Establishing an Urban Wood Use Program
An Introduction

WHAT ARE URBAN WOOD & URBAN WOOD USE PROGRAMS?
⇒ Urban wood includes logs and limbs from trees removed in urban areas
⇒ Urban wood can come from public and private spaces, including parks, backyards, and street trees
⇒ Urban trees are removed for many reasons—death or disease, infrastructure or development projects, homeowner preference, or public space management
⇒ Urban Wood Use Programs seek to divert these resources from the waste stream for beneficial use

WHY ESTABLISH AN URBAN WOOD USE PROGRAM?
⇒ Reduce operating costs and generate revenue from urban wood products
⇒ Repurposing urban wood products has direct environmental benefits
⇒ Your organization’s environmental stewardship through urban wood utilization is a marketable trait

ECONOMIC BENEFITS:
• Urban wood has traditionally been considered a waste product
• Disposal is often costly due to transportation costs and land-fill tipping fees
• Cost savings can be redirected towards other urban forestry uses
• Tree services may be able to increase profit/reduce the fees charged to customers and add value-added services
• Urban wood, and associated products, can generate revenue or be repurposed for other uses within your organization; mulch, park benches, signs, etc.

ENVIRONMENTAL BENEFITS:
• Diversion relieves stress on landfills and can lower transportation needs, reducing emissions
• Mulch use enhances plant health and can protect soil during construction or disturbance activities
• Urban wood products, such as lumber or furniture, continue to hold carbon that would otherwise be released into the atmosphere
A Program is Scalable
Start simple and work your program within your capacity. Through the development process, your program will evolve to its highest potential.

Urban Wood Production
First, inventory the volume of raw products you are generating. Second, are there other producers that you can partner with that will add volume?

Inventory Resources & Needs
- Operational
- Equipment
- Personnel
- Administrative

Set Your Goal
Based on your production volume, available resources, and markets, set your program goal and implement.

Identify Markets
Identify local and regional partners, demand for products (volume), markets, and end-users.

The process continues if you would like to grow your program.
Set a Goal—Developing an Urban Wood Use Program can be a step-by-step process and not everything has to be done at once. A tiered approach can provide milestone objectives to arrive at a program that matches your resource capacity and market demand. Consider a three-tiered development approach.

<table>
<thead>
<tr>
<th>Tier 1: Base Utilization</th>
<th>Tier 2: Developing Utilization</th>
<th>Tier 3: Enterprise Utilization</th>
</tr>
</thead>
<tbody>
<tr>
<td>Goal: Cost reduction and diversion of urban wood and byproducts you generate from landfill for better use.</td>
<td>Goal: Regional producers, markets, and end users identified and engaged. You have achieved Base Utilization. You are actively researching for markets and partners in your operating region to determine the potential for expanding your program for revenue generation and higher-use products.</td>
<td>Goal: Supplying and/or producing mid and high-value products in your regional market or beyond and generating revenue. This tier will be the culmination of your developing utilization findings and work. You have acquired all needed resources.</td>
</tr>
<tr>
<td>Using limited resources urban wood products and byproducts are used internally or passed on to vendors or end users for better use.</td>
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<td></td>
</tr>
</tbody>
</table>

**Urban Wood Program Resource Needs**

**Tier 1**
- Operation Yard(s)
  - Storage and sorting only
- Equipment
  - Front end loader – move material and organize yard
- Procedures & Administration
  - Work crew raw product generation reporting
  - Raw product inventory
  - Limited operating procedures
- Market Information – lists of consumers, vendors, and partners
  - Intra-organizational product use
  - Firewood and mulch vendors or end users

**Tier 2**
- Operation Yard(s)
  - Storage and processing
- Equipment
  - Chipper or tub grinder – grind wastewood
  - Grapple truck – transport wood and logs
  - Firewood processor
  - Mulch processor – grinds to various grades and mulch coloring
- Procedures & Administration
  - Managing sale of products
    - Contracts
    - Point of Sale
- Market Information – lists of consumers, vendors, and partners
  - Other producers
  - Landscape contractors and nurseries

**Tier 3**
- Operation Yard(s)
  - Multiple locations – minimize travel time and handle volume
  - Customer access to products
- Equipment
  - Portable sawmill
  - Dry kiln
- Procedures & Administration
  - Operating procedures
  - Personnel needs
  - Staff training
    - Equipment
    - Log grading
    - Identifying quality logs on the stump
    - Cutting wood to retain highest value
    - Sorting
- Market Information – lists of consumers, vendors, and partners
  - Portable sawmillers
  - Sawmills
  - Industrial applications
  - Wood artisans or manufacturers
  - Value added services for tree services - yard tree to product of sale
  - Marketing
    - Products
    - “Green” services
# Arborists’ Markets for Woody Residues

This chart addresses the most typical market dynamics and is not meant to be inclusive of all situations. Higher percent of production volume, less processing complexity and equipment, lower economic value.

