Assess, Research, and Reframe
“Benefits of Recycling”

Client: Washington State Department of Ecology, Waste 2 Resources Program
Benefits of Recycling Focus Sheet

Waste 2 Resources Program

Washington’s Recycling Produces Results

Recycling reduces the need for mining or logging, and reduces water and air pollution. It also reduces the amount of waste sent to landfill, and saves energy by reducing the amount of raw materials needed to produce new products. Recycling also conserves natural resources.

Recycling contributes to economic development and job growth. The recycling industry is a major contributor to the state’s economy, providing millions of dollars in revenue each year.

Recycling also helps to reduce the amount of waste sent to landfills, which can reduce the cost of waste management and help to protect the environment.

The benefits of recycling are numerous, and include:

- Reduces the amount of waste sent to landfills
- Saves energy by reducing the amount of raw materials needed to produce new products
- Conserves natural resources
- Stimulates economic development and job growth
- Helps to protect the environment

More information


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Special accommodations:

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<table>
<thead>
<tr>
<th>Material</th>
<th>Tons Recovered</th>
<th>BTU Saved (megajoules)</th>
<th>GIGA Joules Saved (MJ)</th>
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<tr>
<td>Aluminum</td>
<td>15,636</td>
<td>2,197,468</td>
<td>39,217</td>
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<td>Steel Cans</td>
<td>17,267</td>
<td>334,323</td>
<td>8,776</td>
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<td>Glass</td>
<td>87,754</td>
<td>702,034</td>
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<td>Paper</td>
<td>88,390</td>
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<td>Corrugated Cardboard</td>
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<td>473,293</td>
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<td>Mixed Paper</td>
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<td>Wood</td>
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<td>Yard Waste</td>
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<td>Furniture</td>
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<td>240,718</td>
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<td>Other Organics</td>
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<td>Mixed Waste</td>
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<td>Landfill Gas</td>
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<td>Cans</td>
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<td>Tons</td>
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<td>1,253,022</td>
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<td>Total</td>
<td>7,473,514</td>
<td>130,927,444</td>
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GIGA Joules Saved (MJ)
Project Purpose

1. Determine how the focus sheet is being used by the primary “influencers” identified by Ecology.
2. Develop a better understanding of what economic and environmental information “influencers” find most useful.
3. Reframe the most useful information in a scientifically robust and captivating manner to more effectively communicate the benefits and impacts of recycling.
4. Design a new focus sheet based on our findings.
Old & New Focus Sheets

Focus on the Benefits of Recycling

Waste 2 Resources Program

February 2015

Washington’s Recycling Produces Results

Recycling in Washington continues to produce important environmental and economic benefits for our state. In 2013, more than 26 percent of the waste generated by Washington residents and businesses was recycled or diverted from landfills. While reducing the amount of waste going to landfills is important, recycling is as much or more than a matter of managing wastes—it also reduces pollution and conserves natural resources.

Recycling saves energy and reduces greenhouse gas emissions

Using recycled materials to make new paper, plastic, glass, and metal products saves energy. Collecting, processing, and transporting recycled materials almost always uses less energy than extracting, refining, transporting, and processing raw materials. Less energy use also means fewer greenhouse gas (GHG) emissions.

In 2013, 3 million tons of material were collected for recycling in Washington. This effort:

- Saved energy equivalent to 1 billion gallons of gasoline, or more than 120 million British thermal units (BTUs) of energy. This is enough to power nearly 1.2 million homes for a year—nearly half the homes in Washington.
- Prevented 1.1 million tons of GHG emissions—averted 495 pounds per person. That impact is similar to taking off 2.4 million vehicles from the road, or stopping 60,000 railway cars of coal from being burned.

Recycling conserves natural resources

Recycling reduces the need for mining or logging, along with their attendant environmental effects. Replacing industry with recycled materials instead of virgin resources uses less energy and conserves these scarce resources and protects valuable habitat. In 2013, Washington recycling programs collected 5 million tons of material to supply industry with commodities such as metals, plastics, paper, glass, wood, and construction and demolition scrap.

- Manufacturing recycled products requires an average, 17 times less energy than manufacturing the same products from virgin materials.
- By recycling nearly 1.4 million tons of scrap metal in 2013, Washington avoided mining and processing 1.73 million tons of ore, 700,000 tons of coal, and 28,000 tons of limestone.
- Every ton of a paper recycled saves enough energy to heat a home for 36 hours.
- Every ton of a paper recycled saves 17 trees and 7,000 gallons of water.
- Recycling lessens emissions of air and water pollutants

Recycling keeps materials out of landfills, where they can contaminate groundwater and generate GHG. It also reduces the amount of pollutants entering the air and water and keeps harmful materials out of streams that can pollute the air and create acid rain. To make a bad situation worse, a large amount of paper used in recycling does not reduce the energy consumption and air pollution by 50 percent.

Focus on Curbside Recycling

Washington residents and businesses recycle 39% more than the U.S. average. Curbside recycling includes common household materials that can be processed by most recycling facilities. These materials include aluminum cans, steel cans, glass, plastics, corrugated cardboard, and mixed paper.

