From the USDA Forest Service and Partners

# Urban Wood Roundtable

By Morgan Grove, Joe Lehnen, Marisa Repka, Jeff Carroll, Kari Divine, Scott Paul, Katie Fernholz, Steve Freeman, Cherie Fisher, Sarah Hines, and Phil Rodbell

Wood products research and development at the USDA Forest Service is most concentrated at the venerable Forest Products Laboratory, based in Madison, Wisconsin. Urban wood use and market development is a unique area of study done in collaboration with city, state, and private partners in metropolitan areas across the United States. Urban trees are not removed for their wood value, but rather due to storm damage, safety, insects and disease, or other reasons. Yet, how the tree is removed impacts future options and potential value of the wood.

What the last decade has taught us is that it's helpful to think much more broadly than wood alone, and that social, ecological, and economic opportunities can be intertwined. Efforts underway at local to national scales have much to learn from one another, and national networks—such as the USDA Forest Service-supported Urban Wood Network (UWN)—can help to connect and accelerate our learning.

Right now, the more urban wood we can collectively transform into useful material, the more we create options and economic opportunity for the entire sector. Arborists and urban foresters—both public and private—each have a role to play in making this happen. Below, we share some perspectives from various thought and practice leaders in the urban wood space, and we welcome your feedback and ideas.

## Urban Wood Network

Local urban wood programs have great potential—not only to reduce the amount of woody material going to waste, but also to generate income for municipalities through time and cost savings in material disposal, and through the conversion of material to value-added products. These programs have great potential to stimulate local economies with jobs, goods, and services, and to educate residents on the environmental benefits of urban wood utilization, such as community sustainability, carbon sequestration, emissions reduction, and sustainable urban forest management.

Local urban wood programs are complex, and working collaboratively to establish and maintain these efforts is essential. The process of utilizing urban forest resources is often described as an "urban wood chain," with the links in the chain defined as those who own and manage urban trees, those who process urban wood into products, those who specify or otherwise dictate its use as end products, and the consumers themselves. The idea of a linear chain is an oversimplification of an industry that is driven by diverse wood supplies, supported by state and federal agency programming, and benefits from support services industries. The UWN brings all the stakeholders together to inform, collaborate, and connect to build community and business and consumer confidence in urban wood. Collectively, we have an opportunity to realize a circular economy that contributes to global sustainability.

UWN is a national platform for those who work in and with the urban wood industry so that individual efforts are leveraged for the greatest impact. UWN is a repository of information for those who use urban wood and provides industry-specific training, outreach materials, branding, and digital engagement of consumers.

How a tree is removed impacts future options and potential value of the wood. This slab table represents a unique and high-value option made from an urban tree. Photo Courtesy of USDA Forest Service

Upcycled urban timber at Sterling Lumber milling facility in Phoenix, Illinois. Logs produced from municipal/public property ash removals were milled and used in the shipping and construction matting industries. Photo by Jim Semelka

Some resources are free and others are available only to members; membership is open to all for a small fee. Members share their expertise so that others can benefit from and build on their successes, rather than struggle with trying to overcome the same old barriers. Working together will help to ensure the highest and best use of our nation's urban forest resource.

## A role for the private sector consultant

Demand for urban wood is high in cities across the US, but lack of consistent supply remains a key obstacle to high volume utilization. The challenge in realizing a circular economy model for urban wood is in coordinating across interested parties with limited bandwidth and resources. Consultants can play a vital role in coordination, coaching, and connecting the players crucial to the building of a reliable supply chain. They are the shared "staff" who can identify and address the gaps, connect the dots, and build a collaborative network necessary to take urban wood sales to scale.

The current loosely connected ecosystem of suppliers, sawyers, mill shops, and fabricators—each individually capable of producing value-added products from fresh cut and deconstructed lumber—lack sufficient capital and labor to satisfy large orders from mid-level buyers. An aggregation of these sawyers, millers, and fabricators under the coordination of consultants and private sector partners could change that and result in the ability to collectively meet the needs of larger companies who want to use urban wood but are not willing to aggregate from multiple sources.

Another key factor calling for the assistance of consultants is identifying the diversity of uses for urban trees. These uses can range from mulch and firewood to high-end lumber used in furniture. Technical assistance can play a critical role in identifying end markets for urban wood across a variety of grades, and ultimately capturing maximum value from this waste stream. The goal of the consultant is to get the >>

David Brown of Brick + Board in Baltimore, Maryland processes salvaged urban wood from deconstructed houses for resale. Photo Courtesy of USDA Forest Service

Ash removal logs milled and thermally modified Refueling Station on Lake Michigan, in the Chica

supply chain from source to consumer running sustainably on its own market fuel. Once the engine is primed by the work of the consultancy and the initial funding required to bring the project to life, it should run indefinitely and independently.

## A role for the public sector and the tree care industry

City agencies and private arborists can play critical roles to track data, cut trees correctly, and dispose of trees in ways that support urban wood product markets and value development. Tracking data through inventory management is a key role that occurs at two stages. The first step is data collected in the field. These data are important to know how many trees are available by species, size, and condition over the long term. These data enable wood-related businesses to know the likely flows of wood in the future and what types and sizes of businesses could be supported. Second is data for inventory management of wood materials that are currently available. At this stage, a company may need 20,000 board feet (47.2 cubic m) of white oak or a city agency may need 1,000 cubic yards (765 cubic m) of wood chips. A successful inventory management system can answer whether the need can be met.

