

**US Army Corps
of Engineers**

Hydraulics and Hydrology Capability Assessment

Task Force Report

August 2003

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Hydraulics and Hydrology Capability Assessment

Task Force Report

August 2003

Department of the Army
U.S. Army corps of Engineers
Washington D.C.

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Executive Summary

This report of the USACE Hydraulics & Hydrology (H&H) Capability Assessment Task Force, established by the Director of Civil Works and Director of Military Programs, is submitted in response to the Task Force's 14 March 2001, charter. The primary focus of the Task Force was to assess the status of H&H capability in the Corps and evaluate options and develop recommendations to restore and retain H&H competency as might be necessary. The Task Force was encouraged to look at solutions that integrate USACE's business processes and organizational structure with emphasis on working in a regional business center and project delivery team environment. The Task Force gathered and analyzed information on H&H competency in Corps districts, MSCs, laboratories and centers of expertise, and HQUSACE. From the findings, the Task Force developed a detailed, overall strategy to restore and enhance USACE hydraulics and hydrology capabilities through enhancement of the regional business center and project delivery team environment, re-establishment of a competent HQ H&H Team, retaining technical specialists, and more effective training.

The Task Force Chair was Mr. William Branch, P.E., CENWD-CM-W-N and was assisted by Meg Jonas, CENAB. The Field level team included: Joe Evelyn, CESPL; SK Nanda, CEMVR; Michael Bart, CENWK; Chuck Wener, CENAE; John Hashtak, CESAJ; Pat Foley, CEMVP; Dave Schweiger, CELRE; John Bianco, CENAD; Ed Sing, CESP; Bob Watson, CESAD; Patrick Evermon, CESWD; Stan Wisbith, CELRD; Darryl Davis, CEIWR-HEC; Bob Pietrowsky, CEIWR; Ming Tseng, CECW; Ron Copeland, ERDC/CHL; Steve Daly, ERDC/CRL; Earl Eiker, Retired and Pete Juhle, Retired. The Task Force recommendations are presented and discussed in Chapter 6 of the report.

A summary of the Task Force observations are discussed below.

The Corps of Engineers is a significant steward of the nation's water resources. The demands on these resources are many and varied and we must be capable of addressing these demands and associated impacts in a highly skilled and professional manner. The hydraulics and hydrologic disciplines form an integral and essential foundation for discharging our stewardship responsibility. Planning studies, design, construction, reservoir regulatory procedures, emergency management, navigation, operation and maintenance of existing projects, and other studies that improve water resource analysis including both civil works and military support, are built upon on competent H&H analysis. Despite the importance of H&H, the Corps is losing this critical capability as demonstrated by the response to the Task Force survey that notes that 19% of the districts believe that present H&H capability is inadequate, and 50% of the districts have chronic H&H position vacancies. In addition, a significant fraction of our remaining experienced H&H personnel will reach retirement age within the next five years.

Currently the most critical lack of technical H&H expertise is at HQUSACE. The Task Force specifically addressed the fact that HQ H&H staff are not currently resourced to cover the broad range of H&H technical specialties nor perform functions described in the assigned E&C functions. This is demonstrated by the fact that our survey indicates that 86% of the time our Districts are securing answers to their questions involving technical methods or policy from sources other than the MSCs or HQUSACE and only 17% of the time do our MSCs go to

HQUSACE to answer these questions. The Districts and MSCs have clearly responded that they want technically competent and strong leadership re-established at HQUSACE.

At the district level some report that H&H technical expertise has been substantially weakened through reorganization and the loss of H&H staff to other functional elements and organizations within the districts. Many districts do not have established career paths for H&H staff within the H&H function. Grade levels for senior H&H technical specialists are not on a par with those in other technical specialties. Districts are finding it increasingly difficult to attract and keep talented H&H staff to sustain quality engineering services into the future.

As such, we are inadvertently positioning ourselves to be ineffective in providing H&H policy and guidance from HQ to the MSCs and districts. Unless action is taken quickly our corporate H&H capability is likely to reach a point where they will be unable to remain responsive to our nation's water resource challenges. The consequences of inaction for the Corps will be grave.

Improving H&H capability Corps-wide requires focusing attention in several key areas: restoring visibility and role of H&H as the core technical expertise that is the foundation of the Corps Civil Works program; re-establishing a competent HQ H&H team and technical leadership; providing a road map for training and development; building a solid career ladder for H&H staff; and recognizing that maintaining in-house H&H software development and maintenance is an essential element of the Corps achieving standing as a world-class engineering organization. Improving the technical foundation of Civil Works in-turn provides the essential skills necessary to support Military Programs in areas like Kosovo.

The Task Force has identified several opportunities and management measures that can be implemented to address the key areas requiring attention. It is our recommendation that these measures be approved, and implemented as quickly as possible.

William E. Branch, P.E.
Task Force Chairman
August 23, 2001

The H&H Capability Executive Committee, appointed in January 2002, has been monitoring progress on implementation of the recommendations contained in the draft report. The Executive Committee met in Portland, Oregon in May 2003 to review the status of the report recommendations and brief the incoming E&C Chief, Don Basham, on progress. Following is a summary of the recommendations and status as of July 2003.

STATUS OF RECOMMENDATIONS
H&H Capability Assessment Task Force
May 2003

Restore visibility and role of Hydraulics and Hydrology (H&H) as a core technical expertise that forms the foundation of the Corps Civil Works program.

- 1) That HQUSACE senior leaders use appropriate opportunities and venues to accomplish this goal by speaking to the role of H&H in Corps and public forums, and issuing letters and directives to subordinate Commanders requesting their assistance in restoring the visibility and role of H&H as a core CW function.

***Some accomplishment.** Subsequent to Senior Leader briefings in early 2001, the Chief E&C Division and Deputy Director of Civil Works spoke out in favor of the importance of H&H and expressed support for restoring the needed capability throughout the Corps. This past year, no notable championing of H&H by Senior Leader has occurred. E-mail messages encouraged applications for Watershed Systems Team Leader vacancy. No letters or directives were sent to MSCs or districts encouraging restoring visibility and role of H&H.*

- 2) Designate the Watershed Team Leader as the Corporate Champion and Corps Technical Leader for H&H. Create business processes that ensure that the Watershed Team Leader is invited to attend all HQ briefings and meetings that concern water resource projects, studies or issues.

***Some accomplishment.** It is generally accepted by many that the Watershed Team Leader is the champion and Corps technical leader for H&H. This is particularly true for HQSACE civil works leaders and selected senior field H&H staff. To date (July 2003) no further announcing, documentation changes, or acknowledgement of this anointing has occurred. HQUSACE leadership pledged at the Portland H&H conference to rename the Watershed team and announce such to the H&H community of practice.*

- 3) That the HQ Watershed Team apply the PMBP by: (1) Supporting project delivery teams at USACE districts and divisions (vertical integration) using BG Madsen's concept of SPD District Support Teams as described in the Task Force Report, and (2) Providing technical leadership by communicating with H&H leadership at national meetings which focus on H&H issues (2 meetings per year), and including representatives from

Engineering/Construction, Project/Programs Management, Planning & Policy, Operations, and other functional areas as appropriate to discuss policy, guidance, current issues, tech transfer, future work, share information and experience.

Substantial accomplishment. *The Watershed Team Leader regularly represents H&H in HQ PMBP teams and is frequently consulted on national-level key matters with H&H implications. Few opportunities to meet with the senior field H&H community have occurred to date. A national H&H meeting was approved and was held in Portland in May 2003. The Watershed Team Leader played a prominent role in shaping the conference and leading important sessions.*

- 4) That the Watershed Team Leader position be reclassified from an interdisciplinary position to a Hydraulic Engineer, GS-0810-15, with required Professional Engineering registration. This will ensure that the position of the technical lead for H&H in the Corps will be filled with someone that has a strong H&H background. The Team Leader should also have demonstrated a technical leadership capability.

Accomplished. *The team leader position is now filled as well as the vacant GS-14 that occurred coincident with this time period.*

- 5) That the Watershed Team Leader position be backfilled in the following manner while a permanent replacement is being recruited (estimated June 2001 to March 2002): a mini-recruitment should be performed immediately to obtain a temporary GS-15 replacement from the field for a period not to exceed twelve months. The Advisory Committee should be an active participant in the recruitment and selection process.

Accomplished.

- 6) That two GS-14 hydraulic engineer positions be added to the Watershed Team to ensure that HQ maintains H&H technical competencies that are essential to the CW program: hydraulic design, hydropower, river hydraulics, stream/ecosystem restoration, and sedimentation. The most recent workload assessment identified a need for 6.26 FTEs to perform the duties of the Watershed Team; currently there are only 4.0 FTEs. Position justifications and the workload assessment are included in Appendix N.

Partially accomplished. *One additional GS-13/14 position added to Watershed Team. Position remains unfilled.*

- 7) That the Watershed Team actively pursues the functional responsibility of interagency coordination by coordinating Corps R&D efforts with those of other federal agencies to encourage collaboration and leveraging limited research funds.

Partially accomplished. *Some coordination work with FEMA/FI and Federal interagency sedimentation committee has occurred as well as outreach to the National Weather Service in areas of mutual interest. Embryonic outreach is beginning to take place, but none of significance has occurred to date.*

- 8) That the division PMBP H&H role be patterned after the District Support Teams in SPD. Fitting within the framework of our existing PMBP guidance, these have a high level of engagement with the districts, and a high level of customer satisfaction. Information on the SPD District Support Teams is included as Appendix D.

Not accomplished. No action to date by HQUSACE or others to foster implementation of this recommendation on a national scale. Time and events may have overtaken this with the current action focused on the Stockton 2012 report and subsequent FAA process.

GS-13 Technical Specialists

- 9) That non-supervisory technical GS-13 hydraulic engineer positions be encouraged for key district H&H function positions which are regional or national technical specialists, one to several in each district depending on workload and specialty expertise. Sample position descriptions are included in Appendix O.

Accomplished. CEHR-E memorandum dated 6 July 2001 and EC 1110-1-104 provides mechanism to accomplish this recommendation. A number of GS-13 hydraulic engineer positions have been established and filled at the district level.

Training and Development

A comprehensive H&H Training Plan is presented in Appendix P and the following specific recommendations are made.

- 10) That the “Basic H&H Training Plan”, as detailed in this Task Force Report, be generally adopted for Corps wide implementation in FY03 for all entry-level H&H technical staff. Commanders will assure district support of the Basic Training Plan and that this Plan is included in Individual Development Plans (IDPs), as applicable. All formal training required by this plan will be funded at the district level.

Not accomplished. Discussions held about revising and re-issuing a previous EP that provided guidance for training and development of H&H professionals, to include guidance for METYL and IDP activities, but no action taken.

- 11) That the “Journeyman/Expert H&H Training Plan”, as detailed in this Task Force Report, be generally adopted for Corps wide consideration. Commanders will assure district staff prepare annual IDPs with the 5 year training plan prepared as an individual career development plan to meet mission requirements.

Not accomplished. General guidance is provided in EC 1110-1-104, but no specific action related to H&H has occurred.

- 12) Increase central funding of long-term training (with a minimum of five H&H positions per year) to include labor, tuition, travel and per diem to ensure access to nationally prestigious graduate programs.

Not accomplished. Not only has no headway been made on this recommendation, support for USACE-sponsored long-term training seems on the decline, with the program suspended for FY 2003.

- 13) That the critical need to educate H&H work force to meet the new and growing mission area of stream/ecosystem restoration receive one-time central funding over a period of two years. The Watershed Team Leader would propose a training plan after consultation with Planning/Policy and Operations Divisions.

Partially accomplished. PROSPECT courses related to stream/ecosystem restoration are offered by CEERDC and CEIWR-HEC, and these courses are well attended. No action has been taken to centrally formulate and fund a course on this topic for H&H staff. This recommendation has been somewhat overtaken by time and events.

Research and Development

- 14) That Corps leadership recognizes the need to maintain a sustainable level of research and development in hydrology and hydraulics, to include in-house H&H software development and maintenance capability, and be advocates for such R&D and associated expertise in the Corps. H&H R&D and associated software are essential elements of the Corps achieving standing as a world-class engineering organization.

Not accomplished. Civil works R&D funding is on the decline, and thus H&H funding would be expected to decline as well. In fact, H&H-related research is faring less well, with biological aspects of environmental restoration and economics of navigation R&D being more successful in competing for a share of the shrinking R&D budget. The new Watershed Team leader has not yet become fully engaged in the R&D process so that effective advocacy for H&H is still lacking.

Executive Advisory Committee

- 15) That the HQUSACE Chief of Engineering & Construction Division create an Advisory Committee (composed of the H&H Capability Assessment Task Force members) to provide assistance to HQUSACE executive staff for the next three years in implementing the above Task Force recommendations. Due to the near-critical staffing shortage and the impending retirement of the Watershed Team Leader in June 2001, the Committee will have a major role as the champion of the Task Force recommendations.

Accomplished. An executive advisory committee has been appointed (Task Force leader is committee lead), and has been relatively active in monitoring implementation progress.

CHAPTER 1: INTRODUCTION

Purpose and Scope

This report presents the findings and recommendations of the USACE Hydraulics & Hydrology (H&H) Capability Assessment Task Force. This Task Force was established by the Director of Civil Works and Director of Military Programs on 14 March 2001. As described in its charter (Appendix A), the Task Force was formed in response to a growing concern among Civil Works and Military leaders that Corps H&H talent is diminishing, and that a continuation of this trend will impair the Corps' ability to meet its water resource and military responsibilities.

The Task Force was encouraged to look at solutions that integrate USACE's business processes and organizational structure with emphasis on working in a regional business center and project delivery team environment. The Task Force has developed a detailed, overall strategy to enhance USACE hydraulics and hydrology capabilities through enhancement of the regional business center and project delivery team environment, re-establishment of a competent HQ H&H Team, retaining technical specialists, and more effective training.

Task Force Structure

The Hydraulics & Hydrology Capability Assessment Task Force consists of a Chair and Assistant and mixed membership which included HQUSACE, MSCs, Districts, Labs, FOA and retirees (see Appendix B for membership). The Task Force was responsible for developing information and recommendations that included identifying priorities among the recommendations for further development.

Task Force Activities

The Task Force has undertaken the following activities to develop the recommendations presented in this report:

- **Mid-February '01:** Formation of the Task Force.
- **Late February '01:** Survey of all Civil Works H&H chiefs/leads at MSCs, Districts, Labs, FOAs, and HQ.
- **15 March '01:** Task Force meeting #1, (virtual) with use of a phone bridge. Reviewed results of H&H Capability survey and capability identified issues and needs.
- **20 March – 19 April:** Task force meetings were held each Tuesday and Thursday (meetings #2- #11), (virtual) with use of a phone bridge. Discussed and researched issues and needs. Developed final draft Task Force recommendations.
- **Late April '01:** Prepared draft Task Force Report.

Information Sources

In preparing its recommendations the Task Force relied on the following sources of information:

- Hydrology and Hydraulics Capability Survey: Civil Works H&H chiefs/leads at MSCs, Districts, Labs, FOAs, and HQ were asked to respond to a series of 23 questions focused on their H&H capability and needs of the H&H workforce. A summary of responses, as well as samples of verbatim responses is presented in Appendix C.
- South Pacific Division District Support Teams: Memorandum from SPD Commander establishing District Support Teams; Charter for the SPD District Support Teams; and SPD District Support Team Plan for Los Angeles District presented in Appendix D.
- ER 15-2-14, Committees on Tidal Hydraulics, Channel Stabilization, Water Quality, and Hydrology: This regulation prescribes the objectives, composition, and responsibilities of the Corps of Engineers Committees on Tidal Hydraulics, Channel Stabilization, Water Quality, and Hydrology. Appendix E
- ER 1110-2-1460, Hydrologic Engineering Management: This regulation defines the scope, authorities, and management requirements for hydrologic engineering activities within the Corps of Engineers. Appendix F
- EP 350-2-1, Training, Career Development of Hydrologic and Hydraulic Engineers: This pamphlet describes professional development necessary for hydrologic and hydraulic engineers to successfully advance and perform specialized hydrologic engineering studies. Appendix G
- ER 350-1-416, Training, Headquarters, U.S. Army Corps of Engineers (USACE) Centrally and Locally Sponsored Long-Term Training (LTT) Program: To establish policy for HQUSACE Centrally and Locally Sponsored LTT Program. Appendix H
- Engineering and Construction Division, USACE, Mission and Functions, dated 14 November 2000: Presents the functions under the new re-structure for the Water Resources Branch. Included are functions mapped to New Branches and Teams including the Watershed Team. Appendix I
- Standard Operating Procedures of PMBP Within the Office of the Deputy Commanding General for Civil Works (CW): Defines the operational scenarios expected of the Civil Works Team as we carry out our roles in striving to meet our mission. Appendix K

Structure of the Task Force Report

Chapter 2 of the report presents background information on hydraulics and hydrology functions. Chapter 3 presents findings about critical CW H&H capabilities, needs and opportunities. Chapter 4 presents guiding principles and other considerations that the task force employed to help develop potential ways of addressing the problems and needs. The range of potential actions considered by the Task Force is described in Chapter 5, while Chapter 6 presents and discusses the Task Force recommendations.

CHAPTER 2: BACKGROUND INFORMATION

In accordance with the Task Force Charter (Appendix A), it is noted that “Our ability to maintain technical expertise in the H&H field is critical to our continued support to the nation.”

The Civil Works program of the Corps is one of assessing and managing water in a natural or constructed environment to achieve national beneficial purposes as authorized by Congress. The technical professionals within the Corps that possess the requisite critical skills of assessing and managing water are the hydraulics and hydrology community. The military is concerned with water on bases and within the field of operation, and H&H skills are also important though not as critical as in Civil Works. Because hydraulics and hydrology capability is essential to healthy Civil Works and Military Programs, the Task Force was established to examine issues that are critical to the continued health of H&H in the Corps.

What is Hydraulics and Hydrology?

Hydraulics and Hydrology (H&H) is a core technical expertise that forms the foundation of the Corps Civil Works program.

Hydraulics and hydrology is a part of civil engineering practice in which applications of professional knowledge of hydrologic and hydraulic principles are key elements in water resources development and management decisions. The scope includes the natural and management processes affecting the water cycle from precipitation on the land surface through the ultimate return of water to the sea or inland sink. Technical methods of analysis include field measurement and observation, mathematical and statistical analyses, and models. Outputs from hydrologic engineering studies include: water availability as expressed by surface and subsurface yield; water surface elevations and water surface profiles; sediment processes; modeling of watershed catchment processes, flood hydrograph development, and surface infiltration; probability analysis of flood or drought frequency, risk of project failure, and reliability of supply; reservoir regulation requirements for water supply, navigation, power generation, and flood control; water quality effects of natural phenomena and project operations; and groundwater level changes due to recharge and withdrawal.

For the Civil Works program H&H engineering studies play an integral and fundamentally essential role in planning studies, design, construction, reservoir regulatory procedures, emergency management, dam safety, navigation, operation and maintenance of existing projects and other studies that involve water resource analysis.

For military support, H&H engineering is an essential component of water supply, storm water management, and waste disposal on military bases. In the field, H&H engineering is critical to water supply and sanitation, and maneuverability as effected by weather and stream crossings.

Hydraulics and Hydrology studies and analyses in Civil Works utilize technical and practical applications to achieve diverse objectives as dictated by the scope of the assigned

investigation. Findings and results of these studies must reflect the most efficient, cost effective, and logically implementable alternative.

Hydraulics and Hydrology is not a solitary pursuit. Hydraulics and Hydrology is a member of an interdisciplinary team. The H&H engineer must be able to interface with many and varied professions that play into the diverse roles which H&H is integral and essential.

The Hydraulics and Hydrology engineer must have the ability to effectively communicate and understand the nuances associated with legal, social, natural, economic, plan formulation and other management areas.

Hydraulics and Hydrology Functions

In trying to develop a strategy to maintain the Corps' H&H capability and technical expertise, it is important to first identify those functions and knowledge, skills and abilities (KSAs) that are essentially unique to the H&H expertise and are important to maintaining the Corps' H&H competency. A general summary of the traditional H&H elements studies and support to the programmatic areas of planning, design, construction, and operations and maintenance are shown in the following list. More details are presented in Appendix J.

Planning: H&H studies develop fundamental technical flood and drought information for reconnaissance and feasibility phases of survey investigations and continuing authority programs, floodplain management, and special and national studies for navigation, flood damage reduction, shore protection, stream bank erosion control, hydroelectric power, recreation, water supply and quality management, fish and wildlife, wetlands conservation, regulatory program, and special programs. Technical aspects of such studies include:

- Precipitation data
- Flood and low flow frequency analysis
- River hydraulics and sediment transport
- Reservoir sizing and operations
- Spillway/dam safety
- Flood impacts
- Sedimentation
- Watershed modeling and analysis
- Ecosystem restoration
- Water Quality
- Serve as an active team member with many and varied professions which play into these types of investigative studies.

Design: H&H studies develop technical material for pre-construction engineering and design studies, post authorization changes, reevaluation reports and design memoranda. They also provide information for preparation of plans and specifications and handling of water during construction. A particular responsibility of H&H is that of Hydraulic Design, that is shaping the structures that are used to manage water for authorized purposes.

- Develop hydraulic structures necessary to provide the desired deliverables in the most cost-effective design.

Construction: The H&H engineering role during construction is typically one of support to the construction function:

- During construction, he/she must be able to react quickly to needed construction contract modifications. These include analysis of construction modifications, close coordination with other design elements and assistance in development of a fair and reasonable cost estimate.

Operations and Maintenance: H&H engineering studies provide the basis for real-time water control decisions, undertaking emergency management actions, preparing water control manuals, monitoring reservoir sedimentation, evaluating reservoir storage reallocations, and other water control studies. H&H studies also support project operation modifications as might be necessary for maintenance of features of projects.

- For reservoirs, hydropower facilities and navigation projects, the complexities associated with these multifaceted projects demands a wide and comprehensive working knowledge of stochastic hydrology, geohydrology, hydrometeorology, hydroecology, regulatory permitting policies, Federal Energy Regulatory Agency licensing actions, ecosystem and environmentally sensitive procedures and practices and other special programs germane to a specific project.
- In reservoir control and water management, the H&H engineer is responsible for implementation, deployment and maintenance of the Corps Water Management System (CWMS). Additionally, the engineers are tasked with use of complicated forecasting models, real time data acquisition, real time water control decisions including issuing instructions to the project operators and preparing reports on flood damage prevention to HQUSACE and Congress.

Maintaining H&H Capabilities

The status and health of H&H in the Corps is of significant concern. Indications are that H&H capabilities of the Corps have declined, and a perception that the need for these capabilities is diminishing makes this investigation imperative. Subsequent chapters will make clear that maintaining, as well as strengthening the Corps' H&H capability requires re-establishing a competent HQ H&H team to provide both national technical H&H leadership and support to project delivery teams at USACE districts and divisions. Additionally, it requires building the H&H career field so the Corps can attract young talented engineers, train and develop them, and then retain them as they gain experience.

Bottom line... it is important that HQ H&H provide technical leadership and our H&H people have the right skills to support a changing Civil Works mission, and to meet the essential needs for military support.

CHAPTER 3: PROBLEMS, NEEDS, AND OPPORTUNITIES

The chief sources for identifying problems, needs and opportunities that impact on Hydraulics and Hydrology capability included the Hydrology and Hydraulics Capability Survey (Appendix C), the Engineering and Construction Division, USACE, Mission and Functions (Appendix I) and the Standard Operating Procedures of PMBP Within the Office of the Deputy Commanding General for Civil Works (CW) (Appendix K). Below is a brief discussion of the key problems, needs and opportunities that impact on H&H capability considered by the Task Force.

- **Erosion of hydraulics and hydrology talent base at HQUSACE.**

H&H staff, based on narrative responses to the Corps-wide survey, are in overwhelming agreement that our H&H capability at HQUSACE has been steadily eroded in recent years and has become ineffective in providing leadership, expertise, policy, guidance and H&H visibility within the Corps. This is demonstrated by the fact that districts responded that 86% of the time they are securing answers to their questions involving technical methods or policy from sources other than the MSCs or HQ and only 17% of the time do our MSCS go to HQ to answer these questions.

Respondents to the survey believe meaningful roles for H&H elements in the MSCs and HQ need to be defined and appropriate staffing levels maintained in order to provide consistent and meaningful agency-wide H&H involvement and supporting presence in project development and delivery. They say “H&H is the basis for or supports all aspects of our mission: planning, design, construction, operations, emergency management and regulatory and a loss in H&H capability adversely impacts mission performance throughout the agency. Specifically, the technical policy and guidance role of HQ H&H should be reaffirmed.”

- **Erosion of hydraulics and hydrology talent base due to retirements and migration to project management by H&H engineers.**

H&H survey respondents believe that H&H technical capability has declined because of the migration of H&H technical experts to Project Management – to obtain higher grade levels. The top technical grade for H&H engineers in district offices is most often GS-12, while it is possible to become a GS-13 project manager in all districts. In addition, an aging workforce is a concern in that one in four H&H engineers in the districts and one in two in divisions could potentially retire within the next five years. The decline in technical capability is supported by the survey response by the districts which indicated the present capability to meet mission needs with H&H professional services is “inadequate” or “woefully inadequate” in 18% of the districts.

The district survey responses to the question, whether a career ladder to technical specialist GS-13 would alter their career plan, responded that 78% would alter their career plan.

- **Difficulties in obtaining needed training in a timely and cost effective fashion.**

Survey respondents believe that the shortfall in H&H technical expertise can be overcome by providing increased funding/opportunity for training to strengthen all technical areas of H&H. Survey respondents indicate that the current training budgets are established based on some arbitrary percentage of the office operating budgets and bear no relationship to actual training needs. Technology is advancing rapidly and if the Corps is to remain a world leader in Water Resource Engineering, leadership must recognize that training budgets must increase. Investment must be made in training H&H engineers in GIS, CADD, ecosystem restoration methods, water supply, water quality, hydroelectric power, leadership and communication skills to better meet the challenges and problems that face the nation. The survey respondents believe that on-the-job training and mentoring were the most effective ways, followed closely by custom (just-in-time) seminars and workshops and PROSPECT courses, of enhancing skill development. The recent emphasis on contracting out significant portions of engineering work, and flattening the organization by increasing the employee/supervisor ratios has negatively impacted opportunities for mentoring, and providing a variety of real (not contract supervision) work for new H&H engineers.

- **Lack of recognition at HQ level that H&H is a central technical discipline, which forms the foundation of the Civil Works program for USACE.**

H&H engineers and scientists are concerned that the critical importance of their function in Civil Works is not well understood or valued by the Senior Leadership at the HQ level. They feel that too much attention and energy has recently been focused on the business processes and an atmosphere has evolved that H&H services can be purchased without understanding that H&H is one of the core competencies of the USACE. This lack of recognition in HQ has resulted in permeation of this atmosphere downward to senior leadership at the divisions and districts.

CHAPTER 4: GUIDING PRINCIPLES AND CONSIDERATIONS

Principles/Objectives

The principles set forth in this report reflect the Task Force analysis of hydraulics and hydrology problems and needs, and include suggestions and recommendations made in various sources of information. These sources include the Hydrology and Hydraulics Capability Survey (Appendix C) and the Task Force Charter (Appendix A) and extensive discussions with senior HQ leadership and well-regarded technical specialist throughout the Corps. The following principles were used to formulate the recommended measures.

- Hydraulics and Hydrology is a core technical expertise that forms the foundation of the Corps Civil Works program.
- Hydraulics and Hydrology is critical to the Corps' continued support to the nation.
- Corps' continued status as a world leader in H&H, supported by Corps Leadership.
- The solution will require a systematic corporate response.
- The solution will integrate current business processes and organizational structure.
- The Watershed Team (Water Resources Branch, E&C Div, Civil Works) is the HQUSACE H&H team.
- The Watershed Team Leader is the corporate leader, champion and technical lead for H&H in the Corps of Engineers.
- The Watershed Team must be reconnected with the districts and divisions to stay abreast of technical needs and corporate opportunities. This reconnection is essential for HQ to perform its leadership role as proponent for R&D, training, and technical policy and guidance.
- Training and Development are priority investments that need to be started early and continue throughout the career of the H&H engineer.
- H&H must support career opportunities equivalent to other career ladders within the Corps.
- Corps H&H needs to be involved in cutting edge research to be a world class Water Resource Agency.

- A world-class organization performs world-class work; it does not buy critical core work and products from others. On the contrary, a world-class organization is looked to for expertise and products that others make use of to get their work done.

CHAPTER 5: ACTIONS CONSIDERED

The Task Force considered a range of actions to address the key problems and needs identified. Actions developed were evaluated against the criteria listed below to determine whether they should be carried forward for further development and recommendation by the task force. It should be noted that the near-crisis situation in HQ H&H (and its associated recommendations) moved many “major” recommendations on other topics into the “minor” category. The summary of recommendations lists those that are considered the most urgent and important. Other “minor” recommendations are discussed in more detail in Appendix Q.

- Importance. Which recommendations were the most important?
- Urgency. Which recommendations must be implemented as soon as possible?
- Feasibility. Could these recommendations be implemented in the prevailing organizational climate that currently exists in HQUSACE and the field?
- Cost-effectiveness. Which recommendations offered the most benefit at the least cost?
- Within Task Force mission. Was the recommendation within the Task Force mission?

The table below presents the actions considered by the Task Force and their disposition with respect to the above evaluation criteria.

Table 5-1: Actions Considered by Task Force (TF)

Summary of Actions Considered	Disposition of Action
Problem: Perceived lack of recognition by Corps leadership of H&H as a core technical expertise which forms the foundation of the Corps Civil Works program	
Suggest that HQUSACE senior leaders use appropriate venues to restore the visibility and role of H&H as a core CW function	Addressed by TF (Recommendation #1)
Designate the HQUSACE Watershed Team Leader as the technical lead for H&H within the Corps	Addressed by TF (Recommendation #2)
Create business processes within HQ that ensure that the Watershed Team Leader is involved in water-resource related briefings and meetings	Addressed by TF (Recommendation #2)
Problem: Need to re-establish an effective HQ H&H team	
Define a role for HQ H&H which engages them with the districts and divisions	Addressed by TF (Recommendation #3)
Make sure that the Watershed Team Leader position is qualified to be the technical lead for H&H within the Corps	Addressed by TF (Recommendation #4)
Provide for competent interim backfill for	Addressed by TF (Recommendation #5)

Watershed Team Leader position during recruitment for permanent team leader	
Add positions (to HQ Watershed Team) which cover key H&H disciplines	Addressed by TF (Recommendation #6)
Problem: need to foster sense of H&H team community within Corps	
Facilitate tech transfer between districts/divisions	Addressed in part by TF (Recommendation 3); should be undertaken by fully staffed Watershed Team
Organize H&H workshops and conferences	Addressed in part by TF (Recommendation 3); should be undertaken by fully staffed Watershed Team
H&H newsletter	Great idea, but needs an HQ proponent and funding. Deferred.
Update of H&H personnel directory	Same as above
Internet chat site for H&H questions	Same as above
Problem: Need for improved definition of Division PMBP role	
Encourage Divisions to use SPD District Support Teams as a model	Addressed by TF (Recommendation #7)
Problem: Difficulty in retaining experienced H&H personnel due to migration to higher-graded positions in PM and other functional areas	
Encourage Districts to create non-supervisory GS-13 technical hydraulic engineer positions	Addressed by TF (Recommendation #9)
Problem: Need for training in traditional “core” areas of H&H expertise	
Prepare and adopt the “Basic H&H Training Plan”	Addressed by TF (Recommendation #10)
Prepare and adopt the “Journeyman/Expert Training Plan”	Addressed by TF (Recommendation #11)
Problem: Lack of training funding	
Encourage Districts to allow H&H sections flexibility to reallocate their technical indirect budgets to fund training	Addressed by TF (discussion for Recommendations #10 & 11)
Request central funding for H&H core training program	Considered desirable, but likely infeasible.
Use innovative methods, for instance: (1) using Planning Assistance to States funding to set up workshops for local governments with some spaces for Corps employees, (2) regional training put on by divisions	Good ideas, not addressed by TF.
Problem: Lack of access to nationally prestigious programs for long-term training in H&H	
Level the playing field by restoring central funding for long-term training costs	Addressed by TF (Recommendation #12)
Problem: Need for ecosystem restoration training	
Develop a plan for cost-effective training	Addressed by TF (Recommendation #13)

(after consultation with Planning and Operations Divisions). Obtain central funding for an intensive, short-term effort to train hydraulic engineers in this rapidly growing new mission area.	
Problem: Lack of recognition of role that in-house H&H software development plays in the maintenance of a world-class engineering organization	
Encourage the recognition by Corps leadership of the need for in-house H&H software development as an essential element in the maintenance of a world-class engineering organization	Addressed by TF (Recommendation #14)
Central funding for software maintenance	Considered by TF, not recommended. Although the TF agreed that central funding would be desirable, the conclusion was that the total R&D funding was a “zero sum” game, and that an increase in central funding for model maintenance would come out of some other R&D effort which cannot afford it.
Problem: Difficulty in implementing Task Force recommendations with recent loss of senior personnel, a near-critical staffing shortage, and the impending retirement of the Watershed Team Leader in June 2001.	
Create an Advisory Committee to act as the champion of the Task Force recommendations	Addressed by TF (Recommendation #15)
Problem: Difficulty in hiring	
Encourage Districts to establish hydraulic engineer positions with full performance at the GS-12 level	Good idea, no action taken
Standardize personnel practices so that all Districts can hire directly at the GS-9 level as some do now	Good idea, no action taken
Remove the mobility requirement for DA interns, so that they can stay on at the district which recruited them	Good idea, no action taken
Problem: Need for national & regional H&H technical expertise which is no longer supplied by Divisions or HQ	
Expand role of technical committees	Addressed by TF, but not included as a major recommendation. See write-up in Appendix Q.
Problem: ROS not helpful in identifying sources of H&H expertise	
Modify ROS to make more H&H-friendly	Addressed by Task Force in Appendix Q
Problem: Need for increased technology transfer	
Develop and acquire funding for a	Addressed by TF, but not included as a

centrally-funded consulting mechanism for flood control projects (similar to DOTS and WOTS for dredging and water quality problems)	major recommendation. See write-up in Appendix Q.
Use regional and national H&H meetings to keep H&H leadership informed of new software and technology	Addressed by TF (Recommendations #3 and #8)
Problem: Perceived problems with Corps QA on hydraulic engineering studies	
Evaluate need for increased technical review on studies which are complex, nationally significant, politically sensitive, or policy-setting.	Outside the TF charter, however, the implementation of Recommendations #3 and #8 will establish a collaborative working relationship between the districts, divisions, and HQ which will have a beneficial impact on project quality.
Problem: Need to identify Corps' future H&H mission	
Potential water resources work for developing nations	Outside TF charter, however, the implementation of Recommendations #3-6 (reestablishment of an effective HQ H&H team) will provide the proper assistance for this mission.
Ecosystem restoration a rapidly growing new mission area, with training critically needed	Addressed by TF (Recommendation #13)
Problem: Scarce resources	
Use of virtual teams to use sources of expertise (or labor) in various locations	Supported by the TF. The regional and national meetings of H&H leadership (Recommendations #3 and #8) are seen as the most effective method of building the face-to-face partnerships that are the foundation of virtual teams.
Increased inter-agency cooperation and technology transfer	Addressed in part by TF (Recommendation #3): one function of a fully staffed HQ Watershed Team would be coordination with other agencies (on R&D and other areas) to minimize duplication of effort.

CHAPTER 6: TASK FORCE RECOMMENDATIONS

Cost of Implementation of Recommendations: The task force recommends fifteen actions to respond to the findings of the status of H&H competency of the Corps. Many recommendations have no implementation cost, others have national/central funding requirements, still others have only local/MSO costs, and a few have both. Perhaps the most important recommendations (#1, Support and advocacy for H&H by Corps senior leaders) costs nothing but can have a dramatic impact and set the context for ready acceptance and implementation of other recommendations. Two others (#3, Role of HQ Watershed Team in PMBP; and #8, Improved Definition of Division H&H roles) are also cost free and can have both immediate and long lasting value to the Corps business processes. Other cost free recommendations of significant note include: Watershed Team Leader/H&H designation, curriculum guidance for basic and advanced training, and interagency coordination of R&D. There are important recommendations that have cost: adding two technical GS14s to the HQ Watershed Team; one-time ecosystem restoration training for H&H; increased software-related R&D; and upgrading selected field office technical specialist to GS-13 grades. Estimates of the cost impacts for the task force recommendations are tabulated in Table 1.

Recommendations:

Restore visibility and role of Hydraulics and Hydrology (H&H) as a core technical expertise that forms the foundation of the Corps Civil Works program.

Recommendation (1): Support from HQUSACE Senior Leaders

That HQUSACE senior leaders use appropriate opportunities and venues to accomplish this goal by speaking to the role of H&H in Corps and public forums, and issuing letters and directives to subordinate Commanders requesting their assistance in restoring the visibility and role of H&H as a core CW function.

Discussion: During the past few years, there has been an erosion of technical capability while attention was focused on developing business processes. The charter of this task force, and several messages from General Flowers, indicate a renewed interest in engineering excellence and the maintenance of our in-house engineering expertise. To position the Corps as the nation's premier water resources agency, it is essential to reestablish its identity, not as an agency that buys technical services, but as an agency that maintains a world-class scientific and engineering staff. As a water resources organization, the discipline of hydraulic and hydrologic engineering forms the foundation of our entire civil works program. If this message is to become the blueprint for our organization, it must be promoted at all levels. It must be acknowledged in speeches and in writing, at every opportunity, so that it reaches both the public and our own employees. It would be desirable for the Corps SES staff to speak about the importance of maintaining technical capability at gatherings of senior military and civilian leaders. It would be helpful for our HQUSACE staff to discuss this when they visit the districts or the MSCs, and for District Engineers to make a point of it when they have town hall meetings. The statements by General Flowers in support of engineering excellence have been widely quoted as a positive sign within the Corps, and (for instance) an indication that the recommendations of this Task Force

have a chance of being implemented. The dissemination of this message by our top leaders, as forcefully and as frequently as possible, will hasten the day that we become an organization dedicated whole-heartedly to valued public works projects achieved through engineering excellence.

Cost: There is not cost associated with implementing this recommendation. See Table 1 for estimates of the cost impacts for all task force recommendations.

Recommendation (2): HQ Watershed Team Leader as Technical Lead for H&H

Designate the Watershed Team Leader as the Corporate Champion and Corps Technical Leader for H&H. Create business processes that ensure that the Watershed Team Leader is invited to attend all HQ briefings and meetings that concern water resource projects, studies or issues.

Discussion: Several factors have contributed to the current lack of visibility of HQ H&H: 1) recent emphasis on Program/Project Management and business practices without commensurate equivalent emphasis on technical excellence; 2) the reorganization of HQ Civil Works; and 3) loss of HQ H&H personnel. In order to restore HQ H&H technical leadership, the Watershed Team Leader must be actively involved in current projects, studies, and issues related to water resources. HQUSACE upper management needs to amend current business processes to ensure the involvement of the Watershed Team Leader in all such matters to promote vertical integration of our products and services.

Cost: There is not cost associated with implementing this recommendation. See Table 1 for estimates of the cost impacts for all task force recommendations.

