



US Army Corps  
of Engineers®

# HEADQUARTERS

## ENGINEERING & CONSTRUCTION NEWS

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APRIL-MAY'S THEME:

### *Knowledge Management Redesigned E&C Web Page*

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#### DWIGHT'S NOTES

The theme of this issue of E&C News is Knowledge Management (KM). John Lanzarone's follow-on article on KM explains far better than I can, the importance of KM to the future of the Army Corps of Engineers. Simply put, Knowledge Management is the strategy, process, and tools that will enable Corps team members to leverage each other's knowledge across the entire organization, quickly and easily, to better serve our customers. General Flowers has repeatedly (as lately as today in my one on one mentoring session with him) emphasized that the Corps needs to invest in KM, deliberately and smartly to help us become a "learning organization".

John and I have learned a great deal about Knowledge Management in our capacity of leading the SAME National KM/IT Committee. Other senior leaders in the HQ who are KM advocates include, but is certainly not limited to Wil Berrios, Corps CIO, Kristine Allaman, MP Division Chief, and Dr. Ed Link, recently retired Director of R&D. And for each of us there are several other leaders who work in our functional areas as well as others. A few weeks ago Wil Berrios briefed the Corps' Learning Advisory Board (LAB) (co-chaired by Dr. Susan Duncan and General Peter Madsen) about KM. Wil got a very warm reception as the power of KM became readily apparent to our learning leaders. Wil was followed by John's boss, M.K. Miles, who told the LAB about a great application of KM, which we call the new E&C Website. The E&C website has captured lessons learned from the Navy's "Foundation Knowledge" website which is designed around "communities of practice". See John's article for a complete description of the website. The LAB has since asked us to work with them to adapted this website to be an enabler for the Corps learning initiatives. Thanks go to NAVFAC and the Corps CADD/GIS Technology Center for the great work they did in designing Foundation Knowledge and the E&C Website, respectively.

Please take the time to learn more about KM, do some experimentation with it, and find places where you can adapt KM principles and practices to your jobs and organization. Done well, Knowledge Management will delight you and your customers.

HQ is about to lose the talents of Mr. Ming Tseng our learned Watershed Team (soon to be renamed Hydraulics and Hydrology Team) Teamleader. Ming is retiring on 3 June. Oh, to have had a fully functioning KM system in place a year or so ago, so we could have captured all the great knowledge Ming has built up in his long and prosperous career in the Corps. We sure could have used it to capture the knowledge of other great Corps leaders as Brian Doyle, who retired as Chief of Engineering in Sacramento District and my good friend Dr. Ed Middleton, who retires from his job as Chief of Engineering in Jacksonville District. Thank you Ming, Doyle, and Ed for helping the Corps

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## DWIGHT'S NOTES (CONTINUED)

remain the "World's Premier Public Engineering Organization". Now the question is, who will step up to the plate to help lead the Corps in these capacities so we continue to keep the Castle shining?

Essays!

Dwight

(Editors' note: If you want to share your thoughts with our readers regarding Dwight's Notes send an email to the E&C News editor ([charles.pearre@usace.army.mil](mailto:charles.pearre@usace.army.mil)). A synopsis of your comments will be published in the next issue.)

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# *Knowledge Management /Redesigned E&C Web Page*

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## **KNOWLEDGE MANAGEMENT EFFORTS/REDESIGNED E&C WEB PAGE**

Around this time last year I wrote about how the Technology Integration Branch of Engineering & Construction (E&C) Division was responsible for various technological integration activities. I focused on the Knowledge Management (KM) effort that was just beginning within HQUSACE E&C. I spoke of Portals and that an accepted philosophy is that KM is 75% people and business processes and 25% technology. KM involves getting the right information to the right person at the right time so that he/she can make the best business decision for the corporation (USACE in our case). I also listed various ongoing HQUSACE KM efforts, including the formation of committees on which we participate. Well, as they say, that was then, this is now. I would like to take this opportunity to update you on the redesigned E&C web site that we've been developing.

Early last year I first learned that whatever we do in the KM arena should make our jobs easier. That's my guiding light in this effort. I also learned that many do KM for the sake of KM and while that may be acceptable for an educator, it is the wrong focus for an engineer. KM is a tool I use to accomplish my goal. Some might say I'm applying km, not focused on KM for KM sake. Next HQUSACE E&C learned that we do not know what we know; therefore we do not know what we need to know. Figuring out what we know sounds easy but think about it for a moment. If I were to ask you to tell me all you know about your job, where would you start? KM is, to many, a new buzzword, and there are many companies selling themselves, or their products as KM solutions. Generally, most of their KM solutions come down to buying some technology – usually software that searches and organizes information/data. Unfortunately, the technology will not provide us the content – the stuff we need to do our job, the stuff that needs to be organized. So the most important thing we learned is that we need to figure out what we know and who knows it.

Starting with the premise that we needed to get “content,” namely discover what we know - we developed a schema; 11 areas/items that each HQ E&C proponent interacts with in some fashion. The schema consists of: technical criteria and other documents, training (e.g. PROSPECT), automated information systems (e.g. RMS), the R&D community, other government agencies (e.g. NASA), professional societies and organizations (e.g. AIA), conferences, centers of expertise, subject matter experts, industry products, and customers (e.g. MSC's). Using the schema, we developed a subject matter based website through the Information Technology Laboratory in Vicksburg.

Why subject matter based? We knew that the E&C website was short on technical content, difficult to navigate, and lacking information. We discovered that the website required the user to know the organizational structure of the division in order to find information. That alone is a serious problem because in FY00 we were reorganized and merged with civil works. We now function as a matrix team. As a matrix teamed organization the “water” experts may be distributed through numerous branches. Thus a question on water quality issues may be directed to one person in one branch, while questions about some other water issues may be directed to another person in a different branch. We also realized that the existing HQ E&C website (at <http://www.usace.army.mil/inet/functions/cw/cecwe/>) is set up as most websites have traditionally been, as a marketing tool. It lists our mission and function

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statement, members, biographies of selected individuals, and contains links to other sites. However, it does not really tell the user who can help and in what subject areas help can be offered within HQ E&C or Corps-wide. It is not meant to be a place to find useful technical content – it is meant to tell the user that we can help, but without directly giving the information needed. That prompts the user to follow-up with a phone call, or email, to get the actual needed piece of information.

The new HQ E&C website is designed to provide users the answers to their queries on technical issues. Thus, it should minimize the need for the user to contact anyone further, or it should at least accurately direct the user to the subject expert. Questions such as - Who is the HQ E&C expert on HVAC systems?; Who is the pavements expert?; Who in HQ E&C is working with AGC or AIA or ASCE?; Is there any PROSPECT course on pavements?; What R&D products are available for advanced pavements?; Is there a center of expertise for Hydroelectric Design? - will all be easily answered at the enhanced website. To ensure we are not duplicating work already developed, we have been coordinating our efforts with the Installation Support Division, Engineering Research and Development Center (ERDC), and the Human Resources Division - which is responsible for the PROSPECT training and USACE University efforts. Additionally, while our expertise list is developed in-house, we plan to tie that into the registry of skills site to avoid duplication of database information.

The enhanced website is not organizationally based; it is content focused. Along the left side of the screen you will see a list of various subject areas (e.g. concrete, construction), an expandable list of Expertise, and an expandable staff directory. Using the staff directory allows you to find an individual within HQ E&C, and all the information with which that individual is tied. You will see the topics in which that person is a subject matter expert, the technical criteria they are responsible for (click the red bar that says technical criteria - red bars are hyperlinked in this website), and if he/she is a proponent for PROSPECT or other training. You will also find out what DOD or other agencies and committees he/she works with regularly, and the centers of expertise and automated information systems for which the individual is the POC. Alternatively, one could find the same information by looking under the subject area list. At the top of the screen is a horizontal list that consists of some of the eleven items in the schema. Presently, one can see all of the AIS's and centers of expertise listed along with their HQ E&C contact/proponent plus links to the center of expertise website or AIS website. The criteria button takes you to a listing of criteria and to the criteria change page. The Engineer (ENG) Form 3078 form has been rescinded and replaced by an all-electronic submission process accessible from the new website.

Working with the PROSPECT training and USACE University folks in Human Resources, we are trying to modularize PROSPECT classes. Presently, we link PROSPECT classes to the Professional Development and Support Center (PDSC) website in Huntsville (see <http://pdsc.usace.army.mil/>). It requires you to download the “purple” book to see the class listings. We have proposed, and are hoping to pilot, a feature where the PROSPECT class link from our site will show you a course synopsis, the cost, course schedule, and the PDSC and HQ E&C POC. The next phase of our proposal calls for the course content to be listed like a table of contents with each module or chapter representing a 60-90 minute training session. We would like these sessions to be hyperlinked so that the user can view the text and PowerPoint slides used during the class. Our intent is not to eliminate the need for people to take PROSPECT training, but our goal is to allow a fully qualified engineer/scientist to view the latest training materials. This will answer many quick questions for users and may serve to further improve the content of the class material. Also, seeing that a PROSPECT class has helpful information may actually result in more people taking some classes. In a similar cooperative effort, working with ERDC, we are trying to tie their proven products (products being a report, software, technology, etc.)

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to the subject matter expert at HQ E&C. Our goal here is to improve the penetration of ERDC products into existing designs and ongoing construction methods. Technology transfer from the labs to the field has not been as successful as it could be. Part of that may be that ERDC products, once developed, do not have HQ E&C advocates that can promote the new technologies. Since we plan to tie ERDC products to subject areas, and subject areas will have E&C proponents, we hope to improve the penetration of ERDC products into the field.

I briefed the concept of the enhanced E&C website to the Infrastructure Conference, held in Reno last August, and got an extremely positive response. In November, the preliminary version of the enhanced site was shown to the MSC E&C chiefs with positive reviews. With this article, which really functions as the unveiling of the site, I hope to get even more constructive comments.

While the enhanced website is still undergoing many revisions before all the bugs are corrected, I do not want to miss the opportunity to have you start looking at it and using it. However, please understand that changes are occurring daily, and the site may not always be up. Lists of AIS's and centers of expertise are being vetted and will be changing. Many of the graphics and "news" related information serve as placeholders for now, and those items may not be current. Links to many of the sites take you to existing HQ web pages or information papers that are dated. That is the part of KM where we are learning what we know and don't know about ourselves. We aim to have HQ E&C individuals be responsible for keeping "their" web information accurate once the site is officially released. As we approach that point, I expect the content to improve substantially. Please visit the enhanced website at <http://hqec.wes.army.mil/> and let me know what you think. There is a comment button you may use to submit your suggestions, or email me [john.r.lanzarone@usace.army.mil](mailto:john.r.lanzarone@usace.army.mil) - it is possible the comment feature may not be accessible at all times. In the coming months I hope you will continue to visit the site to see what new features have been added. Most of all, I hope this site is a step forward toward using what I first learned about how KM can make our jobs easier.

