Title: Description and mapping of urban soils properties for the Los Angeles area

Client: Dr. Gordon Rees is point of contact, project to be completed with assistance from Dr. Stewart Wilson and in cooperation with TreePeople, an LA area non-profit

Description of Project;

1. The goal of the project is to characterize key attributes of soils collected from the LA urban area
2. Objective 1: Measure heavy metals, total carbon and nitrogen, phosphorus, potassium, calcium and pH of ~350 soil samples from the LA area

Objective 2: Predict measured soil properties across the LA area using predictive modeling and digital soil mapping.

1. The properties of urban soils are relatively poorly documented. An initial soil survey of the LA area has recently been completed by the NRCS. However, many soil properties of interest to urban land uses, such as heavy metal concentrations, are not included in the NRCS soil survey. Therefore, the utility of the existing survey could be greatly enhanced with the addition of lab data on urban-relevant metrics. Further, predictively mapped soil properties can add additional layers of soils information to the region. TreePeople, an LA area non-profit working extensively in urban forestry, has collected hundreds of soil samples with location data, but doesn’t have the expertise of equipment to analyze these soils. The results from this work would add to our understanding of urban soils in general, enhance the soil survey data for the LA area, potentially provide new soil mapping products, and would be distributed by TreePeople as part of their community outreach efforts.
2. The project centers on soil analysis in the LA area, but the bulk of research would take place in analyzing soils at Cal Poly.
3. Deliverables: Maps of soil properties, report analyzing distribution of different properties, potentially a manuscript for peer-reviewed publication.

Project Funding: No support committed to date. TreePeople is soliciting funds to support some of the analysis (potentially including some student salary), USDA NRCS will perform some of the basic soil analysis, Dr. Rees has some funds available to cover lab consumables for pXRF heavy metal characterization.