Austin Troy: Mapping urban tree shade to help planners

As climate change makes cities hotter and water scarcer, a strategic approach needs to be taken to placing trees in semi-arid cities like Denver. This research effort seeks to understanding the feasibility of mapping tree shade at a fine scale and using that information for planning purposes. Using high-resolution LiDAR remote data, we have mapped trees and tree shade, enabling us to compare several cities, including Denver and Baltimore. Among our results, we found that, while there are more trees in Baltimore, Denver's trees are, on average, more strategically placed to shade buildings. Our research will help planners develop tools to pinpoint key locations where tree planting should be prioritized to maximize shade. This project builds off a contract with the Denver Department of Parks and Recreation in which our team produced the official city tree canopy map.

- Funders: USDA Forest Service (Dates active: 2016-2019), Denver Department of Parks and Recreation (Dates active 2017-2018)

- Partners: USDA Forest Service, USGS, Baltimore Ecosystem Study, Denver Parks and Recreation

- Research Team:

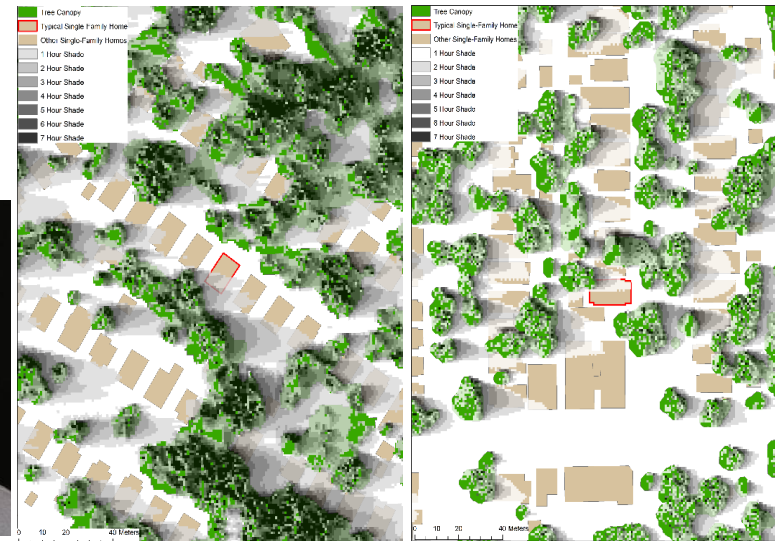*Modeling late afternoon shade over pedestrian paths in a park*

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Typical Baltimore tree shade pattern   Typical Denver pattern

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