GSP Evaluation Matrix
Public Draft GSPs and Final Adopted GSPs

Groundwater Basin/Subbasin: XYZ Basin/Subbasin (DWR #)
GSA: XYZ GSA
GSP Date: January 2020

Comments were submitted to the XYZ GSA during the public draft comment period. Excerpted language below reflects the public draft GSP. The rightmost column reflects a review of the final GSP as submitted to DWR. A "yes" response in either column indicates that the plan includes language on that topic, but does not mean that our organizations concluded that the draft or final GSP addressed the criterion adequately. The summary/comment box at the end of each section provides greater detail on needed improvements to the current draft; highlighted comments represent comments on the public draft GSP that were not fully addressed in the final GSP.

1. Identification of Beneficial Users

Were key beneficial users identified and engaged?

Selected relevant requirements and guidance:

GSP Element 2.1.5, "Notice & Communication" (§354.10):

(a) A description of the beneficial uses and users of groundwater in the basin, including the land uses and property interests potentially affected by the use of groundwater in the basin, the types of parties representing those interests, and the nature of consultation with those parties.

GSP Element 2.2.2, "Groundwater Conditions" (§354.16):

(d) Groundwater quality issues that may affect the supply and beneficial uses of groundwater, including a description and map of the location of known groundwater contamination sites and plumes.

(f) Identification of interconnected surface water systems within the basin and an estimate of the quantity and timing of depletions of those systems, utilizing data available from the Department, as specified in Section 353.2, or the best available information.

(g) Identification of groundwater dependent ecosystems within the basin, utilizing data available from the Department, as specified in Section 353.2, or the best available information.

GSP Element 3.3, "Minimum Thresholds" (§354.28):

(4) How minimum thresholds may affect the interests of beneficial uses and users of groundwater or land uses and property interests.

Review Criteria		Review of Draft GSP					Addressed in GSP (Yes/No)
		Yes	No	N/A	Relevant Info per GSP	Location (Section, Page[1])	
1. Do beneficial users (BUs) identified within the GSP area include:	a. Disadvantaged Communities (DACs)						
	b. Tribes						
	c. Small community public water systems (<3,300 connections)						
2. What data were used to	a. DWR DAC Mapping Tool[2]						

[1] Page numbers refer to the page of the PDF.

[2] DWR DAC Mapping Tool: https://gis.water.ca.gov/app/dacs/

	identify presence or absence of DACs?	i. Census Places						
		ii. Census Block Groups						
		iii. Census Tracts						
		b. Other data source						
3.	Groundwater Conditions section includes discussion of:	a. Drinking Water Quality						
		b. California Maximum Contaminant Levels (CA MCLs)[3] (or Public Health Goals where MCL does not exist, e.g. Chromium VI)						
4.	What local, state, and federal standards or plans were used to assess drinking water BUs in the development of Minimum Thresholds (MTs)?	a. Office of Environmental Health Hazard Assessment Public Health Goal (OEHHA PHGs)[4]						
		b. CA MCLs[3]						
		c. Water Quality Objectives (WQOs) in Regional Water Quality Control Plans						
		d. Sustainable Communities Strategies/ Regional Transportation Plans[5]						
		e. County and/or City General Plans, Zoning Codes and Ordinances[6]						
5.	Does the GSP identify how environmental BUs and environmental stakeholders were engaged throughout the development of the GSP?							
Summary/Comments on Public Draft GSP								
Summary/Comments on Adopted GSP								

[3] CA MCLs: https://www.waterboards.ca.gov/drinking_water/certlic/drinkingwater/MCLsandPHGs.html
[4] OEHHA PHGs: https://www.waterboards.ca.gov/drinking_water/certlic/drinkingwater/MCLsandPHGs.html
[5] CARB: https://ww2.arb.ca.gov/resources/documents/scs-evaluation-resources
[6] OPR General Plan Guidelines: http://www.opr.ca.gov/planning/general-plan/

2. Communications Plan

How were key beneficial users engaged and how was their input incorporated into the GSP process and decisions?

Selected relevant requirements and guidance:

GSP Element 2.1.5, "Notice & Communication" (§354.10):

Each Plan shall include a summary of information relating to notification and communication by the Agency with other agencies and interested parties including the following:

(c) Comments regarding the Plan received by the Agency and a summary of any responses by the Agency.

(d) A communication section of the Plan that includes the following:

(1) An explanation of the Agency's decision-making process.

(2) Identification of opportunities for public engagement and a discussion of how public input and response will be used.

(3) A description of how the Agency encourages the active involvement of diverse social, cultural, and economic elements of the population within the basin.

