



# ESTABLISHING AN URBAN WOOD UTILIZATION PROGRAM

N.C. Forest Service Urban and Community Forestry

## What ARE Urban Wood and Urban Wood Utilization 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 streets.
- 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 Utilization 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 landfill tipping fees.
- Cost savings can be redirected toward other urban forestry uses.
- Tree services may 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, such as mulch, park benches, signs, etc., within your organization.

### Environmental Benefits:

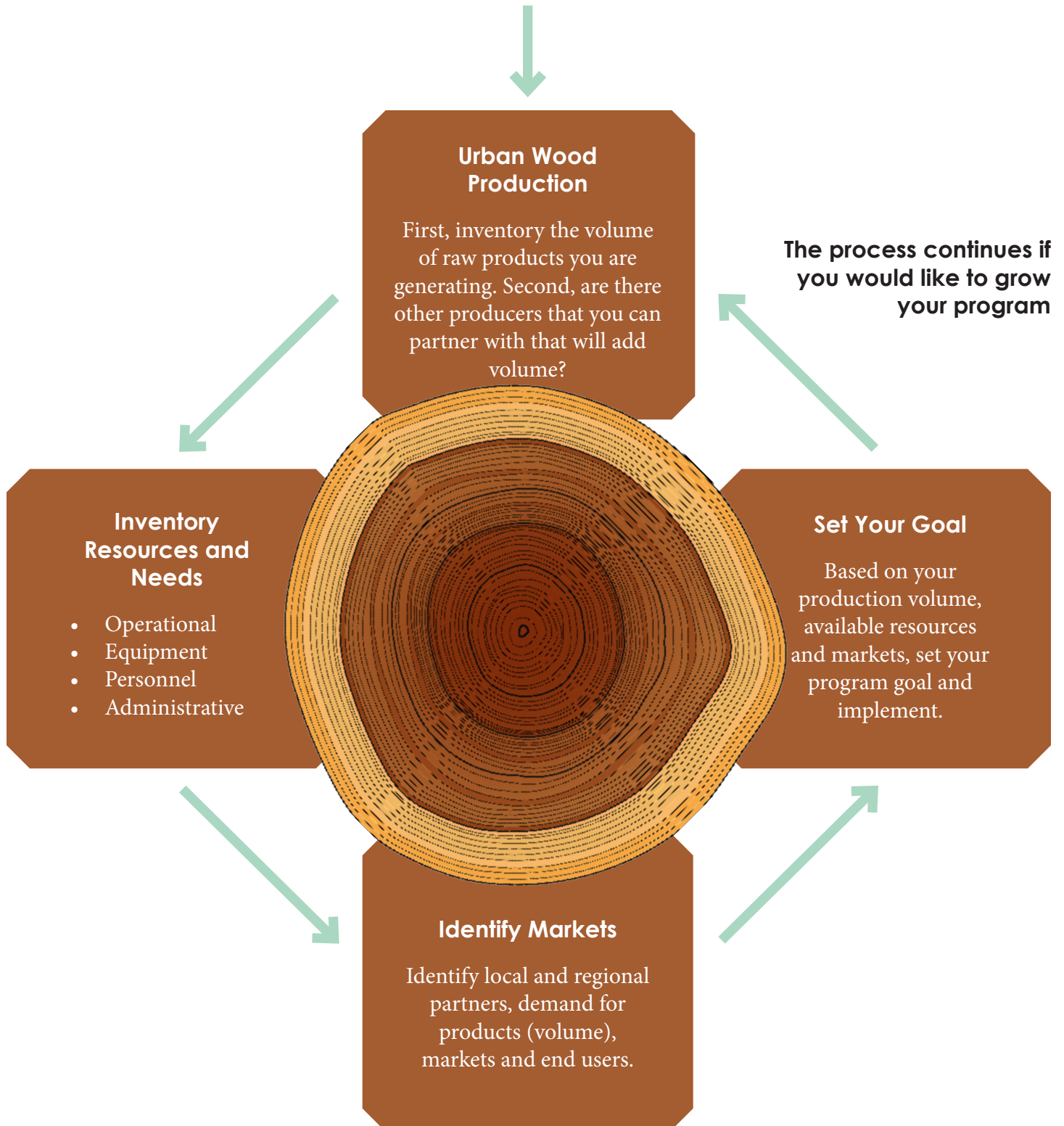
- Diversion relieves stress on landfills and can lower transportation needs, reducing emissions.
- Using mulch enhances plant health and can protect soil during construction or disturbance activities.
- Urban wood products, such as lumber or furniture, continue to hold carbon that would otherwise be released into the atmosphere.

