



Community Urban Wood Utilization Planning Worksheet

Developing a wood utilization plan for a community may seem complicated and is often viewed as unnecessary, especially when wood disposal is still affordable and straightforward. But in reality, finding value-added uses for wood generated through urban forestry practices can be quite simple and may have many beneficial results for a community. Despite the common assumption that “urban” wood has no value beyond its uses as firewood, mulch, or compost, recent studies in Southeast Michigan have shown that the wood from our region’s dead and dying trees could produce nearly five million board feet of quality lumber (enough to build 362 average-sized homes) each year. Finding a wider variety of uses for removed trees not only promotes better resource stewardship, it has the opportunity to lower wood disposal costs, create public-private partnerships that can more efficiently handle widespread tree mortality (such as from the emerald ash borer), and produce high-quality, sustainable products suitable for use in community projects and green building programs.

This worksheet is intended to help walk you through some of the issues you might consider in developing a wood utilization plan. While it might seem overwhelming at first, the questions posed below are merely intended to help you think about what objectives are most important for your own community. These steps make an attempt to introduce many of the major issues, opportunities, and challenges that you are likely to encounter. However, a successful plan may be developed by addressing only a very small portion of what you see below. The key is to investigate the capacity and partners that you have available and to use them to better meet your own community’s unique needs.

Initial Overview – Current status, needs, and opportunities

- What is your current wood disposal system?
- Do you use outside contractors or do it all in-house?
- What expenses does your community face in regards to wood disposal? Even if this is done entirely in-house, do you have expenses associated with handling wood residues, performing chipping/grinding operations, maintaining equipment, etc.?
- Do you currently create any products (firewood, mulch, compost, etc.) from your wood residues? Are these sold or given away? Do you have a formal procedure for this?
- Does your community have any obvious wood product needs?
- How supportive is your staff of new urban forestry practices?
- How supportive is your community of new urban forestry practices?

Inventory & Resource Availability

- Does your community already have an urban tree inventory?
- Does it include both street and park/recreation trees?
- Does it include information that may be helpful in planning to utilize the higher quality logs from dead trees? The following measurements may be useful to consider for future data collection:
 - o Diameter – Typically at least a 10” DBH (diameter at breast height, approximately 4’ from the ground) is needed for a log to be millable.

- Height to first branching – Typically, at least an 8’ log is desirable for milling, but shorter logs may be considered depending on the types of products planned.
 - Mortality/health – Do you know roughly how many trees are removed from your community annually? Are standing dead trees still in good condition?
 - Accessibility – Can the tree be felled safely without cutting the log into smaller segments?
 - Quality – Do the trees have obvious damage, scarring, metal, or other contaminants that would restrict their use?
 - Species – Different species can be more suitable for some products than others.
- If you are planning a new inventory or updating one, would you be able to include a few simple, additional data points to make future wood use planning easier? Including a DBH measurement and notes on log length, accessibility, and quality would be very helpful in exploring potential product opportunities, recruiting partners, and determining the scale of your program. For a much more complex model, California’s Community and Urban Forest Inventory and Management Program has created an online template for wood utilization-based urban forest inventories at http://www.ufe.org/files/ufeipubs/CUFIM_Report.pdf.

