

COMMENTS AND RECOMMENDATIONS ON THE OEHHA DOCUMENT,

A FRAMEWORK AND TOOL FOR EVALUATING CALIFORNIA'S PROGRESS IN ACHIEVING THE HUMAN RIGHT TO WATER (January 2019 Draft) (document)

The comments and recommendations herein pertaining to the above-titled document are the writer's opinions based upon research of material available in the public arena, experience in the regulatory and water industry (civilian and military), and professional certifications in the water industry. The comments and recommendations presented are not to be construed as being derogatory or to representing an impugning attitude towards the authors, staff, or the presented material in the above titled document.

Acronyms, abbreviations, and selected phrases used herein are those in common use in the regulatory and the water industry. It assumed the reviewer(s) are familiar with the terminology used. Comments and recommendations are keyed to applicable pages and topics in the document, and are referenced for clarity.

Please accept my sincerest thanks for providing the opportunity to offer these comments.

Overview Comments. The document describes various components which the authors believe is a framework for assessing the progress California is making to ensure the human right to water is both viable and on track, given the current laws, regulations, processes, and practices. This document does not adequately describe either a framework or a tool.

- a. The document fails to adequately describe the California waterscape and how its hydrology varies regionally.
- b. The document fails to present adequate assessments and locations of the most vulnerable human populations within each hydrological region.
- c. The document fails to address the regulatory, economic, legal, and other impediments that would be necessary for determining if human rights and access to water are lacking or are on track.
- d. The document appears to present a data-mining framework as opposed to a decision and policy development framework. Essential elements for building an assessment and action planning framework are missing or are poorly described.
- e. The "tool" mentioned in the title is not adequately described. There is no discussion on how the "tool" is to be used and/or fitted into the current decision-making process(es) in the water industry.

Recommendation. Revise the introduction to include an explanatory discussion of why this document is needed, what its spirit and intent is to be, and identification of the various elements of information (data sets) needed to develop the framework. Explain the need for reinforcing the human right to reliable and safe water.

Recommendation. Build a platform for the development of the framework by identifying the various hydrological regions, water resources within those regions (e.g. water basins, reservoirs, rivers, etc.), primary water delivery and usage systems, with demographic information incorporated to support the main focus.

Recommendation. Identify vulnerable populations in each region, based on the above criteria, plus applicable health needs assessments, epidemiological information, public health records, and other information (site visits, town hall meetings, focused inspections, etc.). Assess the human right to water issues from the obtained information and create an applicable dataset to be used in constructing the framework.

Recommendation. Discuss the current California waterscape, how it is controlled, managed, and operated. Include water sources, water acquisition, water distribution systems, water transfers, and water allocation practices. Create an applicable dataset.

Recommendation. Discuss the regulatory burden associated with the water industry, including water rights, water contracts, allocation agreements, health and safety, environmental, political, and other related burdens that impact the framework.

Comment. “Water Adequacy” is not explained sufficiently enough to warrant its viability as an entering argument for the framework.

Recommendation. Explain “water adequacy” in terms that include,

- a. Water sources (Norcal, Colorado River, Groundwater (gw), local surface waters, reservoirs, etc.).
- b. Water distribution (SWP, CVP, major rivers, pipelines, aqueducts, or direct access).
- c. Water resource management (water rights, water contracts, regulatory allocations and adjudications, and the water markets).
- d. Water demand (urban, agriculture, commercial, industry, etc.).

Recommendation. Generate and analyze region-specific human water needs assessments in order to develop datasets for identifying and confirming a human right to water condition (low, medium, high, tragic) warrants attention.

Comment. The analysis of the human right to water framework would be better based on an evaluation of the water resource with respect to,

- a. Water availability (surface, gw, reservoirs, imports, supplemental sources (ocean, desal, reclaimed, recycled).
- b. Water management (water rights, water allocations, water contracts, etc.).
- c. Regulatory burden (federal and state laws, local regs and ordinances, etc.).
- d. Environmental demand.
- e. Demographic information, including health and safety concerns.

