



## 10.0 FACT SHEET

### The Data / Governance Obsolescence Crisis

There is a profound strategic risk in attempting to manage 21st-century water demand using 20th-century data. The hydrogeologic baseline for Whidbey Island was established in a different climatic and demographic era, rendering current decision-making fragile and reactive.

Core Source Dates: The Aging Foundation

| Document Type                                       | Author / Agency              | Year |
|-----------------------------------------------------|------------------------------|------|
| First Soil/GW Mapping                               | Ness & Richins, USDA         | 1958 |
| Aquifer Layer Definitions                           | Easterbrook & Anderson, USGS | 1968 |
| Main Hydrologic Flow Model                          | Sapik & Bortleson, USGS      | 1988 |
| Last Comprehensive Inventory Island County Planning |                              | 1990 |
| Last Full Nitrate Baseline                          | Dept. of Ecology             | 1997 |
| Most Recent Recharge Model                          | Sumioka & Bauer, USGS        | 2003 |

The 2003 USGS recharge model is the current "gold standard," yet it is functionally insufficient for 2026 planning. It relies on water-budget data from the 1998–1999 water years—a period prior to the observed shifts in the Pacific Northwest climate, which now features longer summer dry spells and higher-intensity winter downpours that favor runoff over soil infiltration.

#### Critical Data Gaps

To stabilize our resource management, four "Critical Data Gaps" must be addressed:

- **Updated Recharge Estimates:** Modeling must incorporate 2000–2025 precipitation and land-cover changes to reflect modern infiltration rates.
- **Contemporary Groundwater Levels:** A refreshed network is required to update 40-year-old water-head data.
- **Seawater Intrusion Mapping:** Chloride and conductivity maps from the 1980s must be updated to account for modern pumping patterns and rising tides.
- **Nitrate Baselines:** We are operating on a 1997 baseline that does not account for 30 years of septic loading and agricultural shifts.

Without this updated data, "Peak Water" will not arrive as a single island-wide event, but as a "patchwork of local failures."

## Data Fragmentation Exacerbated by Water Governance

| Entity               | Specific Domain           | Critical Limitation                                        |
|----------------------|---------------------------|------------------------------------------------------------|
| Island County        | Land Use & Permitting     | No authority to regulate private well pumping volumes.     |
| WA Dept. of Ecology  | Water Rights & Allocation | Does not manage day-to-day local aquifer health or stress. |
| Health Department    | Water Quality & Septic    | Focused on contamination, not groundwater quantity.        |
| Public Water Systems | System Delivery           | Mandate ends at their specific service area boundaries.    |

**The Governance Paradox:** The existence of a single, sole-source aquifer is at odds with the absence of a basin-wide management authority. Current governance can regulate *where* a house is built but lacks the mandate to regulate the *volume* of water extracted from the private well serving that house.

## Strategic Roadmap: Towards Guardianship and Mitigation

To sustain a healthy vibrant aquifer Whidbey must shift from a model of extraction to one of stewardship and reciprocity.

## Short Tem Mitigation Toolkit & Update Data

- **Monitoring:** Develop a strategy to deploy "Sentinel Wells" consistent with resources and need in high-risk coastal and rain-shadow zones. These must be paired with a public warning dashboard to provide real-time status on aquifer health.
- **Infrastructure:** Incentivize winter water storage (ponds, rain gardens, cisterns, enhance wetlands and reservoirs); re-injection of urban treated water: and diversion of storm water runoff from Salish Sea disposal. Note, capturing winter precipitation decouples agricultural needs from fragile summer aquifer levels.

## Vision for 2035: Community-Held Water Budgeting

- **Unified Aquifer Model:** Replace 40-year-old assumptions with a model utilizing 21st-century climate data.
- **Coordinated Management:** Formation of a basin-wide water management entity with the power to monitor, adapt, and protect the sole-source resource.

- **Distributed Food Strategy:** Avoid concentrating high-demand irrigation in rain-shadow or coastal zones; focus intensive agriculture in thicker, inland aquifers.

Whidbey Island is at a tipping point. "Peak Water" is already appearing in our coastal and rain-shadowed zones. We must move beyond fragmented oversight and outdated data to build a system of coordinated guardianship before these local failures become a permanent island-wide reality.

### **Long-term Solution: Build a Coordinated Water Authority**

Whidbey will eventually need:

A basin wide water management entity

Authority to set aquifer wide rules

Power to monitor, enforce, and adapt

A mandate to protect the sole source aquifer for future generations

This doesn't exist today — but communities can start building the foundation.