

Status Report on Water System Feasibility Study

PRESENTATION TO 2023 ANNUAL MEETING

Introduction

- ▶ **Our water system and the Sunlight Beach Water Association received a \$50,000 grant to prepare a study on issues facing our two systems.**
 - ▶ **Funding from Washington Department of Drinking Water**
- ▶ **This presentation will discuss**
 - ▶ **The water association's goals**
 - ▶ **The near-term and long-term challenges we are facing**
 - ▶ **The scope of work of the study**
 - ▶ **The process to inform and involve the membership**

Goals and Challenges

- ▶ Our goals are to provide safe, reliable, and affordable water
- ▶ Our system is facing near-term and long-term risks
- ▶ The other water system that serves our area faces the same issues
- ▶ Need to assess options for the long term

Near-term limitations

- ▶ Last year, well number 2 was offline and limited system capacity for six months because of supply chain problems.
- ▶ Water supplies during high-peak periods stress the system.
- ▶ Seawater intrusion concerns.
- ▶ System is aging and some components need significant maintenance, and some will need to be replaced.

Long-term Risks—Septic Systems

- ▶ Risk of contamination from additional septic systems over the Well Head Protection Area.
- ▶ 2013 Golder Wellhead Protection Plan report
- ▶ There is a potential for additional septic systems within the Wellhead Protection Area
 - ▶ Our analysis, using Department of Health Nitrate Balance Model showed risk of exceeding the state reporting level.
 - ▶ Study will provide independent evaluation of risks