Recommendation. Refer to Figure 1 below. Revise the framework to include the above comments.

Comment. The document does not adequately describe the impacts of regulatory, environmental, water rights, contractual agreements, and preferential allocations on vulnerable populations within selected hydrological regions.

Recommendation. Explore and discuss the above noted impacts with a focus on vulnerable populations within selected hydrologic regions. Create an applicable dataset.

“The Tool” (pp 7 & 31)

Comment. The document does not adequately describe what the “Tool” is or how it is to be used in the critical areas of water resource management. The statement (page 31), “The framework becomes a tool when it is populated with data” is vague and inconclusive. The potential user of the “tool” is left confused as to just what technical functions are necessary to (1) obtain and input data, (2) manipulate the data, (3) build the data set, and (4), organize the data sets for presentation to analysts, decision-makers, and policy developers.

Recommendation. Refer to Table 1. Provide clarification of the “tool’s mechanics” (i.e., computer model, spreadsheet matrix, “what-if/If-then” scenarios, software app, and so on) to demonstrate how it is to be used within the current decision-making and policy development process for addressing the human right to water conditions in selected areas.

Comment. The conceptual view of how multiple challenges can affect individual water systems is not adequately discussed (page 8). Multiple challenges to local water systems have been shown over the last decade to include,

- a. SWP/CVP and preferential water contracts.
- b. Water diversion projects (includes water transfers from its status as a public resource asset to a market/commodity asset).
- c. Unregulated gw acquisition and distribution.
- d. Environmental demand.
- e. Tabling or deferring water infrastructure improvement/upgrading projects.
- f. Deterioration of local water conveyance and distribution systems.
- g. Competition for the water resource (special interests, water rights holders, urban, industrial, commercial, oil industry).
- h. Biased regulations (i.e., the Monterey Amendments and oil industry deferential treatment).
- i. Ethnocentric bias.
- j. Poor and incompetent water system management.
- k. Other economic and political competition for the resource.
- l. Water service privatization.

These factors can be condensed:

- a. Regulatory and political competition.
- b. Water system management (includes O&M).
- c. Water demand and allocation (by region).
- d. Water Law / water rights.
- e. Environmental demands.
- f. Health and Social Justice demand (based on demographic information).

Recommendation. Delete Figure 3. Revise the discussion to include considerations of the above comments as obstacles to achieving the human right to water objectives.

Component 1: Water Quality (pp 9-17)

Comment. Water Quality is determined by,

- a. Water source characteristics and any chemicals of concern (CoCs) present.
- b. Source location and the hydrogeological conditions within the selected area.
- c. Current technology implemented with respect to water treatment and delivery systems.
- d. Water system O&M.

Recommendation. Revise the discussion to include real-time data. Select a vulnerable region to demonstrate the CoC contaminants impacting the water resource, treatment practices (if any), what is being delivered to the users, and how the system's O&M is being managed.

Comment. Water chemistry analyses include an awareness of a wide variety of chemical contaminants and their mixtures (chemical suites) in the water medium. It is sufficient to state CoCs are present and that they may pose a threat to human health and the environment.

Recommendation. Include a discussion of the uniqueness of using "direct access" water (groundwater or surface) without treatment protocols in place. This would also include imported water. The discussion would require a look at the hydrogeological characteristics of the selected region as well as the various methods of accessing, treating, and delivering the water.

Recommendation. Delete the discussion of specific chemicals of concern and whether or not a particular chemical meets a regulatory threshold. Revise this concern to include a discussion and analysis of the water stream influent/effluent conditions and whether or not the treatment technology employed meets the health and safety criteria for drinking water.

Recommendation. Discuss the impact of contaminated water in a vulnerable population and whether or not the existing O&M processes, managerial practices, and treatment technologies are sufficient to address the human right to reliable, clean, and safe drinking water.

(Component 1) Water Quality Indicators (pp 14-18)

Comment. The water quality indicators mentioned are marginally connected to the human right to reliable and safe drinking water. The exposure indicators mentioned do not support the overall theme of the document, specifically due to the fact chemical contaminant suites vary by source, region, and human access. Site specific analyses are required to determine an appropriate level of water quality and exposure indicators.

