

## **Interim Measure Managed Recharge**

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*(Prepared by the Idaho Department of Water Resources as background for the Eastern Snake River Plain Aquifer Framework Process Management Alternative Working Group meeting on December 4, 2006)*

Multiple factors affect the ability to conduct managed recharge as an interim measure. Those factors include water availability, recharge capacity, financing, monitoring and factors associated with accounting for water recharged. In the Spring of 2006 excess water allowed for the recharge of water through existing canal systems and two existing recharge sites. This experience led to several conclusions regarding the use of existing facilities for managed recharge.

### Availability

1. Water availability and recharge capacity are tied together. In order to divert water for managed recharge the IWRB's water right needs to be in priority. The IWRB holds two water rights for managed recharge. One of those rights is for the diversion of 1200 cfs on the Snake River and the other allows for 800 cfs diversion on the Big Wood and Little Wood River systems. Both water rights held by the IWRB have priority dates of August 25, 1980. In order for recharge to occur the water right must be in priority prior to the commencement of the delivery of irrigation water by canal companies and irrigation districts diverting from the Snake River. This can leave only a narrow window of opportunity for recharge to occur. The IWRB needs to work with canal companies to open canals as early as possible in the event there is the possibility for their water rights to be in priority.
2. Water could be leased from the Water District 1 rental pool and used for managed recharge. This water would most likely be used in the fall of the year near the end of the irrigation season. The use of storage water from the rental pool is a possibility but it will require a financial commitment. The use of stored water may also be impacted by Bureau of Reclamation's salmon augmentation flow. In low water years there could be little stored water left for managed recharge after stored water is released to meet augmentation flow targets.

### Capacity

1. Canal maintenance issues impact the window of opportunity for recharge to occur. Canals located in the Magic Valley traditionally open near the end of March but in mild winters they can potentially open by early to mid-March. Canals in the upper basin do not traditionally open until mid-April to early May. In mild winters with favorable conditions for spring canal maintenance, canals could potentially be open by early April. In the Spring of 2006 the upper basin received six inches of snow the first week of April. This storm hindered the ability of canal managers to complete needed canal repairs and hence hindered the ability to open canals early. The weather will continue to play a role ability of canal managers to complete canal repairs and open canals to facilitate managed

recharge.

2. The recharge right that diverts from the Big and Little Wood River is generally in priority during periods of high flow on these river systems. In the Spring of 2006 the Big Wood and Little Wood rivers experienced flooding that could have become catastrophic under the certain conditions. In order to prevent flooding some recharge was accomplished at both the LSRARD and Devils Headgate. However, diversions to the Devils Headgate and other canals was limited as canal managers chose to maintain as much emergency capacity in those canals in the event of catastrophic flooding. This highlights the need to develop recharge sites with large and reliable capacities that can be used to help alleviate flooding.
3. Considerable amount of “natural” recharge was accomplished on the Big Wood River. The river loses considerable amounts of water between Magic Reservoir and the City of Shoshone. If water is available this should be the first place it is used. Water recharged through the river is not encumbered with water quality monitoring requirements and is easily accomplished. A potential problem with recharge using the Big Wood River is that it may be difficult to quantify actual losses.

#### Financing

Recharge accomplished in 2006 was carried out without any financial commitment by the IWRB. While canal companies and irrigation districts cooperated fully with the IWRB’s needs in 2006, it is unlikely that this level of cooperation will continue. There could be considerable expenses in preparing and operating a canal system to accomplish managed recharge. Canal companies and irrigation districts may be required to bring seasonal help on earlier than normal or there may be extra expense to open canals early. The IWRB needs to find a source of funding to compensate canal companies and irrigation districts in their recharge efforts.

#### Monitoring

Two recharge sites were used during the spring of 2006. Under rules promulgated by the Department of Environmental Quality, monitoring is required when using spreading basins to accomplish aquifer recharge. In 2006 monitoring cost were provided by the Lower Snake River Aquifer Recharge District and the Department of Environmental Quality. Total cost of the monitoring was approximately \$5,000. If the recharge sites are used in 2007, funding must be made available to pay for the required monitoring.

#### Water Accounting

In order to adequately account for water that is recharge through existing canals, water must be measured at both the point of diversion and where the canal returns to the Snake River. Some canal systems in the upper basin do not have the ability to adequately measure return flows back to the river. If canal companies and irrigation district desire to be compensated for their recharge efforts, there must be a mechanism for quantifying their recharge.