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## Update

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### **DEFENSE DEPARTMENT STANDING UP FACILITIES ENGINEERING ACQUISITION CAREER FIELD**

How do you define the word "Acquisition"? The Department of Defense defines it as follows:

*Acquisition is the planning, design, development, testing, contracting, production, introduction, acquisition logistics support, and disposal of systems, equipment, facilities, supplies, or services that are intended for use in, or support of, military missions.*

The DoD Tri-Service Engineering Senior Executive Board requested and received approval on 16 July 01 for establishment of a new Facilities Engineering Acquisition Career Field. This initiative was begun to accommodate a workforce performing acquisition duties that did not have an existing career field under current provisions of the Defense Acquisition Workforce Improvement Act (DAWIA). Previously, the 1986 President's Blue Ribbon Commission on Defense Management, later known as the Packard Commission, provided recommendations concerning the acquisition workforce definitions and implementation of DAWIA enacted in November 1990. Under a later May 1999 "Refined" Packard Commission Study Defense Organizations were categorized as acquisition or acquisition related organizations. The Corps of Engineers was classified as an "Acquisition Related" organization

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and as such certain civilian GS job series were designated as potential acquisition positions. Although many positions would be considered as performing acquisition duties, with very few exceptions, there was no proper career field under DAWIA to establish mandatory education, training and experience requirements.

What positions will be in this new career field? Positions involved in the facilities acquisition process of planning, programming, budgeting, real estate, design, construction management, project management, environmental protection, operations, real property maintenance and disposal might be included. The official career field definition is as follows:

***Definition of Facilities Engineering Career Field (What Workforce is Included)***

*The Facilities Engineering Career Field encompasses a variety of professional individuals with diverse skills focused on the design, construction, and life cycle maintenance of military installations, facilities, civil works projects, airfields, roadways, and ocean facilities. It involves all facets of life cycle management from planning through disposal, including design, construction, environmental protection, base operations and support, housing, real estate, and real property maintenance. Additional duties include advising or assisting Commanders, and acting as or advising program managers and other officials as necessary in executing all aspects of their responsibilities for facility management and the mitigation/elimination of environmental impact in direct support of the Defense Acquisition process.*

The refined Packard methodology specifically allows exclusion of Civil Works funded positions. However, our intent is to include some of them to some extent in the new career field because of our need to develop the entire workforce and maintain balanced capabilities. Contracting already has a separate acquisition career field under DAWIA and for the Corps both 1102s and certain 800 series positions in construction contract administration are currently designated as acquisition. This is expected to remain that way, however, the 800s may be designated in the new career field also (dual designation).

The new Facilities Engineering career field began as a clean sheet of paper that is being filled in over the next several months through the efforts of a Functional Integrated Product Team representing the services and DoD elements. One of the first efforts will focus on development and approval of a Position Category Description and Career Path Definition, which becomes an appendix to DoD 5000.52-M, Acquisition Career Development Program. This new appendix defines the Facilities Engineering Acquisition Career Field typical duties, typical career codes (job series or military equivalent), representative job titles, position location and typical assignments as well as outlining the experience, training and education requirements for the various career levels which are tied to grade.

Upon approval of the new appendix, the Army will initiate workforce assimilation, which is the process for designating which positions are to be considered acquisition.

Over the next several months sub-FIPT's representing the five functional areas of planning, real estate, engineering & construction, environmental and base operations will work with the Defense Acquisition University to develop training courses (mainly online offerings). These courses will be centrally funded and are intended to provide the acquisition training for individuals occupying designated acquisition positions.

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The Facilities Engineering Acquisition Career Field does not replace or conflict with existing Army career programs, such as CP-18. Careerists in Army career programs will continue with career development as before with added acquisition standards if their position is designated as an acquisition position. In addition to providing funded training there will also be opportunities for tuition assistance and other acquisition career development.

For additional information on this new career field please access the website at:

<http://www.foundationknowledge.com>.

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## **CP-18 FOCUSES ON RECRUITING A CAPABLE WORKFORCE**

Contrary to popular opinion, Career Program 18 for Engineers and Scientists (Resources and Construction) is alive and well. A recent validation survey showed that while there is a high level of interest in information about career ladders, many engineers and scientists are not even aware of the program, much less its benefits to them. Those who were aware stressed the lack of a specific training program for environmental professionals and uniformed specialists and the need for updating the CP-18 Army Civilian Training, Education, and Development System Plan, better known as ACTEDS.

Efforts began at the CP-18 Workshop in August 2000, where Environmental and DPW focus groups were established with Army-wide representation. A Process Action Team (PAT) was immediately formed, consisting of representatives from the Department of Army and USACE, to identify relevant issues, develop recommendations, review contractor progress and provide feedback to the Functional Chief's Representative, Bill Brown.

“Our PAT team defined CP-18 environmental customers as environmental user organizations that hire careerists, such as Army installations, the Corps of Engineers, and Research and Development laboratories,” said Bert Jemmott, Environmental Division, HQUSACE. “They all require a supply of competent careerists who need information on training, career paths, mentoring and job assignments. To advise these careerists, career program managers and human resources personnel need guidance and information on training availability, selection criteria, permanent and developmental assignments as well as assistance in hiring and retaining qualified careerists. And that’s what we worked on.”

The PAT team also stressed the need to market any CP-18 improvements with a recommendation for submitting regular features such as a CP-18 Corner or Career Development Corner to existing Army publications. Other findings included a need for soft skills (budget, information management, legal, human resources, community relations, etc.) in many positions and keeping career managers better informed about hiring, retention and other tools.

At the CP-18 Career Program Managers Workshop held 29-30 November 2001, Jemmott explained what has been accomplished so far. “We’ve updated career ladders, KSA's (knowledge, skills and abilities), and training requirements and we’re studying various mentoring programs. We also created a CP-18 website (<http://www.jccs.com/cp18/index.html>). Version 1 was reviewed during the summer of 2001 and Version 2, this winter. We let the contract to make the final changes last October.”

“To help get the word out about CP-18 improvements and changes, we published articles in AEC’s *Environmental Update*, USACE’s *The Environment* and USACE’s *Public Works Digest*,” he

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continued. "In addition, we gave a CP-18 presentation at the CP-18 Career Program Managers Workshop and sent letters to all CP-18 members when the site was up on the web.

CP-18 is also partnering with the Functional Chief's Representative for CP-16 in endorsing web-based tools and looking for other opportunities to partner in the areas of training and developmental assignments, said Jemmott.

"We will continue in our efforts to get the word out," he concluded. "The DPW Worldwide Training Workshop held in December 2001 provided a perfect forum for us and we plan to continue taking advantage of similar opportunities. We will update the website annually and continue to refine our training program."

At the 2002 CP-18 Workshop, Bill Brown stressed the need for all supervisors, managers, and team leaders to take a more personal interest in mentoring and developing the talents and abilities of their people. "Urge your employees to actively seek training and aggressively approach their development. Tell them to use the new ACTEDS to maximize and leverage their professional skills and enhance career development."

There is still a lot of work to be done. Treating the recent improvements as only an 80 percent solution, Brown said that they are currently giving special emphasis to professional registrations, park rangers and architects in the program, and the need to maintain diversity. "We are also working on the problems of retention and hiring," he added.

According to Tony Whitehouse, Directorate of Human Resources, HQUSACE, "Only 4.7 percent of the people are retiring as soon as they're eligible. They're leaving for other jobs, making retention and hiring much bigger concerns right now."

What can the Army, the Corps and the Human Resources community do to attract new employees? Whitehouse emphasized the importance of a more "corporate" approach to marketing and recruitment, to include taking advantage of recruiting workshops and job fairs, targeting downsizing companies, developing new marketing tools and paying for "licenses" and professional registrations. Some new initiatives being explored include "pay based on contribution to the organization" and "pay banding."

Attracting more interns is another recruiting alternative. "We currently have summer hire positions in Hawaii, Germany, Korea and Japan," Brown said proudly. "We have 119 positions and we are the only career program to have all of our positions filled. With decentralized selection of interns, everyone will be able to select their own interns. This means there will be more competition for the same resources."

Stressing the need to take full advantage of professional development courses, the SES tracks, the LDP (Leadership Development Programs, and DLAMP (Defense Leadership and Management Program), Brown said, "There are tremendous opportunities out there! It's a shame DLAMP never filled all of its available positions."

The LDP, which is geared towards training and providing developmental opportunities for GS 11, 12 and 13 careerists, will be switching to annual calls for applicants but currently has only 35 new spaces. (A new class started on February 2, 2002.) CPD involves long-term training related to functional areas. Schools selected must be within 150 miles of the applicant's present work location and cost a maximum of \$35,000.

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Summing up the recent changes to CP-18 and their impacts, Brown re-emphasized that the program can only do so much for careerists. “As a sequenced path to training, education, and professional development opportunities, the revised ACTEDS plan provides all the information needed to build programs for career progression, *but* the building part is still up to you,” he said.

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## PLANNING AND ENGINEERING COMPETENCY

Engineer Circular 1110-1-104, Planning and Engineering Competency, was recently signed and is on the USACE publications website. This EC establishes policy for maintaining planning and engineering competency in USACE in support of the Corps’ vision to be the world’s premier public engineering organization. The circular emphasizes the reasons USACE must maintain technical competency, such as serving the public interest, ensuring quality, and responding to emergencies and contingencies. The role of the private sector is also described.

The circular identifies numerous principles regarding workload planning and workforce development that should be followed to ensure USACE maintains adequate planning and engineering capability. Existing quantitative guidelines for military and civil works are maintained, and are to be applied at the regional (MSC) level. Various qualitative indicators are also recommended.

Districts and centers (TAC and HNC) are required to annually assess their planning and engineering competency in accordance with the principles and metrics in the EC, and make appropriate adjustments to their workload and workforce. MSC’ are responsible for general oversight of the technical competencies of their subordinate districts and regional coordination of planning and engineering capabilities. HQUSACE must determine the necessary national competencies and establish appropriate national experts and centers of expertise.

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## CONSTRUCTION ESTIMATING

This article provides the reader with an overview of construction estimating by answering basic questions and discussing relevant topics.

