NORTHWEST ENVIRONMENTAL DATA-NETWORK

FFY 06 SCOPE OF WORK

1.0 Purpose and Rationale

The purpose of this Scope of Work is to describe Northwest Environmental Data-network (NED) work tasks for the second year (FFY06) of Phase II effort to develop NED. It follows the Phase I effort that involved the completion of a regional information study, *Recommendations for a Comprehensive and Cooperative Columbia River Information Management System*[1], and the development of a Northwest Environmental Data-network Memorandum of Understanding (MOU).

The Scope of Work:

- Is limited to the support of improved data management for fish, aquatic and terrestrial habitat and water as outlined in the Northwest Environmental Data-network MOU.

- Identifies tasks that could be completed by work groups within NED, depending on the interests and time availability of members, and tasks that need to be completed by the NED Project Team as a whole.

- Is consistent with the steps outlined by Science Applications International Corporation in their recommendations – with a particular focus on supporting identified subject area groups. These groups have contemporary data network sharing and management issues. There is a strong emphasis on protocols and standards and in working with existing regional data entities. Some data will be more efficiently managed if common data management protocols and approaches were used across the different subject area groups. To make progress on this goal the work plan identifies tasks for cross subject area work groups.

- Has been developed to complement related but independent regional data protocol and data framework efforts, for example those concerning the Pacific Northwest Aquatic Monitoring Partnership, federal salmon recovery programs and the currently proposed Pacific Northwest Regional Geographic Information Council PNW-RGIC (formerly the Inter-Organizational Resource Information Coordinating Council). See Attached Figure I.

[1] Recommendations for a Comprehensive and Cooperative Columbia River Information Management System, *April 30, 2003.* Submitted to the Northwest Power Planning Council (NPPC), by Science Applications International Corporation (SAIC)

2.0 Core Project Team Tasks

Core Project Team Tasks are those that must be completed by the Project Team as a whole or by ad-hoc groups made up of Project Team members.

2.1 Support the establishment and coordinate the efforts of the subject area and cross subject area work groups as detailed in Section 3.0 and 4.0 below.

2.2 Develop Organizational and Administrative Arrangements for Regional Data Network.

2.2.1 Identify and facilitate development and adoption of organizational and administrative arrangements to improve regional data sharing and networking. Build off the May 2005 workshop findings

2.2.2 Identify and coordinate available staff resources (assigned, in-kind or through contracts).

2.2.3 Provide briefings on regional data management, as needed, to interested groups, for example the Federal Columbia Regional Power System Caucus, the Oregon Watershed Enhancement Board, The Washington Governors Forum on Monitoring and others.

2.3 Promote the use of and educate data collection and management entities on the importance of using consistent regional data management protocols in agencies and entities with responsibility for collecting and managing NED related data.

2.3.1 Encourage the use of NED-developed or adopted data standards and protocols in agencies internal and external business practices – such as in contracting and program implementation. Extend efforts to engage more partners in the NED MOU.

2.3.2 Develop/identify training and educational programs to promote understanding and advantages of data standards deployment.

2.4 Develop and maintain tools that can support scientific and resource decision makers

2.4.1 Develop protocols to provide access to regional data networks, and management systems as they become available for fish, aquatic and terrestrial

habitat and water data via the world wide web. These informational data sets could include regional data dictionary as well as provide public access to NED reports and materials. Data topics may include: project reporting, salmon status and trend, effectiveness monitoring, non-anadromous species, wildlife species, and related information (e.g., power planning) and other research.

2.4.1 Develop and maintain a NED web page.

2.4.2 Develop a regional NED portal.

2.4.3 Develop a regional NED locator that allows monitoring information as well as other ancillary data sets to be recorded within a subbasin or watershed

2.5 Identify sources and mechanisms for funding.

2.5.1 Identify equitable mechanisms and a process for funding regional data network projects. Build off the findings of the May 2005 workshop.

2.6 Identify regional requirements for spatial and metadata compliance.

2.6.1 Collaborate with Federal, State, Tribal and other entities including PNW-RGIC to identify any applicable spatial and metadata requirements/guidance applicable to the Northwest region.

2.6.2 Work with PNW-RGIC and others to document any requirementss that are necessary to meet federal spatial and metadata reporting standards and make these requirements known and accessible available to data collectors and users.

2.6.3 Work with PNW-RGIC and others to identify, maintain and support framework data elements for data collection and management protocols that are consistent with State, National and other protocols.

2.7 Maintain a regional data network resource plan.

2.7.1 Maintain a plan to identify and stage the steps necessary to achieve improvements in regional data quality, quantity and access.

2.7.2 Identify options, tasks and likely cost of completing the plan.

2.7.3 Use the CBCIS/NED Project Team December 2003 Report and the SAIC report as the initial planning documents. Supplement these findings with the recommendations from the May 25 and 26, 2005 Data sharing and Exchange workshop.

2.8 Draft a Regional Data Sharing Agreement.

2.8.1 PNAMP and other user groups are interested in the development and adoption of an agreement that defines responsibilities for sharing data.

2.8.2 Work with existing state, regional and national coordinating groups that are developing similar data stewardship and sharing agreements

2.9 Make NED plans and other products available for Regional decision making.

2.9.1 Make NED work plans and products available to inform Council or other decision makers on funding decisions for regional data projects; and for use in making solicitations on needed regional projects.