(4) The method the Agency shall follow to inform the public about progress implementing the Plan, including the status of projects and actions.

DWR Guidance Document for GSP Stakeholder Communication and Engagement[7]

Review Criteria	Review of Draft GSP					Addressed in GSP (Yes/No)
	Yes	No	N/A	Relevant Info per GSP	Location (Section, Page)	
1. Is a Stakeholder Communication and Engagement Plan (SCEP) included?						
2. Does the SCEP or GSP identify that ongoing engagement will be conducted during GSP implementation?						
3. Does the SCEP or GSP specifically identify how DAC beneficial users were engaged in the planning process?						
4. Does the SCEP or GSP explicitly describe how stakeholder input was incorporated into the GSP process and decisions?						
Summary/Comments on Public Draft GSP						
Summary/Comments on Adopted GSP						

[7] DWR Guidance Document for GSP Stakeholder Communication and Engagement
https://water.ca.gov/-/media/DWR-Website/Web-Pages/Programs/Groundwater-Management/Sustainable-Groundwater-Management/Best-Management-Practices-and-Guidance-Documents/Files/Guidance-Document-for-Groundwater-Sustainability-Plan---Stakeholder-Communication-and-Engagement.pdf

3. Maps Related to Key Beneficial Uses

Were best available data sources used for information related to key beneficial users?

Selected relevant requirements and guidance:

GSP Element 2.1.4 "Additional GSP Elements" (§354.8):

Each Plan shall include a description of the geographic areas covered, including the following information:

(a) One or more maps of the basin that depict the following, as applicable:

(5) The density of wells per square mile, by dasymetric or similar mapping techniques, showing the general distribution of agricultural, industrial, and domestic water supply wells in the basin, including de minimis extractors, and the location and extent of communities dependent upon groundwater, utilizing data provided by the Department, as specified in Section 353.2, or the best available information.

GSP Element 3.5 Monitoring Network (§354.34)

(b) Each Plan shall include a description of the monitoring network objectives for the basin, including an explanation of how the network will be developed and implemented to monitor
groundwater and related surface conditions, and the interconnection of surface water and groundwater, with sufficient temporal frequency and spatial density to evaluate the affects and effectiveness of Plan implementation. The monitoring network objectives shall be implemented to accomplish the following:

(c) Each monitoring network shall be designed to accomplish the following for each sustainability indicator:

(1) Chronic Lowering of Groundwater Levels. Demonstrate groundwater occurrence, flow directions, and hydraulic gradients between principal aquifers and surface water features by the following methods:

(A) A sufficient density of monitoring wells to collect representative measurements through depth-discrete perforated intervals to characterize the groundwater table or potentiometric surface for each principal aquifer.

(4) Degraded Water Quality. Collect sufficient spatial and temporal data from each applicable principal aquifer to determine groundwater quality trends for water quality indicators, as determined by the Agency, to address known water quality issues.

(6) Depletions of Interconnected Surface Water. Monitor surface water and groundwater, where interconnected surface water conditions exist, to characterize the spatial and temporal exchanges between surface water and groundwater, and to calibrate and apply the tools and methods necessary to calculate depletions of surface water caused by groundwater extractions. The monitoring network shall be able to characterize the following:

(A) Flow conditions including surface water discharge, surface water head, and baseflow contribution.

(B) Identifying the approximate date and location where ephemeral or intermittent flowing streams and rivers cease to flow, if applicable.

(C) Temporal change in conditions due to variations in stream discharge and regional groundwater extraction.

(D) Other factors that may be necessary to identify adverse impacts on beneficial uses of the surface water.

(f) The Agency shall determine the density of monitoring sites and frequency of measurements required to demonstrate short-term, seasonal, and long-term trends based upon the following factors:

(3) Impacts to beneficial uses and users of groundwater and land uses and property interests affected by groundwater production, and adjacent basins that could affect the ability of that basin to meet the sustainability goal.