**How Is Construction Estimating Used?** Construction Estimating is used as a tool for one or more entities to create an understanding of value. Estimating provides an assessment of a project. This assessment enhances the total plan. Estimates provide the extremely high risk unknown cost to a known cost or value. Cooperation of the project’s management, design, construction, and users personnel contribute towards the success of the project. With effective coordination between these team members, errors, conflicts and user discrepancies can be found and minimized. The end product, the final construction estimate will then be the most usable facility possible provided to the customer.

**What Does An Estimator Do?** The estimator coordinates with the owner, designers, technical managers, project managers, construction, operations, contracting, legal, and value engineering for any estimate. The goal of the estimator is to prepare a reasonable estimate for a construction contract or modification specified in the contract documents requirements. If this is not specified in the contract documents, then create a specification within the local construction industries policies and procedures.

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The cost estimator and the designer should work together on developing the format, type, and actual quantities the estimator will need to create the cost estimate.

Estimators are always learning about new innovative products and applications. Rules of thumb often are used to make judgments to check if the estimate is fair and reasonable. The end product of an estimator is clear and definitive because of the bottom line cost. The estimator biddability, constructibility, and operability capability is a valuable resource for any construction project.

**What Is A Construction Estimate?** Construction Estimates for new, remodeling, or modifications work must cover all cost aspects. Materials, supplies, subcontracting equipment, labor, indirect cost, bond, profit, special situations and project impact are all legitimate cost aspects. The estimate must clearly indicate what work is to be subcontracted. It must also be presented in an organized fashion, clearly identifying the elements (or line items), quantities, unit costs, extended costs, sub totals, and final totals. Source(s) of unit costs must be indicated. Always show the prime contractor's and subcontractor's field overhead, home office overhead, profit, and bond.

Another relevant part of an estimate is the Title/Signature Sheet. This sheet should indicate as a minimum the following:

1. The project name / location
2. Contract or bid opening data
3. Number of amendments included if any
4. The proposal due date
5. Owners estimate
6. Price level date
7. Dated signature lines for the estimate preparers', reviewer, and approving official

**Work Breakdown Structure.** With the private industry finally grasping the ASTM E1 557-97 UNIFORMAT II and the Government already using a work breakdown structure, accurate estimates are matching the actual construction cost in a usable method. Work breakdown structure uses both feature codes and descriptions. The work breakdown structure occurs when all the items of a task are put together as one element in a project.

**When And For Whom Is Construction Estimating Used?** During the design process, designers use an estimate to keep the project realistic. During the bidding process, the estimate helps owners award contracts. During the construction process, modification estimates speak to both owners and the builders.

**Types Of Construction Estimates.** Construction project starts are now being established from zero design to 100% design. Because of the many types of construction starts, many types of estimates are being utilized. They vary from pre-concept up to full design to parametric (based on limited characteristics or parameters) and even to very detailed quantity take-offs. During a typical design process, estimates are created at specific stages. The first is a planning stage estimate, which makes a broad sweep of a total project cost. This is followed up with 10%, 65% and 100% design phase estimates. Each estimate brings the user closer to the actual projected cost of the project. The best Construction Estimate matrix should isolate and account for all aspects of the work.

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**Where Is Construction Estimating Applied?** Estimating is applied during all phases of work. These phases of work include programming, predesign, design, final bidding and sometimes during construction. Each phase may require many types of estimates to be generated. Estimates before award of a construction contract are owner driven and after an award are contractor profit driven. Before award of a project, estimates are owner driven because of budget constraints. After award of a project, estimates are profit driven due to Contractor errors and under bidding as a contractor may try to recover his loses. Estimates used during construction are usually generated by modifications.

**Why Use Construction Estimating?** Written estimates reduce the risk of misunderstanding the responsibilities by all parties. A written estimate is a ready reference to show where and why cost occurs and can also provide tangible and reliable evidence in a court of law. Beware of "mere details" and "oh-by-the-way" cost estimate issues because they can impact a project's total cost. The fundamental Construction Estimate principles and procedures should be followed to minimize any loses regardless of what Construction Estimate measures are employed. Fundamental Construction Estimate principles relate to good planning and execution.

**Can A Construction Estimate Predict The Future?** Construction estimating is a very efficient way of preventing potential construction hazards or problems from happening. An estimate can greatly diminish, intercept, or divert hazards by projecting construction issues with known construction technology and with the futuristic application of such technology.

**How Is A Construction Estimate Created?** The types of media used for creating estimating documents range from paper and pencil to electronic spreadsheets, and computer automation. If a media is electronic, then it should be consistent with the industry standards for estimating and windows application program formats. For example the United States Army Corps of Engineers uses an estimating program called Micro Computer-Aided Cost Estimating Systems (MCACES). MCACES is used for the preparation of detailed construction cost estimates. MCACES has a project database and supporting databases from which is produced a detailed cost estimate. The supporting databases include unit price books, crews, assemblies, labor rates, equipment ownership schedule costs, and models. There are many computer products on the market. Computer technology has greatly improved the ease and accessibility of Construction Estimating by providing descriptive text, photographs, schematic drawings, and specifications.

**Summary.** The philosophy of estimating is simple. Provide an estimate of cost, which is fair and reasonable. Estimating Methodology applies correct methods based on the degree of information provided. The degree of detail any type of estimate should have is; a scope of work, quantities, and different types of cost and pricing sources. A Construction Estimate plays a key role and is probably one of the best ways of controlling and minimizing the final cost of a project. Estimating is a skill that can be honed with time and experience. The drive and need to know the bottom line will always make Construction Estimates an important tool for completion and understanding of a project in a competitive industry.

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## HOMELAND DEFENSE – PROTECTING CORPS FACILITIES

In the aftermath of 9-11, Corps districts nationwide, including Kansas City, took on Homeland Defense challenges to deal with potential threats to the nation's security. The effort within the Kansas

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City continues and involves many people, some of whom are known, while other must remain anonymous due to the sensitive nature of the mission.

According to Walter Heimbaugh, the District's overall mission is to support the government's interagency domestic terrorism Concept of Operations Plan (CONPLAN). The plan represents a concerted effort by a number of federal departments and agencies to work together to achieve a common goal. Some of the tasking will require working with the U.S. Office of Homeland Security, the Protective Design Center (PDC), USACE, and other Corps-wide Centers of Expertise. The Corps' Protective Design Center in Omaha was consulted to determine scope. As a result, additional team members were recruited for their unique qualifications. In addition, St. Louis District has been coordinating Homeland Defense efforts with the District.

Heimbaugh said that with the historic cuts in defense spending, the old guard method of placing many armed guards around a key asset is obsolete and cost prohibitive. Today, other protective measures must be used. To help in the process, a Homeland Defense MATOC, or Multiple Award Task Order Contract, has been created, which is an indefinite delivery, indefinite quantity, firm fixed price contract. While this new hybrid contract type doesn't have a proven track record, Heimbaugh said, it clearly defines the role of the Homeland Defense mission and should be a highly effective contracting tool.

The creation of the MATOC required the efforts of many PM's throughout the Division. Harold Yates lead the real time Quality Control efforts, and under the direction of Charlene Points, CT, Pam Wellons completed the RFP package. Because the MATOC crossed over existing KCD Military, Civil works and HTRW programs, as well as many existing MATOC contracting tools, it required everyone to be a team player to create the final product. Some examples of the existing contracting tools are TERC, Rapid Response, START(EPA), PRAC and Military MATOCs. In addition to Heimbaugh, District members who have contributed or continue to contribute to the effort are Bill Root, IM, Christopher Ray, OD-TM, Robert Smith, PM-M, Michael Trial, DP, and Larry Myers, EX, who initiated the effort in the District as an Outreach Program initiative.

The first major milestone that was met by the District after 9-11 was the rapid preventive and protective measures taken at the District's lake projects. These included increased surveillance and closing some of the roads at dams, etc.

More information can be obtained about homeland defense on the Internet at <http://www.fema.gov/r-n-r/conplan/>; or <http://www.whitehouse.gov/homeland/>; or <http://pdcsec.nwo.usace.army.mil/PDC/index.html>.

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## SECURITY ENGINEERING

This article focuses on the identification of an asset, asset threats, security engineering survey/report, qualifications of a Security Engineer and the force protection multiplier aspect of security engineering.

**Identification of an Asset** -- Any person, place or thing may be identified or labeled as an asset. A true key asset is described as being irreplaceable, one of a kind, or critical to success during time of need. An asset can have many classifications of importance. Classifications of assets can be

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described as critical, secondary, or noncritical. Critical means the asset has to be usable at all times or is irreplaceable. A secondary asset supports the critical asset but can be replaced in a timely fashion. Noncritical assets are easily replaceable at any time. A good rule of thumb is if the assumed critical asset can be remanufactured or services reinstated within 48 hours or a reasonable amount of time then the asset is not critical.

**Asset Threats** -- A threat to an asset can be anything or anyone, which can cause that harm. The threat must be identified before it can be stopped or have the effects mitigated. Large planes crashing into key assets were not an issue for civilian targets, nor were chemical or biological attack but after 911 they are now considered. To stop or mitigate a threat, response time must be less than the protective design time. For example, a bank vault has a four-hour fire rating. The threat can be analyzed by adding the detection time and the protection time together and comparing this to the response time. If the sum is less than the response time, then the asset is lost.

**Security engineering survey/reports** -- If a threat causes impact on an asset, then a security engineering survey and report is usually indicated. There are many methods of performing security-engineering surveys. Security engineering surveys provide expertise and recommendations for protective measures. First the threat must be identified. A good security survey will clearly state what are the real assets and provide a listing of supporting items that support the asset. An existing facility should be surveyed for physical and administrative security procedures. The survey should include a night survey for lighting if appropriate. During a security engineering survey personnel should be used as guides and resources.

A benefit to the asset owner is to identify areas for immediate improvement and recommended upgrades. An out briefing to discuss weaknesses and recommended upgrades for immediate benefit should then be given.

If a report needs to be generated then it should cover periods during mobilization for help and where forces are deployed to protect the asset. These forces may include civil law enforcement from local, state and federal authorities. Sometimes National Guard troops may also be required. The survey and analysis of each key asset considers the defined aggressors and their likely tactics. Weapons and tools to mitigate blast effects, existing required construction equipment; procedures and manpower should also be considered. The final security engineering report should spell out all expedient passive defense measures (EPDM). The report should assume the response group knows nothing of the asset or is totally unfamiliar with the asset. Security Engineers develop an expedient passive defense plan for each asset surveyed and also provide a Physical Security Plan.

Some of the benefits a security engineering survey and report can provide are risk management, loss-control and planning for emergency relocation. Keeping data backed up offsite is another way of reducing the loss of critical assets and can also be seen as a benefit of security engineering. A good security engineering survey will also point out training, testing, redundancy and recovery information about an asset.