Well Head Protection Area



Wells



6-month

1-year

5-year

10-year

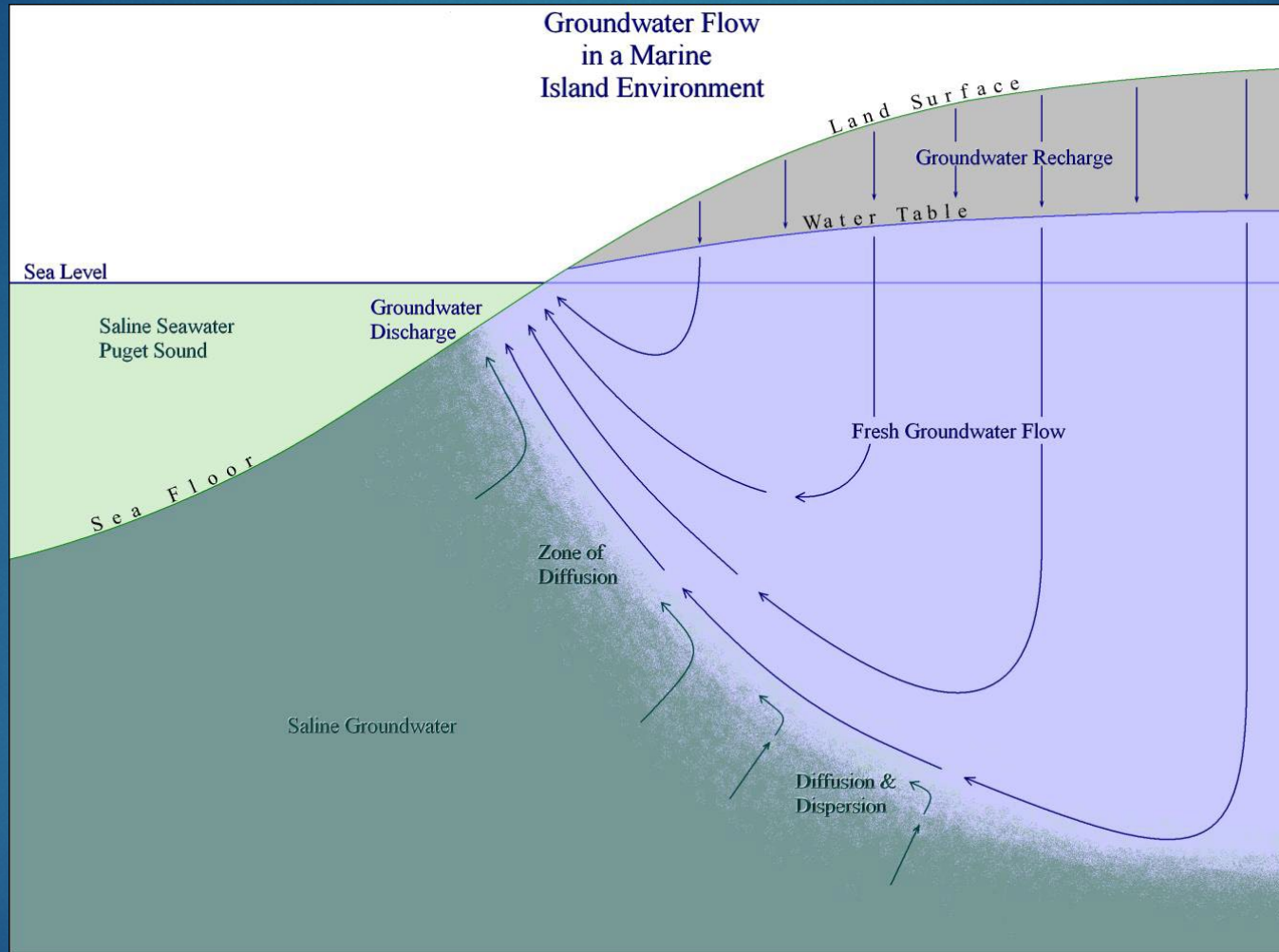


Potential Houses and Septic Systems

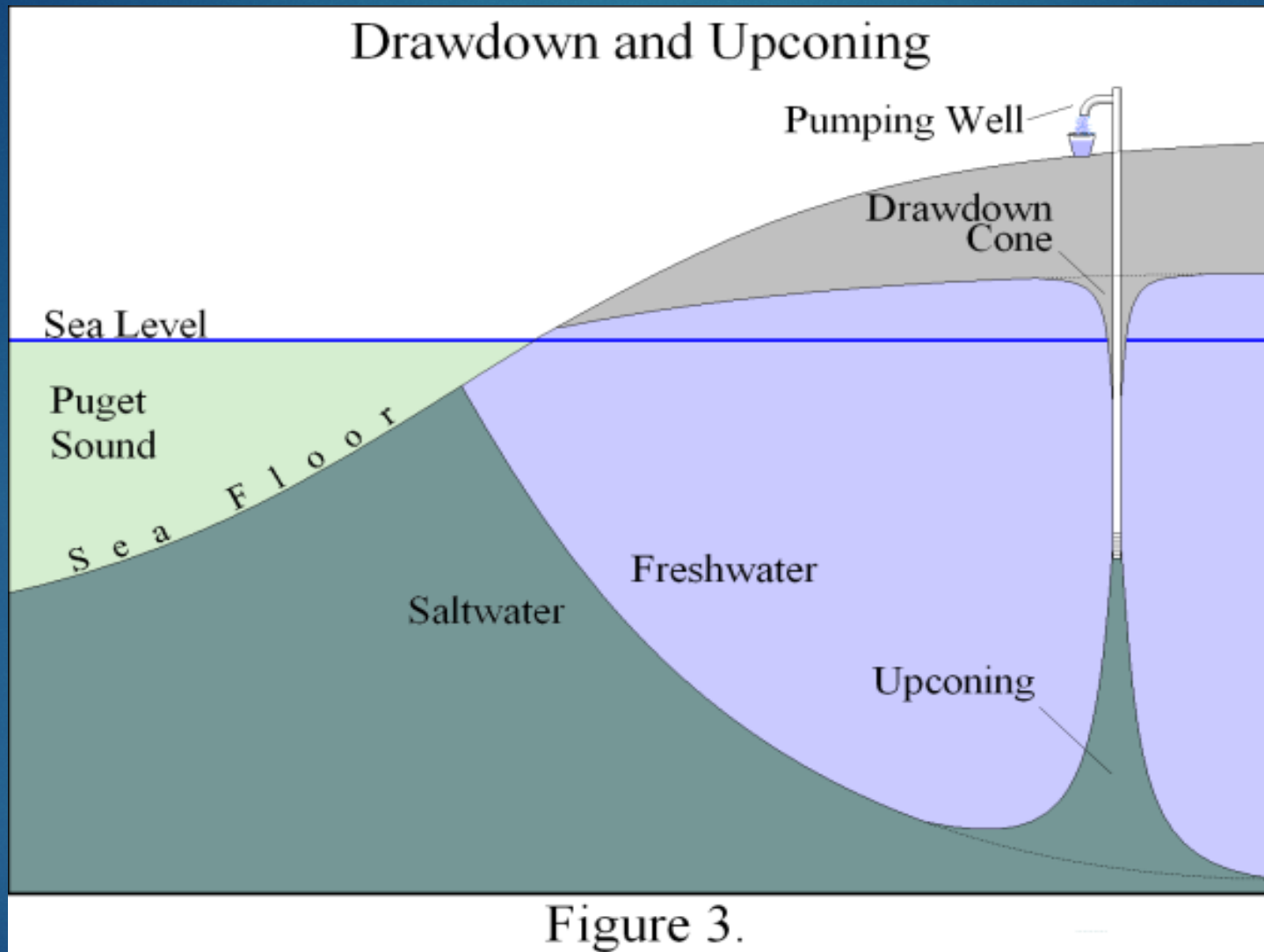
Long-term Risks—Seawater Intrusion

- ▶ Risk of sea level rise or dike break could cause seawater inundation and intrusion into our aquifer.
 - ▶ Our well house is near sea level and close to Puget Sound
- ▶ Climate change is evident now with intensifying storms
- ▶ Climate change could increase droughts and affect water supplies.

Underwater & Underground Landscape of Whidbey Island



How does seawater intrusion happen?



Saltwater Intrusion Issues

▶ Supply

- ▶ Recharge from rain, surface water, and underground streams
- ▶ Droughts and hotter summers reduce supply

▶ Demand

- ▶ Number of water users, number of gardens and lawns
- ▶ High use on holiday weekends.

▶ Pressure from surrounding sea level

- ▶ Sea level rise
- ▶ Increasing intensity of winter storms

Assessing Options

- ▶ Relocating wells and facilities could address some risks
- ▶ Sunlight Beach Water Association serves 48 members on Sunlight Beach Road; they are facing similar risks
- ▶ Formed a joint planning team among the two systems to discuss options
- ▶ Identified state funding for engineering and feasibility studies
- ▶ Submitted Application to Office of Drinking Water
- ▶ Joint Planning Committee overseeing the study
 - ▶ Ed Sheets and John Lovie, SV-SLB
 - ▶ Cliff Slade and Carol Russo, SBWA

