

Reforestation Hub Assessment Project Synthesis

Prepared for:



by



Objectives

The goal of this initiative was to conduct a high-level opportunity analysis for “Reforestation Hub” development in US cities. Reforestation Hubs are a circular-economy model for urban forestry, in which trees are managed for maximum benefit across their life cycle. In particular, by **harnessing the value of urban wood waste** as a means of fueling reinvestment in new tree planting and maintenance, the study looks to provide a roadmap for cities to reduce waste and revitalize canopies.

Key Findings

PITTSBURGH



- At present the City of Pittsburgh **pays \$317,644 for wood waste disposal**, recovering very little material for secondary use at any grade (from mulch to durable products).
- Establishment of an organic recycling center could recoup up to **\$403,111** in lost annual economic value, while creating local jobs and reducing waste.
- Given the large network of unmanaged and/or unprotected open green space throughout the city, a carbon offsetting program was recommended as a means of financing capital-intensive planting and improved forest management toward the city’s goal of **100,000 trees planted by 2030**.

NEW YORK CITY



NYC Parks

- With an average **12,512 annual tree removals** (excluding ad hoc storm events), New York City presents one of the largest urban wood waste streams in the country.
- A key challenge for NYC Parks lies in centralizing its wood waste management across 5 distinct borough maintenance and operations teams.
- A pilot wood waste processing yard servicing Brooklyn & Queens could have significant impact: over **\$7 million dollars**, and more than **11,000 metric tons of CO2e emissions reductions**.

EUGENE



- For the City of Eugene, **improved data collection** was identified as a critical first step in facilitating wood utilization. By recording all city tree removals with size, species, and location data, the City can both measure wood waste generation and develop targeted management strategies.
- Because the volume of tree removals prescribed by the city itself is relatively low (less than 1000 annual), **aggregating wood waste streams** from additional sources (such as the Eugene Water and Electric Board, or private arborists and tree care companies) is important for creating the economies of scale necessary to make wood waste processing cost-effective.

Lessons Learned

Cambium Carbon conducted more than 100 interviews with stakeholders involved in urban forest management and wood waste processing (including city officials, sawyers & millers, arborists, and local nonprofit partners). In addition, a series of financial models were developed based on city data and market research. Our analysis has led to the following recommendations for future cities looking to develop local Reforestation Hubs:

- **Measure for management.** We found that current data collection regarding wood waste generation is often scattered across city departments and work orders, and rarely unified in a central record. However, understanding the scale and composition of the local wood waste stream is critical to sizing infrastructure investment and creating a management program that puts that material to its highest and best secondary use.
- **Centralize wood waste collection and processing infrastructure.** In all cities, current wood utilization was limited by the ability of any individual crew or actor to make cost-effective use of a small slice of a variable waste stream. By designating a central log yard to collect debris from multiple sources, shared processing infrastructure -- such as milling equipment, forklifts, or operating crews -- can be leveraged toward upcycling the maximum volume of material, thereby increasing return on investment.
- **Activate the private sector.** From contracting arborists to local millers and wood crafters, private sector partners play a pivotal role in implementing an urban wood economy. City government is well-positioned to be a central connector in aggregating material from individual sources; however, strong partnerships are essential in connecting material to the market. Coordination and buy-in from sector stakeholders will be essential to fueling a sustainable and economically efficient reuse engine.