

Agenda  
Sacramento Suburban Water District  
**Special Board Workshop**

3701 Marconi Avenue  
Sacramento, California 95821

Monday, April 29, 2024  
4:00 p.m.

**This meeting will be conducted both in-person in the District’s Boardroom at the address above, and by videoconference and teleconference using the information provided below. The public is invited to listen, observe, and provide comments during the meeting by any method provided. The President will call for public comment on each agenda item at the appropriate time.**

**For members of the public interested in viewing and having the ability to comment at the public meeting via Zoom, an internet-enabled computer equipped with a microphone and speaker or a mobile device with a data plan is required. Use of a webcam is optional. You also may call in to the meeting using teleconference without video. Please use the following login information for videoconferencing or teleconferencing:**

**Join the meeting from a computer, tablet or smartphone:**

<https://us02web.zoom.us/j/86806845006?pwd=U3VBUnVuYXNxcWZ2UTFRaFJyWVN2UT09>

**Meeting ID: 868 0684 5006**

**Password: 124798**

**You can also dial in using your phone: 1 (669) 900-6833**

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Zoom uses encryption of data during Zoom meetings. The District uses a secure password to restrict access to scheduled meetings. The meeting host has control of content sharing, recording, and chat.

**Please mute your line.**

Where appropriate or deemed necessary, the Board may take action on any item listed on the agenda, including items listed as information items. Public documents relating to any open session item listed on this agenda that are distributed to all or a majority of the members of the Board of Directors less than 72 hours before the meeting are available for public inspection in the customer service area of the District’s Administrative Office at the address listed above.

The public may address the Board concerning an agenda item after the staff presentation but before Board’s consideration of that agenda item. Persons who wish to comment on either agenda or non-agenda items should fill out a Comment Card and give it to the General Manager. The President will call for comments at the appropriate time. Comments will be subject to reasonable time limits (3 minutes).

In compliance with the Americans with Disabilities Act, if you have a disability, and you need a disability-related modification or accommodation to participate in this meeting, then please contact Sacramento Suburban Water District Human Resources at 916.679.3972. Requests must be made as early as possible and at least one full business day before the start of the meeting.

**Call to Order**

**Pledge of Allegiance**

**Roll Call**

**Announcements**

**Public Comment**

This is the opportunity for the public to comment on non-agenda items within the Board’s jurisdiction. Comments are limited to 3 minutes.

**Items for Discussion and/or Action**

- 1. Production Capacity Roadmap  
*Recommendation: Receive presentation from staff on Sacramento Suburban Water District’s new software tool to assist in making decisions to plan for future replacement production capacity projects. Provide staff direction as appropriate.*

**Adjournment**

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**Upcoming Meetings**

Monday, May 20, 2024, at 6:00 p.m., Regular Board Meeting

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I certify that the foregoing agenda for the April 29, 2024, meeting of the Sacramento Suburban Water District Board of Directors was posted by April 26, 2024, in a publicly accessible location at the Sacramento Suburban Water District office, 3701 Marconi Avenue, Sacramento, California, and was freely available to the public.

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Dan York  
 General Manager/Secretary  
 Sacramento Suburban Water District



## Agenda Item: 1

**Date:** April 29, 2024

**Subject:** Production Capacity Roadmap

**Staff Contact:** Matt Underwood, Assistant General Manager

### **Recommended Board Action:**

Receive presentation from staff on Sacramento Suburban Water District’s new software tool to assist in making decisions to plan for future replacement production capacity projects. Provide staff direction as appropriate.

### **Background:**

The Sacramento Suburban Water District (District) Board set a goal in 2023 to develop a roadmap, acceptable to the Board, for capital improvements necessary to meet future water demands. The subject goal was placed on hold until completion of the combination discussions with Carmichael Water District. However, staff felt it was necessary to continue developing the roadmap for approval in 2024. The District has contracted with the consultant Brown and Caldwell to assist in developing a desktop computer analytical tool (Tool) for the District to use in making better informed decisions about when to plan to construct replacement production capacity (i.e., new groundwater wells).