In summary the security engineering survey should identify the asset and determine the minimum time required to get each critical function restored and prioritized. Well-documented plans and processes can save time and effort during a crisis.

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**Qualifications of a Security Engineer** -- After 9/11 security engineers seemed to pop up over night just like dotcoms did in the late 90's. Everyone seems to have become an expert in security engineering and terrorism. There are many types of physical security specialists. A security engineer should be able to perform site-specific physical security surveys for an asset protection. They are often tasked with mobilization and focus on issues related to mobilization. Security Engineers are trained specifically to develop physical security reports.

The United States Government has used the following selection criteria to identify security-engineering firms. The criteria for selection, in order of importance, are as follows:

Recent specialized experience and technical competence of the firm (including consultants) in the following areas:

1. Structural Analysis due to weapons effects: includes conventional weapon threat assessment related to facility siting and construction, and vulnerability analysis of individual structures given the explosive size and location. Applying air-blast loads on and around structures or other obstructions using two or three-dimensional Eulerian based general-purpose computer software, prediction of free field ground shock parameters and waveforms. Capability to perform calculations of the dynamic response of steel structures, of composite reinforced concrete structures, and of composite structural steel and concrete structures, caused by blast effects. Where appropriate, response calculations shall incorporate nonlinear material behavior and strain rate effects. Simple single degree of freedom and multi-degree of freedom analysis may be required. Must be capable of performing calculations that verify a structure has enough redundancy to resist progressive collapse when subjected to an explosive event.
2. Antiterrorism/Force Protection, Security Engineering, and Vulnerability Assessments. Formulation of plans or planning procedures for integrated security-engineering solutions to mitigating complex, multiple tactic threats to assets, including combinations of criminal, terrorist, and/or espionage related threats. Solutions must be integrated across building, site work, and electronic security system components. Provide capabilities to investigate and analyze protective measures for acoustical eavesdropping threats as defined in the TM 5-853 series. The Contractor will become familiar with the most current edition of DIAM 50-3, "Physical Security Standards for Sensitive Compartmented Information Facilities" (SCIF). Application of engineering for all aspects of commercial and military electronic security systems (ESS) to include, but not limited to, Joint-Service Interior Intrusion Detection System (J-SIIDS) and Integrated Commercial Intrusion Detection System (ICIDS). Performance of security engineering site surveys (vulnerability assessments) that address the identification of threats to assets, the vulnerabilities of assets to those threats, and the protective measures to mitigate the threats. The threats may include criminal, terrorist, or espionage related tactics.
3. Capability to develop programming level design recommendations and construction cost estimates for security measures identified to mitigate shortcomings discovered during the security engineering survey and vulnerability assessment.
  - a. Management. Overall capability of management to pull the expertise of all the team together to produce a quality final product. We will be evaluating your team on your general management of delivery order tasks including your organizational structure identifying key individuals and their management duties with respect to the delivery orders; list of subcontractors showing when

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and how you plan to use them and how they will be integrated into the team; and work scheduling and quality control procedures to be used in contract performance.

b. Quality control procedures and team organization, including consultants as described in the Management Plan. The selected firm must be able to provide products that meet guidance, criteria and quality standards without detailed review by the District. The firm must also present a logical team organization that provides an effective method of coordination and communication between the individual team members as well as consultants.

c. Professional qualifications and specialized experience of the proposed team members (including consultants) in providing services similar to those listed above.

d. Capacity to accomplish the work in the required time, including the ability to complete more than one task order at a time.

e. Past performance on previous contracts with respect to cost control, quality of work, and compliance with performance schedules.

**The Force Protection Multiplier Aspect** -- A wisely placed physical resource used to protect an asset and free up human resources is said to be a Force Protection Multiplier. A program should have a purpose to provide protection during any event or as a minimum during a fire. Prior to and during mobilization, a Force Protection Multiplier can increase the assets survivability aspect. A good design will provide a Force Protection Multiplier, thus providing greater protection. Funding is often a major concern and cost return should always be considered. Using well thought out engineer construction measures, which act as a Force Protection Multiplier, will provide a good asset protection program.

**Summary** -- Everyone should be part of a security program. Further study in other sources is highly recommended. The scope and complexity of Security Engineering is vast. The facts presented in this article are simply the bare-bones basics and should not be considered all-inclusive by any means. Volumes have been written on highly specialized Security Engineering subjects. Security Engineering is about relationships between assets and protection.

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## ARCHITECTS ROLE IN SECURITY DESIGN

Every single construction trade and designer has been affected by the past year's turn of events one way or another. Our nation's landscape has changed forever and the architect must be part of the team to turn a tragedy into a positive step for humanity. We are now an international community, no longer isolated from the events of the world. This article will focus on the ever-changing role of the architect.

The architect's role has become increasingly larger, due to the events of 9-11. The word architect is Greek for "master builder." Seldom did architects feel the need, since medieval times, to deal with security issues, but now that has all changed. Today the architect must take security driven-elements and incorporate them into a building system. Due to past homeland events architects must be profound in their designs. Architects must deal with the struggle against helplessness many people feel, brought about by a perceived lack of protection brought about by the events of 9-11.

People find protection in safe structures, natural or man made. Thus, architects must now be masters of design and use "highly scientific naturalism" to comfort the end user. The greatest achievements may be to have designs that are constructed, yet are not easily visible or noticed. As homeland defense

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measures are refined, architects will be required to provide individual directions that embrace forward-looking designs and design-build efforts that are meticulous in nature. That is, architects must be innovators, willing to experiment in their work with great imagination and thought.

The history and theory of architectural security design is about relationships between assets and protection. For example the basic principles of construction of post & lintel, the round arch, pointed arch, steel cage, cable, air enclosures and fiber hybrids, evolved because of a single thought of a need for safety. The past was always used and drawn upon to model a structure, especially for fortifications. If it worked, do it again with less until it fails; that was the process. The three main factors that are combined to make a successful project are site, materials and best methods of construction. The architect historically negotiated whatever obstacles lay ahead, and made them clear, definitive and functional for the end user.

The day of massive manpower allocations to protect an asset is gone. Response force makeup and time analysis of the armed forces were once never a factor, except for fire insurance. Now they are included in asset design efforts. The major tactics of terrorism include hostage taking, bombing, arson, high jacking, assassination, kidnapping, cyber attack, radiological attack, electronic sabotage, biological attack, electrical power, and chemical attack. Architects today must design to prevent, mitigate and to deter any such harmful attack.

To address the asset security concerns, every architect should take the time to write a statement of vision and approach to their efforts in dealing with project security elements. This initiates actions and sets standards for the security element designers. The art of not interfering with nature, and tasking, comes into play. The more the security element is translucent, the better the design is, in most cases. The greatest designs are the ones that blend in with the surrounding. Whether the element is in an office setting or out in a field, the architect must incorporate the whole design concept. The environmental and geographic factors to be considered are location, landforms, terrain, vegetation and land use. Landscaping and site element have become much more important. One site element, for example, is the refuge removal site. At one time it was totally forgotten. Typically the disposal container site was located in parking lots or by a pathway. Today it has become a number one item for security placement and must be strategically located.

The Architect must be able to identify and evaluate the asset. The architectural/ structural, barriers, access control and detection systems need to blend in with the surroundings. The architect historically takes the lead role beyond manager tasking to give the proposed assessment /design team disciplines a goal.

1. Architects must outline a construction plan listing passive physical means to be placed/installed.
2. They must address the proposed public and nonpublic access plan to the areas.
3. They must propose permanent passive physical means to be placed.
4. They must propose public and non-public access plans during daily activities.
5. The architect must have a feel for the total construction, labor, and materiel cost for the permanent protective measures.
6. One architect goal must be to defeat terrorism by making facilities even more accessible, yet not close up the building structures.

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Training and renewal is an important part of an architect's goal to reach his potential. Architects must now allow their talents to flourish during times of need. Architects have monumental tasking ahead to instill confidence for the end users. To do this fully, train Assess Design Build teams to be able to use advance designs that will provide public and domestic structures with a high quality product. To renew an architect's sprit, one might consider going to an AIA convention. This would be a great place for the accumulation of new ideas and fresh approaches. For example, with new technology, fast tracking will be the norm in coming years due to increased communications for awareness among architects.

As many professional organizations start to develop an articulated program to address security issues, we must all work together. The architect has many political, financial, regulatory, procedural and operational security considerations to deal with now. The US Army Corps of Engineers must remain a leader in security matters. We have begun a new era for Architects and we have new tools with which to build a new vision of "form follows function." The new threat to cause harm to the world is often from ambitious and sophisticated sources. Architects must now think in a "terrorist action prevention program design effort" mind set. Architects must deal with the smallest detail to rebuild America's reputation as a safe place to live and work. Architects in America, like no other country, have a wide rage of materials with which to build from. Fascination with technique for safety issues has made the America architect unique. The challenge of America's architects is to design structures to make them more accessible while defying the terrorists' ability to do harm. Open plans and easy transitions between indoors and outdoors can be accomplished by using innovations. Architects must accept this new challenge to produce a more user friendly, finished product.

*POC: WALTER J. HEIMBAUGH, RA, CENWK-EC-DC, 816-983-3306*

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## *Dam Safety*

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### 22<sup>ND</sup> USSD ANNUAL MEETING AND CONFERENCE

The 22<sup>nd</sup> USSD Annual Meeting and Conference will be held June 24-28, 2002 in San Diego, California. The theme of the 22<sup>nd</sup> USSD Conference is ***Dams — Innovations for Sustainable Water Resources***. An important feature of the Conference will be the opportunity to visit San Diego County Water Authority's Olivenhain dam site. When completed, Olivenhain will be the highest **roller-compacted concrete dam** in the U.S. Design and construction of RCC dams, including Olivenhain, will be featured during two days of oral and poster presentations of more than 50 technical papers.

In addition to RCC dam technologies, the Conference will include papers on project delivery methods, environmental management, permitting and other contemporary dam issues.

Prior to the conference, the Third U.S.-Japan Workshop on Advanced Research on Earthquake Engineering for Dams will precede the USSD Conference on June 22 and 23. The theme of the Workshop is ***Future Directions in Seismic Design and Evaluation of Dams***. The Workshop will feature keynote speakers and technical presentations by speakers from the U.S. and Japan.

Continuing Education Units offered through Colorado State University will be available for Workshop and Conference participants. CEU information will be available at the Conference.

Technical papers addressing the Conference topics will be featured during the Tuesday evening Poster Session and Reception. The table-top-exhibition will also be open during the Poster Session and Reception.