Re-establishment of an effective HQ H&H team

Recommendation (3): Role of HQ Watershed Team in PMBP

That the HQ Watershed Team apply the PMBP by: (1) Supporting project delivery teams at USACE districts and divisions (vertical integration) using BG Madsen's concept of SPD District Support Teams as described in the Task Force Report, and (2) Providing technical leadership by communicating with H&H leadership at national meetings which focus on H&H issues (2 meetings per year), and including representatives from Engineering/Construction, Project/Programs Management, Planning & Policy, Operations, and other functional areas as appropriate to discuss policy, guidance, current issues, tech transfer, future work, share information and experience.

Discussion: The task force unanimously agreed that a connection between HQ H&H and the divisions and districts was essential to reestablish the value, leadership, and effectiveness of the HQ Watershed Team, and that the mechanism by which this was accomplished would be one of the central recommendations of this report. Without contact with the districts, divisions and other field operating activities, the HQ Watershed Team cannot perform its functions of leadership, and supporting the districts' missions with appropriate training, R&D, guidance, and policy. Neither can it perform its function of supporting upper management within the Corps, or

representing the Corps to other agencies in any useful way. The task force and divisions were queried for ideas on how increased involvement by the HQ Watershed Team could be successfully achieved within our current organization and guidance. Two ideas were selected for recommendation.

The first is modeled on the successful implementation of District Support Teams (DSTs) in SPD as an application of the Project Management Business Process. These teams were initiated by PPMD, supported by the Division Commander, senior management and division staff, and have been highly successful. They operate much like the district Project Delivery Teams, but their goal is to provide maximum support to the districts in delivering projects to their customers through the following actions:

1. Providing programmatic overview of various programs and authorities.
2. Assisting the districts on specific project actions and problems as requested by the districts and as warranted.
3. Processing and expediting district products through SPD, HQUSACE, and OASA(CW).
4. Keeping the Division Commander and SPD staff informed of district actions.

Other DST activities include helping the districts resolve project and funding issues, moving projects efficiently through SPD and HQUSACE for approval, improving communications, coordinating multi-division support for national customers, serving as the district champion for all project actions, and providing expertise through guidance, tools, and regional training. The teams include members from Operations, Counsel, Planning, Real Estate, Project Management, and Engineering & Construction. (H&H personnel represent the E&C Division on the DSTs, acting as a point-of-contact and calling in other E&C disciplines as needed). DSTs are involved with the districts through a regularly scheduled series of milestone briefing and meetings, occurring from reconnaissance studies through operation and maintenance of civil works projects. The team members have considerable authority, including signature authority for many actions. A full description of SPD's District Support Teams is included as Appendix D. Since these teams are successfully supporting the districts and operate within our existing authorities, the task force decided to use these as a model for the role of the HQ H&H team.

We are recommending that:

1. H&H represent E&C Division on the HQ PMBP team,
2. The team be proactively involved on projects and studies of national significance,
3. The HQ team use SPD's charter and principles & guidelines as a model for their involvement with the districts and divisions, and
4. HQ creates four permanent Division Support Teams, with each team covering two divisions.

Each team would be composed of permanent members from each HQ division, with the goal being to have a stable group that forms long-term working relationships with the districts and divisions. The districts and divisions should know who to call at HQ to answer questions in different areas. The teams would have a regular schedule of meetings with the divisions: some would be project-related, and some would be for budget briefings, partnering, inspection, QA

assessment, and PMBP review. The project-related meetings would only be for significant projects: complex, politically sensitive, policy-setting, etc. By formation of these teams and interaction with the field, the districts and divisions derive the benefit of broader experience from HQ, and a champion who can resolve issues at the HQ level. By their participation on these teams, the HQ Watershed Team will get a better understanding of the districts' needs for training, R&D, policy, and guidance. This approach is a collaborative one with multidisciplinary teams, rather than a stovepipe relationship with authoritative technical review by division and headquarters. However, the success of this collaborative approach depends on direct interaction among the team members. It is also essential that the HQ Watershed Team members have direct contact with their counterparts at the districts and divisions. It is through this contact over the life of a project that collaboration can occur, with division and HQ giving the districts the benefit of their regional and national perspective, resulting in value-added for the customer. It is essential that the HQ Watershed Team be represented on the HQ PMBP team on all water-resources projects and studies.

The second idea selected for implementation is patterned after the successful model of HQ Planning Division, which holds meetings with the MSC planning chiefs twice a year (district chiefs are invited to one of these meetings). The proposed meetings would be led by the HQ Watershed Team and would be forums for two-way discussion of policy, guidance, current issues, technology transfer, future work, etc. Representatives from Planning, Operations, Program/Project Management, the labs, and other functional areas as appropriate will be invited to participate to cover current topics of interest. This interaction with the districts and divisions is crucial to the technical leadership role of the HQ Watershed Team. It will ensure that the products supplied by HQ are useful to the field, and that the HQ Watershed Team can adequately support HQUSACE management by keeping them informed of division and district actions.

Cost: The estimated cost of implementing this recommendation is \$10k/year nationally (central funding) and \$350k/year for districts/MSCs. This covers costs for two national meetings per year: travel costs for four attendees from HQUSACE and 75 attendees from districts/division, and salary costs for divisions. See Table 1 for estimates for the cost impacts for all task force recommendations.

Recommendation (4): Reclassification of Watershed Team Leader Position

That the Watershed Team Leader position be reclassified from an interdisciplinary position to a Hydraulic Engineer, GS-0810-15, with required Professional Engineering registration. This will ensure that the position of the technical lead for H&H in the Corps will be filled with someone that has a strong H&H background. The Team Leader should also have demonstrated a technical leadership capability.

Discussion: The Watershed Team Leader is the technical lead for H&H in the Corps of Engineers, the nation's premier water resources organization. This position must be filled by someone with a strong H&H background in order to be effective, mandating a reclassification of the position as a Hydraulic Engineer, GS-0810-15. The job series that are currently eligible (Mechanical Engineer, General Engineer, Civil Engineer, and Hydrologist) do not have sufficient H&H background to adequately perform the position duties. If the position is filled with another

job series, not only will the Watershed Team leader be poorly prepared for his/her duties, but the team leader will not be able to provide backup for the skills sets of the other team members. This would leave the Watershed Team at a critically low level of staffing.

The need for a strong H&H background, with a significant component of district H&H experience, should be self-evident: the effectiveness of the Watershed Team Leader depends on their ability to command technical respect, both inside the Corps in the districts and divisions, and outside the Corps, within the professional community and with other federal agencies. The need for demonstrated technical leadership capability arises from the fact that the majority of the position responsibilities involve leadership: the Watershed Team Leader must lead the Corps in all areas relating to H&H. The specific characteristics that the Watershed Team Leader should possess are listed in detail in Appendix L, "HQUSACE Watershed Team Leader, GS-0810-15, Desired Characteristics."

Cost: There is not cost associated with implementing this recommendation. See Table 1 for estimates of the cost impacts for all task force recommendations.

Recommendation (5): Temporary Backfill of Watershed Team Leader Position

That the Watershed Team Leader position be backfilled in the following manner while a permanent replacement is being recruited (estimated June 2001 to March 2002): a mini-recruitment should be performed immediately to obtain a temporary GS-15 replacement from the field for six to twelve months. The Advisory Committee should be an active participant in the recruitment and selection process.

Discussion: The retirement of the Watershed Team Leader, expected to occur in June 2001, will virtually complete the loss of institutional Hydrology and Hydraulics (H&H) technical experience and knowledge residing at HQUSACE. It is therefore imperative that the impending H&H technical vacuum be short in duration and the Acting Watershed Team Leader be temporarily filled with a knowledgeable and versatile H&H specialist. To aid in this procedure, the following is recommended: **(1)** Prior to the formal retirement announcement, that the Advisory Committee be tasked to assist the CW Water Resources Branch Chief in preparation and/or development of a set of Knowledge, Skills and Abilities (KSAs) that would be used to assist in the recruiting on a temporary and permanently basis; **(2)** that immediately upon formal retirement announcement by the incumbent, HQUSACE release a Corps-wide interest and availability request for an H&H developmental assignment at HQUSACE (temporary fill) at the GS-15 level to all known qualified individuals in-the-field that have significant H&H technical backgrounds; **(3)** that the temporary fill announcement (developmental assignment at HQUSACE) be time limited and expected to last for a period not to exceed 12 months while the position is being actively recruited; **(4)** that a designated subset of the Advisory Committee serve as a pre-selection committee for the Acting Watershed Team Leader to narrow the field of potential applicants (evaluate individuals on H&H technical expertise and proven H&H leadership skills) and provide the shortened list (with supporting documentation and justification) to the selecting official; **(5)** that the Acting Watershed Team Leader be recruited to be on-board at HQUSACE for a transition period with the incumbent; and **(6)** that the

Advisory Committee have at least one member on the final selection panel for the permanent replacement.

Cost: There is a one-time estimated national cost (central funding) of \$35k associated with implementing this recommendations, covering travel and per diem for 180 days. See Table 1 for estimates of the cost impacts for all task force recommendations.

Recommendation (6): Additional Positions on HQ Watershed Team

That two GS-14 hydraulic engineer positions be added to the Watershed Team to ensure that HQ maintains H&H technical competencies that are essential to the CW program: hydraulic design, hydropower, river hydraulics, stream/ecosystem restoration, and sedimentation. The most recent workload assessment identified a need for 6.26 FTEs to perform the duties of the Watershed Team; currently there are only 4.0 FTEs. Position justifications and the workload assessment are included in Appendix N.

Discussion: Analysis by the H&H Capability Assessment Task Force identified a critical understaffing in the Watershed Team (CECW-EW-W). The most recent workload assessment identified a need for 6.26 FTEs to perform the duties of the Watershed Team; currently there are only 4.0 FTEs. The Task Force determined that during the establishment of the current E&C organizational structure the Watershed Team was under-resourced to effectively meet requirements of assigned functions. The Corps-wide H&H Capability Assessment Task Force Survey also received many comments from the field that staffing of HQUSACE Watershed Team must be increased to provide policy and guidance in several critical H&H areas in a responsive manner. The current workload and staffing has resulted in:

- staff not being available when requested to participate in PMBP teams
- staff not available to support UOC (for example, the current Red River of the North situation)
- staff operating in "crisis mode" and being forced to neglect crucial but less urgent functions such as technical policy, professional society interface, workforce evaluation & development, CX proponent for E&C programs, etc.
- staff technically unqualified to respond to requests from districts and MSCs to provide guidance in several critical H&H areas in a responsive manner.

The H&H Capability Assessment Task Force has evaluated the functional responsibilities of the Watershed Team, required technical skills, new mission areas, and actual workload requirements. The analysis indicates that the following H&H technical skills are required by the Watershed Team:

- Surface water hydrology
- River hydraulics
- Reservoir system analysis
- Water quality
- Hydrologic statistics, frequency and risk analysis
- Groundwater hydrology

- Drought and low-flow hydrology
- Erosion, sediment transport, and sedimentation Coastal Engineering
- Hydraulic design

Applications/business areas include:

- Flood control/damage reduction
- Shallow/inland and deep draft navigation
- Water supply
- Stream/ecosystem restoration
- Hydropower
- Water Control Management

Program management, liaison, or corporate POC responsibilities include:

- International Joint Commission (IJC), International Boundary Waters, and Columbia River Treaty
- Corps of Engineers Water Management System (CWMS)
- Dam Safety
- Several interagency committees including sediment, flood flow frequency, FEMA HAZUS model.

Technical skills which are not possessed by current Watershed Team members are:

- Hydraulic design
- Hydropower
- River Hydraulics
- Stream/ecosystem restoration
- Erosion, sediment transport, and sedimentation.

The area of hydrologic statistics, frequency and risk analysis is currently covered by the Watershed Team Leader, who is retiring.

The two additional GS-14 hydraulic engineer positions which are recommended will cover the technical skill areas that are currently not possessed by the Watershed Team and assume program management/POC duties currently un-resourced. One position will cover Hydraulic Design & Hydropower, including coordination with FERC on hydropower licenses. The other will cover River Hydraulics, Sedimentation, and Stream/Ecosystem Restoration. This last technical skill, stream/ecosystem restoration, is a rapidly growing new mission area that is currently not represented on the Watershed Team, and in which critical needs have been identified by the field for training, guidance, policy, and R&D. The addition of the two recommended positions will enable the Watershed Team to cover the necessary skill set and to perform its mission successfully. These positions should be recruited as GS-13/14 positions to attract a larger and more diverse group of applicants. HEC has national experts that can be used on a case-by-case basis to fill voids in technical expertise during the recruitment process, and provide supplemental expertise and manpower as might be needed when requirements exceed the resources of the fully

staffed Watershed Team. HEC is not a laboratory and thus may be GE resourced. The previous Deputy Director of Civil Works (John D'Aniello) tasked IWR management to seek such resource inclusion in future IWR budget requests.

Cost: The estimated cost of implementing this recommendation is \$350k/year nationally (central funding). This covers salary plus overhead for two GS-14's in HQUSACE. See Table 1 for estimates of the cost impacts for all task force recommendations.

Recommendation (7): Interagency Coordination

That the Watershed Team actively pursue the functional responsibility of interagency coordination by coordinating Corps R&D efforts with those of other federal agencies to encourage collaboration and leveraging limited research funds.

Discussion: The HQ Watershed Team should make an intensive effort to coordinate our R&D efforts with those of other federal agencies. This is already done in sedimentation through the Federal Interagency Sedimentation Program. There is a critical need for this approach in the H&H component of ecosystem restoration, where there are multiple federal agencies working on similar research activities. In ecosystem restoration, the key agencies (along with the Corps) would be USDA, NRCS, FWS, EPA, and USGS. Corps research dollars are so limited, and there is so much that needs to be done, that any leveraging that could be obtain (through interagency coordination) would be extremely beneficial and would more than repay the time and effort spent. This effort is dependent on filling the position allocated in the Watershed Team.

Cost: There is not cost associated with implementing this recommendation. See Table 1 for estimates of the cost impacts for all task force recommendations.

Recommendation (8): Improved Definition of Division H&H Role

That the division PMBP H&H role be patterned after the District Support Teams in SPD. Fitting within the framework of our existing PMBP guidance, these have a high level of engagement with the districts, and a high level of customer satisfaction. Information on the SPD District Support Teams is included as Appendix D.

Discussion: The role of H&H staff in the divisions has not been clearly defined under PMBP. Several Corps divisions have a high level of engagement between their H&H staff and those of the districts on civil works projects, and have found that there is value added for the districts to have division support, especially on controversial or complex projects. Since SPD had the most formalized and well-documented procedure for interaction with their districts, they were selected as a model, both for other Corps divisions and for HQ (as described in Recommendation 3 above). The role of the SPD District Support Teams is described above in the discussion following Recommendation 3, with additional information included in Appendix D. The SPD teams have been successful, resulting in a high degree of district and division satisfaction. The

interaction between the division and the districts has led to the division supplying products such as training and guidance which are valued by the districts.

Cost: There is not cost associated with implementing this recommendation. See Table 1 for estimates of the cost impacts for all task force recommendations.

Recommendation (9): GS-13 Technical Specialists

That non-supervisory technical GS-13 hydraulic engineer positions be encouraged for key district H&H function positions which are regional or national technical specialists, one to several in each district depending on workload and specialty expertise. Sample position descriptions are included in Appendix O.

Discussion: Many of the best and the brightest H&H university graduates go to work for the Corps of Engineers. The Corps is probably the nations largest employer of H&H specialists and has some of the most interesting work being done. Unfortunately, these excellent engineers become frustrated because the career ladder for engineers desiring to remain technical specialists in H&H at the districts is capped at the GS-12 level. 78% of district H&H staff answered yes to the question “Would a career ladder to technical specialist GS-13 alter your career plan...?” To get promoted in their district engineers at this level have to leave their technical specialty and become managers or supervisors. With decreased supervisory ratios first line H&H supervisors often supervise 15 engineers. These supervisors don’t have the time to maintain their technical expertise, to provide technical guidance and review, or to adequately mentor younger staff. This is especially disturbing now that the districts are responsible for technical review. With the current disparate grade levels the Corps runs the risk of becoming a world-class project management organization supported by a second class engineering staff.

GS-13 district technical specialists would play a role in the proposed district support teams. Permanent members of these teams would come from divisions but district regional experts would serve on an ad hoc basis when their specialty was required. This would increase district participation in the regional business process and help ensure sharing of expertise between districts. Sharing of expertise will be especially important as some districts reduce in size and won’t be able to maintain expertise in all portions of H&H. The survey found that districts with smaller H&H staff were mainly the ones who rated the Corps H&H expertise as woefully inadequate or inadequate. Regional GS-13 district technical specialists could play a significant role helping smaller districts through virtual teaming.

A district career ladder to a technical GS-13 would help ensure retention of many of the excellent current H&H staff. It takes many years of challenging training and work to produce top-notch journeymen H&H engineers. Too often the Corps’ investment in these engineers is wasted when our top performers leave the technical area to obtain promotions and the attendant recognition. Technical GS-13s would also help retain more of the senior engineers who are approaching retirement age. This will help allow an orderly transition to the new generation of recent graduates.

Cost: The estimated cost of implementing this recommendation is 1.5M/year for districts/MSCs, assuming 70 GS-12s upgraded to GS-13 (approximately two per district). See Table 1 for estimates of the cost impacts for all task force recommendations.

Training and development

Recommendation (10): Basic H&H Training Plan

That the “Basic H&H Training Plan”, as detailed in this Task Force Report, be generally adopted for Corps wide implementation in FY03 for all entry-level H&H technical staff. Commanders will assure district support of the Basic Training Plan and that this Plan is included in Individual Development Plans (IDPs), as applicable. All formal training required by this plan will be funded at the district level.

Discussion: The importance of a sound technical foundation for the hydrologic and hydraulic sciences cannot be understated for the overall Civil Works Program of the Corps of Engineers. As such, the development of this expertise is founded in the basic curriculums of the Universities and Colleges that provide the preparation for the various H&H career paths. However, it is common practice that the depth and breadth of this initial “training” provides minimal exposure to the actual practice of either hydrologic or hydraulic engineering. In this regard, it is paramount that actual on-the-job experience must be supplemented with focused training that provides for direct application of the tools, techniques, and engineering principles absolutely necessary for career progression in the H&H sciences.

Appendix P details a listing of course-work that must be adopted to provide the entry-level H&H team member the basic Corps curriculum to advance in the direct application of the hydrologic and hydraulic sciences. With this foundation firmly established in the Individual Development Plan for each entry-level H&H employee, the continued H&H expertise in the Corps of Engineers can be built upon. It is imperative that direct support of this basic “Curriculum” be supported by Corps leadership for it is the basis upon which the execution of the Civil Works Program will rely upon in the future.

The Task Force recommends that the Districts be encouraged to allow H&H sections flexibility to reallocate their technical indirect budgets to fund training to meet this objective.

Cost: There is not cost associated with implementing this recommendation. See Table 1 for estimates of the cost impacts for all task force recommendations.

Recommendation (11): Journeyman/Expert H&H Training Plan

That the “Journeyman/Expert H&H Training Plan”, as detailed in this Task Force Report, be generally adopted for Corps wide consideration. Commanders will assure district staff prepare annual IDPs with the 5 year training plan prepared as an individual career development plan to meet mission requirements.

Discussion: Recommendation No. 10 provides the basis for building a firm foundation upon which the basic H&H disciplines can be developed. This recommendation provides for the continued development of our journeyman and expert level staff that form the framework in which the predominance of our overall H&H workload is accomplished. Maintaining and expanding our overall expertise in these critical disciplines is paramount in order to meet the many challenges in water resources. As an example, the rapidly expanding environmental mission must be met with a competent and prepared staff. This was emphasized in responses gained directly from the Districts and Divisions in the recent capability survey in that the survey indicated a significant need for training in this area.

Continued development of staff is critical for maintaining expertise. The tools and techniques utilized for hydrologic and hydraulic analyses are rapidly evolving. These include unsteady flow analyses, hydrologic modeling using graphical user interfaces, and 2 (and 3-) dimensional modeling techniques to name a few recent examples. Providing a clear path for maintaining and developing expertise will not only provide challenging opportunities for our team members, but will enable the Corps of Engineers to be the world-class technical organization that our nation's problems demand that it should be.

Appendix P details a listing of course-work that must be adopted to provide the "Journeyman/Expert" H&H team member the continuing Corps curriculum to be a learning organization and maintain/enhance our technical expertise. The Task Force recommends that the Districts be encouraged to allow H&H sections flexibility to reallocate their technical indirect budgets to fund training to meet this objective.

Cost: There is not cost associated with implementing this recommendation. See Table 1 for estimates of the cost impacts for all task force recommendations.

Recommendation (12): Long-term Training

Increase central funding of long-term training to include labor, tuition, travel and per diem to ensure access to nationally prestigious graduate programs.

Discussion: It has been an established policy of the Corps of Engineers to provide appropriate training and development opportunities to assure maximum efficiency of civilian employees in the performance of their official duties. This policy has normally been executed, on a team-member basis, by the application of an Individual Development Plan (IDP) that details the training and guidance necessary to progress in a chosen career field. Actual implementation has traditionally been accomplished through the annual training survey which details coursework, seminars, and other appropriate venues to maintain or enhance an individual's expertise. Paramount to this process is a realization, by both the Individual and the Agency, on actions necessary to implement the IDP. Both training and expected expertise needs (by the Agency) are reviewed, and effective training practices and techniques applied in efforts to raise team-member performance and to meet present and anticipated needs for skills, knowledge, and abilities. If the Corps is to keep abreast of management, technical, and scientific advancements, attention must be given to providing value-added, appropriate development opportunities beyond the customary short-term programs.

Long-term training of an individual can be determined through the IDP process. The basic concept for long-term training is as follows: **The new knowledge and skills required can only be achieved through a comprehensive, concentrated program of study.** This premise separates long-term training from the annual cycle of course-work/training that can effectively be accomplished to achieve specific, short-term objectives. Long-term training, by its basic definition, is usually associated with the following attributes:

1. An accelerated study program of long-term, full-time duration is required, and
2. An educational institution or academic program offers a unique specialized program of study and has academic superiority over other institutions.

The key concept associated with long-term training is the opportunity to provide an intense, focused learning experience that will benefit the Agency and team member. Other avenues of training such as sporadic course-work, seminars, or actual on-the-job experience simply do not replace the benefits of a long-term training experience from both a timing perspective (expertise/value needed soon by Agency) and educational importance (reputable education to team member and Agency).

As an example of this concept, consider the rapidly expanding environmental mission of the Corps of Engineers. Past practices in hydrologic and hydraulic engineering are not necessarily applied in the same manner to receive outputs as measured by habitat units as compared to flood damage reduction. Accordingly, our approach to these unique water resource problem areas must be met with a competent and prepared staff. An intensive one-year program could be one solution to increase technical skills related to ecosystem restoration and to provide additional theoretical background and state-of-the art knowledge in order for a District to meet the increasing mission needs in this area. Environmental training was emphasized in responses gained directly from the Districts and Divisions in the recent capability survey. Training that is developed and taken over several years may be value-added by not timely. Long-term training can fill this void by intensively developing key team members that can rapidly apply recent learning to a multitude of water resource problems and situations.

The overall recent trends in the funding of long-term training opportunities has reflected a shifting of some costs (labor, tuition, travel or per diem) to the appropriate District or Division that nominates a team member for this form of training. For example, labor costs and per diem have been funded by the individual District or Division which can place an extensive financial cost on the nominating office with an unfortunate outcome of potentially discouraging offices from nominating anyone for these programs due to the high costs. The Task Force recommends an increased central funding of long-term training to include labor, tuition, travel and per diem to ensure access to nationally prestigious graduate programs that are critical to our corporate development as an Agency. Since we do encourage team members to extend their expertise across the Corps of Engineers (mobility), costs associated with long-term training should be a corporate expense of the Agency.

Cost: The estimated cost of implementing this recommendation is \$185k/year nationally (central funding) and \$455k/year for districts/MSCs. This includes central funding costs and local salary costs for five new long-term H&H trainees per year. See Table 1 for estimates of the cost impacts for all task force recommendations.

Recommendation (13): Ecosystem Restoration Training

That the critical need to educate H&H work force to meet the new and growing mission area of stream/ecosystem restoration receive one-time central funding over a period of two years. The Watershed Team Leader would propose a training plan after consultation with Planning/Policy and Operations Divisions.

Discussion: Restoration of the ecosystem of streams and rivers is a growing priority for the nation and the Corps of Engineers. The Corps' current employees have vast expertise and knowledge of H&H for flood control and navigation projects. Much of this is directly applicable to stream restoration but in order for the Corps to respond quickly and lead the nation's efforts in this area there is a need for additional training over what the standard training budgets allow. This training is needed to teach current H&H employees how to work with a different type of team with different players and different expectations. The H&H designer needs to be trained to learn how to apply his/her knowledge to maximize both ecosystem and flood control benefits, instead of the previous mentality of maximizing flood control benefits and only mitigating ecosystem damage. The H&H community needs training in what resource managers need for streams to improve ecosystem values and how they can provide those changes within the Corps guidelines. Our survey found that ecosystem restoration training was rated as the highest need by H&H staff of districts, divisions and labs/CXs. The existing training budget is barely adequate to train new H&H employees in the use of the basic Corps' H&H tools. To jump-start the Corps in this direction it is necessary to provide central funding of team type training in stream ecosystem restoration. It is recommended that a training plan be developed by the Watershed Team Leader, and that the training be performed regionally with tuition cost centrally funded. This is similar to what has been done previously for dam safety, and for risk and uncertainty. A list of PROSPECT courses and ERDC workshops relating to ecosystem restoration is included as Appendix M.

Cost: The estimated one-time cost of implementing this recommendation is 240k nationally (central funding) and 650k for districts/MSCs. The cost estimate is based on a course presented at nine locations with 30 students each, including central preparation and presentation, and travel, per diem, and salaries for district/MSC attendees. See Table 1 for estimates of the cost impacts for all task force recommendations.

Recommendation (14): Research and Development

That Corps leadership recognize the need to maintain in-house H&H software development and maintenance capability, and be advocates for such expertise in the Corps. This is an essential element of the Corps achieving standing as a world-class engineering organization.

Discussion: The Corps Civil Works mission involving large and small and urban and rural watersheds, among the largest rivers and urban streams, natural lakes, arid, humid, alpine and other settings is unique among agencies and institutions in the US and abroad. The H&H analysis for such a variety of settings is complex and challenging. A vigorous and sustainable level of R&D is needed to ensure that the methods and tools needed to meet the ever increasing complexity of problems and possible solutions and enhancements are ready when needed. That R&D needs to address basic analysis methods, new and innovative information sources, new and novel applications settings, and include the practical and user friendly software for its ready use in the field.

The majority of hydraulics and hydrology analysis in support of Corps water resources activities is performed using modern computer software. Good software incorporates well accepted and state-of-the-art technical algorithms needed to address the issues being investigated, has an interface that enables efficient use, and produces output products that accurately depict the results. The Corps laboratories and Centers of Expertise have developed most of the software now in use by the Corps, and the software is also often the standard used in the larger professional community. While hydrology and hydraulics software are available from commercial vendors, academic institutions, and other agencies and is occasionally used for specific projects, Corps modelers do not typically have access to the source code. This makes it impossible for the Corps to modify the code to fit specific needs. Full understanding of computational algorithms and numerical methods, interpretation of questionable results, and changes to the code would require contractor involvement. This would inevitably lead to an erosion of Corps technical capabilities. In addition, training and support of non-Corps software must be secured from the software vendors, not in-house sources.

A world-class engineering organization must recruit, retain and reward the people that produce the software needed to accomplish its basic missions. The Corps is not unique in that respect. To be world-class in hydrologic engineering, we must maintain and expand our in-house ability to develop hydrology and hydraulics software that serves the unique needs of the Corps. To that end, HQUSACE needs to acknowledge the need for the requisite specialized staff, and support the software development organizations by providing sufficient funding and national-level advocacy.

Cost: The estimated cost of implementing this recommendation is \$2M/year nationally (central funding). See Table 1 for estimates of the cost impacts for all task force recommendations.

Recommendation (15): Executive Advisory Committee

That the HQUSACE Chief of Engineering & Construction Division create an Advisory Committee (composed of the H&H Capability Assessment Task Force members) to provide assistance to HQUSACE executive staff for the next three years in implementing the above Task Force recommendations. Due to the near-critical staffing shortage and the impending retirement of the Watershed Team Leader in June 2001, the Committee will have a major role as the champion of the Task Force recommendations.

Discussion: The retirements in the past year of several key members of the HQUSACE Watershed Team and the impending retirement of the Watershed Team Leader in June 2001 will leave the HQUSACE Watershed Team without critical leadership skills and national-level institutional memory relating to the overall Corps Civil Works program. In addition, there will be no permanent staff at the HQ level with the background to evaluate the technical leadership capability and hydraulic engineering expertise of the candidates for the Watershed Team Leader position or the two new GS-14 hydraulic engineer positions. There is a critical need for continuity during this critical period while the HQUSACE Watershed Team is being re-staffed and redefined. The implementation of the Task Force recommendations will also require involvement of Task Force members from outside HQUSACE, since there will be no one remaining at HQUSACE who was involved in the Task Force. For these reasons, it is recommended that the Task Force be rolled over into an Advisory Committee, with intense involvement for the next 12-18 months to overcome a critical leadership vacuum in the HQUSACE Watershed Team. The major function of the Advisory Committee would be to get the Watershed Team back in operating condition, with appropriate staffing and a redefined role that engages them with the districts and divisions. The staffing of the Watershed Team is a crucial issue, since it is the people in these jobs who will define the technical leadership role for H&H within the Corps of Engineers. The Advisory Committee will be an active participant by assisting the Chief of Engineering Division and Water Resources Branch Chief in the following responsibilities:

- Preparation of position description, and participation in the advertisement and selection process for the next Watershed Team Leader
- Preparation of position descriptions, and participation in the advertisement and selection process for the two Watershed Team members
- Providing continuity of H&H leadership while the HQ Watershed Team is in transition
- Champion of the Task Force recommendations
- Providing follow-up assessment to HQUSACE leadership on implementation of the Task Force recommendations

Participation in the advertisement and selection process would include such items as 1) assisting in the development of KSAs or crediting plans, 2) screening applicants, and 3) having one or two committee members on the selection panel. It is anticipated that the Advisory Committee would be actively involved for the next 12 to 18 months, until the HQUSACE Watershed Team has been fully staffed and the role of the team has been successfully defined and implementation well underway to achieve engagement with the districts and divisions. The Advisory Committee would also provide written follow-up assessment to HQUSACE executive staff on a quarterly basis for the next three years on progress being made on implementation of the above-approved Task Force recommendations.

Cost: The estimated cost of implementing this recommendation for the next three years is \$78k for the first year, and \$52k per year for the next two years (all costs from central funding). This includes salary, travel, and per diem for two meetings per year (with one additional meeting the first year) at HQUSACE with 8 attendees. (Costs are based on three days per meeting, to include both meeting and travel time.) The advisory committee will be more intensely involved during

the first 12 to 18 months of the three-year period. See Table 1 for estimates of the cost impacts for all task force recommendations.

Table 6-1 Costs of H&H Capability Assessment Report Recommendations

Recommendation	National Cost	Local/ MSC Cost	Comments
1. Support/Advocacy from HQUSACE Senior Leaders	None	None	
2. Designate Watershed Team Leader as H&H Lead	None	None.	
3. Role of HQ Watershed Team in PMBP	10k/Year	350k/Year	Two national meetings, travel cost for HQUSACE (4 attendees) and district/divisions; salary cost for divisions. 75 Attendees
4. Reclassification of Watershed Team Leader Job.	0 None	None	
5. Temporary Backfill Team Leader	35k once	None	Travel plus PD for 180 days.
6. Additional Positions for HQ Watershed Team	350k/Year	None	Salary + OH for two GS 14s in HQUSACE
7. Interagency Coordination of R&D	None	None	Normal duties.
8. Improved Definition of H&H Roles	None	None	Normal duties.
9. GS-13 Technical Specialists in districts	None	1.5M/Year	70 GS-12s upgraded to GS-13; averages about two per district.
10. Basic H&H Training	None0	None	Curriculum guidance, no additional training.
11. Journeyman/Expert H&H Training	None	None	Curriculum guidance, no additional training.
12. Long-term Training	185k/Year	455k/Year	Central funding cost plus local salary cost for five new LTT per year for H&H.
13. Ecosystem Restoration Training	240k Once	650k Once	Course prepared and presented at nine locations with 30 students each. Central prep. and presentation; local attendee T/PD and salaries.

14. H&H Research and Development including software.	2M/YearN	None	Added R&D for H&H methods development including associated user friendly software development for ERDC plus FOA/DX
15Executive Advisory Committee	None	None	Conduct business in virtual meetings.
TOTALS FY 2002	\$2.8M	\$1.46M	
TOTALS Out Years	\$2.5M/Year	\$0.81/Year	

APPENDIX A

TASK FORCE CHARTER



DEPARTMENT OF THE ARMY
U.S. Army Corps of Engineers
WASHINGTON, D.C. 20314-1000

REPLY TO
ATTENTION OF:

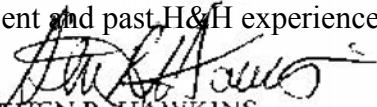
1 2 MAR 2001

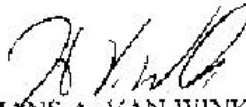
CECW-EW (1110-2-200)

MEMORANDUM FOR SEE DISTRIBUTION

SUBJECT: Assessment of Hydraulics and Hydrology (H&H) Capabilities in USACE

1. Hydraulics and Hydrology (H&H) expertise is one of the core competencies of the USACE. Our ability to maintain technical expertise in the H&H field is critical to our continued support to the nation. In recognition of this emphasis, we are directing an assessment of USACE H&H capabilities. This assessment will evaluate H&H technical capabilities and needs throughout USACE- from the districts, through the Divisions, and to the Headquarters (including labs & centers). Our objective is to develop a plan to ensure we remain world leaders in the H&H field. These capabilities are essential to support both our Civil Works and Military Programs missions.
2. Mr. Bill Branch, Chief of Water Management at Northwest Division, North Pacific Region, will be the leader of a task force to accomplish this assessment. Mr. Paul Robinson, Director of Military & Technical Services at Lakes and Rivers Division, will perform executive oversight of this task. I am asking that they work with the USACE collective resources of the field, including the Institute of Water Resources, the Hydrologic Engineering Center, and the Engineering Research and Development Center.
3. The task force will evaluate a number of options to restore and retain H&H technical competency in USACE. Some options that will be evaluated will include, but are not limited to: use of engineering technical committees; development of virtual teams; filling senior-level H&H technical positions in districts and divisions; developmental and training opportunities; and establishment of Centers of Expertise. The solution requires a systematic corporate response that integrates our current business processes and organizational structure into our existing H&H culture. Emphasis will be placed on working on a regional business center and project delivery team environment.
4. To perform this assessment, the Task Force will be utilizing a number of procedures including data calls, interviews with MSCs and district leadership and technical personnel, and the use of the Registry of Skill (<https://ros.usace.army.mil:8096>) to query employees with present and past H&H experience.


STEVEN R. HAWKINS
Brigadier General, USA
Director of Military Programs


HANS A. VAN WINKLE
Major General, USA
Director of Civil Works

APPENDIX B

ASSESSMENT OF HYDRAULICS AND HYDROLOGY CAPABILITIES IN USACE

Appendix B

**ASSESSMENT OF HYDRAULICS AND HYDROLOGY
CAPABILITIES IN USACE**

Task Force

District

Joe Evelyn (SPL)	(213) 452-3525
SK Nanda (MVR)	(309) 794-5310
Michael Bart (NWK)	(816) 983-3157
Chuck Wener (NAE)	(978) 318-8686
John Hashtak (SAJ)	(904) 232-2105
Pat Foley (MVP)	(651) 290-5630
Dave Schweiger (LRE)	(313) 226-6440

Division

John Bianco (NAD)	(718) 491-8738
Ed Sing (SPD)	(415) 977-8117
Bob Watson (SAD)	(404) 562-5107
Patrick Evermon (SWD)	(214) 767-2370
Stan Wisbith (LRD)	(513) 684-6259

Labs, HQ & Other Ofc.

Darryl Davis (HEC)	(530) 756-1104
Bob Pietrowsky (IWR)	(703) 428-8015
Ming Tseng (HQ)	(703) 428-7218
Ron Copland (ERDC-WES)	(601) 634-2623
Steve Daly (ERDC-CRREL)	(603) 646-4218

Retired

Earl Eiker	(410) 465-2120
Pete Juhle	(410) 655-8732

Task Force Leader

Bill Branch (NWD)	(202) 761-4242 @ HQ
	(703) 428-7040 @ Kingman Bldg.

Task Force Assistant

Meg Jonas (NAB)	(703) 428-7180 @ Kingman Bldg.
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APPENDIX C

SOME NOTES ON THE HYDROLOGY AND HYDRAULIC CAPABILITY SURVEY AND RESPONSES

Some Notes on the Hydrology and Hydraulics Capability Survey and Responses

Responses were received from each of the targeted Corps offices: districts, divisions, FOA/LABS, and headquarters, a surprising achievement. The responses were not all complete, nor in accordance with the instructions, but then again, the questionnaire was not perfect either! However, a relatively complete and interesting view of H&H in the Corps is revealed. The summary that follows is an attempt to condense the results without unduly omitting important information.

The responses are collapsed to a summary for districts, divisions, and FOA/LAB. HQUSACE is down to four, which is hardly worth summarizing. The responses represent near 1,100 H&H staff as reflected by a consolidated response prepared by each office. The total of respondents represented is tabulated for the first question. Thereafter, responses are tabulated as percentages for each of the three groups. Most offices tabulated consistent results, but for a number of others (perhaps a quarter of the respondents), interpretations on our part were necessary. We tried to guess right. Narrative responses are difficult to capture, and I have resisted the temptation to summarize themes or prevailing views. Instead, there is a reasonable sampling of the narrative responses appended following the questionnaire summary. Further analysis and compilation will likely occur, but this first quick summary is intended to support early deliberations by the HQUSACE appointed task force looking at H&H in the Corps

Darryl W. Davis, Director
Hydrologic Engineering Center
March 10, 2001

Hydrology and Hydraulics Capability Survey (2-15-01/Summarized 3-10-01/HEC)

This Web-based survey seeks to: 1) develop base information about the existing Corps hydrology and hydraulics capability; 2) identify weaknesses or shortcomings in capability needed for current and future Corps missions; and 3) solicit views on potential solutions for the weaknesses and shortcomings. Of interest is hydrology and hydraulics for both Civil Works and Military Programs that encompasses: precipitation-runoff processes, reservoir systems analysis, hydrologic probability and risk analysis, river hydraulics and sediment transport, hydraulic design, stream channel and land surface erosion, coastal processes, groundwater hydrology, and water quality. The applications areas include: flood damage reduction, water control management, hydroelectric power, navigation, erosion control, water supply, watershed studies, ecosystems restoration, and military operations. The H&H studies support planning, design, construction, operations, and regulatory. Please take a few moments to complete the survey questions below. Only summary information will be compiled; no individual answers will be reported. **The survey is targeted for Corps staff that perform hydrology and hydraulics professional services as a predominate activity of their regular work assignments, no matter the staff organization location. Professionals with substantial hydrology and hydraulics capability but now performing other functions are encouraged to complete the questionnaire as well.**

This questionnaire is annotated in fuchsia to tailor the questions to elicit desired response by a POC to reflect an approximate composite/summary for that office. A single questionnaire response from each Corps office (District, Division, Laboratory/FOA) is desired. The intention is that the information would be compiled by consensus or judgments of a few key staff, or use approximate compilations from readily available information. Please return the questionnaire by making the appropriate annotations edited on this electronic document and return file to darryl.w.davis@usace.army.mil by COB 2 March 2001.