The District is 100% reliant on groundwater because it has no surface water rights (only entitlements – which are not “firm” capacity). As such, prudent and conservative planning for construction of new groundwater wells to potentially replace existing wells due to age and regulatory requirements is of paramount importance in long-term planning of adequate supplies necessary to reliably meet demand, consistent with the District’s Mission Statement.

### **Discussion:**

During the Special Board meeting staff will provide an overview of the Tool via a PowerPoint presentation (Attachment 1), to be followed by an interactive demonstration of the Tool. Staff requests input/direction from Directors during the demonstration/discussion.

### Tool Overview

The Tool, in summary, functions as follows.

### **Existing Data**

Uses the following three data points for existing wells:

- Well Age
- Well Site Area
- Well Site “Vulnerability to Treatment”

### **User Input**

Accepts the following three user inputs:

- Service Area (North or South)
- Well Reliability Scenario (% , by service area)
- Well Useful Life Scenario (years, by service area)

### **Output**

Identifies the year:

- An existing well is expected to reach the end of its useful life
- A replacement well is needed to be on-line
- Capacity vulnerable to treatment

Results from User Inputs are produced instantly in a graphical display.

### Not Included in the Tool

#### Existing Wells

Factors potentially impacting how long a well remains viable consist of the following:

- An individual well’s degradation/aging
- Change in an individual well’s water quality/production
- Changes in water quality regulations (including those driving need to add treatment)

#### New Wells

Factors potentially impacting whether a new well meets the Tool’s performance assumptions of: a) at least 1,500 gallons per minute capacity; and b) no treatment required:

- Aquifer conditions / production capacity
- Water quality

### **Use of the Tool in Long-Term Planning:**

The Tool does not “answer” questions in the literal sense of that word. What it does do, based on User Input, is provide the timing of changes in Service Area total capacity compared to demand.

### Risk

A critical aspect is that User Input cannot be separated from a decision about risk tolerance for outcomes inconsistent with (less desirable than) the Tool's predictions based on User Input.

Therefore, a "risk tolerance" decision will be required as part of selecting User Inputs on which to base decisions for planning new well capacity.

### Board's Preference

Following the interactive demonstration, staff requests direction from the Board on two points:

1. Use of the Tool
  - Staff requests the Board provide direction as to staff's use of the Tool in planning.
2. Risk Tolerance

If the Board directs staff to use the Tool in planning, staff anticipates using the Tool in development of the next 5-year CIP outlook which will then be used in the Rate Study now underway.

  - Staff requests the Board provide direction as to which User Inputs (Useful Life; and Reliability) are to be used based on the Board's tolerance as to the District's risk. Staff intend to request direction at a future meeting.

### **Fiscal Impact:**

Fiscal Impact will be based on the District's planning decisions for replacement capacity and cannot be determined at this time. Costs for the consultant's assistance in developing the Tool is \$112,000.

### **Strategic Plan Alignment:**

- Goal A: Provide a High Quality, Reliable Water Supply by Ensuring It Is Sustainable, Clean, and Safe
- Goal B: Optimize Operational and Organizational Efficiencies
- Goal C: Ensure Fiscal Responsibility and Affordable Rates
- Goal D: Maintain Excellent Customer Service

### **Attachment:**

1. Presentation

# Production Capacity Roadmap



*April 29, 2024*



# Agenda

- Background
- Objectives
- Design / Functionality
- Examples
- Interactive Demonstration

# Background

The SSWD Board of Directors set a goal in 2023 to provide a roadmap for capital improvements necessary to meet future water demands of SSWD customers.

The District has contracted with the consultant Brown and Caldwell to assist it in developing a desktop computer analytical tool (**Tool**) for the District to use in making better informed decisions about when to plan to construct replacement production capacity (i.e., new groundwater wells). Note that only SSWD customer demands are included.



# Background

The SSWD Board of Directors on April 22, 2024, designated

**“Sacramento Suburban Water District a Groundwater  
Reliant water agency.”**

# Tool – Objectives

# Tool – Use Objectives

The tool should provide the following utility for staff.

