign.

- There are no records on drywall dumpsters on the February or March records from United Disposal. Most likely the drywall dumpsters were taken to City Wide Recycling and not the West Bend Farm as recommended by WasteCap WI. KBS should look into this matter.

# M a t e r i a l s   R e c y c l e d

♻️ ♻️ 389 TOTAL TONS RECYCLED ♻️ ♻️



## C a r d b o a r d

3.59 TONS RECYCLED ♻️

At the start of the project, cardboard was put in the trash dumpster and taken to City Wide Recycling. When more cardboard was generated, a 20 yard open dumpster was used and taken to Recycle America. It was sorted, bundled, and sold to be made into new paper products.



# C o n c r e t e

158 TONS RECYCLED ♻️

Washed out concrete from concrete delivery trucks was allowed to harden, and then placed in a 20 yard dumpster along with masonry, stone and tile. The concrete and brick was hauled



to a recycler, crushed, and made into new concrete or as general construction gravel for roadbeds and fill.

# W o o d

28.4 TONS RECYCLED ♻️

Unpainted, untreated scrap wood was separated both for reuse and recycling. The scrap wood included packaging wood (e.g. from windows), pallets, clean dimensional wood, heavy wood beams, plywood, OSB and particle board. Dimensional lumber over 4' in good condition was stockpiled in a separate location for reuse when short-length pieces are needed. Scrap wood not reused was placed in a separate dumpster for recycling. The scrap wood not reused was chipped, dyed and used as landscaping mulch.



## R e u s e

2 2 TONS RECYCLED 

A water tower that was used by the original tannery complex was carefully stored for reuse as a project focal point. The 42,000 pound steel tank was refurbished and given a fresh coat of paint.



## R e c y c l i n g R e s u l t s

3 8 9 . 0 1 TONS RECYCLED 

Between May 2008 and June 2009, a total of 445 tons of debris was generated on the ONE the north end project. 56 tons of debris was landfilled. The rest was recycled or reused.

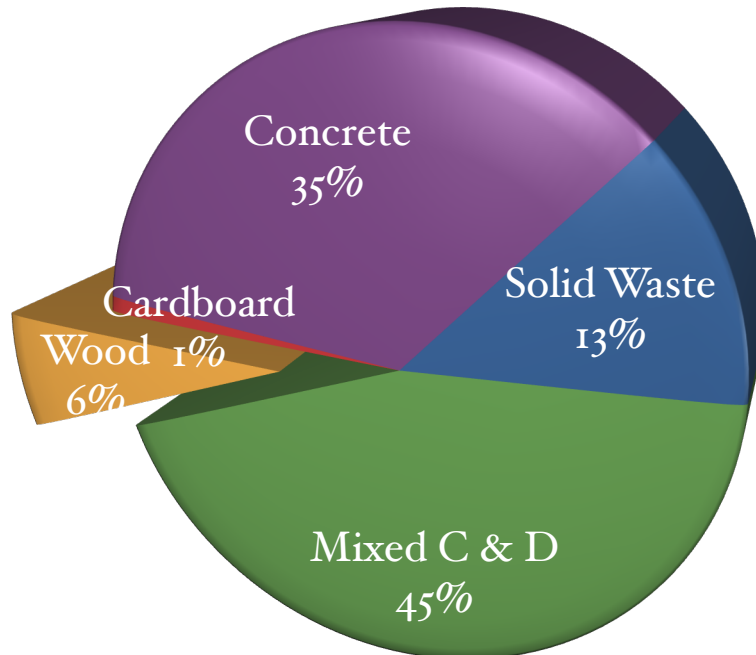
**The Final Recycling Rate for the Project was:**