## Developing an Urban Wood Utilization Program



### Program is Scalable

Start simple, and work your program within your capacity. Through the development process, your program will evolve to it's highest potential.



# Urban Wood Program Resource Needs

## 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:**

### Tier 1: Base Utilization

Goal: Cost reduction and diversion of urban wood and byproducts from landfill for better use.

Using limited resources, urban wood products and byproducts are used internally or passed on to vendors or end users for better use.

#### 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

- Intraorganizational product use
- Firewood and mulch vendors or end users

### Tier 2: Developing Utilization

Goal: Regional producers, markets, and end users are 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.

#### Operation Yard(s)

- Storage and processing

#### Equipment

- Chipper or tub grinder – grind waste wood
- 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: Enterprise Utilization

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 developing utilization findings and work. You have acquired all needed resources.

#### 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 tree services – yard tree to product of sale
- Marketing
  - Products
  - "Green" services



# Arborists’ Markets for Woody Residue

This chart addresses the most typical market dynamics and is not meant to be inclusive of all possible markets. It is intended to be used for lower uses in the hierarchy.

	<div>TIER 1</div> <div>Higher percent production volume, less processing complexity, lower economic value</div>			
	Lowest Value Products			
Wood Form	Chips and Ground Material			St
Log Grades	All			
Units of Measure	Cubic feet, weight			
Species	All			h
Quantity				
End Uses	Compost	Chips	Mulch	
Markets	Compost producers, reclamation yards, landscaping firms	Fuel - biomass energy companies Agriculture/livestock yards, construction	Mulch producers, reclamation yards, landscaping firms	
End Users	General public, local school and park districts, businesses, institutions and government	Fuel — biomass energy companies Agriculture, livestock producers, construction contractors	General public, local school and park districts, businesses, institutions and government	
Marketing/ Services	“Green Services” Company/Organization			
Processing Required	Chipping or grinding (Also, presorting, processing to set dimensions, moisture control)			
Processing Equipment	Chipper or grinder, trailer or other hauling equipment			C I

## es from Urban and Community Trees

ative of all situations. Higher quality wood in columns further to the right may also be in columns to the left.

## TIER 2&3

ity and equipment,

Lower percent production volume, more processing complexity and equipment, higher economic value

Mid-Range Value Products			Highest Value Products	
Stumps, branches and log segments	Timbers and Whole Trees	Merchantable Logs (at least 8' long, 12" diameter — confirm with mill)		
All	All	Grades 1-3	Select grades or character wood	Grades 1 and 2
Cords	Board feet, weight			
Commercial species, i.e., Hickory or other, ash requires special treatment	All	Hardwoods and commercial species	Most hardwood species and pine, where appropriate	Commercial hardwood species
		High quantity		High quantity
Firewood	Timbers and other uses	Pallets, crates, packaging, industrial uses	Lumber, cabinetry, furniture, millwork, flooring, gifts	
Firewood Producers	Combined mulch and milling producers, mix of forest products producers	Log buyers, small sawmills or pallet/container mills	Small, typically portable, band mills	Log buyers, industrial sawmills
General Public	Commercial buyers, hobbyists, artisans/makers	Construction contractors, manufacturers	General public, local school and park districts, businesses, institutions and government	General public, businesses, institutions and government
None		Tree removal to end-product		
Sorting by species	None	Tree grading, log grading, log manufacturing		
		Sorting by grade, metal scans, accumulation of semi-loads	Sorting by grade and species	Sorting by grade and species, metal scans, accumulation of semi-loads
Chain or hand saw, trailer or other hauling equipment	Log loader and crane; metal detection equipment, portable sawmill, dry kiln			

## RESOURCES AND REFERENCES

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For additional information and more detailed instructions regarding urban wood program implementation:

- The NC Urban Wood Group is an organization that promotes urban wood utilization, works to connect stakeholders and provides educational opportunities.
- 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 is a resource offered by the U.S. Forest Service, American Forests and the National Association of Regional Councils.

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**Contact your County Ranger | [ncforestservice.gov/contacts](https://ncforestservice.gov/contacts)**

Urban & Community Forestry | 919-857-4841 | [ncforestservice.gov](https://ncforestservice.gov)

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