

# Summary of Draft Sustainable Management Criteria

For Comment and SHAC Recommendation

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Vina Stakeholder Advisory Committee  
June 15, 2021



## Today's Agenda Topic

Recommendations to the Vina Board on the final draft:

- Sustainable Management Criteria (SMC)
- Monitoring Network
- Groundwater Dependent Ecosystems (to be integrated into Basin Setting Chapter)

Chapters will remain draft until the entire GSP is adopted in December

## Sustainable Management Criteria (SMC)

Includes

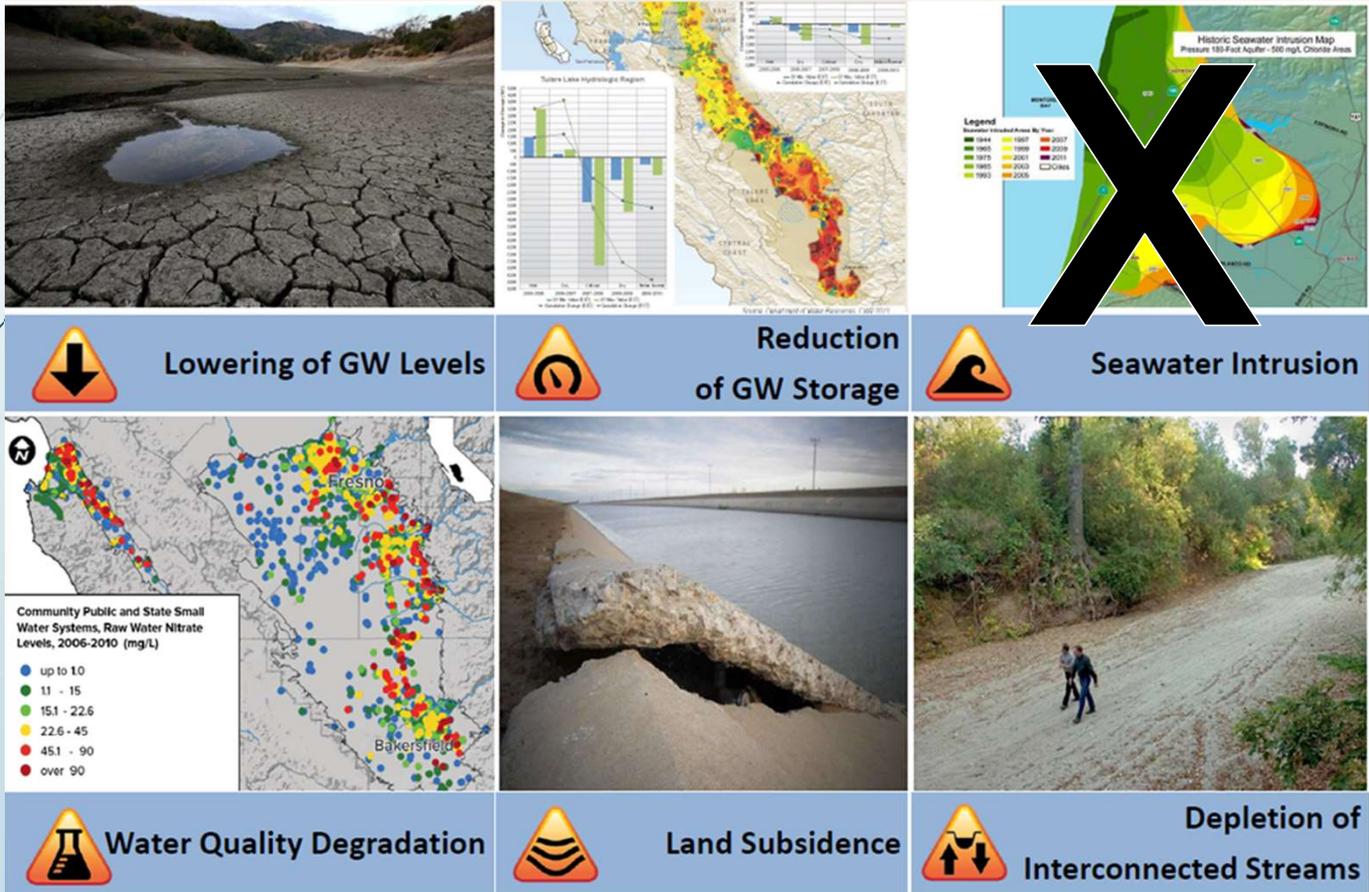
- Sustainability Goal (qualitative)
- Undesirable Results (quantitative)
- Minimum Thresholds (quantitative)
- Measurable Objectives (quantitative)

What's considered “significant and unreasonable” is left for the local GSAs and stakeholders to decide.