Corps Hydrology and Hydraulics Capability Profile

1. Where are you now assigned? **(Place X by office and include office symbol)**

	Total H&H
District - All responded:	771
Division - All responded:	70 (70% are in NWD)
FOA/Lab - HEC, TEC, CRL, CHL	253 (80% are CHL)
HQUSACE	4
Total	1,091

2. In what organization do you now work? **(Include head count of H&H staff by office organization)**

	Dist.	Div.	FOA/LAB
Planning/Project Management	-	1%	-
Engineering - Hydrology and Hydraulics	59%	6	10%

Engineering - Hydraulic Design	9	2	5
Water Control Management	28	89	-
Operations/Construction	-	-	-
Regulatory	-	-	-
Research and development	-	-	85
Other: _____ Specify	4	2	-

3. What hydrology and hydraulics technical function do you primarily perform (check one)? ?
(Include head count of H&H staff by technical function)

	<u>Dist.</u>	<u>Div.</u>	<u>FOA/L</u>
Do not presently perform hydrology and hydraulics functions	1%	5%	2%
Precipitation-runoff processes	15	15	6
Reservoir systems analysis	13	25	6
Hydrologic probability and risk analysis	11	10	5
River hydraulics and sediment transport	14	10	20
Stream channel and land surface erosion	6	7	13
Hydraulic design	15	3	15
Groundwater hydrology	2	-	8
Coastal processes	6	1	20
Water quality	8	5	5
Other H&H technical function: _____ Specify	9	19	-

4. What applications area does your work primarily support? ? **(Include head count of H&H staff by applications area)**

	<u>Dist.</u>	<u>Div.</u>	<u>FOA/LAB</u>
Flood damage reduction	32%	11%	23%
Water control management	32	35	10
Hydroelectric power	3	19	2
Navigation	7	12	21
Water supply	6	4	4
Erosion control	7	2	12
Ecosystem restoration	9	2	16
Military programs	11	2	10
Other _____ Specify	2	15	2

5. What is your education level? ? **(Include head count of H&H staff by education level)**

	<u>Dist.</u>	<u>Div.</u>	<u>FOA/LAB</u>
Bachelors Degree	67%	60%	30%
Masters Degree	30	35	45
Doctorate or Professional Degree	3	5	25

6. How many years have you been working for the Corps? ? **(Include head count of H&H staff by category of years with the Corps)**

<u>Dist.</u>	18%	14	16	15	17	14
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<u>Div.</u>	7%	11	6	9	33	24	10
<u>FOA/L</u>	8%	15	15	20	15	15	12
0 - 5 ____; 6 - 10 ____; 11 - 15 ____; 16 - 20 ____; 21 - 25 ____; 26 - 30 ____; 31+ ____							

7. How many years of hydrology and hydraulics experience do you have? **(Include head count of H&H staff by years of experience)**

Dist.	7%	16	16	9	28	17	7
Div.	22%	16	15	14	16	11	6
FOA/L	8%	15	15	20	15	15	12
0 - 5 ____; 6 - 10 ____; 11 - 15 ____; 16 - 20 ____; 21 - 25 ____; 26 - 30 ____; 31+ ____							

8. What is your current grade level? **(Include head count of H&H staff by grade level)**

	<u>Dist.</u>	<u>Div.</u>	<u>FOA/LAB</u>
5	5%	-%	2%
7	5	1	8
9	9	4	10
11	21	7	10
12	46	30	25
13	12	40	25
14	2	14	15
15	-	4	5
SES	-	-	1

9. Which of the following does your present career plan target (select one)? **(Include head count of H&H staff by category as possible)**

	<u>Dist.</u>	<u>Div.</u>	<u>FOA/LAB</u>
Technical specialist in H&H	66%	54	85%
Specialist in project management	2	6	-
Specialist in planning	1	-	-
Specialist in other field: _____ Specify	8	14	2
Supervisory/management in any above field	23	32	13

10. Would a career ladder to technical specialist GS-13 alter your career plan target noted in question 9. above? **(Indicate Yes or No as a consensus for the organization)**

	<u>Dist.</u>	<u>Div.</u>	<u>FOA/LAB</u>
Yes	78%	10%	-%
No	22	90	100

11. Which best describes you? **(Include head count of H&H staff by category)**

	<u>Dist.</u>	<u>Div.</u>	<u>FOA/LAB</u>
Supervisor	10%	7%	10%
Team Leader	14	22	15
Non-supervisor technical worker	76	48	75

12. Please indicate how you view your own skill level in hydrology and hydraulics. **(Include head count of H&H staff by category)**

	<u>Dist.</u>	<u>Div.</u>	<u>FOA/LAB</u>
Novice	7%	4%	3%
Apprentice	13	9	6
Journeyman	38	32	37
Expert	42	55	54

12. Please indicate where you normally secure answers to your technical questions involving methods or policy? **(Include head count of H&H staff by category as possible)**

	<u>Dist.</u>	<u>Div.</u>	<u>FOA/LAB</u>
Own district H&H colleagues or senior staff	61%	46%	2
Another district's H&H staff w/in or outside Division	5	6	-
Division	12	20	-
HQUSACE	2	17	-
Corps laboratories or FOAs	13	8	90
Private consultants	2	-	2
Academia	2	-	6
State agencies	1	-	-
Other Federal agencies	2	3	-

13. Please indicate your age group: **(Include head count of H&H staff by age group)**

	<u>Dist.</u>	<u>Div.</u>	<u>FOA/LAB</u>
20-30	18%	9%	8
31-40	23	22	20
41-50	37	27	43
51-60	20	37	27
Over 60	2	5	2

Weaknesses and Shortcomings in Capability for Current/Future Missions

14. In my view, the present capability of the Corps to meet mission needs with hydrology and hydraulics professional services is: **(Select category that would be consensus for organization)**

	<u>Dist.</u>	<u>Div.</u>	<u>FOA/LAB</u>
Woefully inadequate	3%	2	-

Inadequate	16	45	40
Satisfactory	27	47	20
Good	39	4	20
Excellent	15	2	20

15. In your opinion, what have been the three most important contributing factors leading to the present state of H&H capability. **(Respond with description of factors that would be consensus for organization)**

Factor 1

Factor 2

Factor 3

16. What do you view as the H&H technical capability areas that are the weakest in the Corps today - select up to 3? **(Respond with technical capabilities (up to 3) that would be consensus for organization)**

	<u>Dist.</u>	<u>Div.</u>	<u>FOA/LAB</u>
Precipitation-runoff processes	3%	5%	20
Reservoir systems analysis	4	5	10
Hydrologic probability and risk analysis	8	15	20
River hydraulics and sediment transport	12	10	10
Stream channel and land surface erosion	10	10	10
Hydraulic design	12	-	-
Groundwater hydrology	23	25	10
Coastal processes	8	5	-
Water quality	15	20	20
Other H&H technical function - please specify	5	5	-

17. What do you view as the applications areas that are the weakest in the Corps today - select up to 2? **(Respond with applications areas (up to 2) that would be consensus for organization)**

	<u>Dist.</u>	<u>Div.</u>	<u>FOA/LAB</u>
Flood damage reduction	5%	-%	-%
Water control management	3	-	-
Hydroelectric power	16	20	-
Navigation	5	-	-
Water supply	20	20	35
Erosion control	14	-	15
Ecosystem restoration	34	60	35
Military programs	3	-	15

18. What ancillary subject areas do you view as in need of increased knowledge or skills for H&H professionals - select up to 4? **(Respond with ancillary subject areas (up to 4) that would be consensus for organization)**

	<u>Dist.</u>	<u>Div.</u>	<u>FOA/LAB</u>
Water resources policies and authorities	13%	22	-%
Public involvement processes	6	5	10
Conflict resolution processes	8	15	-
Negotiating agreements with sponsors	2	-	-
Identifying/developing alternatives	8	-	15
NEPA process	9	5	5
Endangered species, environmental mitigation anal.	9	10	5
Local cooperation requirements	2	-	-
Floodplain Management requirements	3	-	5
Independent technical review	10	20	10
Project management business process	5	5	10
Cost benefit analysis	3	-	15
Technical writing	10	5	5
Communication skills	5	5	5
Team participation - team building	6	10	5
Leadership	4	-	5

Views on Potential Solutions

19. If you could make recommendations to Corps leadership on improving our hydrology and hydraulics capability, what would they be - up to three? **(Respond with recommendations that would be consensus for organization)**

Recommendation 1

Recommendation 2

Recommendation 3

20. What are the two most critical "areas of training" that you need to enable you to better support Corps mission requirements? (Please use short phrases, e.g., risk analysis; reservoir system analysis; GIS in hydrology and hydraulics; etc. **(Respond with areas of training that would be consensus for organization)**

Training need #1 (specify)

Training need #2 (specify)

21. Here is a list of ways that training and development for hydrology and hydraulics staff could be provided. Please indicate how effective each of these ways is likely to be for improving hydrology and hydraulics capability by assigning the appropriate number. **(Respond with factor/number assignments for each training/development method that would be consensus for organization)**

- 1 Not at all,
- 2 Not very,
- 3 No opinion,
- 4 Moderate,
- 5 Very

	<u>Dist.</u>	<u>Div.</u>	<u>FOA/LAB</u>
Within-district training	4.5	4	3
Within-MSD training	4	5	3
Mentoring	5	4	4
Rotational assignments	4	4	4
Short-term assignments to HQ	2	3	4
Long-term training	4	4	5
PROSPECT courses	4.5	4	4
Self-paced instruction CDs	4	3	3
College courses	4	4.5	4
Custom (just-in-time) seminars and workshops	4.5	5	4
Video-conferenced courses	3	3	3
Web-based training	3	3	3
On-the-job training	5	4.5	5

22. Please express your views on the following recruitment/retention/professional matters by circling the appropriate response. **(Respond with Y or N for each item that would be consensus for organization)**

	<u>Dist.</u>	<u>Div.</u>	<u>% Yes</u> <u>FOA/L</u>
Is your org. able to recruit and retain needed H&H staff?	70%	15%	75
Are you aware of chronic H&H vacancies in your organization?	50	70	75
Does your org. encourage and support professional activities?	94	55	50
Have you prepared and presented technical papers at conferences?	76	85	75
Does your org. promote and support cross-H&H skills training?	72	15	100%
Does your org.'s leadership consider H&H a highly valued skill?	85	50	100%

23. If you have any additional comments please provide them in the space below.
(Organization POC may wax eloquent on any aspect of the Corps H&H competency issue that strikes their fancy!)

Samples of Narrative Responses

Question 15. In your opinion, what have been the three most important contributing factors leading to the present state of H&H capability. **(Respond with description of factors that would be consensus for organization)**

Factor 1 Lack of recognition at HQ level that H&H is a central technical discipline at the very heart of water resources management for USACE.

Factor 2 The relatively mature discipline of H&H in the engineering and sciences community, coupled with a series of modeling tools that appear to “solve” all the H&H problems, has led to the belief that the H&H area needs no help and limited growth.

Factor 3 The changing roles of USACE, from a development agency to a management agency, has meant that H&H-related technical activities are falling in the province of differing groups such as planning, other parts of engineering, etc. Given that H&H in the district has remained almost steadfast in trying to do hydraulic design and/or water control, when the changing missions needing H&H are environmental and geotechnical in some cases, may have isolated the H&H community or divided it in district offices.

Question 19. If you could make recommendations to Corps leadership on improving our hydrology and hydraulics capability, what would they be - up to three? **(Respond with recommendations that would be consensus for organization)**

As the Nation’s premier water management agency, H&H should be the central, integrating technical discipline within the agency. Increase its level of visibility, staffing, and training.

Recognize that, as a water management agency, USACE must be exceptional in its procurement of H&H services. As such, the technical capability of the H&H staff must be raised to a new level compared to current circumstances.

Integrate environmental and H&H functions to insure development and management of environmentally-sustainable projects, and to facilitate holistic thinking for future USACE activities. Projects such as the Columbia River and the Everglades require integrative, holistic thinking in the water management and delivery area. This may be the tip of the iceberg in such studies.

Leadership publicly recognize and support the need for strong H&H in Corps

Increase grades for technical specialists to balance with PM grades; it is now significantly out of balance.

Increase funding/opportunity for training to strengthen all areas of H&H

Elevate grade structure in H&H with greater emphasis on technical specialists' advancement opportunities; re-emphasize the importance of H&H engineering work as the foundation of all water resource projects undertaken by the Corps

Re-establish stovepipe; increase HQ H&H staffing; establish clear and logical H&H organizational structure from the HQ down to the District level

Educate Corps leadership on the value of internal Corps H&H expertise and install strong competent H&H leadership team in HQ with a clear mandate of support to the field.

Expand training to include theoretical aspects of H&H not just application of canned programs.

Create H&H technical career program that will maintain current state of readiness and develop sustainable workforce.

Trust the districts – If you don't trust them, then fire them.

Just because HQ has lost expertise does not mean field has.

Replace SOME of the expertise HQ has lost.

Encourage Technical 13s in the H&H area so that we keep our experts within Engineering and not lose them to PM

Need to beef up HQ experts to provide corporate overview and leadership in H&H stovepipes. (I realize that stovepipe is not the right word today)

Need regional H&H training at lower costs.

District training budgets the last few years have been cut back to the point that they are totally inadequate. Currently training budgets are established based on some arbitrary percentage in office operating budgets that bears no relationship to actual training needs. The Corps should be investing heavily in training staff in GIS, CADD, environmental mitigation methods, water quality, and communication skills, to better meet the challenges and problems that currently face the nation. One of the truly outstanding and relatively unique aspects of the Corps of Engineers is its extensive formal H&H training opportunities offered primarily at HEC and WES. However, it does no good to have these training programs available if insufficient training funds are not allocated to field offices to utilize them.

Take a more balanced management approach in promoting technical capabilities of the organization versus project management. The over-emphasis on project management for the past 10-12 years has hurt the overall capability of the organization to perform its mission. Gen. Flowers appears to recognize this situation and is taking corrective action.

I would permit and even encourage a smaller supervisory ratio (somewhat less than the currently mandated 1:10) as a way to better foster on-the-job training and mentoring by our senior staff. I also believe that first-line supervisory technical review is the best way to achieve better quality products and rapidly development H&H staff.

H&H needs to be a Branch with a GS14 reporting directly to a Division Chief.

H&H needs to be recognized by the organization as a critical participant in the PM process, including scoping and funding studies.

Technical GS13's need to be available for highly expert technical employees.

Question 23. If you have any additional comments please provide them in the space below.

(Organization POC may wax eloquent on any aspect of the Corps H&H competency issue that strikes their fancy!)

Transition to more program and project management philosophy is a necessary step. However, consciously killing stove pipes, like H&H, will in the long run, prove disastrous. The way an organization becomes technically competent and 'world class', is to do competent and 'world class' work. Hiring technical H&H work to be done at the expense of internal work that challenges staff, results in institutional pride, is a loser. Without expertise that is recognized as such that is placed throughout the echelons of the Corps, one simply has managers and coordinators that cannot recognize excellence from the ordinary - you simply cannot hire that. Please, for the sake of the Corps, restore some semblance of excellence in HQ and the divisions, and give them something meaningful on technical issues to do.

Some Districts' excessive use of A-E firms to conduct H&H studies and designs can prevent staff from gaining valuable work experience. Quality control (staff review of A-E work) is becoming a poor joke at the expense of the District staff, customer, and ultimately the taxpayer.

As I've suggested above, I think the Corps needs to decide what it wants to be. If the concept is to become an organization in which the only focus is on efficiently (in terms of both time and money) completing projects, regardless of where the technical expertise comes from (i.e. from any District, from a center of expertise, from a lab, from academia, or from an A/E), then I think we're doing a fine job of getting there. If on the other hand, the Corps wants to maintain its posture as the "nations civil engineers," then I think that we really need to redirect a portion of our energies.

In many Districts it is becoming extremely difficult to recruit the bright college graduates that we need for the future of H&H (and other technical disciplines) within the Corps. With this problem it is even more important to retain the skilled people that we already have, and one of the best ways that we have to do this is to provide an opportunity for a "technical future" within the Corps.

I believe that General Flowers was correct in suggesting that the pendulum may have swung too far away from engineering. I also believe that given the recruitment and retention problems that we have, that it is critical time for us to regain our focus on technical expertise.

The worst problem is that we are, at best, paying lip service to the question of quality control in terms of reviewing our work. ED is doing nearly nothing. When we comment to PPPMD during their “technical review” we get no response. The concept of co-locating a project team will put ED-HH and probably ED completely out of the loop on reviewing work and quality control. The product will suffer. We don’t have enough senior H&H engineers with long experience of Corps projects to staff all the teams under that concept.

In the PM revolution we downsized our Divisions and got rid of our Technical Experts who helped train HH people in the Districts. These Division people also helped hold the whole research area together. You cannot just put people back in these positions and get this expertise back. These people had 30 + years in the Corp and were mentored by people before them. This type of resource is probably gone forever or would take 15 years of effort to get back. We used to have a very strong HH branch at HQ. We now have no expertise.. There is no career path for a HH expert. Some day we may get technical 13 for these people. Without a strong commitment to the functional area of Hydraulics which included stovepipes to Div and HQ you will not have strong HH capabilities. However these are all bad words in the PM climate the corp has chosen.

It is very important that the balance of technical and project management be clearly defined. Recent emphasis on Project Management (draft new regulation) under-emphasizes the need for top quality technical specialists such as H & H. General Flowers has indicated his interest in restoring the balance between these two areas. The lack of technical input at the highest levels, the recent emphasis on the process rather than the quality of the product, and the increased staffing for PM at the cost of technical staffing levels all serve to undermine the need for top quality technical specialists.

Currently our Water Management organization moved into the PM Civil Works stovepipe. This has been somewhat disastrous. Current management believes that this is a business, and can not grasp the concept of having a technical organization in his midst. The current thrust is to move all of the Water Management leadership to be policy level decision makers. Without a historic technical background to back up policy decision, all the Water Management skills will be lost.

Leadership within this organization (at the SES level) does not appreciate technical capability, yet in the event of a flood, or a tough technical decision to be made, the skill has to be available. Current SES level management also does not appreciate the folks who have been in Water Management for more that 20 years. These individuals have seen it all and are capable of passing on their technical experience to new, young employees.

Current SES management believe all people should be moved every three years or so. In the Water Management arena that is a very effective way to erode historic knowledge, and the resultant technical skills.

In many fields staying in the same job for more than five years can make an individual stale, yet in the field of Water Management staying in the same job for five years is practically a MUST. Since water conditions are very different each year, an individual needs the experience of a flood, and a drought to be skilled in the field. Understanding Corps policy is not enough when you are faced with a 100 year flood event!

There has been steady erosion in recent years of number of H&H staff at HQUSACE that provide leadership, expertise, and H&H visibility within the Corps. The H&H Community within the Corps needs to be reenergized and reemphasized. We need more skilled staff in H&H and Water Control in leadership positions throughout the Corps. The change in direction should start with HQUSACE where loss of key staff has been most acute.

Meaningful roles for H&H elements in the MSC's and HQ offices need to be defined, and appropriate staffing levels maintained in order to provide an agency-wide H&H involvement and supporting presence by these offices in mission accomplishment. H&H is the basis for or supports all aspects of our mission: planning, design, construction, operations, emergency management, and regulatory. A loss in H&H capability adversely impacts mission performance throughout the agency. Specifically, the technical policy and guidance role of HQ H&H should be reaffirmed.

The frequent major reorganizing, changes in functional responsibilities of organizational elements, and shifting technical requirements for projects (brought on by the demands of local cost-sharing sponsors) that have characterized Corps management during the last decade have had an adverse impact on overall agency productivity and quality of work including that of the H&H community. Continuity and stability of organizational structure and technical requirements are important for maintaining productivity.

Another recommendation is to reinstitute periodic Corps National H&H conferences as a way to address H&H issues, and to reenergize and emphasize H&H within the Corps.

APPENDIX D

SOUTH PACIFIC DIVISION DISTRICT SUPPORT TEAMS



REPLY TO
ATTENTION OF

DEPARTMENT OF THE ARMY
SOUTH PACIFIC DIVISION, CORPS OF ENGINEERS,
333 Market Street, Room 923
San Francisco, California 94105-2195

24 MAR 2000

CESPK-DE

MEMORANDUM FOR South Pacific Division District Support Teams

SUBJECT: Establish of District Support Teams

1. The purpose of this memorandum is to formally establish and initiate operation of the South Pacific Division District Support Teams.
2. Your mission is to help our Districts and their Project Delivery Teams:
 - -Resolve project issues
 - -Move products efficiently though HQSPD and HQUSACE for approval
 - -Resolve funding issues
 - -Coordinate multi-division support for national customers
 - -Improve communications with HQSPD and HQUSACE
 - -Serve as the District champion for all project actions
3. By accomplishing the above actions we will ultimately delight our customers. To this end you have been given considerable authority, including signature authority for normal operational, technical and procedural actions not otherwise specified by statute or regulation. This includes communications from higher authority which are retransmitted to the districts for feedback and relayed messages.
4. You have my support and that of the SPD senior management in this endeavor. I have also asked my District Commanders, in separate correspondence, to support this team concept and take advantage of the help that you can provide in the execution of their Programs.

A handwritten signature in black ink, appearing to read "Peter T. Madsen".

PETER T. MADSEN
Brigadier General, U.S. Army
Commanding



REPLY TO
ATTENTION OF

CESPK-DE

DEPARTMENT OF THE ARMY
SOUTH PACIFIC DIVISION, CORPS OF ENGINEERS,
333 Market Street, Room 923
San Francisco, California 94105-2195

24 MAR 2000

MEMORANDUM FOR Commander, Albuquerque District
Commander, Los Angeles District
Commander, Sacramento District
Commander, San Francisco District

Subject: Establish of District Support Teams

1. The purpose of this letter is to inform you of the formal establishment of the District Support Teams. Enclosed is the Charter(s) for the team(s) dedicated to your District which includes the names of your team members. The mission of District Support Team is to help you to the maximum extent possible in the execution of your projects and in delighting our customers. To that end the Team members have been given considerable empowerment, including signature authority, to resolve most project related issues quickly and efficiently.
2. The District Support Team concept is an extension of the Corps team philosophy to that Division level. Our teams will not be delivering projects but will be dedicated to helping your Project Delivery Teams in accomplishing that mission.
3. I ask that you support this initiative and that you take advantage of your Division team in the execution of your programs.

A handwritten signature in black ink, appearing to read "Peter T. Madsen".

PETER T. MADSEN
Brigadier General, U.S. Army
Commanding

CHARTER FOR THE SPD DISTRICT SUPPORT TEAMS

The purpose of this Charter is to create District Support Teams, in the South Pacific Division, to support our four Districts in the execution of their programs, through the application of the Project Management Business Process. The teams will operate much like the District Project Delivery Teams but their goal will be to provide maximum support to the Districts in delivering projects to its customers through the following actions:

1. Provide programmatic overview of various programs and authorities.
2. Assist the Districts on project specific actions and problems as requested by the Districts and as warranted.
3. Process and expedite District products through South Pacific Division, HQUSACE and OASA(CW).
4. Keep the Division Commander and SPD staff informed of District actions.

Five teams will be formed: one for each District in the Civil works area and one for Military/Environmental programs. The Civil works teams will support all programs in the Civil Works area including programs under Support for Others. Each team will be nominally led by a Program Manager and will be staffed by members from Engineering, Planning, Construction-Operations, Real Estate and Office of Counsel (see Encl.1). One person from each of the above functions will be the primary team member. However, others from the same function may be designated as alternates and/or support to the primary member.

Each team is allowed latitude in its operating procedures subject to the approval of the SPD District Support Team Steering Committee. To this end, each team will submit to the Steering Committee, within three weeks of the issuance of this charter, a set of operating procedures to include the following:

Definition of team member roles

Team goals and responsibilities

Conflict resolution procedures

Communication procedures for team members, peers and functional managers

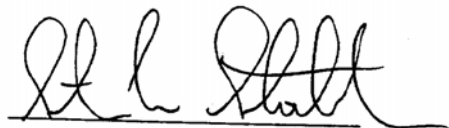
Team views on team member collocation

Team view on whether input from District and team members should be considered for performance appraisals.

Team views on team member empowerment, including team authority to sign for certain actions

Performance criteria for inclusion in TAPES

Whatever else the team deems necessary to its operation



STEVEN L. STOCKTON, P.E.
Director, Programs Management



CARL R. POSTLEWATE, P.E.
Director, Engineering and
Technical Services

SOUTH PACIFIC DIVISION DISTRICT SUPPORT TEAMS

	CIVIL WORKS SPK	CIVIL WORKS SPL	CIVIL WORKS SPN	CIVIL WORKS SPA	MILITARY/ ENVIRONMENTAL
Programs Management	John Tsingos	Jim Ueda	To be determined	John Tsingos	Steve Miller
Engineering	Frank Krhoun	Ed sing	Ed Sing *	Frank Krhoun	Frank Chui/Victor Yan
Construction-Operations	George Lehtinen	George Domurat	George Domurat	George Lehtinen	Ron Randolph/Ahsan Syed
Real Estate	R. Guthrie	Marilyn Rodriguez	R. Guthrie	Marilyn Rodriguez	Dennis Drennan
Office of Counsel	Dan Dykstra	Neil Purcell	Mary Gillespie	Mary Gillespie	Neil Purcell/ Mary Gillespie
Planning	John Bogue	Robin Mooney	Les Tong	Jim Conley	Ken Orth

* Mr. Ed Sing is temporarily designated in the PM role until a permanent PM is selected.

CESPD-ET-E
(Sing)

8:48 AM03/10/00

LOS ANGELES DISTRICT SUPPORT TEAM OPERATING PLAN

1. TEAM PURPOSE.

The Corps of Engineers is moving to a team environment, to provide enhanced project delivery to the customer/partner. To apply the team concept at HQSPD, a multi-disciplinary team is created to assist the Los Angeles District in all aspects of its Civil Works and Support of Others Programs. Ultimately, the team is expected to fully support the Los Angeles District in the efficient and effective execution of its program and assist in resolving complex and sensitive issues. The specific types of support include:

- Assisting the District in resolving project issues with HQSPD and HQUSACE.
- Moving District products efficiently through HQSPD and HQUSACE for approval.
- Assisting the District with funding issues.
- Coordinating multi-division support for a national customer.
- Improving communications with HQSPD and HQUSACE.
- Serving as the District champions at the Division and with HQUSACE.

2. TEAM MEMBERS:

Program Management Directorate - Jim Ueda - Alternate, John Tsingos

Planning Division - Robin Mooney - Alternate, Bob Sloan

Engineering Division - Ed Sing - Alternate, Gerhard Krueger

Construction-Operation Division - George Domurat - Alternate, George Lehtinen

Real Estate Division - Marilyn Rodriguez - Alternate, Tyrone Miller

Office of Counsel - Neil Purcell - Alternates, Mary Gillespie and Dan Dykstra

3. TEAM MEMBER ROLES:

Team becomes involved in a project/issue when requested by the District, HQSPD management or when the team itself feels that it's involvement would be useful.

Each team member is considered the door into his or her functional organization and will have the resources of other members in the functional organization as support. To accomplish action items, the team members may go directly to individuals within the MSC for support.

Each team member will be responsible to keep the appropriate team members informed of significant actions performed by him or her.

8:48 AM03/10/00

4. TEAM EMPOWERMENT AND SIGNATURE AUTHORITY

Members of the Los Angeles District support team will be empowered to act on behalf of their functional organizations. Actions of the team represent those of HQSPD and the Division Commander. Team members may sign "FOR THE COMMANDER" and will have signature authority for all actions except for those otherwise specified by statute or regulation and for those actions that the team deems to be highly controversial and/or politically sensitive. Planning products will be processed in accordance with the CESP-ET-P memorandum, sub: Processing of Planning reports in the South Pacific Division. Signature authority for these products are described on table 2 of this memorandum. Letters to the Los Angeles District will be addressed to the District Commander with an "attention line" to the appropriate functional organization. The correspondence will have appropriate team members on the ladder to facilitate review and concurrence of the team members. The functional team member will sign the correspondence using his/her own signature block indicating the functional organization.

5. COMMUNICATION PROCEDURES

Actions from HQUSACE or the Los Angeles District will be directed to the appropriate responsible organization and then assigned to a Los Angeles District support team member in that functional organization. Actions, products or issues that originate from a functional organization will be staffed by the team member that represents the functional organization. Each team member will be responsible for determining the appropriate level of coordination and for keeping the team informed of significant actions that have been performed.

Telephonic discussions, use of e-mail and especially face to face discussions will be used for communication. The support team will also meet at a minimum of once a month, normally on the first Wednesday of the month, 0900hrs. These meetings can, however, be combined with other meetings at the Los Angeles District. Any team member may call ad hoc team meetings, as the need arises, and these meetings may be held in HQSPD or CESPL.

6. SUPPORT TEAM FILES

Correspondence, memorandums, records, etc. signed by a team member will be filed electronically in the Los Angeles District support team files on the U drive. Everyone on the support team will have access to this file. It will be the responsibility of each team member to assure that the electronic filing of all important correspondence is included in the support team files.

8:48 AM03/10/00

7. CONFLICT RESOLUTION

The Team will always strive to act on a consensus basis but on rare occasions honest disagreements may arise among team members, between the team and the District and between the team and other HQSPD members. On those occasions, the disagreement will be referred to the appropriate functional Chiefs for resolution. If the disagreement cannot be resolved at that level it will be elevated to the Steering Committee, consisting of the two Directors, the four Division Chiefs in DETS and the Chief Counsel, for resolution.

8. PROGRAM EXECUTION

Since the focus is on execution of the programs, the support team must become a participant in the development of all the programs. The support team shall review the district program. The reviews will be conducted to review the current year, budget year minus one and the budget year.

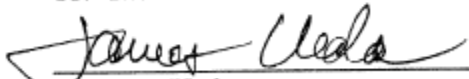
9. INFORMING FUNCTIONAL MANAGERS

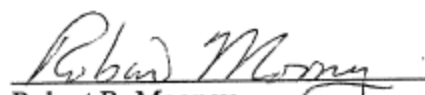
Functional managers will be kept fully informed and will be requested for support and guidance for unusually complex or politically sensitive projects. Each team member is responsible for keeping the supervisory chain and other appropriate individuals in his/her functional area fully informed of the activities of the team.

10. PERFORMANCE APPRAISALS

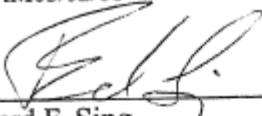
The performance appraisals for team members will be done by the first-line supervisor. Specific performance criteria for TAPES will be developed individually by each team member and his or her supervisor.

11. TEAM MEMBER SIGNATURES



James Y. Ueda
Program Management Directorate


Robert R. Mooney
Planning Division

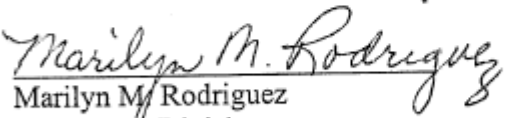
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Edward F. Sing
Engineering Division



George W. Domurat
Construction-Operation Division



Marilyn M. Rodriguez
Real Estate Division



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Page last updated February 27, 2001 (FC)
Return to District Support Teams

Roles and Responsibilities (District Expectations)

- The district support teams will participate in product and project development. They will know and appreciate the district's idiosyncrasies, participate in team building and aid the district's sponsors and clients. They will assist the district in finding creative solutions and explore/analyze new ideas and risk taking.
- The district support teams will provide expertise through guidance, tools and training. They will provide consulting services and act as a sounding board, as requested by the district.
- The district support teams will support the districts as advocates for the districts and as champions of the district's products. They will facilitate communication to expedite the process, both pushing Headquarters and pulling the districts.

Roles and Responsibilities (Division Expectations)

- The district support teams will provide assessments of the districts' quality management and implementation of the Regional Programs and Project Management Business Process. They will participate in the annual review of the districts' budget request.
- The district support teams will facilitate answers, resolve issues and resolve conflicts.
- The district support teams will keep Division management informed through the functional chain and by providing a liaison between the districts' and Division Program Review Boards.

Roles and Responsibilities (HQUSACE Expectations)

- The district support teams will make the tough decisions as needed to ensure consistency of corporate policy and assist in damage control. They will process products and exercise delegated authorities to approve products.
- The district support teams will manage quality of district products through quality assurance activities and policy review.
- The district support teams will act as a liaison with Headquarters and serve as a proxy for Headquarters in the field. They will add the regional perspective to actions/products, including regional lessons learned.

ATTACHMENT

PRINCIPLES AND GUIDELINES FOR DISTRICT SUPPORT TEAMS

SOUTH PACIFIC DIVISION

JANUARY 2001

FORWARD

The effort to revitalize the district support team concept, was initiated by an ad hoc group of district support team members from the Planning Division. We conducted the effort as a series of three full-day workshops. The first workshop was held on 19 September 2000, with 29 participants from the Division and 4 participants from the districts. The second was held on 27 October 2000 with 14 participants from the Division and, telephonically, 10 participants from the Headquarters. And, the third was held on 7 December 2000, with 19 participants from the Division.

The Principles and Guidelines records the discussions from the workshops. To ensure that this document represents a consensus, four drafts were distributed over a period of two months to all district support team members, and all comments were incorporated.

One surprise was the great uncertainty regarding the roles of the district support teams. As a result, significant parts of the workshops were devoted to the definition of the roles.

Another objective of the workshops was to address a charge by the Division Commander to specifically enhance the district support teams by: 1) providing better identity of the teams, 2) providing more efficient management of issues, and 3) empowering the district support teams. The workshop participants established an array of initiatives to address these areas of improvement, which are described in Appendix D.

While the ultimate answer to the question “ Was the effort worth it?” will depend on the follow-through on the initiatives, there are a number of important and immediate results from the district support team revitalization effort:

1) The district support team members have developed an understanding and commitment, and therefore ownership, of the district support team concept through participation in the district support team revitalization effort.

2) The district support team members have reached a consensus on the roles and responsibilities of the teams and of the team members.

3) The district support team members recognize the importance of, and are committed to, a greater level of communication.

4) And, most importantly, the district support team members recognize and embrace their empowerment.

In closing, I would like to thank all of those individuals who contributed to the district support team revitalization effort, especially the ad hoc group that initiated the effort, Les Tong for his leadership and Carol Sanders for serving as facilitator of the workshops.

Robin Mooney
Volunteer Recorder

PRINCIPLES AND GUIDELINES FOR DISTRICT SUPPORT TEAMS

January 2001

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- D-a. Civil Works District Support Team Members Roles And Responsibilities
- D-b. Regular Visits to the Districts

PRINCIPLES AND GUIDELINES FOR DISTRICT SUPPORT TEAMS

January 2001

1. Purpose and Scope. The purpose and scope of this document is to outline the roles and basic operational concepts for the district support teams. This document records the consensus that was developed through the district support team revitalization effort. While the Civil Works district support teams are addressed in this document, the concepts may apply equally to the military and environmental/SFO district support teams.

2. Background

a. Establishment of District Support Teams. District support teams were established through a charter signed by the Director, Programs Management and Director, Engineering and Technical Services, which is included as Appendix A. This was followed by an operations plan developed by each district support team that established the team's rules of operation and by the delegation of signature authority by the Division Commander to members of the district support teams.

b. District Support Team Revitalization The charter originally established a steering committee to approve district support team operating procedures. With the abolishment of this steering committee, the teams became entirely self-governing. At the same time, the district support teams realized that the performance of the teams could be enhanced and that significant differences between the teams could lead to problems in managing the Division as a regional business center. As a result of these concurrent events, a number of the district support team members formed an ad-hoc committee to lead a revitalization effort to better define the roles of the district support teams and identify initiatives to enhance district support team performance. While the development of these principles and guidelines is a result of this revitalization effort, the major benefit of the effort is the understanding and commitment to the district support team concept that resulted from the participation in the process by all of the members of the district support teams.

3. Expectations of District Support Teams

a. District Objectives. Representatives of the districts presented their views on the district support team concept at the first district support team revitalization workshop. In general, the districts' objective for the district support teams is to support the districts in delivering projects to its customers through the following actions:

i. Participate in product and project development. Visit the district as a true active partner and partner with the district and their customers to focus on the project.

i Views of district representatives were recorded on flipcharts, and then reproduced in the summary of the first district support team revitalization workshop.

- ii. Provide the district with expertise. Be engaged in problem solving and training.
- iii. Represent the Division at the district and be the district advocate or champion within the Division and with Headquarters.

b. Division Objectives. The Division's objective for the district support teams, as expressed in the Charter for the SPD District Support Teams, is to provide support to the districts in delivering projects to its customers through the following actions:

- i. Provide a programmatic overview of various programs and authorities.
- ii. Assist the districts on project specific actions and problems as requested by the districts and as warranted.
- iii. Keep the Division Commander and SPD staff informed of district actions.

c. Headquarters Objectives. Representatives of Headquarters presented their views on the district support team concept at the second district support team revitalization workshop

ii. In general, Headquarters values the district support teams for the following objectives:

i. Making the tough decisions. Set the right direction, lead and say "no" when appropriate.

ii. Ensuring district compliance and quality products from the district.

iii. Adding the regional perspective. The Division cannot have items just pass through but must be involved in the preparation or influence the preparation of actions/products.

d. Comparison of Objectives. In general, the district support teams have been concentrating on district support – meeting the objectives of the districts. The objectives of the Division and Headquarters, while not inconsistent with the objectives of the districts, have a very different emphasis. Some areas, most notably quality assurance, have not received adequate attention.

4. District Support Team Roles

a. Agreed Upon Roles: District support team roles were developed at the first two district support team revitalization workshops. The agreed upon roles are listed, without respect to priority, on the following table:

ii The views of Headquarters representatives were recorded on flipcharts, and then reproduced in the summary of the second district support team revitalization workshop.

TABLE 1
DISTRICT SUPPORT TEAM ROLES

- Facilitate answers
- Provide guidance, tools
- Training
- Communicate
- Product champions
- Issue resolution
- Support districts
- Processing and approval of products
- Participation
- Know and appreciate district idiosyncrasies
- Liaison between district and division PRB
- Liaison with HQ
- Expedite process
- Participate in strategy
- Advocate for district
- Explore/analyze new ideas and risk taking
- Find creative solutions
- Quality assurance
- Review of district budget requests
- Resolve conflicts
- Serve as proxy for HQ
- Exercise delegated authority
- Policy review
- Pushing HQ/Pulling districts
- Damage control
- Sounding board
- Lessons learned
- Team building
 - District Assessments: Quality Management, Budget and RPMBP
- Keep management informed through functional chain
- Makes tough decisions
- Consulting
- Aiding sponsors and clients

b. Matrix of District Support Team Roles. The expectations of the district support teams are expressed as objectives by the districts, the Division and Headquarters in Paragraph 3. The roles that were identified by the district support team members are listed above in Table 1, not in any order of priority. These roles were then cross-referenced to the identified objectives as shown on the matrix in Table 2. In the matrix, roles that support a particular objective are identified with the symbol “①”. The matrix also identifies the objective with which each role is most closely identified with the symbol “❶”.