3.0 Cross Subject Area Work Groups

Different subject area groups have some data sets or data needs with a high degree of commonality. Consistent landscape level data management can therefore be advanced by bringing representatives from the discrete subject areas together, in cross subject area work groups to develop collective solutions. NED will sponsor workshops and other activities to bring together subject area experts to work on data products that cross subject area boundaries or cannot be completed by any individual agency or entity. The major objective is to identify a minimum set of data elements and any other protocols that would be necessary to ensure the success of all subject area groups.

3.1 Temporal and Spatial Data Elements Work Group (Lead Joy Paulus)

3.1.1 Work with key regional technical leaders to develop a draft set of regional standards for spatial definitions. Work collaboratively with existing regional spatial data groups to develop common data definitions for spatial attributes used in reporting project or site locations.

3.1.2 Create a work group to develop geographically based language and data attributes guidance for reporting on project or site location. Create guidance on minimum standards and common language. Explore model language (e.g. EPA E-Map) that can be used as a starting point.

3.2 Project Description and Performance Data Management Work Group (Currently combined with Temporal and Spatial Data Elements Work Group.)

3.2.1 Convene a work group to support the ongoing development and use of consistent data protocols for the reporting of project level data across all groups.

3.3 Technology for Data Discovery and Sharing Work Group

3.3.1 Develop or identify protocols and rules for sharing data using open standards protocols such as established XML Schema and "web mapping services".

3.3.2 Identify existing sites and link using ISO Web Map Service standard or other agreed on standards.

3.3.3 Evaluate the adaptation of the EPA Dasta Exchange Network model for sharing tabular data sets beyond water quality data.

3.3.4 Develop the use of a pilot regional metadata server. The starting point for the design of this effort is the SAIC proposal for a regional metadata server.

3.3.5 Convene a workgroup to identify, define and document needed regional open standards protocols.

4.0 Subject Area Data Work Groups

Many subject areas have unique data management needs requiring direct input from the subject area specialists. NED will collaborate with groups and subject area specialists to promote common approaches to development and use of consistent data management protocols, including data elements and reporting indicators – see below. Data quality assurance and quality control methods unique to each subject area are an important task for each group to develop.

4.1 Salmonid Monitoring and Research Data Work Group. Lead - Stewart Toshach

4.1.1 PNAMP Monitoring groups. Provide advice on data coordination to the PNAMP Effectiveness, Watershed Status and Trend, and Fish Population and other monitoring groups.

4.1.2 Subbasin Pilots – Track Status and Trend Monitoring pilot data management efforts. Continue to facilitate the use of consistent approaches to data management in these and subsequent pilots.

4.1.3 Phase II of PSCRF Project Monitoring. Help to coordinate and facilitate the adoption of consistent project description and performance protocols.

4.1.4 Develop and manage a project to identify data management protocols/definitions used for Salmonid data sets and to map the process through which data is collected, synthesized and managed.

4.1.5 Work collaboratively with StreamNet, the EPA and other entities on a Pacific North West component of the EPA Challenge Grant made to the California Department of Water Resources to improve Salmonid data sharing and exchange in the Pacific Northwest

4.2 Subbasin Planning Data Work Group. Lead – Peter Paquet

4.2.1 Facilitate and deploy an action plan for compiling current Sub-Basin information for areas throughout the Columbia River Basin to ensure that it is archived & accessible.

4.2.2 Facilitate and deploy the development of draft standards and protocols for ongoing reporting of Sub-Basin planning for projects, status and trends and effectiveness monitoring.

4.3 Water Quality Data Work Group. Lead David Tetta

4.3.1 Facilitate and promote the adoption of the PNWWQDX formats and protocols and technologies within the region.

4.3.2 Catalogue nationally developed protocols and systems for water quality data management.

4.3.3 Evaluate the viability of conducting training for these guidance documents.

4.3.4 Identify participating agency programs (i.e. NW State agency and EPA 305 (b) and 303 (d) programs) that would benefit from either NED work products, or other national protocols, such as the Revised Guide for Water Quality Data Elements. List any key activities in those programs for 2005 as part of the identification task.

4.3.5 Identify individuals with expertise in this area, and include them in the NED web site.

4.4 Regional Aquatic, Upland and Riparian Habitat Data Work Group. Lead Tom O'Neil

4.4.1 Facilitate compilation of consistent data definitions for aquatic, riparian and upland species.

4.4.2 Describing and defining habitat features (defined as data attributes) will contribute to an improved understanding of data for use in management. A consistent approach to data management is needed for all habitats within the Pacific Northwest landscapes.

4.4.3 Develop a consistent set of hierarchical habitat definitions for fish and wildlife that can be applied to marine, freshwater, riparian, and upland habitats throughout the Pacific Northwest.

4.4.3.1 Develop a list, by agency/organization, of current habitat characteristics or elements and related data definitions being used for fish and wildlife in the Pacific Northwest.

4.4.3.2 Establish a comprehensive list of defined habitat data terms and identify where the terms are used by agencies or organizations.

4.4.3.3 Work to identify where differences are substantive of semantic and work to resolve apparent differences in the use of definitions and terms.

4.4.3.4 Develop cross-walks to the comprehensive list above.

FIG. I EXAMPLE OF DATA PROTOCOL & STANDARDS ROLES OF NW SUBJECT AREA GROUPS , NED AND PNW-RGIC