## Primary

- Ability for staff to forecast timing of the need for replacement wells

## Secondary

- Fast and simple scenario manipulation
- Instantaneous output when user-inputs are changed
- Easy for staff to update underlying data (e.g., adding a new well)
- Ability to identify capacity that does not have room to add treatment

# Tool – Design Objectives

The tool design objectives are summarized below.

- Simple to use
- Interactive
- Graphical output
- Limited user-input of variables
- Use of “standard” assumptions

# Tool – As Designed

# Tool – As Designed

Microsoft **Power BI** was selected

- Proven, stable software
- Utilizes data contained in a Microsoft Excel spreadsheet
- Power BI is interactive and highly customizable



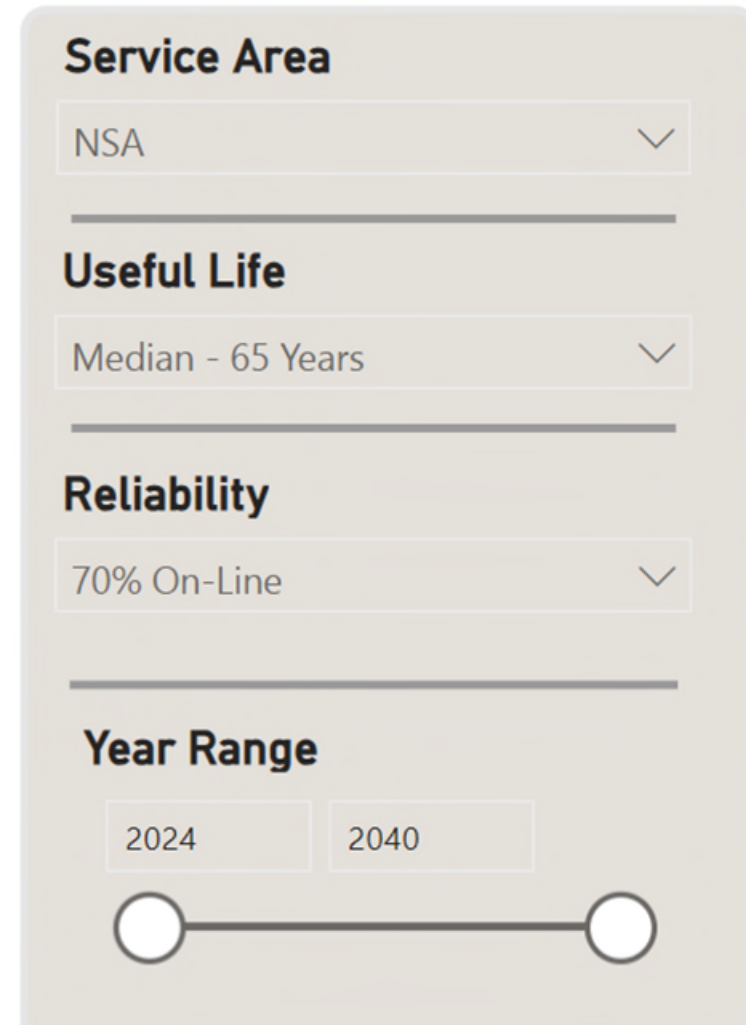
Microsoft

| Power BI

# Tool – As Designed

User-inputs limited to:

- Service Area (NSA or SSA)
- Well Useful Life Scenario (3 user-selectable values)
- Well Reliability (3 user-selectable values)
- Year Range (user-selectable values from current year to 2040)



The screenshot shows a user interface with four sections, each separated by a horizontal line:

- Service Area:** A dropdown menu with "NSA" selected and a downward arrow.
- Useful Life:** A dropdown menu with "Median - 65 Years" selected and a downward arrow.
- Reliability:** A dropdown menu with "70% On-Line" selected and a downward arrow.
- Year Range:** Two input boxes containing "2024" and "2040" above a slider control with circular endpoints.



