Draft

Seawater Intrusion Sustainable Management Criteria

At its Meeting #6 on March 11th, 2021, the Ad Hoc Sustainable Groundwater Planning Advisory Committee (Committee) directed staff to prepare a written summary of proposed Seawater Intrusion (SWI) Sustainable Management Criteria (SMC). The summary that follows builds from and is supported by, the SWI Technical Memoranda presented to the Committee. In addition, it is a response to the Department of Water Resources (DWR) recommendations #6 and #7. A Committee member has proposed a different statement of significant and unreasonable conditions than what was presented at Meeting #6 on March 11. This option for the statement of significant and unreasonable conditions is presented below with description of rationale for both the Meeting #6 option and the newly proposed option to be presented at Meeting #7 on April 8th, 2021. Although the choice between the options will change the implementation of SMC going forward, the choice should not change the quantitative SMC (minimum threshold, undesirable results, and measurable objective) included in the GSU22.

Staff propose that Committee members review and provide comments to staff on the suggested language below prior to Meeting #7 scheduled for April 8. The language that is ultimately approved by the Committee will be presented to the PV Water Board of Directors for adoption, and included in the Basin Management Plan: Groundwater Sustainability Update 2022 (GSU22).

In order meet DWR Recommendations #6 and #7, the GSU22 will include the following sustainable management criteria that can be used to assess whether significant and unreasonable conditions are occurring:

Statement of Significant and Unreasonable Conditions

Option Presented at Meeting #6 (March 11)

The 2014 Basin Management Plan Update sets a goal of reducing the rate of seawater intrusion by 90% to be achieved with the successful implementation of the Phase I projects by 2025. Therefore, it would be significant and unreasonable for seawater to intrude into the Aromas aquifer, the principal aquifer of the Basin, beyond the inland extent of seawater intrusion as will be observed in 2025.

Option to be Presented at Meeting #7 (April 8)

The 2014 Basin Management Plan Update sets a goal of reducing the rate of seawater intrusion by 90% to be achieved with the successful implementation of the Phase I projects by 2025. Therefore, it would be significant and unreasonable for seawater to intrude into the Aromas aquifer, the principal aquifer of the Basin, at concentrations above 250 mg/L beyond 1,000 feet inland of the 250 mg/L chloride isocontour as of 2020.

Considerations for Options of Statements of Significant and Unreasonable Conditions

Option Presented at Meeting #6 (March 11)

The Meeting #6 option recognizes that Basin Management Plan Phase 1 projects designed to reduce the rate of seawater intrusion will not be fully implemented until 2025. This option defines significant and unreasonable conditions based on actual advancement of seawater intrusion through 2025. The estimate of 1,000 feet inland of 2020 intrusion is therefore used to define quantitative SMC such as the minimum threshold and measurable objective for inclusion in GSU22 but will be updated based on observations through 2025.

Option to be Presented Meeting #7 (April 8)

The Meeting #7 option recognizes that the Basin Management Plan Phase 1 projects have a goal only to reduce the rate of seawater intrusion by 90% in 2025. As this is not a complete elimination of ongoing seawater intrusion and the Phase 1 projects may not fully achieve its goals by 2025, significant and unreasonable conditions of intrusion beyond 2025 conditions results in an elevated risk of state intervention. Setting significant and unreasonable conditions based on 1,000 feet inland of 2020 intrusion can account for additional intrusion beyond 2025. This will also provide more management certainty for PV Water as the quantitative sustainable management criteria would not be revised based on 2025 conditions. However, quantitative SMC could be revised based on new information about 2020 conditions.

Table 1. Summary of Considerations for Significant and Unreasonable Conditions Options

	Meeting #6 Option	**Meeting #7 Option**
"It would be significant and unreasonable for seawater to intrude into the Aromas aquifer, the principal aquifer of the Basin…"	"…beyond the inland extent of seawater intrusion as will be observed in 2025."	"…at concentrations above 250 mg/L beyond 1,000 feet inland of the 250 mg/L chloride isocontour as of 2020."
Rationale	Basin Management Plan Phase 1 projects not fully implemented until 2025	Basin Management Plan Phase 1 projects do not fully eliminate seawater intrusion
Use of 1,000 feet inland of 2020 isocontour	Estimate of potential intrusion by 2025	Accounts for intrusion beyond 2025
Revision in Groundwater Sustainability Update 2027	Based on conditions as of 2025	Based on new information about 2020 conditions

Quantitative SMC to be included in GSU22 for either option are based on an isocontour 1,000 feet inland of the 2020 isocontour so the below quantitative SMC apply for both options.

Minimum Threshold for Seawater Intrusion

The minimum threshold for seawater intrusion is defined as the 250 mg/L chloride isocontour located 1,000 feet inland (Proposed Minimum Threshold Isocontour as depicted on Figure 1) of the 250 mg/L chloride isocontour as of 2020, per the best estimates of all available data.

Undesirable Results for Seawater Intrusion

Undesirable results for seawater intrusion occurs when the minimum threshold is exceeded in 3 of 5 years.

