

PARTNERING WITH FEDERAL AND NON-FEDERAL AGENCIES FOR HYDROLOGIC ENGINEERING MODEL DEVELOPMENT

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Abstract For the past few years, the US Army Corps of Engineers (USACE) Hydrologic Engineering Center (HEC) has been engaged in efforts to develop joint agreements with other Federal, state, local agencies, and private sector firms for development and application of hydrologic models. In today's budget climate, the impetus for joint activities is strong, yet the impediments to developing successful contract arrangements are substantial. Doing business with the Federal government invokes a number of requirements not typically encountered in the private sector. Accommodating these requirements caused HEC to adopt new project development business practices, enter the world of lawyers and contracts more deeply than heretofore was the case, and essentially become more entrepreneurial. This paper initially provides an overview of the context for Federal and non-Federal project partnerships of the nature requiring contracts and transfer of funds. This overview is followed by chronologies and discussion of several recent examples: HEC with local agency; HEC with a local agency, morphing to working through another Federal agency; and HEC with another Federal agency operating through a private sector firm engaged in international work.

INTRODUCTION

Today's government climate provides a strong incentive to leverage resources for hydrologic engineering software development among agencies, both Federal and non-Federal. Budgets are tight, the need for publicly developed software continues to be recognized, and there is strong and growing competition from the US and international private sector engineering firms and software vendors with Federal agencies efforts to develop and apply software. The US political response as reflected in legislation and agency rules and policies can be viewed as discouraging to such interagency collaborations. Roadblocks have emerged that impede cooperation between Federal agencies, and between Federal agencies and non-Federal agencies, particularly when funds are to be exchanged and contractual instruments will be needed. Several statutes bear on the issues that are discussed later. The requirements of these statutes and agency rules and policies can be accommodated in developing successful partnering agreements but doing so takes significant time, effort, and cooperation among technical staffs and counsel for all parties.

KEY FEDERAL STATUTES AND PROGRAMS

The key statutes that are significant to development of partnering agreements between Federal agencies and non-Federal agencies are The Anti-deficiency Act (AD), the Economy Act (EA), and in the case of USACE, the Thomas Amendment (TA). A key statute that offers opportunity for the USACE and perhaps other Federal agencies to become engaged with the US private sector in international activities is coined the Technical Assistance Program (TAP). While individual Federal agencies have their own regulations implementing these statutes that can vary from one another; the discussion here is how these have impact agreements undertaken by HEC as an office of the US Army Corps of Engineers.

The Anti-deficiency Act US Code Title 31, 1314 (AD) – see APPENDIX I - prescribes limitations on expending and obligating funds by officers and employees of the United States Government. For our purposes here, the limitation is pretty simple; it prohibits Federal agencies from obligating or expending funds that either was not appropriated by Congress, or has been deposited in the agency's account in accordance with other Federal law and regulations. While logical and straight forward from the Federal agencies viewpoint, difficulties arise when forming contract agreements with state and local government agencies, and even some Federal agencies. The AD in-effect makes it necessary that any agreements between Federal agencies or between Federal and non-Federal agencies include language that obligates the requesting agency to pay all costs. Further, the AD requires that these costs be paid in advance for all work being undertaken. This provision often seems to state and local agencies, that the Federal agency is less accountable for how it undertakes and completes the work, is not obligated to perform the work agreed upon within the costs identified in contract documents, and that they are liable for as yet undefined and unspecified other costs that might arise during the execution of the work. From a legal perspective, these concerns are very valid. As expected then, these concerns can be significant, and in one example noted later, fatal to consummating an agreement that by all other accounts, would have been a most attractive and beneficial agreement for all parties.

The Economy Act US Code Title 31, 1535 (EA) – see APPENDIX I. The EA governs agreements and funds transfers between Federal agencies. This act requires a finding on the part of the agencies that capability exists to perform the service, that the acquisition of the service from another Federal agency would result in economy to the agencies, and lastly, that the service cannot be reasonable procured from the private sector. The various Federal agencies have slightly different policies governing Economy Act procurements, but in general, each requires documentation of an analysis that demonstrates that the provisions of the Act will be met. While not a strong impediment, the simple matter of requiring an analysis, accomplishing the paper work, and seeking approval have served to dampen pursuit of such agreements, and thus impede potentially attractive inter-agency collaborations.

