

**KENNEWICK UNDERGROUND ARTIFICIAL (AQUIFER) STORAGE AND
RECOVERY (ASR) PROJECT DEVELOPMENT MEMORANDUM OF
UNDERSTANDING**

THIS MEMORANDUM OF UNDERSTANDING ("MOU"), entered into this 2nd day of January, 2008 by and between the Washington State Department of Ecology, 15 West Yakima Ave., Suite 200, Yakima, WA 98902-3452 (hereinafter called the "Ecology") and the City of Kennewick, 210 West 6th Avenue, Kennewick, Washington, (hereinafter called the "City"). The purpose of this MOU is to document the City's and Ecology's intent to partner on a proposed storage project. This MOU does not commit Ecology or the City to take any actions or fund any part of the proposed storage project. Actual State funding commitments will be made in a State Funding Contract.

- 1) **Intent.** Both the City and Ecology intend to work collaboratively to evaluate the feasibility to construct an underground Artificial (Aquifer) Storage and Recovery (ASR) facility that will meet both the City and Ecology's goals. These goals include: understanding whether the City's proposed site is a viable location for ASR, learning about how ASR can potentially be used in the Columbia River Program to benefit instream and out-of-stream resources, and determining how ASR can be used as mitigation of the Quad-City water right (S4-30976P) during periods when Bi-Op flows are not being met. The efficacy of the ASR facility will be determined jointly by the City and Ecology following the pilot phase and will include a review of metrics such as: ASR volume, cost-benefit, operations, efficiency of recovery, and water quality.
- 2) **Benefits.** Both the City and Ecology recognize benefits of further evaluating ASR as a viable strategy for making additional water available through storage, particularly during critical flow periods of the Columbia River. A successful ASR program benefits the City by providing source diversification and a means to supplement existing peak supply capacity. A successful ASR program benefits the State of Washington (and Ecology's mandate under the Columbia River Water Supply Account) by expanding municipal supplies, demonstrating the feasibility of a viable water storage technology, and increasing instream flows (both the storage quantity and the return flow from that stored quantity) during the critical periods of July and August.
- 3) **Pilot Study Phase.** Both the City and Ecology will jointly develop a schedule for completing the ASR pilot study, parameters of the study and report, and milestones. Financial funding for the pilot phase shall be provided by Ecology with the City responsible for securing the test site and in-kind contribution. Two key milestones of the pilot phase are:
 - a) Completion of Phase 1 Pilot Study (8 inch test well, withdrawal only (approximately \$200,000), which will include an evaluation of aquifer parameters, including water quality conditions. If, at the end of Phase 1, the City and Ecology jointly agree that the proposed site is not suitable for ASR, Phase 2 will not be completed. The City and Ecology will consider other storage possibilities, including other ASR opportunities at that time.
 - b) Completion of Phase 2 Pilot Study (16 inch pilot well, withdrawal and injection, approximately \$800,000), which will attempt actual injection and recovery of

treated City surface water. If, at the end of Phase 2, the City and Ecology jointly agree that the proposed site is not suitable or economical for ASR, the construction phase will not be completed. If Phase 2 of the Pilot Study is successful, the City will commit to the construction of the ASR Construction Phase.

- 4) ASR Construction Phase. Upon the successful outcome of the Pilot Study Phase, the City will proceed with the construction phase of the ASR. The City will work with Ecology to develop a schedule for the construction of the ASR. Funding for the ASR Construction Phase may be from one or more sources, however, water supplies secured by way of the construction phase of the ASR shall be proportioned and managed in accordance with the following:
 - a) By the City in proportion to City funding of the ASR pilot and construction phase. The City funding shall be financial and in-kind contributions, including funding from other sources and shall include other means and methods of support of the ASR pilot and construction phase agreed to by the City and Ecology. Water supplies secured by the City funding shall be managed solely by the City.
 - b) By Ecology in proportion to the funding from the Columbia River basin water supply development account for the ASR pilot and construction phase. Water supplies secured from this account shall be allocated in accordance with RCW 90.90.020 (1)(a) and managed solely by Ecology.
- 5) Permitting. The City and Ecology will coordinate permitting for this ASR project, as well as partnering on efforts to meet the City's long-term permitting goals. Specific permitting goals include:
 - a) The City will file an application for a storage permit under RCW 90.03.370. Ecology will expedite processing of this permit.
 - b) If the ASR facility is constructed, the City will file a trust water application and transfer a portion of its existing perfected surface water rights to Ecology's trust water program under Chapter 90.42 RCW. The water right transferred will be identified by the City, but shall have a priority date prior to June 24, 1980 (the effective date of the Columbia River instream flow rule) and shall not be the Quad Cities permit, S4-30976P. The amount transferred will be equal to the amount of water to be managed by Ecology under Section 4(b) above.
 - i) Ecology shall manage 1/3rd of this water for instream flow benefit.
 - ii) Ecology shall manage 2/3rds of this water for out-of-stream benefit and intends to use this quantity to satisfy a portion of the State's obligation to mitigate for the consumptive use associated with the first 10 cfs of the Quad Cities Permit No. S4-30976.
 - c) The City may file an application for a new water right for groundwater supply equal to the quantity placed in trust. This quantity would be additive to Kennewick's existing water rights and would, in the long-term, balance the City's pre-ASR and post-ASR water right portfolio. Ecology will work with the City according to Columbia River Program rules and policies to develop supply to mitigate any permit issued in response to the application. Ecology will process this application as part of its regular schedule of processing applications, unless

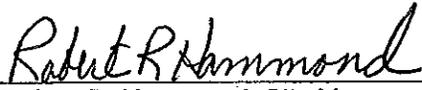
the application is eligible for expedited processing pursuant to Chapter 173-152 WAC.

- d) The City may file an application for a new water right for groundwater supply that is non-additive to existing water rights and instead provides source redundancy to its surface water treatment plant. Ecology will work with the City and the State Department of Health to determine whether this application can be expedited under Chapter 173-152 WAC.
- e) The City may use Certificate S4-25479C, Certificate 3897-A, or Permit S4-30976P for the source of supply for the ASR. Water use under Permit S4-30976P by the City will not be from the first increment of water authorized by Condition E of Permit S4-30976P. Ecology shall work with the City and Department of Health to provide a program whereby water used by the City from the ASR facility pursuant to Permit No. S4-30976P meets all the requirements of that permit for use when the Bi-Op flows are not met.

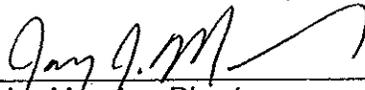
IN WITNESS WHEREOF, the parties hereto have executed this Agreement as of the day and year first above written.

CITY OF KENNEWICK, WASHINGTON

WASHINGTON STATE DEPARTEMENT OF
ECOLOGY



Robert R. Hammond, City Manager



Jay Manning, Director

January 2, 2008
Date

1/14/08
Date