Seattle Requirements for Construction & Demolition Materials
Reuse and Recycling

August 5, 2014
Seattle Recycling Requirements and Shingles Disposal Ban

Seattle Public Utilities
Seattle Solid Waste and Building Code
Construction Waste Recycling Requirements

• Targeted Landfill Disposal Bans
• Recycling Facility Certification
• Waste Diversion Plan & Report
• Salvage Assessment
Seattle C&D Definitions

- **Recycling** – *materials separated for reuse or recycling*
- **Beneficial Use** – *clean wood to hog fuel or industrial boiler fuel*
- **Alternative Daily Cover (ADC) and Industrial Waste Stabilizer (IWS)** – *ADC covers the active face of a landfill instead of soil and IWS provides structure in special landfills. Both are counted as disposal*
- **Disposal** – *material permanently place in a landfill*
Seattle C&D Tons Generated

<table>
<thead>
<tr>
<th>Year</th>
<th>Disposed</th>
<th>Recycled</th>
<th>Beneficial Use</th>
<th>Total Tons</th>
</tr>
</thead>
<tbody>
<tr>
<td>2013</td>
<td>396,380</td>
<td>61.8%</td>
<td>38,500</td>
<td>396,380</td>
</tr>
<tr>
<td>2012</td>
<td>371,962</td>
<td>60.2%</td>
<td>38,398</td>
<td>371,962</td>
</tr>
<tr>
<td>2011</td>
<td>359,390</td>
<td>63.2%</td>
<td>38,098</td>
<td>359,390</td>
</tr>
<tr>
<td>2010</td>
<td>288,960</td>
<td>61.9%</td>
<td>38,600</td>
<td>288,960</td>
</tr>
<tr>
<td>2009</td>
<td>288,550</td>
<td>56.4%</td>
<td>38,477</td>
<td>288,550</td>
</tr>
<tr>
<td>2008</td>
<td>397,050</td>
<td>50.6%</td>
<td>42,000</td>
<td>397,050</td>
</tr>
<tr>
<td>2007</td>
<td>415,800</td>
<td>49.3%</td>
<td>49,600</td>
<td>415,800</td>
</tr>
</tbody>
</table>

Not including City transfer stations and City collections

Disposed includes:
- Direct landfill Disposal
- Alternative Daily Cover
- Industrial Waste Stabilizer

61.8% Recycled
60.2% Recycled
63.2% Recycled
61.9% Recycled
56.4% Recycled
50.6% Recycled
49.3% Recycled

396,380 tons
371,962 tons
359,390 tons
288,960 tons
288,550 tons
397,050 tons
415,800 tons
2013 Seattle C&D Generation with & without Concrete

- **Without Concrete**
  - Disposed: 201,460 tons
  - Recycled: 61.8% (201,460 tons)
  - Beneficial Use: 7.2% (28,950 tons)

- **With Concrete**
  - Disposed: 396,380 tons
  - Recycled: 61.8% (243,160 tons)
  - Beneficial Use: 13.1% (52,060 tons)
2013 Material Diversion Levels

- **Concrete**: 95% Reused or Recycled
- **Clean Wood**: 53% Diverted to Recycling and Beneficial Use
- **Clean Gypsum**: 85% Recycled
- **Metals**: 72% Recycled
- **Asphalt Roofing**: .6% Recycled
- **Carpet**: 11% Recycled

Tons: 0, 100,000, 200,000, 300,000

Legend:
- Orange: Landfilled
- Green: Recycled
- Light Green: Beneficial Use
C&D Recycling Ordinances (2012-2013)

- 2012 Seattle Solid Waste Plan Adoption
  - 70% recycling goal by 2020 for C&D Citywide

- Disposal Bans on Asphalt Paving, Brick and Concrete from construction job site disposal containers effective in 2012

- 2012 C&D Recycling Ordinance #124076-C&D Waste Recycling Required (SMC 21.36.09)
  - Asphalt Paving, Brick and Concrete (effective 2012)
  - Metal, cardboard, new construction gypsum board (2014)
  - Carpet & plastic film wrap (originally effective 2014)
  - Clean wood and tear-off asphalt roofing shingles (2015)

- 2013 SPU Director’s Rulemaking- details of facility certification, waste diversion reporting and phased landfill disposal bans
  - Director’s Rule SW-405.3 delayed the disposal ban on plastic film wrap and carpet to 2015 due to end market uncertainties
## Phased Landfill Disposal Bans for Construction Sites (2012-2016)

<table>
<thead>
<tr>
<th>Material</th>
<th>1/1/12</th>
<th>1/1/13</th>
<th>1/1/14</th>
<th>1/1/15</th>
<th>1/1/16</th>
</tr>
</thead>
<tbody>
<tr>
<td>Asphalt Paving</td>
<td>Educate</td>
<td>Enforce</td>
<td>Enforce</td>
<td>Enforce</td>
<td>Enforce</td>
</tr>
<tr>
<td>Concrete &amp; Bricks</td>
<td>Educate</td>
<td>Enforce</td>
<td>Enforce</td>
<td>Enforce</td>
<td>Enforce</td>
</tr>
<tr>
<td>Metal &amp; Cardboard</td>
<td></td>
<td></td>
<td>Educate</td>
<td>Enforce</td>
<td>Enforce</td>
</tr>
<tr>
<td>New Gypsum Wallboard Scrap</td>
<td></td>
<td></td>
<td></td>
<td>Educate</td>
<td>Enforce</td>
</tr>
<tr>
<td>Unpainted and Untreated Wood</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Educate</td>
</tr>
<tr>
<td>Carpet</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Educate</td>
</tr>
<tr>
<td>Plastic Film Wrap</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Educate</td>
</tr>
<tr>
<td>Asphalt Roofing Shingles</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Educate</td>
</tr>
</tbody>
</table>