The equivalent of 133 thousand truckloads of materials were recycled by Washington Residents in 2014. That is 1.2 million tons that did not enter a landfill!

The amount recycled by Washington residents in 2014 saved enough energy to power 600,000 households. That is 23 trillion BTU’s saved!

The amount recycled by Washington residents in 2014 captured the same amount of carbon dioxide as 5.7 million acres of U.S. forests. That is enough to avoid 1 million tons of carbon (MTCO2) emissions to the atmosphere.

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Please recycle and recycle
Methodology

Literature Review

Qualitative Interviews & Survey:

- W2R Team identified 107 “influencers” to be interviewed and surveyed regarding their use of Ecology’s metrics and focus sheets.
- Eight key influencers participated in open-ended interviews.
- 26 influencers responded to a ten question online survey.

Analysis: Open-ended survey responses were combined with the interview responses and aggregated in an Excel document for qualitative analysis. This allowed us to extract the key themes and compare this data with that of the interviews.
Key Themes & Findings

➔ Create a narrative about recycling & materials management

➔ Emphasize curbside recycling and organics

➔ Focus on economic values: job creation, tax revenue

➔ Emphasize the most-current data at regional and local level

➔ Data visualization: images, infographics, color

➔ Present hierarchies of information for diverse audiences
Survey Findings

Appendix D. Survey Results

Audience Needs

To ensure effective communication of the benefits of recycling to your audience, what is the most useful to you and your organization?

- Concentrate on economic values
  - Not at all useful: 3.85%
  - Not very useful: 30.77%
  - Somewhat useful: 61.54%
  - Very useful: 61.54%

- Concentrate on conservationist values
  - Not at all useful: 3.85%
  - Not very useful: 46.15%
  - Somewhat useful: 11.54%
  - Very useful: 19.23%

- Concentrate on scientific values
  - Not at all useful: 3.85%
  - Not very useful: 30.77%
  - Somewhat useful: 46.15%
  - Very useful: 11.54%

- Keep it to one page front and back
  - Not at all useful: 3.85%
  - Not very useful: 15.38%
  - Somewhat useful: 80.77%
  - Very useful: 80.77%

- Make it graphically appealing
  - Not at all useful: 7.69%
  - Not very useful: 88.46%
  - Somewhat useful: 88.46%
  - Very useful: 88.46%

- Keep the message straightforward and simple
  - Not at all useful: 7.69%
  - Not very useful: 88.46%
  - Somewhat useful: 88.46%
  - Very useful: 88.46%
Data Visualization Needs

When communicating the benefits of recycling using data visualization, what is the most useful for you and your organization?

- Visual equivalent examples:
  - Very Unimportant: 3.85%
  - Somewhat unimportant: 26.92%
  - Neither: 61.54%

- Charts and graphs:
  - Very Unimportant: 3.85%
  - Somewhat unimportant: 50%
  - Neither: 34.62%

- Images and photographs:
  - Very Unimportant: 3.85%
  - Somewhat unimportant: 19.23%
  - Neither: 73.08%

- Saved energy equivalent example:
  - Very Unimportant: 7.69%
  - Somewhat unimportant: 50%
  - Neither: 38.46%

- Detailed raw numbers:
  - Very Unimportant: 13.64%
  - Somewhat unimportant: 59.09%
  - Neither: 13.64%
Informational Needs

Please rate how useful the following information is/would be for your purposes

- Region-specific data (Western Washington/Eastern Washington): 26.92% Very useful, 61.54% Not at all useful
- Data on specific categories of materials: 4% Somewhat useful, 40% Not at all useful
- Data on environmental impact of recycling over time: 3.85% Not very useful, 30.77% Somewhat useful, 61.54% Very useful
- Data on government revenue created through the recycling economy: 3.85% Not very useful, 30.77% Somewhat useful, 42.31% Very useful
- Data on the jobs created in Washington state through recycling: 38.46% Somewhat useful, 57.69% Very useful
- Construction and demolition data: 3.85% Not very useful, 7.69% Not at all useful, 34.62% Somewhat useful, 30.77% Very useful
- Natural resource data: 3.85% Not very useful, 3.85% Not at all useful, 32% Somewhat useful, 48% Very useful
- GHGs avoided: 3.85% Not very useful, 3.85% Not at all useful, 42.31% Somewhat useful, 30.77% Very useful
- BTUs saved: 7.69% Very useful, 57.69% Somewhat useful, 15.38% Not very useful
- Tons of materials recycled: 3.85% Not very useful, 26.92% Somewhat useful, 65.38% Very useful
Interview and Survey Participation

“The focus sheets are State-wide, but if they were honed closer to home—if not by county then by region, for example, “Eastern WA”, but with the same information, it would be useful to know: “How many jobs (etc.) is this creating in our backyard?”

Another influencer in a more rural county commented “I definitely rely on Ecology’s statistics” and that this information “helped to make the case for expanded recycling programs” in her area.

