

# WHIDBEY WATER SOLUTIONS

## SOLVING THE COMPLEX PROBLEM

Among the many challenges posed by population growth and climate change, securing sustainable freshwater supplies is paramount, particularly for Whidbey Island. Freshwater here is derived solely from rainfall, which replenishes the Island's finite aquifer system. Yet, the recharge rate of this system remains poorly understood. Coupled with population growth, accelerating climate variability, rainfall patterns changing and recharge processes shifting, this potentially leaves the island vulnerable to a critical imbalance: the extraction of more water than can be naturally replenished. Whidbey's relationship with water is uncertain and complex: serious further study is needed.

### COMPLEXITY –Solving the problem

A complex problem cannot be solved starting with the pieces. Well known design principles must be applied to create sustainable long-term solutions that meet the public needs and are in balance with natural water cycles and that improve resilience.

The FIRST principle is to Understand the System. Fresh water on WI is limited to a sole source aquifer and dependent upon rainfall for recharging that which is withdrawn. Over 7000 independently operated wells draw fresh water to support WI population with very little reliable data on amount withdrawn and time lag between rainfall and availability<sup>1</sup>.

The SECOND principle is to become comfortable and familiar with complexity as a priority. The people must develop sustainable

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<sup>1</sup> "Peak Water on Whidbey Island", Perry Lovelace, 2024, [www.whidbeyclimate.org](http://www.whidbeyclimate.org)

water management systems that are interdependent, self-organizing, intuitive, collective and intelligent. We must push through the discomfort of controlling, measuring and predicting in the solution design, although we may revisit those later.

The THIRD principle is to seek simplicity on the other side of complexity. If we go for simplicity before we understand complexity, we will succumb to reductionism, which is how this situation was created resulting in where we are.

“Problems cannot be solved with the thinking that created them” –  
Albert Einstein

#### OUR COMPLEX ISSUES:

- A. Data on aquifer recharge needs to be updated in order to predict carrying capacity of the Island for future population growth.
- B. The changing climate is unpredictable and will likely impact the water cycle. We need better predictive models for climate resilience.
- C. Many smaller and some larger water systems on WI are facing aging/failing infrastructure (pumps and piping).
- D. Water system management has been lacking in preparing for reserve expenditures resulting in large assessments and lack of funding for replacement.
- E. There is a growing shortage of licensed Operators with several existing Operators retiring and limited succession planning.
- F. Due to the dispersed nature of the thousands of independently operated water systems, it is a challenging business proposition for a private operating company

(Satellite Management Agency, SMA). Most of the systems cannot be joined together into larger operating systems.

- G. Water system inspections, many required by State law to be performed by licensed operators, are not being done or collect imperfect data. A public health risk.
- H. Operator training requires a high level of dedication and is not seen as a desirable career path.
- I. Wells, extraction and development decisions are controlled by many agencies, state, local and national, and have various levels of authority and very little regulation integration.

#### POSSIBLE ORGANIZATIONAL SOLUTIONS:

1. Create a Public Utility District under WA state law.
  - a. Advantages
  - b. Disadvantages
2. Create new water District(s). There are already 21 Districts and or expand existing ones.
  - a. Advantages
  - b. Disadvantages
3. Create a community owned LLC as SMA
  - a. Advantages
  - b. Disadvantages
4. Create a Community Water Aggregation Cooperative

- a. Advantages
  - b. Disadvantages
5. Other options

## KEYSTONE STAKEHOLDERS

- A. WIWSA (Whidbey Island Water Systems Association)
- B. Island County and Cities
- C. WA DOHealth AND DOEcology, DNR
- D. Whidbey Climate Action and other NGO
- E. Citizens of Whidbey Island
- F. Indigenous Peoples

## NEXT STEPS

Establish and convene a working team of knowledgeable stakeholders to work out the details of each solution in the first quarter of 2025 and produce a most desirable organization plan by mid 2025.

## ELEMENTS OF ALL SOLUTIONS

### 1. EDUCATION

- a. Public Awareness of water cycle and efficiency practices.
- b. HOA and Well users' infrastructure maintenance management, operation and finance.
- c. Operator and Technician training and certification.
- d. Public officials support actions
  - i. County
  - ii. State Dept of Ecology, Dept of Health, DNR

### 2. RESEARCH

- a. Data collection, analysis and modeling
- b. Regenerative surface technologies and recharge

### 3. FUNDING

- a. Low/no interest loans
- b. Infrastructure equipment and services for reasonable cost
- c. Research Grants
  - i. Recharge modeling and Watershed Management
  - ii. Water efficient technologies and regenerative processes.

### 4. FINANCE

- a. Member Fees, usage based rates
- b. Cost plus services

c. Bonds and Levies

d. Support grants (i.e. Watershed Management Plan)

## 5. LEGAL

a. State registration

b. Liability