All Conference participants are invited to attend the USSD Annual Meeting of Members on Monday afternoon.

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Following a brief review of 2001 USSD activities; Members will have an opportunity to present their ideas and suggestions about USSD to the Board of Directors. The Annual Meeting will be followed by a dinner cruise on San Diego Bay.

The Host of the 22nd Annual Meeting and Conference is the San Diego County Water Authority.

Participants and guests will have the opportunity to join two interesting Field Tours. The Thursday Field Tour will begin with a visit to the Olivenhain Dam construction site. Following lunch in a nearby park, the tour will go north to the Temecula, California, area to see relatively new grape vineyards and to visit two wineries.

The Friday Field Tour includes visits to two projects north of San Diego. In the morning, participants will visit the Diamond Valley Lake, a major water storage project developed by the Metropolitan Water District of Southern California. After lunch, the tour will visit the Corps of Engineers' Seven Oaks Dam, an earth-rockfill dam on the Santa Ana River.

The Workshop and Conference will be held at the San Diego Marriott Mission Valley, 8757 Rio San Diego Drive, 619-692-3800. The Marriott is a full service hotel located about 10 minutes from the San Diego Airport. The hotel is near a San Diego Trolley stop and is about one mile from a major shopping center.

The special rate for USSD Conference participants and guests is \$125 single or double, plus tax. To make your hotel reservations, call the Marriott at 800-228-9290 and request the special USSD rate. The room block at this rate is guaranteed only through May 23, 2002. Reservations made after May 23 will be on a space available basis.

The Participant Registration Fee for the Annual Meeting and Conference includes the Conference Proceedings, participation in all technical sessions, the Monday evening dinner cruise, lunches Tuesday and Wednesday, Tuesday evening reception, Wednesday reception and dinner, and Thursday and Friday Field Tours, including lunches and Thursday winery tours. To receive the Early Registration Rate, you must register by June 12.

An [online](#) Registration Form is available. Contact [USSD](#) to receive a print version of the Program and Registration Form.

*POC: CHARLES PEARRE, CECW-EIS, 202-761-4645*

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## **DAM SAFETY 2002**

The Association of State Dam Safety Officials (ASDSO) annual conference will be held September 8-11, 2002, at the Saddlebrook Resort in Tampa, Florida.

The technical agenda will be highlighted by sessions on Dam Safety Research, Hydrology (PMF), Gates, Dam Construction and Rehab Case Studies, RCC, Instrumentation, EAP's and Liability, Environmental Issues, Seepage, Hydraulics/Scour, Dam Inspections, Seismic Issues, Risk, and Dam Security.

Call the Saddlebrook Resort at 1-800-729-8383 to make reservations at the ASDSO conference rate. Discounted conference rates are available until the cutoff date of August 6, 2002.

Saddlebrook Room Rates for Dam Safety 2002:

Deluxe Guest Room: \$95 plus tax per night.

One Bedroom Suite: \$120 plus tax per night.

Two Bedroom Suite: \$170 plus tax per night. All rates are for single or double occupancy. An

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additional \$6 per night resort fee covers use of the fitness center, local phone calls and long distance access charges.

Additional information on a Corps Dam Safety gathering at Dam Safety 2002 will be furnished in the June-July issue of the newsletter.

*POC: CHARLES PEARRE, CECW-EIS, 202-761-4645*

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## *Information*

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### **MING TSENG'S RETIREMENT**

Dr. Ming Tseng, Water Resources Branch, will retire from Headquarters, USACE, on 3 June 2002.

A retirement luncheon for Ming Tseng will be held on Thursday, 6 June 2002, from 1130 until 1330 at Pier 7, 650 Water Street, S.W., Washington, DC. The cost of the luncheon is \$22.50. Reservations for the luncheon are due by 30 May 2002 with payment by check or cash to Mr. David Wingerd, 4306 Braeburn Drive, Fairfax, Virginia 22032-1804. More information can be obtained from either Anjana Chudgar or David Wingerd.

Plan to join the members of Engineering and Construction Division at this retirement luncheon.

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### **MODIFICATIONS TO EXISTING CONSTRUCTION CONTRACTS**

Modifications to existing construction contracts are another part of estimating. A modification is defined as any written or verbal change in the terms or conditions of a contract. The modification of a contractual requirement changes the scope of work, which then causes a changed cost. Sometimes a bilateral agreement making a change to the terms or conditions of a contract by two parties is called a supplemental agreement. This may be either within or not within the existing scope of the contract. Sometimes the owner has to issue a unilateral change order without the approval of the Contractor. This is when arbitration steps in or the Contractor is released from his contractual work.

**The Modification Process** -- The modification process begins where the owner or Contractor recognizes the need for a change. Typically, a request, verbal or written, is sent to the Contractor for a proposal. The owner then reviews and evaluates the Contractor's proposal. On very large projects a Prenegotiation Objectives Memorandum (POM) is generated before negotiations begin in order to keep a project going on schedule. A Contractor must provide the owner a good cost analysis to document his claim if any. The owner and contractor should always document their positions. After both parties agree at negotiations it should be documented. All errors on the POM and estimates should be corrected and updated. A final agreement is then made and the modification is written. Both the Contractor and the owner must sign off for the modification to become active. A very important position everyone should agree on is if an error is found amend the error, correct the error and go forward. If an agreement can't be reached, then an independently prepared estimate should be made. From this a reasonable equitable adjustment should be reached.

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**The Final Modification Of A Construction Estimate Product** -- Revision of a Construction Modifications Estimate is formally revised after bid opening, or during or after negotiations. The figures of both the initial and revised estimates should be shown and the details of the basis for revisions should be fully explained and documented. The same authority that approved the initial Construction Modification estimate should approve the revised estimate.

**Other Change Order Types** -- There are three types of change orders. They are (1) unpriced change orders, (2) unilateral change order due to a contractor failure to submit a proposal, and (3) unilateral change orders due to failure to agree on a price. These three often end up in arbitration or the court system. A good rule is to have arbitration procedures outlined in the construction contract before the need should arise. There are local arbitration groups and organizations nation wide who can provide sound information.

**Modification Issues** -- For the preparation of detailed construction modification cost estimates the following issues should be considered. The estimate should be prepared by technical personnel for use in analyzing costs associated with the evaluation of bids and proposals. The owner's estimated price tabulated should be based on a reasonable cost to the Contractor and include profit. What is fair and reasonable is always being reestablished by the construction industry. Construction modification changes are required usually when the owner has poor design documents; poor contractor planning or before outside events beyond the contract scope unfold. The modification estimate supporting databases, often include a standard unit price book, crews, assemblies, labor rates, equipment ownership schedule costs and models. All databases should be able to work in conjunction with each other to produce a detailed cost estimate.

**Impact Of Modifications To A Construction Estimate** -- Modifications to a Construction Estimate weigh heavy on the projects ultimate success. The effect of a change order on the original contract work is called impact. When a modification is generated, the impact work required changes the cost estimate.

Two standard types of impact cost are acceleration and delay/disruption costs. Acceleration requires an equitable adjustment labor, equipment and inefficiencies. Some examples of delay/disruption costs are extended overhead items, escalation, learning curve and equipment on standby.

Cost types are equitable adjustment, cost only, time only, and profit included. Equitable adjustment costs are direct field and home office overhead, impact and profit. Time cost are incurred when a project has a variation in estimated quantities, differing site conditions use/possession prior to completion, changes, owner furnished property, inspection of construction and partial termination for convenience. Cost and profit adjustments are included in price reductions, defective work/products, and partial or total termination for convenience of the owner. Cost only is for taxes, suspension of work, and Value Engineering cost proposal by the Contractor. Time is usually only given for defaults by the Contractor or owner pending the case.

**Claims In Construction Estimating** -- Estimators must always look out for many issues or claims. For example when a Prime Contractor uses a subcontractor who hires a subcontractor who hires a subcontractor fair and reasonable mark up of profit becomes inflated and unreasonable to an owner. Most court cases show and establish the importance of equitable adjustment based on the proper measure of what is a reasonable cost.

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**Avoiding Claims In Construction Estimates** -- One of the best ways of preventing a claim is by having an estimator do checks on a set of construction documents. By doing the quantities, reading the plans and the specifications, and having to determine what is being constructed, the estimator can find holes in a job. By questioning the designers, the estimator adds improvements to the plans and specifications before the project is under a construction contract and modifications have to be made.

By spot-checking and using rules of thumb, an independent reviewer can emphasize those areas of the project, which need further consideration. This is a preventative measure, which provides limited protection from a potential problem.

**Summary** -- In summary the functionality of a Construction Modification Estimate should be consistent with the industry standards. The same philosophy and methodology used in Construction Estimating should be applied to a Construction Modification Estimate. By applying consistent breakdowns of cost and using the best information available, the estimate should provide the users with a working document, which can keep a project on course. The degree of detail any construction estimate or basic estimate should have is a scope of work, quantities, and different types of cost and pricing sources. A Construction Modification Estimate is not a temporary fix nor exact, but rather a precisely made product. Construction Modification Estimate effectiveness improves as it becomes proven over time and better established at the construction site. A Construction Modification Estimate plays a key role and is probably one of the best ways of controlling and minimizing cost.

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## JOB VACANCIES

Engineering and Construction Division have received the following job vacancies announcements.

**Supervisory General Engineer or Supervisory Architect**, GS-0801-15 or GS-808-15, Sacramento District, Corps of Engineers, Chief, Engineering Division -- This position will be open through the Western Regional CPOC. Interested individuals will need to be registered in the Western Regional CPOC RESUMIX system. For more information on this position contact Nicole M. Gauthier at (916) 557-7490 or email [nicole.m.gauthier@spk01.usace.army.mil](mailto:nicole.m.gauthier@spk01.usace.army.mil).

**Engineer Position**, GS-0808/0810/0830/0850 series, Albuquerque District, Engineering and Construction Division -- The Albuquerque District is establishing a new resident office in western New Mexico to handle a significant increase in workload in that portion of New Mexico. Initial projects to start late this spring include two design-build schools for the Bureau of Indian Affairs, total cost approximately \$50 million and a small flood retention dam in Gallup, New Mexico. Other work in NW New Mexico would also be assigned to this office. This is your chance to get in on the ground floor and participate in selecting your staff, currently estimated between six and ten people. The Resident Engineer will have ACO authority and report directly to the district office. Position will soon be recruited, in the 0808, 0810, 0830, & 0850 series. Interested candidates need to be registered in RESUMIX in the Western Regional CPOC. If you have any questions concerning this position contact William McCollam at (505) 342-3445 or email [william.j.mccollam@spa02.usace.army.mil](mailto:william.j.mccollam@spa02.usace.army.mil) or Gary Gamel at (505) 342-3434 or email [gary.l.gamel@spa02.usace.army.mil](mailto:gary.l.gamel@spa02.usace.army.mil).