→ Management Decision

Defines what  
**SUSTAINABILITY** is and looks  
like in the subbasin

# Sustainability Indicators



# 1. Sustainability Goal

To ensure that groundwater is managed to provide a water supply of adequate quantity and quality to support rural areas and small communities, the agricultural economic base of the region, and environmental uses now and in the future.

*Comments & Recommendations*



Lowering of GW Levels

## 2. Chronic Lowering of Groundwater Levels **Undesirable Result** (2 RMS wells within a Management Area reach the Minimum Threshold for 2 consecutive non-dry years)

### *Comments & Recommendations*

Declining GWL	
<b>Definition</b>	An Undesirable Result is experienced if sustained groundwater levels are too low to provide a water supply of adequate quantity and quality to support rural areas and small communities, and the agricultural economic base of the region, or if significant and unreasonable impacts to environmental uses of groundwater occur.
<b>Identification</b>	<b>Two RMS wells within a management area reach their MT for two consecutive non-dry year-types.</b>
<b>Minimum Thresholds</b>	S. Vina: 15th percentile of shallowest domestic wells within a 3-mile radius of the RMS well. N. Vina: Elevation protective of sustainably constructed domestic wells within the polygon associated with the RMS well
<b>Measurable Objectives</b>	The groundwater level based on the groundwater trend line for the dry periods (since 2000) of observed short-term climatic cycles extended to 2030.



Lowering of GW Levels

### 3. Chronic Lowering of Groundwater Levels **Minimum Thresholds:** Two Approaches— Preference?

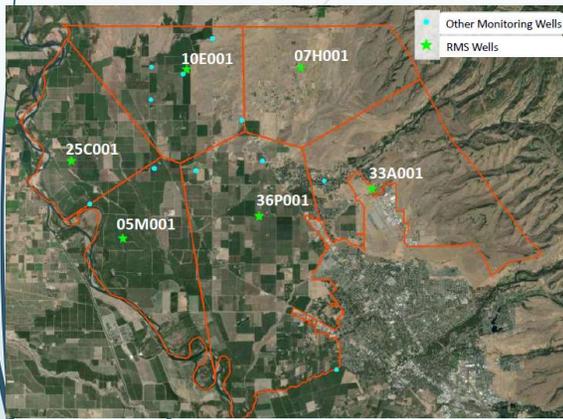
#### *Comments & Recommendations*

Declining GWL	
<b>Definition</b>	An Undesirable Result is experienced if sustained groundwater levels are too low to provide a water supply of adequate quantity and quality to support rural areas and small communities, and the agricultural economic base of the region, or if significant and unreasonable impacts to environmental uses of groundwater occur.
<b>Identification</b>	Two RMS wells within a management area reach their MT for two consecutive non-dry year-types.
<b>Minimum Thresholds</b>	<b>S. Vina: 15th percentile of shallowest domestic wells within a 3-mile radius of RMS well. N. Vina: Elevation protective of sustainably constructed domestic wells within the polygon associated with the RMS well</b>
<b>Measurable Objectives</b>	The groundwater level based on the groundwater trend line for the dry periods (since 2000) of observed short-term climatic cycles extended to 2030.

### 3. Chronic Lowering of Groundwater Levels

Two Approaches to setting the Minimum Thresholds – Preference?

