Title: Green infrastructure governance in U.S. cities

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Interdisciplinary research team: Governance and just transitions

Abstract: Green infrastructure (GI) and urban forestry are widely promoted sustainability and resilience strategies, providing multiple benefits. Despite the multifunctionality of GI, existing literature demonstrates a mismatch between GI conception and implementation due to regulatory drivers and practical barriers. Prior city case studies and analyses of plans suggest that the US GI decision-making processes often focus on hydrologic considerations and are not centered on equity. We extend this work by surveying city officials from diverse U.S. cities to assess how cities make green infrastructure or urban forestry decisions. Our aim was to better understand the processes and decision-making tools used in siting, planning, or designing GI. Results indicate that most cities prioritize trees/urban forestry, followed by new parks and bioretention basins. Stormwater management emerged as the most consistently valued GI benefit, followed by heat mitigation and community well-being. Economic development and wildlife habitat were ranked lowest. Most cities address GI in stormwater management plans, comprehensive plans, and zoning codes and regulations. While most cities report using stormwater data and heat data sources, fewer cities report consistently integrating equity, future climate change projections, or involving residents in GI processes. Expertise, information required for GI implementation, and GI knowledge were the highest rated barriers on average while funding, time and staff and other investments/issues were rated lowest. These findings suggest that although U.S. cities have widely adopted GI and data-driven approaches to stormwater management and heat mitigation, advancing equitable, climate-informed and participatory GI planning will require overcoming persistent expertise, information, and knowledge constraints.