HDR | ONE COMPANY *Many Solutions*℠

Technical Memorandum

To:	WRIA 35 Planning Unit		
From:	John Koreny, Jory Oppenheimer and Kari Vigerstol	Project:	WRIA 35 Water Storage Wetland Alternative Phase II, Level 2
CC:	Ben Floyd		
Date:	May 16, 2005	Job No:	22604

RE: WETLAND WATER STORAGE SITES AND SCREENING CRITIERA

1.0 INTRODUCTION

Summary of Progress

A multi-purpose water storage assessment is being completed to identify a location and method to provide additional water storage for the WRIA 35 watershed. The following tasks have been completed:[1]

1. Evaluation of the water supply needs and availability in the Pataha Creek, Asotin Creek and Tucannon River sub-basins.
2. Evaluation of seven water storage alternatives including: new reservoirs, in-channel storage, modify existing riparian zone or farm flooding, modify existing sediment basins, new or modified wetlands and aquifer storage.

Based on the results of the initial assessment, the Planning Unit agreed to further evaluate wetland and aquifer storage alternatives. The benefits of these alternatives is that the effort and cost in terms of land acquisition, permitting, construction and design is much lower than the other alternatives considered.

Purpose of Memorandum

The purpose of this memorandum is to present potential specific wetland sites to be consideration for construction by the Planning Unit. The aquifer storage alternative is being further evaluated, and will be reported in a separate document.

We propose meeting with the Planning Unit members to identify the type of wetland water storage project that would best fit with the long-term goals of the watershed. At this meeting, we propose to work with the Planning Unit to identify the project

[1] The results for these tasks are summarized in the Water Storage and Needs Assessment Technical Memorandum dated March 10, 2005.

components (size, location, type of wetland, land requirements, cost) that would provide the best water storage and habitat benefits. A screening criteria is identified in Appendix A that could be used to narrow down site selection from all possible wetland site alternatives. However, it will be most economical and practical if one or more wetland storage sites can be suggested by the Planning Unit members, in order to avoid further screening studies.

2.0 WETLAND WATER STORAGE OPTIONS

The following list summarizes some of the options to be considered in selecting a wetland storage project.

- New Construction on Enhancement of Existing Wetlands: Improve/enhance existing wetlands, or construct new wetlands?
- Location: Locate the project along the mainstem riparian corridor, at the confluence of a tributary with the mainstem river, or along a tributary higher in the watershed?[2]
- Source of Water Supply: Possible sources of water supply include: 1) constructed diversions from the mainstem or tributaries, 2) natural runoff or 3) ground water.
- Size: Small project (i.e., 10 acres) or large project (i.e., 100 acres)?
- Habitat: Riparian mainstem habitat or upper watershed habitat disconnected from mainstem-type habitat?
- Cost: Acceptable cost for project and project sponsor?

Because some or all of these details are not known at this time, the potential storage projects considered for further evaluation include a range of projects. One or more projects will be chosen from this list for final design.

4.0 POTENTIAL WETLAND WATER STORAGE SITES

We have identified 10 potential wetland water storage sites. The locations of these sites are shown in the attached figures (figures are on large color maps- and will be provided at the meeting on June 2). These preliminary sites were selected by reviewing GIS information on wetlands, topography, streams, orthophotographs, and other information. In addition, we contacted representatives from the WRIA 35 Conservation Districts,

[2] A water storage project located in the upper tributaries may offer a greater water storage benefit because of the possibility of increasing tributary flow higher in the watershed. A water storage project in the upper tributaries may also have the advantage of storing more water because of natural topographic and geologic features that would allow construction of a large reservoir. A water storage project in the lower tributaries and along the mainstem is likely to be able to store less water, because the topography may not be as advantageous for construction of a large reservoir. However, lower tributaries and mainstem locations may provide opportunities for a combined-benefit project for habitat enhancement and ground water recharge.