The Thomas Amendment Section 11, Water Resources Development Act of 2000 as amended by Section 109 of the Energy and Water Development Appropriations Act of 2002 (TA) – see APPENDIX I. The TA addresses agreements between the US Army Corps of Engineers and other Federal and non-Federal entities. The TA essentially tightens up the findings requirements and extends the EA to non-Federal agencies. It further emphasizes that the requested USACE work must not be reasonably available from the private sector. The essential feature of the TA that dampens what were previously active collaborations between USACE and local agencies is the specific requirement that the USACE Chief Executive must individually approve each agreement and attendant analysis and documentation of findings. Agency processing requirements for USACE agreement with local agencies are substantial and detailed.

The Technical Assistance Program: US Code Title 33, 2314a (TAP) –see APPENDIX I. The TAP authorizes USACE to provide technical assistance on a nonexclusive basis, to any US firm which is competing for, or has been awarded, a contract for the planning, design, or construction of a project outside the US. The essential purpose of this program is to assist US firms in competition for foreign work by providing access to technical expertise and resources of

USACE. The AD act and similar provisos to features of the EA and TA are considered, but the requirements are much less onerous. Additional requirements are: That the services to be provided by USACE not exceed 50% of the project services; that performing the work will not adversely affect USACE execution of assigned missions; and that the US Embassy in the project country concurs with the work. This seemingly seldom used program offers opportunities for USACE, and private firms to partner on a wide range of international projects. While the statute referenced here specifically names 'The Secretary' (sic - of the Army), it may be that other statutes provide similar authorities to other Federal agencies.

CASE EXAMPLES – PARTNERING AGREEMENTS

Each of the case examples described here have different origins but are surprisingly common in terms of project development negotiations, findings and documentation needs, and approval processing. They differ in the scope of agreements, issues that arose, and ultimately the success (or not as the case may be) of eventual execution of a joint project. The cases described include: A successful TA project; an unsuccessful TA project with attendant morphing to EA project; and a successful TAP project for international work.

Successful TA – Lower Colorado River Authority LCRA: This project began as many such projects do – professional contact between engineers of LCRA and HEC at conference. Presentations made by HEC staff on the USACE-developed 'Corps Water Management System – CWMS' were observed by LCRA staff and mutual discussions ensued. Over a period of months, information exchange evolved to the point where LCRA determined it wished to implement CWMS for their system. CWMS is a comprehensive decision-support system comprised of the following capabilities: Real-time data acquisition and management; standardized database; modeling and decisions support; control and visualization; and data dissemination. The system is an official Army Automated Information System (AIS) used by field offices for day-to-day water control operations of the 500 plus USACE water management projects. LCRA wished to implement many of the features of CWMS, adapt some others to their unique needs, and receive training and technical support for the system.

Chronology of the Agreement

August 2002: Federal Interagency Modeling Conference – initial contact.

February 2004: Initial feeler to HQUSACE for guidance, acceptability.

August 2004: Formal letter of request from LCRA (after several revisions).

August 2004: Initiation of formal request for approval to HQUSACE.

September 2004: USACE counsel requested revised letter of request.

October 2004: Approval from Assistance Secretary of Army, Civil Works - ASA(CW).

December 2004: MOU and support agreements signed, project underway.

Discussion The agreement now in place provides for the joint efforts of LCRA and USACE/HEC to make certain improvements to CWMS, deploy the system to LCRA, and provide training and technical support for a period up to five years. Ultimately, accomplishing the provisions of the agreement require work by staff of HEC and LCRA, and work by private contractors supporting HEC and LCRA. Both parties are pleased with the joint project; LCRA because they have use of a sophisticated and advanced water control management data

acquisition and decision support system for their complex Lower Colorado system; and HEC because, as an element of the agreement, LCRA is sponsoring and funding a number of improvements that are of significant value to the USACE user community that would not have otherwise been possible to develop in such a timely manner.

