

learned to the Partnership. The program will provide for recognition of accomplishments, and it will include a mechanism to regularly update the Plan to reflect best practices and processes that have proven to be effective in the Region.

This task will result in a matrix evaluation of the IRWM Program as a whole and individual actions/projects (i.e., groupings of related and/or integrated projects) and/or individual projects, as appropriate. The matrix will be supported with a narrative describing the definitions and the evaluation process.

Task 3.J Data Management

The Data Management task includes planning for and developing websites and on-line DMS as well as documenting these activities for the IRWMP update. There are three main parts in this task including web site development, ftp site management, and DMS development.

Task 3.J.a. – Website Development and Management

This task includes development of a public website designed for the IRWM Partnership, or as a new section of one of the existing Partnership agency's websites. Detailed requirements for the website will be defined through discussion with the Partnership. The website will be used to post status updates and other news, meeting announcements, meeting notes, documents for public review, and links to participating agencies. It will provide a document repository using links to PDFs.

Deliverable: URL to Tahoe Sierra IRWM website (submit in respective QuarterlyReport).

Task 3.J.b. – FTP site management

Working administrative draft documents that are not ready for public viewing will be maintained on an FTP site that active Partnership members will access through a password-protected web-portal.

Task 3.J.c. – Develop Data Management System

The Consultant Team will develop and implement a DMS in support of the Tahoe-Sierra IRWMP. The DMS will serve as a basic platform for publishing spatial and tabular data as needed to promote collaboration and data sharing between the Partnership, other stakeholders of the IRWMP, and the public, as appropriate.

Also part of this task is to collect and organize various repositories of documents such as MS Word, PDF, Excel, images and other types of formats. The Consultant Team will import these documents into the DMS and configure an interactive document library function for easy loading, searching, and retrieval. These documents may be linked to locations on the map to enhance storage and retrieval by adding a spatial component. Tools will be provided for authorized DMS users to load additional documents and edit and manage the document library after the initial documents import effort has been completed.

Task 3.K Finance

In consultation with the Partnership, the Consultant Team will develop a finance plan for funding the recommended implementation projects and programs. Based on information provided by the project proponents, the finance plan will identify anticipated funding sources for each element, including estimated probability that the funds will be secured as well as identifying how operations and maintenance costs for projects would be covered and the certainty of those funds. The finance plan will describe a range of potential financing strategies, including local, state, and Federal funding opportunities and other sources. For each source of funds identified, any known limitations on application dates, acceptable project types, duration and potential amount of awards including the certainty and longevity of funding, matching funding requirements, and other selection criteria will be specified.



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of the impact and benefit evaluation (e.g., program, project, RMS, and objectives).

Using information gathered during the preparation of Region Description in Task 3.B, the recent, relevant studies that are identified will provide the basis for the impact and benefit assessment on the areas identified. In addition, the Consultant Team will draw upon local knowledge developed through our team's recent work in the Region.

Task 3.H Plan Performance and Monitoring

Using metrics for the objectives as identified in Task 3.C, the approach to monitoring overall Plan performance will be updated. This section will summarize the monitoring frequency for metrics, targets for satisfying the underlying objectives, and the frequency whereby monitoring results will be compiled to assess overall performance. A more specific means of addressing project implementation performance using a Data Management system is described in Task 3.H.a below.

As part of the task, the Consultant Team will develop a IRWM program evaluation process. This will include a means of soliciting feedback on project outcomes and communicating results and lessons learned to the Partnership. The program will provide for recognition of accomplishments, and it will include a mechanism to regularly update the Plan to reflect best practices and processes that have proven to be effective in the Region.

This task will result in a matrix evaluation of the IRWM Program as a whole and individual actions/projects (i.e., groupings of related and/or integrated projects) and/or individual projects, as appropriate. The matrix will be

supported with a narrative describing the definitions and the evaluation process.

Task 3.H.a – Project Performance Monitoring Module to Data Management System (DMS)

Minimum requirements of the Guidelines for project performance monitoring could be met through relatively simple means, including project tracking using an Excel spreadsheet or Access database and a public website where files and other announcements can be posted as part of the IRWM outreach process. However, a more advanced, searchable, database-driven website, using relevant historic data from the Tahoe Integrated Information Management System (TIIMS), updated with current and future data, would facilitate a more effective, integrated analysis and also provide project data to address the simple project tracking. This task is to utilize the valuable information contained in the existing TIIMS project data base for the Lake Tahoe Basin and add a specific project performance monitoring module to the Data Management System described in Task 3.I.C.

The existing TIIMS website is no longer actively maintained as the centralized repository for Lake Tahoe restoration and planning information therefore new project information data management procedures will be developed. In addition, the Information in the project database will need to be expanded to cover the entire Tahoe-Sierra Region.

Once the basic DMS platform has been implemented (Task 3.I.c), the Consultant Team will add a module for management of the Plan Performance Project Database. The module will be modeled after the functionality currently hosted inside of TIIMS. The Consultant Team and the DMC will review the TIIMS project data structure and design the module in the DMS by selecting applicable functionality and up to 10



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database fields from TIIMS. The Consultant Team will enhance the existing TIIMS functionality to improve project data management by including the following features:

- Projects database screen that can be queried and sorted, showing the selected database fields.
- Export function that will generate an Excel file with project data for selected projects through the query option – these can be periodically downloaded and posted to the IRWM Web site and/or used for IRWMP update
- Project details that provides options for managing project data (adding, editing and deleting).
- Map link that shows the extent of the project as a boundary on the map.
- Tracking of project status throughout the project’s lifecycle.
- Project data management workflow to allow for QA/QC during the data management process and before actual publication of data to DMS users.
- Project boundaries map layer color-coded by various database attributes (e.g. project status, project type, owner etc.).

