**NCEE Checklist for Developing Research Proposals**

1. **Title:** The Implications of Water System Service Area Accuracyfor Environmental Justice Analysis in Drinking Water
2. **Authors and Affiliations**

* NCEE authors:
  + Wes Austin
* Other EPA authors
  + NA
* External authors
  + AR El-Khattabi, North Carolina Environmental Finance Center

1. **Abstract:** A public water system (PWS) service area is the geographic extent of a drinking water system’s customer base. Service areas have a wide variety of applications for non-profits, in academia, and in government, and for this reason many advances have been made in the collection, estimation, and modelling of service areas over recent years. Despite these advances, there still does not exist a nationally consistent and complete spatial dataset of all PWS service areas. Moreover, to date there has been minimal published systematic testing of the implications of employing distinct service area boundary types. This paper aims to fill this gap by summarizing a set of environmental justice indicators in drinking water across seven distinct methods for assigning service areas. These methods include assignment of county polygons, zipcodes served, four combinations of EPIC/SimpleLab tiered data, and the Hall & Murray boundaries. While it is generally understood that different service area assignment methods have varying accuracy, it is not yet known how significant this accuracy may be for the conclusions of environmental justice analysis. As such, this paper fills a critical gap in our understanding of the importance of collecting service areas and producing a high-quality nationally consistent geodatabase.
2. **Expected Outputs** (e.g. article, external presentation, database)
   1. NCEE Working Paper Series (target: 8/2023)
   2. Journal Article (target: 12/2023)
3. **Expected Resource Requests** - Indicate any anticipated requests for funding, research assistant support, contractor support, purchase of datasets, software, etc ...
   1. Include an estimate of expected NCEE level of effort
      1. Meetings 4 hours total per person
      2. Coding data merges (2 hours total), generating drinking water indicators (4 hours), generating tables (6 hours), creating figures (4 hours)– 8 hours per person
      3. Writing paper – 16 hours total
4. **Program Office Notification** - Indicate which program offices may have equities and should be notified (include the point of contact you expect to notify)
   1. **Office of Water**, **WEC**: Julie Hewitt
   2. **Office of Water:** Jim Kohler, Chandler Klawitter, Rachel Gonsenhauser, Morgan Teachey, Julia Montsarrat
   3. **Office of Environmental Justice:** Tai Lung, Alex Hall (on detail from ORD)
   4. **Office of Enforcement and Compliance Assurance:** Andrew Schulman, Nicholas Spalt
5. **Data** - Provide a brief description of dataset(s) that will be developed or used
   1. Will a Quality Assurance Project Plan (QAPP) be prepared?

Research which collects primary data or generates environmental data using models require a QAPP. For more information see: <https://www.epa.gov/sites/production/files/2016-06/documents/r5-final_0.pdf>

No

* 1. Will a Scientific Data Management Plan (SDMP) be prepared?

An SDMP is required for any journal article involving an original EPA-funded dataset and must be completed before the manuscript is submitted to a journal. For more information see: <https://intranet.ord.epa.gov/releasing-manuscripts-and-data/epa-scientific-data-management-plans-sdmp>

No

* 1. Will this Research Require the use of Human Subjects?

No

* 1. Does the Paperwork Reduction Act (PRA) apply?

No

* 1. Does the dataset include Controlled Unclassified Information (CUI) that cannot be publicly released?

No

* 1. Is a Privacy Threshold Analysis (PTA) and potential Privacy Impact Assessment (PIA) required?

A PTA is a questionnaire used to determine if a data set or system contains personally identifiable information (PII), and whether a PIA, as well as other actions are required.

No

* 1. Will a Data Use Agreement be required?

No

1. Sample Output Table for the Analysis