Review Criteria		Review of Draft GSP					Addressed in GSP (Yes/No)
		Yes	No	N/A	Relevant Info per GSP	Location (Section, Page)	
1. Does the GSP Include Maps	a. Well Density						
	b. Domestic and Public Supply Well Locations &						

	Related to Drinking Water Users?	Depths						
		i. Based on DWR Well Completion Report Map Application[8]?						
		ii. Based on Other Source(s)?						
2.	Does the GSP include maps related to Groundwater Dependent Ecosystem (GDE) locations?	a. Map of GDE Locations						
		b. Map of Interconnected Surface Waters (ISWs)						
		i. Does it identify which reaches are gaining and which are losing?						
		ii. Depletions to ISWs are quantified by stream segments.						
		iii. Depletions to ISWs are quantified seasonally.						
3.	Does the GSP include maps of monitoring networks?	a. Existing Monitoring Wells						
		b. Existing Monitoring Well Data sources: i. California Statewide Groundwater Elevation Monitoring (CASGEM)						
		ii. Water Board Regulated monitoring sites						
		iii. Department of Pesticide Regulation (DPR) monitoring wells						
		c. SGMA-Compliance Monitoring Network						
		i. SGMA Monitoring Network map includes identified DACs?						
		ii. SGMA Monitoring Network map includes identified GDEs?						
Summary/Comments on Public Draft GSP								
Summary/Comments on Adopted GSP								

[8] DWR Well Completion Report Map Application: https://www.arcgis.com/apps/webappviewer/index.html?id=181078580a214c0986e2da28f8623b37

4. Water Budgets

How were climate change projections incorporated into the projected/future water budget and how were key beneficial users addressed?

Selected relevant requirements and guidance:
GSP Element 2.2.3 "Water Budget Information" (Reg. § 354.18)

Each Plan shall include a water budget for the basin that provides an accounting and assessment of the total annual volume of groundwater and surface water entering and leaving the basin, including historical, current and projected water budget conditions, and the change in the volume of water stored. Water budget information shall be reported in tabular and graphical form.

*Projected water budgets shall be used to estimate future baseline conditions of supply, **demand**, and aquifer response to Plan implementation, and to identify the uncertainties of these projected water budget components. The projected water budget shall utilize the following methodologies and assumptions to estimate future baseline conditions concerning hydrology, water demand and surface water supply availability or reliability over the planning and implementation horizon:*

(b) The water budget shall quantify the following, either through direct measurements or estimates based on data:

(5) If overdraft conditions occur, as defined in Bulletin 118, the water budget shall include a quantification of overdraft over a period of years during which water year and water supply conditions approximate average conditions.

(6) The water year type associated with the annual supply, demand, and change in groundwater stored.

(c) Each Plan shall quantify the current, historical, and projected water budget for the basin as follows:

*(1) Current water budget information shall quantify current inflows and outflows for the basin using the most recent hydrology, water supply, **water demand**, and land use information.*

DWR Water Budget BMP[9]
DWR Guidance for Climate Change Data Use During GSP Development and Resource Guide[10]

Review Criteria		Review of Draft GSP					Addressed in GSP (Yes/No)
		Yes	No	N/A	Relevant Info per GSP	Location (Section, Page)	
1. Are climate change projections explicitly incorporated in future/ projected water budget scenario(s)?							
2. Is there a description of the methodology used to include climate change?							
3. What is used as the basis for climate change assumptions?	a. DWR-Provided Climate Change						
	b. Other						

[9] DWR BMP for the Sustainable <management of Groundwater Water Budget:
https://water.ca.gov/-/media/DWR-Website/Web-Pages/Programs/Groundwater-Management/Sustainable-Groundwater-Management/Best-Management-Practices-and-Guidance-Documents/Files/BMP-4-Water-Budget.pdf

[10] DWR Guidance Document for the Sustainable Management of Groundwater Guidance for Climate Change Data Use During GSP Development:
https://water.ca.gov/-/media/DWR-Website/Web-Pages/Programs/Groundwater-Management/Sustainable-Groundwater-Management/Best-Management-Practices-and-Guidance-Documents/Files/Climate-Change-Guidance_Final.pdf

Data and Guidance[11]								
4. Does the GSP use multiple climate scenarios?								
5. Does the GSP quantitatively incorporate climate change projections?								
6. Does the GSP explicitly account for climate change in the following elements of the future/projected water budget?	a. Inflows:	i. Precipitation						
		ii. Surface Water						
		iii. Imported Water						
		iv. Subsurface Inflow						
	b. Outflows:	i. Evapotranspiration						
		ii. Surface Water Outflows (incl. Exports)						
		iii. Groundwater Outflows (incl. Exports)						
7. Are demands by these sectors (drinking water users) explicitly included in the future/projected water budget?	a. Domestic Well users (<5 connections)							
	b. State Small Water systems (5-14 connections)							
	c. Small community water systems (<3,300 connections)							
	d. Medium and Large community water systems (> 3,300 connections)							
	e. Non-community water systems							
8. Are water uses for native vegetation and/or wetlands explicitly included in the current and historical water budgets?								
9. Are water uses for native vegetation and/or wetlands explicitly included in the projected/future water budget?								
Summary/Comments on Public Draft GSP								
Summary/Comments on Adopted GSP								