# Tool – As Designed

## Well Useful Life

55 years – “Baseline”

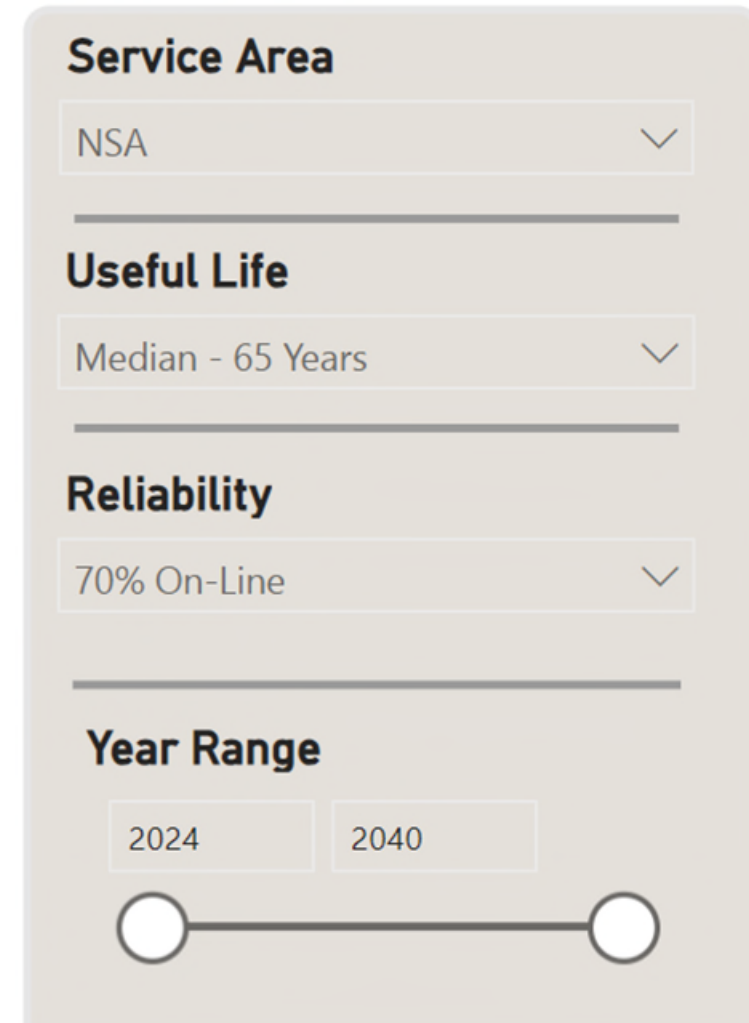
- 2017 Water System Master Plan

65 years – “Median”

- Staff included for this Tool a “median” range age

78 years – “Optimistic”

- 2020 Groundwater Well AMP



The screenshot shows a configuration panel with the following sections:

- Service Area:** A dropdown menu with "NSA" selected.
- Useful Life:** A dropdown menu with "Median - 65 Years" selected.
- Reliability:** A dropdown menu with "70% On-Line" selected.
- Year Range:** A range selector with input boxes for "2024" and "2040" and a slider below.

