How A Waste Assessment Can GREEN Your Building Operation

FGBC Greentrends 2011

June 1 – 3, 2011

Miriam Kessler, Kessler Consulting, Inc.

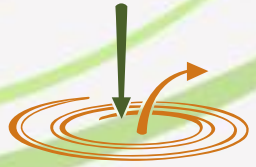
Cynthia Barber, City of Tallahassee

What is a Waste Assessment?

- **Visual** analysis of
  - Waste in the workplace, and/or
  - Recyclables in the workplace
  - Types and quantities
  - Waste management practices
  - Opportunities for Waste Prevention/Reduction
- Powerful tool to continuously improve green building operations
  - Identify opportunities for managing materials and resources

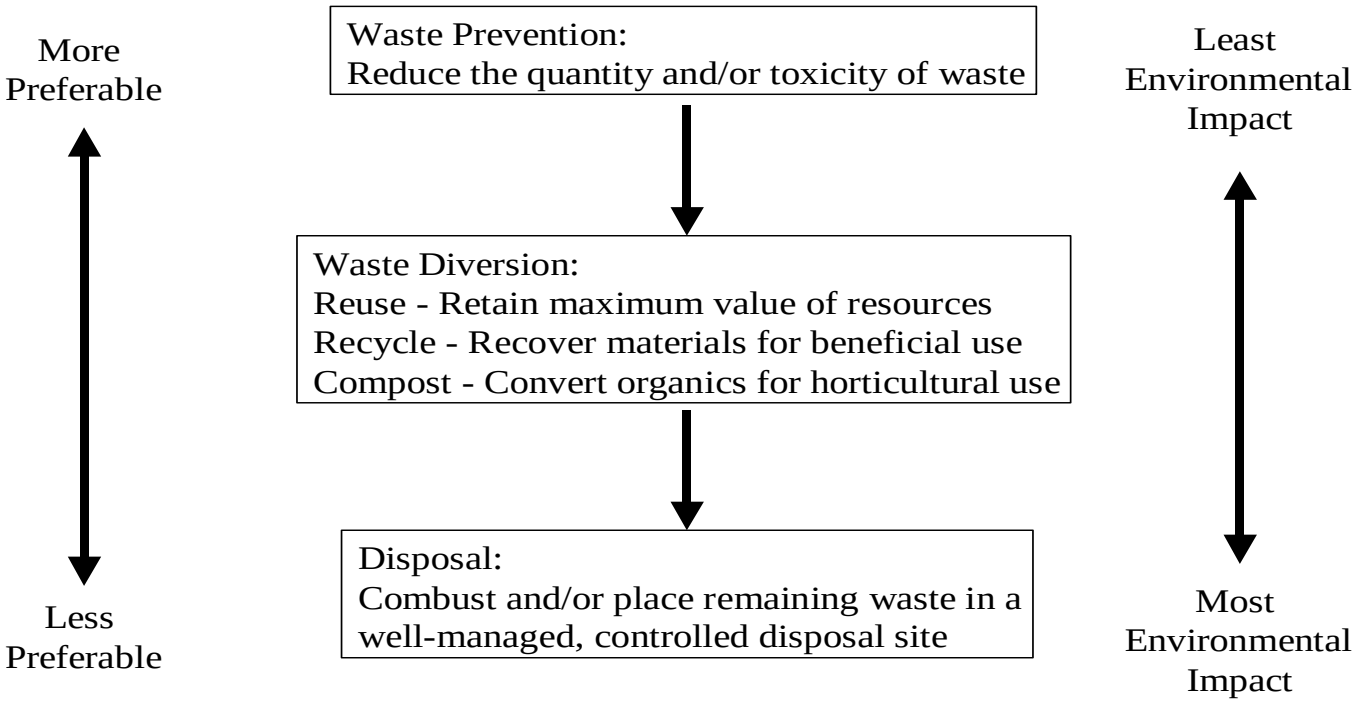
Definitions Are Important

- Waste Prevention
  - P2, Source Reduction
  - Quantity and Toxicity
- Waste Diversion
  - Reuse
  - Recycling
  - Composting
- Environmentally Preferable Procurement
  - Recycled content material, etc.