[11] DWR Guidance Document for the Sustainable Management of Groundwater Guidance for Climate Change Data Use During GSP Development: https://water.ca.gov/-/media/DWR-Website/Web-Pages/Programs/Groundwater-Management/Sustainable-Groundwater-Management/Best-Management-Practices-and-Guidance-Documents/Files/Climate-Change-Guidance_Final.pdf
DWR Resource Guide DWR-Provided Climate Change Data and Guidance for Use During GSP Development: https://water.ca.gov/-/media/DWR-Website/Web-Pages/Programs/Groundwater-Management/Sustainable-Groundwater-Management/Best-Management-Practices-and-Guidance-Documents/Files/Resource-Guide-Climate-Change-Guidance_v8.pdf

5. Management Areas and Monitoring Network

How were key beneficial users considered in the selection and monitoring of Management Areas and was the monitoring network designed appropriately to identify impacts on DACs and GDEs?

Selected relevant requirements and guidance:
GSP Element 3.3, "Management Areas" (§354.20):

(b) A basin that includes one or more management areas shall describe the following in the Plan:

(2) The minimum thresholds and measurable objectives established for each management area, and an explanation of the rationale for selecting those values, if different from the basin at large.

(3) The level of monitoring and analysis appropriate for each management area.

(4) An explanation of how the management area can operate under different minimum thresholds and measurable objectives without causing undesirable results outside the management area, if applicable.

(c) If a Plan includes one or more management areas, the Plan shall include descriptions, maps, and other information required by this Subarticle sufficient to describe conditions in those areas.

CWC Guide to Protecting Drinking Water Quality under the SGMA[12]
TNC's Groundwater Dependent Ecosystems under the SGMA, Guidance for Preparing GSPs[13]

Review Criteria	Review of Draft GSP					Addressed in GSP (Yes/No)
	Yes	No	N/A	Relevant Info per GSP	Location (Section, Page)	
1. Does the GSP define one or more Management Area?						
2. Were the management areas defined specifically to manage GDEs?						
3. Were the management areas defined specifically to manage DACs?						
1. a. If yes, are the Measurable Objectives (MOs) and MTs for GDE/DAC management areas more restrictive than for the basin as a whole?						
2. b. If yes, are the proposed management actions for GDE/DAC management areas more restrictive/ aggressive than for the basin as a whole?						
4. Does the GSP include maps or descriptions indicating what DACs are located in each Management Area(s)?						

[12] CWC Guide to Protecting Drinking Water Quality under the SGMA: https://d3n8a8pro7vhmx.cloudfront.net/communitywatercenter/pages/293/attachments/original/1559328858/Guide_to_Protecting_Drinking_Water_Quality_Under_the_Sustainable_Groundwater_Management_Act.pdf?1559328858

[13] TNC's Groundwater Dependent Ecosystems under the SGMA, Guidance for Preparing GSPs: https://www.scienceforconservation.org/assets/downloads/GDEsUnderSGMA.pdf

5. Does the GSP include maps or descriptions indicating what GDEs are located in each Management Area(s)?						
6. Does the plan identify gaps in the monitoring network for DACs and/or GDEs?						
a. If yes, are plans included to address the identified deficiencies?						
Summary/Comments on Public Draft GSP						
Summary/Comments on Adopted GSP						

6. Measurable Objectives, Minimum Thresholds, and Undesirable Results

How were DAC and GDE beneficial uses and users considered in the establishment of Sustainable Management Criteria?

Selected relevant requirements and guidance:

GSP Element 3.4 "Undesirable Results" (§ 354.26):

(b) The description of undesirable results shall include the following:

(3) Potential effects on the beneficial uses and users of groundwater, on land uses and property interests, and other potential effects that may occur or are occurring from undesirable results

GSP Element 3.2 "Measurable Objectives" (§ 354.30)

(a) Each Agency shall establish measurable objectives, including interim milestones in increments of five years, to achieve the sustainability goal for the basin within 20 years of Plan implementation and to continue to sustainably manage the groundwater basin over the planning and implementation horizon.