WDFW, and the Nez Perce Tribe to verify that there were not potential wetland projects already identified in these basins.

ASOTIN BASIN

Mainstem of Asotin at Charley Creek Confluence

Advantages:

- High enough in the watershed to provide benefits to most mainstem water users
- Existing wetlands at the proposed location
- Corridor of flat land near confluence
- Tributary inflow expected to be sufficient to provide water for the wetlands

Possible limitations:

- Road crosses tributary about 800 feet from the confluence

Mainstem of Asotin at S. Fork/N. Fork Confluence

Advantages:

- High in the watershed, potential to benefit most of the mainstem water users
- Some existing wetlands in the area
- Area of flat land available between the tributary and main stem
- Tributary watershed is quite large, suggesting sufficient inflow

Possible limitations:

- Road just to the east of the South Fork
- Steep topography

Mainstem of Asotin Downstream from George Creek

Advantages:

- Low in watershed- could provide high habitat benefit
- Some existing wetlands in the area
- Area of flat land available
- Tributary watershed is quite large, suggesting sufficient inflow

Possible limitations:

- Low in watershed

Mainstem of Asotin near Center of Drainage

Advantages:

- Middle of watershed
- Some existing wetlands in the area
- Area of flat land available
- Sufficient inflow from mainstem

Possible limitations:

- Low in watershed

PATAHA BASIN

Mainstem at Tatman Gulch

Advantages:

- Upstream of several major water users
- Flat undeveloped land near confluence

Possible Limitations:

- Houses about 3000 feet away from confluence
- Steep slopes along tributary

Mainstem upriver from Pomery (2 locations)

Advantages:

- High in watershed
- Mainstem could provide water storage

Possible Limitations:

- Late spring and summer flow is limited

TUCANNON BASIN

Near Confluence with Smith Hollow

Advantages:

- Existing wetlands in the area
- Expected sufficient inflow

Possible Limitations:

Steep topography

- Local road along mainstem close to confluence
- Downstream of some major water users

Near Confluence with Willow Creek

Advantages:

- Upstream of major water users
- Relatively flat topography
- Expected sufficient inflow

Possible Limitations:

- Major road about 1100 feet from the confluence

Near Confluence with Cummins Creek

Advantages:

- Upstream of most water users
- Large undeveloped land area

Possible Limitations:

- Steep topography

Mainstem of Tucannon River

Advantages:
- Upstream of most water users
- Large undeveloped land area

Possible Limitations:
- Agricultural land with some trees

6.0 NEXT STEPS

There are two potential paths for the remaining project tasks. In order to most-efficiently use the remaining project funds, we recommend proceeding with the first approach (Approach 1) described below.

Approach 1 - Conduct feasibility and conduct conceptual design of one or more of the potential wetland storage sites

Approach 1 includes conducting feasibility and conceptual design for up to 2 potential wetland storage sites selected by the WRIA 35 Planning Unit members. This approach eliminates the need to collect site specific data, develop feasibility conceptual design, and rank the 10 preliminary sites. Therefore, more of the remaining Phase II budget can be allocated to the actual implementation of the wetland storage sites, rather than in the effort to select among many potential sites. This approach would require one or more of the Planning Unit agencies to take the lead on project development and sponsorship now, rather than at the design and construction stage of the project.

Approach 2 – Screen through 10 sites to select one or more final sites for conceptual and final design

Approach 2 assumes that the members of the WRIA 35 Planning Unit have not identified potential wetland water storage sites to support. Therefore, up to 10 preliminary sites identified in this memo or (alternative sites identified by the WRIA 35 Planning Unit members) would be ranked using the screening criteria described in this memo. It would be necessary to collect site specific data for each site and conduct a feasibility level conceptual design for each site to have the information necessary to rank the sites.

