

Urban Woody Biomass Utilization in Baltimore County, Maryland

Removing urban trees is a perpetual process needed for protecting public safety, eliminating conflicts within the built landscape, and promoting forest health. Felling, bucking, transporting, and processing removed trees is a costly process, and strategies for improving the efficiency of processing and redistributing the tree materials are needed to reduce the associated costs.

Background

To remain profitable, the traditional forest industry relies on high volumes of consistent grade logs and the low-volume producer (e.g., one using a portable mill for primary breakdown) requires very high product values. However, despite the current lack of a profitable process, the need to better utilize the large volumes of wood generated by arborists remains. Simply reducing disposal costs is ample motivation to devise a more efficient means of disposal. Processing arborist material into value-added products can reduce costs.

Objective

The goal of this study is simply to ascertain process improvements to reduce costs of urban forest management operations (in contrast to past efforts to catalogue opportunities to generate profit from recovered logs).

Approach

This study will examine four issues common to operational costs of municipal tree management:

1. Potential benefits of establishing municipal sort yards for receiving tree materials (reduction in labor costs, increased productive capacity of tree crews, cost efficiencies of pre- and post-processing of tree



Processing a typical urban log. Form and defect present special challenges.

materials for distribution to various value-added markets)

2. Development of lumber recovery factors from logs not suitable for commercial sawmills
3. Documentation of barriers and opportunities for marketing value-added products of urban trees to offset the costs of tree removals and disposition
4. Identification of opportunities to cost-effectively direct the bulk volume of wood material not suitable for mill production to other end uses (specifically, identification of volumes and distribution channels to verify reliable and sustainable production of wood fuel to support a thermal energy application)

Expected Outcomes

Municipal tree managers and public work departments will be able to use the results of this study to improve the efficiency of their tree disposition programs. The approach of Baltimore County may not be suitable for



adoption by other municipalities in its entirety, but it will demonstrate individual approaches and outcomes that can be incorporated into municipal tree programs.

Knowledge gained through this study should help managers determine if establishing sort yards is economically justifiable, considering factors such as anticipated volume of trees, personnel requirements, operator skills, equipment needs, land availability, wood product market assessments, and procurement processes. The results of this study will demonstrate how managers can compare their current operations with the techniques and processes studied.

Timeline

The project will begin in September 2014 and conclude by September 2016. Preliminary cost improvements to municipal tree care operations should be available by spring of 2015. Mill efficiencies will be catalogued by March 2016. Final results will be available for presentation by September 2016.

Cooperators

USDA Forest Service, Forest Products Laboratory
USDA Forest Service, Northern Research Station,
Princeton Laboratory

Maryland Forest Service, Forest Products Utilization
Program

Baltimore County, Maryland, Department of Environ-
mental Protection & Sustainability and Department of
Public Works



A typical assortment of logs sourced from roadsides and other urban settings in Baltimore County, Maryland.

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