# Tool – As Designed

## Well Reliability

60% of Wells On-Line

- Reactive maintenance condition

70% of Wells On-Line

- Transitional maintenance condition

80% of Wells On-Line

- Proactive maintenance condition and/or a very young average well age

**Service Area**

NSA ▼

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**Useful Life**

Median - 65 Years ▼

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**Reliability**

70% On-Line ▼

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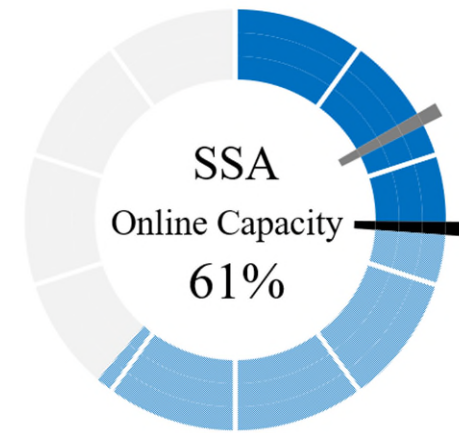
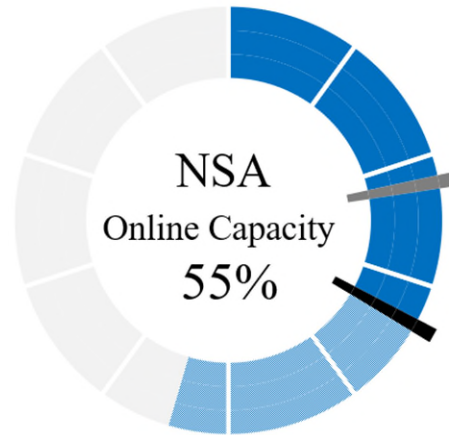
**Year Range**

2024      2040

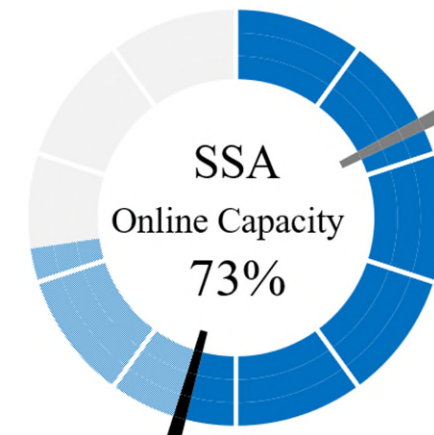
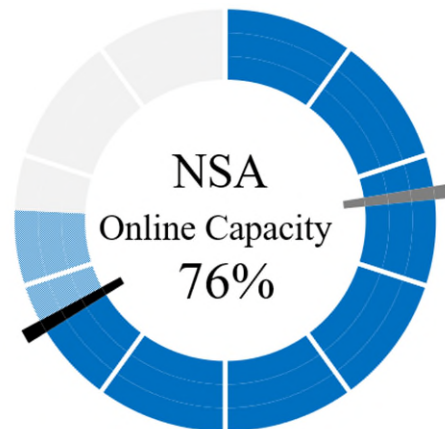
# Tool – As Designed

