

Kennedy/Jenks Consultants
Engineers & Scientists

10850 Gold Center Drive, Suite 350
Rancho Cordova, California 95670
916-858-2700
FAX: 916-858-2754

18 September 2014

Lynn Nolan
Grant Coordinator
South Tahoe Public Utility District
1275 Meadow Crest Drive
South Lake Tahoe, CA 96150

Subject: Data Management System – Scope Clarification
Tahoe-Sierra Integrated Regional Water Management (IRWM) Plan
K/J 1270036*00

Dear Lynn:

Per our discussions over the last several months, it has become apparent that the proposed scope for the data management system (DMS) described in the original Task 3.H.A and 3.I.C of Task Order 5 executed 13 September 2013 between South Tahoe Public Utility District (District) and Kennedy/Jenks Consultants (Kennedy/Jenks) may not be the most effective means of providing DMS to the Tahoe-Sierra IRWM Partnership because of several more recent opportunities. One is that significant technological changes have occurred since the DMS was originally scoped in 2012 while the other is the potential long-term support for DMS management that could be provided by the Sierra Water Work Group (SWWG). In addition, SWWG can also provide support for website management in parallel with DMS management. For these reasons, we recommend the following clarifications to the Task Order 5 scope (using strike out for deleted text and underline for new text). We propose to provide this modified scope of work under the remaining DMS budget as detailed in the Budget section.

“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 database for the Lake Tahoe Basin and add a specific project

Lynn Nolan
South Tahoe Public Utility District
18 September 2014
Page 2

performance monitoring module to the Data Management System (DMS) described in Task 3.1.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 Task 3.1.c, Subtask a. 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 3.1.c), the SWWG as a subcontractor and Consultant Team will add a module for management of the Plan Performance Project Database. The Partnership will designate key members to be on a Data Management Committee (DMC). The module will be modeled, if appropriate, after the functionality currently hosted inside of TIIMS. The SWWG, 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 database fields from TIIMS, if appropriate, or provide an alternative during the evaluation that occurs in Task 3.1.c, Subtask a). The SWWG and Consultant Team will enhance the existing TIIMS functionality to improve project data management by including the following features, as appropriate:

- Project 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) by the project owner and/or DMC member or agency responsible for maintaining the database that uploaded the project to the database.
- 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.).

Lynn Nolan
South Tahoe Public Utility District
18 September 2014
Page 3

Task 3.I.a Website Development and Management – partially authorized under March 13, 2013 letter

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. In addition to the DMS support described in Task 3.I.c, subtask b, the SWWG will be required to maintain and update the Tahoe-Sierra IRWM web page. This will include improving website functions, providing coordinated outreach to stakeholders, uploading project information, posting meetings, minutes, and other relevant information to the region. 100 hours a year for three years will be budgeted for on-going Tahoe-Sierra website management.

Task 3.I.c. Develop Data Management System – partially authorized under March 13, 2013 letter

The Consultant Team will work with the SWWG to 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 within between the Data Management Committee (DMC) from the Partnership, other stakeholders of the IRWMP and the public, as appropriate.

Sub-Task a: Technology Evaluation

DMS will contain the following basic functions The Consultant Team and SWWG will complete a Technology Evaluation to determine:

- Data storage and access needs. Determine the amount of data that will need to be stored, how often it will need to be accessed and by who, and cost estimates. Cloud-based storage will be considered.
- Software needs. Database, geographic information systems, security, website and web browser compatibility, etc.
- Basic Functions of DMS. SWWG and the Consultant Team will work with the IRWMP to determine the basic functions, which may include but are not limited to:
 - User-friendly, web-based platform with menu system to access various functions and data screens.

Lynn Nolan
South Tahoe Public Utility District
18 September 2014
Page 4

- 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 Partnership.
- Investigate Potential Additional Functions. Explore feasibility of building in, or making future updates possible, to allow including data such as project data as described in Task 3.H, water quality, objectives tracking, standardized project form, etc.

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 SWWG and Consultant Team will work with the Partnership to identify layers from TIIMS that are candidates for import into the DMS, as appropriate. 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, if available
- Flood hazard areas.
- Hydrologic and other types of models.
- Other types of data deemed necessary for IRWMP purposes.

Lynn Nolan
South Tahoe Public Utility District
18 September 2014
Page 5

Sub-Task b: Implementing DMS

~~Also part of this task~~ Populating database. Collect and organize various repositories of documents such as MS Word, PDF, Excel, images and other types of formats. The ~~Consultant Team~~ SWWG 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, and may support other browsers depending on the Technology Evaluation.

Ongoing Data Management Support. 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.