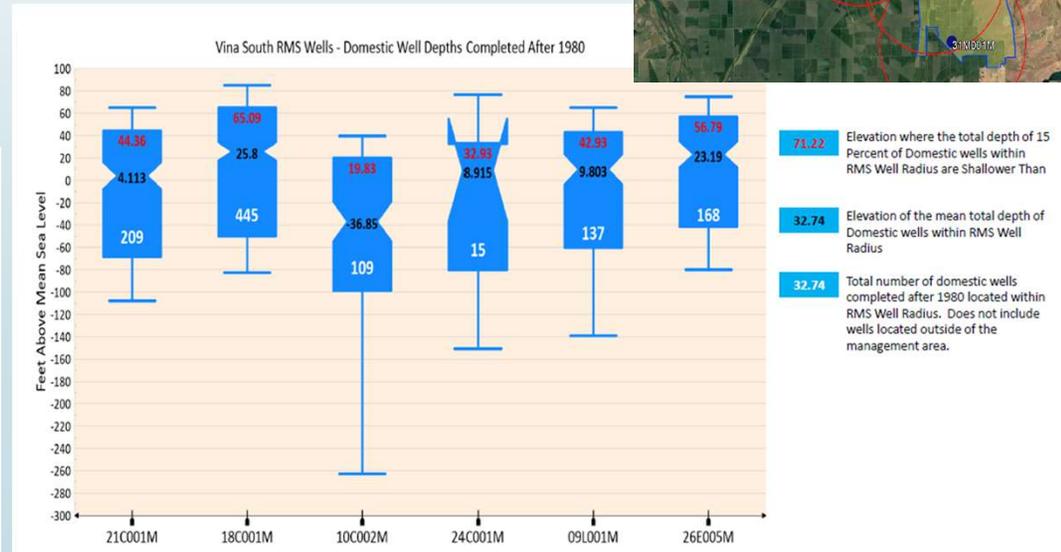
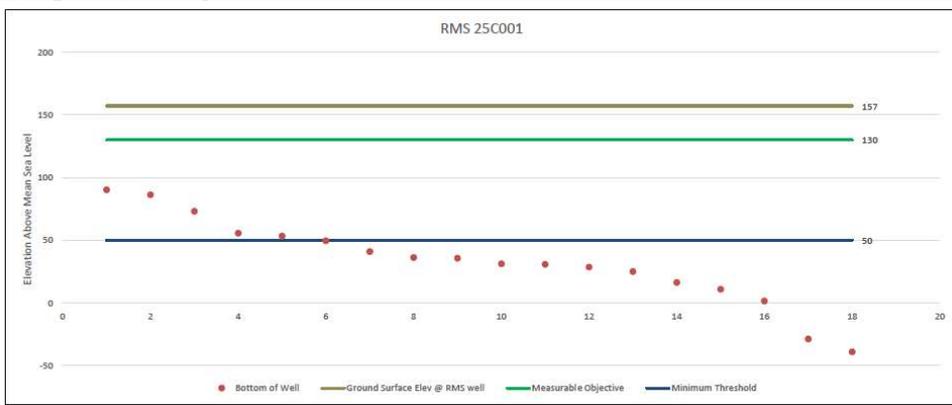
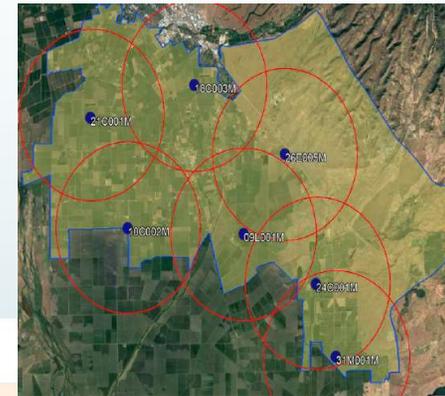
#### Vina North Approach



#### Vina Chico and Vina South Approach

- Polygons vs 3-mile radius
- Graphing method vs. 15th percentile

#### Comments & Recommendations



- 71.22 Elevation where the total depth of 15 Percent of Domestic wells within RMS Well Radius are Shallower Than
- 32.74 Elevation of the mean total depth of Domestic wells within RMS Well Radius
- 32.74 Total number of domestic wells completed after 1980 located within RMS Well Radius. Does not include wells located outside of the management area.