## Well Reliability – Recent History

April 2023



April 2024



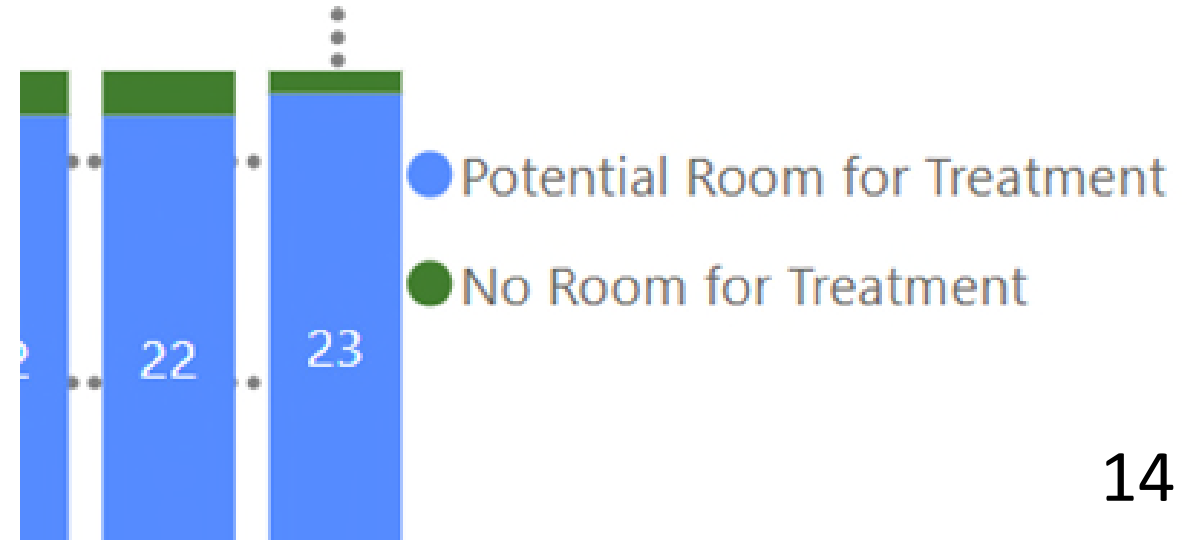
# Tool – As Designed

## Assumptions:

- New well capacity of 1,500 gpm
- Replacement Well is Active Four (4) Years Following the Current Year
- Parcels under 3,200 square feet were categorized as too small to add treatment
- Demand is MDD

New Well Capacity  
(gpm)