TABLE 2 - DISTRICT SUPPORT TEAM ROLE MATRIX

District, Division and HQSACE → Objectives	Participate in product and project development (Dist)	Provide District with Expertise (Dist)	Represent Division and be District Advocate (Dist)	Provide Programmatic Overview (Div)	Assist Districts on project actions and problems (Div)	Keep DE and SPD staff informed (Div)	Make the tough decisions (HQ)	Ensure District Compliance and Quality (HQ)	Add a Regional Perspective (HQ)
District Support Team Roles ↓									
Facilitate Answers	0	0	0		1		0	0	0
Provide Guidance, Tools	0	1							
Training		1							
Communicate	0	0	1	0	0	0	0	0	0
Product Champions	0		1		0				
Issue Resolution	0		0		1		0		0
Support Districts	0	0	1	0	0		0	0	0
Processing and Approval of Products			0		0		1	0	0
Participation	1	0	0		0		0	0	0
Know and appreciate district idiosyncrasies	1		0						
Liaison between District and Division PRB			0	0		1			
Liaison with HQ			0		0		0		1
Expedite Process	0		1		0		0		0
Participate in Strategy	1	0						0	0
Advocate for District			1		0		0		
Explore/Analyze New Ideas and Risk Taking	1	0			0				0
Find Creative Solutions	1	0			0				0
Quality Assurance	0	0		0			0	1	
Review of District Budget Requests	0			1					0
Resolve conflicts			0		1		0		0
Serve as a Proxy for HQ							0	0	1
Exercise Delegated Authority							1	0	0
Policy Review	0	0			0		0	1	0
Pushing HQ/Pulling Districts	0		1		0			0	
Damage Control		0			0		1	0	0
Sounding Board	0	1			0			0	0
Lessons Learned	0	0			0	0		0	1
Team Building	1		0		0				0
District Assessments: QM, Budget and RPMBP		0		1		0		0	0
Keep mgt informed thru functional chain						1			
Make tough decisions	0						1	0	0
Consulting	0	1			0				0
Aiding Sponsors and Clients	1	0			0				0

c. Summary Statements - Roles of the District Support Teams. The roles that are most closely identified with each objective were then integrated into the paragraphs that follow. These paragraphs are used to group and summarize the roles of the district support teams

i. The district support teams will participate in product and project development. They will know and appreciate the district's idiosyncrasies, participate in team building and aid the district's sponsors and clients. They will assist the district in finding creative solutions and explore/analyze new ideas and risk taking.

ii. The district support teams will provide expertise through guidance, tools and training. They will provide consulting services and act as a sounding board, as requested by the district.

iii. The district support teams will support the districts as advocates for the districts and as champions of the district's products. They will facilitate communication to expedite the process, both pushing Headquarters and pulling the districts.

iv. The district support teams will provide assessments of the districts' quality management and implementation of the Regional Programs and Project Management Business Process. They will participate in the annual review of the districts' budget request.

v. The district support teams will facilitate answers, resolve issues and resolve conflicts.

vi. The district support teams will keep Division management informed through the functional chain and by providing a liaison between the districts' and Division Program Review Boards.

vii. The district support teams will make the tough decisions as needed to ensure consistency of corporate policy and assist in damage control. They will process products and exercise delegated authorities to approve products.

viii. The district support teams will manage quality of district products through quality assurance activities and policy review.

iii There is almost a schizophrenic nature to the district support teams' responsibilities. On one hand they have the role of district advocates, on the other they are responsible for quality assurance, audits, etc, which may have a negative connotation to the districts. Even though the districts may view these activities negatively, the overall intent is to actually help the districts. The consensus was reached that the Division should be working with the districts throughout product development so that the proposals can be supported when they are completed. It was also recognized that because of the close relationships between the districts and the sponsors/clients and the role of the Division to represent Headquarters in the field, this

effort might not always be entirely effective. In these cases, the district support team must make the tough decision to support corporate policy.

ix. The district support teams will act as a liaison with Headquarters and serve as a proxy for Headquarters in the field. They will add the regional perspective to actions/products, including regional lessons learned.

d. Prioritization of Roles. Without prioritization, all of the roles would require much more effort than the resources of the district support teams could sustain. The teams will need to prioritize among competing demands, giving preference to the roles that have the most significant and long-term positive impacts. Through a process of trial and error, the teams will need to determine the best balance of the roles to maximize the value added.

5. Team Composition

a. Primary Team Members. Membership on the district support teams includes representatives of the major functional organizations that have a role in resolving project specific issues. Members of the Civil Works district support teams include representatives from the Civil Works Management Division, Planning and Policy Division, Technical Engineering and Construction Division, Operations Division, Real Estate Office and Office of Counsel.

b. Alternate Members. The need for alternate members was previously identified and they have been designated to cover meetings and address issues in the absence of, or in addition to, the primary team members. The existing system of primary team members with alternates appears to be the most flexible in its ability to provide coverage when primary members are absent and to concurrently address multiple district issues and actions.

c. Regional Subject Matter Experts. Regional subject matter experts are critical to the functioning of the district support teams and have responsibilities to support and participate on the teams on an ad-hoc basis. To maximize effectiveness, other members of the functional organizations must be accessible and available to participate as regional subject matter experts on any district support team. Each team member serves as a door into his or her functional organization and will have the resources of other members in the functional organization as support. To accomplish action items or resolve issues, however, team members may also go directly to any individual within the Division for support. The Division is relatively small and can take maximum advantage of the efficiency that results from informal networking. Most district support team members also have primary duties as regional subject matter experts to perform functional duties and assist other district support teams.

6. Team Member Roles

a. Roles by Functional Representative. The members of the district support teams are regional subject matter experts and represent their functional organizations on the teams.

Members provide value on the teams because of the functional experience and expertise that they offer the team to resolve issues associated with their functional responsibilities. Different team members lead the team in different activities. A detailed listing of the roles that the various team members have is included as Appendix B, Roles of the District

Support Team Members.

b. Backup. Backup for a team member will normally be provided by an alternate team member from the same functional organization. There are some activities, however, which involve multiple team members and the backup for the leader of one of these activities may be more appropriate from another team member that is already involved in the effort. Team members essentially have mutually exclusive duties and there should be only limited requirements for this type of backup. Representatives of one functional organization would not normally perform a function of another functional organization, as this would obviate the basic reason for having functional representatives on the team in the first place. Team members must, however, remain flexible, as exceptions to general rules will occur. When team members will be absent, they have the responsibility for arranging appropriate backup.

c. Points-of-Contact. Each member of the team serves as a point-of-contact for the team and from time-to-time may be approached with issues that may rightly be within the purview of another team member. When this occurs, the team member will facilitate the involvement of the individual with the appropriate expertise.

7. Empowerment

a. Change in Culture. Many organizations are presently going through a transition to a team culture. In a traditional hierarchical organization there is often little empowerment, if individuals are allowed only to proceed in a very controlled, prescribed manner. In a team with a designated leader, team members are largely disempowered, in that they must “get a yes” from the leader before they take action. The district support teams were basically empowered in that the individuals on the teams can take what they consider to be the appropriate course of action, but the teams were to report on their activities to the district support team steering committee. With the abolishment of the district support team steering committee, the district support teams are now fully empowered. In this respect, the district support teams in the Division have progressed further on an evolutionary scale of empowerment than most project delivery teams. This degree of empowerment is rather an experimental concept for the Division, which the teams are defining through the district support team revitalization process. It is also reflective of the Chief of Engineers’ “Just do it” philosophy.

b. Leadership. In some instances the representative of the Civil Works Management Division provides nominal leadership in terms of scheduling and logistics and in others, other team members are self-empowered to lead and call team meetings as required. This flexibility seems to work well in most situations. The teams work best when there is an active proponent for an action - a team member that establishes a clear objective and

leads the team. Where the teams may have come up short is when there is no proponent for an action, and in those cases where a team may not be the best vehicle for accomplishing a task. The roles that are discussed in Paragraph 6.a. and listed in Appendix B, Roles of the District Support Team Members, specify leadership roles for particular actions. Leadership of the teams normally falls to the team member with the recognized expertise to manage the particular action or issue at hand. Every team member is expected to be a leader.

c. Empowerment of Team Members. Members of the district support teams are empowered to act on behalf of their functional organizations. As the actions of the team members represent those of the district support teams and the actions of the district support teams represent those of the Division Commander, it is concluded that the actions of the team members represent those of the Division Commander. Team members may sign "FOR THE COMMANDER" and have signature authority for all actions within their functional responsibilities, except those otherwise specified by statute or regulation and for those actions that the team member determines to be highly controversial or politically sensitive. When a representative of either a district or Headquarters communicates with a district support team member, they can expect that they will get a responsive corporate opinion. One of the significant outcomes of the district support team revitalization effort was the clear recognition of this empowerment.

d. Empowerment of Teams. Each team has the latitude to establish its own operating procedures, which are adopted through their team operations plans, without additional approval. This collection of Principles and Guidelines obtains standing through its adoption by the district support teams in their respective operations plans.

e. Recognition and Acceptance of Empowerment. At the first district support team revitalization workshop, many expectations were expressed regarding the need to empower the teams. While management at the Division has indicated that the teams and team members are empowered, empowerment does not occur until it is recognized and accepted by those who are empowered. The most important result of the district support team revitalization effort has been the recognition and acceptance of empowerment by the district support team members. The teams are now possessive of this empowerment and have made an effort to clearly separate the teams from the hierarchal organization.

f. Conflict Resolution. In general the teams are readily able to resolve conflicts regarding technical issues, policy issues and other project related issues. Issues related to communication, trust, turf and potential alternative agendas are harder to deal with. With empowerment, the team is the ultimate authority in resolving conflicts within the team. The team may request outside help in facilitating issue resolution, choose to raise issues to functional managers, or request that another team assist in the resolution of an issue.

g. Accountability and Recognition. District and peer review has been established as an initiative and is described in Appendix D, District Support Team Initiatives. This initiative is a potential program where an assessment of the team's activities is requested from the district and where an assessment of each team member is developed from information provided by his or her peers on the district support team. An additional

initiative has also been established to review potential incentives and recognition.

8. Communication

a. Face Time with the District. When you ask representatives of a district their thoughts regarding the district support team, they are very pleased with the team concept and want more effort directed to assisting the district. If you dig deeper, the aspect that they really appreciate is that individuals from the Division visit the district and work directly with the staff to resolve issues and provide direction and training. This is accomplished through personal contact at the district office. One of the needs identified in the district support team revitalization effort is that when members of the district support team visit a district, they need to better advertise in advance and include offices other than those of their functional counterparts.

b. Team Member Identification. One of the revelations that occurred during the district support team revitalization effort was that the Headquarters staff was never notified of the district support teams prior to preparation for their participation in the revitalization workshop. Only through “osmosis” were they somewhat aware of the district support team concept and team membership. Problems, especially with the identification of alternate team members, have also been raised from the district staffs as well as from within the Division itself. These problems have resulted in part from the changes in the team membership that have occurred since the district support team operations plans were developed and also as a result of trying to maintain continuity of staff with particular projects or programs. The problems with the identification of team members will be addressed through the initiatives below to establish the virtual teams.

c. Establishment of Virtual Teams. The district support teams will make use of appropriate information technology to enhance district support team operations and increase communication with the districts, Headquarters and upper levels of management in the Division. Initiatives could include items from an almost endless list, and each would have to be evaluated separately to assess the benefits and costs of implementation. At present, four initial initiatives that can be easily accomplished with existing systems are being developed as a part of the district support team revitalization effort, which are described in Appendix D, District Support Team Initiatives. These initiatives include: 1) phone listings that identify individual team members, 2) an e-mail distribution list for each team, 3) a web-page for the teams that can be linked from a district’s homepage, and 4) separate district support team Outlook folders, managed by the representative of the Civil Works Management Division with access by other team members.

d. Improvement of Teamwork. Team members have been assigned to the teams on the basis of their functional expertise and not on the basis of their leadership qualities or their abilities to work in a team environment. The team members have not participated in training or team building sessions. The consensus of the district support team members is that there would be great benefit to the teams resulting from the participation in this type of activity. An initiative has been established in Appendix D, District Support Team Initiatives, for the development of a team-building workshop that would be held in

conjunction with the next semi-annual district support team off-site.

9. Relationship of Teams to Functional Organizations.

a. Teams Accomplish the Division’s Role. At their most basic, all activities of the Division serve to support the districts. There are also no differences in the basic roles of the Division and the roles of the district support teams. The district support teams only serve to better focus the support efforts. Each member of the district support team functions as a point of contact between the district and the Division. Each member of the district support team is responsible for actions between the Headquarters and the districts, and the district support team members represent all of the Division on these actions, including all members of the hierarchal organization.

b. Matrix Organization. Each member of the district support team is a member of one of the functional organizations, which in the following matrix would be represented as a row. Members of the district support teams support the districts that are represented by the columns. Every activity in which a member of the Division staff participates would fall within one of the open boxes in the matrix. Activities undertaken as a district support team member would be supported by both his or her functional organization and by the district support team. The functional organization would support the team member with regional expertise in the functional area. The district support team would support the team member with the perspective of the other functional areas. Activities cannot generally be differentiated as either functional activities or support team activities.

FIGURE 1 – ACTIVITY MATRIX

	LOS ANGELES DST	SACRAMENTO DST	SAN FRANCISCO DST	ALBUQUERQUE DST	DIVISION-WIDE INITIATIVES
Civil Works Management					
Planning and Policy					
Tech Engr and Construction					
Operations					
Real Estate					
Office of Counsel					

c. Relationship to the First-Line Supervisor. The role of the supervisor remains unchanged. Assignment of duties, training, mentoring, approvals, performance evaluations and all other supervisory duties will continue to be performed by the first-line supervisor of the functional organization. The first- line supervisor will be required to assign team members and alternate team members. The first- line supervisor will also be required to allocate

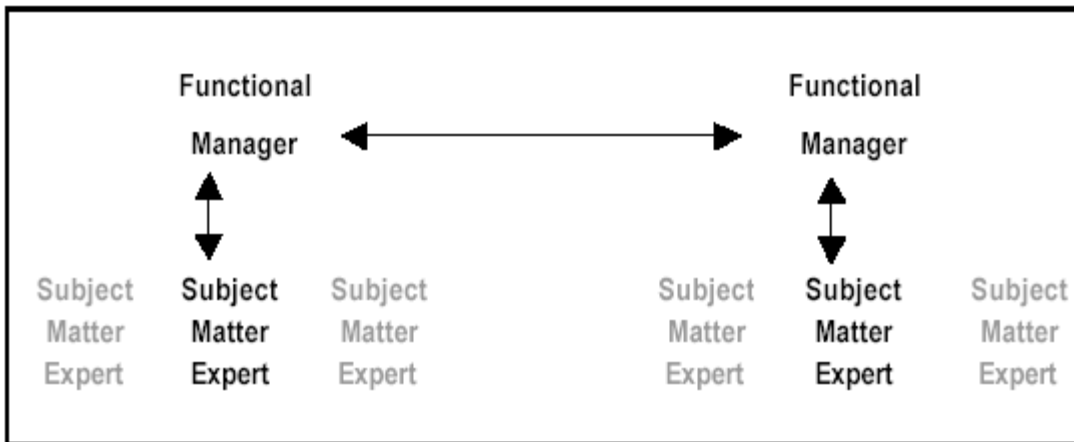
reasonable time and resources for these individuals to participate on those limited district support team activities that may not already within the preview of the functional organization (such as participation in the district support team off-site workshops referenced in Paragraph 11). Keeping management informed of district support team activities will occur primarily through team member communication with the first-line supervisor. The level of this communication is an item that must be left to the individual team members to define in the context of the supervisory controls that are in their position descriptions and the level of communication that is agreed to in the development of the team members' annual performance objectives. Team members have the responsibility to initiate communications.

d. Taskings. The district support teams will not be used to avoid making decisions regarding the assignment of actions to a particular functional organization. Actions from the hierarchal organization would be assigned to one of the team members, as a representative of the responsible functional organization. This team member will engage the rest of the team. As the team concept becomes more established, most actions will be initiated directly through the team members rather than through the hierarchal organization.

e. Administrative Support. The functional organizations provide timekeeping support, prepare correspondence, manage travel, maintain files and provide all of the other types of administrative support. Resources are not available to duplicate any of these functions specifically for the district support teams. Many administrative support personnel have specialized knowledge in functional activities that apply to all districts.

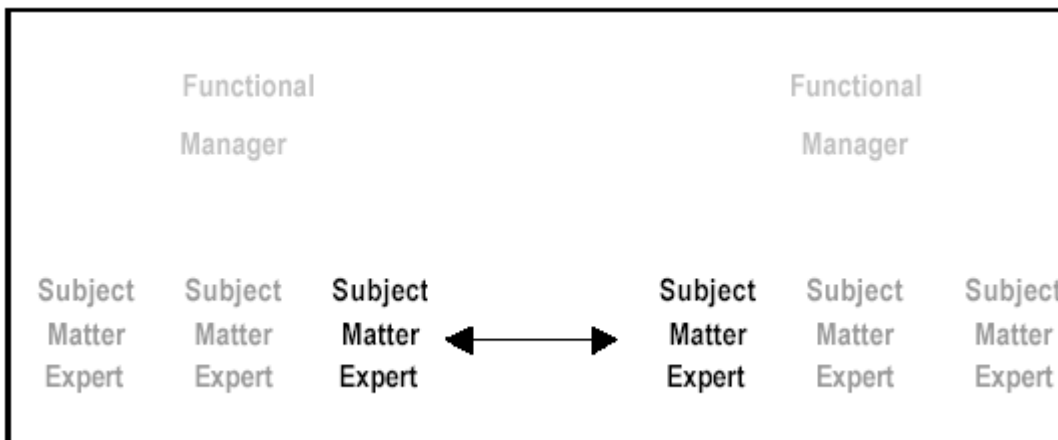
f. Functional Organization Communication. With the establishment of the district support teams and the empowerment of the team members, the traditional "stovepipes" have been eliminated at the Division. Issues are no longer raised to a supervisor in the "stovepipe" to ensure that a regional perspective is developed. Team members must rely on more informal communication as a means for maintaining regional perspective and their status as regional experts. The existing relationships that have been built upon trust between Headquarters, Division and district counterparts will continue. In the diagram below, the arrows represent formal communication for actions in a hierarchal organization. The vertical arrows represent the "stovepipes".

FIGURE 2 – COMMUNICATION WITH "STOVEPIPES"



This next diagram represents formal communication for actions as they occur with the district support teams. Informal communication within the functional organizations must replace the important values associated with developing a regional perspective that were previously provided by processing through the “stovepipe”.

FIGURE 3 – COMMUNICATION WITH DISTRICT SUPPORT TEAMS



g. Other Teams. One of the things that makes jobs interesting and allows individuals to gain a vast array of experiences is the participation on many teams. There are many teams related to functional responsibilities and some teams, in addition to the district support teams, include various members of the different functional organizations, such as the quality management team that manages and maintains the overall Division quality management program. There are endless opportunities in the areas of district support where these often ad-hoc teams would add value, including teams to pursue the initiatives that are identified in Appendix D, District Support Team Initiatives.

Participation on a number of teams provides work that is challenging and will more fully utilize the capabilities, intelligence, resourcefulness and initiative of the district support team members. The work environment must promote opportunities for all team members to participate on multiple teams and nothing should be done that would limit the ability to establish or participate on these teams.

h. Managers of Specific Programs. There are a number of independent program managers in the Division – including CAP, PAS, FPMS, Dam Safety, Water Management, Regulatory, etc. The district support team steering committee did not adequately differentiate between the roles and responsibilities of these program managers and the district support teams, which resulted in a lot of confusion (especially with CAP). During the district support team revitalization meetings, there were many alternative attempts proposed to capture the different roles in words but the meaning was generally the same. The teams would undertake the specific project review and approval actions that require the multi- function disciplines of the teams. Technical issues and policy issues on individual projects, and PCAs, were noted as items that the teams would address. The program manager would be a program proponent, be an expert in the program, be an expert in procedural matters, be an expert in processing, be responsible for funding approval and would have a general knowledge of project specific information. Differences in the relationship between the teams and the program managers would vary to some degree, depending on the program. Therefore, each program manager will develop guidelines for the participation of the district support teams in relation to their assigned program, with due consideration of adding value and organizational efficiency.

i. Management's Role in the District Support Team Concept. The primary responsibility of the management hierarchy is to enhance the quality of work life. It is to be proactive, provide encouragement, meet district support team resource needs, assist in problem solving, promote fairness, put equity in rewards, and promote a work environment with purpose and meaning. As indicated above in Paragraph 4.d. the district support teams will manage their activities to maximize added value. The recognition of this additional value by the team members will be a significant factor in how they view their work life. Team members that enjoy and recognize value in their work lives is the measurement of management's success.

10. Team Actions

a. Participation in Product Development

i. Issue Resolution. The district support teams will take a proactive approach to issue resolution. They will always be available to the district, to provide consulting support, adding regional expertise and the benefit of lessons learned to the districts. They will assist in finding creative solutions, facilitating answers and resolving conflicts. District support team members will be involved in the preparation of responses to Headquarters actions.

ii. Milestone Conferences. The district support teams will participate in Division mandated study milestone conferences, Headquarters mandated issue resolution conferences and other milestone conferences that are held in support of individual studies and projects. These conferences are listed in Appendix C, Regular Visits to the Districts.

iii. Quality Management Audits. A separate team has been established for the management of the Division's Quality Management Program. This team will prepare the annual revisions to CESP R 1110-1-8, Quality Management Plan. The district support teams will conduct project specific audits in accordance with this Quality Management Plan

b. Report Processing:

i. Receipt of Reports. Planning reports for Civil Works will be submitted to the Division in accordance with CESP-ET-P memorandum, dated 31 July 2000, subject: Processing of Planning Reports in the South Pacific Division. Other products will be submitted to the responsible functional organizations as they are identified in CESP R 1110-1-8, Quality Management Plan.^{iv} The submittal of district products to the appropriate functional organizations as indicated in current guidance will be reemphasized through memoranda and training.

^{iv} Some problems have arisen in the past when these products have been misdirected to the Programs Management representative on the district support team and because of absences of this individual, the products were not provided to the appropriate functional team member for action. While some of the district support teams tried to use the Programs Management representative as the single mail drop for all district actions, this adds an additional layer to the system and there is inadequate administrative support to provide assistance.

ii. Internal Processing. The district support teams will be responsible for full and adequate coordination within the Division. The team lead for this coordination will be as indicated in Appendix B, Roles of the District Support Team Members. This coordination will be accomplished to develop a corporate response in accordance with the team's Operations Plan, described in Paragraph 12.

iii. Approvals. The team lead for an action will either have the approval authority, or will make the team's recommendation to the approval authority. These team leads may sign "FOR THE COMMANDER" and have signature authority for all actions within their functional responsibilities, except those otherwise specified by statute or regulation and for those actions that the team member determines to be highly controversial or politically sensitive. The team lead will process approval actions through the functional chain for those actions that are not within the team's approval authority.

c. Project Review Board Participation: The district support team, primarily through the representative of the Civil Works Management Division, will facilitate the Civil Works Project Review Board process. Through this vehicle, the Division staff will be informed of district activities. One role of the district support team is to ensure that the

district implements the Regional Program and Project Management Business Process and the team will not duplicate the tracking and reporting elements of this process.

d. Annual District Assessments

i. Quality Management Assessment. The major shortcoming of the district support teams thus far has been in the area of quality assurance. The last full audit of a major district Civil Works document was some time ago and the specified requirements are to conduct these audits in each district on an annual basis. The quality management program also suffered when it was not included in the command inspection of the districts this last year. Each year the district support teams will provide to the District and Division Commanders the results of an assessment of the district's quality management program based upon audits of their products, in a command inspection type format, based upon the procedures established by the Division's quality management team.

ii. Regional Programs and Project Management Business Process Assessment. This assessment would be similar to that performed for quality management. The purpose of this assessment will be to review the district's conformance to the Regional Programs and Project Management Business Process and provide recommendations to the District Commander.

iii. Command Inspection. Either of the assessments that are described above may be included in the annual command inspection of the district. If either of them is included, then the presentations of the results will be presented to the District and Division

Commanders at the command inspection and not done separately. Other focus areas may also be identified for the command inspections that would involve the participation of the district support team.

iv. Budget/Program Review. An annual budget conference, as directed by the program development team, will be held in the district prior to congressional testimony. The district support teams will provide support to the program development team at these conferences to ensure that the strategies for projects and studies are appropriate.

e. Training.

i. Proactive Training Initiatives. Too often we concentrate on solving major problems and by not focusing on the systems, tools and training that could be used to avoid these problems, we are guaranteed that there will always be an endless supply of major problems to address. District support teams will identify training needs and facilitate training by regional experts. And, as a team, the district support teams will provide crossfunctional training to the district project delivery teams, as needed or requested.

ii. Internal District Support Team Training. Identified members of the district support teams that represent the different functional areas will develop a short course covering their function/area of responsibility that will be provided for all of the district

support team members. Modules will include: planning, real estate, engineering and design, quality management, programs/budgeting, project management, operations and maintenance, construction and legal issues. This is an initiative included in Appendix D, District Support Team Initiatives.

iii. District Project Delivery Team Training. After the training that is described in the preceding paragraph is developed, the district support teams will provide the training to members of the districts' project delivery teams.

11. District Support Team Off-Sites

a. Semi- Annual Workshops. The abolishment of the district support team steering committee has resulted in a significant empowerment of the teams and the need to establish a vehicle to share information between the teams. The teams need to meet offsite, at least twice a year to review and share lessons learned – what works and what doesn't. The responsibility to organize the off-site meetings will rotate among the teams, starting with the San Francisco District support team, and then followed by the Sacramento District, Los Angeles District and Albuquerque District support teams, respectively.

b. Review of the Principles and Guidelines. The district support team members prior to each semi-annual workshop will review these Principles and Guidelines. Any proposed changes will be discussed at the workshop and incorporated upon consensus. Operations plans would be reviewed, revised, and approved by the individual teams to incorporate these changes.

c. New Initiatives. Goals and objectives would be established for the following six month period. Process action teams would be established to address cross-team initiatives. Progress on ongoing initiatives to enhance the district support teams would also be reviewed. Additional potential initiatives for future consideration were identified during the review of these Principles and Guidelines, subsequent to the workshops. The list of these potential initiatives is included at the end of Appendix D, District Support Team Initiatives.

d. Team Building and Training. A team building workshop, described in Paragraph 8.d. is proposed for the next district support team off-site meeting. Another of the district support team revitalization initiatives is the internal district support team training that is described in Paragraph 10.e.ii. This training may be included at the semi- annual off-site meeting or included in additional district support team off-site meetings.

12. District Support Team Operations Plans

a. Operations Plan Flexibility. In March 2000, each of the district support teams developed an operations plan that included procedures and rules for operation, which the team members felt would optimize their ability to support the district. In general, a consistent concept was developed that emphasized the independence and empowerment of

the individual team members. Each operations plan may be reviewed, revised and independently approved by the district support team, as the team identifies the need.

b. Internal Operating Procedures. The district support team operations plan includes internal operating procedures for the team. The operations plans address team meetings and internal coordination that may vary between the different district support teams.

c. Adoption of the Principles and Guidelines. Each operations plan will include, by reference, these Principles and Guidelines. The operations plan may also amend or supplement these Principles and Guidelines.

d. Roster of Team Members. Each district support team operations plan lists the primary members of the district support team. The operations plan is signed by the primary members of the district support team, which represents the commitment of the team members to participate on the district support team and abide by the policies that are established in the operations plan.

APPENDIX D-a

CIVIL WORKS DISTRICT SUPPORT TEAM MEMBERS ROLES AND RESPONSIBILITIES

APENDIX D-a: CIVIL WORKS DISTRICT SUPPORT TEAM MEMBERS ROLES AND RESPONSIBILITIES

Civil Works Management Division Representative's Role

1. Serves as the team liaison with the District and Division Project Review Boards.
2. Serves as the primary team liaison with CECW-B
3. Provides guidance, tools and training related to programs and project management.
4. Serves as a direct district point of contact for the resolution of program and project management issues.
5. Coordinates/negotiates the resolution of program and project management issues with the district, Division, HQUSACE and other stakeholders.
6. Provides team leadership in the review, approval and processing of program management products as they are defined in the CESPDP QMP.
7. Discusses and provides lessons learned on programs and project management issues to other regional experts.
8. Exercises delegated signature authority for the approval and processing of program and project management products and actions.
9. Leads the district support team in an annual evaluation of the district's implementation of the Programs and Project Management Business Process.
10. Leads the team in an annual review of the district's proposed budget in support of the program development team.

Planning and Policy Division Representative's Role

1. Provides guidance, tools and training related to policy and planning.
2. Serves as a direct district point of contact for the resolution of policy and planning issues.
3. Consults/refers complex issues to other regional planning experts.
4. Coordinates/negotiates the resolution of planning and policy issues with the district, Division, HQUSACE and other stakeholders.
5. Provides leadership in the review, approval and processing of planning products as they are defined in the CESPDP Quality Management Plan.
6. Discusses and provides lessons learned on planning and policy issues to other regional experts.
7. Exercises delegated signature authority for the approval and processing of planning products and actions.

Technical Engineering and Construction Division Representative's Role

1. Provides guidance, tools and training related to engineering and construction.
2. Serves as a direct district point of contact for the resolution of engineering and construction issues.

3. Consults/refers complex issues to other regional engineering and construction experts.
4. Coordinates/negotiates the resolution of engineering and construction issues with the district, Division, HQUSACE and other stakeholders.

5. Provides leadership in the review, approval and processing of engineering and construction products as they are defined in the CESPDP Quality Management Plan.
6. Discusses and provides lessons learned on engineering and construction issues to other regional experts.
7. Exercises delegated signature authority for the approval and processing of engineering and construction products and actions.
8. Leads the district support team in an annual evaluation of the district's implementation of quality management.

Real Estate Office Representative's Role

1. Provides guidance, tools and training related to real estate.
2. Serves as a direct district point of contact for the resolution of real estate issues.
3. Consults/refers complex issues to other regional real estate experts.
4. Coordinates/negotiates the resolution of real estate issues with the district, Division, HQUSACE and other stakeholders.
5. Provides leadership in the review, approval and processing of real estate products as they are defined in the CESPDP Quality Management Plan.
6. Discusses and provides lessons learned on real estate issues to other regional experts.
7. Exercises delegated signature authority for the approval and processing of real estate products and actions.

Operations Division Representative's Role

1. Provides guidance, tools and training related to operations.
2. Serves as a direct district point of contact for the resolution of operations issues.
3. Consults/refers complex issues to other regional operations experts.
4. Coordinates/negotiates the resolution of operations issues with the district, Division, HQUSACE and other stakeholders.
5. Provides leadership in the review, approval and processing of operations products as they are defined in the CESPDP Quality Management Plan.
6. Discusses and provides lessons learned on operations issues to other regional experts.
7. Exercises delegated signature authority for the approval and processing of operations products and actions.

Office of Counsel Representative's Role

1. Provides guidance, tools and training in support of legal activities.
2. Provides leadership in the review, approval and processing of legal products.
3. Serves as a direct district point of contact for the resolution of legal issues.
4. Coordinates/negotiates the resolution of legal issues with the district, Division, HQUSACE and other stakeholders. Discusses and provides lessons learned on legal issues to other members of the Office of Counsel
5. Exercises delegated signature authority for the approval and processing of legal products and actions.

APPENDIX D-b

REGULAR VISITS TO THE DISTRICTS – Participation of CESPD District Support Teams

APPENDIX B: REGULAR VISITS TO THE DISTRICTS – Participation of CESP
District Support Teams

<u>MIL</u> ¹	<u>NAME</u>	<u>DESCRIPTION</u>	<u>COORDINATING OFFICE</u>
	<u>Annual Budget Briefing</u>	<u>Program reviews in preparation of budget proposals and congressional testimony</u>	<u>CESPD-CM-B</u>
<u>42</u>	<u>Reconnaissance Phase Interim Milestone Conference</u>	<u>Milestone in PROMIS WBS</u>	<u>CESPD-CM-P</u>
<u>-</u>	<u>Reconnaissance Review Conference</u>	<u>IRC with HQUSACE participation when held</u>	<u>CESPD-CM-P</u>
<u>100</u>	<u>Initiate Feasibility Phase</u>	<u>SPD Milestone F1². [Date district receives Federal feasibility phase study funds.] DST has opportunity to introduce team to PDT and provide any basic training requested by the District.</u>	<u>District Planning</u>
<u>-</u>	<u>In-progress Review (IPR)</u>	<u>Held at request of sponsor, PDT, or DST to discuss topics of concern in any functional area or review of input and to determine course of proceeding. Held anytime during course of study at request of PDT or DST.</u>	<u>Varies</u>
<u>-</u>	<u>Issue Resolution Conference (IRC)</u>	<u>Held at request of PDT or DST to discuss issues and clarify guidance requiring resolution before proceeding further. Could be held in conjunction with any major milestone meeting.</u>	<u>Varies</u>
<u>102</u>	<u>Feasibility Study Conference #1 (F3)</u>	<u>SPD Milestone F3 - Feasibility Scoping Meeting (FSM). Meeting with HQUSACE to address potential changes in the PMP. Establish without project conditions and screen preliminary plans.</u>	<u>CESPD-CM-P</u>
<u>103</u>	<u>Feasibility Study Conference #2 (F4)</u>	<u>SPD Milestone F4 - Alternative Review Conference. Conference to evaluate the final plans, reach a consensus that the evaluations are adequate to select a plan and prepare AFB issues.</u>	<u>CESPD-CM-P</u>
<u>124</u>	<u>Alternative Formulation Briefing (AFB)</u>	<u>SPD Milestone F4A - Policy compliance review of the proposed plan with HQUSACE required to prepare and release the draft report.</u>	<u>CESPD-CM-P</u>
<u>130</u>	<u>Feasibility Review Conference (FRC)</u>	<u>SPD Milestone F7. Policy compliance review of the draft report with HQUSACE to identify actions needed to complete the final report.</u>	<u>CESPD-CM-P</u>

¹ MIL – Milestone number used in the PROMIS database.

² F1 through F9 are historical designations for the SPD Milestone

<u>MIL</u> ¹	<u>NAME</u>	<u>DESCRIPTION</u>	<u>COORDINATING OFFICE</u>
-	<u>Technical Review Strategy Session (TRSS)</u>	These meetings are typically held at the beginning of product development phase. Provides contact with District PDT prior to initiation of work. PMP or its status could be briefed by PDT.	<u>District PM</u>
-	<u>PCA Coordination Meeting(s)</u>	Recommended for understanding complex or intricate requirements of deviations to PCA language involving several functional areas.	<u>District PM</u>
-	<u>QA Assessments/Audits</u>	Held pursuant to SPD's QMP. These audits ensure that the Districts' established quality management processes are being followed and provides lessons learned for District	<u>CESPD-MT-E</u>
-	<u>Partnering, Coordinating and Mentoring Visits</u>	Continuous dialog and interactions with counterparts to provide informational exchange, includes field visits with districts to potential and already constructed project sites.	<u>Varies</u>
-	<u>Command Inspection Visits</u>	Held annually to inspect particular areas of Command interest. District Support Teams typically teach, coach, assist in particular topical areas/issues	<u>CESPD-RM</u>
-	<u>Regional Project Management Business Process [RPMBP] Assessment Visits</u>	Assessment of District's implementation of RPMBP as needed	<u>CESPD-CM-C</u>
-	<u>Project Review Board (PRB)</u>	Assist in identifying and resolving technical, policy and/or budgetary issues raised during PRBs.	<u>CESPD-PM</u>

APPENDIX C: DISTRICT SUPPORT TEAM INITIATIVES

An objective of the workshops was to address a charge by the Division Commander to enhance the district support teams. Specifically, the workshop participants were tasked with looking at ways to improve district support team performance by 1) providing better identity of the teams for the district and Headquarters, 2) providing more efficient management of issues within the Division and Headquarters, and 3) empowerment of the district support teams.

The assembled group of district support team members addressed these three district support team improvement areas at the first district support team revitalization off-site. Each participant was asked to provide one suggestion for each area. These suggestions were listed on flip charts and posted in the room. Each participant was then given 5 votes to prioritize the suggestions in each area. The suggestions with the most votes were singled out as initiatives for further development and near term implementation. At the second district support team revitalization workshop, each initiative was discussed and appropriate volunteers were identified to lead further efforts on the initiatives. The list of initiatives was again refined at the third workshop and the current status presented.

The district support team members that have volunteered to lead in the initiatives are to negotiate them into their annual performance objectives. This will establish the support and priority of the initiatives with the supervisors. The volunteer leaders have the responsibility to coordinate their efforts with other district support team members. The initiatives and the volunteer leaders of the initiatives are identified as follows:

1. How Do We Better Identify District Support Teams?

a. **Establish a website with real audio/video:** The initial effort will consist of the creation of a web-page for each team that provides the names, e-mail addresses and phone numbers of the district support team, the primary team members and the alternate team members. Clark Frentzen provided a first-cut draft of a table for the website at the third district support team revitalization meeting and requested comments.

b. **Attend Technical Review Strategy Sessions as a team.** Although Ed Sing was absent from the third workshop, he provided a written discussion of the importance of the technical review strategy sessions. Revisions to the CESPQ Quality Management Plan are being pursued by the quality management team under Ed's leadership

c. **Establish a telephone number and e-mail address for each district support team.** An E-mail distribution for each Civil Works team has been created in Outlook. Alternatives for a separate phone number for each team that would automatically forward calls to caller selected team members were discussed at the third workshop. Since the district and HQUSACE representatives had previously indicated that they would phone directly to the individual team members and since Steve Stockton indicated that the benefit for managers at the Division would not be worth the cost, John Tsingos will now

investigate the concept of having district support team cards printed with appropriate phone numbers.

d. **Work Areas at the Districts.** Early discussions and recommendations from the first workshop were for the establishment of work areas in each district that would provide a phone, LAN connection, desk, etc., to the district support team members. This initiative received support from the district representatives. The Civil Works Management Division representative for each district support team (Jim Ueda, John Tsingos, & Marcelo Pascua) will take the lead in coordinating the establishment of these work areas with their assigned districts.

2. How Do We Better Manage Issues in SPD?

a. **Develop an issue tracking system.** For each team, an outlook folder will be created for the representative of the Civil Works Management Division. Other members of the team will then be given access via icon to this folder. Marcelo Pascua will continue to work this with assistance from Jeannine Hritz.

b. **Regular visits to the district.** Les Tong requested input from other district support team members to identify those occasions when the team has either the requirement or opportunity to visit the districts. Examples would include planning milestone conferences, technical review strategy sessions, annual budget review, etc.

c. **Having a strong district support team.** John Bogue will coordinate a training program for the district support team members. Members from the different functional areas will develop a short course covering their function/area of responsibility:

- i. Planning: Robin Mooney
- ii. Real Estate: Marilyn Rodriguez and Dick Guthrie
- iii. Engineering and Design: Frank Krhoun
- iv. Quality Management: Ed Sing
- v. Programs/budgeting: To be determined
- vi. Project Management: To be determined
- vii. Operations and Maintenance: To be determined
- viii. Construction: To be determined
- ix. Legal Issues: To be determined

d. **Team-Building Workshop.** John Bogue will also take the lead in the establishing a team-building workshop for district support team members as a separate initiative. Examples such as the one used by the Leadership Development Program will be investigated. The intent will be to have the workshop in conjunction with the next semi-annual district support team off-site.

e. **District support teams provide training and guidance.** After the training above is developed, the district support teams will provide the training to members of the district's project delivery teams.