Developing this project proved to be a substantial learning experience for HEC managers and staff. It became necessary to negotiate with USACE and LCRA senior agency officials and counsel, develop new funding processes, and implement a degree of specificity and accountability not common for a public agency like HEC. From the chronology above, it is apparent that some issues arose, and they did. The most contentious proved to be those relating to the Anti-deficiency Act. In particular, the USACE standard agreement spelled out in excruciating detail, the costs for which the requesting party might become liable (litigation, poor work by USACE, etc.), which of course was disturbing to LCRA, and for that matter, did not feel very good to HEC either! After many rounds of language change proposals, in the end, the language in the TA statute relating to the EA requirement was substituted for the great detail of the USACE standard agreement; this took several months and more than a dozen legal exchanges. As of October 2005, work had been accomplished that included modifying the security features of CWMS (necessary for implementation outside USACE), the system deployed to LCRA, initial training provided to local staff, and work underway on technical improvements to CWMS that include user interface, reservoir model, and data processing and visualization improvements.

Unsuccessful TA – Yuba County Water Agency (YCWA), morphing to potential Economy Act

This project began as a cooperative activity of several agencies involved in the operation of important flood damage reduction reservoir projects in Northern California. Oroville Dam on the Feather River, constructed and operated by the State of California, and New Bullards Bar on the Yuba River, constructed and operated by the Yuba County Water Agency (YCWA), jointly regulate flood flows in the Feather River prior to its confluence with the Sacramento River just north of Sacramento. For some time, the involved agencies of California Department of Water Resources (DWR), YCWA, USACE Sacramento District (oversees flood operations of these Section 7 flood control projects), and the National Weather Service (NWS) forecast office in Sacramento have discussed improving the joint operation of these projects. The opportunity to initiate a project for such purpose arose with the passage of Proposition 13 by the California voters. A proposal for this joint project was presented and ultimately funded. HEC became involved because its flagship reservoir simulation model, HEC-ResSim was to be the central analytical tool for supporting the joint flood control operation of the two reservoirs. Thus, YCWA approached HEC with the idea of requesting technical assistance in making certain improvements to ResSim to accommodate unique aspects of project operations and application with the ensemble forecasting output of NWS, and assistance implementation in several other agency systems. The outcome of the effort was to be implementation of the improved ResSim in: The NWS River Forecast System in Sacramento, USACE Sacramento District CWMS system, and DWR CEDEC system. The concept being that all involved agencies would be using the same reservoir simulation tool in decisions related to their respective joint operation responsibilities.

Chronology of the Agreement

February 2004: Initiation of project discussions.
May 2004: Basic technical issues agreed upon.
August 2004: First draft MOU and request letter.
January 2005: Negotiations break down over software liability issue.
May 2005: Salvaged agreement/documents processed to HQUSACE.
June 2005: Negotiations again break down, this time for good.
July 2005: Alternate Economy Act with NWS negotiations begin.
August 2005: HQUSACE approval of TA with YCWA (moot!).
October: Draft EA agreement under review.

Discussion Developing the technical requirements that for the agreement proved to be the simple task even though the issues were substantial and in some instances, contentious. As the chronology depicts, negotiations proved to be difficult from the beginning, and as expected, difficulties centered on the Anti-deficiency Act agreement implications. As the issue evolved, the counsel advising the YCWA determined that YCWA could become liable for unspecified and potentially huge software-related claims. Counsel's logic was like this: YCWA sponsors and funds improvements to ResSim; HEC makes the improvements permanent features of its public release version of the software, available to anyone in the world; faults in the subsequent software application could result in claims, perhaps huge, that could legally find their way back to YCWA. Several approaches were taken in an attempt to allay this fear; crafting agreement language to reflect that HEC was solely responsible for its software; crafting agreement language that indicated that the YCWA-sponsored improvements were planned by USACE/HEC and the agreement simply permitted their earlier development; requiring HEC software users to accept a conditions of use statement; and other liability softening language. In the end, these attempts at resolving the issue failed, legal counsel for YCWA advised that the agreement not be signed, thus closing the option of a partnering agreement with YCWA.