Recommendation. Revise this component using real time data and the categories of the information based on the recommendations herein, to build datasets that are more closely aligned with the document’s main theme and goals.

Recommendation. Focus on treatment and inspection protocols to assess and address the conditions observed in the water system, particularly at the interfaces between acquisition, treatment, and delivery for human consumption. Include a review of “direct access” problems which may impact water quality standards and exposure indicators.

Recommendation. Base the water quality discussion on the acquisition and/or building of datasets taken from CoC load, exposure assessments, local analyses of water streams, and overall effectiveness of the existing treatment alternatives.

(Component 2) Water Accessibility (pp 18-21)

Comment. Water accessibility is not limited by consumer vulnerability, but rather by who controls the water resource (water asset), including water distribution, treatment, and delivery. Direct access to water (gw withdrawals, riparian, surface sources) is also a function of who controls the water resource.

Recommendation. Revise this component to include a discussion of the water (asset) control mechanisms and functions. Obtain data from water contractors, water purveyors, and water wholesalers to gain insights into how the asset is delivered to the consumer. Include costs and other financial data (which are also limiting factors) in the dataset.

Recommendation. Since water accessibility varies by region, usage, and control factors, it is prudent to tailor datasets to each hydrologic region, correlate the technical datasets with the region’s demographic data and refine the correlation for further analysis and fitness in support of the document’s human right to water theme.

Recommendation. Revise this component. Revisit and reassess the major functional elements that control/limit water accessibility in the selected region,

- a. Physical impact data (surface water, gw basin withdrawals, diversion projects, conveyance and distribution systems, etc.)
- b. Institutional impact data (regulatory burden, contractual arrangements, competing demands, allocation processes, etc.)
- c. Affordability factors. (i.e., consumer median incomes by location and their ability to pay for water service).

Recommendation. Discuss the impact of gw fracking (region-specific) where water is taken from an aquifer or gw basin by an affluent water user at the expense of neighboring vulnerable populations who also depend on the aquifer’s water.

Recommendation. Discuss how water diversion, via water contracts, statutory and preferential allocations as well as physical diversions, impact accessibility.

Recommendation. Build accessibility datasets using the above-mentioned identifiers. Correlate the datasets with the region’s demographic data and refine the correlation for further analysis and fitness in support of the document’s main theme.

(Component 3) Water Affordability (pp 23-30)

Comment. Water affordability refers to the ability of a household (consumer) to pay for water service (see footnote 20). In this context, water service includes all mechanisms and control factors involved water acquisition, conveyance, treatment, and distribution.

The consumer's ability to pay for the service is a central consideration in assessing the human right to reliable and safe water.

Recommendation. Building a dataset based on affordability should include the following;

- a. Direct and indirect costs of the service prior to delivery. The appropriate line items would include water acquisition, conveyance, treatment, and distribution. Indirect costs would include administrative and managerial costs and certain O&M costs.
- b. Regional and local median incomes for vulnerable populations, especially locations where seasonal employment is a driving factor in calculating consumer income over time.
- c. Regional and local O&M costs are important line items as they have influences and ramifications across several datasets (accessibility, availability, and water quality).
- d. Rate setting practices by the delivering agencies.

Recommendation. Build the affordability dataset using information based on the above mentioned criteria.

Recommendation. Dispense with water quantity conversion gymnastics and use the accepted California Water Industry nomenclature (i.e. gallons, gallons per minute, gallons per day, cubic feet, acre-feet, etc.) for deriving formulas and performing other calculations.