3. How Do We Empower the District Support Teams?

a. **Semi-Annual Offsite.** The initiatives that were identified at the first workshop to address this question were, to a large degree accomplished through the first phase of the district support team revitalization process. The most significant output of the revitalization effort was the recognition and acceptance of empowerment by the district support team members. The success of the district support team concept is dependent, however, on the continuation of the processes that have been initiated. The teams need to meet offsite, at least twice a year to review and share lessons learned – what works and what doesn't. The responsibility to organize the off- site meetings will rotate among the teams, starting with the San Francisco District support team, and followed by the Sacramento District, Los Angeles District and Albuquerque District support teams, respectively.

b. **District and Peer Review.** This initiative is a potential program where an assessment of the team's activities is requested from the district and an assessment of each team member that is developed from information provided by his or her peers on the district support team. Clark Frentzen has taken the lead in developing a more detailed proposal. The program for SES evaluation will be investigated.

c. **Team Recognition.** At the third workshop, an additional initiative was established to review potential incentives. Boni Bigornia volunteered to lead this initiative.

POTENTIAL FUTURE INITIATIVES

Additional potential initiatives for future consideration were identified during the review of the Principles and Guidelines, subsequent to the workshops. The list will be reviewed at the next district support team off-site where they may be adopted for action.

1. **Listing of Actions Delegated to the District Support Team Members.** The team leads may sign "FOR THE COMMANDER" and have signature authority for all actions within their functional responsibilities, except those otherwise specified by statute or regulation (or actions that the team member determines to be highly controversial or politically sensitive). This initiative would be to develop a specific listing of those actions that the team leads would have the authority to sign.

2. **Listing of Regional Subject Matter Experts.** Regional subject matter experts are critical to the functioning of the district support teams and have responsibilities to support and participate on the teams on an ad- hoc basis. To maximize effectiveness, members of the functional organizations and regional subject matter experts in the districts must be identifiable, accessible and available to participate as regional subject matter experts on any district support team. Most district support team members also have primary duties as

regional subject matter experts to perform functional duties and assist other district support teams. This initiative would be to create and maintain a listing of subject matter experts in the Division and subordinate districts – potentially building upon other nation-wide systems.

APPENDIX E

ER-15-2-14

Committees on Tidal Hydraulics, Channel Stabilization,
Water Quality and Hydrology

DEPARTMENT OF THE ARMY
U.S. Army Corps of Engineers
Washington, D.C. 20314-1000

ER 15-2-14

CECW-EH-D

Regulation
No. 15-2-14

24 April 1992

Boards, Commissions, and Committees
**COMMITTEES ON TIDAL HYDRAULICS,
CHANNEL STABILIZATION, WATER QUALITY,
AND HYDROLOGY**

1. **Purpose**. This regulation prescribes the objectives, composition, and responsibilities of the Corps of Engineers Committees on Tidal Hydraulics, Channel Stabilization, Water Quality, and Hydrology.

2. **Applicability**. This regulation applies to HQUSACE/OCE elements, major subordinate commands, districts, laboratories, and field operating activities (FOA) having civil works responsibilities in the areas of tidal hydraulics, channel stabilization, water quality, and hydrology.

3. **Objectives**. General objectives of these committees are to:

a. maintain a continuing evaluation of the state-of-the art;

b. determine problem areas and recommend studies, investigations, and research designed to provide improved techniques;

c. disseminate pertinent information;

d. render consulting service on specific problems as requested by various elements of the Corps of Engineers; and

e. participate in development of guidance.

4. **Scope of Committee Activities**.

a. **Committee on Tidal Hydraulics**. This committee will address topics in the areas of tidal hydraulics such as channel shoaling, hurricane surges, and saltwater intrusion.

b. **Committee on Channel Stabilization**. This committee will address topics in the areas of alluvial channel hydraulics and channel stabilization such as bank stabilization, erosion control, and river meandering.

This regulation supersedes ER 15-2-14, dated 29 March 1991

c. **Committee on Water Quality.** This committee will apply the objectives to the areas of water quality determination, prediction, and control for reservoirs and inland waterways as well as coastal and estuarine water resource projects.

d. **Committee on Hydrology.** This committee will apply the objectives to the area of hydrologic engineering such as rainfall runoff modeling, impacts of land use on runoff, flood routing, project design floods, flow frequency, low-flow hydrology, and risk.

5. **Composition.** Each committee is a continuing committee. The members are full-time civilian employees of the Corps of Engineers and are experts in the specific committee specialty. Members are appointed by the Chief, Hydraulics and Hydrology Branch, Directorate of Civil Works, HQUSACE, with the concurrence of their employing organizations. Each committee will have a chairman and other officials as necessary. Current committee memberships are contained in Appendixes A, B, C, and D.

6. **General.** The committees will carry out their objectives in accordance with the following:

a. The committees function under the general direction of the Chief, Hydraulics and Hydrology Branch, Directorate of Civil Works, HQUSACE.

b. The chairman will call meetings as required to carry out committee objectives, normally semiannually. Advance notice, agenda, and minutes of each meeting will be furnished CDR USACE (ATTN: CECW-EH) WASH DC 20314-1000, committee members, and pertinent USACE Commands.

c. Travel and per diem expenses incurred by committee members while performing committee activities will be furnished by HQUSACE. Salaries for committee members while on committee activities will be furnished by their employing organizations. Committee activities will require that members accomplish some committee work at their regular duty station.

d. Requests for committee assistance by USACE Commands which involve HQUSACE funding will be submitted to CDR USACE (ATTN: CECW-EH) for approval and processing.


e. Direct correspondence is authorized among committee members, and between the chairman and USACE Commands. Information copies of committee actions having important bearing on project design or investigation programs will be furnished to CDR USACE (ATTN: CECW-EH). Such committee actions will be advisory rather than directive in nature.

f. The committees will arrange for publication and distribution of appropriate committee reports and papers.

g. The committees may arrange through cooperating USACE Commands for engagement of staff assistance, expert services, and consultants.

7. Requests for Consulting Services. Advisory consulting services are provided to assist field elements in defining problems, developing plans for solutions to problems, and identifying appropriate expertise to perform necessary investigations and studies. Requests for consulting services are to be submitted to the appropriate committee chairman through CDR HQUSACE (ATTN: CECW-EH). Other requests for advisory assistance, received by individual committee members, will be referred to the committee chairman for action.

FOR THE COMMANDER:


MILTON HUNTER
Colonel, Corps of Engineers
Chief of Staff

4 Appendixes

- App E-a - Members of the Committee on Tidal Hydraulics
- App E-b - Members of the Committee on Channel Stabilization
- App E-c - Members of the Committee on Water Quality
- App E-d - Members of the Committee on Hydrology

Appendix E-a

Members of the Committee on Tidal
Hydraulics

APPENDIX E-a

MEMBERS OF THE COMMITTEE ON TIDAL HYDRAULICS

The following Corps of Engineers personnel are currently designated members of the Committee on Tidal Hydraulics:

Frank A. Herrmann, Jr., Chairman	U.S. Army Engineer Waterways Experiment Station
Cecil W. Soileau, Jr., Executive Secretary	U.S. Army Engineer District, New Orleans
Glenn R. Drummond, Liaison Lincoln C. Blake	HQUSACE (CECW-EH-D) U.S. Army Engineer District, Charleston
H. Lee Butler U.S.	U.S. Army Engineer Waterways Experiment Station
John Harrison	U.S. Army Engineer Waterways Experiment Station
Barry W. Holliday	HQUSACE (CECW-OD-D)
William H. McAnally, Jr	U.S. Army Engineer Waterways Experiment Station
Jaime R. Merino	U.S. Army Engineer Division, South Pacific
John G. Oliver	U.S. Army Engineer Division, North Pacific
Virginia A. Pankow	U.S. Army Engineer Water Resources Support Center
Edward A. Reindl, Jr.	U.S. Army Engineer District, Galveston
A. David Schuldt	U.S. Army Engineer District, Seattle
Ronald G. Vann	U.S. Army Engineer District, Norfolk
Charles J. Wener	U.S. Army Engineer Division, New England

Appendix E-b

MEMBERS OF THE COMMITTEE ON CHANNEL
STABILIZATION

APPENDIX E-b

MEMBERS OF THE COMMITTEE ON CHANNEL STABILIZATION

The following Corps of Engineers personnel are currently designated members of the Committee on Channel Stabilization:

Samuel B. Powell, Chairman	HQUSACE (CECW-EH-D)
Thomas E. Munsey, Executive Secretary	HQUSACE (CECW-EH-D)
Larry E. Banks	U.S. Army Engineer District, Vicksburg
Warren J. Mellema	U.S. Army Engineer Division, Missouri River
Raymond L. Montgomery	U.S. Army Engineer Waterways Experiment Station
John G. Oliver	U.S. Army Engineer Division, North Pacific
Thomas J. Pokrefke, Jr	U.S. Army Engineer Waterways Experiment Station
Tasso Schmidgall	U.S. Army Engineer Division, Southwestern
Edward F. Sing	U.S. Army Engineer District, Sacramento
Michael F. Spoor	U.S. Army Engineer District, Huntington
William A. Thomas	U.S. Army Engineer Waterways Experiment Station
Howard M. Whittington	U.S. Army Engineer District, Mobile

Appendix E-b
Members of the Committee on Channel Stabilization
August 2003

Appendix E-c

MEMBERS OF THE COMMITTEE ON WATER
QUALITY

APPENDIX E-c
MEMBERS OF THE COMMITTEE ON WATER QUALITY

The following Corps of Engineers personnel are currently designated members of the Committee on Water Quality:

Friedrich B. Juhle, Chairman	HQUSACE (CECW-EH-W)
David P. Buelow	U.S. Army Engineer Division, Ohio River
Dennis W. Barnett	U.S. Army Engineer Division, S. Atlantic
David Brown	U.S. Army Engineer Division, Southwest
John Bushman	HQUSACE (CECW-PO)
Lewis Decell	U.S. Army Engineer Waterways Experiment Station
Robert Engler	U.S. Army Engineer Waterways Experiment Station
James Farrell	U.S. Army Engineer Division, Lower Mississippi Valley
Rixey Hardy	HQUSACE (CECW-OM)
Jeffery P. Holland	U.S. Army Engineer Waterways Experiment Station
Michael T. Lee	U.S. Army Engineer Division, Pacific Ocean
Gary Mauldin	U.S. Army Engineer Division, South Atlantic
E. Morton Markowitz	U.S. Army Engineer Division, South Pacific
Warren Mellema	U.S. Army Engineer Division, Missouri River
Harlan L. McKim	U.S. Army Engineer Cold Regions Research & Engineering Laboratory

Jan A. Miller

U.S. Army Engineer
Division, North Central

Andrew Petallides

U.S. Army Engineer
Division, North Atlantic

Bolyvong Tanovan

U.S. Army Engineer
Division, North Pacific

Charles Wener

U.S. Army Engineer
Division, New England

R.G. Willey

U.S. Army Engineer
Hydrologic Engineering
Center

Appendix E-d

Members of the Committee on Hydrology

APPENDIX E-d

MEMBERS OF THE COMMITTEE ON HYDROLOGY

The following Corps of Engineers personnel are currently designated members of the Committee on Hydrology:

Ming T. Tseng, Chairman	HQUSACE (CECW-EH-Y)
Lewis A. Smith, Executive Secretary	HQUSACE (CECW-EH-Y)
Surya Bhamidipaty	U.S. Army Engineer District, Huntington
John P. Bianco	U.S. Army Engineer District, New York
Michael L. Choate	U.S. Army Engineer District, Jacksonville
Gary R. Dyhouse	U.S. Army Engineer District, St. Louis
Harry E. Kitch	HQUSACE (CECW-P)
S.K. Nanda	U.S. Army Engineer District, Rock Island
John C. Peters, Recorder	U.S. Army Engineer Hydrologic Engineering Center
Paul K. Rodman	U.S. Army Engineer District, Ft. Worth
Douglas D. Spears	U.S. Army Engineer Division, North Pacific
Dennis R. Williams	U.S. Army Engineer District, Nashville

APPENDIX F

ER-1110-2-1460
Hydrologic Engineering Management

2-1460 DEPARTMENT OF THE ARMY ER 1110-
CECW-EH U.S. Army Corps of Engineers
Washington, DC 20314-1000

Regulation
No. 1110-2-1460
1989

7 July

Engineering and Design
HYDROLOGIC ENGINEERING MANAGEMENT

1. Purpose. This regulation defines the scope, authorities, and management requirements for hydrologic engineering activities within the Corps of Engineers.

2. Applicability. This regulation applies to all HQUSACE/OCE elements, and field operating activities having civil works engineering and design responsibilities.

3. References. References are listed in Appendix A.

4. Scope of Hydrologic Engineering Activities.

a. General. Hydrologic engineering is a part of civil engineering practice in which applications of professional knowledge of hydrologic and hydraulic principles are key elements in water resources development and management decisions. The scope includes the natural and management processes affecting the water cycle from initial precipitation on the land surface through ultimate return of water to the sea or inland sink. Technical methods of analysis include field measurement and observation, mathematical and statistical analyses, and models. Outputs of hydrologic engineering studies include: water availability as expressed by surface and subsurface yield; water surface elevations and water surface profiles; sediment processes; modeling of watershed catchment processes, flood hydrography development, and surface infiltration; probability analysis of frequency of flooding, risk of project failure, and reliability of supply; reservoir regulation requirements for water supply, power generation, and flood control; water quality effects of natural phenomena and project operations; and groundwater level changes due to recharge and withdrawal. The hydrologic engineer must also be knowledgeable of and able to communicate in related legal, social, economic, plan formulation, administration and management areas.

(1) Hydrologic engineering is a key element in many programs of the Corps of Engineers. Hydrologic engineering studies are an integral part of planning, design, construction, operations, and maintenance of civil works projects and other special studies.

(2) Hydrologic engineering studies are performed in the federal interest in the areas defined in EP 1165-2-1. Those include navigation, flood damage reduction, shore protection, stream bank erosion control, hydroelectric power, recreation, water supply and quality management, fish and wildlife, wetlands conservation, regulatory program, and special programs.

(3) Activities of a programmatic nature managed by CECW-EH include water control, elements of the dam safety program, reservoir sedimentation, hydrometeorology studies, hydrologic data collection, hydrologic studies, and the cooperative stream gaging program.

b. Hydrologic Engineering During Planning. Hydrologic engineering studies develop fundamental technical flood and drought information for reconnaissance and feasibility phases of survey investigations and continuing authority programs, floodplain management, and special and national studies.

c. Hydrologic Engineering During Design. Hydrologic engineering studies develop technical material for preconstruction engineering and design studies, post authorization changes, and general and feature design memoranda. They also provide information for preparation of plans and specifications and handling of water during construction.

d. Water Control Management. Hydrologic engineering studies provide the basis for real-time water control decisions, undertaking emergency management actions, preparation of water control manuals, monitoring reservoir sedimentation, and other water control studies.

e. Regulatory. Hydrologic engineering studies are performed in support of Section 404 permitting activities, Federal Energy Regulatory Agency license actions, water quality certification, and flood plain management actions.

f. Other. Inter-agency committees and other federal, state, and local agency programs frequently request Corps hydrologic engineering studies. Negotiated agreements establish the basis for these studies.

5. Hydrologic Engineering Studies. Studies use technical methods selected to achieve the objectives of the investigation. The studies are planned and managed to achieve the objectives in the most efficient and cost-effective manner.

a. Study Design and Management. The scope of technical studies is determined through consultations and negotiations

between the hydrologic engineer and other affected parties. The study scope will be responsive to the nature and type of investigation and the needs of other study participants. A formal study plan will be developed that documents the study objectives, scope, level of detail, budget, schedule, milestones, and form of the final product. The study plan will be negotiated between the responsible parties. Conferences, meetings and other appropriate means of communication will be utilized as necessary to involve other district, division, and HQUSACE staff in the resolution of critical issues.

b. Study Team and Coordination. The hydrologic engineer has two roles when he serves as a participant in an interdisciplinary investigation team. The hydrologic engineer shares in the accomplishment of overall responsibilities of the team. The hydrologic engineer also contributes as the technical specialist in hydrologic engineering matters. Coordination with other affected parties, in and outside of the Corps, will be a continuous process. Consultations with and supervision of hydrologic engineers participating in the team effort is the responsibility of hydrologic engineering supervisors and managers.

c. Technical Procedures. Technical procedures are selected commensurate with the nature and type of investigation and the needs of other study participants. Choice of technical methods will be made in a decision process that includes consultations with division and HQUSACE staff, and coordination as appropriate, with others. These include federal, state, and local agencies and cost-sharing partners. The decision process supporting selection of the technical methods will be thoroughly documented.

d. Quality Control. Review. The review process provides quality control for technical studies and the resulting reports. It ensures that studies are complete and performed to an appropriate level of confidence consistent with the study objectives. Technical review is conducted within the district on a regular basis throughout the study. Division staff provide final, detailed technical review. Review by HQUSACE is performed primarily to confirm conformance with existing policy, identify the need for new or revised policy, and to ensure the safety, function, and performance of project proposals. Table 1 summarizes the review levels for hydrologic engineering components of Corps studies. Requirements for coordination with and review by agencies outside the Corps that is mandated by law is documented in other regulations.

e. Cost-Shared Studies. Many Corps studies are cost-shared with local sponsors. These include the feasibility phase of survey studies, most design studies, and other special studies. The studies may involve joint financing with the Corps performing all technical work, or joint analysis in which the local cost sharing

partner contributes to the hydrologic engineering work. The study scope, technical methods, schedules, and budgets are negotiated with the cost sharing partners. Negotiations involving hydrologic engineering components of studies require hydrologic engineering representation. Performance of studies will be in an open,

cooperative partnership manner including local cost-share partner representatives in study activities.

6. Level-of-Detail and Completeness.

a. General Requirements. The level-of-detail and completeness of hydrologic engineering studies will be established at the time of study plan development. The study plan will reflect a conscious decision to develop a specific technical product. It will be phased to provide increasing refinement of completeness and detail as the study progresses. The technical product will be scoped to support the decisions and recommendations for the specific investigation being performed.

b. Planning Studies.

(1) Feasibility Studies. Reconnaissance phase studies provide the basis for a decision as to whether to proceed with more detailed feasibility studies and scope the full feasibility study. The study must demonstrate that there is a federal interest as well as likelihood that a feasible, implementable project would result from further studies. Feasibility phase studies provide the bases for NED plans, impacts on environmental quality, safety and risk determinations, and baseline costs for selecting project recommendations by the Corps for congressional authorization. Hydrologic engineering investigations for such items as frequency analysis, storm studies, reservoir yield, and stream water surface profiles are therefore considered final for supporting economic analysis, basic plan formulation and evaluation.

(2) Flood Plain Management. Studies are performed for flood plain information, flood insurance, and other special studies. The technical scope and detail for these studies are consistent with existing conditions analysis for feasibility studies. A major exception is that flood insurance studies do not use expected probability frequency estimates and are based on existing conditions.

(3) Special Studies. The technical scope and detail for special studies, such as regional and national studies, are often consistent with the reconnaissance phase of feasibility studies.

c. Design Studies. The preconstruction engineering and design (PED) begins after the division engineer issues his public notice for the feasibility report and PED funds are allocated to the

district. During the PED phase, engineering effort consists of those activities necessary to ready the project for the first construction contract. Results of these studies are documented in design memoranda, plans and specifications, and other special reports. Engineering during construction includes preparation of plans and specifications for subsequent contracts (where appropriate), review and approval of selected shop drawings, site visits, support for claims and modifications, development of operation and maintenance manuals, and preparation of as-built drawings.

(1) As a project moves from the feasibility phase to design, the emphasis will normally shift from hydrologic engineering analysis in support of plan formulation to hydraulic design. Design studies determine final sizes, configurations, and structural details of features of projects. Studies for structure geometry, stable channel design, and erosion protection works predominate. Additional hydrologic engineering studies to refine features such as real estate requirements, spillway dimensions, water control plans, and pumping plant and control structure operation will usually be required.

(2) Post authorization change studies are the result of significant changes in the economics, engineering, local conditions, or other pertinent aspects of the project. Revision of feasibility-level hydrologic engineering analysis as well as design studies may be needed.

d. Water Control Management. Hydrologic engineering studies to support water control management are described in ER 1110-2-240 and ETL 1110-2-251. Studies are needed to develop technical elements of water control manuals and to support realtime water control decisions for flood control and conservation operations at Corps projects. The scope and technical detail for these studies will be consistent with the operation decisions to be made.

e. Regulatory. Studies needed for regulatory decisions are diverse. The usual analysis involves impact assessments similar to the feasibility phase of survey investigations. The nature of the regulatory action under study will determine the needed technical product.

Table 1
Technical Review Process
Hydraulics and Hydrology Elements of Studies

<u>Study Type</u>	<u>District</u>	<u>Division</u>	<u>HQUSACE</u>	<u>BERH a</u>
			<u>a</u>	

Survey				
Reconnaissance	X	X	**	
Feasibility	X	X	**	X
Continuing Authority	X	X		

Appendix F
 Hydrologic Engineering Management
 August 2003

Flood Plain Mgmt.	X	X	
Special/National	X	X	X
Design Memoranda			
General Design	X	X	*
Feature Design	X	X	*
Post Authorization Change	X	X	*
Water Control	X	X	
Regulatory	X	X	

A Staff review for HQUSACE elements and BERH is provided by the Washington Level Review Group (WLRG), a division of the Water Resources Support Center, Ft. Belvoir.

* Selected project types and features require review/approval by HQUSACE (ER 1110-2-1150).

** HQUSACE participates in issue resolution conferences and may provide consulting services to the BERH.

7. Documentation and Reporting

a. General. The results of hydrologic engineering studies are documented in technical reports. The technical material may be published separately or incorporated in other documents. The documentation will present technical information on a professional engineering level. The objective is to document the data, study methods, assumptions, and results for use by the originating office, reviewers within the Corps, and other interested professionals. The documentation will permit an independent analyst to follow and understand the analysis and decision process presented in the document.

b. Content. The documentation will include a complete and accurate description of the total functional project (not just what is proposed for construction) , project features, function, and setting for the study. A description of the source and reliability of data, alternative methods of analysis considered, analysis methods selected, and calibration procedures utilized will be included. Relevant assumptions will be documented and the results presented. Conclusions will be explained as they relate to project formulation, feature selection, design, operation, and the function of the project. Analysis and design items to be incorporated into operations manuals and local cost sharing agreements will be identified. Project performance in physical terms as well as economic and social terms will be explained. Also

included will be a description of project performance when design is exceeded and any associated operations and actions by the Corps as well as local agreements needed to assure proper operation for events exceeding the design event.

c. Format. The format will be that of a professional technical report including logical text construction, liberal use of graphs, charts, maps and tables, and proper use of references and bibliography. Format guidance is contained in ETL 1110-2-230, Appendix A of ER 1110-2-1150, and ETL 1110-2-251.

d. Reporting Documents. The reporting documents include reconnaissance- and feasibility-phase reports for survey studies, detailed project reports for continuing authority investigations, flood plain information and flood insurance reports, design memoranda, water control manuals, and special reports. Specific guidance for these documents is contained in the appropriate regulations.

8. Professional Development. Professional development and maintenance of the hydrologic engineering workforce is critical to accomplishment of the Corps Civil Works mission. It is an important responsibility of supervisors and commanders at the district, division, and HQUSACE levels. Improving skills at the entry level and skills of experienced engineers can be accomplished through on-the-job experience and training, formal short course and long term training assignments, and through participation in activities of professional societies. Skills development should involve technical hydrologic engineering skills, and other important skills of written and verbal communications, familiarity with other technical elements of the Corps, and supervision and management skills. Supervisors and employees should cooperate to formulate a systematic development program as part of the annual performance appraisal process.

a. On-the-Job. Regular work assignments performed under the supervision of experienced engineers is a proven method of engineer development. Assignments should be diversified and encompass the full scope of hydrologic engineering studies, avoiding where possible, repeated piece-meal work. Periodic informal technical sessions involving colleagues and supervisors are encouraged.

b. Formal Training. Short-term training courses specifically tailored to Corps hydrologic engineers are available through the PROSPECT program. Registration for these courses occurs annually and is managed by training officers within districts and divisions. Short courses are available through local universities and occasionally on a special-case basis locally within a Corps office. Long-term training (up to one year) at selected

universities is available for advanced education. Applications for long-term training are made on an annual basis.

c. Professional Society Activities. Professional societies provide the opportunity to participate with peers in sharing of technical information and exchange of views on items of mutual professional interest. Hydrologic engineers are encouraged to belong to professional societies and consider participating in society activities through committee work and preparation and presentation of professional papers. Commanders and supervisors are encouraged to foster a sense of professionalism among the hydrologic engineering staff.

9. Technical Committees. Technical committees have been established to assist the Corps in maintaining competency in selected technical areas. The four committees that are established and operate as defined in ER 15-2-14 are: Committee on Tidal Hydraulics, Committee on Channel Stabilization, Committee on Water Quality, and Committee on Hydrology.

a. Objectives. These four committees provide technical focal points identifying problems and recommending investigations, monitoring the technical developments, and disseminating information.

b. Other Committees. Corps representatives serve on many inter-agency and professional society committees. These contacts serve as a source of current technical activities in areas additional to the existing Corps committees.

10. Hydrologic Engineering Research

a. Objectives and Products. Hydrologic engineering research is accomplished to develop information, analysis methods, and technical guidance to ensure efficient accomplishment of the Corps civil works mission. The scope of research is the full range of hydrologic engineering as defined in paragraph 4, Scope of Hydrologic Engineering Activities. Output products are improved information and improved analysis methods, new and revised computer programs, and technical literature.

b. Management. Civil works research needs are identified through the research needs system (ER 70-2-6). The program is managed by the Directorate of Research and Development (ER 70-1-5). Research may also be undertaken for specific projects.

c. Performing Organizations. Corps research and development laboratories and performing elements and occasionally Corps field offices perform the research and can provide technical assistance.

Corps agencies that perform hydrologic engineering related research are:

(1) Hydrologic Engineering Center, 609 Second Street, Davis, CA. 95616, phone (916) 551-1748.

(2) Cold Regions Research and Engineering Laboratory, 72 Lyme Road, Hanover, NH, 03755-1290, phone (603) 646-4100.

(3) Waterways Experiment Station, Halls Ferry Road, Vicksburg, MS, 39180-0631, (601) 634-2485.

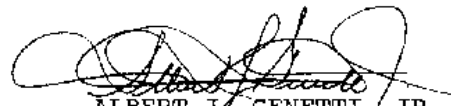
11. Hydrologic Engineering Guidance.

a. General. Hydrologic engineering guidance is provided in engineer regulations (ER's), engineer manuals (EM's), engineer technical letters (ETL's), engineer pamphlets (EP's), engineer circulars (EC'S), and occasionally by other communications such as engineer multiple letters. Some guidance documents are devoted only to hydrologic engineering topics while others address broader issues.

b. Guidance Definitions. ER's prescribe policy and are directive in nature; EM's document technical aspects of broader hydrologic engineering topics; ETL's document a restricted technical subject; EC'S are an interim document with a 1-year expiration date; and EP's provide information about a particular subject.

c. Status. Hydrologic engineering guidance is revised and updated on a continuing basis. EP 25-1-1, Index of publications, documents the official status of HQUSACE/OCE documents. Information on the status of hydrologic engineering guidance will be provided through EC's issued periodically.

FOR THE COMMANDER:


ALBERT J. GENETTI, JR.
Colonel, Corps of Engineers
Chief of Staff

1 Appendix
APP A - References

Appendix F-a
References

Appendix F-a
References

- a. ER 10-1-3, Divisions and Districts
- b. ER 15-2-14, Committees on Tidal Hydraulics, Channel Stabilization, Water Quality, and Hydrology
- c. ER 70-1-5, Corps of Engineers Research and Development Program
- d. ER 70-2-6, Identification of Civil Works Research Needs
- e. ER 1105-2-10, Planning Programs
- f. ER 1105-2-20, Project Purpose Planning Guidance
- g. ER 1105-2-30, General Planning Principles
- h. ER 1105-2-60, Planning Reports
- i. ER 1110-2-100, Periodic Inspection and Continuing Evaluation of Completed Civil Works Structures
- j. ER 1110-2-240, Water Control Management
- k. ER 1110-2-1150, Engineering After Feasibility Studies
- l. ER 1110-2-1400, Reservoir Control Centers
- m. ER 1110-2-1403, Hydraulic and Hydrologic Studies by Corps Separate Field Operating Activities and Others
- n. ER 1110-2-1455, Cooperative Stream Gauging Program
- o. ER 1130-2-339, Inspection of Local Flood Protection Projects
- p. ER 1165-2-1, The Federal Responsibility in Water Resources Development
- q. EM 1110-2-4000, Reservoir Sedimentation Investigations Program
- r. EP 25-1-1, Index of Publications
- s. EP 1165-2-1, Digest of Water Resources Policies and Authorities
- t. ETL 1110-2-230, Hydrologic & Hydraulic Engineering for Survey Investigations
- u. ETL 1110-2-251, Preparation of Water Control Manuals

APPENDIX G

EP 350-2-1

Training, Career Development of Hydrologic and Hydraulic
Engineers

DEPARTMENT OF THE ARMY
350-2-1
U.S. Army Corps of Engineers
Washington, DC 20314-1000

EP

Pamphlet
1994
No. 350-2-1

15 November

Training
CAREER DEVELOPMENT OF HYDROLOGIC
AND HYDRAULIC ENGINEERS

1. Purpose

This pamphlet describes professional development necessary for hydrologic and hydraulic engineers to successfully advance and perform specialized hydrologic engineering studies. It will serve to improve the efficiency of employees and the quality of their products.

f. Memorandum dated 3 December 1990 (by Chief of Engineers). Subject Army Civilian Training, Education and Development System (ACTEDS) for Civilian Career program for Engineers & Scientists.

2. Applicability

This pamphlet applies to all HQUSACE elements, major subordinate commands, districts, laboratories, and field operating activities having civil works responsibilities.

4. Requirements

ER 1110-2-1460 lists and explains the activities of hydrologic engineering within the civil works functions of the Corps of Engineers. The Army Civilian Training, Education and Development System (ACTEDS) plan provides training and development guidance for hydraulic engineers who aspire to a key position in their career field. This pamphlet describes the requirements for hydraulic engineers to further their professional development with the U.S. Army corps of Engineers.

3. References

- a. ER 15-2-14, committees on Tidal Hydraulics, Channel Stabilization, Water Quality and Hydrology.*
- b. ER 350-1-416, Headquarters, U.S. Army Corps of Engineers (HQUSACE) Centrally and Locally Sponsored Long-Term Training (LTT) Program.*
- c. ER 690-1-958, Army Civilian Career program for Engineers and Scientists (Resources and construction)*
- d. ER 1110-2-1460, Hydrologic Engineering Management.*
- e. EP 1165-2-1, Digest of Water Resources Policies.*

5. Scope of Hydrologic Engineering Activities

a. General. Hydrologic engineering is a part of civil engineering practice in which applications of professional knowledge of hydrologic and hydraulic principles are key elements in water resources development and management decisions. The scope includes the natural and management processes affecting the water cycle from precipitation on the land surface through the ultimate return of water to the sea or inland sink. Technical methods of analysis include field measurement and observation, mathematical and

statistical analyses, and models. Outputs from hydrologic engineering studies include water availability as expressed by surface and subsurface yield; water surface elevations and water surface profiles, sediment processes; modeling of watershed catchment processes, flood hydrograph development and surface infiltration; probability analysis of flood or drought frequency, risk of project failure, and reliability of supply; reservoir regulation requirements for water supply, navigation, power generation, and flood control; water quality effects of natural phenomena and project operations; and groundwater level changes due to recharge and withdrawal. The hydraulic engineer must also be knowledgeable of and able to communicate in related legal, social, economic, plan formulation, and management areas.

(1) Hydrologic engineering is a key element in many programs of the Corps of Engineers. Hydrologic engineering studies are an integral part of planning, design, construction, operations, and maintenance of civil works Projects and other special studies.

(2) Hydrologic engineering studies are performed in the Federal interest in the areas defined in EP 1165-2-1. Those areas include navigation, flood damage reduction, shore protection stream bank erosion control, hydroelectric power, recreation, water supply and quality management fish and wildlife, wetlands conservation, regulatory program, and special programs.

(3) Activities of a programmatic nature managed by CECW-EH include water control, elements of the dam safety program, reservoir sedimentation, hydrometeorology studies, hydrologic data collection, hydrologic studies, the cooperative stream gaging program, and hydrologic design for flood control and navigation.

b. Hydrologic engineering during planning. Hydrologic engineering studies develop fundamental technical flood and drought information for reconnaissance and feasibility phases of survey investigations and continuing authority programs, floodplain management and special and national studies.

c. Hydrologic engineering during design. Hydrologic engineering studies develop technical material for preconstruction engineering and design studies, postauthorization changes, reevaluation

reports, and design memoranda. These studies also provide information for preparation of plans and specifications and handling of water during construction.

d. Water control management. Hydrologic engineering studies provide the basis for real-time water control decisions, undertaking emergency management actions, preparing water control manuals, monitoring reservoir sedimentation, evaluating reservoir storage reallocations, and other water control studies.

e. Regulatory. Hydrologic engineering studies can be performed for Section 404 permit activities, Federal Energy Regulatory Agency license actions, water quality certification, and floodplain management actions.

f. Other. Interagency committees and other Federal, state, and local agency programs frequently request Corps hydrologic engineering studies. Negotiated agreements establish the basis for these studies.

6. Professional Development

a. General. It is the policy of the Corps of Engineers to foster the professional development of its engineering employees through providing encouragement offering training and education opportunities, and supporting actions toward professional registration. While professional development is primarily the responsibility of the employee, supervisors will offer encouragement and advise on matters important to progress. In the professional development process, there is a need for formal training, professional society participation, technical committee participation, and professional engineer registration in addition to on-the-job training. At the bachelor's degree level, the nation's colleges and university provide broad basic civil engineering education and an introduction to hydrology, hydraulics, and hydraulic design. The basic education needs to be supplemented with specialized advanced course work and training to accelerate development of requisite professional skills. This pamphlet outlines a structure and process for guiding professional development of hydraulic engineers.

b. On-the-job. On-the-job training is a continuous process. The entry-level hydraulic engineer needs an experienced mentor with the supervisor carefully selecting a good match. The

entry level engineer generally has energy, enthusiasm, openness, and a willingness to learn. The mentor needs to nurture and direct this energy and enthusiasm. The new engineer will make mistakes and needs support and assistance to learn and grow. The mentor must be willing to teach, have patience, and fully explain the duties of the job. The mentor needs to critically review work and provide feedback and be quick to provide praise where appropriate. The mentor can also learn from the hydraulic engineer by listening for new and fresh ideas and the latest technology changes. On-the-job training is the most effective way to gain experience and become competent.

c. Professional engineer registration. All engineers are strongly encouraged to become registered professional engineers in the state(s) of their choice to exhibit their professional ability. Professional engineering registration is a mandatory requirement for the Chief, Hydrology and Hydraulics (H&H) Branch; Assistant Chief, Engineering Division; and Chief, Engineering Division.

d. Formal training. Hydraulic engineers should contact their local Training Officer for detailed information on training programs and requirements. Several programs of importance to engineers are described herein.

(1) Short-term training. Hydraulic engineers should work with their supervisors to identify developmental needs. Short courses that meet these needs should be noted in the employee's Total Army Performance Evaluation System (TAPES) objectives statements and attendance scheduled accordingly. Systematic and regular short course attendance is a valuable strategy to follow to maintain professional development. The short courses need not be limited to hydrologic engineering courses. The short courses can be correspondence, in the office, or outside the office. They can be either government (such as the Corps' PROSPECT Program) or nongovernment (such as university-sponsored) courses. Another form of short-term training is executive or technical developmental assignments or programs less than 120 days in duration. Short courses and developmental assignments should be reflected in employee's TAPES objectives statements.

(2) Long-term training. All engineers should consider applying for long-term training. Employees will be competitively selected for this

training to develop them for greater responsibility in their career field. Long-term training includes such Army-wide programs as senior service colleges, fellowship programs, university programs, training with industry assignments, and developmental assignments over 120 days. The Water Resources Support Center Professional Development Program is long-term training, 3 to 6 months in duration, designed to provide selected candidates broad training and work experience. Three- to six-month TDY assignments are often available at HQUSACE, divisions, Hydrologic Engineering Center (CEWRC-HEC), Waterways Experiment Station (CEWES), Cold Regions Research and Engineering Laboratory (CECRL), and other offices.

(3) Hydrologic Engineering Education program (HEEP). This 12-month program is a part of the HQUSACE-sponsored long-term training program. The objective of HEEP is to increase the skills and experience of engineers in the hydrologic engineering field. The program consists of 9 months (two semesters or three terms) of study at the selectee's university of choice followed by summer assignment (approximately 3 months) at CEWRC-HEC, CEWES, or CECRL. Employees interested in applying for HEEP can contact CECW-EH at (202) 272-8500 for information on suggested accredited universities and the developmental assignments.

(a) Nominee requirements. Nominees will normally be in the 0810 civil engineering/hydraulics job classification field employed in a district division, headquarters, laboratory, or other Corps agency. The nominee is expected to have an interest in or show excellent promise in hydrologic engineering and will be expected to make the Corps of Engineers their career employer. Normal civil service rules concerned with service time required following government-sponsored training will be followed. Nominees will normally be GS-11/12 engineers possessing a bachelor's degree with a minimum of 4 years of civilian experience with the Corps of Engineers, including at least 2 years in the hydrologic engineering field.

(b) Application procedures. Applicants must follow the application procedures provided in ER 350-1416. Applications are due to HQUSACE (CEHR-D) 15 January of each year however, local Human Resources offices will set an EARLIER suspense for applications to be submitted to them.

Appendix G
Training, Career Development of Hydrologic and Hydraulic Engineers
August 2003

Selections will be announced in March of each year.

(c) Program curriculum. Study programs pursued by the student must be a university-approved course of study within an accredited advanced degree program. The emphasis of the specific program will be designed by the student commensurate with his or her interests and consistent with the needs of the

- Hydrologic Systems.
- Open Channel Hydraulics.
- Hydraulic Structures.
- Statistical Analysis in Water Resources.
- Advanced Mathematics for Engineers.
- Erosion and Sedimentation.
- Urban Water Management.
- Water Systems Modeling.
- Water Resource Management Institutions.
- Water Law.
- Graduate Seminar/Project
- Engineering Hydrology.
- Hydraulic Systems.
- Unsteady-Flow Hydraulics.
- Water Resources System Analysis
- Design of Water Resource Systems.
- Operations Research.
- River Mechanics.
- Control of Floods and Droughts.
- Economic and Environmental Aspects of Water Resources.
- Engineering Project Management

FOR THE COMMANDER:

Corps. Normally, this will be determined in consultations between the applicant and his or her supervisor at the time of application. The following is a list of course topics that are expected to be a major part of the study program curriculum. The courses taken will, of course, be dependent on specific offerings of the university attended. Most course offerings will carry 3 or 4 hours of credit.

- Groundwater Hydrology.