Review Criteria	Review of Draft GSP					Addressed in GSP (Yes/No)
	Yes	No	N/A	Relevant Info per GSP	Location (Section, Page)	
3. Are DAC impacts considered in the development of Undesirable Results (URs), MOs, and MTs for groundwater levels and groundwater quality?						
4. Does the GSP explicitly discuss how stakeholder input from DAC community members was considered in the development of URs, MOs, and MTs?						
5. Does the GSP explicitly consider impacts to GDEs and environmental BUs of surface water in the development of MOs and MTs for groundwater levels and depletions of ISWs?						
6. Does the GSP explicitly consider impacts GDEs and environmental BUs of surface water and recreational lands in the discussion and development of Undesirable Results?						
7. Does the GSP clearly identify and detail the anticipated degree of water level decline from current elevations to the water level MOs and MTs?						
8. If yes, does it include: b. Is this information presented in table(s)?						
c. Is this information presented on map(s)?						
9. d. Is this information presented relative to the locations of DACs and domestic well users?						
e. Is this information presented relative to the locations of ISW and GDEs?						
2. Does the GSP include an analysis of the anticipated impacts of water level MOs and MTs on drinking water users?						

3. If yes: 10.	a. On domestic well users?						
	b. On small water system production wells?						
	c. Was an analysis conducted and clearly illustrated (with maps) to identify what wells would be expected to be partially and fully dewatered at the MOs?						
	d. Was an analysis conducted and clearly illustrated (with maps) to identify what wells would be expected to be partially and fully dewatered at the MTs?						
	e. Was an economic analysis performed to assess the increased operation costs associated with increased lift as a result of water level decline?						
11. Does the sustainability goal explicitly include drinking water and nature?							
Summary/Comments on Public Draft GSP							
Summary/Comments on Adopted GSP							

7. Management Actions and Costs

What does the GSP identify as specific actions to achieve the MOs, particularly those that affect the key BUs, including actions triggered by failure to meet MOs? What funding mechanisms and processes are identified that will ensure that the proposed projects and management actions are achievable and implementable?

Selected relevant requirements and guidance

GSP Element 4.0 Projects and Management Actions to Achieve Sustainability Goal (§ 354.44)

(a) Each Plan shall include a description of the projects and management actions the Agency has determined will achieve the sustainability goal for the basin, including projects and management actions to respond to changing conditions in the basin.

(b) Each Plan shall include a description of the projects and management actions that include the following:

(1) A list of projects and management actions proposed in the Plan with a description of the measurable objective that is expected to benefit from the project or management action.

Review Criteria			Review of Draft GSP					Addressed in GSP (Yes/No)
			Yes	No	N/A	Relevant Info per GSP	Location (Section, Page)	
1. Does the GSP identify benefits or impacts to DACs as a result of identified management actions?								
2. If yes:	f.	Is a plan to mitigate impacts on DAC drinking water users included in the proposed Projects and Management Actions?						
	g.	Does the GSP identify costs to fund a mitigation program?						
	h.	Does the GSP include a funding mechanism to support the mitigation program?						
1. Does the GSP identify any demand management measures in its projects and management actions?								
2. If yes, does it include:	i.	Irrigation efficiency program						
	j.	Ag land fallowing (voluntary or mandatory)						
	k.	Pumping allocation/restriction						
	l.	Pumping fees/fines						
	m.	Development of a water market/credit system						
	n.	Prohibition on new well construction						
	o.	Limits on municipal pumping						
	p.	Limits on domestic well pumping						
	q.	Other						
r. Does the GSP identify water supply augmentation projects in its projects and management actions?								
4. If yes, does it	a.	Increasing existing water supplies						

12.	include:	b. Obtaining new water supplies						
		c. Increasing surface water storage						
		d. Groundwater recharge projects – District or Regional level						
		e. On-farm recharge						
		f. Conjunctive use of surface water						
		g. Developing/utilizing recycled water						
		h. Stormwater capture and reuse						
		i. Increasing operational flexibility (e.g., new interties and conveyance)						
		j. Other						
5.	Does the GSP identify specific management actions and funding mechanisms to meet the identified MOs for groundwater quality and groundwater levels?							
6.	Does the GSP include plans to fill identified data gaps by the first five-year report?							
7.	Do proposed management actions include any changes to local ordinances or land use planning?							
8.	Does the GSP identify additional/contingent actions and funding mechanisms in the event that MOs are not met by the identified actions?							
9.	Does the GSP provide a plan to study the interconnectedness of surface water bodies?							
10.	If yes:	a. Does the GSP identify costs to study the interconnectedness of surface water bodies?						
		b. Does the GSP include a funding mechanism to support the study of interconnectedness surface water bodies?						
11.	Does the GSP explicitly evaluate potential impacts of projects and management actions on groundwater levels near surface water bodies?							
Summary/Comments on Public Draft GSP								
Summary/Comments on Adopted GSP								