Definitions:

US EPA Waste Management Hierarchy



Owner Benefits

- Collection and disposal cost savings
- Improve work practice efficiencies
- Enhance existing environmental initiatives
- Improve employee morale
- Green Programs/Contributions
- Qualitative complement to quantitative waste composition study

Purpose of a Waste Assessment

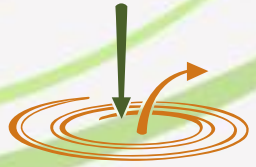
- Define sources and types of waste
- Estimate quantities of waste generated
- Identify opportunities for
  - Waste reduction
  - Cost savings
  - Education and outreach

Purpose of a Waste Assessment (cont'd)

- Start or rejuvenate recycling program
- Gain employee support for green initiatives
- Qualify for LEED® certification
  - Existing Buildings: Operations and Maintenance

Six Basic Steps

1) Planning
2) Building Demographics
3) Information/Data Gathering
4) On-Site Analysis
5) Employee Input/Feedback
6) Analysis of Qualitative Findings



Planning – Step 1

- Define objectives and expected outcomes
- ID assessors and equipment
- Identify major waste types (anticipated)
- Timing of event

Building Demographics – Step 2

Building Type

1. Free Standing (O, PM)
2. Strip Mall (O, PM)
3. High Rise (O, PM)
4. Office Park (O, PM)

Size

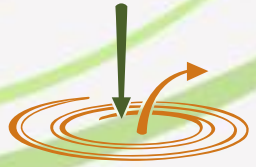
1. Square Footage
2. Floors/Levels
3. Cafeteria
4. Special/Other

Business Activities

Occupants/Job Function

Internal Design/Flow

External Design/Flow



Information/Data Gathering – Step 3

Building Information

- Square footage
- Hours of operation
- Employee population
- Public Access
- Organizational Chart
- Floor Map

Historical Data

SW Collection

(1) Container Type and Size

(2) Service/Week

(3) Disposal Fees

Recycling Collection

(1) Container Type and Size

(2) Service/Week

On-Site Analysis – Step 4

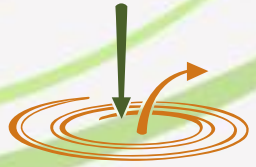
- Facilities/Custodial staff interviews
- Employee volunteers and training
- Equipment
- Visual observation during walk through
  - Internal
  - External
- Clip Boards/Forms/Phone #s

Employee Input/Feedback – Step 5

- Electronic Survey
- Interview during on-site analysis
- Casual discussions with groups at lunch
- Convene informal employee focus group
- Green Team members

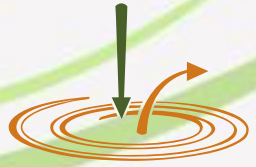
Qualitative Analysis – Step 6

- **Type of Waste Generated**
  - MSW
  - SW
  - HW
  - Industrial Waste
- **Total Amount of Waste Generated**
  - Volume or tons
  - Volume to tons conversion
- **Type and quantity of containers**
- **Container content**
  - Quantity
  - Quality
    - Recyclables in garbage;
    - Contamination in recycling bins



Qualitative Findings - Step 6 (cont'd)

- C**ollection costs and data** with recommended savings
- **Spreadsheets and graphs** from forms and data
- **Common themes/issues** that offer standardization and solutions
- **Employee solution**s to challenges - link to pertinent data findings
- **Photos** help **tell** the **story** to owners
- Provide results in a consolidated **report** with **recommendations**



Green Programs

(1) Green City/County Certifications

(2) Green Building Certifications

- Reports, Results and Recommendations
- Material and Resources
  - Prerequisites
  - Credits

Tallahassee Benchmark: *City Hall* and *Renaissance Center*

City Hall

- City Employees
- 121,400 sq ft
- 430 employees
- 4,500 visitors/mo
- 25 tons recycled*
- 84 tons disposed**

Renaissance Center

- City/County Employees
- 68,145 sq ft
- 242 employees
- 26,000 visitors/mo
- 17 tons recycled*
- 33 tons disposed*

* 10/2009 – 9/2010 actual tons
** Volumes to estimated annual tons

On-Site Visual Findings: *City Hall*

- Garbage:
  - 12% of cans had recyclable containers
  - 8% had recyclable paper
- Recycling:
  - 14% of bins had contaminants
- Employee responses overall positive about the program
  - Some requests for additional garbage capacity
  - Employee requests for additional signage

On-Site Visual Findings: *Renaissance Center*

- Garbage:
  - 6% of cans had recyclable containers
  - 32% held recyclable paper
- Recycling
  - 11% of bins held contaminants
- Employee responses mixed
  - A lot of innovative employee initiatives
  - Interviews find inconsistent program knowledge among some employees
    - Citywide survey to verify on-site interviews

Conclusions and Next Steps

- Revamp the education program
  - Redistribute what's recyclable information
  - Proper use of garbage and recycling bins
- Provide continuing education
  - Communication channels
  - City Events
  - Signage and container labeling
- Additional garbage options
  - Deskside waste reduction tips
  - More common area cans
- Procurement supplies and product review
- Recommendations towards Zero Waste

Contact Information

Miriam Abascal-Kessler, LEED® AP, Sr. Consultant
Kessler Consulting, Inc.
(813) 971-8333 and mzimms@kesconsult.com

and

Cynthia S. Barber, CPM
Director Environmental Policy and Energy Resources
City of Tallahassee
(850) 891-8363 and cynthia.barber@talgov.com