Following two semesters (three quarters) at a university, the student will arrange for approximately a 90-day assignment at CEWRC-HEC, CEWES, or CECRL to work on a specific hydrologic or hydraulic engineering applications problem. The student assignment could be: working on a problem from their home office; participating in a research project or assisting with resolving a policy question. The desirable project is one that would be completed with a technical report. In some instances, it may be possible to acquire university credit for the project and subsequent report. Students should make these arrangements by contacting: Director, CEWRC-HEC; Director, Hydraulics Lab, CEWES; or Technical Director, CECRL.

e. Professional society participation.

Professional society participation provides self development for the hydraulic engineer. There are numerous professional societies for the hydraulic engineer. The most prominent are the American Society of Civil Engineers, Society of American Military Engineers, National Society of Professional Engineers, American Public Works Association, American Water Resources Association, American Geophysical Union, and the Society of Women Engineers. All engineers in the Corps are encouraged by the Chief of Engineers to become active members of professional societies.

f. Corps technical committees. The Corps has four technical committees that have memberships comprised of hydraulic and hydrologic engineers: Tidal Hydraulics, Channel Stabilization, Water Quality, and Hydrology. The purpose, objectives, scope of activities, composition and other general information for these committees are contained in ER 15-2-14.

APPENDIX H

ER-350-1-416

Training, Headquarters, U.S. Army Corps of Engineers
(USACE) Centrally and Locally Sponsored Long-Term
Training (LTT) Program

DEPARTMENT OF THE ARMY
U.S. Army Corps of Engineers
Washington, D.C. 20314-1000

CEHR-HD

Regulation
No. 350-1-416

31 January 1992

Training
HEADQUARTERS, U.S. ARMY CORPS OF ENGINEERS (HQUSACE)
CENTRALLY AND LOCALLY SPONSORED LONG-TERM TRAINING (LTT) PROGRAM

1. Purpose. To establish policy for HQUSACE Centrally and Locally Sponsored LTT Program.

2. Applicability. All HQUSACE/OCE elements, major subordinate commands (MSC), districts, laboratories and field operating activities (FOA).

3. References.

- a. FPM 410
- b. JTR Vol 2
- c. AR 690-400, Chapter 410
- d. AR 690-950
- e. ER 15-1-16
- f. ER 37-2-10

4. LTT and Education.

a. "Long-term training and education" refers to training to which an individual is assigned on a continuous, full-time basis for more than 120 calendar days. The assignment may be to either Government or non-Government facilities. A training program split arbitrarily between two or more school terms is one continuous program.

b. The training of personnel in apprenticeship, cooperative education and career intern programs is excluded from the scope of this regulation.

5. Policy.

a. It is the policy of the Corps of Engineers to provide appropriate training and development opportunities to assure maximum efficiency of civilian members in the performance of their official duties. Training needs will be reviewed, and effective training practices and techniques applied in efforts to raise individual performance and to meet present and anticipated needs for individual knowledge, skills and abilities.

This regulation supersedes ER 350-1-416, 15 September 1989.

b. Most training needs of members can be met by short-term, low-cost training programs. To keep the Corps abreast of managerial, technical and scientific advancements, some members may need training opportunities beyond the customary short-term programs. It is Corps policy to use LTT when such assignments are

more appropriate to providing needed knowledges, skills and abilities than assignments of short duration.

c. A member on a LTT assignment must enroll as a full-time student. He/she must carry 15 semester hours (or equivalent quarter hours). Members who propose to carry less than 15 semester hours are required to obtain verification of full-time status from the college or university prior to acceptance into long-term training. During extended school recesses, employing activities may return the member to duty. The employing activity will pay expenses associated with the return to the activity. Members not returned to duty will use annual leave during recesses unless they can show they will be fully involved in a research and study project for the training assignment. Members are responsible for complying with this policy.

d. Members taking long-term training in a Government or non-Government program must agree to continue in the service of DOD after completing the training. They must sign a written agreement before they are assigned for the training. The period of continued service will be three times the length of the training period and begin when training is completed. The Continued Service Agreement on DD Form 1556 will be used to document the required period of continued service. In the event a member should terminate the Continued Service Agreement, he/she must promptly notify the Training Officer in writing.

e. Members may submit applications for HQDA funded and HQUSACE sponsored LTT. If a member applies for both programs within the same fiscal year, he/she must participate in the HQDA program, if selected. Failure to accept the HQDA offer will automatically preclude participation in the HQUSACE program.

f. Members may only participate in one LTT assignment in each ten (10) year period of Federal civilian service.

g. Every Corps member who meets the established criteria and standards will be given an equal opportunity to be considered for LTT and education. Managers and supervisors should identify eligible women and minority group members and strongly encourage their participation in LTT.

h. Where training and education may result in promotion, merit promotion or career management procedures will be followed.

6. Responsibilities

a. HQUSACE Centrally Sponsored LTT.

(1) Director of Human Resources, HQUSACE:

(a) Implements and directs LTT activities in the Corps of Engineers.

(b) Assures necessary resources are provided for the accomplishment of HQUSACE sponsored LTT.

(c) Develops guidance and implementing instructions.

(d) Monitors FOA implementation of the HQUSACE LTT program.

(e) Grants final approval of attendees for LTT covered by this regulation, except as described under Locally Sponsored Long-Term Training.

(2) Corps of Engineers Training Issues Committee (CETIC) Subcommittee on LTT:

(a) Reviews LTT nominations for programs other than the Planners & Project Managers (P&PM) Program according to established criteria.

(b) Using competitive procedures, recommends LTT attendees for all LTT programs except the P&PM Program.

(3) Directorate of Civil Works HQUSACE (P&PM Program only):

(a) Reviews applications for P&PM Program according to established criteria.

(b) Selects members nominated by Major Subordinate Commands (MSC), Civil Works Planning Division (CECW-P) and Civil Works Project Management Division (CECW-L) to participate in the P&PM Program.

(4) Career Program Managers (CPMs) at HQUSACE and FOA level, in coordination with the appropriate Human Resources/Civilian Personnel Offices (HRO/CPO) and supervisors will be actively involved in the identification and selection of LTT trainees. In addition, CPMs will ensure that LTT activities are effectively planned and carried out.

(5) HRO/CPOs:

(a) Provide the necessary guidance and administrative support to ensure compliance with regulatory requirements.

(b) Establish screening panel. Training Committees are ideal for this purpose. However, since training committees are optional, activities should establish a screening panel to review applications and eliminate those which do not meet the necessary criteria.

(6) Supervisors:

(a) Determine members' training needs and nominate eligible personnel as outlined in this regulation for the various LTT programs.

(b) Support goals and objectives of Equal Employment Opportunity (EEO).

(c) Review the utilization plan prepared for the nomination package and ensure the plan is carried out upon completion of the LTT assignment.

b. Locally Sponsored Long Term Training.

(1) Commanders of Major Subordinate Commands (MSC) and Commanders and Directors of Laboratories and Separate Field Operating activities are delegated authority to select members for locally funded LTT. This responsibility may be redelegated to Human Resources/Civilian Personnel Officers (HRO/CPO) who can further delegate responsibility to local Chiefs of Training and Development, if desired.

(2) Activities will establish procedures to select members for locally funded LTT in accordance with AR 690-400, 410, Subchapter 10.

(3) Activities must annually provide this Command (CEHR-HD) with a list of those selected for locally funded LTT. The list must provide the following for each selectee: name, grade, position title, RNO, number of years of Federal civilian service, program of study, estimated cost and a statement from the CPO certifying that the individual meets regulatory requirements.

7. Types of LTT Programs.

a. Locally Sponsored Long-Term Training. Major Subordinate Commands, Laboratories, and Separate FOA may establish and announce locally funded long-term training opportunities through separate announcements or local regulations.

b. HQUSACE Sponsored Long-Term Training Programs.

(1) Mission Related Graduate Program (MRGP). This program provides an opportunity for graduate level study in an academic discipline that is directly related to accomplishing the Corps mission.

(2) Water Resources Planners and Project Managers (P&PM) Program. This is an eleven-month internship for Corps of Engineers water resource planners, project managers and other technical personnel involved in the Civil Works project development process who exhibit exceptional promise and potential for advancement to positions of greater responsibility. The program is conducted annually starting in August by the Education and Policy Division, at the Washington Level Review Center (WLRC), Fort Belvoir, Virginia. The purpose of the program is to develop planners who will manage complex planning studies, project managers who will manage complex Civil Works projects and other Civil Works technical personnel who provide support to planners and project managers during the project development and implementation process. The program emphasizes applied water resource policy, planning, engineering, construction, operation and project management techniques. Other training associated with the program is aimed at developing decision making capabilities and managerial and communication skills. Instruction is conducted by staff members of the WLRC, HQUSACE, MSCs, Districts,

Laboratories and lecturers from other governmental agencies and private consulting firms. Lectures are presented during workshops, short courses, case studies, and field trips. In addition, each member assists in the review of current planning and design reports, completes independent research in an area of their interest, completes special assignments during a headquarters assignment and provides instruction to other Corps members during Planner and Project Managers Orientation courses.

(3) Graduate Fellowship in Water Resources and Environmental Law (WREL) Program. This program is for attorneys employed by the Corps of Engineers. The program consists of a full calendar year of study (not an academic year), conducted at the George Washington University (National Law Center) in Washington, DC. In addition to the course work, approximately 10 hours per week will be spent in the Office, Chief Counsel, HQUSACE.

(4) Coastal Engineering Education Program (CEEP). This program, which started in 1990 and is offered once every three years, is designed to provide coastal engineering specialists with a strong, fundamental education on the forces which affect coastal projects and practical abilities to plan, design, construct and operate coastal projects. The program consists of 12 months of academic study from Texas A&M University (9 months on campus at College Station, Texas, and 3 months at the Coastal Engineering Research Center (CERC), Waterways Experiment Station, in Vicksburg, Mississippi). The curriculum at College Station, Texas includes 30 hours of course work in coastal sediment processes, physical oceanography, ocean wave mechanics, higher math, marine dredging, coastal engineering theories of fluid mechanics, coastal problems, and hydromechanics. The curriculum at CERC, WES, Vicksburg, Mississippi, includes 12 semester hours of course work in computational fluid dynamics, physical modeling, and coastal field measurements (including hands-on laboratory work, numerical modeling, and field measurement and analysis at the Field Research Facility, Duck, North Carolina).

8. Eligibility Criteria.

a. Locally Sponsored Long Term Training.

(1) Grade. Members grade GS-11 and above.

(2) Experience. Members must be serving under Career appointments or in Schedule A appointments without time limitation. Career members and Schedule A members must have a minimum of three years Federal civilian service under either type of appointment plus one year of Corps civilian experience beyond the intern level.

b. HQUSACE Sponsored LTT. Members must meet minimum specialized and program requirements to be nominated for HQUSACE LTT. The checklist format at Appendix A shows the information needed to determine a member's eligibility for HQUSACE Sponsored Long Term Training.

(1) Minimum Experience.

(a) Grade. Members grade GS-11 and above.

(b) Type of appointment. Members must be serving under Career appointments or in Schedule A appointments without time limitation. All members must have a minimum of three years civilian service under either type of appointment. Time spent in an intern program (functional trainees and HQDA and locally funded interns) is NOT qualifying for the civilian experience requirement.

(2) Specialized Experience.

(a) MRGP. Four years civilian experience. At least one of the four years must be Corps civilian experience.

(b) P&PM Program. Four years of Corps civilian Civil Works experience. For planners, two of the four years must have been in a planning function. For project managers, two of the four years must have been in a project management function. For technical members, two of the four years must have been in support of Civil Works project development from the planning phase through the construction and operations phase. Operations technical members with two of the four years of experience in direct support of the flood control, navigation and environmental restoration project related missions shall qualify for participation in this program.

(c) WREL Program. Four years civilian experience. At least one of the four years must be Corps civilian experience.

(d) CEEP. Four years civilian experience. At least one of the four years must be Corps civilian experience.

(3) Program Requirements.

(a) MRGP. Evidence of application to the requested training facility.

(b) P&PM Program. Members must be working in a Civil Works planning, project management or technical support function at the time of nomination.

(c) WREL. Evidence of application to George Washington University.

(d) CEEP. Evidence of application to Texas A&M University.

c. Waivers.

(1) Locally Sponsored Long Term Training. Commanders of Major Subordinate Commands (MSC) and Commanders and Directors of Laboratories and Field Operating Activities are delegated authority to approve waivers for one of the required four years of service. Waiver of the 3-year service requirement must be approved by HQDA. This responsibility may be redelegated to Human Resources/Civilian Personnel Officers (HRO/CPO), if desired.

(2) HQUSACE Sponsored LTT. Nominations for members who do not meet regulatory requirements must be submitted to CDR, USACE (CEHR-HD) WASH DC 20314-1000. Waivers must be endorsed by the first line supervisor, commander, and career program manager or senior functional representative for non-career program members.

(3) Eligibility Criteria. If the member does not meet minimum and/or specialized experience requirements, submit the following information or explain:

(a) The type of waiver requested: grade level; type of appointment; and/or specialized experience.

(b) Why the training is necessary in the timeframe requested.

(c) Why the training cannot be delayed until the nominee meets regulatory criteria listed in paragraphs 8a and 8b.

(d) Why the training is critical to the activity accomplishing its mission.

(e) For grade level waivers only, state how this request for training complies with FPM 410.3-6 and 5-3 and AR 690-400, 410, S3-6 and S5-3 requirements concerning training which leads to a promotion or reassignment into a different field of work.

(4) 1-in-10 Requirements. Except as provided in references, training is prohibited for members who have accumulated one (1) year of non-Government training in each decade of civilian service. The following conditions must be met before a waiver can be considered.

(a) The member is serving under a career or career-conditional appointment or an appointment without time limitation in the excepted service; and

(b) The training, added to the amount of previous training through non-Government facilities, would not exceed 2 years in the current 10-year period of civilian service; and

(c) A record of use of the authority for making the waiver is inserted in the member's Official Personnel Folder providing the information contained in the 1-in-10 waiver format.

(5) 1-in-10 Waiver Request. In addition to the information requested in subparagraph 8c(1) the following information must also be provided in a request for the 1-in-10 waiver:

(a) Member name.

(b) Type of appointment.

(c) State if the training will, when added to any previous non-Government training, exceed 2 years in the member's current 10-year period of civilian service.

(d) Describe the training program in terms of substance (e.g., hydrology), level (e.g., graduate), and facility (e.g., University of Maryland) to be used.

(e) Give the period for which the waiver is required (month and year the training begins and ends).

(f) If the training is primarily for application to a future assignment, describe the major duties of the future position.

(g) State whether or not a waiver has been granted previously during the member's current decade of civilian service at time of nomination. If yes, give date and attach waiver and relevant correspondence.

(h) Give the projected beginning of the member's next decade of civilian service (month and year).

(i) State the reasons that application of the limitation would be contrary to the public interest. Describe the effect of postponement of the training until the next decade of civilian service. This statement must provide detailed information, not just conclusions. The statement could show how the application of the limitation would be detrimental to: the activity's acquisitions of skills, abilities, or knowledges which cannot be practicably or more economically obtained; or an agency program which is in consonance with an equal employment opportunity plan approved by OPM; or an activity program under the law providing for training for placement in a different agency; or an activity program scheduled for completion within a specified timeframe or a Command/Army program which is highly visible, sensitive, controversial or is a priority project, mission, or function.

(j) For locally sponsored LTT waiver requests only, list training supported with Government funds as follows: Government/Interagency training during preceding five (5) year period. Indicate: course title, length, and year completed. Non-government training during member's current decade of civilian service at time of nomination. Indicate: course title, length (classroom hours), year completed, and if the particular course counts toward the 1-year-in-10 limitation. Total the number of hours counting toward the 1-year-in-10 limitation. If the course does not count toward the 1-in-10 limitation, indicate the reason (See FPM 410-5-5c(2).)

9. Local Nomination and Screening Process.

a. The criteria below will be used to determine when long-term, full-time training should be used instead of after-hours, part-time, or short-term training programs.

(1) The needed set of knowledges or skills requires a comprehensive study program which could not be accomplished by a series of unconnected, short-term courses.

(2) The time span for acquisition of the knowledges or skills is such that a concentrated or long-term program is most feasible.

(3) The set of knowledges or skills is so complex, so new, or so unique that it could not be readily obtained on a short term basis.

b. Identification and selection of members. Identification and selection of members for LTT is a continuing process. Long-range planning for both activity missions and member IDPs is required. Local, competitive selection procedures should be designed so that management officials (especially CPMs) are actively involved. The activity's training committee may also help identify and select members for LTT. The committee may, for example, apply competitive procedures to ensure balance and fairness in selections throughout the activity.

c. Career factors. The timing of nomination or selection of members for LTT is important. In addition to mission-related factors, the timing should also consider factors related to the member's career status, performance, achievements and qualifications, demonstrated aptitude for training, and career plans.

10. Application Procedures.

a. Members can only be nominated for one program.

b. The original application package and nine copies must be submitted for each member.

c. Commanders must endorse all nominations and forward them through Command channels. The endorsement will be used to evaluate the organization's need for the long term training and the impact on the organization if the training is approved or disapproved. The endorsement must also assure that the member's services will continue to be required. In the endorsement, the commander could elect to explain why the organization needs the LTT, why this particular training program was chosen, what alternatives have been considered to obtain these knowledges, skills and abilities, why this member was nominated, and what will happen if the training is approved or disapproved. If it is not evident throughout the nomination package that the member has adequately demonstrated the following, the commander may choose to address the member's demonstration of one or more of these items: special skills or accomplishments, self development activities, previous contributions to mission accomplishment, and professional knowledge and expertise.

d. All nominations must be received by CDR, HQUSACE (CEHR-HD) WASH DC 20314-1000 NLT 30 January. Late or incomplete nominations (e.g., packages missing required items or lacking the correct number of copies) will not be considered.

11. Nomination Package Requirements.

a. All nomination packages must be completed and compiled in the format and order prescribed at Appendix B, Nomination Package Requirements. Incomplete packages or packages received after the suspense date will not be considered.

b. If the requested information/documentation cannot be provided, a statement must be inserted (where the information should appear) explaining why the information is not available.

c. ENG Form 4996-R, Training Officer's Checklist (Appendix C), must be completed by the local Training Officer and attached to each nomination package. This form will be used to verify information needed to make selections for HQUSACE sponsored long-term training. This checklist must be attached to the front of each LTT application package. This form may be reproduced locally on 8 1/2" X 11 " paper or electronically generated in accordance with existing guidelines on forms automation.

12. Training Costs.

a. Preparation of Cost Estimate of Proposed Training. Activities will estimate all costs to be incurred during the entire training period and document them on ENG Form 4997-R, Cost Estimate of Proposed Training, (Appendix D). This form may be reproduced locally on 8 1/2" X 11 " paper or electronically generated in accordance with existing guidelines on forms automation. Costs not reflected in the cost estimate submitted with the nomination package will not be paid by HQUSACE. Central funding is limited to the costs described below:

(1) Salary. These costs should be computed to cover the entire training period. The calculation should be based on the member's grade and step at the time of nomination with any projected step increases and locality comparability payment if applicable. If salary costs are based on special pay rates, the pay schedule should be identified in the space provided.

(2) Fringe benefits. These benefits must be calculated at 15% of the total of Object Class 11 (Appendix D). Overhead is not reimbursable.

(3) Per Diem. Generally, CONUS members participating in LTT are placed in a TDY status and the per diem rate for LTT is established, as provided for in the JTR, at 55% (rounded to the next higher dollar) of the maximum allowable rate for the principal area in which the LTT is conducted. For example, the P&PM Program is conducted at Ft. Belvoir, Virginia. If the maximum allowable per diem rate for Ft. Belvoir is \$131.00, then the LTT per diem rate would be $0.55 \times \$131.00 = \$72.05/\$73.00$. At the election of the member, consideration may be given to a limited PCS move. If the member elects a limited PCS, the estimated cost of round trip transportation of the member's immediate family and household goods between the official duty station and the training location will not exceed the aggregate per diem payments that the member would receive while at the training location. The following entitlements are not authorized for TDY or limited PCS: per diem for dependents; house hunting trips; temporary quarters subsistence expenses; non-temporary storage; real estate/unexpired lease expenses; and miscellaneous expenses.

(4) Local Travel Expenses. Members attending LTT within commuting area of their permanent residence are authorized

reimbursement on a mileage basis for the distance between residence and the training location, plus parking fees and tolls.

(5) Travel and Per Diem For Round Trip to Training Location. LTT participants attending training outside commuting area of permanent duty station are authorized one trip to and from the training site. An additional round trip, for pre-registration, may be authorized if required by the school/university. Written documentation from the school/university must be submitted with ENG Form 4997-R, Cost Estimate of Proposed Training, (Appendix D).

(6) Field Investigations. Expenses for field investigations are authorized for the CEEP and P&PM Program if required as part of the programs. For the P&PM program, there are approximately six field trips during the training period at an average cost of \$400.00 each. Approximately 40 days are spent on these field investigations and 290 days of the training are spent at the training facility (Ft. Belvoir). Approximately \$150.00 per day is a reasonable estimate for per diem in connection with field investigations (\$40.00 is an estimate of the average lodging cost at the location of the training facility plus approximately \$34.00 and \$76.00 for M&IE and lodging, respectively at the field investigation locations). The estimates above are based on 1991 costs and may be used as guides in computing the corresponding cost estimates for the P&PM Program (Appendix D).

(7) Transportation of Things. LTT participants on TDY will be reimbursed for the transportation of 350 lbs. of personal belongings to and from the training facility.

(8) Tuition. The employing activity should make arrangements with the training facility to bill them for tuition instead of the LTT participant. FOR THE PLANNERS AND PROJECT MANAGERS PROGRAM: Tuition is provided by the Water Resources Support Center and must not be billed to HQUSACE.

(9) Books, Supplies and Miscellaneous Services. Costs for books, supplies and services such as typing, zexxing, etc. are reimbursable. For the P&PM Program, miscellaneous expenses for camera film, mosquito repellent and second hand clothing for field investigations when required as a part of the program are reimbursable. P&PM Program participants may not exceed \$350.00 for these expenses. Equipment is not reimbursable. Items such as computers, calculators, binoculars, or similar equipment should be borrowed from the employing activity (C2, Chapter 410).

b. HQUSACE will not reimburse any expenses other than those described above (12a (1 thru 9)).

c. The employing activity will prepare the LTT member's travel orders. All travel will be subject to the provisions of Volume 2, JTR, including paragraph C4502 and as described above. The JTR defines LTT for reimbursement of subsistence expenses as training of 30 or more calendar days.

d. Employing activities with OCONUS members approved for LTT in CONUS must follow the guidance in AR 690-400, 410, Subchapter

10, paragraph 5c to prepare a cost comparison of the applicable per diem expenses with the estimated total cost of round trip transportation for the member's dependents and household goods between the member's permanent duty station and the training location. A copy of the cost comparison must be included with ENG Form 4997-R (Appendix D). All provisions cited in AR 690-400, 410, Subchapter 10, paragraph 5c are applicable to the HQUSACE sponsored programs covered by this regulation.

e. Reimbursement of Training Costs to Sponsoring Activity. Activities will submit an advance bill by SF 1080 for each LTT participant by name and program. This bill (for the entire authorized cost estimate) must be received by CEHR-HD NLT 15 September of the fiscal year in which the training was taken. Bills received after this date will be returned without action and the employing activity will be responsible for those costs. There will be no exceptions to this requirement. The member's employing activity will be responsible for any costs exceeding the total cost figure submitted with the original nomination. Specific instructions for billing are provided in Appendix E.

f. Travel Advances for LTT. Members selected to attend LTT in some instances will secure lodging on a lease basis. Payment of a security deposit (usually equivalent to one months rent) plus payment of one or two months rent is normally required when the lease is signed. In these cases, local finance and accounting offices should provide a sufficient travel advance to cover these expenses plus an allowance for M&IE and other allowable expenses as provided in the JTR. This should be done to ensure that the member has sufficient funds to cover per diem expenses until reimbursement is received from the first travel voucher.

g. Backfill.

(1) Manpower Spaces. The position occupied by the participant in an HQUSACE sponsored LTT program will be within the current manpower authorizations of the employing activity. No additional manpower spaces are provided.

(2) Funding. HQUSACE does not provide additional funding for backfill behind the (LTT) participant. However, this does not preclude backfill since salary funds budgeted by the employing activity may be used for this purpose. Manpower authorizations for backfill must be coordinated with the local manpower office.

(3) Civilian Personnel Action. If required, supervisors will prepare an SF 52, Request for Personnel Action, to establish and recruit for a temporary position. Since this action is necessary due to the temporary assignment of an employee to long term training, the position may only be filled on a temporary basis. Contact your local HRO/CPO for specific rules regarding this action. The remarks section of the SF 52 should read: "Temporary position NTE. This action is necessary to fill behind (name of the LTT participant) who is assigned to HQUSACE Sponsored Long Term Training." Documentation to support this request will consist of a copy of the selection letter and cost estimate for the LTT

participant (which shows that HQUSACE funds salary for the LTT participant).

13. Selections for LTT Programs.

a. HQUSACE Selection Process. The Corps of Engineers Training Issues Committee's (CETIC) Subcommittee on LTT (ER 15-1-16) will evaluate each nomination and recommend selections for all LTT programs (except the P&PM program) based on items (1) through (5) below. Selection criteria and benchmarks will be distributed annually to training officers.

(1) Two most recent performance appraisals.

(2) Supervisor's statement of relationship of training to activity mission accomplishment and post training utilization.

(3) ENG Form 4998-R, Career Program Manager's Assessment (Appendix F). This form may be reproduced locally on 8 1/2" X 11" paper or electronically generated in accordance with existing guidelines on forms automation.

(4) Member's statement of need.

(5) Commander's letter of endorsement.

b. The committee will select a minimum of six (6) members for the CEEP once every three years.

c. P&PM Program Selections.

(1) Each Major Subordinate Commander may submit nominees for the P&PM program. Additionally, the Chief, Policy and Planning Division (CECW-P) and the Chief, Project Management Division (CECW-L) may nominate one candidate each for the program. Nomination packages for all these nominees will be completed and submitted according to the requirements for all HQUSACE LTT applicants, as described in this regulation. Members will be selected by a Directorate of Civil Works Selection Committee, based on the information in the nomination packages. Up to 20 nominees may be selected for the P&PM Program. The members will not be notified of selection until all HQUSACE Sponsored LTT applicants are notified.

14. Notification of Selection.

a. After the CETIC Subcommittee on LTT and the Civil Works Selection Committee make the selections for each LTT program, training offices will be notified of the selections via CORPSMAIL. HQUSACE will mail letters of notification, through Command channels, NLT 15 March.

b. When the local training office receives the selection letter, training officers must notify members of their selection. The training office must then forward member's letter of acceptance of the LTT assignment and university acceptance letter

to CEHR-HD within 30 days from the date on the selection letter. If the selected member declines the LTT assignment or can not attend the requested training facility or obtain the requested program of study, the member must formally withdraw from the LTT program. The withdrawal must be done in writing through the training office to CEHR-HD. The member can resubmit his/her nomination the next year. c. If CEHR-HD does not receive a letter of acceptance from the selected member (through the local training office), the selected member's LTT space will be given to an alternate member.

15. Assignment to Long-Term Training. The servicing Human Resources/Civilian Personnel Office (HRO/CPO) will process a Standard Form 50, Notification of Personnel Action, to temporarily assign an employee to long-term training. Instructions for processing this action will be provided with the selection letter.

16. Substitution of Training Facility or Program of Study. There can not be a substitution of the training facility or the program of study upon which a member was selected to attend a LTT program. A change of one or two courses in the program of study is permissible if formal approval is obtained from CEHR-HD in advance. Requests for change should be submitted through the training officer, to CEHR-HD, and must include a description of the requested change, the reason for the change, and supervisory and career program manager endorsement.

17. Return to Duty Station During LTT. Commanders should ensure that students return to their duty stations during breaks in training unless it can be shown that those periods are used for research and study in connection with the particular LTT Program. Commanders should also not request that members return to the duty station during the training period unless it can be demonstrated that their return is critical to mission accomplishment. This will help to ensure that disruptions in the training will be minimized. Supervisors will inform the local CPO when an early return to duty is necessitated. For the P&PM Program, Commanders who require that the member return should submit a request with supporting justification through appropriate channels to the attention of the Director, Water Resources Support Center, ATTN: CEWRC-WLR-EP for coordination/approval with the HQUSACE Civil Works Directorate. Expenses for this return travel will not be billed to HQUSACE LTT.

18. Post Long-Term Training Requirements. Members will complete an evaluation one year after the completion of the long term training assignment. ENG Form 4999-R, Long-Term Training (LTT) Post Evaluation, (Appendix G) will be used for this purpose. This form may be reproduced locally on 8 1/2" X 11 " paper or electronically generated in accordance with existing guidelines on forms automation. A copy of the evaluation must be forwarded to CDR, USACE (CEHR-HD) WASH DC 20314-1000.

FOR THE COMMANDER:


MILTON HUNTER

Colonel, Corps of Engineers
Chief of Staff

Appendices

- APP H-a - Eligibility Req
- APP H-b - Nomination Pkg Req
- APP H-c - ENG Form 4996-R
- APP H-d - ENG Form 4997-R
- APP H-e - Billing Procedures
- APP H-f - ENG Form 4998-R
- APP H-g - ENG Form 4999-R

APPENDIX H-a

ELIGIBILITY REQUIREMENTS

APPENDIX H-a
ELIGIBILITY REQUIREMENTS

PURPOSE: Use the questions under minimum and specialized experience to determine an applicant's eligibility for HQUSACE Sponsored long-term training. Applicants who do not meet minimum and/or specialized requirements should see subparagraph 8c, Waivers.*

SECTION I. MINIMUM (M) EXPERIENCE REQUIREMENTS FOR ALL PROGRAMS

M1. Is the applicant permanently assigned to a GS-11 or higher level position?

_____ Yes: Proceed to question M2.

_____ No: STOP. The applicant is ineligible for HQUSACE LTT.*

M2. Is the applicant serving under a career appointment?

_____ Yes: Proceed to specialized experience requirements for applicable program.

_____ No: STOP. Proceed to question *

M3. Is the applicant serving under a schedule A appointment?

_____ Yes: Proceed to question M4.

_____ No: STOP. The applicant is ineligible for HQUSACE LTT.*

M4. Does the schedule A appointment have a time limitation?

_____ Yes: STOP. The applicant is ineligible for HQUSACE LTT.*

_____ No: Proceed to question M5.

M5. Does the applicant have three years civilian service under the Schedule A appointment?

_____ Yes: Proceed to specialized experience requirements for applicable program.

_____ No: STOP. The applicant is ineligible for HQUSACE LTT.*

*NOTE: If the applicant does not meet eligibility requirements, see subparagraph 8c, Waivers.

SECTION II. SPECIALIZED (S) EXPERIENCE REQUIREMENTS

a. Mission Related Graduate Program

Appendix H-a
ELIGIBILITY REQUIREMENTS
August 2003

S1. Will the applicant have 4 years of civilian service from the time he/she entered into civilian service until the program start date?

_____ Yes: Proceed to Question S2.

_____ No: STOP. The applicant is ineligible for this program.*

S2. Will the applicant have one year of USACE civilian experience from the time he/she entered into civilian service until the program start date? (Do not count time spent as an intern towards this requirement.)

_____ Yes: The applicant is eligible for this program.

_____ No: STOP. The applicant is ineligible for this program.*

b. Planners and Project Managers Program

S3. Will the applicant have 4 years of civilian service from the time he/she entered into civilian service until the program start date?

_____ Yes: Proceed to question S4.

_____ No: STOP. The applicant is ineligible for this program.*

S4. Will the applicant have two of the four years in a planning, project management or related technical function from the time he/she entered into civilian service until the program start date? (Do not count time spent as an intern towards this requirement.)

_____ Yes: Proceed to question S5.

_____ No: STOP. The applicant is ineligible for this program.*

S5. Will the applicant be working in a planning, project management or related technical function at the time of nomination?

_____ Yes: The applicant is eligible for this program.

_____ No: STOP. The applicant is ineligible for this program.

*NOTE: If the applicant does not meet eligibility requirements, see subparagraph 8c, Waivers.

c. Water Resources and Environmental Law

S6. Will the applicant have 4 years of civilian service from the time he/she entered into civilian service until the program start date?

_____ Yes: Proceed to question S7.

_____ No: STOP. The applicant is ineligible for this program.*

S7. Will the applicant have one year of USACE civilian service from the time he/she entered into civilian service until the program start date?

_____ Yes: The applicant is eligible for this program.

_____ No: STOP. The applicant is ineligible for this program.*

d. Coastal Engineering Education Program

S8. Will the applicant have 4 years of civilian service from the time he/she entered into civilian service until the program start date?

_____ Yes: Proceed to question S9.

_____ No: STOP. The applicant is ineligible for this program.*

S9. Will the applicant have one year of USACE civilian service from the time he/she entered into civilian service until the program start date?

_____ Yes: The applicant is eligible for this program.

_____ No: STOP. The applicant is ineligible for this program.

*NOTE: If the applicant does not meet eligibility requirements, see subparagraph 8c, Waivers.

Appendix H-b

NOMINATION PACKAGE

Appendix H-b
NOMINATION PACKAGE

Applicants must specifically address stated criteria to be competitive.

Include a utilization plan which shows how training will be utilized following completion of LTT. Endorsements should show why the applicant needs the training, how it relates to the applicant's current or planned assignments and how the training will be used to accomplish Corps and Army missions and goals.

All nomination packages must be assembled in the order listed below for each part of the nomination package. Where no form is specified, the information requested should be provided on plain bond paper or letterhead, as appropriate. Each part of the nomination package must be completed by the following people:

Part One: Commander

Part Two: Applicant

Part Three: Immediate Supervisor

Part Four: Career Program Manager

Part Five: Training Officer

Part One
(To be completed by Local Commander)

1. Commander's letter of endorsement. (20% of Crediting Plan used by CETIC Subcommittee)
2. Request for Waiver. (If required)

Part Two
(To be completed by the Applicant)

Section A

1. Complete DD Form 1556, Request, Authorization, Agreement, Certification of Training and Reimbursement. Follow the instructions on the reverse of the form to complete all sections except as modified below:

a. Section A, Block 5, "Continuous Federal Service" - Show Federal civilian service only.

b. Section C, "Cost Information" - leave blank.

c. Section D, Block 37, "Billing Instructions" - Show the mailing address of the servicing finance and accounting office.

d. Section D, Block 34, "Authorizing Official" - Insert the name and title of the current Chief, Employee Development and Program Evaluation, HQUSACE.

e. All sections which require applicant signature must be completed.

f. The period of obligated service must also be completed. Make the following changes: in Item 38, "Agreement to Continue in Service" - in the first sentence, cross out "non-government"; in sub-paragraph a, first sentence - cross out "Government sponsored". Initial both of these changes.

2. Program of study (list all courses by title).

3. Evidence of application to the training facility (e.g. a copy of the application form or acknowledgement of receipt). Applicant must apply to the training facility before submitting nomination.

4. Explain why you selected this institution. Discuss quality, cost, location and academic program in your response. (MRGP applicants only.)

5. Explain (a) why you need the requested LTT and (b) how you will use the training back on the job. (No more than one page). (20% of Crediting Plan used by CETIC Subcommittee)

6. Signature and date.

7. Standard Form 181, Race and National Origin Identification. Include this form with ONLY the original application package.

Section B

1. Description of current duties and responsibilities.

2. DA Form 2302 (Civilian Personnel Qualification Record).

3. Last two DA Forms 5398-R or 5398, Civilian Performance Rating, with Individual Development Plan Sections completed. (20% of Crediting Plan used by CETIC Subcommittee)

Part Three

(To be completed by the Immediate Supervisor)

1. Discuss the relationship of the proposed LTT to the applicant's current and projected duties. Specifically, state how the LTT will contribute to mission requirements (current and projected). State in specific terms how applicant will use the knowledge, skills and abilities obtained from the training when he/she completes LTT and returns to the job. (20% of Crediting Plan used by CETIC Subcommittee)

2. Justify completely why the requested training cannot be done through after-hours, part-time or short-term training. (AR 690-400, Chapter 410.)
3. Statement of support for the applicant (no more than one page).
3. Signature, title, telephone number, office symbol and date.

Part Four

(To be completed by the Career Program Manager or Senior Functional Official)

1. Complete Appendix F, Career Program Manager Assessment. (20% of Crediting Plan used by CETIC Subcommittee)

Part Five

(To be completed by the Applicant and the Training Officer)

1. Appendix D, Cost Estimate of Proposed Training.
2. Attach completed Appendix C, Training Officer's Checklist, to the front of the entire nomination package.

Appendix H-c

ENG FORM 4996-R

APPENDIX H-C

TRAINING OFFICER'S CHECKLIST

(ER 350-1-416)

(ATTACH TO THE FRONT OF THE APPLICATION PACKAGE)

APPLICANT'S NAME (Last, First, Middle) (Type or print)	TRAINING PROGRAM
TITLE, SERIES, GRADE	CAREER PROGRAM

REVIEW APPLICANT'S LONG-TERM TRAINING PACKAGE TO ASSURE THAT THE FOLLOWING INFORMATION IS PROVIDED AND ARRANGED IN THE ORDER INDICATED BELOW. VERIFY WITH A CHECK MARK BY EACH ITEM CONTAINED IN THE APPLICATION PACKAGE.

PART I - COMMANDER

1. COMMANDER'S LETTER OF ENDORSEMENT 2. REQUEST FOR WAIVER (if required)

PART II - APPLICANT

SECTION A	SECTION B
1. <input type="checkbox"/> DD FORM 1558 WITH SIGNED CONTINUED SERVICE AGREEMENT	1. <input type="checkbox"/> DESCRIPTION OF CURRENT DUTIES/RESPONSIBILITIES
2. <input type="checkbox"/> PROGRAM OF STUDY	2. <input type="checkbox"/> DA FORM 2302, CIVILIAN PERSONNEL QUALIFICATION RECORD
3. <input type="checkbox"/> EVIDENCE OF APPLICATION TO THE TRAINING FACILITY	3. <input type="checkbox"/> TWO MOST RECENT DA FORMS 5398 (or 5398 R), CIVILIAN PERFORMANCE RATING, WITH INDIVIDUAL DEVELOPMENT PLAN SECTION COMPLETED.
4. <input type="checkbox"/> REASON FOR SELECTION OF INSTITUTION (NRCP only)	
5. <input type="checkbox"/> RELEVANCE OF LIT TO CURRENT AND/OR PROJECT ASSIGNMENT	
6. <input type="checkbox"/> SIGNATURE AND DATE	
7. <input type="checkbox"/> SF 151 (Original Package only)	

PART III - IMMEDIATE SUPERVISOR

1. STATEMENT EXPLAINING HOW NEED FOR TRAINING WAS DETERMINED 3. STATEMENT OF SUPPORT FOR THE APPLICANT
2. STATEMENT JUSTIFYING THE REASON TRAINING CAN NOT BE DONE THROUGH AFTER-HOURS, PART-TIME OR SHORT-TERM TRAINING 4. SIGNATURE, TITLE, TELEPHONE NUMBER, OFFICE SYMBOL AND DATE

PART IV - CAREER PROGRAM MANAGER

1. APPENDIX F, CAREER PROGRAM MANAGER'S ASSESSMENT

PART V - TRAINING OFFICER

1. APPENDIX D, COST ESTIMATE 2. APPENDIX C, TRAINING OFFICER'S CHECKLIST

REMARKS

FOR ILLUSTRATION PURPOSES ONLY
 (Local reproduction authorized - blank masters available from local FMO)

TRAINING OFFICER'S NAME AND TITLE (Type or print)	TELEPHONE (Commercial)
SIGNATURE	DATE SIGNED

Appendix H-d

ENG FORM 4997-R

Appendix H-e

Billing Procedures

APPENDIX H-e
BILLING PROCEDURES

Upon notification of selection for long term training the following procedures should be followed by the designated individuals:

-- Training Officers and Trainees: Provide one copy of the approved DD 1556, selection letter, and cost estimate to the Finance and Accounting Office.