“With a small city staff we wear many hats so yes, support is needed to effectively communicate the benefits of recycling. It’s always easier to have a starting point rather than a blank page, it saves staff time and increases the likelihood of routinely getting something put into newsletters or the newspaper.”

We “need a suite of material that range from simple to more detailed and complex to meet inquiry needs from different levels of consumer.”
Create a narrative about recycling & materials

Recycling as a tool for Sustainable Materials Management

Sustainable Materials Management looks at the full life cycle of materials from the design and manufacturing phase, through the use phase, to the end-of-life phase when the material is either disposed or recycled. The goal is to reduce negative environmental and health impacts, including climate impacts, by managing materials that through all stages of their life cycle.

Recycling is one tool for Sustainable Materials Management focused at the end of a materials life. Recycling materials not only avoids the pollution that would be generated through landfilling and incinerating materials, but also reduces the environmental burden of virgin materials extraction and manufacturing processes.
Focus on Curbside Recycling

Washington residents and businesses recycle 14% more than the U.S. average. Curbside recycling includes common household materials that can be processed by most recycling facilities. These materials include aluminum cans, steel cans, glass, plastics, corrugated cardboard, and mixed paper.

The equivalent of 133 thousand truckloads of materials were recycled by Washington residents in 2014. That is 1.2 million tons that did not enter a landfill!!

The amount recycled by Washington residents in 2014 saved enough energy to power 600,000 households. That is 23 billion kWh saved!!

The amount recycled by Washington residents in 2014 captured the same amount of carbon dioxide as 3.7 million acres of U.S. forests. That is enough to avoid 1 million tons of carbon (MTC) emissions into the atmosphere. 

To request ADA accommodation, call Ecology at 360-407-7000; Relay Service 711, or TTY 877-833-6341.
More information on Organics
Focus on economic values: job creation, tax revenue.
Local, regional, most-current data

**Economic Benefits of Recycling**

**Waste 2 Resources Program**

**June 2017**

**Recycling as a tool for Sustainable Materials Management**
Sustainable Materials Management looks at the full life cycle of materials from the design and manufacturing phase, through the use phase, to the end of life phase when the material is either disposed of or recycled. The goal is to reduce negative environmental and health impacts, including climate impacts, by managing materials through all stages of their life cycle.

Recycling is one tool for Sustainable Materials Management focused at the end of a materials life. Recycling materials not only avoids the pollution that would be generated through landfiling and incinerating materials, but also reduces the environmental burden of virgin materials extraction and manufacturing processes.

**Focus on the Economic Benefits of Recycling**

Recycling creates jobs. Recycling jobs include waste collection, materials recovery jobs, and recyclable material merchant wholesaler jobs. Every 1000 tons of waste recycled or composted creates 20 jobs. Landfilling the same amount of material only creates 5 jobs.

- **Recycling Jobs in Washington in 2013**
  - 2,718* collection jobs
  - 655 material recovery facilities jobs
  - 1,904 recyclable material merchant wholesaler jobs

**Recycling Employment Trends in Washington**

- Materials Recovery
  - Expected in 2013-2018 employment increase
  - 182% Employment increase

- Material Merchant Wholesaler
  - Expected in 2013-2018 employment increase
  - Employment increase

Multiply each thousand tons of materials your county recycled by the number of jobs created at each step in the recycling process to find out how may jobs your county created!
Data visualization: Images, infographics, color

Focus on Curbside Recycling

Washington residents and businesses recycle 54% more than the U.S. average. Curbside recycling includes common household materials that can be processed by most recycling facilities. These materials include aluminum cans, steel cans, glass, plastics, corrugated cardboard, and mixed paper.

In 2014, Washington residents created 6.78 pounds of waste per person per day. 47% of that waste was recycled.

The equivalent of 133 thousand truckloads of materials were recycled by Washington Residents in 2014. That is 1.2 million tons that did not enter a landfill!
Hierarchies of information for diverse audiences

The amount recycled by Washington residents in 2014 saved enough energy to power 600,000 households. That is 23 trillion BTUs saved!¹

¹ The equivalent of 133 thousand truckloads of 50-ton load trucks did not enter a landfill.
Communication Plan

1. Build Ecology’s reputation as the go-to place to get up to date data and statewide information.

2. Build partnerships with industries that can become partner outlets that help communicate compelling information.

3. Through State funding or grant administration, provide additional funding to municipalities to stimulate locally driven recycling efforts.
Conclusion & Questions

- Small respondent pool

- Respondents were mostly employed by municipalities (W2R program’s main customer) potentially generating a selection bias weighted toward city and county needs

- Important needs outside the range of the focus sheets this included:
  - More policy action at the legislative level
  - Need for more information and programs focused on waste reduction and reuse
  - More outreach materials focused specifically on behavior change, not just education.

“People already have the attitude that recycling is important, but it’s confusing and that’s one of the barriers. There are obstacles to making it convenient or easy to understand.”