Lowering of GW Levels

## 4. Chronic Lowering of Groundwater Levels Measurable Objectives

### *Comments & Recommendations*

Declining GWL	
<b>Definition</b>	An Undesirable Result is experienced if sustained groundwater levels are too low to provide a water supply of adequate quantity and quality to support rural areas and small communities, and the agricultural economic base of the region, or if significant and unreasonable impacts to environmental uses of groundwater occur.
<b>Identification</b>	Two RMS wells within a management area reach their MT for two consecutive non-dry year-types.
<b>Minimum Thresholds</b>	S. Vina: 15th percentile of shallowest domestic wells within a 3-mile radius of RMS well. N. Vina: Elevation protective of sustainably constructed domestic wells within the polygon associated with the RMS well
<b>Measurable Objectives</b>	<b>The groundwater level based on the groundwater trend line for the dry periods (since 2000) of observed short-term climatic cycles extended to 2030.</b>

# 5. Groundwater Level Representative Monitoring Network

## Comments & Recommendations

### Legend

#### RMS GWE Monitoring Wells

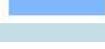
-  Residential
-  Irrigation
-  Observation
-  Municipal and Industrial

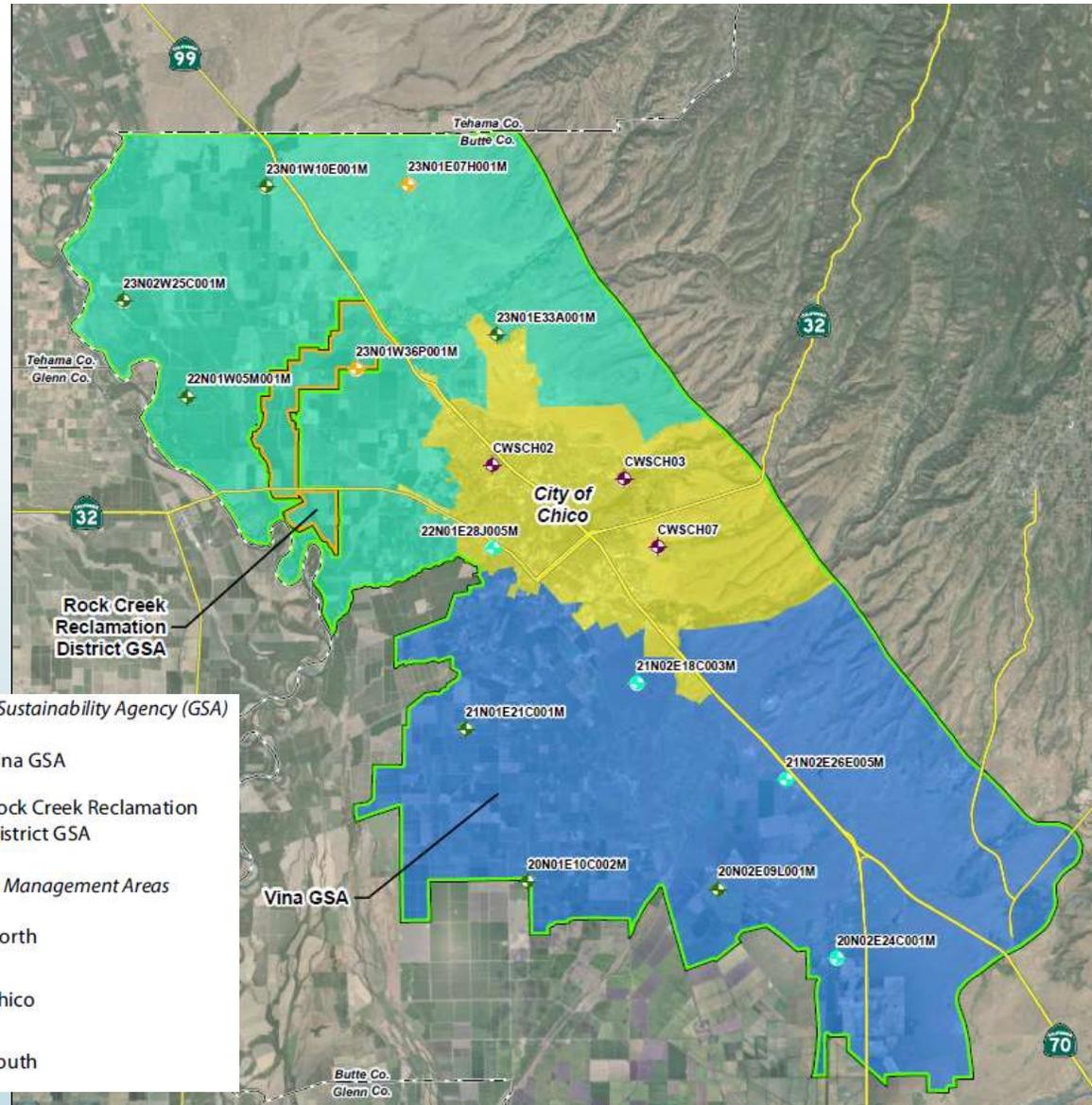
-  Highways
-  County boundaries

#### Groundwater Sustainability Agency (GSA)

-  Vina GSA
-  Rock Creek Reclamation District GSA

#### Vina Subbasin Management Areas

-  North
-  Chico
-  South



# Chronic Lowering of Groundwater Levels

Interim Milestones (IM)