Measurable Objective for Seawater Intrusion

The measurable objective for seawater intrusion is groundwater chloride concentrations less than or equal to 100 mg/L chloride inland of the minimum threshold isocontour (Proposed Minimum Threshold Isocontour as depicted on Figure 1)[1] .

[1] References to figures will be updated in final GSU22 document.

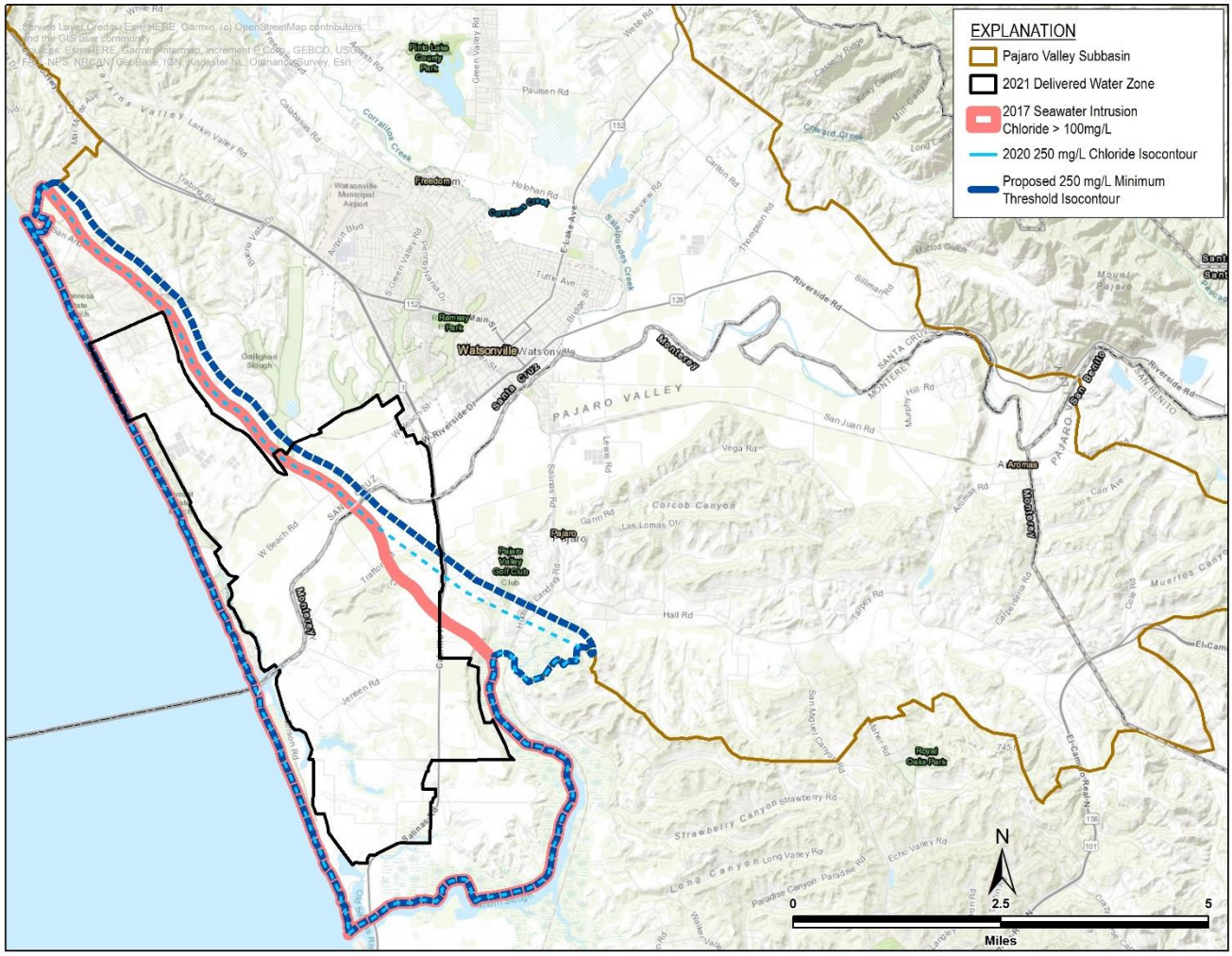

Figure 2. Map of Proposed Sustainable Management Criteria for Seawater Intrusion

Table 1 provides SWI SMC metrics at a glance for reference:

Table 3. Summary of Proposed Quantitative Sustainable Management Criteria for Seawater Intrusion

Sustainable Management Criteria	**Proposal**
Minimum Threshold Chloride Isocontour[1]	1,000 feet inland of 2020 250 mg/L Seawater Intrusion Chloride Isocontour based on observations in Aromas aquifer
Minimum Threshold Chloride Concentration	250 mg/L
Undesirable Results	Minimum Threshold Exceedances (Seawater Intrusion Inland of Minimum Threshold Chloride Isocontour) in 3 of 5 Years
Measurable Objective Chloride Isocontour	Same as Minimum Threshold Chloride Isocontour
Measurable Objective Chloride Concentration	100 mg/L

[1] For the Meeting #6 (March 11) option for the statement of significant and unreasonable conditions, the MT isocontour will be revised based of observed conditions through 2025.