Ironically, the counsel for YCWA found less objectionable, the provisions of a potential agreement between YCWA and the NWS. Thus after more than a year of negotiations with USACE/HEC and its counsels, YCWA began negotiations for essentially identical technical assistance with the NWS. The plan is that following YCWA agreement with NWS, NWS will in turn; develop an Economy Act agreement with USACE/HEC. Somehow, the YCWA counsel viewed the language in the NWS standard agreement acceptable even though both USACE and NWS agreements both must respect the Anti-deficiency Act. As this paper is being finalized, negotiations between USACE/HEC and the NWS are nearing completion. If all goes well (a concept for this project one could question based on experience to date), an agreement between NWS and YCWA, and an agreement between NWS and USACE/HEC should be signed in the October/November time frame with work to begin shortly thereafter.

Technical Assistance Program (International) Agreement: This project evolved because of the support HEC provided to occupying forces in the aftermath of the toppling of the Saddam Hessian regime in Iraq. HEC was engaged to assist in reservoir operation by the Army through the reach-back support capability managed by the Mobile District. Also, at that same time,

USACE senior staffs were serving as advisors to the Iraq Ministry of Water Resources (MoWR), resulting in further HEC exposure to the needs of MoWR and water resources management in Iraq. As odd as it may seem, there was no readily available authority or administrative vehicle that would permit HEC to work neither directly for the Coalition Provisional Authority, the MoWR, nor easily with the United States Agency for International Development (USAID), the principal US agency responsible for reconstruction work in Iraq. It occurred that a project sponsored by USAID to initiate restoration efforts in the internationally important southern marshes in Iraq was underway that offered a vehicle, the Technical Assistance Program, for HEC participation in Iraq water management. As it eventually evolved, USAID's contractor for the marsh work, Development Alternatives, Inc. (DAI), made a request of HEC to provide the following technical assistance: Provide preliminary reservoir system model development and training; compile and catalogue historic streamflow records; assess status of streamgauge system; provide on-going reservoir water control management advice; and provide coordination and technical analysis in support of marsh restoration studies.

Chronology of Agreement

- May 2003: Project discussions initiated.
- June 2003: Draft Phase I agreement (start).
- August 2003: Phase I agreement signed.
- September 2003: Draft Phase II agreement.
- December 2003: Phase II agreement signed.
- December 2004: Reformulated Phase II.
- June 2005: Training/capacity building addition.
- June 2005: Next Phase (III?) Water Resources Strategy Plan discussions initiated.

Discussion Contrary to the other agreements discussed in this paper, the management and administrative burden to HEC to develop and process the agreement for approval proved to be minimal. Since any efforts in Iraq were high visibility/high priority for the President Bush Administration and USACE officials, the burden of completing the findings and documentation to validate the agreement was accomplished by HQUSACE. HEC's role in the administrative side was relatively modest, confined to providing project execution and HEC organization information. The significant issues were devising an appropriate scope with sufficient detail to satisfy contracting regulations for a project with great uncertainty in the planned work in a region with significant security and travel impediments, and ferreting out the business processes of DAI that was needed to craft an agreement. Other complications arise in high visibility projects such as this: High national/international interest results in greatly expanded coordination among the many interested competing entities, including foreign firms and governmental institutions. International travel to insecure locals, and nearby secure but not typical US or European locals, posed its issues with implications for agreement provisions.

The advantages to USACE/HEC for work such as this Iraq MoWR support project are many-fold: Exposure to water management systems and concepts in the international community; acquaintance with engineers educated and experienced in other parts of the world; and the opportunity to work on a meaningful, stimulating, and technically challenging project. The advantages to Iraq MoWR include: Access to state-of-the-art water management analysis

methods and software; opportunity to engage the US professional community; exposure to US culture and technology; and development of colleague relationships with the larger international community.