Capacity Assessment

- How much staffing time do you have available for the additional handling, sorting, or processing that you may need to create products from your trees? What role do private contractors currently play in your tree care and removal operations?
- What kinds of training do these staff members currently have? Are there ways to get them additional helpful training (as needed) in log evaluation, species identification, harvesting and safe felling techniques, log bucking (cutting into sections while still preserving value), equipment usage, wood handling, and sorting?
- What kinds of equipment do you have available, especially regarding transporting and sorting logs, chipping/grinding, and other processing? If you do not have capability to transport logs, is this a service that can be found locally?
- Do you have a yard or multiple yards with ample space available for collecting, sorting, and/or processing wood residues? Do you have appropriate areas to store processed lumber, firewood, mulch, or other products?
- Keep in mind that picking up and transporting single logs can often be quite inefficient. Can you create systems to streamline this effort, such as coordinating tree removals of millable trees around similar dates and locations or capturing removed logs in roll-off containers strategically placed throughout a community?
- Coordinating the transportation and collection of wood materials within communities can be challenging. Is this something that could be shared as a cooperative effort between neighboring cities and/or private arborists?
- If you use private contractors to conduct any or all of your tree removals, are they receptive to incorporating a wood use plan? Be sure to work details into any removal contracts that specify how logs will be handled and what the expectations for wood disposal are. If your wood use plan actually reduces the wood disposal responsibilities for your contractor, be sure to see that their service fees are reduced by a corresponding amount.
- Are there any quarantine regulations (such as for the emerald ash borer) or other local ordinances that pose restrictions on the processing and/or movement of your wood residues?
- Does your current forestry budget and/or planning strategy allow for flexibility in how wood disposal is handled?

Product Development Opportunities

- First and foremost, what does your community need in terms of wood products? Your plan will differ depending on the products you choose to focus on. Generally, communities can successfully reduce their own wood disposal costs and save money on the cost of the wood products used for city projects by using their own dead and dying trees. Finding uses for dead urban trees usually benefits municipal governments most directly when the wood is used to fulfill needs within the community itself. While many possible products are described below, a mix of these that makes the “best use” of the wide range of quality available in urban wood is generally the most recommended strategy (for example, using good logs for lumber and flooring, while using smaller trees, branches, and stumps for firewood, mulch, compost, and/or boiler fuel).
- Do you have some quantity of good logs available and the ability to process them (either internally or with outside partners)? Some of the highest value uses for logs are obviously planed lumber and other finished products, such as flooring or paneling. Are there currently building projects going on in city buildings where hardwood floors may be particularly prized? (This could pair nicely with any green building project that focuses on the use of sustainable and/or local materials.) Capitalizing on the talent of local woodworkers and artists can also be a good opportunity here, especially with dead trees of particular community or historical significance. Could city trees be used for memorial park benches or conference tables in city hall? Would students in vocational and/or construction engineering courses be able to use these products? Could they be used in low-income housing programs or sold to citizens with profits coming back to a city tree fund? While the quantity of trees suitable for these uses are likely to be somewhat lower and the processing skill and expense higher, these types of projects can have exceptional value in promoting municipal sustainability and garnering public enthusiasm. The Ann Arbor District Library’s new Traverwood Branch building, which features flooring and paneling from local dead ash trees, is an excellent example of this type of project (<http://www.aadl.org/buildings/traverwood>). The City of Grosse Pointe Park has also completed several successful projects of this kind.
- Do you have quantities of sizable logs available that could be simply rough-milled and used to meet ongoing city maintenance needs? Do you have needs for landscape timbers, trail walkways and borders, truck sideboards, barricades, equipment storage, or other simple cut-to-order wood products that could be milled quickly and at a much lower cost than purchasing from traditional lumber yards? The City of Monroe has been very successful at using their own wood for simple wood needs throughout the community.
- Do you have large quantities of lower-quality wood available and needs for firewood, mulch, compost, or boiler fuel? Alternatively, are there outside markets for any of these products? Some communities have firewood, mulch, and/or compost giveaway programs that are very popular with residents. Others use their own mulch and compost in city landscaping operations. Some communities have been able to address their own high costs for both heating and wood disposal by installing a wood biomass boiler. A boiler installation of this type is currently underway in the City of Taylor’s Heritage Park. For more information about wood energy opportunities, please visit <http://michiganwoodenergy.org>.