**87.42% By Weight**  
**84.08 % By Volume**

**Table I- Total Recycling Rate (Actual)**

MATERIAL	VOLUME (YD <sup>3</sup> )	WEIGHT (TONS)
Cardboard	60.00	3.59
Mixed C & D (Recycled)	1,313.40	199.51
Concrete	228.00	157.51
Wood	240.00	28.40
<b>TOTAL RECYCLED</b>	<b>1,841.40</b>	<b>389.01</b>
Solid Waste	349	55.99
<b>TOTAL</b>	<b>2,190.00</b>	<b>445.00</b>
<b>PERCENT RECYCLED</b>	<b>84.08%</b>	<b>87.42%</b>

- Solid Waste
- Mixed C & D
- Wood
- Cardboard
- Concrete



**Table II- Total Recycling Rate  
(INCLUDING Reused Water Tower and Existing Building Demolition)**

MATERIAL	VOLUME (YD <sup>3</sup> )	WEIGHT (TONS)
Cardboard	60.00	3.59
Mixed C & D (Recycled)	1,313.40	199.51
Concrete	21,228.00	42,157.51
Wood	240.00	28.40
Reuse	162.80	22.00
<b>TOTAL RECYCLED</b>	<b>23,004.20</b>	<b>42,411.01</b>
Landfilled Trash	349	55.99
<b>TOTAL</b>	<b>23,352.80</b>	<b>42,467.00</b>
<b>PERCENT RECYCLED</b>	<b>98.51%</b>	<b>99.87%</b>

### Conversion Figures

In order to calculate the volume or the weight of materials for which complete data was not available, conversion figures were used. For example, for wood, it was known how many cubic yards of wood were removed from the project. This number had to be converted into weight using the numbers listed below:

### List of Conversion Figures

EPA CONVERSION (1)	TRASH	ASPHALT	BOTTLES & CANS	CARD-BOARD	CONCRETE	DRY-WALL	METAL	WOOD
AVERAGE YARDS PER TON	5.71	0.64	8.27	20	0.50	4	7.4	5.26
AVERAGE TONS PER YARD	0.175	1.55	0.12	0.05	2	0.2	0.135	0.19

(1) EPA Standard Volume-to-Weight Conversion Factors:  
[http://www.epa.gov/recycle.measure/docs/guide\\_b.pdf](http://www.epa.gov/recycle.measure/docs/guide_b.pdf).

## C o n c l u s i o n

In conclusion, WasteCap wishes to thank the Mandel Group and KBS Construction for the experience of working together with them on the ONE the north end project. It has been our privilege to work with your team of skilled, professional employees who are committed to quality and craftsmanship and share WasteCap's values of building in a responsible manner for the benefit of our clients and our state's environment. Because of the teamwork of the owner, architect, general contractor, haulers and workers, this project was a success. It recovered **1,841 cubic yards** of materials, and saved money by avoiding disposal costs. The recycling efforts earned the cooperation of all crews and was fairly simple for them to follow. Congratulations to all on an economic and environmental success story.



# C o n t a c t I n f o r m a t i o n

## MANDEL GROUP, INC. [CLIENT]

### **Phillip Aiello, Senior Development Manager**

301 E. Erie Street  
Milwaukee, WI 53202  
(414) 347.3600  
www.thenorthend.com

paiello@mandelgroup.com



## KBS CONSTRUCTION [GENERAL CONTRACTOR]

### **Pat Babe, Superintendent**

4425 W. Mitchell St.  
Milwaukee, WI 53214  
(414) 291.5430  
www.kbsconstruction.com

pbabe@kbsconstruction.com



## UNITED DISPOSAL SERVICES [WASTE & RECYCLING HAULER]

### **Erin Fisher, Account Representative**

2751 South Chase Ave.  
Milwaukee, WI 53207  
(414) 489.1970  
www.uniteddisposalservices.com

erin@uniteddisposalservices.com



## WASTECAP RESOURCE SOLUTIONS [CONSTRUCTION WASTE MANAGEMENT]

### **Jenna Kunde, Executive Director**

### **John Lottes, AIA Project Manager**

131 W. Seeboth St.  
Milwaukee, WI 53204  
(414) 961.1100  
www.wastecap.org

jkunde@wastecap.org

jlottes@wastecap.org