SUMMARY AND CONCLUSIONS

Budget issues and simply the norm of the times provide impetus and opportunities for interagency collaborations. Unfortunately, at the same time, impediments to this collaboration are also presented. Adapting an entrepreneurial approach to collaborations, becoming savvy in the ways of contracts and negotiations, and staying alert to opportunities has proven beneficial to the HEC work program. It would not be wise for such collaborations to become a major and critical component of our activities because of potential staffing impacts and vulnerability to the whims of the times. None-the-less, such engagements provide opportunities to leverage in-house work and expertise, and provide enriching opportunities for staff growth as well as provide cost efficiencies for the US taxpayer.

APPENDIX I

Anti-deficiency Act: Title 31 > Subtitle II > Chapter 13 > Subchapter III > § 134, § 1341. Limitations on expending and obligating amounts.

(a) (1) An officer or employee of the United States Government or of the District of Columbia government may not— (A) make or authorize an expenditure or obligation exceeding an amount available in an appropriation or fund for the expenditure or obligation; (B) involve either government in a contract or obligation for the payment of money before an appropriation is made unless authorized by law; (C) make or authorize an expenditure or obligation of funds required to be sequestered under section 252 of the Balanced Budget and Emergency Deficit Control Act of 1985; or (D) involve either government in a contract or obligation for the payment of money required to be sequestered under section 252 of the Balanced Budget and Emergency Deficit Control Act of 1985. (2) This subsection does not apply to a corporation getting amounts to make loans (except paid in capital amounts) without legal liability of the United States Government. (b) An article to be used by an executive department in the District of Columbia that could be bought out of an appropriation made to a regular contingent fund of the department may not be bought out of another amount available for obligation.

Economy Act: Title 31 > Subtitle II > Chapter 15 > Subchapter III > § 1535. Agency agreements.

(a) The head of an agency or major organizational unit within an agency may place an order with a major organizational unit within the same agency or another agency for goods or services if— (1) amounts are available; (2) the head of the ordering agency or unit decides the order is in the best interest of the United States Government; (3) the agency or unit to fill the order is able to provide or get by contract the ordered goods or services; and (4) the head of the agency decides ordered goods or services cannot be provided by contract as conveniently or cheaply by a commercial enterprise. (b) Payment shall be made promptly by check on the written request of the agency or unit filling the order. Payment may be in advance or on providing the goods or services ordered and shall be for any part of the estimated or actual cost as determined by the agency or unit filling the order. A bill submitted or a request for payment is not subject to audit or certification in advance of payment. Proper adjustment of amounts paid in advance shall be made as agreed to by the heads of the agencies or units on the basis of the actual cost of goods or services provided. (c) A condition or limitation applicable to amounts for procurement of an agency or unit placing an order or making a contract under this section applies to the placing of the order or the making of the contract. (d) An order placed or agreement made under this section obligates an appropriation of the ordering agency or unit. The amount obligated is de-obligated to the extent that the agency or unit filling the order has not incurred obligations, before the end of the period of availability of the appropriation, in— (1) providing goods or services; or (2) making an authorized contract with another person to provide the requested goods or services. (e) This section does not— (1) authorize orders to be placed for goods or services to be provided by convict labor; or (2) affect other laws about working funds.

Thomas Amendment: Section 211 of the WRD Act of 2000 (PL 106-541) as amended by Section 109 of the Energy and Water Development Appropriations Act of 2002 (PL 107-66)

Performance of Specialized Services.

(a) DEFINITION OF STATE—In this section, the term “State” has the meaning given the term in section 6501 of title 31, United States Code. (b) AUTHORITY—The Corps of Engineers may provide specialized or technical services to a Federal agency (other than an agency of the Department of Defense) or a State or local government under section 6505 of title 31, United States Code, only if the chief executive of the requesting entity submits to the Secretary—(1) a written request describing the scope of the services to be performed and agreeing to reimburse the Corps for all costs associated with the performance of the services; and (2) a certification that includes adequate facts to establish that the services requested are not reasonably and quickly available through ordinary business channels.