Public- Private Partnerships

- Do you have a need and/or interest in working with private industries to handle processing or to purchase finished products? Developing partnerships with private wood industries can be quite successful, but communities should not expect to see significant profit from municipal trees due to the challenging transportation and handling involved. Public-private relationships can be mutually beneficial, typically resulting in a break-even situation for the community whereby disposal costs are lowered, but no major revenue is generated. The private industries involved gain greater accessibility to local wood resources and a stronger connection to the local community.
- Do you have some familiarity with the industry? Many first attempts at partnerships between wood industries and communities have little success due to miscommunications and failure to meet expectations. Many communities give up after getting a poor reception from a few larger forest product businesses, not realizing that these industries do not typically operate in urban areas due to their concerns about the quality of wood that is not obtained from traditionally managed forests. Simply put, their large, highly mechanized operations

are not well-suited to the diversity and challenges of recovering urban trees. Smaller and more urban-based companies (such as portable band-saw mills and mulch industries) are much more likely partners. Even then, particularly with mills, you will want to be careful to keep the lines of communication open, so that everyone is clear about what types and quality of wood are desired and how it should be processed.

- Do you have a clear idea of the types of partners that you are looking for? You will want to make many decisions about what specific services you are looking for before beginning to talk with potential partners. When interviewing possible industry cooperators, be sure to collect information and clarify details on the following:
 - o Scale, Capacity, and Services – Are they interested in single-log pickup or do they only want to be called if you have fifty available? Can they handle wood transportation or will you need to provide that? If you intend to receive finished wood products, what is their typical turnaround time? What all services do they provide (chipping, grinding, milling, kiln-drying, air-drying, planing, etc.)?
 - o Wood Needs – Do they have limits on the species, size, quantities, and/or condition of wood? Will they accept and process all logs that you set aside? Will the community be expected to pre-screen or sort the material in advance or will the processor provide sorting as an additional paid service? Can the processor provide some simple training for municipal employees to ensure that log quality requirements (if any) are understood?
 - o Location – Where is the potential partner located? Where will processing take place? Is any additional transportation needed? Can the processing take place on city property and/or at the wood collection site?
 - o Payment Types – What types of payment will be considered? This will be highly dependent on what specific services the community is looking for. If your community just wants to have all of the wood removed, there is a possibility that you might receive some small compensation for the wood, particularly if some type of pre-sorting or processing has occurred (for instance, with the best logs stacked and ready or with fuel-ready chips set aside). If your community is looking to have an industry member perform a service for you, it may benefit you to be flexible with the partnership agreement. Some mills, for instance, will provide custom cutting on site, allowing the community to retain a portion of the final lumber products, but taking the bulk of the lumber as payment with no additional money exchanged. This type of goods-for-services scenario can be quite attractive for some communities. Others will charge simply by the hours of service provided or for the amount of wood processed. Any additional transportation fees, handling/sorting fees, and/or equipment fees (such as for saw blades) should also be addressed in advance.
- Do you need assistance with development of bids/contract agreements for utilization services? The Michigan Department of Natural Resources and the Southeast Michigan RC&D Council may be able to provide some examples and/or technical assistance.
- Have you already identified any potential partners? Small sawmill services, in particular, can be quite difficult to locate. The following websites are likely to be good sources for identifying wood industry partners: Ash Utilization Options Project (<http://semircd.org/ash/education/resources.php#22>), Michigan Department of Natural Resources Forest Products Industry Directory (<http://www.michigandnr.com/wood/>), The Urbanwood Project (<http://urbanwood.org>), and Forestry Forum (<http://www.forestryforum.com/>). Local Conservation District and Michigan State University Extension offices also can be good contacts for lists of local wood industries.

Community Planning, Administration, and Outreach

- Does your community already have a written urban forestry management plan? If so, you may want to consider developing a utilization component to include in these long-term plans. For one good example, you may want to look at the Wood Waste Recycling Plan for the City of Olympia, WA, available online at <http://www.ci.olympia.wa.us/NR/rdonlyres/8825122E-5317-4DBC-9611-B3FA697160A4/0/WoodWasteRecyclingReport.pdf>.

