

## Urban Woody Biomass Utilization for Economic Development

The Forest Product Laboratory (FPL) feasibility study for urban woody biomass utilization for urban economic development provides a framework for an integrated system for collection, processing, and distribution of urban woody biomass in Baltimore, Maryland. Unlike many existing urban wood utilization efforts, this integrated system includes deconstructed building materials, resulting in value-added products and opportunities to generate economic gains and jobs for inner-city residents. The key component of this system is creating jobs for chronically unemployed and under-employed urban residents. This assessment includes an overview of the city's economic conditions, raw material supply, labor resources, current process and systems, infrastructure requirements, potential markets, and development opportunities.

### Background

Every urban center possesses a repository of value in the wood within its borders. That value is realized through effective harvesting, transporting, and processing of wood from urban fall, arborist activity, and deconstruction of urban structures. Generating woody materials from urban forests and lumber from blighted homes is considered a cost center due to the expense of handling and disposing of these materials. However, these woody materials should be regarded as a profit center, an asset for building community wealth. Motivated mostly by cost avoidance, many municipalities have implemented innovative ideas to utilize urban wood. However, in contrast to their rural counterparts, few urban centers have considered their urban wood supply as a job generator.

Baltimore has 16,000 vacant properties scheduled for demolition. Deconstruction as a process for building



The city of Baltimore, Maryland, has 16,000 vacant homes. Reclaiming materials through deconstruction and establishing market outlets can create value where none currently exists.

removal would capture this urban wood source and make it available for better uses. Under Humanim's Details program (Precision Deconstruction & Innovative Reuse), a contract has been secured with the City of Baltimore to complete a pilot deconstruction project involving 50 contiguous row houses.

### Objective

The goal of this study is to determine the economic viability and social and environmental impacts of an integrated system that aggregates urban wood waste (woody biomass and deconstructed lumber).

### Approach

Gathering information on establishing an urban woody biomass industry, including a workable urban wood sort yard, involves several steps:



1. Determine if Northern European demand for wood pellets justifies capital costs of a pelletizing plant
2. Determine wood volumes from private arborists for supporting market outlets
3. Build partnerships with relevant organizations and execute memoranda of understanding to establish a distribution and market outlet system
4. Track and document chain of custody to show that material was actually reclaimed for reuse or manufacturing
5. Track costs, jobs generated, and market outlets for reclaimed wood
6. Track building material with photo, written, and bar code identification to establish reliable reclamation rates
7. Track revenue and expense related to deconstruction and disposition of material
8. Coordinate with other regional efforts to realize economies of scale

## Expected Outcomes

The proposed integrated system includes both urban wood waste and deconstructed building materials removed from the waste stream and converted to commodities. The aggregated sort yard will open up additional market outlets for urban wood, including deconstructed wood, thereby increasing the value of wood in blighted properties. By increasing the demand and value of deconstructed materials and urban woody biomass, jobs will be created upstream of the sort yard. We estimate that 60 to 80 jobs will be created with the successful completion of this study; an additional 100 jobs could be created with a fully operational sort yard.

## Timeline

The project will begin in May 2014 and end by July 2015. The first 35 contiguous houses will be



Urban wood collected from tree maintenance programs and storm damage are collected at Camp Small, Baltimore, Maryland. The wood is predominately chipped into mulch.

deconstructed by December 2014, with concurrent disposition of the material. The wood volume and European market analysis will be completed by December 2014. Information will be gathered and partnerships developed through early 2015, with the sort yard concept refined by June 2015 and a final report prepared by July 2015.

## Cooperators

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