

Project ID/Title: NE\_TEMP2401: Urban Agriculture: Equity, Sustainability, and Community Development

Comments:

The team appreciates the encouraging comments from the review panel and hope that indeed our “work will provide actionable knowledge” for urban agriculture practitioners, researchers and support agencies.

The lack of detail about specific approaches to this research makes it difficult to evaluate the study on technical merit...but additional details would be required in order to assess the likelihood of success of any of these specific studies, or the ability of this team of researchers (including the resources to which they have access) to successfully complete this work.

Agreed. The research approaches are intentionally general in this proposal, as the work will be highly site specific to the urban farms and institutions involved in the work. To prioritize the Community Development aspect of the project, research approaches must be informed by urban agriculture practitioners. We have added greater specificity to Objective 2, in response the reviewer comment below.

Within objective 2, evaluate municipal irrigation water as an input and implications on pH and electrical conductivity. Insure that nutrient leaching includes direct conveyance into stormwater sewer systems (overlay aspects on combined sewer overflows (CSOs).

Examples of approaches to be used to accomplish basic or applied research projects:

- On farm research or research in collaboration with urban farms and gardens involving:
  - Soil sample collection
  - Leachate water sample collection using lysimeters buried under productive areas
  - Instrumentation for water use monitoring, soil moisture monitoring, ET and weather monitoring
  - Compost sample collection
  - Collection of produce samples
  - In situ testing of soil and crop produce with XRF technology
- Controlled experiments on research farms involving using relevant urban agricultural production practices:
  - Soil sample collection
  - Leachate water sample collection using lysimeters buried under productive areas
  - Instrumentation for water use monitoring, soil moisture monitoring, ET and weather monitoring

- Soil and compost testing including but not limited to:
  - Extraction and spectrographic analysis for nitrate, ammonia, and phosphate
  - Acid digestion and analysis using ICP-OES or ICP-MS for mineral nutrients and heavy metals
  - XRF testing in laboratory conditions to assist in the validation of in situ test results
- Leachate, municipal, and gray water analysis including but not limited to:
  - Volume measurements in the field
  - pH and conductivity measurements
  - Spectrographic analysis for nitrate, ammonia, and phosphate
  - Analysis using ICP-OES or ICP-MS for mineral nutrients and heavy metals.
- Produce analysis including but not limited to:
  - Total and marketable yield measurements
  - Spectrographic analysis for nitrate
  - Acid digestion and analysis using ICP-OES or ICP-MS for mineral nutrients and heavy metals
  - Plant stress indicators including but not limited to:
    - Canopy temperature measurements by thermal imaging
    - Leaf water potential
    - Leaf chlorophyll fluorescence
    - Stomatal conductance

Objective 4, include language assessment and preferred delivery of translation services.

Yes, an important consideration as many engaged in urban agriculture speak languages other than English. We have added to Objective 4 “Prioritize accessibility of project research processes and educational outputs for diverse audiences by conducting language and preferred delivery assessment of translation services at cooperating urban farms. Language preference will be assessed via in-person interviews and written materials translated into appropriate languages and where possible contract interpreters for verbal research and education events.”