-- Finance and Accounting Offices: Establish a reimbursable account for the long term training participant. Any costs exceeding the approved (by CEHR-HD) cost estimate is the responsibility of the employing activity.

-- Finance and Accounting Offices: Submit advance bill by SF 1080 for the entire authorized cost estimate to HQUSACE (CEHR-HD). This bill can be submitted anytime during the fiscal year in which the training was taken but NLT 15 September. Bill received after that date will be returned and become the responsibility of the employing activity. There will be no exceptions to this policy. A sample bill is enclosed. Bills should be submitted to:

Commander, US Army Corps of Engineers
ATTN: CEHR-HD
20 Massachusetts Avenue, NW
Washington, DC 20314-1000

SAMPLE BILL

The proper format and content for HQUSACE Sponsored LTT bills is as follows:

Participant name: Student

Program: Mission Related Graduate Program

COSTS:

Object class

11	Salary:	\$38,861.00
12	Fringe Benefits:	5,829.15
21	Local Travel or Travel and Per diem or partial pcs	1,000.00
22	Transportation of Things	250.00
25	Tuition	3,780.00
26	Miscellaneous Services (list items and costs)	
	BOOKS:	500.00
	SUPPLIES:	100.00
	TOTAL:	\$50,320.15

Appendix H-f

ENG FORM 4998-R

APPENDIX H-f

CAREER PROGRAM MANAGER'S (CPM) ASSESSMENT
 (ER 350-1-416)

INSTRUCTIONS: This form will be completed by nominee's CPM. Unregistered career program nominees must have this form completed by the CPM representing their career field. If the nominee's occupation is not represented by a career program, this form should be completed by a senior functional representative in the nominee's field of expertise.

1. NOMINEE (Last, First, MI)	2. CAREER PROGRAM NO. OR OCCUPATIONAL FIELD
------------------------------	---

3. TRAINING PROGRAM _____

4. TO WHAT EXTENT IS THIS PROGRAM APPROPRIATE TRAINING FOR THIS STAGE OF THE APPLICANT'S CAREER DEVELOPMENT? (Circle one)

5	4	3	2	1
ESSENTIAL		NOT ESSENTIAL BUT RECOMMENDED		NOT APPROPRIATE

COMMENTS (if appropriate): _____

5. IS THIS TRAINING AN APPROPRIATE PART OF NOMINEE'S CAREER GOALS? (Check one)

Yes No

COMMENTS (if appropriate): _____

6. IS THIS TRAINING CONSIDERED HELPFUL TO THE ORGANIZATION IN TERMS OF THE CORPS MISSION? (Explain)

7. DO YOU RECOMMEND THAT THIS NOMINATION BE APPROVED? Yes No

8. STATEMENT OF SUPPORT (if applicable)

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9. NAME (Type or print)	9b. SIGNATURE	9c. DATE
9d. TITLE	9e. OFFICE SYMBOL	9f. TELEPHONE NO.

Appendix H-g
ENG FORM 4999-R
August 2003

Appendix H-g

ENG FORM 4999-R

APPENDIX H-g

LONG-TERM TRAINING (LTT) POST EVALUATION
(ER-350-1-416)

This evaluation should be completed one year after completion of the LTT assignment.
 This evaluation must be forwarded to CDR, USACE (CEHB-HD), Washington, D.C. 20314-1000

1. NAME (Last, First, MI)	2. EMPLOYING ACTIVITY (Complete mailing address)
---------------------------	--

PART I - JOB DATA PRIOR TO LTT

3. LOCATION	4. OFFICIAL TITLE, SERIES, AND GRADE (from your SF 50, Notification of Personnel Action)
5. ORGANIZATIONAL TITLE (e.g., Project Manager)	6. LOCATION IN EMPLOYING ACTIVITY (Section, Branch, Division)

7. BRIEF DESCRIPTION OF YOUR DUTIES

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PART II - LTT ASSIGNMENT DATA

8. END OF SERVICE OBLIGATION (enter date)	
LTT PROGRAM TITLE AND TYPE	
9. a. TITLE (e.g., MRGP)	b. TYPE (e.g., developmental assignment, university course)
10. SCHOOL/TRAINING ACTIVITY	11. ACTUAL PERIOD OF ATTENDANCE From: _____ To: _____
12. ACADEMIC ACHIEVEMENT (Did you earn an academic degree as a by-product of the LTT Program?)	
<input type="checkbox"/> YES <input type="checkbox"/> NO	
If answer is YES, complete as appropriate: a. DEGREE: _____	
b. ACADEMIC DISCIPLINE: _____	c. DATE AWARDED: _____

PART III - CURRENT JOB DATA

13. LOCATION	14. OFFICIAL TITLE, SERIES, AND GRADE (from your SF 50, Notification of Personnel Action)
15. ORGANIZATIONAL TITLE (e.g., Project Manager)	16. LOCATION IN EMPLOYING ACTIVITY (Section, Branch, Division)

17. SUMMARY OF POSITIONS HELD SINCE LONG-TERM TRAINING. (If you have changed positions since you were selected for LTT, give series, grade, position title, and effective date for each change.)

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PART III - CURRENT JOB DATA (Cont'd)

18. BRIEF DESCRIPTION OF CURRENT DUTIES

19. LTT ASSIGNMENT BENEFITS. *(Describe how your LTT assignment prepared you for your current job.)*

PART IV - SUPERVISOR'S EVALUATION

(To be completed by the supervisor if the trainee has not changed positions since the LTT assignment.)

20. MISSION IMPACT *(Describe impact of trainee's participation in LTT on mission accomplishment.)*

21. REMARKS *(Use this space for continuation of above data items (Part I thru IV), as necessary, and for any additional comments on LTT.)*

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22. TRAINEE'S SIGNATURE		DATE
23. SUPERVISOR'S NAME <i>(Type or print)</i>	SIGNATURE	DATE

Reverse of ENG FORM 4999-R

APPENDIX I

Engineering and Construction Division, USACE, Mission and Functions

Engineering and Construction Division, USACE, Mission and Functions

HYDRAULICS AND HYDROLOGY PROGRAMS AND FUNCTIONS

1. BRANCH ORGANIZATION (5 Prof., 1 Admin)
 - A. EH: Chief, CRT, Hydrometeorology, Hydropower, Dam Safety, IJC
 - B. EH-W: WCM, WQ, CWMS, Environmental Engineering
 - C. EH-Y: Navigation, Coastal, Hydrology, FDR, Groundwater

2. ENGINEERING FOR PROJECTS
 - A. Policy and Engineering Guidance Development
 - B. Consultation to Districts upon Request

3. INTERFACE WITH LABORATORIES
 - A. Technical Oversight of Hydrologic Engineering Center
 - B. Coordination with WES/CHL, CRREL

4. R&D MONITORING AND OVERSIGHT
 - A. Coastal Engineering Research Area
 - B. Coastal Inlets
 - C. Inland Navigation and Flood Damage Reduction Research Area
 - D. Water Quality
 - E. Risk Analysis (FDR and Dam Safety)

5. INTERAGENCY PROGRAMS
 - A. USGS Stream Gage, NWS Rain Gage
 - B. NWS Hydrometeorological Studies
 - C. FERC non-Federal Hydropower
 - D. Stream Corridor Restoration

- E. International Joint Commission

6. COLUMBIA RIVER TREATY PERMANENT ENGINEERING BOARD - U.S. Section
 - A. PEB Secretary and PEBCOM Chair
 - B. Alternate Member PEB

7. DAM SAFETY
 - A. Guidance and Oversight of H&H Activities- incl. RBA
 - B. HQ Dam Safety Committee Member

8. WATER CONTROL MANAGEMENT

- A. Coordination w/and support for/UOC

- B. Mississippi River WCM Board
- C. O&M WCM Funds Oversight
- D. CWMS Modernization Program

9. Other H&H Engineering Activities

- A. Risk-based Analysis for FDR Studies
- B. Upper Mississippi River Flow/Frequency Study
- C. Mississippi River Unsteady Flow Model
- D. Hydrologic Studies Program
- E. HQ Strategic Planning Task Groups (FDR, Water Supply, Emergency Management)

10. PROFESSIONAL ACTIVITIES (All Engineers in EH are Registered PE)

- A. Four EH Engineering Committees
- B. Interagency Committees
- C. Professional Societies- ASCE, USCOLD, ICOLD

Appendix J

Role of Hydraulics and Hydrology in the Corps of Engineers

Appendix J

Role of Hydraulics and Hydrology in the Corps of Engineers

1. **HYDRAULICS AND HYDROLOGY.** Hydrology and Hydraulics (H&H) engineering is a crucial element in any engineering study or analysis which calls for practical applications of professional knowledge associated with this field of civil engineering. Essentially, this field of engineering encompasses the full water cycle from initial precipitation, use and control of runoff to the water's eventual return to a major body of water or infiltration to subterranean levels through impoundment in a closed basin. In this process, the professional skills needed from the cadre of trained and dedicated H&H professionals entails technical methods of analysis to include field measurements and observations, mathematical and statistical analyses of runoff precipitation, development and application of complex computer models, estimates of water availability as expressed by surface, subsurface and impounded yields, all aspects of reservoir, river and sediment hydraulics, stochastic development of flooding characters developed through an intimate knowledge and application of the biome of watersheds and drainage basins and reservoir regulation needs and requirements for water supply, flood control, hydropower generation, water quality, recreation and fish and wildlife habitat enhancement. In addition to the many and varied skills and knowledge required of the H&H engineer to perform their duties, the ability to effectively communicate and understand the nuances associated with legal, social, economic, plan formulation and other management areas are a vital necessity.
2. **CIVIL WORKS.** In the Corps, H&H engineering studies play an integral and essential role in planning studies, design, construction, reservoir regulatory procedures¹, navigation, operation and maintenance of existing projects and other studies that involve water resource analysis. Under authorities, privileges, and responsibilities assigned by Congress, the Corps has accepted and managed an effective stewardship of the Nation's water resources. The largest and most active role played by the H&H engineer is in the Civil Works (CW) arena. Hydrology and Hydraulics studies

¹ Includes Flood Control, Water Supply, Water Quality, Hydropower, Dam Safety, Risk of Project Failure, Recreation, Shoreline Erosion, Wetlands Conservation, and Fish and Wild Life enhancement.

and analyses in CW utilize technical and practical applications to achieve diverse objectives as dictated by the scope of the assigned investigation. Findings and results of these studies must reflect the most efficient, cost effective and logically implementable alternative. These programmatic studies are, but not necessarily limited to, the following areas:

a. **Hydrology and Hydraulics Engineering during Planning.**

These studies develop fundamental technical precipitation data, river hydraulics, flood impacts, and other study specific analyses associated with Reconnaissance and Feasibility phases of project development. The H&H engineer must be able to interface with the many and varied professions which play into these types of investigative studies. These include but are not limited to, biology, botany, wild life specialists, economist, sociologist, geologist, archeologist, paleontology, limnology, and other non-Federal interests such as State and local governments.

b. **Hydrology and Hydraulics Engineering during Design.**

Armed with the basic hydrologic data developed in the planning phase of study, the hydraulic design engineer is tasked with the responsibility to develop the hydraulic structures necessary to provide the desired deliverables in the most economic cost effective design. These technical designs will be reflected, discussed and defended in preconstruction engineering and design reports, post authorization reports and other design documents necessary to proceed to final Plans and Specifications (P&S). These designs, which must be developed to a detail sufficient to proceed to P&S and Diversion and Care of Water during construction with minimum modification, include reservoir intake and outlet works, spillway design, hydropower and related support facilities, river and stream bank protection features, lock and dam design for navigation, diversion structures to facilitate water supply and irrigation and recreation associated structures such as boat ramps. The hydraulic design engineer must continue to work closely with other Corps elements involved in the design of these features to include close coordination with project customers and other Federal and non-Federal elements.

- c. **Hydrology and Hydraulics Engineering during preparation of Construction Documents.** With completion of final design of all hydraulic structures and other related appurtenant structures, the H7H engineer must work hand in glove with those Corps elements responsible for development and approval of construction Plans and Specifications. This entails a working knowledge of construction practices and methods. The H&H engineer must be able to ensure that all drawings and specifications reflect the exact design and intent of the structure. During construction, he/she must be able to react quickly to needed construction contract modifications. These include analysis of construction modifications, close coordination with other design elements and assistance in development of a fair and reasonable cost estimate. Participation in the contract modification negotiation phase may be a requirement.
- d. **Post Project Water Management.** The H&H engineer continues to play a critical and expanded role following construction and implementation of a CW project. This is especially true when considering reservoirs, hydropower facilities and navigation projects. In addition to the many areas of expertise discussed in the above paragraphs, the complexities associated with these multifaceted projects demands a wide and comprehensive working knowledge of stochastic hydrology, geohydrology, hydrometeorology, regulatory permitting policies, Federal Energy Regulatory Agency licensing actions, ecosystem sensitive procedures and practices and other special programs germane to a specific project. In the reservoir control and management arena, the H&H engineers are responsible for implementation, deployment and maintenance of the Corps Water Management System (CWMS), a comprehensive suite of computer programs designed to provide a real time analysis of projects within the assigned areas of responsibility for the Corps district or division. Additionally, the engineers are tasked with use of complicated forecasting models, real time river flows through the use of cooperative stream gaging programs, design and implementation of a working Continuation of Operations Plan (COOP), preparation of deviation requests and updating of existing Water Control Manuals, monitoring sediment deposition and preparing reports on flood damage prevention and other studies to Corps Headquarters and Congress.

- e. **International Treaty and Other International Support.** Because of the depth of the Corps' design capabilities, the support role of the Corps has been prominent in a number of initiatives involving foreign governments. Some of those missions are discussed in the following paragraphs.

- f. **International Joint Commission Support.** The mission of the International Joint Commission (IJC) is to prevent and resolve disputes between the United States and Canada under the 1909 Boundary Waters Treaty and to pursue the common good of both countries as an independent and objective advisor to the two governments. As such, the Corps of Engineers provides extensive H&H support to the IJC under the purview of several International Boards of Control and task forces created by the IJC. From the Atlantic to the Pacific Ocean, the Corps H&H provides technical advice and vital engineering services on projects affecting boundary waters and, often in regulating the operation of these projects. In general, H&H staff is tasked with ensuring that the regulation of the levels of boundary water lakes is in compliance with the IJC's Orders. Specifically, these services include, but are not limited to: monitoring and reporting on water levels, flows, water quality, and aquatic ecosystem health; development of numerical models to verify existing stage-discharge equations; and conducting hydraulic discharge measurements to calibrate and verify flow models.

- g. **International Boundary and Water Commission.** The IBWC is an international body consisting of the U.S. and Mexico. The President of each respective country appoints the Commissioner representing each side. The charge of the IBWC is to apply the rights and obligations which the governments of the United States and Mexico assumed under the numerous boundary and water treaties and related agreements. The two major rivers that affect the IBWC are the Rio Grande and Colorado River. Effective and productive management of these vital water resources is a primary mission of the IBWC. On a case by case basis, the Corps has been approached

to lend their expertise in the H&H arena as well as Geotechnical and hydropower.

- h. **Other.** Many of the existing Corps projects were authorized and constructed in the late 1940's and early 1950's. The authorizations associated with these projects reflected the needs of the Nation at the time of authorization. In the interim, these needs have changed or have been modified drastically. The migration of industry and population from the coastal areas to the other portions of the nation has promulgated a need for an increased use of water resources. The demand for water supply and hydropower increase with each year. Navigation and the economic transport of goods along the nation's waterways utilizing larger and more barges per tow challenges our ageing lock and dam design along with port and coastal waterway design. The nation's increasing demand for accessible and unique recreation development at Corps lakes is documented by the increasing annual visitation rate. Each of these potential project purposes poses a challenge to the Corps of Engineers. At the center point of this is the H&H engineer. As with the planning role discussed in paragraph 2.a above, the H&H engineer must be able to understand the needs and proceed with a logical problem solving process that speaks to each purpose in a fair and ethical manner. As the Corps proceeds into the 21st Century, the water resource engineer will and must be at the vanguard of change.
3. **MILCON/OMA.** The military construction program is designed to provide the necessary support for the uniformed services to accomplish their assigned missions. In the MILCON/OMA arena, the H&H engineer is responsible for use of technical methods to analyze and design drainage facilities, potable water supply design, sanitary plant design and other mission specific designs. These studies are planned and managed to achieve the objectives in the most cost efficient and implementable manner. Strict design timelines and costs are set at the beginning of design, therefore, the H&H engineer must be able to plan and design within a severely constrained schedule.
4. As an example, recent Tele-Engineering efforts (including geotechnical, soils, structural and hydraulic engineering) were remotely employed and were successful in assisting troop deployment and base camp selection missions in both

- Bosnia and Kosovo. During these military missions, engineers were requested to develop river stage forecast models with limited on the ground survey data, determine/develop 100-year floodplain maps and prepare initial assessment of potential dam-break flood waves that could be generated by non-friendly forces at upstream dams/reservoirs. In addition, one H & H lab, using remote sensing techniques was called upon to estimate snow packs (approximate the snow water equivalents - SWE) residing on the nearby surrounding mountain ranges. Site specific snowmelt algorithms were employed to assist in the 100-year flood plain determination. These assessments were critical in assessing movement of men and material, troop deployment and final base camp selection. This Kosovo effort was
5. required due to the high likelihood of a longer duration mission and more permanent base camp set-up, that was eventually realized during the Bosnia mission.
 6. **CORE COMPETENCY - HYDROLOGY AND HYDRUALICS ENGINEER.**
Hydrology and Hydraulic engineering is a part of civil engineering practice in which applications of professional knowledge and experience of hydrologic and hydraulic principles are key elements in water resources development and management decisions. To this end, it is imperative that the Corps of Engineers foster and promote a sound technical environment wherein the neophyte engineer that would aspire to develop a career in H&H engineering is allowed a wide range of career choices along with commensurate grade advancement that would result in a high percentage of retention. The technical side of the work force is too often relegated to a subservient position and role in the decision making process. Current estimates are that in five (5) years over 40% of the working force in the Corps will be eligible for retirement. Replacement rates for these critical personnel fall embarrassingly short of the attrition rate. The three primary technical fields that are the cornerstone of the Corps' technical capability; Hydrologic, Geotechnical, and Structural engineering, are part of this exodus. If allowed to continue unabated, the Corps will have to face the realization that it can no longer claim a Premiere engineering organization status. There are solutions that can be implemented now that will help to ameliorate this outcome. These remedies are not easy but they are achievable. They are:

- a. **Professional Registration.** All engineers in the Corps are strongly encouraged to become Professional engineers in the state(s) of their choice and practice as a symbol of their technical and ethical standards. In selected cases, professional registration is a requirement in some position classifications.

- b. **Formal Training.** Training is essential to keep the H&H engineer functional and current with new procedures and methods of applying their profession. Systematic and regular short course attendance is a valuable tool in development as a short term training option. Though usually competitive, long-term training should be considered for those personnel that have shown a strong and aggressive career development drive in the water resources arena. Temporary loss of personnel for a period commensurate with this type of training should not be a consideration or factor in evaluation. The overall benefit to the Corps and organization is paramount. Lastly, cross training within the organization adds depth and enhances product delivery coincident with mission priorities and assignments. Consideration should also be given to allowing developmental assignments with sister districts or divisions. The interface of fellow technical colleagues serves as a valuable learning field and promotes the Regional Business Center process into a regional network of committed and knowledgeable H&H engineers. This one simple tool encompassing a regional approach to the current technical drain can serve to promote capability and responsiveness within any specified region².

- c. **Conclusion.** The technical expertise required to maintain the Corps' viability and respect worldwide is directly dependent on its people. If not addressed now with aggressive tactics, the Corps will find a dearth of technical depth and experience within its ranks. The spectrum of technical depth necessary to retain this prestigious and well earned position in the global engineering community does not come easy. There are neither quick solutions nor safe paths. There is, however, commitment by senior management that the Corps will not or ever take a second seat in providing a

² A "region" may be defined as a shared resource between two or more sister districts. Also, this could translate into a Corps wide expertise that would be available on an as needed basis.

sound, cost effective and professional solution to any challenge or tasking offered by those who say, "It can't be done". ***Essayons!***

APPENDIX K

STANDARD OPERATING PROCUDURES OF PMBP
WITHIN THE OFFICE OF THE DEPUTY
COMMANDING GENRAL FOR CIVIL WORKS (CW)

Framework for the Standard Operating Procedures of PMBP Within the Office of the Deputy Commanding General for Civil Works (CW)

1. Purpose. This paper provides an extension of the fundamental concepts of operations of the Office of the Deputy Commander for Civil Works as defined in the White Paper – Bringing the PMBP Home to the Civil Works Team. It defines the operational scenarios expected of the Civil Works Team as we carry out our roles in striving to meet our mission.

2. CW Roles in Meeting Its Mission.

In accomplishing the mission of the Civil Works program four basic roles of the Headquarters Office of the Deputy Commander for Civil Works (CW) have been identified. These roles are:

- A. Executive Direction and Oversight.
- B. Program development, defense and support. - The CW Program is comprised of many programs and projects. The HQs role is to develop the annual and out-year programs, defend them, and support the execution. As an integral part of the PDT, the HQ is an active player in the teaming process required to accomplish the delivery of projects and the execution of programs.
- C. Policy and Guidance Development - HQ oversight role in assuring that mission is accomplished in a professional manner within all applicable laws and Administration policy. Policy and guidance is developed based on the business programs in which USACE is engaged; Navigation, Flood and Coastal Storm Damage Reduction, Ecosystem Restoration and Protection, Emergency Operations, Regulatory Function, Recreation, Hydropower, Water Supply, and Support For Others.
- D. National Interface - HQ role in providing liaison with agencies and National organizations in both mission areas and professional areas of expertise.

3. Operations of the Organization consistent with the PMBP.

CW HQ will operate within the concepts and principles of the PMBP for all of its mission areas, and within the context of all the roles defined above. The primary thrust of this operational change is to focus on teams and teamwork. Executing our roles in teams will foster cohesiveness within the organization. It will provide a point of contact to which the MSC can turn in order to receive needed support and services. The entire organization will benefit from this effort as our HQ's teams concentrate on providing essential support, while eliminating duplicative efforts that often result unintentionally when several organizational units within the HQs strive to provide speedy service independently. What follows is a construct of the environment we will promote within the organization that defines a unified posture in support of mission accomplishment and one which revolves around empowered teams.

4. Operations in Support of Executive Direction and Oversight.

The Deputy Commanding General for Civil Works (DCGCW), the Executive Office, and the CW team of civilian Senior Executives provide executive direction and oversight for the CW mission. Just as with all other teams within CW this team comprised of a number of Subject Matter Experts (SMES) who bring a vast array of knowledge and experience to the senior leadership team. Oversight and direction of the CW Program is provided through the team. The Executive Office, through the Principal Assistant, Executive Director and VPs, facilitate communications between the DCGCW and the HQ, CW Divisions. Emphasis will be communication with the Project Integrators/Area Managers or Program Integrators. It is not the VP's responsibility to be a project officer or action officer but to ensure the DCGCW and MSC Commanders requests are met as quickly as possible. As a team member of vertical and horizontal teams within his region of responsibility, he ensures that team progress/issues are communicated both internally and externally, as required.

- a. Communications. The executive office receives communications by several means; letters, taskers from higher authorities, taskers from within the Directorate, telephone calls and emails from many different sources. The VPs play an important role in determining which Program or Project Integrator in Civil Works has the responsibility for a particular piece of communication. Therefore, the VP is a facilitator in the flow of information. The VPs primary responsibility is to the leadership in the executive office and the commanders in the field, ensuring that their requests receive responses in a timely manner. The area managers and Integrators must endeavor to keep the VPs informed of action taken when responding to the DCGCW or Commanders in the field. In many cases, responding to an issue may require a formal letter, which must be staffed and forwarded to the CW Executive office, the Chief of Engineers or the ASACW for signature. The Integrator should forward the correspondence to the VP responsible for the region or program. The VPs are responsible for obtaining the appropriate signatures.
- b. Project related tasks or inquiries. The VPs will ensure that all project related issues are directed to the appropriate area manager within the Program Management Division. It may be necessary for the VP to work closely with the area manager, particularly when responding to the DCGCW or Commanders from the field, to ensure answers are provided in a timely manner. However, in no case will the VP assume control of a project issue by taking on the responsibilities of the area manager but will participate, when required, as a member of the HQ matrix team, established by the area manager, to assist/resolve the issues of the project managers.
- c. Program related tasks or inquires. The VPs will forward to the appropriate program Integrator in each Division all inquires relating to that particular program. Once the issues are passed to the program integrator, the VP responsibilities are the same as those of any matrix team member.

5. Operations in Support of Program Development, Defense and Support

Civil Works program support to the MSCs and Districts from the HQ extends to the project level and is provided through a team effort in accordance with the PMBP philosophy and concepts.

This team effort will come from a multifaceted, multidiscipline team of technical SMEs as necessary and appropriate. Members of the team will provide, not only their subject matter expertise, but also their experiences and understanding of the CW business processes and its environment. It is the synergy of the team's collective knowledge, experience, and understanding that adds significant value to the PDT. As members of the team, each individual provides a unique perspective that is valued.

As a team, the team shares full responsibility for support to the MSC and districts from this HQ on the CW program and its projects. Members of various teams will vary depending on the program, project, and the circumstances in which support is being provided. Individuals may find themselves on several teams, supporting many MSCs and districts. In all cases, the teams will have a team integrator to assure that the many facets of the CW projects are taken into consideration. All members will share the responsibilities and successes of the team. Tasks assigned to the team will normally come through the integrator. In those instances where a supportive task arises through a SME other than the integrator, it will be brought to the integrator and team's attention, and dealt with in a coordinated efficient manner. All tasks will be handled through the team's resources. In the event insufficient resources are available to support the team's need in any specific subject matter area, the integrator will discuss the requirements with the appropriate branch chief in order to alleviate the shortfall. If the integrator and branch chief are unable to resolve the matter, it will be elevated through the hierarchical structure until resolution is reached. This same procedure will be followed for issues among the team where differences of opinion reside.

Each MSC will have a single Point of Contact (POC), known as an area manager, designated within CW-B, who will function as a clearinghouse for all correspondence received from the MSC. This POC will also serve as an integrator for the HQs team supporting the MSC's project delivery teams. The POC will receive incoming MSC correspondence and make an appropriate assignment of responsibility within the CW organization for the pending action. The assignment of responsibility will be made based upon the nature of the action. For actions, which are programmatic in nature, i.e. the incoming correspondence deals with one of the programs defined below, assignment will be made to the program integrator. For those actions that are project related, the CW-B project integrator will coordinate the assignment of responsibility with HQ supporting team. As the single POC for the MSC the integrator must be kept apprised of all CW related Headquarters' actions that impact their MSC.

Operating in a team concept requires all members of the team to reconsider their former role in support of project/program execution. No longer are various aspects of HQs support to the project considered the responsibility of one organization, or another. The HQs support to the CW program is provided through a team. The success of the team is provided through the shared responsibility of every member serving the team. Tasks are no longer assigned to an organization, but rather to an integrator, whose responsibility is to see that the MSCs and districts receive the support required for their execution of the project/program. Even though a task may appear to be perfectly suited for a particular subject matter area, the responsibility for the task does not rest within that organizational unit. It is a team responsibility. It is the team's responsibility to assure that the subject matter knowledge and expertise required to complete the task is obtained. This responsibility is not limited to simply assuring that the SME resources are

available. It also extends to the resources required to assure that the team's resultant product is carried through to fruition. A successful team is not measured in terms of individuals remarking "I did my part". It is measured in terms of team members who continually say "What else can I do to support the team and get the job done".

The function of Civil Works Program development and defense is an essential part of program support, and has two components, authorization and appropriation. The integrator for CW Program authorization development and defense will be CECW-P, with appropriation responsibility resting with CECW-BD. Program support, inclusive of project support, requires a number of different integrators. Each of these will be discussed separately.

A. Project Support.

Project support is defined in terms of;

- all studies or projects specifically authorized by Congress
- all studies or projects resulting from the Continuing Authorities Program

For project support, team integrators will be located within CW-B, and will be assigned based upon MSCS. The team integrator will provide the MSC with a point of contact to support their mission execution. They are not however, the single responsible party for these actions. The team shares this responsibility. Regardless of the medium by which an action reached the HQs, it is imperative that the integrator and team members all be informed of the support required of the team. In this regard, all actions that are received by the executive office that are project related will be forwarded to the appropriate area manager/integrator in CW-B. The integrator will coordinate with the team members and make the appropriate assignment of responsibilities to accomplish the task in an effective and efficient manner. Actions that find their way to HQs through some other organizational element are to be referred to the integrator who will coordinate with the team and establish appropriate responsibilities.

Completed team actions are assumed to have the effect of a fully coordinated action having been staffed through the division office chief. If there are issues, which a team member is uncomfortable with, they should raise such issues through their organizational elements for resolution.

Team Composition and Designations. Formal designation of a HQs team will be the exception rather than the norm. Teams will be formed informally as required by the circumstances surrounding the HQs support action. The integrator will seek the assistance of the SMEs for a particular action at hand. Once a SME has been acknowledged by the branch chief to support an action for a project, that individual will remain an integral part of the team supporting that particular project even though the next action may not have a direct bearing on their particular subject matter area of interest. The synergy and experiences of every team member are valued. They are an essential and integral part of the team's ability to effectively and efficiently participate on the PDT.

Project support at the HQs begins during the early identification stages of a potential project, before it becomes an authorized study or construction project, or funding is provided. This support begins whenever the field or a member of Congress identifies the potential for a study/project and fact sheets are generated. This support then carries on throughout the development and delivery of the project. It is essential that the HQs team become engaged in the early planning stages of any project in order to provide the fullest extent of HQs service to the PDT. This early on engagement may take several forms, field visits, telephone calls, e-mail, or formal communications. Whatever the medium, it is the responsibility of the HQs team to engage early to preclude any lost time effort, and to allow for HQs to fully appreciate and understand any formal document submissions that must be made to the HQs level for approval. The HQs team should be familiar with the content of nearly all items requiring HQs review and approval, and the processing of such items should be fairly routine in nature.

B. Program Support

The definition of a program takes on various meanings in CW. Programs are to have The following characteristics: they should be institutionalized and sustained within the organization, and they should have identifiable funding associated with them. In addition to Programs there are Special Initiatives and Systems that present unique opportunities. Each major program, special initiative, and system within CW will be enumerated and discussed in terms of the program integrator. If a program, special initiative, or system is not detailed herein, it is assumed to fit in the Project Support category and the integrator will be in CW-B.

As with the project support, program support will be carried out within the team concept. The composition, responsibility and operations of the team are as described in the previous section on project support. The primary difference will be in the location of the program integrator. Although the program integrator may be located in different organizational units for the various programs, the responsibility for that program support, as in the case of project support, is a shared responsibility amongst the team. What follows is a delineation of the various programs within CW, their description and the location of the program integrator.

1. Programs

A. Flood Plain Management Services (FPMS) Program - The FPMS Program provides the full range of technical services and planning guidance that is needed to support effective flood plain management. The program provides assistance and guidance on all aspects of flood plain management planning, including flood plain delineation/flood hazard evaluation, dam break analyses, hurricane evacuation studies, flood warning/preparedness studies, flood proofing assistance, and comprehensive flood plain management studies. Program integrator is: CECWPD.

B. Planning Assistance to States Program - Section 22 of WRDA 74 provides authority for the Corps of Engineers to assist the States, local governments, Indian tribes, and other non-Federal entities, in the preparation of comprehensive plans for the development, utilization, and conservation of water and related land resources. The program can encompass many types of studies, dealing with water resources topics such as: water supply/demand, water quality,

environmental conservation/restoration, wetlands evaluation, dam safety, and flood damage reduction. Program Integrator; CECW-PD.

C. Challenge 21 Program - WRDA 99 S. 212, provides a five-year authority to plan, design and construct projects that provide ecosystem restoration and flood damage reduction benefits. This initiative contemplates development of proposals and project selection during the first year of funding in close coordination with the OASA(CW). Program Integrator; CECWPD.

D. Cultural Resources Management Program - HQUSACE is responsible for developing guidance and providing technical oversight for the agency's management of historic properties, traditional cultural places, buildings, structures, objects and archeological collections that are subject to the provisions of the National Historic Preservation Act, the Native American Graves Protection and Repatriation Act, the Archeological Resources Protection Act, the American Indian Religious Freedom Act, and related Executive Orders and implementing regulations. HQUSACE provides leadership in addressing cultural resource issues and concerns raised to the national level by other Federal agencies, Members of Congress, the general public, and other political sovereignties with particular focus on Federally recognized Indian tribes (including Alaska Natives). Program Integrator; CECW-PG.

E. CW Research and Development Program - Integration of Civil Works Program needs and oversight of the management of the Civil Works research programs including setting of priorities to facilitate meeting mission responsibilities and identifying new research areas needed to address evolving national priorities. Program Integrator; CECW-EE.

F. Regulatory Program - Serves as national POC and program manager for the Corps Regulatory Program Business Function. Serves as National POC for questions from the MSCs and districts regarding application of National regulation, policy and guidance. Provides case specific guidance on regulatory actions raised to the HQUSACE level by other agencies or other external interests informally. Serves as POC for developing direction for DCGCW on Regulatory Program cases elevated to HQUSACE or the ASA(CW) under memoranda of agreement with other agencies. Working with the MSC Regulatory Program counterparts provides executive direction to ensure consistent administration of the program nationwide. Working with the MSC Regulatory Program counterparts executes the GRF portion of the CW Program. Program Integrator; CECW-OR.

G. Recreation Management Support Program - Provides support for recreation issues or initiatives that have broad applicability to many Corps Civil Works projects through management studies, management assistance, and information exchange. Sub-elements of this program include:

National Recreation Reservation Service - an interagency initiative to provide reservation services through a toll free telephone number, an Internet website or at local recreation areas for Federal recreation sites and facilities across the country. Program Integrator; CECW-ON.

Universal Accessibility Program - provides field guidance to assure the Corps public recreation sites and facilities are accessible to all users, including persons with disabilities. Program Integrator; CECW-ON.

Recreation User Fee Program - supports the recreation program through establishing appropriate fees for the use of Corps provided recreation sites and facilities. Program Integrator; CECW-ON.

Shoreline Management Program permits limited, appropriate private uses of public lands while assuring stewardship of public lands. Program Integrator; CECW-ON.

The **Visitor Assistance Program** provides visitor protection services through the enforcement of 36 CFR Part 327 (Rules and Regulations Governing Public Use at Corps Projects) and law enforcement agreements with county law enforcement departments. Program Integrator; CECW-ON.

NRM Uniform Program - provides uniforms to Corps park rangers under a centralized interagency uniform contract. Program Integrator; CECW-ON.

Corps Volunteer Program - supports maximum use of volunteers to help accomplish work in support of project mission objectives. Program Integrator; CECW-ON.

Water Safety Program - provides a centralized focus through the *National Operation Center for Water Safety* to help inform visitors of hazardous activities and to reduce the number of public fatalities at Corps projects. Program Integrator; CECW-ON.

H. Environmental Stewardship Program - Environmental stewardship is the practice of maintaining the viability of the Earth and its natural processes. The program employs the environmental stewardship concept in the operation and maintenance of 11.7 million acres of land and water at more than 450 existing Corps Civil Works projects in 43 states. The goal is to manage, conserve and/or protect the natural and cultural resources at Corps water resources projects consistent with ecosystem management principles, to provide healthy lands and waters which serve the needs of present and future generations. Outputs of the business program include: all Corps lands are managed consistent with ecosystem management principles within watersheds; stewardship activities comply with applicable environmental mandates; and project lands and natural assets are retained for the life of the project. Program integrator; CECW-ON

I. Civil Emergency Management Program - The USACE Civil Emergency Management Program embraces all functions required to assure that USACE is ready to efficiently and effectively respond to any Natural Disaster or other Domestic Contingency within the United States and its Territories. This includes full responsibility for all aspects of the PL 84-99 Program, managing USACE planning and preparedness to support the Federal Emergency Management Agency under the Stafford Act (Federal Response Plan), as well as other Work for Others directly related to Civil Disaster Planning and Operations (e.g. the DOE work in New Mexico). Program elements include Program Guidance and Policy Development, National

interface with FEMA and OFA, FCCE Program Execution, All Hazard Disaster Preparedness, Strategic Planning, Training & Professional Development, EM R&D/Tech Transfer, and Program Evaluation & Corrective Action (both Internal and External). Also teams with the SPO/UOC in managing CW Disaster Operations. Program Integrator; CECW-OE.

J. Hydropower Program - The mission of the hydropower program is to provide reliable capacity and energy to the nation. Activities supporting the HP mission. The marketing of the power is done by the Power Marketing Administrations (PMAs). This requires close coordination among the PMAs and Corps HQ on policy issues. Customer funding brings additional funding to the Corps for improvements to power generation facilities. This funding is handled by a formal agreement with the preference customers in a PMA area of responsibility. National Electric Reliability Council (NERC) is an organization, which provides standards for the electric utility industry. The Corps follows the guidance established by NERC to insure we are compatible with the rest of the industry.
Program Integrator; CECW-OD.

K. Dam Safety Program - The Corps Dam Safety program is part of the overall National Dam Safety Program established by the National Dam Safety Program Act (PL 104-303). The basis guidelines for Federal agency programs are published in FEMA 93, Federal Guidelines for Dam Safety, June 1979. The program includes Corps membership on the Interagency Committee on Dam Safety (ICODS) and the National Dam Safety Review Board (NDSRB) as representatives of the Secretary of Defense. Under the process established by FEMA 93 and Engineer Regulations, the Chief, Engineering and Construction Division, is the Corps Dam Safety Officer. The HQUSACE Dam Safety Committee serves as an advisory board for the program. The Dam Safety PM is responsible for total program management including facilitation of field programs, training coordination, and public awareness programs. The Dam Safety Program also includes the National Inventory of Dams as mandatory by Public Law. Program integrator; CECW-EL.

L. Bridge Safety Program -The Army Bridge Safety Program provides the Civil Works and Military interface with the requirements of the Surface Transportation Assistance Act of 1978 (PL 100-1 7), which requires that all structures defined as bridges on public roads be inventoried and inspected in accordance with the National Bridge Inspection Standards (NBIS). Under the Bridge Safety Program, all bridges owned or maintained by the Army on civil works projects and Army bases shall be inspected and inventoried to ensure their safety and structural integrity. The program manages an inventory of subject bridges (public highway, railroad, foot/pedestrian, access bridges to outlet works and dam service bridges) except pedestrian walkways or passageways which provide internal access in structures. The Bridge Safety PM is responsible for total program management including facilitation of field programs, training coordination, and public awareness programs. The Bridge Safety Program is partially funded by DOT appropriations. Program Integrator; CECW-EL.