**Civil Engineer, Mechanical Engineer, Electrical Engineer, or Natural Resources Manager (Interdisciplinary)**, GS-0401/0810/0830/0850-15, Omaha District, Operations Division -- The

Omaha District is seeking individuals interested in the position as Chief, Operations Division. For more information on this position contact Lynda VanHouse at (402) 221-4076 or email [lynda.k.vanhouse@nwo02.usace.army.mil](mailto:lynda.k.vanhouse@nwo02.usace.army.mil).

**Supervisory Architect, Supervisory Civil Engineer, Supervisory Mechanical Engineer, Supervisory Electrical Engineer (Interdisciplinary)**, GS-0808/0810/0830/0850-15, Jacksonville District, Engineering Division – The Jacksonville District has advertised for a Chief, Engineering Division. The announcement number S02GV1070915LB8 is opened until 5 June 2002 through the South-central CPOC, at Redstone Arsenal, Alabama. The announcement is available on the Internet at <http://cpol.army.mil/va/scripts/public.html>. If you have any questions concerning this position please contact Sharon F. Tarlton at (904) 232-1192 or email [sharon.f.tarlton@saj02.usace.army.mil](mailto:sharon.f.tarlton@saj02.usace.army.mil).

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## NEW PUBLICATIONS

All new publications issued by HQUSACE are now issued electronically. This results in some offices not knowing about new publications for some months after the official issue date of the publication. Corporate Information (CECI-IV) maintains a list of new publications issued in the last 180 days on the Internet at <http://www.usace.army.mil/inet/usace-docs/new-pubs/>.

In order to assist Engineering and Construction offices in obtaining the latest publications, we will include a listing of the newest publications in each issue of the E&C News. The lists in this issue include all publications issue from 1 January 2002 through 1 May 2002.

### New Engineer Circulars

PUB.NUMBER	PGS	PROPONENT	TITLE	PUB.DATE	EXP.DATE
<a href="#">EC 25-1-302</a>	001	CECW-ETE	Information Management - Rescission	29 Mar 02	31 Mar 04
<a href="#">EC 37-3-1</a>	006	CERM-BA	Financial Administration: Carryover Supervision and Administration (S&A)	30 Jan 02	31 Dec 02
<a href="#">EC 1110-1-104</a>	007	CECW-E / CECW-P	Engineering and Design - Planning and Engineering Competency	31 Mar 02	31 Mar 04
<a href="#">EC 1130-2-214</a>	031	CECW-ON	Project Operations - Oleoresin Capsicum (Pepper Spray) Program	22 Apr 02	01 Jun 04

### New Engineer Manuals

PUB.NUMBER	PGS	PROPONENT	TITLE	PUB.DATE
<a href="#">EM 1110-2-1003</a>	101	CECW-EE CECW-OD	Engineering and Design: Hydrographic Surveying	01 Jan 02

### New Engineer Pamphlets

PUB.NUMBER	PGS	PROPONENT	TITLE	PUB.DATE
<a href="#">EP 75-1-3</a>	157	CECW-ET	Explosives - Recovered Chemical Warfare Materiel	04 Jan 02

			Response	
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### New Engineer Regulations

PUB.NUMBER	PGS	PROPONENT	TITLE	PUB.DATE
<a href="#">ER 10-1-47</a>	004	CERM	U.S. Army Humphreys Engineer Center Support Activity	15 Mar 02

### New HQUSACE/OCE Army Technical Manuals

PUB.NUMBER	PGS	PROPONENT	TITLE	PUB.DATE
<a href="#">TM 5-690</a>	0183	CEMP	Grounding and Bonding in Command, Control, Communications, Computer, Intelligence, Surveillance, and Reconnaissance (C4ISR) Facilities	15 Feb 02

### New Office Memorandums

PUB.NUMBER	PAGES	PROPONENT	TITLE	PUB.DATE
<a href="#">OM 600-1-2</a>	008	CEHEC-CP	Alternative Work Schedule	01 Mar 02

POC: LIZ PANNELL, CECI-IV, 202-761-5974

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## *Upcoming Regional and National Meetings and Conferences*

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### 2003 INFRASTRUCTURE SYSTEMS CONFERENCE

The U. S. Army Corps of Engineers is sponsoring the 2003 Infrastructure Systems Conference. The South Pacific Division and the Los Angeles District will host the conference. It will be held at the Bally's Hotel in Las Vegas, Nevada. The conference will consist of plenary session and break out workshops on security engineering, structural engineering, geotechnical/materials engineering, electrical engineering, mechanical engineering, construction, specifications, and dam safety. High participation and attendance by these disciplines, workload permitting, is recommended. The conference will also have an exhibit area for display booths for participating manufacturers and associations. The theme of the conference will be on engineering security and safety into DoD and civil works facilities. The conference will commence at 0800 hours, Tuesday, 6 May 2003, and continue through 1200 hours, Thursday, 8 May 2003. Thursday afternoon will be available for optional training sessions. This conference is primarily an engineering training conference. Continuing education units will be provided for those attending the conference and the optional training sessions.

We are providing this advance information for planning purposes. A website will be developed which will have specific information including the agenda, on-line registration, hotel reservations and exhibitor information. The website address will be provided as soon as the website is established.

Each workshop has a point of contact as follows:

<b>Workshop</b>	<b>Contact</b>	<b>Telephone</b>
Security Engineering	Joe Hartman	(202) 761-0301
Structural Engineering	Pete Rossbach	(202) 761-1518
Geotechnical/Materials Engineering	Jim Chang	(202) 761-5904
Mechanical Engineering – Military Sessions	Sami Rahman	(202) 761-7698
Mechanical Engineering - Civil Works Sessions	Dan Casapulla	(202) 761-5544
Electrical/Electronic Engineering	Bob Billmyre Bob Fite	(202) 761-4228 (202) 761-7169
Construction	Brad James	(202) 761-5541
Dam Safety	Charles Pearre	(202) 761-4645
Specifications	Rick Dahnke	(202) 761-4125

*POC'S: ROBERT KOPLIN, CESPL-ED, 213-452-3629,  
ALBERT SIDHOM, CESPDMT-ET, 415-977-8116,  
AND ROBERT DIANGELO, CECW-ETE, 202-761-5543*

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## ASCE NATIONAL TECHNICAL CONFERENCES

The Environmental & Water Resources Institute (EWRI) of ASCE is sponsoring are five upcoming conferences. The conferences are as follows:

**Conference on Energy Climate, Environment and Water — Issues and Opportunities for Irrigation and Drainage**, July 9-12, 2002, San Luis Obispo, California — Irrigators are facing new challenges as competition for water supplies, coupled with significant increases in energy costs and environmental considerations, threaten the economic viability of irrigation. Climate changes, whether natural or a result of human activity, are providing additional concerns. The Conference, Sponsored by USCID and the EWRI/ASCE, will provide a forum to discuss and evaluate these issues, with a focus on the technology being applied to meet the challenges. An Exhibition on Thursday, July 11, will feature this technology. For more information see [http://www.uscid.org/i\\_slope.html](http://www.uscid.org/i_slope.html).

**An International Perspective on Environmental Engineering — 2002 Joint CSCE and EWRI/ASCE International Conference on Environmental Engineering**, July 21-24, 2002, Niagara Falls, Ontario, Canada — This conference will address various environmental problems that affect both the United States and Canada along the border between the two countries. For more information see [http://www.eos.uoguelph.ca/webfiles/CSCE\\_ASCE\\_2002/](http://www.eos.uoguelph.ca/webfiles/CSCE_ASCE_2002/).

**Joint Conference on Integrated Trans-Boundary Water Management (ITWM)**, July 23-26, Traverse City, Michigan — This conference is jointly sponsored by the Universities Council on Water Resources (UCOWR), Environmental & Water Resources Institute (EWRI/ASCE), the National Ground Water Association (NGWA), the U.S. Army Corps of Engineers Institute for Water Resources (CEIWR), the International Joint Commission (IJC), and the International Boundary and Water Commission (IBWC). Explore numerous facets of the challenges posed by water management that crosses political boundaries. Water resources heed no jurisdictional boundaries. This incontrovertible fact can produce complications in the management of trans-boundary water resources. A stream can flow across boundaries, or perhaps form the boundary between two political entities, each with

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differing needs, legal systems and cultures. Numerous jurisdictions may depend upon a lake for water supplies, waste disposal, transportation and food. A single aquifer system can underlie numerous jurisdictions, with its discharge areas in one jurisdiction and recharge areas in others, and abstraction all throughout the extent of its area. Even if political entities are on friendly terms, their different cultures, political systems, laws and management objectives can exacerbate efforts to achieve sustainable management of trans-boundary waters.

The trans-boundary aspects of water bodies can lead to conflict between jurisdictions, be they states, nations, provinces, municipalities, or Native Americans and First Nations. But trans-boundary water resources can also promote peace and accommodation, as jurisdictions that share a common water resource realize that cooperation is the only way to ensure resource protection and sustainability.

For more information see <http://www.iwr.msu.edu/ucowr/> or contact Gerry Galloway, General Conference Chair at [gallowayg@washington.ijc.org](mailto:gallowayg@washington.ijc.org) or Ari Michelsen at [a-michelsen@tamu.edu](mailto:a-michelsen@tamu.edu).

**EWRI-IAHR Hydraulic Measurements and Experimental Methods Conference (HMEM)**, July 28-31, 2002, Estes Park, Colorado — This conference will allow hydraulic practitioners involved in measurements and development of experimental methods to gather, focus on topics related to the field, and share experiences related to those procedures. For more information about this conference see <http://www.ewrinstitute.org/hmem/>, or contact Cliff Pugh, Conference Co-Chair, at (303) 445-2151, or Kevin Oberg, Conference Co-Chair & Technical Program Chair, [kaoberg@usgs.gov](mailto:kaoberg@usgs.gov).

**The 9<sup>th</sup> International Conference on Urban Drainage**, September 8-13, 2002, Portland, Oregon — This one of the foremost international meetings where engineers, scientists and managers of urban water resources exchange ideas about the urban water environment. The ninth ICUD continues the tradition begun in 1978 in Southampton, UK, exploring state-of-the-art technology and bringing together colleagues from around the world to address critical issues in the practice of urban storm drainage. No other meeting on urban water issues attracts such a diverse group of participants. For more information see <http://www.asce.org/conferences/9icud2002/> or contact Ms. Leonore Jordan, Conference Manager, at [ljordan@asce.org](mailto:ljordan@asce.org).

