Palouse Basin Aquifer Committee
Project Proposals

With the development of the 1992 Ground Water Management Plan the Pullman-Moscow Water Resources Committee set as its primary goal the following:

> "To Provide For Future Beneficial Use of the Basin Ground Water without Depleting the Basin Aquifers While Protecting the Quality of the Water."

Subsequent reviews of the plan in the late 1990 have resulted in a refinement of this goal to stabilize declining aquifer levels by the year 2020. In order to achieve this refined goal, the Committee, now know as the Palouse Basin Aquifer Committee (PBAC), has prioritized its efforts towards research of the aquifers' characteristics in order to better understand how naturally occurring recharge could be enhanced. With the financial commitment of the member communities PBAC has made progress towards this understanding and is now on the point of embarking on larger scale projects that will further clarify if the currently proposed methods of recharge enhancement are truly feasible. The limiting factor in the advancement of these projects is financial. The members of PBAC have shown a consistent commitment to the ongoing managerial aspects of the aquifer by financing $35,000 per year for PBAC administration costs. In addition, in recognition of the need to provide local funding solutions, the PBAC members have been contributing $80,000 per year towards groundwater research efforts within the basin. While the members of PBAC recognize the need to provide local funding, it is difficult for communities the size of those in the PBAC membership to produce the type of revenue needed to develop the larger scale research and, ultimately, the construction projects necessary to meet the 2020 stabilization goal. With this difficulty in mind, the projects noted below are those proposed by PBAC for funding by the Idaho Legislature or other outside sources with the intent of advancing the efforts of stabilizing the aquifers in the most expeditious manner.

1. Project Title: Monitoring Well Fields Nos. 2 and 3

   Project Purpose: Obtain additional aquifer recharge by utilizing a natural interface between the North Fork of the Palouse River and the Wanapum Aquifer.

   Project Description: A natural interface between the upper (Wanapum) aquifer and the North Fork of the Palouse River exists in the vicinity of the Town of Palouse, Washington. The intent of this recharge approach is to increase the amount of naturally occurring recharge from the river system to the upper aquifer by promoting an increase in the recharge from the upper aquifer to the lower (Grand Ronde) aquifer. This would likely be achieved through a passive recharge well system. In order to determine the feasibility of this approach, research is needed to determine the extent of the lower aquifer connection to the Palouse area and the direction of natural water movement in the lower aquifer. If the movement of water in the lower aquifer is as currently anticipated, the intent

would be to use passive enhancement of natural river recharge via the upper aquifer to the lower aquifer to force or induce water to move to the Moscow and Pullman pumping centers, thus mitigating the impacts of the municipal supply on the lower aquifer. Three monitoring well fields are proposed to determine the extent of connectivity and the direction of water movement, to gather benchmark data on current water levels and quality, and to add key geological data necessary to evaluate the viability of this recharge option. The first of these well fields will be located in the State of Washington and financing has been secured with a combination of local and Federal funds. The second and third monitoring well fields, which will be located in Idaho, have not been financed and are proposed as candidates for the consideration of the Natural Resources Subcommittee.

Project Cost: Monitoring Well Field #2 - $220,000

Monitoring Well Field #3 - $154,000

2. Project Title: Pilot Passive Recharge Well

Project Purpose: Develop a better understanding of the ability to supplement naturally occurring recharge from the upper aquifer to the lower aquifer through the use of passive recharge wells.

Project Description: In support of the recharge option noted in item 1 above, this project would install a pilot test well to explore the complexities of making a physical connection between the upper and lower aquifers in the form of a controlled passive recharge well system. By utilizing such a well system, it may be possible to increase the amount of naturally occurring recharge that enters the lower aquifer. This would allow water from the upper aquifer, which has a much higher natural recharge rate, to be used to supplement the lower aquifer and reduce the impacts of withdrawals for domestic and agricultural uses.

Project Cost: Passive Recharge Pilot Well - $100,000

3. Project Title: Pilot Infiltration Basin or Combined Wetlands/Infiltration Basin

Project Purpose: Increase understanding of ability to enhance natural recharge to upper aquifer through use of infiltration galleries or combined infiltration basin/wetlands facilities.

Project Description: This project is intended to increase understanding of the ability to enhance recharge to the upper aquifer through the use of surface facilities. If the research determines that this is a feasible option, future projects could include the use of treated surface water or polished Waste Water Treatment Plant effluent for infiltration into the upper aquifer. The project will include the installation of a pilot facility on a University of Idaho site to allow for testing of various methods of enhancing infiltration.

Project Cost: Pilot Combined Wetlands/Infiltration Basin - $88,000

4. Project Title: Aquifer Model Development

Project Purpose: The creation of a new computerized model of the Palouse Aquifers systems would allow for more accurate projection of existing and future aquifer conditions and will provide a valuable tool for projections of effects on the aquifer due to various water recharge and use scenarios.

Project Description: This project would create a new computerized model of the Palouse Aquifers systems that would take into account the research information that has been obtained since the last modeling effort in the late 1980's. Due to the nature of the multi-level aquifer system within the Palouse Basin it is difficult to gather sufficient field data to answer all questions related to aquifer recharge, aquifer discharge, and vertical connectivity between the multiple layers. With this in mind it is the intent of this project to create a model with the most current field data available and then to develop alternate model scenarios that will help further replicate the historic conditions of the basin. With this refinement of the model the ability to project the potential impacts to the system from outside influences will be enhanced.

Project Cost: Aquifer Model Development - $250,000

5. Project Title: Pilot Surface Catchment Project

Project Purpose: To determine the feasibility of the installation of rainwater catchment facilities that could inject high quality water into the upper or lower aquifer through infiltration galleries (upper aquifer only) or passive recharge wells.

Project Description: This project would create a pilot test facility that would consist of a five to ten acre rainwater catchment basin that would collect precipitation and channel it to injection facilities. The injection facilities would consist of a passive recharge well or an infiltration gallery depending on target aquifer and characteristics of site soils. Due to the clean nature of the collected water it is anticipated that minimal treatment of the injected water would be required.

Project Cost: Pilot Surface Catchment Project - $150,000