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RESEARCH PROSPECTUS

The impact of tree planting on healthcare costs in the first six months of life

Are we getting the most from our urban tree planting programs? Municipal tree planting programs have many supporters. However, tension and uncertainty can arise around program implementation, cost, tree maintenance, and regulation.

This tension reflects a broader challenge: although tree planting is understood to be a long-term investment in the health[1] and resilience of a city, planting programs are often underfunded. A key challenge is the absence of clear, quantifiable data to demonstrate the returns on that investment.

Research proposal. This study aims to fill that gap by focusing on one of our most vulnerable populations: infants. We propose to specifically quantify the impact of tree planting on healthcare costs for babies in the first six months of life. Early health outcomes strongly predict lifelong wellbeing and healthcare needs. If exposure to trees can reduce health problems in infants, the long-term implications for public health and healthcare savings are enormous.

This information will help city leaders and urban planners understand whether improvements in health that come from exposure to trees are worth the costs of tree planting and maintenance.

Political relevance. Urban forestry programs have decisions to make. For example, who should pay for the maintenance of street trees in the public right-of-way? How much of a city's budget should be allocated to urban forestry programs? Tree planting programs must be carefully planned to maximize their benefits. This research will help by:

- **Demonstrating a direct link between trees and reduced healthcare costs**. This will help make the case that trees are an essential, and cost-effective, part of our public-health infrastructure.

- **Framing tree maintenance as preventive public health spending**. Leaders like "triple wins." Tree planting can improve health, save money, and address climate change.
- **Supporting cross-sector collaboration** between planning, parks, and health agencies. The findings from this work will equip municipalities with evidence to justify investments in equitable, city-funded street tree programs.
- **Supporting accountability** by supplying empirical performance measures for tree planting and street tree maintenance. By quantifying the impact of tree planting on infant healthcare costs, this project will provide decision-makers with concrete economic evidence to support urban forestry as a cost-effective public health strategy.

Approach. To show an association between tree planting and neonatal healthcare costs, we will make use of two datasets. First, a recent study found that tree planting around women's homes was associated with higher birthweights[2]. We will use these data to determine how tree planting influences the weight of babies of different sizes. Second, we will use a dataset showing how the healthcare costs of babies increase as their birthweight declines[3]. Combining these two datasets will allow us to directly link tree planting to reductions in neonatal healthcare costs.

Deliverables. At the end of the project, we will share results through a range of products tailored to the needs of different audiences:

- **Comprehensive final report** *(City leaders, funders, health systems, urban forestry professionals)*. A detailed, plain-language summary of methods, findings, and policy recommendations, written to guide decision-making and long-term investment in urban tree planting.
- **Peer-reviewed journal article(s)** *(Academic researchers, practitioners)*. Publication in a leading journal of public health, environmental science, or urban forestry to ensure scientific credibility and rigor.
- **Policy and practice briefs** *(City agencies, policymakers, nonprofits, arborists)*. Concise, visually engaging briefs that distill findings into actionable policies.
- **Community fact sheets** *(Residents, neighborhood groups, advocacy organizations)*. Accessible summaries highlighting key findings, equity implications, and practical benefits of trees for local communities.

- **Conference presentations** *(Urban forestry, arboriculture, and public policy professionals)*. Presentations at national or international conferences to build cross-sector visibility and information-sharing.
- **Webinars or workshops** *(City staff, nonprofit partners, community leaders)*. Interactive sessions designed to help practitioners and community stakeholders translate findings into on-the-ground strategies.
- **Media outreach** *(General public, journalists, advocacy groups)*. Press release and/or social media call outs to increase public awareness and support for trees as public health infrastructure.

Budget and timeline. The total budget of this proposed study is $45,000, and the project duration is 12 months.

References

1. Donovan, G.H., et al., *The association between tree planting and mortality: A natural experiment and cost-benefit analysis*. Environment International, 2022. **170**: p. 107609.
2. Donovan, G.H., et al., *The association between tree planting and birth outcomes*. Science of The Total Environment, 2025. **975**: p. 179229.
3. Beam, A.L., et al., *Estimates of healthcare spending for preterm and low-birthweight infants in a commercially insured population: 2008-2016*. J Perinatol, 2020. **40**(7): p. 1091-1099.