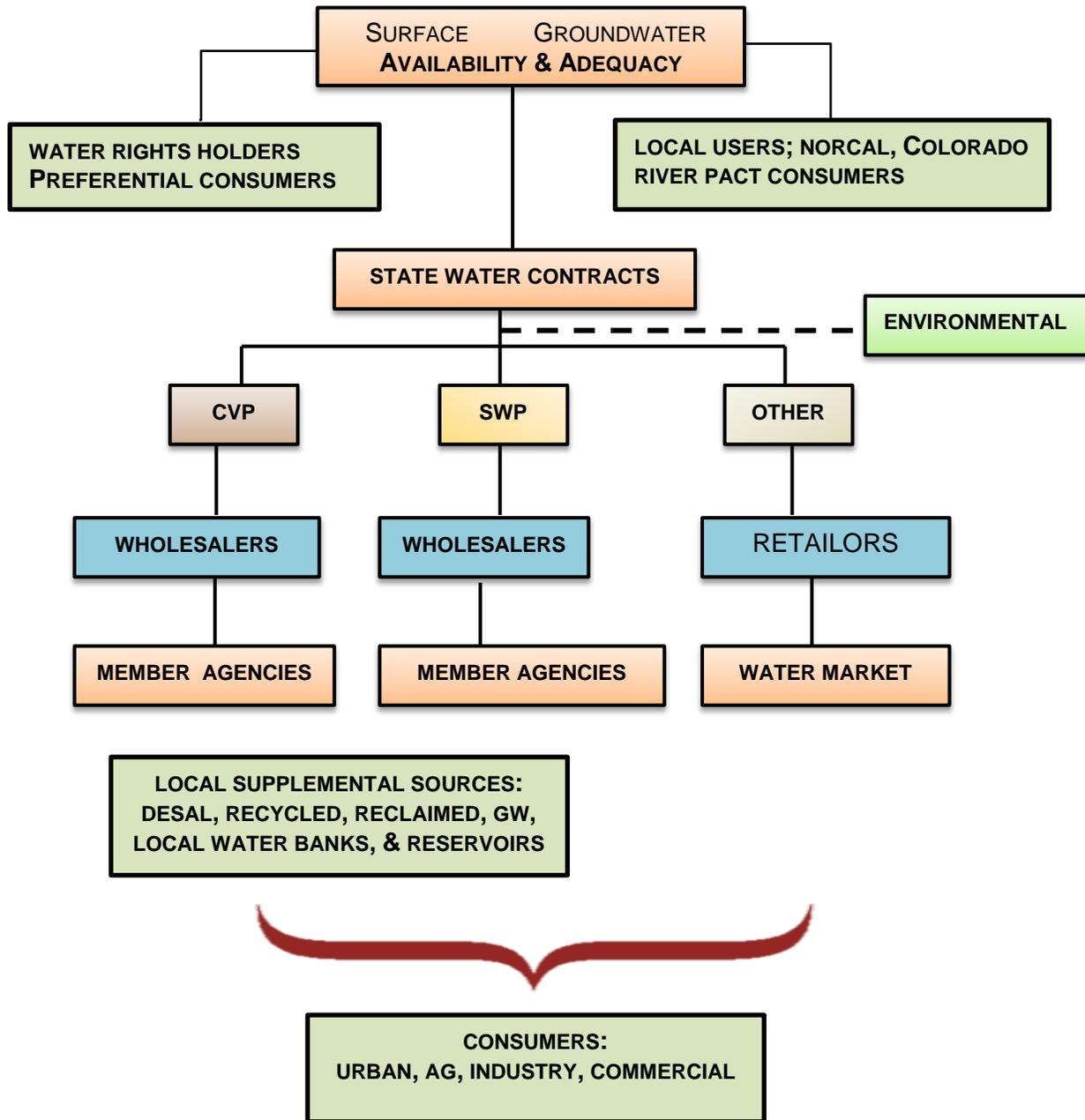


Figure 1. Suggested Framework (based on empirical research)

Notes and disclaimer.

- Acronyms & abbreviations used in fig 1 are those generally recognized in the California water industry.
- Information presented is based on the writer’s non-exhaustive research and opinions. There may be errors and omissions, which are subject to change when new or modifying information is presented.

