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Calculation of Net Water Availability

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The attached table displays the net water availability calculated for each subwatershed in the Highlands Region. The net water availability analysis was performed at a HUC14 subwatershed level to determine three important components:

1. the sustainability of water resources (*ground water capacity*);
2. the water that is "available" for human use (*ground water availability*); and
3. the remaining water after current consumptive and depletive uses are deducted (*net water availability*).

All water values reported in the table are expressed as million gallons per day (MGD). Ground water capacity was calculated using the Low Flow Margin of Safety as documented in Volume 2 of the "Draft Water Resources Technical Report" and the September 6 "Policy Issues for Council Discussion." The NJDEP is using the same method in updating the NJ Statewide Water Supply Plan. However, some of that water must be reserved to maintain stream flows for aquatic ecology and downstream users. In the Protection and Conservation Zones, the allowable threshold is 5% for potable or non-agricultural uses. For agricultural uses within a Conservation Zone, the threshold is 10%. In the Existing Community Zone, the threshold is 20%. The value for the Conservation Zone was modified from the November 2006 draft RMP analysis (10% for all uses) based on the revised Goals, Policies and Objectives of the RMP as discussed in the September 6 "Policy Issues for Council Discussion".

After ground water availability has been calculated, existing consumptive/depletive uses were estimated using 2003 NJDEP permit data and estimates for domestic well and septic system use. Consumptive/depletive uses are those uses that are not returned to the subwatershed by a discharge back into ground or a stream. The analysis compared these consumptive/depletive uses against ground water availability. This difference is called net water availability. Where existing uses exceeded ground water availability, the net water availability is a deficit (red negative value in the

table). Based on policies in the RMP, these deficits also trigger constraints on subwatersheds upstream of the deficit by reducing their ground water availability to 5% more than the existing consumptive/depletive uses or the default threshold for the Zone, whichever is lower.

The RMP restricts additional uses in deficit subwatershed. The RMP conditionally allows an additional 1% of ground water availability in the Protection Zone and Conservation Zone, and 2% in the Existing Community Zone. However, these uses are conditional upon applicants providing demonstration of 125% mitigation of any proposed consumptive/depletive uses using ground water recharge and other water conservation measures; the RMP policies also require municipalities to determine how deficits can be reduced and eliminated in a Water Management Plan.

Agricultural net water availability is shown as the final three columns. As stated previously, it is only available for agricultural uses in a Conservation Zone subwatershed.