Webinar #1:
The Cost and Environmental Impact of U.S. Textile and Apparel Waste

Webinar #2:
How U.S. Textile Recovery Works and Emerging Innovation in Sortation Technologies

Webinar #3:
State and Municipal Views on Textile Waste in the U.S.

Webinar #4:
A Rising Tide of Apparel and Textile Waste - What Brands are Doing and is it Enough?
We INSPIRE and EQUIP people to accelerate sustainable practices in the textile value chain.
United by Action
Catalyzing the Sustainable Development Goals in Textiles

Washington, D.C. | October 9-13, 2017

More Information:
http://textileexchange.org/2017-textile-sustainability-conference/
#TExtileConf | #CreatingMaterialChange | #GlobalGoals
TE Standards

- Organic 100 Content Standard
- Recycled 100 Claim Standard
- Global Recycled Standard
- Responsible Down Standard Certified
- Responsible Wool Standard Certified
- Content Claim Standard
Newly Revised Versions
rPET Working Group

• Brand and suppliers
• Addressing how to increase the availability and demand for recycled polyester
  • Cost
  • Quality
  • Regional issues
Marisa Adler, Sr. Consultant, RRS
Providing solutions to meet sustainability, resource management and waste recovery goals of clients and their supply chains.

Managing change in a resource-constrained world for 30 years.
Jay V. Bassett, Principal Advisor - SMM USEPA
SUSTAINABLE MATERIALS MANAGEMENT

The significant impacts of materials, products, and services can:

- Be concentrated in a single stage of the life cycle (e.g., VOCs released in use phase, or metal emissions from blast furnaces)
- Occur across multiple stages of the life cycle (e.g., chemicals in various processing steps)
- Be the sum total of lots of small upstream impacts
- Arise in the life cycle of the “support systems” (e.g., transportation, energy)

“An approach to serving human needs by using/reusing resources productively and sustainably throughout their life cycles, generally minimizing the amount of materials involved and all associated environmental impacts.”

Sustainable Materials Management: The Road Ahead, EPA
Why SMM?

- “Costs of pollution, ecosystem depletion and health impacts have grown steadily”
  - These now exceed $1 trillion/year for US companies - ~equal to 6.2% of GDP.
    - $3 trillion/year for global companies.
  - If businesses had to pay the costs it would more than wipe out their profits.

(Source: State of Green Business 2015 by Joel Makower and the editors of GreenBiz.com)
EPA’s SMM Program: Brief History

• RCRA provides the legislative basis for EPA’s SMM Program efforts.


• 2009: SMM: The Road Ahead provided recommendations and an analytical framework for moving toward sustainable materials management.

• 2017: SMM FY2017-2018 Strategic Plan In FY 2017-FY 2022
  • Improve measurement systems to track and evaluate trends associated with prevention, reuse, recycling, disposal, processing capacity, feedstocks for markets, and public access to recycling or reuse options.
  • Maintain and improve the analytical tools and methods for quantifying the environmental and economic impacts of SMM efforts.
  • Collaboration with stakeholders at the national and international levels continue and be strengthened.
• Used life cycle assessment to evaluate materials use across the U.S. economy.
  ○ 38 materials, goods and services with significant environmental impacts identified.

• Report also had specific recommendations for Government:
  ○ Promote efforts to manage materials and products on a life cycle basis
  ○ Build capacity & integrate materials management approaches in existing government programs.
  ○ Accelerate the broad, ongoing public dialogue on life cycle materials management.
  ○ Recommendations and analysis serve as the foundation for current and future materials management efforts.
Sustainable Materials Management: The Road Ahead (2009) Results

- Broad Materials/Products/Service Categories which ranked high:
  - Food,
  - Textiles,
  - Non-renewable organics (e.g., coal, petroleum products, chemicals),
  - Metals,
  - Construction,
  - Forest products and
  - Several services and products such as hospitals and electronics.
EPA’s role in promoting and supporting the re-use and recycling of materials

- Waste must be managed well in order to minimize environmental impacts
- Avoid new raw material extraction
Recent conversations with industry representatives indicate EPA can do more to help:

- Better data, research and knowledge.
- A focus on measurement and system approaches
- Convene stakeholders to accelerate optimization of changing collection and processing systems and the use of materials using life cycle based approaches.
Globally, we produce 92 MT of textile waste. By 2030, this will increase 62% to 148 MT.