(c) CORPS AGREEMENT TO PERFORM SERVICES—The Secretary, after receiving a request described in subsection (b) to provide specialized or technical services, shall, before entering into an agreement to perform the services—(1) ensure that the requirements of subsection (b) are met with regard to the request for services; and (2) execute a certification that includes adequate facts to establish that the Corps is uniquely equipped to perform such services. (d) ANNUAL REPORT TO CONGRESS—(1) IN GENERAL—Not later than the last day of each calendar year, the Secretary shall provide to the Committee on Transportation and Infrastructure of the House of Representatives and the Committee on Environment and Public Works of the Senate a report identifying any request submitted by a Federal agency (other than an agency of the Department of Defense) or a State or local government to the Corps to provide specialized or technical services. (2) CONTENTS OF REPORT—The report shall include, with respect to each request described in paragraph (1) (A) a description of the scope of services requested; (B) the certifications required under subsection (b) and (c); (C) the status of the request; (D) the estimated and final cost of the services; (E) the status of reimbursement; (F) a description of the scope of services performed; and (G) copies of all certifications in support of the request. (e) ENGINEERING RESEARCH AND DEVELOPMENT CENTER—The Engineering Research and Development Center is exempt from the requirements of this section.

Technical Assistance Program. Title 33 > Chapter 36 > Subchapter V > § 2314a

(a) In general

The Secretary is authorized to provide technical assistance, on a nonexclusive basis, to any United States firm which is competing for, or has been awarded, a contract for the planning, design, or construction of a project outside the United States, if the United States firm provides, in advance of fiscal obligation by the United States, funds to cover all costs of such assistance. In determining whether to provide such assistance, the Secretary shall consider the effects on the Department of the Army civil works mission, personnel, and facilities. Prior to the Secretary providing such assistance, a United States firm must— (1) certify to the Secretary that such assistance is not otherwise reasonably and expeditiously available; and (2) agree to hold and save the United States free from damages due to the planning, design, construction, operation, or maintenance of the project.

(b) **Federal employees’ inventions** As to an invention made or conceived by a Federal employee while providing assistance pursuant to this section, if the Secretary decides not to retain all rights in such invention, the Secretary may— (1) grant or agree to grant in advance, to a United States firm, a patent license or assignment, or an option thereto, retaining a nonexclusive, nontransferable, irrevocable, paid-up license to practice the invention or have the invention practiced throughout the world by or on behalf of the United States and such other rights as the Secretary deems appropriate; or (2) waive, subject to reservation by the United States of a nonexclusive, irrevocable, paid-up license to practice the invention or have the invention practiced throughout the world by or on behalf of the United States, in advance, in whole, or in part, any right which the United States may have to such invention. (c) **Protection of confidential information** Information of a confidential nature, such as proprietary or classified information, provided to a United States firm pursuant to this section shall be protected. Such information may be released by a United States firm only after written approval by the Secretary. (d) **Definitions** For purposes of this section— (1) **United States firm** The term “United States firm” means a corporation, partnership, limited partnership, or sole proprietorship that is incorporated or established under the laws of any of the United States with its principal place of business in the United States. (2) **United States** The term “United States”, when used in a geographical sense, means the several States of the United States and the District of Columbia.

Findings, documentation, and processing requirements for USACE interagency agreements are found at: <http://www.hq.usace.army.mil/cemp/cn/iishmpg.htm>.

The documents that must be compiled and processed are similar for these several agreements and include: 1) Official letter of request from local agency/firm; 2) Request evaluation check list; 3) proposed MOU and companion support agreements; 3) Counsel review findings; 4) draft ASA(CW) memorandum; and in the case of TAP international work, 6) Letter of concurrence from US Embassy in locale of proposed work.