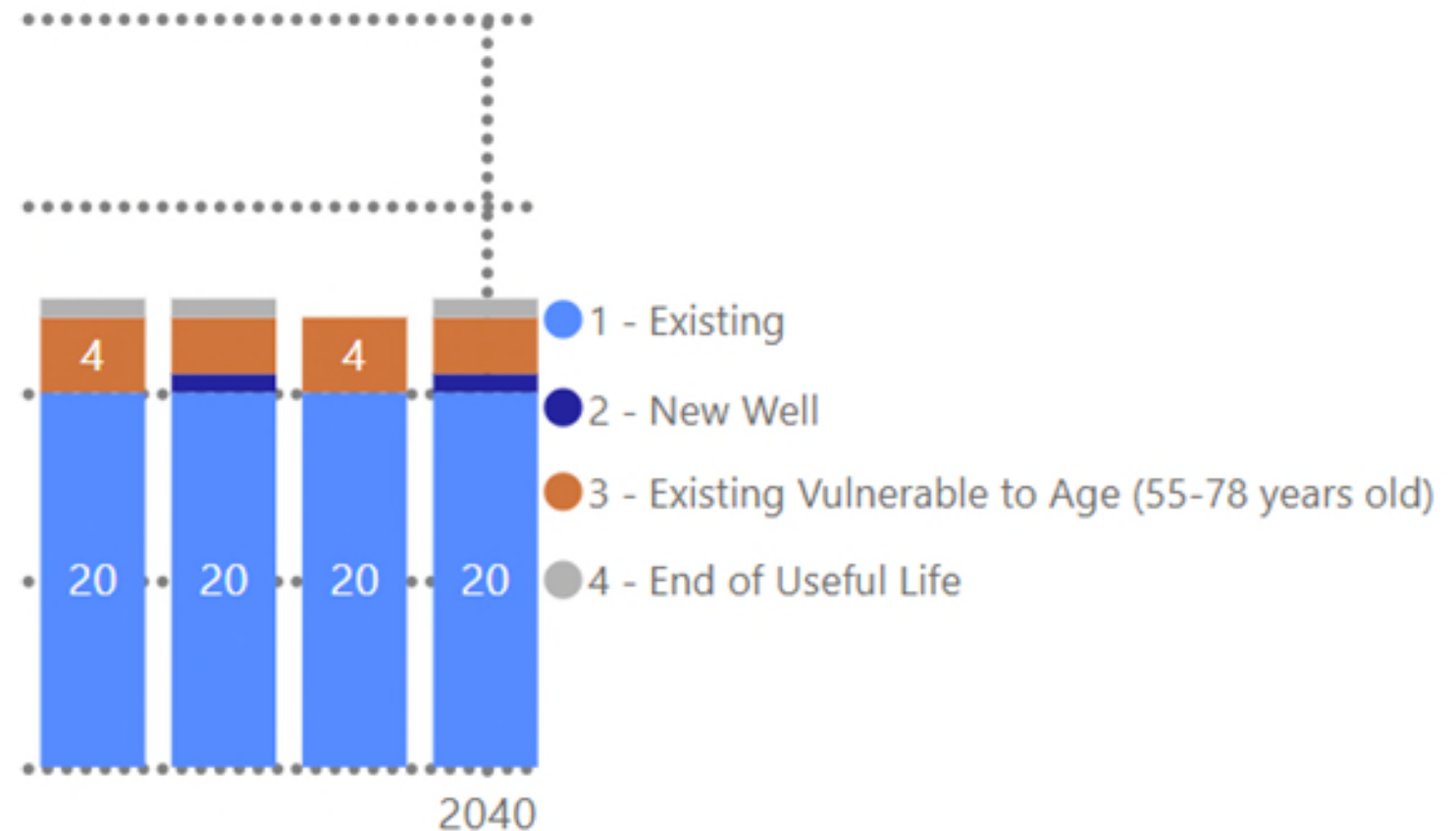
# 1,500



# Tool – As Designed

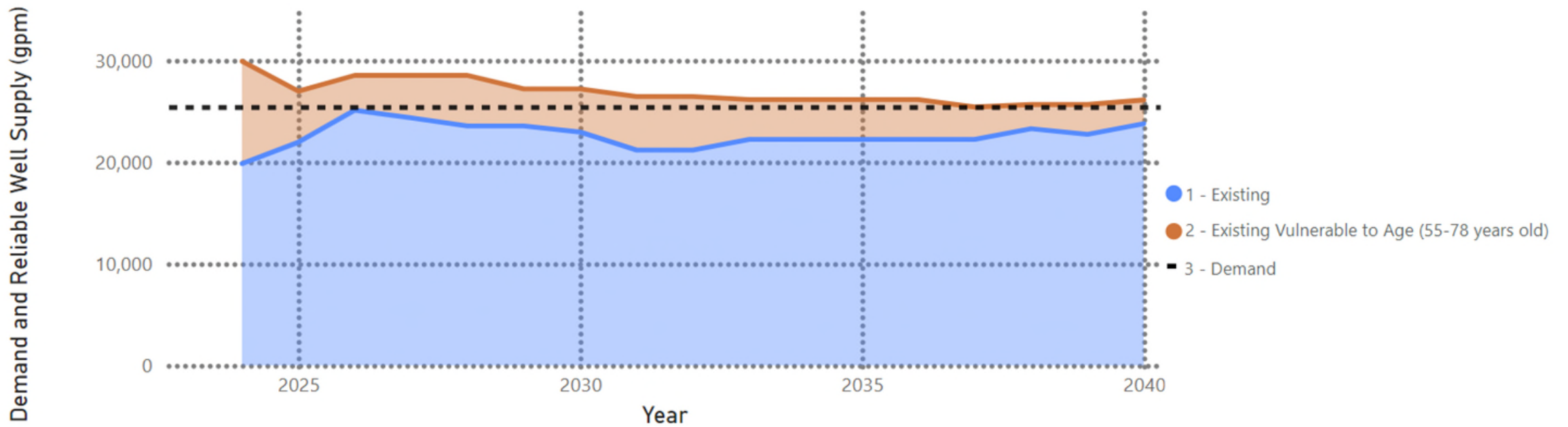
## Tool Calculation:

- Tool automatically adds capacity to maintain:  
**Total Capacity ≥ Demand**
- This is reflected by “New Well” in the graphical display