Study Scope of Work

Task 1: Evaluation of existing systems

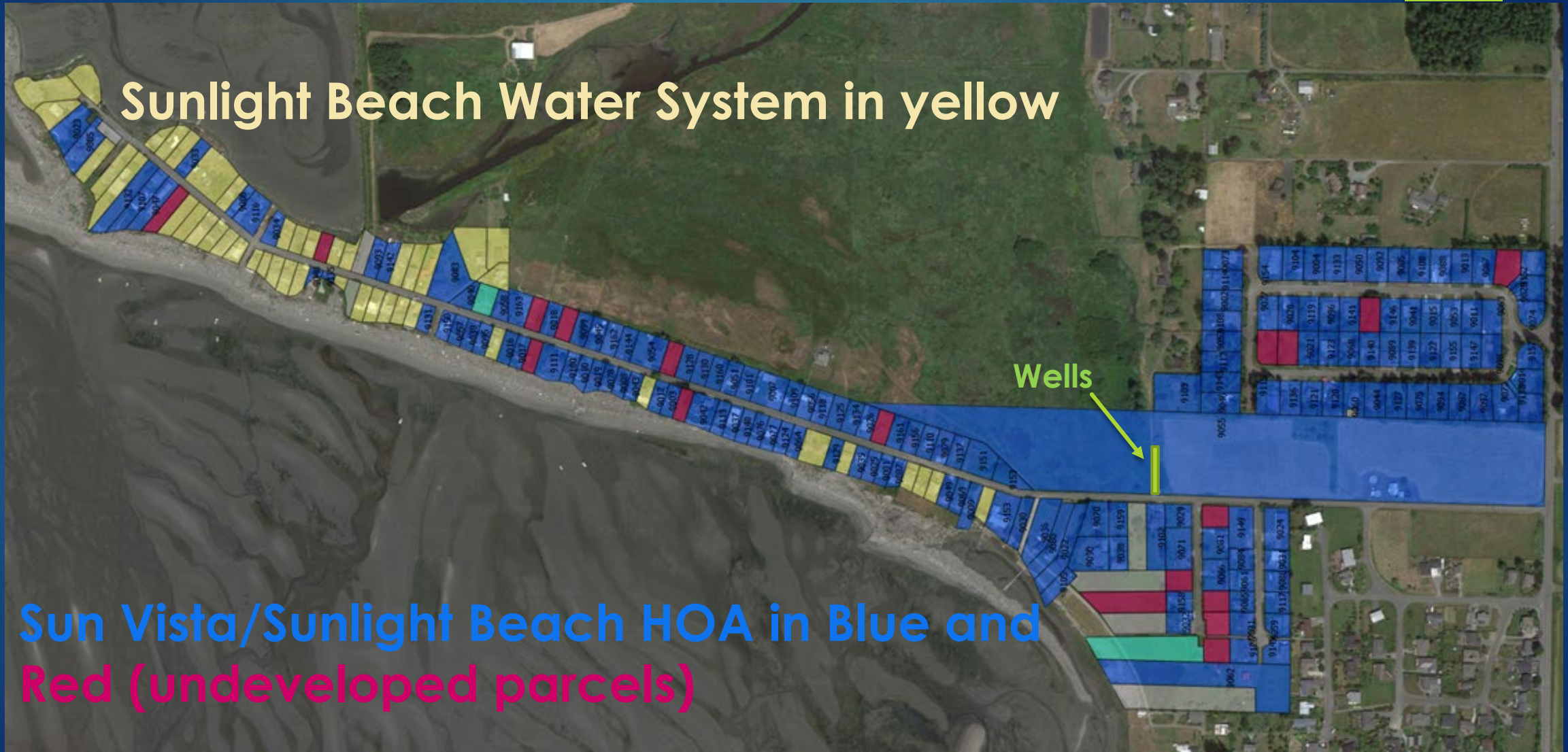
Task 2: Evaluation of separate water systems with new facilities