Comments & Recommendations

Table 3-1. Groundwater Levels SMC by RMS in feet above mean sea level

RMS Well ID	MT	MO	IM		
			2027	2032	2037
Vina Subbasin – North Management Area					
25C001M	50	130	131	130	130
10E001M	80	136	139	136	136
07H001M <sup>a</sup>	72	136	145	136	136
05M001M	31	115	116	115	115
36P001M	45	108	110	108	108
33A001M	72	125	126	125	125
Vina Subbasin – Chico Management Area					
CWSCH01b	85	106	108	106	106
28J001M		110	111	110	110
CWSCH03		108	110	108	108
CWSCH02		105	108	105	105
CWSCH07		108	109	108	108
Vina Subbasin – South Management Area					
21C001M	44	64	66	64	64
18C003M	65	130	134	130	130
10C002M	20	92	95	92	92
24C001M	33	77	82	77	77
09L001M	43	91	94	91	91
26E005M	57	95	96	95	95

<sup>a</sup>MT is associated with GSP Well ID 18A001M.



**Depletion of  
Interconnected Streams**

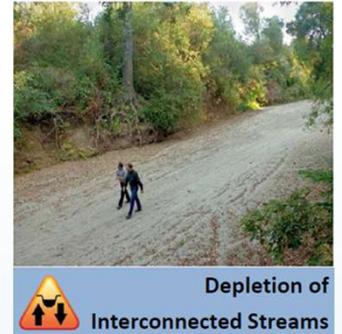
## 6. Interconnected Surface Water

Interconnected Surface Water	
<b>Definition</b>	Avoiding significant and unreasonable depletion of surface water flows caused by groundwater pumping that significantly impacts beneficial uses
<b>Identification</b>	Groundwater Level SMC are used by Proxy: Two RMS wells reach their MT for two consecutive non-dry year-types.
<b>Minimum Thresholds</b>	Groundwater Level MTs are used by proxy
<b>Measurable Objectives</b>	The groundwater level based on the groundwater trend line for the dry periods (since 2000) of observed short-term climatic cycles extended to 2030.
<b>Data Gap</b>	Data needed to develop this SMC includes: definition of stream reaches and associated priority habitat, streamflow measurements to develop profiles at multiple time periods, and measurements of groundwater levels directly adjacent to stream channels, first water bearing aquifer zone, and deeper aquifer zones.

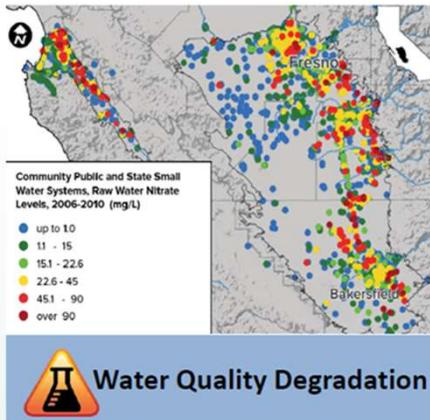
## 6. Interconnected Surface Water

1. Definition of stream reaches and associated priority habitat.
2. Multiple streamflow measurements in each stream reach to develop a profile of streamflow at multiple time periods over at least one year.
3. Measurement of groundwater levels directly adjacent to the stream channel in the adjacent riparian zone or floodplain.
4. Measurement of groundwater levels in the first water bearing aquifer zone.
5. Measurement of groundwater levels in deeper aquifer zones.