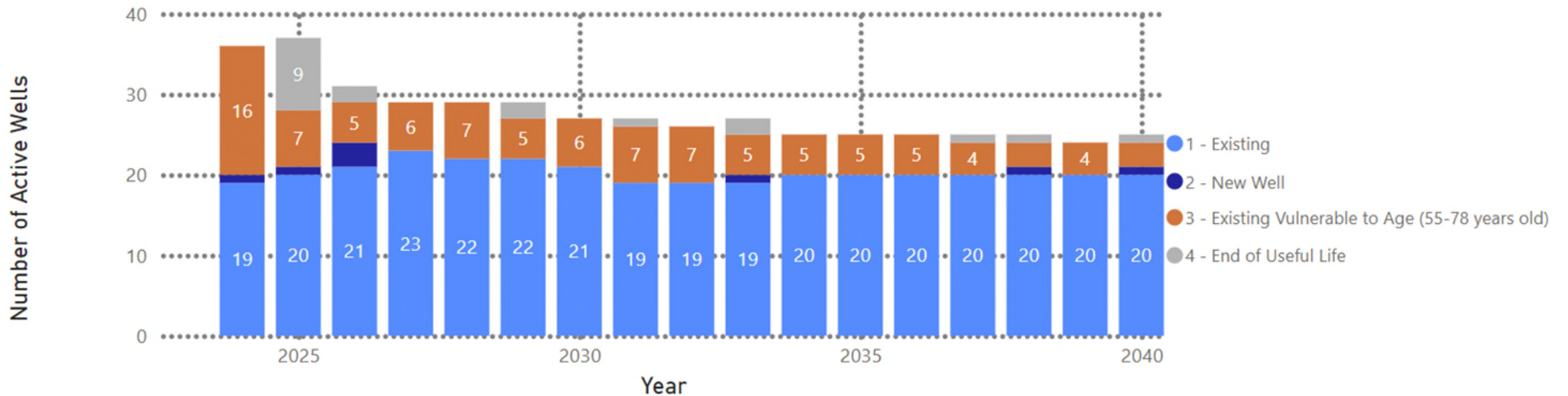
# Tool Examples

# Example – Well Supply and Demand

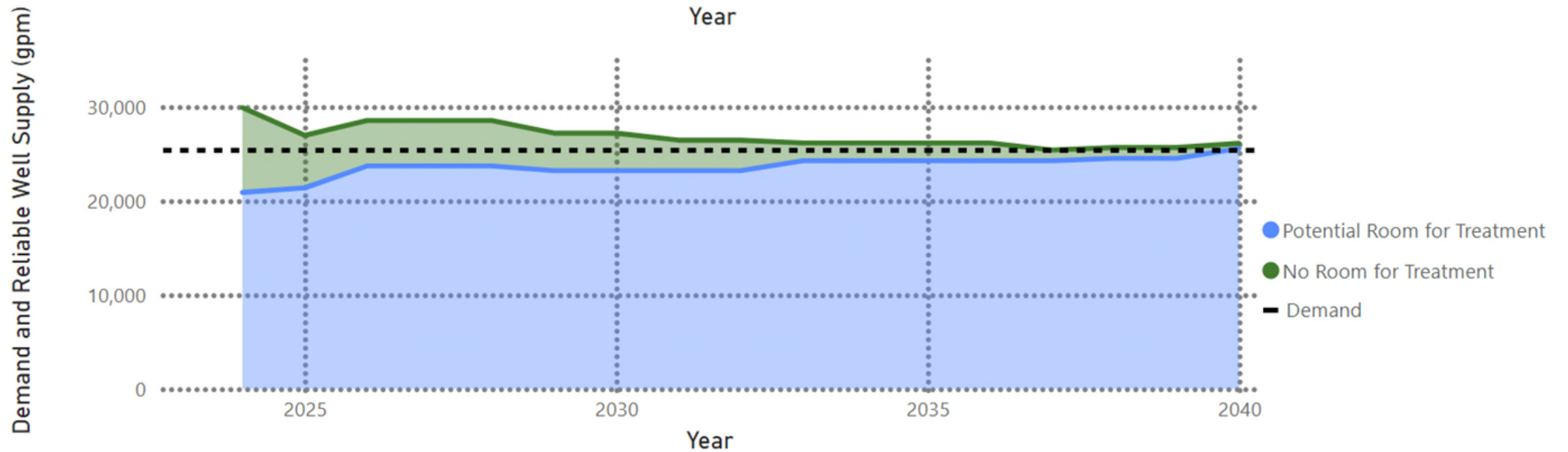




# Example – Number of Wells



# Example – Well Supply Without Room for Treatment



# Interactive Demonstration

# Preview

You will observe the following during the Interactive Demonstration:

- NSA and SSA have significant differences
- Need for replacement capacity is sensitive to changes in user-inputs:
  - Well Useful Life
  - Well Reliability
- Capacity vulnerability due to potential need for future treatment

# Questions Before the Interactive Demonstration?