Urban forest specifications and practices for removing dead or hazardous trees is an essential feature to retain and maximize the wood value of the trees. Trees that have potential as logs for slabs or dimensional lumber need to be cut to the longest length practicable. Here, it is important to remember the observation that "You can make logs into firewood, but you can't make firewood into logs." The other practice is to maximize the social value of the tree by retaining the tree's story, which includes the address and neighborhood where the tree lived. Tagging and tracking trees at this stage is necessary to ensure the story is carried to the consumer.

Finally, wood materials from field operations need to be collected into central areas. The difference between a wood "dump" and an effective "sort yard" is that logs, branches, and chips are separated. Ideally, tagged logs are sorted by species, size, and quality—and there are other separate areas for firewood, wood chips, compost, and mulch. Here, the information management system needs to be reflected in the physical sort yard. Knowing you have it, but not being able to find or access it is a significant obstacle to fulfilling potential clients' needs.

## The retail furniture industry

The Room & Board furnishing store began its use and exploration of urban wood through the Baltimore Wood Project in cooperation with the USDA Forest Service, City of Baltimore, and Humanim. Since launching the product line, the company has expanded to use

to construct the Belm nt Harbor
go Park District. Photo by Jim Semelka

Founder and owner of The Wood Cycle, Paul Morrison, saws wood slabs. Photo Courtesy The Wood Cycle of Wisconsin

wood sourced from Baltimore, Detroit, Minneapolis, Sacramento, Southern California, and other cities and regions. Many of the products use slabs and cookies from deconstructed wood sources, but Room & Board sees real opportunity in finding good sources with a consistent supply of dimensional fresh-cut urban wood.

Many obstacles need to be solved to supply the retail furniture industry including availability, scale improvements, appropriate species, and pricing. But progress has been made and the industry sees a bright future ahead when the entire urban wood supply chain works in concert to create solutions for a wide range of industries and applications.

## Specialty wood products

In 2020, Taylor Guitars released the Builder's Edition 324ce, the first dedicated guitar line made with urban wood. In 2021, the venerable company released the GT Urban Ash and the 326ce. The back and sides of these guitars are made with Shamel ash (*Fraxinus uhdei*) that were former Los Angeles county street trees that needed to be removed. They were sourced from West Coast Arborists, Inc.

The Urban Ash product line was identified specifically as a "tonewood" for guitars, but until Bob Taylor embraced it, there was no cost-effective infrastructure in place to get the wood to their factory with the quality, quantity, and predictability needed to make it work. Shamel ash trees are scattered across the vast landscape of Southern California, on both public and private lands, governed by a patchwork of municipalities, each with their own subset of jurisdictions. Typically, when a city needs to remove a tree, an arborist safely takes it down, cleans up the debris, and plants another tree if instructed. Taylor discovered that the entire system is designed to dispose of the remains of urban wood as quickly and cheaply as possible. This may sound logical to local government—unless entrepreneurs want to make something out of the wood.

Today, Taylor Guitars is involved with several municipal planting programs to expand and diversify the tree canopy supported by the California Department of Forestry and Fire Protection (CAL FIRE). More trees planted ultimately means more trees that will need to be disposed of in the future. Figuring out a circular economy that creates jobs and supports the planting, maintenance, disposal, and repurposing of urban trees is an increasingly important priority for city officials who are struggling with disposal costs.

Taylor Guitars plans to expand their involvement with urban planting projects, and their use of urban wood too. In fact, the company has recently started incorporating other urban wood species such as walnut >>

Ash logs from the Oak Park, Illinois Park District were used for interior trim construction in Oak Park's Austin Gardens Environmental Educational Center, a LEED Platinum Certified building  Photo by Jim Semelka

and eucalyptus into future product lines. And the expectation is that other companies will follow suit.

Of course, small woodshops and artisans have long acquired urban wood through informal networks and personal relationships, but it's unpredictable, and the vast majority of good wood is disposed of by local jurisdictions and the tree care industry before anyone knows it was even there.

Municipal arborists and urban foresters have the power to make wood products a priority and begin to transform their operations in support of value-added products and economic opportunity for the urban wood movement. What steps have you taken in this direction, and what are the biggest challenges and opportunities that you see? We would love to hear from you. Please share thoughts: sarah.hines@usda.gov

*The findings and conclusions of this article are those of the individual authors and do not necessarily represent the views of the U.S. Department of Agriculture or the Forest Service.*

# Recommended Reading

## Andy Hillman Reflects on Career, What's Next, and Why UCF Has Arrived

Last April, Andy Hillman retired from a decade as a business developer for Davey Resource Group. Prior to that, he was Ithaca, New York's longtime city forester, and prior to that he worked for the City of Oswego in public works and urban forestry. Previous to that he was a United States Naval Reserve Commissioned Officer and Student Naval Aviator. Retirement stirs up happy memories and reflection—you're bound to enjoy this blog post with Andy.