*Enforce – through field inspections and a possible monetary fine if “significant” amounts in disposal container or transfer station loads*
## C&D Facility Certification Criteria (2014)

<table>
<thead>
<tr>
<th>Source Separated Recyclers</th>
<th>Permits &amp; Regulatory Compliance</th>
<th>Annual Reporting to Seattle</th>
<th>Monthly Reporting to Seattle</th>
<th>Minimum Recycling Percentages</th>
<th>Sampling Residuals for Landfill Disposal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Source Separated Recyclers</td>
<td>Notification to Regulators</td>
<td>Yes, even if outside City</td>
<td>No</td>
<td>At least 90%</td>
<td>No</td>
</tr>
<tr>
<td>Mixed Waste C&amp;D Recyclers</td>
<td>Solid Waste Permit Required</td>
<td>Yes</td>
<td>Yes</td>
<td>75% for LEED &amp; Built Green Projects</td>
<td>Yes – quarterly sampling of residual for targeted materials – must meet standard of less than 10%</td>
</tr>
</tbody>
</table>
Hauling and Facilities

Recycling Hauling – any company can haul as long as container contents are 90% recyclable

Recycling Facilities

“Qualified” Commingled Recyclers
• Recovery One, Tacoma
• Black River, Renton
• CDL Recycle, Seattle
• United Recycling, Maltby

Non-recyclable C&D only to be hauled by Waste Management under City contract
Waste Diversion Reporting (2014)

Purpose:
❖ Assess if projects with a building permit are recycling targeted construction materials and using recyclers on the City’s approved lists

Applicability:
❖ Projects where permit issued after January 1, 2014
❖ All demolition permits
❖ New construction and alteration permits valued at $30,000 or greater

Report due within 60 days of a project receiving its “Final Inspection Approval” from DPD
New Seattle Building Code Requirements

• Effective Date: January 1, 2014

• New sections:
  • SBC 106.5.9 & SRC R105.5.3

• Applies to projects > 750 sf
Waste Diversion Plan and Salvage Assessment

Required prior to permit issuance for all projects with a working area > 750 square feet

Waste Diversion Plan must include:
- Materials from jobsite
- Hauler
- Receiving location

Deconstruction and Salvage Assessment

- Applies only to demolitions
- Checklist of Salvageable Materials
- Can be performed by reuse retail companies, or demolition or deconstruction contractors
Tear-Off Asphalt Shingles Recycling Infrastructure Issues
Tear Off Asphalt Roofing Shingles

- **49,500 tons** generated in Seattle and King County
- Relatively easy to source separate at job site
- Lower tip fees for source separated materials
- Recovery of valuable resource (oil)
- State Roofing Association supportive
# Recycling Rates for Composition Roofing (Seattle)

<table>
<thead>
<tr>
<th>Year</th>
<th>Estimated Generation (Tons)</th>
<th>Estimated Disposed (Tons)</th>
<th>Reported Recycled (Tons)</th>
<th>Recycling Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Baseline 2007</td>
<td>27,258</td>
<td>26,967</td>
<td>291</td>
<td>1.5%</td>
</tr>
<tr>
<td>2008</td>
<td>25,281</td>
<td>24,297</td>
<td>983</td>
<td>4%</td>
</tr>
<tr>
<td>2009</td>
<td>16,247</td>
<td>15,477</td>
<td>771</td>
<td>5%</td>
</tr>
<tr>
<td>2010</td>
<td>14,440</td>
<td>13,180</td>
<td>1260</td>
<td>9%</td>
</tr>
<tr>
<td>2011</td>
<td>18,733</td>
<td>15,848</td>
<td>2884</td>
<td>15%</td>
</tr>
<tr>
<td>2012</td>
<td>19,453</td>
<td>17,074</td>
<td>2108</td>
<td>11%</td>
</tr>
<tr>
<td>2013</td>
<td>17,178</td>
<td>17,074</td>
<td>104</td>
<td>Less than 1%</td>
</tr>
</tbody>
</table>

2013 – closure of Glacier Recycling. Other facilities have had issues with asphalt shingles piles not moving to market.
Local Recycler and Paver Infrastructure for RAS Production (2013)

<table>
<thead>
<tr>
<th>Recyclers accepting Tear-Off Asphalt Shingles</th>
<th>Paving Producers using RAS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Miles Resources, Lakewood</td>
<td>Miles Resources, Lakewood</td>
</tr>
<tr>
<td>Evergreen Shingle Recycling, Woodinville</td>
<td>Lakeside Industries, Pierce County</td>
</tr>
<tr>
<td>Lautenbach Industries, Mt. Vernon</td>
<td>ICON Materials, Auburn</td>
</tr>
<tr>
<td><em>Other Recyclers will accept incidental amounts in construction loads</em></td>
<td>Northwest Asphalt and Pyramid Materials</td>
</tr>
<tr>
<td></td>
<td>Central Washington Asphalt</td>
</tr>
<tr>
<td></td>
<td>Oldcastle Materials</td>
</tr>
</tbody>
</table>
Action Steps to Support Asphalt Shingle Landfill Disposal Ban

• King County and WSDOT specifications should be adopted or referenced by other public agencies

• SPU and other city agencies to consider use of RAS in appropriate road maintenance or new paving projects (hot mix or warm mix)

• Recyclers need to be aware of local Health Department requirements for on site processing and storage of raw shingles and RAS
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http://www.seattle.gov/util/C&DWasteManagement