*POC: BEVERLEY B. GETZEN, CECW-PD, 202-761-4489*

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## HYDROLOGIC MODELING CONFERENCE

**Hydrologic Modeling for the 21st Century** is the theme for the Second Federal Interagency Hydrologic Modeling Conference to be held this summer, July 28 – August 1, 2002 at the Riviera Hotel, Las Vegas, Nevada. The conference is a function of the Subcommittee on Hydrology, Interagency Advisory Committee on Water Data. Earlier conferences were held in Fort Collins, Colorado in 1993, and in Las Vegas, Nevada in 1998. The conference is open to all interested parties; the 1998 conference was most successful and had significant national and international participation by government agencies, universities, and private industry.

One of the needs identified in the previous conference was for better coordination among similar model development/support activities in the profession. To address those needs and plan for the future, the Subcommittee decided to hold this new conference. In November 2000, a workshop was held in Tucson, Arizona to plan for the conference and identify key issues on hydrologic model development and maintenance. Excellent insights from that workshop are summarized on the website: [http://water.usgs.gov/wicp/acwi/hydrology/mtsconfwkshops/AZ2000\\_wkshop.html](http://water.usgs.gov/wicp/acwi/hydrology/mtsconfwkshops/AZ2000_wkshop.html).

The 2002 Conference will follow a mixed set of formats including formal presentations, model demonstrations, field trips, and short courses. Over 180 abstracts have been submitted on the following topics:

New observations and data for Hydrologic Modeling	Uncertainty estimates for data, parameters and results
Instrumentation to support Hydrologic Modeling in the 21st Century	Model Sensitivity Analysis and Error Estimates
Evaluation of Hydrologic Models by Regime and Climate	Advances in Model Calibration Techniques
Standards for Hydrologic Data	Remote Sensing/GIS Applications
Agency Specific Hydrologic Modeling Practices	Data Sharing Information Management Automation
Research versus Operations Needs in Hydrologic Modeling	Environmental River Management
Documenting Quality of Hydrologic Data	Flood Hydrology
Establishing Standards for the Evaluation of Hydrologic Models	Case Studies of Interagency Cooperation in Hydrologic Modeling
Error Propagation for Hydrologic Models	Modeling of Major River Systems
Identifying Model Parameters	Landscape Erosion, Sediment Transport
Sustaining River Environments	Modeling Water Quality Transport Processes
Using Models in Developing TMDL's	Modeling Dam Removal

Details about the conference activities and papers are being prepared now and should soon be on the website: <http://water.usgs.gov/wicp/acwi/hydrology>

Arlen Feldman of the Corps Hydrologic Engineering Center, CEIWR-HEC, is the overall conference chair. Other members of the organizing committee are: Ming Tseng, Corps HQ; Don Frevert, USBR, and George Leavesley, USGS, Co-Technical Program Chairs; and Doug Glysson, USGS, Operations Chair.

*POC: ARLEN FELDMAN, CEIWR-HEC-HH, 530-756-1104*

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# *Training*

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## **THE EXECUTIVE ASSESSMENT PROGRAM (EAP)**

The Executive Assessment Program (EAP) is an intense, dynamic, six-day program that allows senior leaders and executives to evaluate their current effectiveness as organizational leaders and develop a plan for improvement in the future. Attendees are assessed in several leadership areas using 360-degree, multi-rater feedback, group feedback, one-on-one interviews, leadership style and preference, and diagnostic instrumentation.

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This program gives top executives a comfortable, secure environment in which to evaluate their leadership style and effectiveness and focus on high-level challenges in the company of their peers.

The EAP makes extensive use of validated assessment and diagnostic instrumentation.

Some Key Results:

- Receive personalized assessments of executive leadership competencies
- Receive feedback from superiors, peers, subordinates and customers
- Assess individual participant potential for higher-level opportunities
- Evaluate individual potential for career derailment
- Develop a tailored individual development plan based on the senior executive services (SES) competencies
- Assess who and where they are as leaders and benchmark themselves against others at the same level, with comparable pressures and responsibilities.
- Gain knowledge about critical leadership issues facing executives in the 21st century.
- Receive a thorough fitness evaluation, with an emphasis on how to handle stress and workplace health issues. The program also includes several light aerobic workouts.

Who Should Attend: Senior managers and executives will benefit most from this program. Individuals in SES candidate development programs will also want to attend this program. Individuals who have attended the Federal Executive Institute (FEI) four-week program or the Management Assessment Program (MAP) find the EAP an excellent follow-up 2-3 years after attending that course.

PLEASE NOTE: An extensive amount of assessment instrumentation must be completed before attending the program.

Location: Western Management Development Center Denver, CO

Dates: Sep 22 - Sep 27, 2002

LENGTH: 1 week (Sunday 1:30pm through Friday noon)

Contact WMDC today for space availability 304-870-8008. Or learn more about this seminar at <http://www.leadership.opm.gov/content.cfm?CAT=EAP>.

*POC: CHARLES M. PEARRE, CECW-EIS, 202-761-4645*

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### **MANAGEMENT ASSESSMENT PROGRAM (MAP)**

The Management Assessment Program (MAP) is an intensive, six-day program that allows mid-level managers to gain insight into their leadership strengths and weaknesses. Participants will be evaluated in several leadership and personal competency areas. Individuals attending this program receive multi-rater personalized feedback from several sources: 360-degree multi-rater feedback instrumentation, assessment specialists, peer feedback, experimental exercises, and personality assessments.

Some Key Results:

- Gain an honest and candid appraisal of their leadership style and behaviors from a wide group of observers
- Leave the program with an Individual Development Plan for personal and professional growth

- 
- Receive personal assessment of leadership and management competencies
  - Learn the major reasons why leaders are successful, and what derails them
  - Work extensively with a personal assessment specialist
  - Learn how to lead through change

Who Should Attend: Experienced managers or team leaders will benefit most from this program. Individuals in SES candidate development programs will also want to attend this program.

Location: Western Management Development Center, Denver, CO

Dates: June 2-7, 2002 and August 18-23, 2002

Contact WMDC today for space availability 304-870-8008. Or learn more about this seminar at <http://www.leadership.opm.gov/content.cfm?CAT=MAP>.

*POC: CHARLES PEARRE, CECW-EIS, 202-761-4645*

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### **PROJECT MANAGEMENT BREAKTHROUGHS**

Learn what over 15,000 people worldwide have learned!

Discover how:

- Nestle Corporation saved \$1.2 million on a single project!
- Statistics Canada Census Project (largest recurring - non-military government project in Canada) reduced 5 days of change management impact analysis into 5 minutes.
- Explorer Pipeline completed execution planning 97% faster at only 4% of the cost.

Project Management Breakthroughs simplifies and makes practical the application of Project Management skills. The course provides individuals an effective and proven process to engage project teams allowing them to focus on what is important.

By employing 75% interactive learning in small teams we ingrain the process of using Objective Driven Logic to produce Project Execution Plans with flawless logic. Participants work through six detailed & increasingly complex case studies throughout the workshop.

This program enhances a leader's ability to obtain support from project team members and key people in an organization. Participants will develop a confidence & eagerness to attack any project regardless of size or complexity.

Featured Benefits

- Identify, resolve & track complex resource conflicts
- Grasp the relevance of "e-Project Management" and effectively manage multiple projects in MS Project including tracking, reporting and handling changes
- Accurately establish & manage dependencies between multiple projects
- Convert strategic goals into actionable project plans
- Adapt to incremental & transformational change in a project
- Produce a detailed dependency chart-using objective driven logic and understand its relationship to other network diagrams

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- Participants leave with the acclaimed book "Making It Happen" and a complete - Planning Kit, enabling them to immediately implement their learning at work
  - 32 PMI educational & professional development credits

Location: Western Management Development Center, Denver, CO

Dates: June 10-14, 2002

Contact WMDC today for space availability 304-870-8008. Or learn more about this seminar at <http://www.leadership.opm.gov/content.cfm?CAT=PMB>.

*POC: CHARLES PEARRE, CECW-EIS, 202-761-4645*

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### **BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE**

Are you prepared to deal with the most comprehensive changes to ACI 318 since 1963? ACI and PCA are jointly conducting seminars on changes in the 2002 edition of ACI 318, "Building Code Requirements for Structural Concrete."

All those involved with structural concrete are encouraged to attend: engineers, architects, specifiers, building officials and others who need to understand the new code provisions and implement them in their work.

Each seminar is one and one-half day long and is being offered 78 times in 55 cities throughout the United States. Go to <http://www.aci-int.org/seminars/SeminarDetails.asp?SeminarID=15> for complete information on the 318 seminars and a complete listing of all seminar locations.

Seminar attendees will be guided step-by-step through each code change adopted in the 2002 edition, what it entails, why it was made, and how it impacts the work of designers and specifiers of structural concrete. Numerous examples will be used to demonstrate the code changes in action.

All seminar participants receive ACI and PCA publications worth \$250.50 as part of the registration fee. Included in these publications are the PCA Notes on ACI 318, which will be available in October 2002 and will be mailed at no charge to each seminar attendee.

ACI will award 1.1 Continuing Education Units (CEU's) for this seminar. Professional Engineers can convert these CEU's to 11 Professional Development Hours (PDH's) to fulfill continuing education requirements.

This seminar is a joint presentation by the American Concrete Institute and the Portland Cement Association.

*POC: CHARLES PEARRE, CECW-EIS, 202-761-4645*

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### **NATURAL RESOURCES SEMINAR**

This seminar explores the Federal stewardship of natural resources use and its importance to the continued growth of the United States. By examining alternative strategies for natural resources use and the public benefit those strategies seek to secure, public administrators are able to assess probable economic, environmental, technological, and social consequences of proposed decisions and actions.

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Some of the issue areas that are typically covered are: land management and stewardship; policy issues in management for multiple use; development/conservation as policy motives; natural resources economics; biodiversity and wildlife conservation; water issues and water law; energy needs and energy strategies; public perceptions (and misconceptions) of Federal stewardship, and the like.

#### Key Results

- Learn the history of changes in natural resources use, and examine issues of abundance and scarcity and the management of Federal government land responsibility
- Learn current natural resources policy initiatives and Administration priorities
- Gain an awareness of public perceptions of the risks and benefits of alternative strategies for natural resources use
- Examine the balance of multiple policy goals in the natural resources area, including economic and environmental goals
- Understand the role of scientific knowledge and advanced technologies such as Geographical Information Systems

Location: Eastern Management Development Center, Shepherdstown, WV

Dates: Jun 3 - Jun 14, 2002

Contact WMDC today for space availability 304-870-8008. Or learn more about this seminar at <http://www.leadership.opm.gov/content.cfm?CAT=NRSPI>.