Task 3.I Data Management

The Data Management task includes planning for and developing websites and on-line data management systems (DMS) as well as documenting these activities for the IRWMP update. There are three main sub tasks in this task including web site development, ftp site management, and data management system development.

Task 3.I.a Website Development and Management

This task includes development of a public website designed by Cesar Lopez of Atypical Designs of the Consultant Team. The website can either be a stand-alone site for the IRWM Partnership, or as a new section of one of the existing Partnership agency’s websites. Detailed requirements for the website will be defined through discussion with the Partnership. We anticipate that the website will be used to post status updates and other news, meeting announcements, meeting notes, documents for public review, and links to participating agencies. It will provide a document repository using links to PDFs.

Task 3.I.b. FTP site management

Working administrative draft documents that are not ready for public viewing will be maintained on an FTP site that active Partnership members will access through a password-protected web-portal.

Task 3.I.c. Develop Data Management System

The Consultant Team will develop and implement a DMS in support of the Tahoe-Sierra IRWMP. The DMS will serve as a basic platform for publishing spatial and tabular data as needed to promote collaboration and data sharing between the Data Management Committee (DMC) from the Partnership, other stakeholders of the IRWMP and the public, as appropriate.

The DMS will contain the following basic functions:



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- User friendly web based platform with menu system to access various functions and data screens.
- Multi-level security system through individual user names and passwords associated with various levels of access (e.g. read-only, edit capabilities, administrative capabilities).
- A public version that bypasses the authentication system and provides access to a simplified version of the full featured DMS is also planned for implementation as advised by the DMC.
- Interactive map providing access to various data layers outlined below. Features will include map navigation (zoom, pan), data layer control in an organized layer structure, feature identification for querying and selecting elements on the map and high-resolution PDF-based output.
- Database query functionality for selected data sets to be identified by the DMC.

The interactive map in the DMS will cover the full extent of the Tahoe-Sierra region boundary. It will contain various base map layers as well as IRWMP-specific layers. The intent is to start with data discovery to identify possible data sources for populating the map. One of these data sources will be the TIIMS system that is available but not updated. The Consultant Team will work with the DMC to identify layers from TIIMS that are candidates for import into the DMS. However, since TIIMS covers a subset of the IRWMP extent, the layers from TIIMS may need to be expanded to cover the entire area, including the Truckee and Carson River areas.

In summary, the following is a list of layers likely to be imported into the DMS:

- Base map layers such as topography, boundaries, infrastructure, hydrography and place labels.
- Various IRWMP-specific GIS based data to be determined during data discovery.
- Water quality data for surface and groundwater to be either hosted directly within the DMS or live-linked to other web sources.
- Water quantity data through live links with gauging stations, meter data and diversion data.
- Water rights data.
- Flood hazard areas.
- Hydrologic and other types of models.
- Other types of data deemed necessary for IRWMP purposes.

Also part of this task is to collect and organize various repositories of documents such as MS Word, PDF, Excel, images and other types of formats. The Consultant Team will import these documents into the DMS and configure an interactive document library function for easy loading, searching and retrieval. These documents may be linked to locations on the map to enhance storage and retrieval by adding a spatial component. Tools will be provided for authorized DMS users to load additional documents and edit and manage the document library after the initial documents import effort has been completed. The DMS will be accessible through Internet Explorer v7 or higher. No other web browsers are supported at this time.



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Besides the initial data loading effort, an as-needed budget for future loading of data as new needs come up has been included for three years. This budget is for as-needed maintenance and support of the DMS to address modifications and/or upgrades to the DMS functionality and contents (e.g. modifications of database query screens, map buttons, output formats etc.). The budget contains 100 hours and will be used as new data comes in on a time and materials basis. Once exhausted, this budget may need to be replenished if additional needs arise.

The DMS will be hosted by the Consultant Team out of San Francisco-based server facilities. The Consultant Team will provide all hardware and software required for hosting the DMS. For the first three years, the Consultant Team will charge a hosting fee of \$200 per month which will include hardware and operating system maintenance, file storage space, backups and general IT infrastructure requirements. 100% uptime is not guaranteed but staff will be available during regular business hours to address issues immediately if an outage or other issue arises. The hosting fee does not cover edits, maintenance or upgrades of the DMS. The hosting agreement will be revisited at the end of the first three years at which time the DMC may decide to either take over hosting internally, or have the Consultant Team continue the hosting at the applicable hosting rates at that time.

Task 3.J Finance

In consultation with the Partnership, the Consultant Team will develop a proposed finance plan for funding the recommended implementation projects and programs. Based on information provided by the project

proponents and supplemented by the Consultant Team funding information that are regularly tracked, the finance plan will identify anticipated funding sources for each element, including estimated probability that the funds will be secured as well as identifying how operations and maintenance costs for projects would be covered and the certainty of those funds. The finance plan will describe a range of potential financing strategies, including local, state, and Federal grant opportunities and other sources. For each source of funds identified, any known limitations on application dates, acceptable project types, duration and potential amount of awards including the certainty and longevity of funding, matching funding requirements, and other selection criteria will be specified.

Task 3.K Technical Analysis

The summary of available data sets presented in the prior Plan will be updated, and additional information used in the planning process (e.g. resources identified in the Region Description, from the Partnership, and stakeholders) will be incorporated. The technical analysis to be documented in the IRWMP will include items such as:

- Identification of the data (e.g., population, water demand projections, ecological studies, FERC licensing documents) that quantify water supply needs.
- Description of hydrologic, operations, and other modeling that describes the quantity of water and frequency of availability in the watershed.
- Description of existing water quality data and conclusions that can be drawn