Staff is soliciting public comment on the following questions and issues:
Demonstration of Beneficial Use

• In some cases, a permittee may not be the party pumping water for beneficial use. How can a diverter, who is not the party consuming the water, demonstrate beneficial use? Additionally, wells that draw water stored under the temporary permit may not be equipped with measurement devices.

COMMENT: Since "Groundwater recharge" in and of itself is not considered a beneficial use under the Water Code it appears that the extra water diverted from streamflow must be consumed by human use. In most cases this will accrue private benefit gain. The extremely low price for the two temporary permits issued at a cost of 285 hours of staff time (Approximately $20k) constitutes a government (taxpayer) subsidy resulting in private gain. The question of how much water is removed from streamflow and how much water is "recovered" by pumpers needs to be accurately quantified. The subsidy to private water managers should be clearly accounted. It is unclear why a diverter would invest in the project if not to consume the water later in the season.

• Past permits have relied on previously developed groundwater models or existing groundwater monitoring systems to estimate beneficial use, but not all applicants will have these resources. How does an applicant who does not have a groundwater model or a monitoring system in place demonstrate beneficial use?

COMMENT: The total lack of models and monitoring systems in some regions is a reflection of inadequate monitoring systems and conflicting models in other regions. The importance of monitoring the shallowest portions of aquifer systems has been identified by the Sacramento Valley IRWMP in their supplemental Sacramento Valley Water Resource Monitoring, Data Collection and Evaluation Framework page 5 Habitat Monitoring:

"The long-term health of riparian vegetation, wetland species, and number of other native habitat are commonly associated with maintaining a minimum range of groundwater levels and an appropriate level of interaction between surface water and groundwater resources. The lowering of groundwater levels due to natural climatic changes or the interception of groundwater underflow to surface water systems due to the increased groundwater extraction associated with water management programs, have the potential to impact the native habitat areas. Baseline habitat monitoring is an important data collection objective because it allows for a better understanding of the existing water resource requirements of the native habitat and the evaluation of potential impacts associated with potential changes in water resource management practices. *In order to identify potential habitat impacts associated with potential changes in water management practices, a program-specific network of shallow monitor monitoring wells should be developed to detect changes in water levels over the shallowest portion of the aquifer.* In evaluating impacts to certain wetlands species, it is important to discern both the rate of groundwater level change, as well as the cumulative change over the entire year. Data collection and monitoring frequency should be appropriately selected to support the temporal and long-term evaluations."

If there is no program specific network of shallow monitor monitoring wells over the shallowest portion of the aquifer the monitoring system is insufficient. The aggressive effort to "recover"

water placed by a temporary permitted recharge project can have negative impacts to streamflow, native groundwater dependent vegetation (Valley Oaks) and existing shallow well operators.

"If we want to avoid problems in areas that are reasonably healthy today, it is imperative that we consider the overall value of the hydrologic system, both to man and to nature. Time is of the essence in these cases, since the environmental and surface water rights impacts occur very early in groundwater development, when modest water level declines of only 20 to 40 feet can result in significant depletion of streamflow and even perhaps loss of perennial flow and the impact of surface water rights."

The Sacramento Valley still has water levels that are fairly shallow. There are numerous perennial streams and healthy ecosystems, and the basin is largely within a reasonable definition of sustainable groundwater yield. However, since the 1940s, groundwater discharge to streams in this area has decreased by about 600,000 acre-feet per year due to groundwater pumping. This represents a loss of 1.2 million acre-feet of stream flow. This is streamflow that would have otherwise ended up in the Delta. The Nature Conservancy estimates are that 400,000 acre-feet of this 1.2 MAF per year is lost export capacity. This represents a very real decrease in the yield of the Central Valley Project and the State Water Project, especially for purveyors south of the Delta. There must be some mechanism to ensure that limits on groundwater pumping and water level fluctuations in groundwater basins are arrived at in an reasonable fashion and are properly implemented and maintained. Accurate shallow aquifer monitoring needs to be implemented prior to the active "recovery" phase of artificial recharge projects. Enforceable management objectives are needed to make sure recharge projects do not result in future impacts to ecosystems and existing water rights.

• Regarding accounting for beneficial use of stored water, how may a diverter identify and report that water is being extracted under a temporary permit versus another basis of right?
COMMENT: In order for a groundwater recharge and storage project to work there must be drastic and persistent storage space available. A study done by the Natural Heritage Institute, *Northern Sacramento Valley Conjunctive Water Management Investigation*, indicates "groundwater level analysis suggests that no obvious locations for successful Put-then-Take scenarios exist in the northern Sacramento Valley." Before legal groundwater rights associated with temporary recharge permits are allowed to develop the hydrological reality of banked water must be established.

• Should there be a different level of accounting based on the end use of the water or any other aquifer characteristics?

Expedited Processing, Water Availability, and Thresholds for Diversions
1. Should there be an expedited process for diversion of higher flows versus available flows? An expedited process for temporary permits targeted at diversion of high flows may allow for a more streamlined permitting process; however, determining the flow at which diversions begin or must end for a particular surface water source may be complicated in many watersheds.
COMMENT: during the workshop it was explained that public notices might not reach those legally entitled to notice until after the temporary permit is issued. This is unacceptable. There

must be clear directions on how stakeholders and interested citizens are notified that permit applications are being considered.

2. What approaches could be used to determine the availability of excess stream flow for a project? In some cases, unusually high flows may already be allocated to senior users. COMMENT: Considering the fact that Sacramento Valley Watershed water is tremendously overallocated the very idea that "excess stream flow" even exists is questionable. The biological reality that high stream flows contribute to aquatic life cycles and that chronically ephemeral streams that were once perennial makes many recharge concepts untenable. Expanding flood plains and broadening natural meander zones makes the most sense in replenishing diminished aquifer levels.

3. How may thresholds be determined to differentiate high versus available flows? Some examples of a threshold could include a stream's identified "monitor stage"5, being at or above bank-full flow, exceedance probability, hydrological indices, or other stream-specific criteria. COMMENT: Stream banks are artificial constraints on hydrologic function. Again, Expanding flood plains and broadening natural meander zones makes the most sense in replenishing diminished aquifer levels.

4. How should "channel forming" flows be protected? Salmonids and other aquatic and riparian species may require periodic, high "channel-forming" flows for maintaining stream channel geometry, transport of gravel and woody debris, aquatic habitat, and natural flow variability. COMMENT: Geomorphological streambed formation is critical to the health and safety of valuable Salmonids and other aquatic and riparian species. High flows are also required for migrating anadromous species to find their way out of the Delta maze and back into the bay and ocean. The idea that high flow through the Delta is "wasted" is biologically ignorant and politically misleading.

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