

Learning From Existing Studies and Non-Board Data Sources to Inform the California Wastewater Needs Assessment

EXECUTIVE SUMMARY



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Background

As part of the initial phases of the Wastewater Needs Assessment (WWNA), the University of California, Agriculture and Natural Resources (UCANR) conducted a survey for the Rapid Baseline Assessment (contract Task 1B). The survey's goal is to qualitatively illustrate the breadth, depth, geographic areas of concern, and public health endangering sanitation issues in California.

To supplement the survey effort, UCLA rapidly reviewed existing readily available data sources and reports. The most of these were produced external to the State Water Resources Control Board (non-Board data sources) and provided a high-level summary of existing statewide knowledge on water-related sanitation needs and associated costs (hereafter, the Baseline Studies Review report).

UCLA initiated the review, which resulted in a full report, to better understand wastewater needs and wastewater equity in California, as well as to differentiate the WWNA project from the many other current/recently conducted efforts.

We primarily reviewed the following studies and reports:

Clean Watershed Needs Survey (CWNS)

Recent, published septic-to-sewer studies in California

Department of Water Resources Individual Funding Area Needs Assessments

Recent published studies on tribal housing, including wastewater, needs in both California and nationally

- “California Tribal Housing Needs and Opportunities: A Vision Forward” prepared by the California Coalition for Rural Housing (CCRH) and Rural Community Assistance Corporation (RCAC)
- “Drinking Water and Wastewater Infrastructure: Opportunities Exist to Enhance Federal Agency Needs Assessment and Coordination on Tribal Projects” by the United States Government Accountability Office (GAO)

We reviewed these studies to better understand wastewater needs and wastewater equity in California in terms of:



Previous system mapping efforts,



Methodologies used to identify hotspots of wastewater concern,



Definitions and criteria for failing/at-risk wastewater systems,



Cost and affordability estimates to address inadequate wastewater systems, and



State-wide funding estimates to better understand and address wastewater needs and equity in California.

Clean Watershed Needs Survey (CWNS)

The CWNS is a comprehensive assessment of the capital costs (“needs”) required to meet the water quality goals of the Clean Water Act and address water quality and related public health concerns. Though similar sounding, the CWNS and WWNA differ in their methodologies, including the scope of wastewater systems analyzed and the data collection methods used. The CWNS cost estimate is the most relevant to the WWNA in terms of scope. However, since it focuses on larger wastewater systems, it underestimates the costs for smaller systems. Still, the CWNS Cost Estimation Tools can help guide future methods in the WWNA.

Septic-to-sewer studies

Unlike the broad CWNS, published septic-to-sewer studies in California focus more narrowly on the feasibility of septic-to-sewer conversions in specific areas. Further assessing potential and ongoing septic-to-sewer consolidations is one of the primary motivations of the WWNA. The septic-to-sewer studies are useful for understanding previous consolidation efforts, cost-benefit analyses, methods for obtaining septic system location data at scale, and general consolidation efforts. Since these projects are mostly grant-funded, the application process is lengthy, and it could often take up to five years to reach the construction phase. As a result, statewide studies and detailed information on planning and construction costs are limited. Additionally, cost assessment and solution methodologies vary.

DWR Regional Needs Assessment

As part of the Disadvantaged Community Tribal Involvement Program (DACTIP) efforts, each of California's Integrated Regional Water Management (IRWM) regions developed an Individual Funding Area Needs Assessment (DWR Regional Needs Assessment). The DWR Regional Needs Assessments vary from region to region. Many reports do not quantify wastewater needs in terms of number of systems failing or at-risk of failing nor do they conduct cost, or affordability estimates to address wastewater needs. The DWR Regional Assessments typically broadly describe wastewater issues within their respective regions. However, some reports provide more details on their wastewater systems that can benefit the WWNA efforts, including potential data sources that the WWNA could utilize and support ongoing WWNA methods such as a survey.

Tribal Studies

The Tribal-focused Studies in California rely on surveys and interviews to determine wastewater needs. The CCRH and RCAC study reviews housing needs in California including wastewater issues. Their report has limited wastewater specificity but does review wastewater system capacity. The GAO study reviews water and wastewater needs for all federally recognized tribes in the US and relies on surveying government agencies to determine the current state of infrastructure. The report has limited geographic scope but does quantify estimated costs to address wastewater needs for tribes.

Conclusion and Next Steps

Overall, we find that existing non-Board data sources and studies have and will continue to inform the WWNA approach. This report and its compilation process have already assisted with the risk assessment and mapping efforts. It will continue to guide the WWNA's framework for solutions and costs, as well as Phase 2's initial mapping, which will utilize a machine-learning-generated map of OWTS/unconnected to sewer. These initial mapping efforts will involve a model that uses new machine-learning techniques to identify likely OWTS locations across California. The model will identify areas in need of sanitation infrastructure and determine whether they require OWTS or sewer systems.

Previous studies, while valuable, do not replace the need for the WWNA as they are limited in relevance, accuracy, and coverage. Some aspects of the WWNA, such as wastewater affordability, are not covered by existing data sources and studies. The WWNA process will help fill gaps in existing data sources and literature.