Task 3: Evaluation of consolidated water system with new facilities

Task 1: Evaluate Existing System

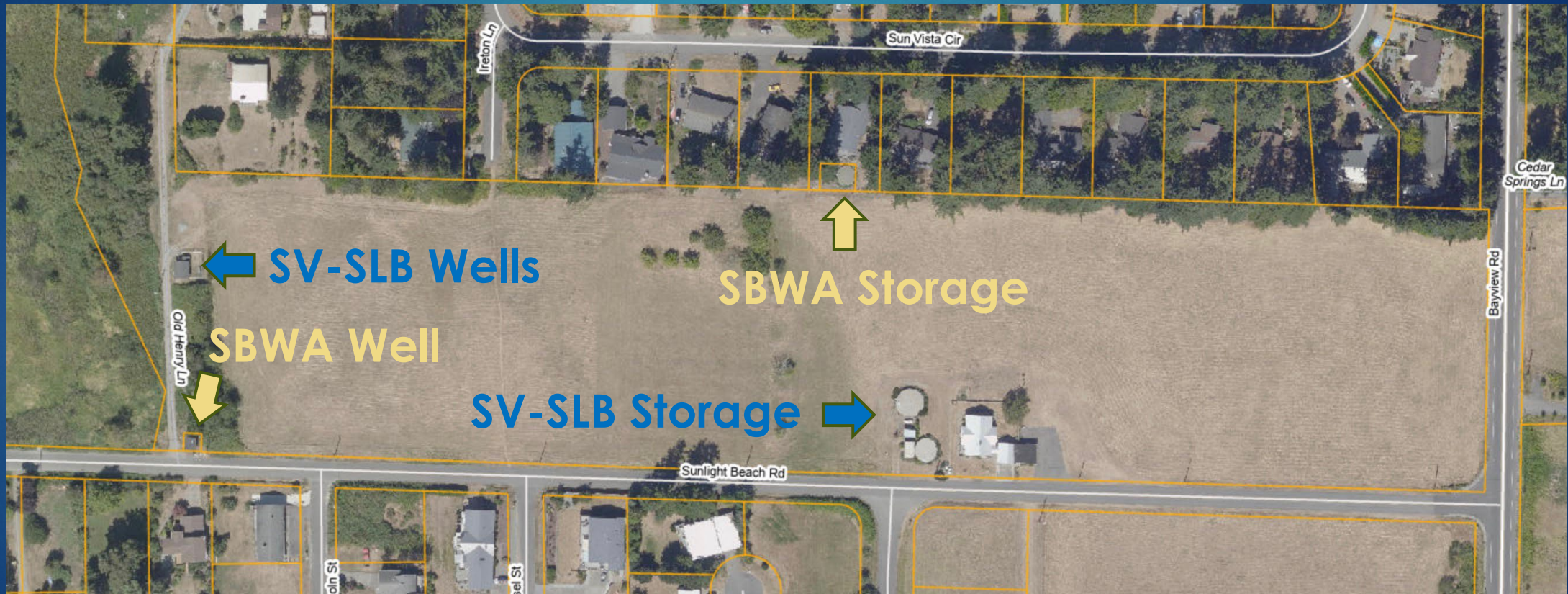
- ▶ Assumes that the two water systems would remain separate into the future.
- ▶ Assess the existing condition of both water systems and evaluate their ability to operate in their existing condition into the future.
- ▶ Evaluate the required improvements and upgrades to meet the future needs.
- ▶ Estimate costs over the next 20 years.

Service Areas*



* An approximate representation of all sites served by each system

Existing Water Systems



Subtasks to Evaluate Existing System

- ▶ Collect and review background information
- ▶ Kick-off meeting and site visit
- ▶ Inventory and map existing water system facilities
- ▶ Forecast water demands
- ▶ Evaluate existing water systems
- ▶ Complete a cost analysis
- ▶ Summarize finding in a memorandum in fall 2023

Subtasks for Task 2: New Facilities for Each System

- ▶ Analyze water supply alternatives
- ▶ Develop improvement plans
 - ▶ New wells and control/treatment facilities for each water system.
 - ▶ New storage tanks
 - ▶ Distribution pipes to deliver water to customers.
- ▶ Assess risks
- ▶ Complete a cost analysis
- ▶ Summarize the Task 2 findings in a memorandum in late 2023

Subtasks for Task 3: Evaluation of Consolidated System

- ▶ **Develop Consolidation Plan**
 - ▶ New wells and control/treatment facilities
 - ▶ New storage tanks
 - ▶ Distribution pipes to deliver water to customers
 - ▶ Consolidated distribution pipelines and other facilities
- ▶ **Assess risks**
- ▶ **Complete a Cost Analysis**
- ▶ **Summarize the Task 3 Findings in a Memorandum in Spring 2024**

Final Report

- ▶ **Assess feasibility of each option**
 - ▶ Maintaining current systems
 - ▶ Moving facilities to higher ground as two systems
 - ▶ Moving facilities as consolidated systems
- ▶ **Assess costs for each option**
- ▶ **Assess risks for each option**
 - ▶ Potential for nitrate and microbial/bacterial contamination
 - ▶ Other regulated contaminants
 - ▶ Potential for sea water contamination and saltwater intrusion
 - ▶ Hydrogeologic concerns
 - ▶ Property owner concerns

Outreach Program

- ▶ Sent three information mailers on current system and issues
- ▶ All documents will be on sv-slb.com website
- ▶ Engineering firm will present Task 1 results in fall 2023
- ▶ Phase 2 and 3 memorandums will be posted on website
- ▶ Presentation of results at 2024 annual meeting
- ▶ Board would determine next steps before any recommendations are made
- ▶ Any decision to move the facilities would be taken to our membership for a vote.
- ▶ Any decision to merge the two systems would be taken to the membership of both systems for a vote.