1. Proprietary Data Modeling Tool capable of accessing various water-related and governmental databases, performing dataset mining, and environmental variable manipulation, developing trend and “what-if” or “If-then” scenarios, and presenting reliable options for decision and policy makers.
2. Assessment Tool capable of combining health assessment information, regional demographic information, and epidemiological data and local water industry data to develop options for decision makers and policy developers.
3. Regulatory Tool capable of addressing water-related policies and realities in vulnerable areas, with the intent to address the conditions observed within a regulatory context.
4. Financial Tool with the capability to research, identify, and obtain funding mechanisms to implement mitigation and “fix it” projects.
5. Trend Analysis Tool to obtain, analyze, and present data in support of (or the progress of) achieving human rights to water objectives.

Table 1. Data Analysis and Interpretation Tools to assist in determining how the human right to water goals are being measured, analyzed, and addressed.

A Holistic View of Water Systems: Applications and Cases (pp 31-39)

Comment. This section is essentially a “sales pitch” description for what the authors refer to as a “framework that becomes a tool”. The section’s title is not reflected in the narrative. Hypothetical, and therefore biased, case studies present applications of the “tool”, leading one to the perception that the “tool” represents a way to represent a holistic view of a water system. This is not accurate since the overall premise and datasets being used are flawed or incomplete.

The evaluation of whether or not a region or locale’s water service meets health and safety standards pertaining to the human right to reliable and safe drinking water can be better achieved with the use of the more realistic parameters mentioned herein.

Recommendation. Revise and retitle the section to reflect a more accurate assessment of a water system’s characteristics with due regard to the highly specific characteristics of water systems in the state’s various hydrologic regions.

Recommendation. Refer to Figure 2 for a recommended illustration of a holistic view of a water system as it pertains to the theme of the document.

