

SCV
GSA

Sustainable Management Criteria (SMC) Introduction

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MEMBER AGENCIES



Activities to Increase Sustainability



Sustainable Management Criteria (SMC)



Sustainable Management Criteria Development Process

- Review Sustainability Indicators
- Review Basin Setting
- Discuss Sustainability Goals
- Discuss Undesirable Results



Santa Clara River – Photo Credit: The Nature Conservancy

Sustainability Indicators

- Six identified by DWR
- Evaluated to gauge sustainability of groundwater basins.
- Each could have significant and unreasonable effects defined as “Undesirable Results” that must be eliminated within 20 years.



Santa Clara River – Photo Credit: The Nature Conservancy

Sustainability Indicators



Lowering of Groundwater Levels



Reduction of Groundwater Storage



Degraded Water Quality



Land Subsidence



Depletions of Interconnected Surface Water



Seawater Intrusion

Review Basin Setting

- Informed by four Technical Memos
 - ❖ GW/SW Interaction TM
 - ❖ Potential GDE TM
 - ❖ Hydrogeologic Conceptual Model TM
 - ❖ Groundwater Budget TM
- Understand groundwater conditions to determine sustainability goals and SMCs



Santa Clara River – Photo Credit: The Nature Conservancy



Sustainability Indicator

Lowering of Groundwater Levels

- Chronic reduction in groundwater levels has not been observed and is not expected in the future.
 - Groundwater elevation changes driven by many factors:
 - Drought
 - Wet periods
 - Groundwater pumping
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Sustainability Indicator

Reduction of Groundwater Storage

- Seasonal and multi-year changes in groundwater elevation take place without causing long-term reduction of groundwater in storage.
 - SCV Water has a basin operating plan that avoids reduction of groundwater in storage by importing water to meet demand during certain conditions.
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Sustainability Indicator

Degraded Water Quality

- Groundwater pollution from Industry exists
 - Perchlorate, VOCs, PFAS
 - Regulatory agencies require responsible parties conduct monitoring, investigation, and cleanup
 - RWQCB, DTSC, Federal Government
 - Water provided by SCV Water incorporates treatment to address Perchlorate, VOCs, and PFAS to meet standards
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Sustainability Indicator

Land Subsidence

- Available data limited but indicates subsidence not a concern
 - Aquifers do not contain extensive clay layers that are prone to collapse when dewatered
 - Significant lowering of groundwater levels not observed
 - Subsidence monitoring is needed to address data gaps
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Sustainability Criteria

Depletion of Interconnected Surface Water

- Interconnection exists along the Santa Clara River and some tributaries:
 - Exchange between surface water and groundwater varies seasonally, annually, and by location depending upon local climatic conditions and pumping.
 - Local habitat is important, and undesirable results to it from groundwater pumping should be avoided
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Sustainability Criteria

Seawater Intrusion

- Because we are so far inland, we do not believe this sustainability criteria is applicable here.
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Sustainability Goals

- Key Items
- Different Approaches
High Level to More Specific
- Examples



Santa Clara River – Photo Credit: The Nature Conservancy

Key Items in Sustainability Goal Development

- Desired conditions of the groundwater basin and plan to get there
- Reflect local economic, social, and environmental values in the basin
- How and why the plan will lead to success within 20 years
- Describe Sustainable Management Criteria

High Level Sustainability Goal Example for Coastal Area with Seawater Intrusion

Maintain a sufficient volume of groundwater so that there is no net decline in GW elevation or storage over wet and dry climatic cycles.

Groundwater levels should be maintained high enough to not inhibit the ability of the Coastal subbasin to prevent net landward migration of saline water impact front after 2040.

Sustainability Goals Examples



Lowering of Groundwater Levels

Maintain groundwater levels that continue to support current and future groundwater uses and a healthy river environment in the basin



Land Subsidence

Reduce or prevent land subsidence that causes impacts to critical infrastructure



Reduction of Groundwater Storage

Maintain groundwater volumes in storage to sustain current and future groundwater uses while supporting the river environment during prolonged drought conditions

Local Approaches for Sustainability Goal(s)

- Recall what we know about our Basin Setting.
 - High Level or More Specific?
 - What's working well in groundwater basin and what concerns do we have?
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Important Local Sustainability Considerations

- Preserve groundwater supply
 - Address groundwater quality concerns
 - Reasonable management of groundwater-surface water interactions and protection of river environment to avoid undesirable results
 - Recognize need for future monitoring
 - Contaminant plume movement
 - Groundwater-surface water interactions - avoid river habitat (GDE) impacts
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Sustainability Goal Examples for USCR (for discussion)

A. The goal of this GSP is to sustainably manage the groundwater resources of the Upper Santa Clara River Basin for current and future beneficial users of groundwater, including the environment, and the welfare of the public who rely directly or indirectly on groundwater.

B. The GSP seeks to maintain long-term reliability and viability of the Upper Santa Clara River Basin groundwater resources through economically sound approaches for robust monitoring, studies, and adaptive management.

Additional Sustainability Goal Examples for USCR (for discussion)



Lowering of Groundwater Levels

Maintain groundwater levels that continue to support current and future groundwater uses and a healthy river environment in the basin



Reduction of Groundwater Storage

Maintain groundwater volumes in storage to sustain current and future groundwater uses while supporting the river environment during prolonged drought conditions



Degraded Water Quality

Manage known degraded groundwater quality issues to reduce impact to groundwater users



Land Subsidence

Reduce or prevent land subsidence that causes impacts to critical infrastructure



Depletions of Interconnected Surface Water

Prevent significant and unreasonable impacts to surface water users and groundwater dependent ecosystems



Seawater Intrusion

Not applicable

Virtual Whiteboard Discussion



Santa Clara River – Photo Credit: The Nature Conservancy

Sustainable Management Criteria (SMC)



What are "Undesirable Results"?

Undesirable results are Significant and Unreasonable effects upon one or more of the Sustainability Criteria, caused by Groundwater Pumping

Undesirable Results Examples for USCR (for discussion)



Lowering of Groundwater Levels

Chronic decline, reduction in supply, need to deepen wells, economic impacts, irreparable harm to habitat



Reduction of Groundwater Storage

Reduction in groundwater storage resulting in insufficient supply during extended drought



Degraded Water Quality

*Insufficient regulatory agency driven monitoring and clean up of contamination
Permanent loss of groundwater supply due to contaminants*



Land Subsidence

Land surface deformation causing broken pipelines and damaged roads



Depletions of Interconnected Surface Water

Depletion of surface water causing irreparable harm to habitat



Seawater Intrusion

(Not applicable here)

Virtual Whiteboard Discussion



Santa Clara River – Photo Credit: The Nature Conservancy

Next Steps

- Update GSA Board in December
- Begin preparation of Sustainable Management Criteria Tech Memo
 - Recommend minimum thresholds, measurable objectives, and interim milestones to allow for elimination of any undesirable results in 20 years
 - Describe past and potential future undesirable results and recommend sustainable management criteria
- Consider potential role of management actions and projects if needed.

- Questions?