Operation Manual. 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. This will be in the form of an "Operations Manual" created by the SWWG and tested and approved by the Consultant Team. The Operations Manual will also serve as a backstop in the case that future funding is not secured or allocated to data management or in the unlikely event that the SWWG or Consultant Team is not available for three years/100 hours.

~~The DMS will be hosted by the Consultant Team out of San Francisco-based server facilities as determined by the Technology Evaluation. The Consultant Team will provide all hardware and software required for hosting the DMS.~~ For the first three years, the ~~Consultant Team~~ SWWG will charge a hosting fee of \$200 per month, which will include ~~hardware and operating data storage~~ 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~~ SWWG continue the hosting at the applicable hosting rates at that time.

Sub-Task c: Propose consistent DMS for other Sierra-Region IRWMs.
Develop Proposal for Ongoing work with Sierra IRWMPs. Target outreach to 1-2 other IRWMPs working with the Consultant Team for preliminary feedback and assessment of current data management systems and future needs. Using experience to date and

Lynn Nolan
South Tahoe Public Utility District
18 September 2014
Page 6

additional IRWMP and DWR feedback, develop task language that each Sierra Region IRWMP could include in their Round 3 Implementation Grant package for new and continued data management services from SWWG. Present project and results at SWWG Annual Summit and/or other state or regional conference(s)."

Also, we believe this DMS scope clarification to be within the planning portion of the Task 3.J of the IRWM Planning Grant agreement number 4600010073 between the District and Department of Water Resources, signed by the District on 20 September 2013 as excerpted below. I suggest that you report on this scope clarification in the quarterly report.

Task 3. I Plan Performance and Monitoring

...A data management system module will be developed for project performance information.

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...

Task 3.J.A – Website Development and Management

This task includes development of a public website designed for the IRWM Partnership, or at a new section of one of the existing 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 depository using links to PDF's.

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.

Lynn Nolan
 South Tahoe Public Utility District
 18 September 2014
 Page 7

Budget

There will be no change to the budget for these scope items as we have overall budget remaining as follows in Table 1 with a more detailed Task 3.H.a and Task 3.I.c budget in Table 2. One of the reasons for the budget surplus is the shorter time-line for plan completion to align with the 2014 DWR IRWM Drought application which resulted in one fewer draft plan than originally planned. As we have discussed, there are other planning-related items such as Salt and Nutrient Management Plan follow-up and other technical assistance that we can provide with the budget that remains after the DMS task is completed.

Table 1: Budget Remaining

Task	Budget Remaining	Notes
Task 1: Project Management	\$12,159	
Task 2: Meetings	\$38,804	Some could be reallocated depending on meetings for which support is requested
Task 3: Review Info and Update IRWM Plan (includes Task 3.H.a Plan Performance and Monitoring Data Management Module, 3.I.a – Website Development and Management, and 3.I.c Data Management System	\$125,011	Which is unspent in the Task 3H.a and 3.I.C tasks
Task 4: Prepare Draft, Final IRWM Plan Update	\$42,619	Complete – budget can be used for IRWM Plan amendments pending DWR comments
Total	\$218,593	

Table 2: Proposed Detailed Tasks 3.H.a, 3.I.a, and 3.I.c – DMS Budget

Detailed Task	Proposed SWWG Budget		Proposed KJ Budget		Total SWWG and KJ
	Hours	Effort	Hours	Effort	Effort
Task 3.H.a – Plan Performance and Monitoring	125	\$9,375	30	\$6,750	\$16,125
Task 3.I.a Website Development and Management (includes website maintenance for 3 yrs @ 100 hrs/yr)	300	\$22,500	0	0	\$22,500
Task 3.I.C – DMS Development and Implementation					

Lynn Nolan
 South Tahoe Public Utility District
 18 September 2014
 Page 8

Detailed Task	Proposed SWWG Budget		Proposed KJ Budget		Total SWWG and KJ
	Hours	Effort	Hours	Effort	Effort
Sub-task a- Technology Evaluation (includes 2 meetings)	60	\$4,500	40	\$9,000	\$13,500
Subtask b – DMS Implementation	350	\$26,250	40	\$9,000	\$35,250
DMS Maintenance for 3 yrs @ 100 hrs/yr	300	\$22,500			\$22,500
Subtask c – Propose DMS for other Sierra IRWMs	100	\$7,500			\$7,500
Task 3.I.C Subtotal	810	\$60,750	80	\$18,000	\$78,750
Total	1,235	\$92,625	110	\$24,750	\$117,375

I suggest that we discuss this and other rescoping topics in our bi-weekly coordination calls.

Very truly yours,

KENNEDY/JENKS CONSULTANTS



Sachiko Itagaki, P.E.
 Project Manager



Tim Williams, P.E.
 Principal

cc: file
 Gavin Feiger, SWWG