Wood Utilization Options for Urban Trees Infested by Invasive Species

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- Renewable Resource Solutions, USDA Forest Service Forest Products Laboratory Contractor
  - Mechanized Urban Harvesting
  - Workforce Development
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"Wood Utilization Options for Urban Trees Infested by Invasive Species" is a reference for land managers, arborists, utilization specialists, and other natural resources professionals. It provides comprehensive information on wood technology, markets, and technical information for hardwoods affected by invasive species.
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Part One - Overview

- Invasive Species are “considered non-native to the ecosystem and whose introduction causes or is likely to cause economic or environmental harm or harm to human health” ~ National Invasive Species Plan 2008
  - Emerald ash borer (EAB)
  - Asian longhorned beetle (ALB)
  - Gypsy moth
  - Thousand cankers disease
Emerald Ash Borer

Photo courtesy of Stephan Ausmus, USDA ARS

Photo courtesy of David Cappaert, www.bugwood.com
EAB Quarantine Map (8/1/2016)
Federal Initiatives

- USDA Animal and Plant Health Inspection Service
  - Detection, control, eradication and education

- USDA Forest Service
  - Research into prevention, biology, control, management, utilization and market research and development
State Programs

- Southeast Michigan Resource Conservation and Development District
  - Ash Utilization Options Project

- Illinois EAB Wood Utilization Team
  - Focused on developing an understanding of infestation and wood utilization for arborists, sawyers, woodworkers, intermediaries and end-users
Part Two – Basic Wood Properties of Hardwoods Affected by Invasive Species
Objective

- To assist users by providing a starting point for gathering important technical information for wood from trees infested by invasive species
- To provide basic information on important characteristics
Part Three – Market and Utilization Options for Ash Logs, Lumber and Other Products
Trees

Traverwood Branch Library – Courtesy Ann Arbor District Library
Lumber

TrueNorth Woods

SE Michigan RC&D Council
Furniture

- Residential and commercial product lines
- Most furniture is clear cuttings, solid wood
- Increasing amounts of veneered surfaces
- Custom and unique designs
Cabinetry

- Both solid and veneered products
- Visual appearance resembles oak
- Clear and rustic grades often used
- Large and small manufacturers
- Cabinets now used throughout home and garage
Millwork

- Produced mostly from solid lumber, increasing amounts of veneer
- Moldings, paneling, doors, mantles
Flooring

- Solid strip, plank or engineered
- 2 ¼ to 8+ inches wide
- 9/16 to ¾ inch thick
- Clear and character grades
- Unfinished and prefinished
Marketing Urban Wood in Michigan

Jessica Simons
Wood Utilization Options for Urban Trees
Unique. Sustainable. Local. Quality. Perfect for your next project!

Every neighborhood is different. That’s what makes the Urban Wood Marketplace special – Because Urban Wood is reclaimed from tree removals in local communities, our products are as one-of-a-kind as the trees on your own street.
ReUse Center
Urbanwood Marketplace
Sales Growth

2008 - $18K
2009 - $29K
2010 - $37K
2011 - $67K
2012 - $124K
- Products vary by mill
- Many cater to hobby woodworkers
- As many as 30 different species available
Don’t chip that tree. Reclaim it!

Did you know that Southeast Michigan’s dead urban trees could produce almost five million board feet of lumber each year? Unfortunately, trees removed from our cities are usually fated for the chipper. Instead, by saving and recycling the best logs, our partners create a wide variety of remarkable green products.

Purchasing lumber or other products from Urbanwood does more than give you beautiful, high-quality wood. Urbanwood partners make smart use of local resources. Our network of local sawmills turns dead urban trees into products that bring lasting value and exceptional character to your home.

Urbanwood products: a sustainable choice that supports communities in Southeast Michigan.
Kenosha County Tree Removal Project
Mechanized Cut-to-Length System

- Rubber tired harvester
- Rubber tired forwarder
Traditional Chainsaw Removal

- Ideal for smaller number of trees
- Utilization is typically not as cost-effective with smaller volumes
- Need training to manufacture logs correctly
Advantages of Rubber Tired Mechanized Logging Equipment

- Can operate on streets
- Can reach out up to 30 feet
- Can process a felled tree
- Top down felling
- Operator is trained in cutting and sorting products
- Safer than doing the same job with a chainsaw
- High visibility
- Removal and processing is fast and efficient
Harvesting Operations

- Processor operator needed to be isolated with minimal contact for optimum operation.
- Forwarder operator needs safe travel routes to landing areas.
Preliminary Ash Locations

Brighton Dale Park & Golf Course
Petrifying Springs Park & Golf Course

Preliminary Ash Locations

October 19, 2013
ASH TREE REMOVAL & REFORESTATION

WHAT IS EMERALD ASH BORER?

