LUMBER RECLAMATION &
THE CIRCULAR ECONOMY

CAROLINE KOSTAK

REPURPOSE DEPOT & THE REUSE PEOPLE
Total Tons & Per Capita Rate for Texas Municipal Solid Waste, 2015
Breakdown of Waste Types Landfilled in Texas for 2015%

- **63%** Municipal
- **19%** C&D
- **18%** Other

TCEQ Municipal Solid Waste in Texas: A Year in Review, 2015
Construction & Demolition Waste Composition

Demolition 34%
Renovation 55%
New Construction 11%

Franklin Associates,
Characterization of Building-Related Construction and Demolition Debris in the United States
TCEQ estimates that local MSW Landfills (Type I) have 60 years of remaining capacity in the H-GAC region.

Table 3. Disposal Amounts and Remaining Capacity by Facility Type in 2015

<table>
<thead>
<tr>
<th>Facility Type</th>
<th>Number of Landfills</th>
<th>Disposal (Tons)</th>
<th>Remaining Capacity (Tons)</th>
<th>Remaining Capacity (Years)*</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>98</td>
<td>29,892,217</td>
<td>1,779,762,464</td>
<td>60</td>
</tr>
<tr>
<td>IV</td>
<td>22</td>
<td>3,217,075</td>
<td>66,408,231</td>
<td>21</td>
</tr>
<tr>
<td>IAE</td>
<td>32</td>
<td>167,441</td>
<td>8,417,471</td>
<td>50</td>
</tr>
<tr>
<td>IVAE</td>
<td>21</td>
<td>36,599</td>
<td>2,778,277</td>
<td>76</td>
</tr>
<tr>
<td>IAE and IVAE</td>
<td>18</td>
<td>130,897</td>
<td>8,242,498</td>
<td>63</td>
</tr>
<tr>
<td>Monofill</td>
<td>8</td>
<td>5,331</td>
<td>175,433</td>
<td>N/A</td>
</tr>
<tr>
<td>Totals</td>
<td>199</td>
<td>33,449,560</td>
<td>1,865,784,374</td>
<td>56</td>
</tr>
</tbody>
</table>
And 21 years in C&D landfills (Type IV) in all of the state of Texas.
Construction Waste by Weight

- Wood: 42%
- Drywall: 27%
- Miscellaneous: 15%
- Brick: 6%
- Roofing: 6%
- Plastics: 2%
- Metals: 2%

Franklin Associates,
Characterization of Building-Related Construction and Demolition Debris in the United States
OPTIONS FOR WOOD WASTE

• Demolition → Landfill
• Recycle → Wood chips, particle board, mulch
• Deconstruction → Resale
In 2016, 1,750 Residential Demolition Permits were issued in Houston.
A typical 2000 ft$^2$ house sends 3,360 lbs (~1.5 tons) of wood to landfill when demolished.
Totaling 5,880,000 pounds (~3,000 tons) of reusable lumber thrown in the landfill in a typical year.
Typical homes in Houston consist of 1x4, 2x4, 2x6, 4x4, 6x6, plywood, shiplap, structural beams
CHALLENGES WITH RECLAIMING LUMBER

- **Time Consuming** – remove stick by stick, denail
- **Requires trained crews** – “Un-building” a house can be dangerous if not done with proper equipment and training
- **Contamination** – Difficult to separate wood from other materials (i.e. foam insulation)
- **Requires storage** – storing reclaimed lumber until it sells requires a lot of space
CHALLENGES WITH RE-USING LUMBER

• **Can’t use for structural purposes** – can not re-grade lumber *(check with Amanda Tullos)*

• **Harder and dryer** – sometimes challenging for carpenters to work with

• **Sourcing** - Quantities and qualities are not always easy to find
BUT…

It CAN be done…
THINGS TO DO WITH RECLAIMED LUMBER
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SUMMARY

• We, as a society, have a responsibility to think coherently about how we want to manage our waste
• We choose to make houses with a lifespan of 50-75 years
• We are nearing the end of that lifespan for many houses in Houston
• How do we want to responsibly manage that waste?
REFERENCES

• Characterization of Building-Related Construction and Demolition Debris in the United States (PDF)

• TCEQ Annual Solid Waste Reports: https://www.tceq.texas.gov/permitting/waste_permits/waste_planning/wp_swasteplan.html

• Network for Business Innovation and Sustainability: http://nbis.org/