OVERVIEW: THE HUMAN RIGHT TO A RELIABLE AND SAFE WATER SYSTEM

THE CALIFORNIA WATERSCAPE

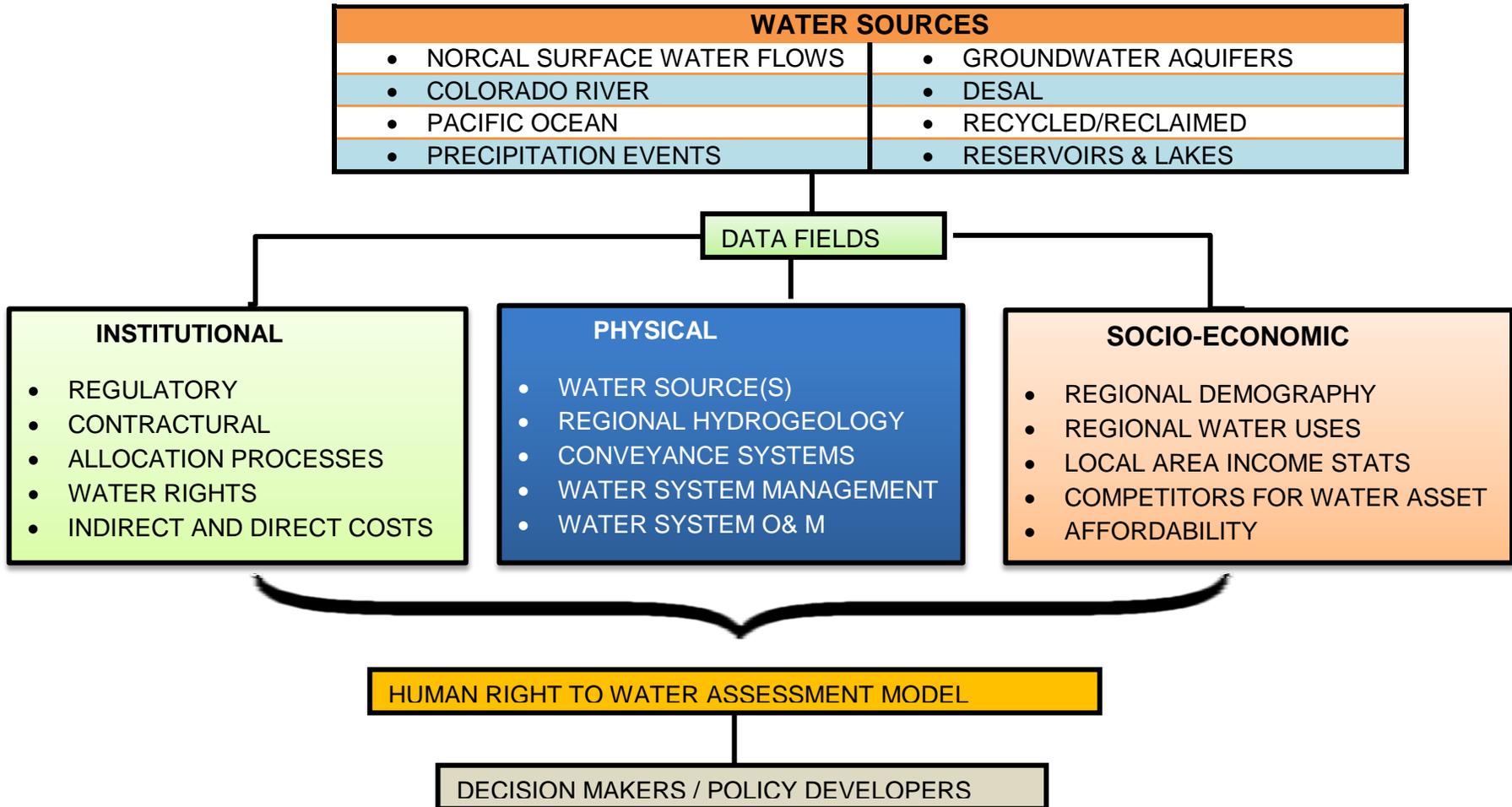


Figure 2.

SUMMARY COMMENTS

California has water resources to meet its current and projected demands for the next 20 years (depending on climate). The most important obstacle to ensuring the human right to reliable and safe water is respected and addressed resides in water allocation and system management.

These elements, along with other realities, embody a highly complex and often controversial subject, which over the years, has become one of the most prominent preoccupations in the state.

California's water is both a controlled public resource and a controlled market asset. The highly regulated water industry is continuously beset with problems and demands from all sectors of the California Endeavor. This further complicates the premise that human access to reliable, clean, and safe water should be extended to all residents regardless of their area of residence.

The human right to reliable and safe water is a noble concept which fits well on the priority listing of Social Justice in the state.

Unfortunately, ensuring this right is extended to all citizens can only be achieved when the entities who control and manage the resource choose to address the matter.

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Education and Experience

- ❖ Registered Environmental Health Specialist (REHS) California
- ❖ MA Degree: Human Behavior and Organizational Development
- ❖ BS Degree: Chemistry
- ❖ AS Degree: Water Technology
- ❖ 20 Years' experience in Environmental Compliance and Project Management (US Navy and Local Government)

Employment Profile

City of Menifee, Planning Commission. (Vice Chair). 2013- Present.

Phillips Enterprises. Environmental Project Advisor. 1995 – Present.

County of San Diego, Department of Environmental Health

- ❖ Registered Environmental Health Specialist.
- ❖ Environmental Regulation: Hazardous Materials Specialist.
- ❖ Project Manager for Environmental Assessment & Remediation Projects.

United States Navy: January 1965 - August 2003

- ❖ Navy Commissioned Officer: Retired Rank; Commander (O-5)
- ❖ Environmental Compliance Manager and Waste Water Treatment Consultant for US Naval Reserve Seabee Battalions & Civil Engineer Detachments.
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Professional Certifications and Awards

- ❖ **Eagle Scout: Class of 1961**

Mt. San Jacinto College

- ❖ Certificate of Achievement: Water Technology
- ❖ Water Distribution System Operator (D1 & D2)

California State University, Sacramento, Office of Water Programs,

- ❖ Water and Wastewater Technology

University of California (Extension), Riverside, CA, Certifications

- ❖ Environmental Land Use and Planning
- ❖ Construction Management

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- ❖ Water Leaders Academy