### Comments & Recommendations







## 8. Degraded Water Quality

Undesirable Result  
Minimum Threshold  
Measurable Objective

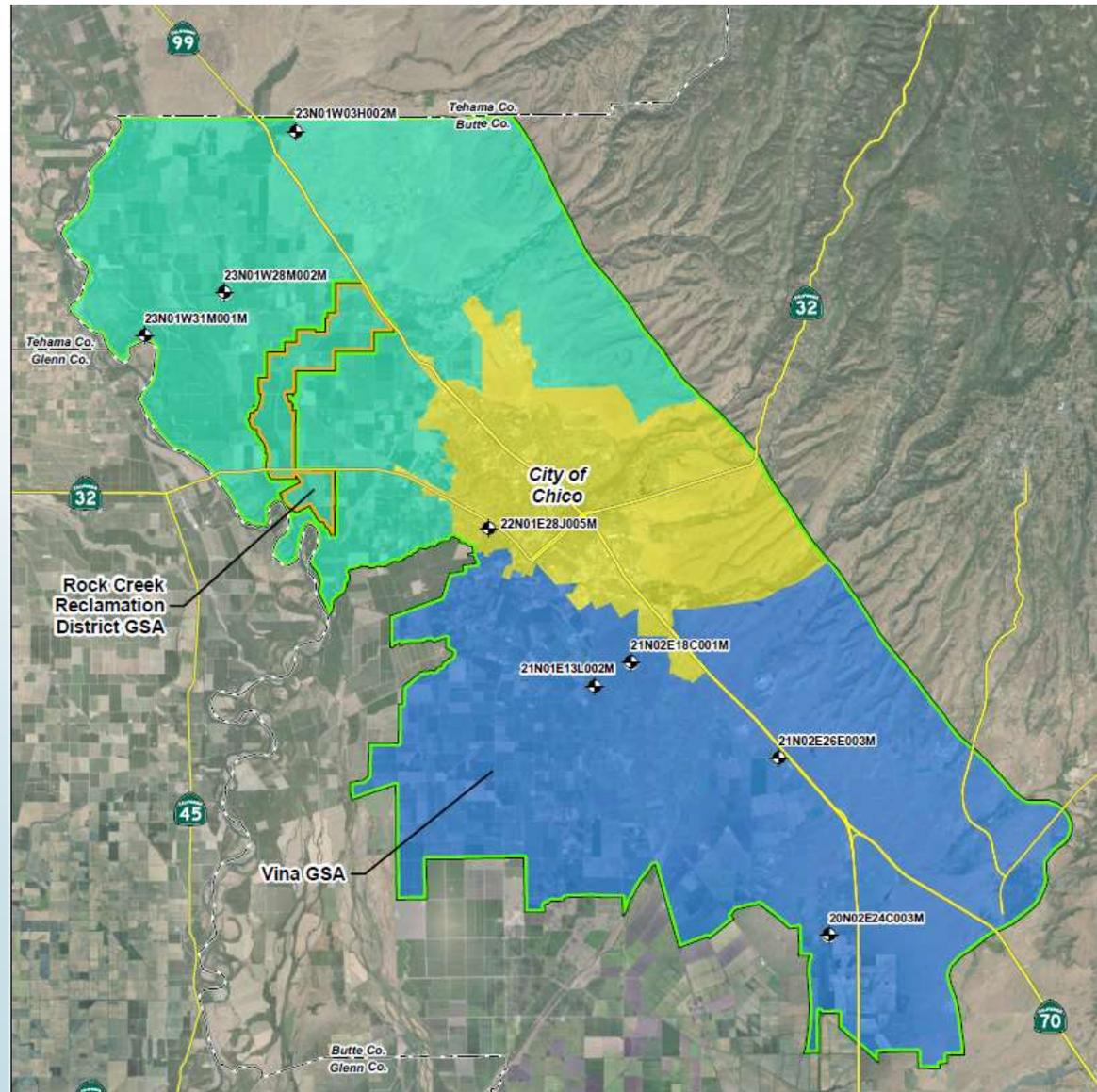
### *Comments & Recommendations*

Degraded Groundwater Quality	
<b>Definition</b>	An Undesirable Result is experienced if groundwater pumping compromises the long-term viability of rural areas and small communities, the agricultural economic base of the region, and environmental uses for suitable habitat.
<b>Identification</b>	Two RMS wells exceed their MT for two consecutive non-dry years.
<b>Minimum Thresholds</b>	The upper limit of the Secondary Maximum Contaminant Level (1,600 $\mu\text{S}/\text{cm}$ ) for specific conductance based on the State Secondary Drinking Water Standards.
<b>Measurable Objectives</b>	The recommended Secondary Maximum Contaminant Level (900 $\mu\text{S}/\text{cm}$ ) based on State Secondary Drinking Water Standards

