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September 2021

## Street Tree Effects on Road Surface Temperatures

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### Citation of this paper:

Stastny, Austine P., "Street Tree Effects on Road Surface Temperatures" (2021). *Inspiring Minds – Showcasing Western’s Graduate Research, Scholarship and Creative Activity*. 51.

<https://ir.lib.uwo.ca/inspiringminds/51>

## **Street Tree Effects on Road Surface Temperatures**

### **Austine P Stastny**

Cities are now home to most of the world's population and are particularly vulnerable to effects from global scale climate change including extreme heat, which is enhanced at the local scale due to modifications of surface characteristics. Vegetation is a critical element of urban design that can mitigate rising temperatures, however limited work exists to understand the effects of tree shade on road surface temperatures ( $T_{road}$ ), both by day and night. Roads are an integral component of urban design and are one of the only surfaces within cities that local governments can modify. This research measured  $T_{road}$  and associated climate forcings across residential neighbourhoods with varying street tree coverage for an entire daily cycle. Results from this research will help us better understand the contribution of roads to urban warming and provide information for effective street tree planting strategies that will contribute to climate resilient urban residential neighbourhoods.

**Word count:** 148