*POC: CHARLES PEARRE, CECW-EIS, 202-761-4645*

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### EXECUTIVE DEVELOPMENT SEMINAR: LEADING CHANGE

#### Getting the Big Picture for Tomorrow Right-Today

There is still room in spring and summer sessions of EDS!

This seminar is aimed at highly effective managers. These managers are considered by their agencies to have the potential to transition to the Senior Executive Service (SES). The seminar focuses on developmental activities designed to strengthen the ability of senior managers to make that transition.

Participants enhance their ability to act strategically, communicate orally in a variety of settings, and interact positively with external constituencies.

They learn to identify and deal effectively with the internal and external politics that impact their missions and organizations. Managers learn the ins and outs of developing support networks and building alliances and how to do so while maintaining high ethical standards.

#### Key Results

- Demonstrate and acquire new techniques and approaches for leading change in areas critical to future mission success through subordinates
- Enhance skills at producing results and assuring accountability
- Learn to build coalitions and communicate more effectively

- 
- Better understand the interrelationship of the legislative, executive, and judicial branches in the development of public policy
  - Become acutely aware of the roles played by special interest groups and the media more confident and effective contributions

Dates and Locations:

June 17-28, 2002 and September 9-20, 2002 at Eastern Management Development Center, Shepherdstown, WV

July 15-26, 2002 and August 12-23, 2002 at Western Management Development Center, Denver, CO

Contact WMDC today for space availability 304-870-8008. Or learn more about this seminar at <http://www.leadership.opm.gov/content.cfm?cat=EDS-LC>.

*POC: CHARLES PEARRE, CECW-EIS, 202-761-4645*

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### ESSENTIAL SEMINARS FOR WOMEN

The Women's Assessment Program is an intensive, six-day program that examines and provides insight into participants' strengths and weaknesses, with a focus on challenges for women. Participants receive personalized feedback from several sources, including: 360-degree multi-rater feedback instrumentation, assessment specialists, peer feedback, experiential exercises, and personal inventories.

The Women's Assessment Program is scheduled for Jul 14 - Jul 19, 2002 at the Western Management Development Center in Denver. Full details on this course can be found on the Leadership website at: <http://www.leadership.opm.gov/content.cfm?CAT=WAP>.

The Women's Leadership Seminar provides participants in managerial positions with an opportunity to explore the issues, choices, and trade-offs that are unique to being a woman in a leadership role. The seminar is based on groundbreaking research into how professional women lead their lives and what factors influence their effectiveness in the work world.

The Women's Leadership Seminar is scheduled for Jul 8 - Jul 12, 2002 at the Western Management Development Center in Denver. Full details on this course can be found on the Leadership website at: <http://www.leadership.opm.gov/content.cfm?CAT=WLS>.

Contact WMDC today for space availability 304-870-8008.

*POC: CHARLES PEARRE, CECW-EIS, 202-761-4645*

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### HOMELAND DEFENSE--UNDERSTANDING THE ENEMY

As Americans watched the horrible events of September 11, 2001, the same question confronted each of us, how could this happen? It is difficult for individuals who live in the most open and caring country in the history of the world to understand how a number of individuals belonging to several different groups could have committed these acts.

The primary objectives of the Homeland Defense seminar are to provide some closure and understanding regarding these attacks and to help participants understand the culture and psychology

of terrorism. Although the emphasis of the course is on the international threat, the threat from domestic organizations and special interest groups is also presented.

Location: Eastern Management Development Center, Shepherdstown, WV

Dates: July 8-12, 2002 and August 5-9, 2002

The tuition of \$2400 includes a private room at our on-campus residential facility and all meals.

Contact WMDC today for space availability 304-870-8008. Or learn more about this seminar at <http://www.leadership.opm.gov/content.cfm?CAT=HD>

POC: CHARLES PEARRE, CECW-EIS, 202-761-4645

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### FY02 PROSPECT COURSES

Listed below are PROSPECT courses available in FY02. If interested in enrolling in any of these courses, please discuss this with your supervisor and local training coordinator and have a DD Form 1556 completed and forwarded to the Registrar's Office of the USACE Professional Development Support Center (PDSC). Telephone: 256-895-7421/7425. Fax: 256-895-7469. Some courses are currently full; some still have spaces available. If a course is full, you may request to be put on a waiting list and you will be informed when a space becomes available. Additional information about these courses is available online at: <http://pdsc.usace.army.mil>.

CTL #	COURSE TITLE	LOCATION	START	END	TUITION
THIRD QUARTER					
178	BASIC HEC-HMS	Davis, CA	6/3/2002	6/7/2002	\$1,620
21	CONCRETE I—QV	Vicksburg, MS	6/3/2002	6/7/2002	\$960
6	FIRE PROTECTION	Huntsville, AL	6/3/2002	6/7/2002	\$920
272	FUND WETLANDS	Annapolis, MD	6/3/2002	6/7/2002	\$1,980
3	ARCH HARDWARE-QV	Sacramento, CA	6/10/2002	6/14/2002	\$1,500
974	DPW PBSC	Huntsville, AL	6/10/2002	6/14/2002	\$610
356	CERCLA/RCRA Process	Minneapolis, MN	6/11/2002	6/14/2002	\$910
980	DPW WORK RECEPTION	Huntsville, AL	6/11/2002	6/13/2002	\$600
225	ENV SAMPLING	Omaha, NE	6/11/2002	6/14/2002	\$1,390
236	FIELD SAFETY	Nashville, TN	6/11/2002	6/13/2002	\$1,080
395	ENV REMED TECH	Denver, CO	6/17/2002	6/21/2002	\$1,290
371	ENV REMED TECH-INSITU	Denver, CO	6/17/2002	6/19/2002	\$690
98	RESERVOIR MODELING C-RES	Davis, CA	6/17/2002	6/21/2002	\$1,830
281	RIPARIAN ECOL/MGT	Louisville, KY	6/17/2002	6/21/2002	\$2,170
337	ENV REMED TECH-CONTAIN	Denver, CO	6/19/2002	6/21/2002	\$690
253	1391 PREPARATION	Arlington, TX	6/24/2002	6/28/2002	\$1,200
263	COASTAL ECOLOGY	Monterey, CA	6/24/2002	6/28/2002	\$2,640
239	WET MIT BANK DEV/MGT	Orlando, FL	6/24/2002	6/28/2002	\$1,910
FOURTH QUARTER					
317	MASONRY STRUCTURES DESIGN	Sacramento, CA	7/8/2002	7/12/2002	\$1,310
275	WETL CONST WQ IMP	Oakland, CA	7/8/2002	7/12/2002	\$2,260
339	SURVEYING II	Huntsville, AL	7/9/2002	7/12/2002	\$1,130
251	APPL OF ENGR GEOLOGY	Huntsville, AL	7/15/2002	7/19/2002	\$1,790

58	STAT METHODS WATER	Davis, CA	7/15/2002	7/19/2002	\$2,040
356	CERCLA/RCRA Process	Denver, CO	7/16/2002	7/19/2002	\$910
236	FIELD SAFETY	Atlanta, GA	7/16/2002	7/18/2002	\$1,080
264	ECOSYS PLN/MGT ISSUES	Vicksburg, MS	7/22/2002	7/26/2002	\$1,570
42	ELECTRICAL—QV	Norfolk, VA	7/22/2002	7/26/2002	\$1,260
286	REAL PROP MGT	Western Region	7/22/2002	7/25/2002	\$700
981	DPW BUDGET/JCA	Huntsville, AL	7/23/2002	7/26/2002	\$625
81	DREDGE SAFETY	New Orleans	7/23/2002	7/26/2002	TBD
975	SQL FOR IFS	Huntsville, AL	8/5/2002	8/9/2002	\$625
272	FUND WETLANDS	Olympia, WA	8/5/2002	8/9/2002	\$1,980
78	NATIONAL ELEC CODE	Seattle, WA	8/5/2002	8/9/2002	\$790
989	DPW PWMOC	Alexandria, VA	8/7/2002	8/16/2002	\$1,200
986	IFS FUNCTIONAL COURSE	Huntsville, AL	8/12/2002	8/16/2002	\$625
103	ECOLOGY FOR ENGINEERS	Seattle, WA	8/12/2002	8/16/2002	\$2,640
399	ORD AND EXP RESPONSE	Huntsville, AL	8/12/2002	8/15/2002	\$520
124	GROUNDWATER HYDRO	Davis, CA	8/19/2002	8/23/2002	\$1,930
983	DPW WORK ESTIMATING	Huntsville, AL	8/20/2002	8/23/2002	\$625
983	DPW WORK ESTIMATING	Huntsville, AL	8/26/2002	8/29/2002	\$625
35	WORKING DIVER	TBD	9/3/2002	9/26/2002	\$3,270
978	QAE/PI	Huntsville, AL	9/9/2002	9/13/2002	\$625
152	WATER DATA MGT/HEC-DSS	Davis, CA	9/16/2002	9/20/2002	\$1,790
984	PWIFS MGMT COURSE	Huntsville, AL	9/23/2002	9/27/2002	\$625

POC: JOHN BUCKLEY, CEHR-P-T, 256-895-7431

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## Open Discussion and Comments

### "STUDENT OUTREACH AT SACRAMENTO DISTRICT"

The following comment was received on the above article in the February-March 2002 issue of the E&C Newsletter.

"I am writing about the article titled "Student Outreach at Sacramento District". I suggest that any district considering the program consider the following:

When an adult engineer is working one-to-one with a student the opportunity for abuse or accusation of abuse is present. A couple of years ago an engineer in our district told me he was falsely accused by the student he was with. Fortunately, the false accusation was quickly unraveled before any harm to the engineer occurred.

Two students at a time working with an engineer would likely prevent these problems."

(Editors' note: If you want to share your thoughts with our readers regarding a subject of general interest, send an email to the E&C News editor at [charles.pearre@usace.army.mil](mailto:charles.pearre@usace.army.mil). A synopsis of your comments will be published next time).

## Editors' Notes

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## FUTURE THEMES

Future regular issues of the Engineering and Construction News will be issued every two months; with special issues published as needed. The themes for the next five issued of the News are listed below for your information and use in preparing articles for submission to the News.

June-July 2002	Design/Construction Awards Programs
August-September 2002	Sustainable Design and Development
October-November 2002	E&C Technical Capability Assessments

*POC: CHARLES PEARRE, CECW-EIS, 202-761-4645*

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