Following data collection, feasibility conceptual design, and ranking of the sites, we would scope the effort to design, permit, and construct the six sites. Once this scoping has been completed, conceptual and final design would be conducted with the remaining available funding. Additionally, a project sponsor would need to be designated from one or more of the Planning Unit members prior to conceptual design, permitting, final design and construction of the selected project.

APPENDIX A
POTENTIAL WETLAND STORAGE SITE SCREENING CRITERIA

Introduction

This appendix presents screening criteria that could be used to rank the sites (or other sites identified by WRIA 35 Planning Unit members) for implementation. The following criteria could be used to screen and prioritize potential wetland sites for implementation:

- Water Storage Benefit
- Habitat Benefit
- Water Quality Benefit
- Level of Maintenance
- Site Constraints and Favorable Constructability
- Ownership (Ease of Acquisition)
- Level of Project Support
- Level of Partnership Opportunities
- Project Cost

These criteria are described below and a scoring table is attached that can be used to score various sites.

Water Storage Benefit

The scoring of a site under this criterion depends on the following attributes:

- The wetland is located in a portion of the watershed that would provide a significant benefit from water storage, such as areas where irrigation demand is high or where stream flow does not always meet water demands.
- The number of water users downstream of the wetland site that may benefit from storage.
- The potential water storage volume of the wetland, related to size of wetland and volume of flow that is expected to reach the wetland each year.

Habitat Benefit

Specific wetland opportunities will be scored based on how well these new habitats enhance regional conditions for wildlife. The project team will evaluate:

- Habitat Quality. Will wetlands enhance already well functioning habitat or will they be subject to ongoing disturbances from adjacent land use?

- Habitat Quantity. Is the potential wetland project area of a sufficient size to provide multiple functions to multiple species or is the site limited in scope or configuration?
- Habitat Connectivity. Will the project site link other significant habitat areas, and promote larger, landscape level functions Or, will the project are be isolated from other tracts of habitat?

Water Quality Benefit

The wetland could provide a water quality benefit to watershed. Typical water quality benefits that wetlands can provide include reducing sediment levels, temperature and/or nutrient concentrations. A higher score indicates greater water quality benefits.

Level of Maintenance

Environmental investment or restoration opportunities that require little-to-no maintenance are preferable to opportunities that require human intervention to ensure success. A higher score indicates lower maintenance needs. A low score is reserved for projects that require specialized equipment or expensive measures when compared to other projects.

Potential for Minimal Site Constraints and Favorable Constructability

This criterion refers to site conditions that may interfere with completion or construction of a successful environmental investment or restoration opportunity (e.g., clearing, grading, fill removal, filling, hydraulic structures, etc.). A higher score indicates fewer or no site constraints and favorable constructability potential. Constraints considered include:

- Topography of site
- Utility locations
- Presence of cultural, historical, or archaeological features
- Access

Ownership (Ease of Acquisition)

This criterion refers to the ease of site acquisition. A higher score indicates favorable conditions for acquiring land based on ownership of the parcel or parcels. Consideration is given to the following questions:

- Are there multiple owners?
- Is the site owned publicly or privately?
- Is the site for sale?

Level of Project Support

This criterion addresses the level of support for each of the projects. A higher score indicates a higher level of public support and a lower level of public opposition. Input from the task force about their knowledge of support or opposition to the project is used to score this criterion.

- Has this site been suggested by another organization in previous reports, surveys or studies?
- Is there any reason to expect public opposition to this project or is this a site that would be particularly well supported by the public?

Level of Partnership Opportunities

This criterion refers to the potential of partnering with other organizations. Joint project implementation with Washington Department of Fish and Wildlife, the Conservation Districts, the Nez Perce Tribe and other organizations is possible. A higher score indicates higher potential for partnership opportunities.

- Are there partnership opportunities available that would assist in leveraging project funds or enhancing long-term manageability of the site?

Project Cost

Total project costs including land acquisition, access, site constructability, etc. This criterion compares the preliminary project costs. A higher score indicates a lower estimated cost.