Most of this waste is landfilled or incinerated; only 20% is collected for reuse or recycling.

Textiles result in a diverse range of environmental impacts. The cumulative impact from wasted textiles will grow.

Source: 2017 Pulse of the Fashion Industry, USEPA
# A Gap on Waste Across Fashion Industry and NGO Initiatives

<table>
<thead>
<tr>
<th></th>
<th>Design &amp; development</th>
<th>Raw materials</th>
<th>Processing</th>
<th>Manufacturing</th>
<th>Transportation</th>
<th>Retail</th>
<th>Use</th>
<th>End of use</th>
<th>Total Pulse Score</th>
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<tbody>
<tr>
<td><strong>Total</strong></td>
<td>22</td>
<td>17</td>
<td>38</td>
<td>28</td>
<td>41</td>
<td>28</td>
<td>23</td>
<td>9</td>
<td>32</td>
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<tr>
<td><strong>Top quartile</strong></td>
<td>37</td>
<td>47</td>
<td>66</td>
<td>56</td>
<td>67</td>
<td>33</td>
<td>24</td>
<td>21</td>
<td>63</td>
</tr>
<tr>
<td><strong>2nd quartile</strong></td>
<td>22</td>
<td>16</td>
<td>43</td>
<td>26</td>
<td>47</td>
<td>35</td>
<td>26</td>
<td>9</td>
<td>32</td>
</tr>
<tr>
<td><strong>3rd quartile</strong></td>
<td>19</td>
<td>4</td>
<td>29</td>
<td>22</td>
<td>34</td>
<td>29</td>
<td>29</td>
<td>4</td>
<td>22</td>
</tr>
<tr>
<td><strong>Bottom quartile</strong></td>
<td>10</td>
<td>2</td>
<td>14</td>
<td>11</td>
<td>17</td>
<td>14</td>
<td>14</td>
<td>2</td>
<td>11</td>
</tr>
</tbody>
</table>

Source: 2017 Pulse of the Fashion Industry
In the U.S., we generated 16.2 MT of textile waste in 2014, up from 9.5 MT in 2000, an increase of 71%. Meanwhile, overall MSW grew only 6%.

Over that same time period, per capita generation rose from 67 lbs/pp/yr to 102 lbs/pp/yr, while per capita generation of MSW fell -6%.

Textiles in the MSW grew from 3.9% in 2000 to 6.2% in 2014.
Diversion through reuse and recycling has remained relatively flat at 16% between 2000 and 2014.

Incineration and landfilling have accounted for about 84% of textile disposal for more than a decade. In 2014, about 19% of textiles went to waste to energy.

The cumulative carbon impact and lost resources due to landfilled and incinerated textiles and apparel is growing each year.
TEXTILES AND APPAREL FLOWS IN U.S.

Pre-Consumer

FIBER SOURCING AND PROCESSING
TEXTILE PRODUCTION
GARMENT PRODUCTION
REMANUFACTURING
DISTRIBUTION & RETAIL
CONSUMER USE
DONATIONS
EXPORTED
RECYCLING
RAGS/WIPING CLOTHS
NEW YARN
SHODDY, MUNGO, STUFFING
NON-CLOTHING PRODUCTS
INCINERATION
LANDFILL

Post-Consumer

A WASTE TREND WITH NATIONAL & LOCAL COSTS

ANNUAL COST TO COLLECT & DISPOSE OF TEXTILES

Source: USEPA tip fees and RRS collection costs used to estimate avg. per ton costs; 2015 costs were used for forecast

- Landfilled materials are collected and managed locally.
- Both the volume and the cost to manage on a per ton basis is growing exponentially in many communities.
- On average only 16% of textiles are diverted for reuse and recycling depending on locality.