Emerald Ash Borer (Agrilus planipennis) is an invasive, wood boring beetle. It kills ash trees (Fraxinus) by eating the tissues under the bark. This metallic green beetle is native to East Asia. It was brought to the United States accidentally in the wood of shipping crates from China.

EAB is not a threat to human health but it kills North American native ash trees of any size, any age, healthy or unhealthy. The larvae (the immature stage of EAB) emerge in the winter and form feeding galleries in the host bark and wood. The adult beetles emerge and mate, then fly to the nearest healthy ash tree to lay eggs. The larvae hatch and start feeding. The beetle travels to another tree and the process repeats. It can kill an ash tree in 3 to 5 years. It is estimated that more than 50 million ash trees are dead or dying in the Midwest because of this insect.

KENOSHA COUNTY PARKS & GOLF COURSES

EAB was first confirmed in Kenosha County in 2006. Kenosha County conducted an inventory of ash trees in the county parks and golf courses in 2018 to determine how many and in what extent the trees had been impacted. The decision was made to remove and replace the ash trees based on their poor condition.

The removal of the ash trees will change the appearance of the parks and golf courses. Kenosha County plans to remove them during the summer so that the process does not interfere with park maintenance and operations. The trees being removed will be in lower areas, fairways on golf courses, and 60 feet into any woods along bore areas and along trails in order to keep park visitors and property safe from falling debris.

A diverse mix of trees species are being planted at a rate of about one for every three that is tree removed. This diversity is to minimize the impact to the level by any future invaders. Many trees have been planted in the parks over the last three years in preparation for this removal project. This will be an ongoing process as long as these trees remain.

This project to remove the diseased and dying ash trees is being done in the interest of public safety. Please bear with us through the process of removal and reforestation.

FOX RIVER PARK

An area on the map, 820 trees will be removed from Fox River County Park.

80 trees will be planted, including Maple, Kentucky Coffee, Locust, Hackberry, Elm, Beech, Oak, and Fir trees.

For more information, please contact Kenosha County Parks at 262-657-1900.
Harvester Operating along the “Green”
Harvester About to Process Tree
Area Post-removal
Pulpwood to be Shipped to Mill by Rail
Parking Log Sort Yard – Pulpwood, Saw Bolts, & Sawlogs
EAB Ash Sawlogs from County Park and Golf Course
Sawlogs
Product Piles
Pre-positioned Trailer
Kenosha County Tree Removal Project

- Renewable Resource Solutions
  - Setting up the removal plan
  - Bid process
  - Harvesting process
  - Address concerns
County Responsibilities

Kenosha County was and is responsible for taking care of informing users and the public of the tree removal process.
Contracted Responsibilities

- Renewable Resource Solutions will make every effort to market as many of the products as possible from the harvesting.
- All of the tree products/parts that can’t be marketed will be the responsibility of Kenosha County.
Renewable Resource Solutions will...

Develop harvest plans, including Maps showing:

- Trees to be removed
- Access points
- Landing areas
Harvest Plans Con’t.

Trees to be removed

- Do they need to be painted?
- What needs to be done & how to designate:
  - Removal of entire tree
  - Removal of bole wood and leave tops
  - Removal of bole wood and chip tops at stump
  - Cut and leave entire tree
Golf Courses - When can trees be removed?

- Identify times of year tree removal can be done
- Can the logger travel on cart paths?
- Where are the irrigation lines?
Landings

- Where can we stack logs and tops?
- Any restrictions on timing, etc.?
- Is there a way to secure the location to prevent firewood theft?
- Noise issues, timing issues, too early/late
Contracts

- What time of year to harvest?
- Bid out separately (three) or bid as one project?
- How long (1 or 2 years)?
- Are there high need areas that should be treated asap?
MAKING MECHANIZED LOGGING WORK IN AN URBAN SETTING
Municipality Needs

- Safe tree removal at the lowest possible cost
Logger Needs

- Clear identification of what needs to be cut
- Product specifications
- Product landing area(s)
- Removal specifications
- Safety
- Equipment securement
Problem

- Municipalities don’t know mechanized logging or wood products
- Loggers don’t know the urban setting or product markets
- Resources are wasted trying to match up
Solution

- Organizer who knows timber sales & product markets
- Pre-cutting logistics set-up
- Works with logger throughout sale
Questions?

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Download “Wood Utilization Options for Urban Trees Infested by Invasive Species”: www.na.fs.fed.us/werc
Learn more about another urban harvesting demonstration:  www.sustainableinc.org/projects