- Are there any local government regulatory structures, ordinances, and incentives that could be created in your community to foster the continued growth of and support for your wood utilization program?
- What is your staff's response likely to be if you attempt to implement a new wood use program? As you well know, many communities are short-staffed and facing ever-tighter budgets. Proposing entirely new management strategies may often be difficult. Following and learning from the success of other communities may help. The resources listed in the recommended reading section below offer many good examples; however, many local success stories exist as well.
- What is the public response likely to be to your wood use efforts? A strong public relations strategy may be another helpful component on an overall wood utilization plan. Without enough information, people can quickly and wrongly make conclusions that the city is unscrupulously "logging" streets and parks to help industries and/or staff make money from public resources. Care should be made to ensure that wood use operations are transparent and clearly communicated to local citizens. By keeping the focus on sustainability and resource recovery, you can instead show the true intent of your program – to "recycle" dead trees, which were once seen as a waste problem, into something of higher value that can benefit the community. You also may want to demonstrate that you are carefully adhering to any local wood quarantine or safety regulations throughout the process.
- Are there others in your community who can help with promoting your wood use efforts? There may be many groups in your city that would be excited about your new resource stewardship efforts and would be willing to help broadcast your success. Local media have been particularly responsive to stories about woodworkers, sawmills, artists, and community projects that have recovered dead ash trees in the wake of the emerald ash borer crisis. Be sure to check with your media outlets for opportunities to share your ideas with local citizens. You may also have good success working with parks volunteers and other community services groups, student organizations, and green building enthusiasts. If possible, create opportunities for citizen involvement, especially by allowing woodworkers or community members to purchase or acquire lumber and other wood products. Finally, don't discount the effect of using explanatory signage on high-profile wood projects.

Answering the questions above should help create a clearer picture of your own wood use needs, opportunities, and challenges. Armed with this information, you should be able to prioritize the goals and objectives that are most important for your planning process, recognize the types of information and/or training needs that you still may have, and identify the types of services that you need from additional partners.

At this point, you may want to review the recommended reading section below for more detailed information on wood utilization strategies, success stories, and planning advice. Further individualized assistance may also be obtained by contacting Jessica Simons at the Southeast Michigan Resource Conservation and Development Council (517-851-2372 or jessica.simons@semircd.org) or Anthony Weatherspoon at the Michigan Department of Natural Resources (517-335-3332 or weathera@michigan.gov).

Recommended Reading:

Cost-Effective Tree Removal and Utilization Strategies to Address Invasive Species Attacks (Bratkovich, Steele, Simons, and Weatherspoon, 2007); <http://semircd.org/ash/news/Cost%20Effective%20Tree%20Removal.pdf>.

Utilizing Municipal Trees: Ideas from Across the Country (Bratkovich, USDA Forest Service, 2001); <http://www.na.fs.fed.us/spfo/pubs/misc/umt/>.

Recycling Municipal Trees: A Guide for Marketing Sawlogs from Street Tree Removals in Municipalities (Cesa, Lempicki and Knotts, USDA Forest Service, 2003); http://www.fs.fed.us/na/morgantown/frm/cesa/rmt/rmt_index.html.

Harvesting Urban Timber (Sherrill, 2003); <http://www.harvestingurbantimber.com/>.

Urban Tree and Woody Yard Residues: Another Wood Resource (McKeever and Skog, USDA Forest Service, 2003); <http://www.fpl.fs.fed.us/documnts/fplrn/fplrn290.pdf>.

Urban Wood Utilization and Why It Matters (Steve Bratkovich, Dovetail Partners, 2008); <http://www.dovetailinc.org/reports/pdf/DovetailUrban0108ig.pdf>.

Ash Utilization Options Project (Southeast Michigan Resource Conservation and Development Council); <http://semircd.org/ash>.

Quantifying Urban Saw Timber Abundance and Quality in Southeastern Lower Michigan, U.S. (MacFarlane, Arboriculture and Urban Forestry, 2007); http://semircd.org/ash/research/macfarlane_isa_2007.pdf.

This worksheet is provided by the Southeast Michigan Resource Conservation and Development Council through funding provided by the USDA Forest Service Northeastern Area Wood Education and Resource Center. The Southeast Michigan RC&D is an equal opportunity employer and provider.



7203 Jackson Road, Ann Arbor MI 48103-9506 • Phone: (517) 851-2372 - Fax: (734) 662-1686 • www.semircd.org