MANAGED LOCALLY
COST OF TEXTILES TO NEW YORK CITY

PERCENT OF TEXTILES IN NYC’S WASTE STREAM

- 0% - 6%
- 6%
- 5%
- 4%
- 3%
- 2%
- 1%
- 0%

2005
2013

NON-CLOTHING TEXTILES (E.G. LINENS)
APPAREL
SHOES/RUBBER/LEATHER

COLLECTION & DISPOSAL COSTS FOR TEXTILES IN NYC

- $46
- $79
- $103

Source: NYC Dept. Sanitation; 2014 costs/ton were used to forecast forecasted
PERCENT TEXTILE WASTE IN OTHER CITIES

Textile Percent by City or County Population

Sources: Published Waste Characterization Studies
Growing Risk to a Variety of Stakeholders

- Increasing rate of apparel consumption driving rapid growth in wastage
- High environmental impact of product
- Future access to resources
- Med-small brands not engaged
- Growing pressure from NGOs raising risk profile to industry
- Increasing costs to manage
- Growing awareness of waste and environmental issues
- Lack of easy and convenient consumer access
LANDSCAPE OF CURRENT TEXTILE INITIATIVES

- Textile Exchange
- Sustainable Apparel Coalition
- C2C Fashion Positive
- Secondary Materials and Recycled Textiles (SMART)
- Council for Textile Recycling
- FabScrap
- Simple Recycling
- Curb My Clutter
- NYSAR3 ReClotheNY
- Valvan Baling Systems’ FIBERSORT
- TOMRA Sorting
- Soex Group — Sorting
- I-Co/San Francisco
- DSNY Collection Pilot
- NYC Greenmarket - Wearable Collections
- ReFashionNYC

FABRIC PRODUCTION

- Made in NYC
- Heron Preston/DSNY Collection

DISTRIBUTION & RETAIL

- Manufactured in New York

RECYCLE

- Patagonia — mailback program
- American Eagle — I:Co clothing recycling program
- Marks & Spencer — Schwop and I:Co
- Gap and Cotton Inc — Denim Collection
- The Limited — partners with I:Co
- Nike — Reuse a Shoe
- H&M — partners with Worn Again; recycled denim collection
- Levi Strauss — partners Aquafil, makers of ECONYL
- J. Crew — seasonal denim recycling program
- Timberland — partners with Thread to use upcycled plastic waste
- Esprit — partners with charity Packmee for takeback
- Eileen Fisher — Fisher Found

How do we link efforts to create a comprehensive consumer solution?
ELEMENTS OF A SUSTAINABLE RECOVERY SYSTEM

01. COLLECTION
02. PROCESSING
03. END MARKETS
04. EDUCATION & ENGAGEMENT
05. SUPPORTING POLICIES
06. PUBLIC-PRIVATE COORDINATION

BUILDING INFRASTRUCTURE
What are the Barriers?

INDUSTRY SURVEY RESULTS ON SUSTAINABILITY – APPLY TO WASTE ISSUES TOO

- Low consumer willingness to pay for sustainable products
- Missing regulations/policy
- Brands focused on self-optimization
- Lack of consumer awareness
- Short-termism of planning and budgeting cycles

Source: 2017 Pulse of the Fashion Industry
QUESTIONS

• How do we find economically viable solutions to reduce textile and apparel waste?
• Why are some cities more successful than others?
• What is needed to develop successful strategies and scale solutions to the reuse & recycling of textiles and apparel?
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<tr>
<th>#</th>
<th>Webinar Topic</th>
<th>Date/Time</th>
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| 1  | The Cost and Environmental Impact of U.S. Textile and Apparel Waste          | Wednesday, August 9, 2017  
1-2pm EST                              |
| 2  | How is that shirt collected and where does it go? Overview of U.S. textile  | Wednesday, August 23, 2017  
1-2:15pm EST                            |
|    | recycling and emerging innovations in sorting technologies.                  |                                    |
| 3  | State and municipal views on textile waste and where they are headed in the  | Wednesday, September 6, 2017  
1-2pm EST                                |
|    | future.                                                                      |                                    |
| 4  | A rising tide of apparel and textile waste. What are brands doing and is it   | Wednesday September 20, 2017  
1-2pm EST                                |
|    | enough?                                                                      |                                    |

**WEBINAR SERIES**

**CONFERENCE**  
Monday-Friday, October 9-13, 2017
ARE YOU READY TO EFFECT CHANGE?

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