## TIER 1

<table>
<thead>
<tr>
<th>Wood Form</th>
<th>Chips &amp; Ground Material</th>
<th>Lowest Value Products</th>
</tr>
</thead>
<tbody>
<tr>
<td>Log Grades</td>
<td>All</td>
<td>Stumps, branches, log segments</td>
</tr>
<tr>
<td>Units of Measure</td>
<td>Cubic feet, weight</td>
<td>All</td>
</tr>
<tr>
<td>Species</td>
<td>All</td>
<td>Commercial species (i.e. hickory) or other; ash requires special treatment</td>
</tr>
<tr>
<td>Quantity</td>
<td></td>
<td></td>
</tr>
<tr>
<td>End Uses</td>
<td>Compost</td>
<td>Chips</td>
</tr>
<tr>
<td>Markets</td>
<td>Compost producers, reclamation yards, landscaping firms</td>
<td>Fuel—biomass energy companies</td>
</tr>
<tr>
<td>End Users</td>
<td>General public; local school &amp; park districts; businesses, institutions &amp; government</td>
<td>Fuel—biomass energy companies</td>
</tr>
<tr>
<td>Marketing/Services</td>
<td></td>
<td>“Green Services” Company/Organization</td>
</tr>
<tr>
<td>Processing required</td>
<td>Chipping or grinding (Also, pre-sorting, processing to set dimensions, moisture control)</td>
<td>Sorting by species</td>
</tr>
<tr>
<td>Processing equipment</td>
<td>Chipper or grinder, trailer or other hauling equipment</td>
<td>Chain or hand saw, trailer or other hauling equipment</td>
</tr>
</tbody>
</table>

This chart was first published in Annex E of ANSI A300 (Part 1) - 2017 Pruning Standard and has been reproduced with permission from the Tree Care Industry Association. Transport of removed tree debris needs to be in compliance with quarantine zone requirements and other applicable regulations.
## Trees from Urban and Community Trees

Higher quality wood in columns further to the right may also be used for lower uses in columns to the left.

<table>
<thead>
<tr>
<th></th>
<th>Mid-Range Value Products</th>
<th>Highest Value Products</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Stumps, branches, &amp; log segments</td>
<td>Merchantable Logs (at least 8’ long, 12” diameter—confirm with mill)</td>
</tr>
<tr>
<td></td>
<td>Timbers &amp; Whole Trees</td>
<td>Grades 1-3</td>
</tr>
<tr>
<td></td>
<td>All</td>
<td>Select grades or character wood</td>
</tr>
<tr>
<td></td>
<td>Merchants</td>
<td>All</td>
</tr>
<tr>
<td></td>
<td>All</td>
<td>Hardwoods and commercial species</td>
</tr>
<tr>
<td></td>
<td>All</td>
<td>Board feet, weight</td>
</tr>
<tr>
<td></td>
<td>All</td>
<td>High quantity</td>
</tr>
<tr>
<td></td>
<td>Board feet, weight</td>
<td>Pallets, crates, packaging, industrial uses</td>
</tr>
<tr>
<td></td>
<td>Hardwoods and commercial species</td>
<td>Log buyers, small sawmills, or pallet/container mills</td>
</tr>
<tr>
<td></td>
<td>Most hardwood species and pine where appropriate</td>
<td>Construction contractors, manufacturers</td>
</tr>
<tr>
<td></td>
<td>Commercial hardwood species</td>
<td>General public; businesses, institutions &amp; government</td>
</tr>
<tr>
<td></td>
<td>High quantity</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Firewood producers</td>
<td>Combined mulch &amp; milling producers; Mix of forest products producers</td>
</tr>
<tr>
<td></td>
<td>Timbers and other uses</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Construction contractors, manufacturers</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Firewood producers</td>
<td></td>
</tr>
<tr>
<td></td>
<td>General public</td>
<td></td>
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<td></td>
<td>Construction contractors, manufacturers</td>
<td></td>
</tr>
<tr>
<td></td>
<td>General public</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Tree removal to end-product</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Tree grading, log grading, log manufacturing</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Sorting by grade; metal scans; accumulation of semi-loads</td>
<td>Sorting by grade and species</td>
</tr>
<tr>
<td></td>
<td>Log loader and crane; metal detection equipment, portable sawmill, dry kiln</td>
<td></td>
</tr>
</tbody>
</table>

See Care Industry Association (tcia.org).
For additional information and more detailed instruction regarding urban wood program implementation.

- The Urban Wood Toolkit and Urban Wood Webinar Series put forth by the Urban Wood Network, a collaborative, national urban wood organization leading production firms in best practices.
- The Urban Wood Use Action Guide offered by Vibrant Cities Lab, a resource offered by the U.S. Forest Service, American Forests, and the National Association of Regional Councils.

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