## 8. Degraded Water Quality

Representative  
Monitoring Network

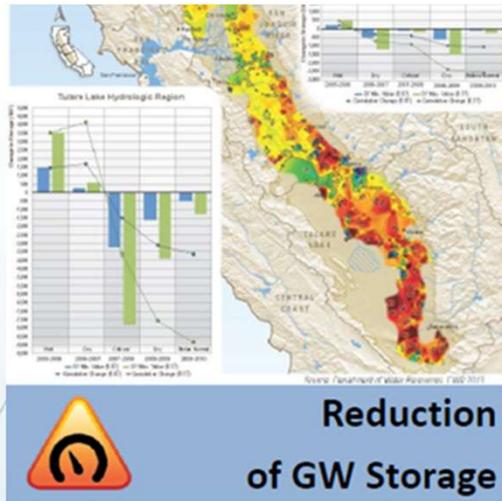
*Comments &  
Recommendations*



## 8. Degraded Water Quality

Table 3-2. Water Quality SMC by RMS in  $\mu\text{S}/\text{cm}$

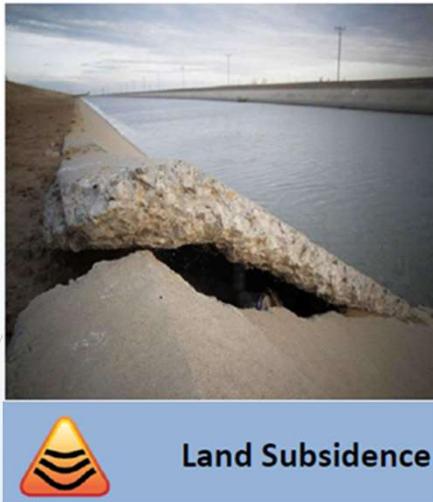
GSP Well ID	MT	MO	IM		
			2027	2032	2037
Vina Subbasin – North Management Area					
28M002M	1,600	900	900	900	900
03H002M					
31M001M					
Vina Subbasin – Chico Management Area					
28J005M	1,600	900	900	900	900
Vina Subbasin – South Management Area					
18C001M	1,600	900	900	900	900
13L002M					
26E003M					
24C003M					



## 9. Groundwater Storage

### *Comments & Recommendations*

Change in Storage	
<b>Definition</b>	An Undesirable Result is experienced if sustained groundwater storage volumes are insufficient to support rural areas and small communities, the agricultural economic base of the region, and environmental uses for suitable habitat.
<b>Identification</b>	Two RMS wells reach their MT for two consecutive non-dry year-types.
<b>Minimum Thresholds</b>	Groundwater Level MTs are used by proxy
<b>Measurable Objectives</b>	The groundwater level based on the groundwater trend line for the dry periods (since 2000) of observed short-term climatic cycles extended to 2030.



Land Subsidence

## 10. Land Subsidence

### *Comments & Recommendations*

<b>Subsidence</b>	
<b>Definition</b>	An Undesirable Result is experienced if groundwater pumping leads to changes in the ground surface elevation severe enough to disrupt critical infrastructure, development of projects that enhance the viability of rural areas, small communities, and the agricultural economic base of the region.
<b>Identification</b>	Occurs when two RMS wells reach their MT for two consecutive non-dry year-types.
<b>Minimum Thresholds</b>	Groundwater Level MTs are used by proxy
<b>Measurable Objectives</b>	The groundwater level based on the groundwater trend line for the dry periods (since 2000) of observed short-term climatic cycles extended to 2030.

## Wrap Up

*Final Comments & Recommendations*

**Public Comment Period Deadline:  
This Friday, June 18**



Lowering  
GW Levels



Reduction  
of Storage



Seawater  
Intrusion



Degraded  
Quality



Land  
Subsidence



Surface Water  
Depletion

Sustainability is **demonstrated** by the avoidance of Undesirable Results for the six sustainability indicators

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Lowering  
GW Levels



Surface Water  
Depletion



Degraded  
Quality



Land  
Subsidence



~~Sewer  
Intrusion~~



Reduction  
of Storage