Local government participation in greenhouse gas inventorying and reduction planning is a growing practice. Effective planning and design strategies reflect inventory systems that accurately assess bio-physical and socio-cultural implications of site and community developments. While extensive research and application has been invested in carbon reduction at the building scale, implementation of inventory systems in broader contexts is less understood. The objective of this case study was to illustrate divergent applications of carbon reduction strategies at the building and community scale, and to formulate a proposal for research to develop a refined inventory system, which provides greenhouse gas and energy consumption data while concurrently addressing contextual relationships and socio-cultural dynamics affecting those systems.

Comparative scale analysis for this study includes NASA Ames Research Center Sustainability Base site and the City of Moscow, Idaho municipal inventory for greenhouse gases and energy consumption. Analysis of biophysical data collection methodologies for both scales is coupled with proposed qualitative analyses of economic, socio-cultural and managerial implications for each site scale. These can be utilized to better characterize comparative advantages of potential applications for inventory systems at the community scale.

The proposed study will provide metrics adaptable to multiple scales of application for the purposes of addressing and responding to climate change and energy efficiency issues. Methodologies developed from this and other studies can be used to enhance optimization of site and species selection for investment in green space developments.