M. Unified Standards and Criteria (S&C) Program - This centrally funded program directly supports the Corps' mission to provide technical guidance for executing the Civil Works Program. The program provides a systematic process for developing and maintaining S&C and for transitioning to commercial and Tri-Service S&C, ensuring responsiveness to changing user

requirements, regulatory and policy requirements, Federal mandates, lessons learned, and RDT&E/industry technological advances in materials, equipment, systems, and methods. Program integrator; CECW-ET

2. Special Initiatives

A. Support to FEMA's Mitigation Directorate - The Corps provides technical support and planning assistance to FEMA in support of the National Flood Insurance Program and other FEMA initiatives, including flood damage mitigation, flood mapping, and Project Impact. Support by District Commands is normally provided on a 100% reimbursable basis. HQ support is provided for development of policy and procedures. Program Integrator; CECW-PD.

B. American Heritage Rivers Program - Federal interagency initiative to assist designated river communities to effectively use and integrate Federal resources. At the Washington level, the Corps has a representative on the task force. The Corps also provides two River Navigators, one for the Upper Mississippi and one for the New River. Program Integrator; CECW-PD.

C. Clean Water Action Program - Federal interagency initiative to more fully utilize the watershed concept to achieve the goals of the clean water act in partnership with Federal, state, local governments and tribes. Program Integrator: CECW-PD.

D. Coastal America Program - Federal interagency initiative to develop a process to facilitate partnerships among Federal, State and local agencies, and non-governmental interests to collaboratively implement solutions to environmental problems along our Nation's coastline, coastal estuaries and watersheds. At the Washington level, the Corps has a representative on the National Team. Program integrator: CECW-PD

3. Systems.

There are a number of systems with CW that support our efforts in meeting our missions. The continued operation and maintenance of these systems will be managed in concert with the PMBP. It will be the identified integrators responsibility to form an appropriate team for their system to assure that each system's team incorporates every aspect of the organization that it may impact, including the financial one. In addition each of the integrators will function as a team member on the CW Systems Integration Team. The CW Systems Integration Team will periodically review the activities of each of the CW systems for potential areas of interface, integration and synergy. The CW System Team Integrator will be CECW-BA.

A. Corps Water Management System (CWMS) Program - CWMS is the centrally supported suite of decision support software, scheduled to be deployed in late 2001, that will drive all Corps water management decision making for the foreseeable future. The software development is being accomplished under the Life Cycle Management of Information Systems (LCMIS) development process. Program integrator; CECW-EW

B. Dredging Operations Technical Support (DOTS) - program provides direct environmental and engineering support to the Army Corps of Engineers Operations and Maintenance (O&M) dredging activity. Technology transfer activities have supported diverse field needs for years and have directly benefited O&M dredging operations throughout the United States. Program integrator; CECW-0.

C. Dredging Information System (DIS) - This database provides useful and important information concerning dredging of the Federally-maintained navigation system dredging advertisement schedule, dredging contract award dates, the schedule for the 12 Army Corps of Engineer dredges and the status of the Corps/Industry dredge fleet. Program Integrator; CECW-0.

D. Lock Performance Monitoring System (LPMS) - Database provides valuable information about the Nation's Federally-operated and maintained lock and dam system and the volume of commerce that passes through this lock and dam system each year. In addition, waterborne commerce statistics are collected and published each year indicating the volume and classifications of foreign and domestic commerce that plies our waterway system. This database also helps us determine whether the expenditure of O&M funds is justified by the volume of commercial and recreational traffic which transit the lock and dams each year. Some of these data have also been used by the navigation industry to improve their own commercial vessel locking efficiency and to train their towboat crews. Program integrator; CECW-0

E. Operations and Maintenance Business Information Link (OMBIL) - OMBIL is an information-linking tool intended to provide managers with information on performance measures and resources utilized in obtaining performance. Its purpose is to assist the O&M community in performance improvement. OMBIL has navigation components that are currently under development or are already being applied. Program Integrator: CECW-0.

F. PRISM/PROMIS/P2 - Prism is the CW program automated management tool used in the development and execution of the CW program. PROMIS is a project management automated tool which integrates project schedules and work breakdown structures with the Corps financial management system (CEFMS). P2 will take the program system and the project system and integrate them into a comprehensive system. Program integrator; CECW-BA.

G. RMS - RMS is the USACE standard construction management information system. RMS does focus on the construction management phase of the PMBP. It will also interface with other key USACE systems such as CEFMS, PROMIS and SPS (DOD system). The software is currently in the final stages of development and deployment. RMS was developed under the Life Cycle Management of Information Systems (LCMIS) development process. Under this process RMS was corporately managed from HQ with actual development managed from the CX in LA District. Program integrator; CECW-ET

H. CADD - The primary CADD software programs being used at Corps districts are MicroStation and AutoCAD. A Senior Advisory CADD (SAC) Group and Field Action CADD (FAC) Groups were formed. The SAC Group members are Chiefs of Engineering from Corps districts. The FAC groups provide input to the SAC group on Corps field requirements. The SAC

group meets two to four times a year. The use of CADD standards by all districts is necessary in order to coordinate efforts of all districts and eventually implement virtual teaming. Implementation of the CADD/GIS Center A/E/C CADD standards will be a focus of the program in the next few years. Program integrator; CECW-E

1. **GIS** - GIS are computer-based systems that are used to store, manipulate and integrate geographic information. GIS is used throughout USACE business areas, by every District, many Divisions, all of ERDC and HQ. Program Integrator; CECW-EE

J. GPS - GPS is a technology more than two decades old is to improve the accuracy and precision of the positions from GPS a technique known as Differential GPS (DGPS) was developed to provide accuracy of a few meters to a few centimeters. In the Corps of Engineers, DGPS technology has replaced various positioning systems used in hydrographic surveys, topographic surveys, control surveys, and dredging. Most applications involving data collection for input into Geographic Information Systems also use DGPS technology. In May 2000, DOD turned SA off which increased the accuracy of GPS to 10-20 meters. Program integrator: CECW-EE

K. Electronic Bid Solicitation (EBS) - The Electronic Bid Solicitation (EBS) program is of a standard for the delivery and distribution of electronic contract solicitation documents. The use of EBS results in improving and streamlining the procurement process, eliminating the unnecessary reproduction of printed media and allowing significant savings in resources for both the government and the public. The CADD/GIS Technology Center maintains a Tri-Service Solicitation Network web page, which links to government agencies currently advertising solicitations on the Internet. Program integrator; CECW-EE

L. Design Review and Checking System/Corporate Lessons Learned (DrChecks/CLL) - DrChecks empowers project teams to improve design quality through an integrated web-based automated design review and feedback business process. DrChecks helps managers, designers, and reviewers identify and resolve issues that impact project scope, quality, time, or cost before project milestones are reached. Integrated within DrChecks is the Corporate Lessons Learned (CLL) System. This ensures that today's problems do not become the expensive construction change orders and maintenance headaches of tomorrow. Program Integrator; CECW-ET

M. SPECSINTACT Specification System - SPECSINTACT is a state-of-the-art, automated specification processing system developed in partnership with NAVFAC and NASA for developing and maintaining master guide specifications and for producing construction project specifications. This cooperative effort promotes the transition to unified tri-agency guide specifications. SPECSINTACT incorporates numerous quality assurance (QA) features and reduces engineering hours spent in developing and verifying technical, testing, submittal, and execution requirements for construction contracts. SPECSINTACT is mandated for in-house and A-E work. The system is distributed on CCB and the Internet. Program integrator; CECW-ET

6. Policy and Guidance Development

The HQ role of Policy and Guidance development is a function of every division within CW. Each division provides direction for the CW program within their assigned I missions and functions. The production of policy and guidance will be accomplished within the concepts of the PMBP. Essential teamwork will assure that the policy and guidance developed is integrated and thoroughly coordinated with all HQs elements as appropriate.

7. National Interfaces

HQs elements provide an essential role as an organizational liaison with many agencies and organizations in both our mission areas and professional areas of expertise. Within CW there are a number of these organizations and agencies with which we interface and dialogue. There may be a number of different elements within CW that have dealings with many of the same organizations, or that could potentially utilize the opportunity that dialogues with these organizations may present. In order to assure that the many facets of the CW program have ample and equal opportunity to utilize the resources these groups may provide, an integrator will be assigned for each group. This integrator will be the primary point of contact for the agency/organization noted. They are to build a cross-functional team from HQs elements to discuss their involvement with these groups, assuring that the HQs is not sending mixed messages to different groups, and capitalizing on any potential these groups may have to offer the CW program.

Appendix K-a - Points-of-Contact.

Appendix K-b - Customer Matrix

Appendix k-a

Individual points of Contact

APPENDIX A				
Individual Points-Of-Contact				
Description	Office	Name	Phone	Email
MSC Point-of contact				
ted by primary and alternate)				
LRD	CECW-BE	Mark Mugler	202-761-0787	Mark.W.Mugler@usace.army.mil
		Ed Price		Edmund.W.Price@usace.army.mil
MVD	CECW-BC	Joe Rees	202-761-8581	Joe.A.Rees@usace.army.mil
		Bruce Heide	202-761-4938	Bruce.Heide@usace.army.mil
NAD	CECW-BE	Tom Harron	202-761-4935	Tom.J.Harron@usace.army.mil
		Jitka Braden		Jitka.Braden@usace.army.mil
NWD	CECW-BW	John Broaddus	202-761-4359	John.Broaddus@usace.army.mil
		Dave Bastian		Dave.F.Bastian@usace.army.mil
POD	CECW-BW	Carol Calza	202-761-8580	Carol.B.Calza@usace.army.mil
SAD	CECW-BE	Rodney Metzger	202-761-5893	Rodney.T.Metzger@usace.army.mil
		Brad Price	202-761-1116	Brad.S.Price@usace.army.mil
SPD	CECW-BW	Brian Bryson	202-761-8588	Brian.D.Bryson@usace.army.mil
		Henri Langlois		Henri.A.Langlois@usace.army.mil
SWD	CECW-BC	Vince Montante	202-761-8583	Vince.Montante@usace.army.mil
MRT	CECW-Bc	Kyle Jones	202-761-8582	Kyle.L.Jones@usace.army.mil

Appendix A

Description	Office	Name	Phone	Email
Programs				
Flood Plain Management	CECW-PD	Maurice Parker	202-761-1854	cecil.m.parker@usace.army.mil
Planning Assistance to States	CECW-PD	Ken Zwickl	202-761-1855	kenneth.j.zwickl@usace.army.mil
Challenge 21	CECW-PD	Ellen Cummings	202-761-8532	ellen.m.cummings@usace.army.mil
Cultural Resources Mgmt	CECW-PG	Paul Rubenstein	202-761-1257	paul.d.rubenstein@usace.army.mil
Research & Development	CECW-EE	M.K. Miles	202-761-8885	Moody.K.Miles@usace.army.mil
Regulatory Program	CECW-OR	John Studt	202-761-1785	john.f.studt@usace.army.mil
Recreation Mgmt Support				
National Recreation	CECW-ON	Judy Rice	202-761-1795	Judith.V.Rice@usace.army.mil
Reservation Service	CECW-ON	Judy Rice	202-761-1795	Judith.V.Rice@usace.army.mil
Personal Accessibility Program	CECW-ON	Judy Rice	202-761-1795	Judith.V.Rice@usace.army.mil
Recreation User Fee Program	CECW-ON	Judy Rice	202-761-1795	Judith.V.Rice@usace.army.mil
Shoreline Mgmt Program	CECW-ON	George Tabb	202-761-1794	George.E.Tabb@usace.army.mil
Visitor Assistance Program	CECW-ON	Stephen Austin	202-761-1796	Stephen.B.Austin@usace.army.mil
NRM Uniform Program	CECW-ON	Stephen Austin	202-761-1796	Stephen.B.Austin@usace.army.mil
Corps Volunteer Program	CECW-ON	Stephen Austin	202-761-1796	Stephen.B.Austin@usace.army.mil
Water Safety Program	CECW-ON	Stephen Austin	202-761-1796	Stephen.B.Austin@usace.army.mil
Environmental Stewardship	CECW-ON	Darrel Lewis	202-761-1788	Darrell.E.Lewis@usace.army.mil
Civil Emergency Mgmt	CECW-OE	Ed Hecker	202-761-0409	Edward.J.Hecker@usace.army.mil
Hydropower	CECW-OD	Barry Holliday	202-761-8832	Barry.W.Holiday@usace.army.mil
Dam Safety	CECW-EI	Charles Pearre	202-761-4531	Charles.M.Pearre@usace.army.mil
Bridge Safety Program	CECW-EI	Paul Tan	202-761-8671	Paul.C.Tan@usace.army.mil
Unified Standards & Criteria Program	CECW-ET	Rick Dahne	202-761-1203	Rick.D.Dahnke@usace.army.mil
Special Initiatives				
Support to FEMA's Mitigation Directorate	CECW-PD	Ken Zwickl	202-761-1855	kenneth.j.zwickl@usace.army.mil
Clean Water Action Program	CECW-PD	Beverly Getzen	202-761-1980	beverly.b.getzen@usace.army.mil
American Heritage Rivers Program	CECW-PD	Beverly Getzen	202-761-1980	beverly.b.getzen@usace.army.mil

Appendix K-a
Points of Contact
August 2003

Description	Office	Name	Phone	Email
Coastal America Program	CECW-PD	Norm Edwards	202-761-8569	norman.t.edwards@usace.army.mil
Systems				
CW System Team	CECW-BA	Bob Soots	202-761-0050	Robert.F.Soots.Jr@usace.army.mil
Water Management System	CECW-EH	Pete Juhle	202-761-8512	Pete.Juhle@usace.army.mil
Dredging Operations Technical Support	CECW-OD	Joe Wilson	202-761-8846	Joseph.R.Wilson@usace.army.mil
Dredging Information System	CECW-OD	Barry Holliday	202-761-8832	Barry.W.Holliday@usace.army.mil
Structural Performance Monitoring System	CECW-OD	Michael Kidby	202-761-8835	Michael.F.Kidby@usace.army.mil
Operations and Maintenance Business Information Link	CECW-ON	Lawrence Lang	202-761-0052	Lawrence.A.Lang@usace.army.mil
PRISM/PROMIS/P2	CECW-BA	Bob Soots	202-761-0050	Robert.F.Soots.Jr@usace.army.mil
RMS	CECW-ET	Bradley James	202-761-1419	Bradley.M.James@usace.army.mil
CADD	CECW-ET	Jean McGinn	202-761-1052	Jean.A.McGinn@usace.army.mil
GIS	CECW-ET	Nancy Blyler	202-761-8893	Nancy.J.Blyler@usace.army.mil
GPS	CECW-ET	M.K. Miles	202-761-8885	Moody.K.Miles@usace.army.mil
Electronic Bid Solicitation	CECW-ET	Jean McGinn	202-761-1052	Jean.A.McGinn@usace.army.mil
Design Review and Checking System	CECW-ET	Rick Dahnke	202-761-1203	Rick.D.Dahnke@usace.army.mil
SPECSINTACT	CECW-ET	Rick Dahnke	202-761-1203	Rick.D.Dahnke@usace.army.mil

Appendix k-b

Customer Matrix

APPENDIX L

HQUSACE Watershed Team Leader Position

HQUSACE Watershed Team Leader Position
GS-0810-15
DESIRED CHARACTERISTICS

The HQUSACE Watershed Team Leader is the technical lead for H&H in the Corps of Engineers, the nation's premier water resources organization, and must have both a strong H&H background and a demonstrated technical leadership capability. The specific characteristics that the Team Leader should possess are the following:

- Broad hydraulics and hydrology experience related to Corps Civil Works projects in flood control, navigation, hydropower, water control management, and coastal engineering. The team leader should have an expert level of understanding (that is, he/she should be an acknowledged authority) in one to three of these areas, with a working knowledge (or the ability to quickly gain a working knowledge) of the other areas. The broader the experience the better.
- Experience in more than one phase of Corps Civil Works projects (planning, design, construction, operation & maintenance) is recommended.
- A broad experience within the Corps is desirable: for instance, experience at more than one district, or at more than one organizational level (district plus division or lab or headquarters experience). The broader the experience, the better.
- Extensive experience within the Corps is required in order to adequately provide leadership in policy, guidance, training, research & development, and other areas. It is required that the team leader have a working knowledge of H&H programs & authorities (cooperative stream gaging programs, continuing authority programs, etc.)
- Experience working at HQUSACE or interfacing with HQUSACE is recommended, to give the team leader a knowledge and understanding of Corps policy, guidance, and budget processes.
- Supervisory experience as an H&H Section Chief, H&H Branch Chief, or H&H technical team leader is required.
- The team leader must have demonstrated technical leadership skills. He or she must be able to clearly lay out the H&H issues to others, and to discuss conclusions that may be unpalatable without alienating listeners. The team leader must have a demonstrated ability to work well with people, particularly in situations where there is potential for conflict or confrontation. He or she should be skilled at working with others collaboratively to produce consensus, and at leading by persuasion and technical respect rather than by regulatory authority.
- It is required that the team leader have the demonstrated respect of the professional H&H community both inside and outside the Corps. He or she should be involved in the following types of activities:
 - a. active involvement in professional organizations (ASCE, U.S. Society on Dams, etc.): leadership roles on committees, development of technical bulletins, presentation of invited and proffered papers at

- conferences, participation in the management of professional organizations
 - b. active involvement in inter-agency committees
 - c. active involvement in national or regional Corps H&H meetings and conferences
 - d. active participation in Corps-wide teams and task forces
- It is required that the team leader be proactive in the area of H&H, that is, that they have seen needs or problems and taken steps to provide solutions. They should have a demonstrated history of expanding their work role by taking on new assignments.
 - The team leader should have a vision of the future of H&H within the Corps, and a plan for how he/she would implement this as leader of the HQUSACE watershed team.
 - Advanced Degree in water resources or a related field is desirable but not required
 - Professional Engineering registration is required.
 - The team leader must have demonstrated oral & written communication skills, as evidenced by oral presentations, briefings, technical papers or reports, etc.

APPENDIX M

Courses Applicable to Ecosystem Restoration

Courses Applicable to Ecosystem Restoration

The following PROSPECT courses are applicable to ecosystem restoration. More information is in the Purple Book.

Ecology for Engineers: This course provides Corps of Engineer personnel with the basics and state-of-the-art knowledge of ecology. Students are given an overview of current ecological paradigms and procedures to serve as background for impact analysis, environmental management and ecosystem restoration. 36 hours

Ecosystem Restoration: This course will provide an interdisciplinary perspective on ecosystem restoration, protection and management. Students will learn the principles and vocabulary of selected disciplines outside their own and will become familiar with relevant case studies and issues in planning and conducting ecosystem restoration projects. WES. 36 hours

Wetlands Development and Restoration: This course provides training in the concepts and practices of ecosystem restoration and development in both inland and coastal areas. The course is directed toward Corps of Engineer biologists, engineers, and natural resources managers concerned with ecosystem restoration including the development and restoration of aquatic, wetland and riparian (stream/river) habitats. Apalachicola, FL and Olympia, WA. 36 hours.

Engineering and Design of Constructed Wetlands: This advanced course gives Corps of Engineer personnel state-of-the art technical knowledge on how to construct wetlands for water quality improvement. Planning, design, engineering, construction, operations and maintenance, and monitoring will be stressed. Orlando. 36 hours

River and Wetland Restoration: The primary objectives of the course is to provide participants with an understanding of the role of hydrology in river and wetland restoration and to equip them with the tools for various hydrologic analyses necessary in planning and design of these features. HEC. 36 hours

Workshops taught by ERDC personnel:

ERDC personnel (CHL and EL) have given workshops covering a variety of subjects useful to hydraulic engineers involved in ecosystem restoration. These workshops vary from addressing very “green” methods (such as bioengineering) to ones which show how to apply standard engineering techniques and analyses to environmental restoration projects. Workshop topics include fluvial geomorphology, stable channel design, bioengineering, streambank protection, water quality, and channel restoration.

APPENDIX N

HQUSACE WATERSHED TEAM POSITION ESTABLISHMENT AND WORKLOAD ASSESSMENT

E&C Position Establishment
 9 March 2001

ENGINEERING & CONSTRUCTION DIVISION
 POSITION ESTABLISHMENT
 (Position 1)

Branch/Team: Water Resources Branch/Watershed Team (CECW-EWW)							
Current Position MMD Info					Required Position Info		
Para	Line	Description	Series	Grade	Description	Series	Grade
					Hydraulic Engineer	0810	14
<p>1. Current Action Underway: Analysis by H&H Capability Assessment Task Force identified a critical understaffing in Watershed Team (CECW-EWW). This position is one of two new positions required to meet staffing requirements. The current Watershed Team positions plus the proposed two new position functional assignments are as follows:</p> <ul style="list-style-type: none"> - <u>Team Leader</u> – Team oversight, Policy formulation and guidance, Program guidance, Hydrology, UOC Support - Tseng - <u>Team Member</u> – Coastal Engineering & Deep Draft Navigation – Chesnutt. - <u>Team Member</u> – Water Control, UOC Support & Inland Navigation – Wingerd - <u>Team Member</u> – IJC, CWMS, Dam Safety, Special Studies, & Water Control – Bank - <u>New Position</u> – Hydraulic Design & Hydropower incl. FERC - <u>New Position</u> - River Hydraulics, Hydrology, Stream/Ecosystem Restoration & Sedimentation. <p>Establishment Justification:</p> <ol style="list-style-type: none"> a. The Corpswide H&H Capability Assessment Task Force Survey indicated staffing of HQUSACE Watershed Team must be increased to provide policy and guidance in several critical H&H areas in a responsive manner. b. H&H Assessment Task Force has determined that during the establishment of current E&C organizational structure the Watershed Team was under resourced to effectively meet requirements of identified functions. c. The Existing Watershed Team cannot effectively provide Headquarters level hydraulic design and hydropower support to Corps functions. d. Establishment of this position will provide policy, guidance, and technical consultation upon request by districts, divisions and other Corps Activities for hydraulic design and hydropower including support for Interagency activities, E&C Programs, UOC, R&D Oversight, coordination with Professional Organizations and recommending to Federal Energy Regulatory Commission (FERC) features required for Corps interests pertaining to non-federal hydropower projects under jurisdiction of FERC licensing authority and coordinating on hydropower installation at Corps projects. e. The position should be established as a Hydraulic Engineer, GS-14, in order to meet the overall Civil Works mission requirements and be responsive to Interagency, District, Division and R&D requirements. 							

E&C Position Establishment
 11 March 2001

**ENGINEERING & CONSTRUCTION DIVISION
 POSITION ESTABLISHMENT
 (Position 2)**

Branch/Team: Water Resources Branch/Watershed Team (CECW-EWW)							
Current Position MMD Info					Required Position Info		
Para	Line	Description	Series	Grade	Description	Series	Grade
					Hydraulic Engineer	0810	14
<p>2. Current Action Underway: Analysis by H&H Capability Assessment Task Force identified a critical understaffing in Watershed Team (CECW-EWW). This position is one of two new positions required to meet staffing requirements. The current Watershed Team positions plus the proposed two new position functional assignments are as follows:</p> <ul style="list-style-type: none"> - <u>Team Leader</u> – Team oversight, Policy formulation and guidance, Program guidance, Hydrology, UOC Support - Tseng - <u>Team Member</u> – Coastal Engineering & Deep Draft Navigation – Chesnutt - <u>Team Member</u> – Water Control, UOC Support & Inland Navigation – Wingerd - <u>Team Member</u> – IJC, CWMS, Dam Safety, Special Studies, & Water Control – Bank - <u>New Position</u> – Hydraulic Design & Hydropower incl. FERC - <u>New Position</u> – River Hydraulics, Hydrology, Stream/Ecosystem Restoration & Sedimentation <p>Establishment Justification:</p> <ul style="list-style-type: none"> e. The Corpswide H&H Capability Assessment Task Force Survey indicated staffing of HQUSACE Watershed Team must be increased to provide policy and guidance in several critical H&H areas in a responsive manner. f. H&H Assessment Task Force has determined that during the establishment of current E&C organizational structure the Watershed Team was under resourced to effectively meet requirements of identified functions. g. The existing Watershed Team can not effectively provide Headquarters level River Hydraulics, Hydrology, Stream/Ecosystem Restoration and Sedimentation support to Corps functions. h. Establishment of this position will provide policy, guidance, and technical consultation upon request by districts, divisions and other Corps Activities for River Hydraulics, Hydrology, Stream/Ecosystem Restoration and Sedimentation including support for Interagency activities, E&C Programs, UOC, R&D Oversight and coordination with Professional Organizations. e. The position should be established as a Hydraulic Engineer, GS-14, in order to meet the overall Civil Works mission requirements and be responsive to Interagency, District, Division and R&D requirements. 							

HQ WATERSHED TEAM		Current FTE	Branch	Recommended FTE
106	Tech Policy-Hydraulics, Hydrologic, Coastal	0.70	CW-EW-W	1.5
107	Tech Policy – Watershed team to take a broader view of watershed impacts (not just the streambed)	1.60	CW-EW-W	1.6
108	Interagency – USGS, NWS, FEMA, NRCS, Etc. ACWI (2), CRT Permanent Engineering Board, Ferc, IJC	0.52	CW-EW-W	0.52
109	Interagency – FEMA	0.02	CW-EW-W	0.05
110	AIS – Water control management system	0.20	CW-EW-W	0.04
111	E&C Programs – Cooperative Observations (with the NWS), Cooperative Stream Gaging, Stream Data Collection	0.10	CW-EW-W	0.10
112	Tech Policy – Water Control/ Water Quality	0.40	CW-EW-W	0.40
113	E&C Programs – Coastal Field Data Collection Program	0.05	CW-EW-W	0.10
114	E&C Programs – Performance – Non-Fed Hydropower Reports, WQ Management Reports	0.11	CW-EW-W	0.11
115	Tech Policy – Corps Committees – HQUSACE Dam Safety	0.05	CW-EW-W	0.20
116	Tech Policy – Support of O&M - CW	0.20	CW-EW-W	0.20
117	Consult – Provide technical input on National Water Resources Policies Studies	0.05	CW-EW-W	0.05
118	Interagency – Interagency Comm on Dam Safety – ICODS	0.03	CW-EW-W	0.03
119	Prof Soc/Industry – USCOLD/COLD	0.10	CW-EW-W	0.10
120	Consult – UOC support	0.05	CW-EW-W	0.10
121	Common Functions (see list on final sheet)	0.57	CW-EW-W	0.80
		4.75		6.26

LIST OF COMMON FUNCTIONS – ASSIGNED TO ALL BRANCHES AND TEAMS	
501	Consult – Special assignments
502	Consult – w/CG, DCG/IM, DCG/CW & MSC Cmdrs
503	Consult – Support to Business Development Division
504	Consult- Other HQ Elements
505	Consult - Tasker Response
506	Consult – w/DA,DoD
507	Consult – DoD Single Face to Industry
508	Consult – w/field offices & installations
509	Consult – w/others on designs for major projects of local, national & international significance
510	Consult – Interagency
511	Tech Policy – Corps Committees – Each Discipline
512	Consult – w/field, tri-services, other gov't groups & A-E's
513	Workforce Eval & Dev – PROSPECT oversight
514	Workforce Eval & Dev – Conferences (AE/RE, CADD/GIS, ChE&C, PDT, Specs, TriService, etc)
515	Workforce Eval & Dev – Engineering Disciplines
516	Prof Soc/Industry – (Strategic Focus)
517	Prof Soc/Industry – (Technical Focus)
518	R&D Oversight – Gang Efforts
519	R&D Oversight – Military (other?)
520	R&D Oversight – CW Pgm & WU monitors (17)
521	Interagency – Others – MP-EA/ED/EC
522	E&C Programs – CX Proponent – HTRW,HDC,APMD,HEC,HAC,MTCtr,RIS/GIS,Paint, Exploration, SeismicMitig,PhotgrMap

APPENDIX O

GS-13 TECHNICAL SPECIALISTS, JOB DESCRIPTIONS

6 July 2001

CEHR-E (690-500)

MEMORANDUM FOR COMMANDERS, MAJOR SUBORDINATE COMMANDS

SUBJECT: District Level GS-13 Regional Specialists

1. Implementation of the Regional Business Management concept, balancing the workload of districts, and reductions in the size of USACE MSC headquarters have resulted in the need for district subject matter experts in various technical specialties to serve on a regional basis as consultants to other districts, other governmental entities, and private firms. Now, within the Regional Business Management concept, such experts may be located within the MSC headquarters or any other offices in the region. Attached is guidance for use when designing or establishing regional specialist positions. Generally, there should only be one regional specialist established for an area of expertise. Individuals selected for these positions must spend at least 25% of their time performing regional duties. Selected individuals must have technical expertise recognized and used throughout a MSC, by other USACE organizations, and other governmental entities. The individuals occupying these positions are recognized as technical experts and are regularly consulted by other individuals both from within and outside of USACE. They also contribute to the development of USACE guidelines, regulations, and policies in their area of expertise.

2. The guidance consists of a classification guide developed by Northwestern Division spelling out the primary requirements for a GS-13 level position at districts (enclosure 1), followed by classified duty descriptions developed by Great Lakes and Ohio River Division at the GS-13 level as examples of application of the guide (enclosure 2). The duty descriptions are designed to be added to a district job description when the incumbent is a recognized regional technical expert. Duty descriptions, patterned after these examples, can be developed for other areas of technical expertise. It is essential that MSCs officially designate these technical experts, either competitively or otherwise, and that they be recognized only when the technical expertise involved is often required within the MSC and monitored to assure that this expertise is maintained and utilized. The MSCs are also responsible to assure that the regional expert duties are actually performed. It should be recognized that the enclosures are provided as a guide only and that the nature and size of the regional workload should drive the type and number of positions required for each MSC.

3. Several established job descriptions have been identified as examples of supportable district GS-13 technical positions. They are all available in FASCLASS.

a. Hydraulic Engineer, GS-810-13, Job Number GB01B01, Pittsburgh District, North Central CPOC.

CEHR-E (690-500)

SUBJECT: District Level Regional Specialists

b. Interdisciplinary, GS-101/401/801/1301-13, Job Number KC1101, Sacramento District, West CPOC.

c. Industrial Hygienist, GS-690-13, Job Number KCV3039, Sacramento District, West CPOC.

d. Architect, GS-808-13, Job Number KCQ3939, Albuquerque District, West CPOC.

e. Structural Engineer, GS-810-13, Job Number KCK3882, Sacramento District, CPOC.

f. Mechanical Engineer, GS-830-13, Job Number HE97070, Portland District, West CPOC.

g. Fishery Biologist, GS-482-13, Job Number HE95102, Portland District, West CPOC.

h. Electrical Engineer, GS-850-13, Job Number HE97015, Portland District, West CPOC.

i. Hydraulic Engineer, GS-810-13, Job Number HE96009, Portland District, West CPOC.

j. Hydraulic Engineer, GS-810-13, Job Number GKS0184, Savannah District, Southeast CPOC

4. In some cases, where a district's workload consists of very complex projects it is permissible to establish technical expert positions for the duration of the projects

5. Point of contact for this action is Monroe A. Major, telephone 202-761-0331.

FOR THE COMMANDER:

2 Encl
as

/S/ Joseph A. Levy for
SUSAN DUNCAN
Director of Human Resources

CF:
MSC Human Resource Officers
Director, Civilian Personnel Operations Center Management Agency

CLASSIFICATION GUIDE FOR DISTRICT LEVEL REGIONAL SPECIALIST GS-13 POSITIONS

Listed below are common characteristics of all nonsupervisory GS-13 jobs at the district level. This guidance is intended as a supplement to position classification standards for the purpose of maintaining consistency and uniformity. It can be used to assist in the classification of district level nonsupervisory GS-13 professional jobs other than attorneys and project managers. Each GS-13 job must possess essentially all of the characteristics described below; these characteristics must be typical of the job; they must be performed on a continuing, regular, and recurring basis; and they must be performed at least 25% of the time.

Each of these jobs is heavily impacted by the special knowledge, skills, abilities, or talents of the individual concerned. When vacated, the regional responsibilities, if still required, may continue in the same position, be assigned to another position, or assigned to a different district where the expertise can be found. The person occupying a district nonsupervisory GS-13 job with regional responsibilities:

- Speaks with authority for the district on matters in his or her functional area.
- Is widely recognized as a regional and/or national authority.
- Is frequently sought out by others within the discipline, officials within the agency and by other Federal agencies and state and local governmental organizations for expert professional advice.
- Contributes to the development of Corps guidelines, regulations, and policy; The person in the job is an expert in developing and interpreting guidance for use by others.
- Is readily recognized by those in other functional areas and disciplines as an authoritative source of information; The person in the job is recognized by peers as the technical expert.
- Often directs the efforts of a team carrying out broad project assignments involving unusually difficult conditions, novel problems and controversial issues.
- Is responsible for a major district activity which presents problems of significant depth and complexity.
- Must apply experienced judgement, perception and depth of analysis in formulating important decisions and negotiating to gain acceptance of controversial recommendations.

Other principles:

- The job description should clearly state the higher level duties and responsibilities.
- One such job per discipline - each is a one of a kind job.
- If the regional technical authority duties are assigned to another position or district, the job reverts to a GS-12 upon the incumbent's departure.
- When the need diminishes for a regional technical authority, the job reverts to a GS-12.
- Retention of an employee is not a reason for the job.
- Each job should be established based on sound business practices and sound position management.

DUTY STATEMENTS FOR GS-13 REGIONAL SPECIALISTS

The following GS-13 duty descriptions can be used as needed to establish or recognize regional experts in various technical specialties. They must be performed at least 25% of the time of the individual occupying a position to be grade controlling and are designed to be added to a district level position description when the incumbent serves as the MSC-wide expert. The specialties described are not all-inclusive, other regional specialist (GS-13) positions can be established based on technical needs and existing expertise.

Structural Engineer, GS-810-13

Serves as the regional technical specialist for navigation projects. Assignments involve work in a broad range of activities and highly specialized structural engineering functions concerning civil works navigation engineering projects. The incumbent to the position encounters many tasks or projects that involve many complicated features, i.e., develops innovative design solutions and new techniques to apply to the design and design review of projects in the Division to achieve durable, cost effective, and functional projects for Division customers. The structures to which the incumbent must apply engineering expertise are commonly large, complex, and some features may be without precedent. Navigation projects include locks and dams and especially features such as lock miter gates, lock emergency gates, complex filling and emptying systems, dam crest gates, and emergency bulkheads and hoists. Typical specialized skills the incumbent must possess include seismic design/analysis of mass concrete structures, design of mass and structural concrete, risk and reliability analysis, finite element analysis, structural modeling, materials and use of high performance materials, rock and soil anchorage design, miter gate design, lift gate design, etc. This individual occupying this position has technical expertise recognized and used throughout the MSC, and often by other USACE organizations, other governmental entities, or private firms. The individual is recognized as a technical expert and regularly consulted by other individuals from within the MSC and often by organizations from elsewhere within USACE in order to use that expertise. The incumbent also contributes to the development of USACE guidelines, regulations, and policies in the area of expertise.

Structural Engineer, GS-810-13

Serves as the regional technical specialist for local protection projects (LPP). Assignments involve work in a broad range of activities and highly specialized structural engineering functions. The incumbent to the position encounters many tasks or projects that involve many complicated features, i.e., develops innovative design solutions and new techniques to apply to the design and design review of projects in the Division to achieve durable, cost effective, and functional projects for Division customers. The structures to which the incumbent must apply his/her engineering expertise are commonly large, complex, and some features may be without precedent. LPP projects include large earth, rock-fill, and concrete dams, and appurtenant control structures; may include hydro electric power features including power plants; flood walls; gate closure structures; pumping stations; sewer and drainage structures; and channel improvement structures. Typical specialized skills the incumbent must possess include seismic design/analysis of buildings and Civil Works type structures; design of structural steel and concrete; risk and reliability analysis; structural modeling; materials, and use of high performance materials; rock

and soil anchorage design; swing, miter, and rolling closure structure gate design; retaining walls; etc. The individual occupying this position has technical expertise recognized and used throughout the MSC, and often by other USACE organizations, other governmental entities, or private firms. The individual is recognized as a technical expert and regularly consulted by other individuals from within the MSC and often by organizations from elsewhere within USACE in order to use that expertise. The incumbent also contributes to the development of USACE guidelines, regulations, and policies in the area of expertise.

Structural Engineer, GS-810-13

Serves as the regional technical specialist for vertical (building) structures. Assignments involve work in a broad range of activities and highly specialized structural engineering functions concerning Military and Civil Works engineering projects. The incumbent of the position encounters many tasks or projects that involve many complicated features, i.e., develops innovative design solutions and new techniques to apply to the design and design review of projects in the Ohio River Division to achieve durable, cost effective, and functional projects for Division customers. The structures to which the incumbent must apply engineering expertise are commonly large, complex, and some features may be without precedent. Typical military projects include hangars, munitions buildings, maintenance shops, headquarters buildings, housing, academic facilities, churches, and health facilities. Typical Civil Works projects include pump stations, control structures, visitor centers, resident engineer offices, etc. Typical specialized skills the incumbent must possess include seismic design/analysis of buildings; wind and snow load design; design of structural steel and concrete; structural modeling; materials and use of high performance materials; foundations (spread footings, mat, and pile); rock and soil anchorage design; diaphragm design; and retaining walls design. The individual occupying this position has technical expertise recognized and used throughout the MSC, and often by other USACE organizations, other governmental entities, or private firms. The individual is recognized as a technical expert and regularly consulted by other individuals from within the MSC and often by organizations from elsewhere within USACE in order to use that expertise. The incumbent also contributes to the development of USACE guidelines, regulations, and policies in the area of expertise.

Hydraulic Engineer, GS-810-13

Serves as the regional technical specialist for hydraulic design aspects of navigation projects. Assignments involve work in a broad range of activities and highly specialized hydraulic engineering functions concerning Civil Works navigation engineering projects. The incumbent of the position encounters many tasks or projects that involve many complicated features, i.e., develops innovative design solutions and new techniques to apply to the design and design review of projects in the Division to achieve durable, cost effective, and functional projects for Division customers. The structures to which the incumbent must apply engineering expertise are commonly large, complex, and some features may be without precedent. Navigation projects include locks and dams, canals, deep-draft navigation channels, inlet jetties, turning basins and harbor and docking facilities; with features such as complex lock filling and emptying systems, dam spillway and dam crest gates, stilling basins, construction cofferdams, approach channels, guard walls, and lock emergency closure gates. Typical specialized skills the incumbent must

possess include design, evaluation, and interpretation of numerical modeling and physical hydraulic model tests for lock filling and emptying systems, and evaluation of physical models for general navigation, hydraulic design of spillway gates and lock emergency closure gates, hydraulic energy dissipaters, cost-effective scour protection bank stabilization structures, drainage structures, and evaluation of navigation and flood impacts of construction cofferdams, etc. This individual occupying this position has technical expertise recognized and used throughout the MSC, and often by other USACE organizations, other governmental entities, or private firms. The individual is recognized as a technical expert and regularly consulted by other individuals from within the MSC and often by organizations from elsewhere within USACE in order to use that expertise. The incumbent also contributes to the development of USACE guidelines, regulations, and policies in the area of expertise.

Hydraulic Engineer, GS-810-13

Serves as the regional technical specialist for flood protection projects and local protection projects. Assignments involve work in a broad range of activities and highly specialized hydraulic engineering functions. The incumbent of the position encounters many tasks or projects that involve many complicated features, i.e., develops innovative design solutions and new techniques to apply to the design and design review of projects in the Division to achieve durable, cost effective, and functional projects for Division customers. The structures to which the incumbent must apply his/her engineering expertise are commonly large, complex, and some features may be without precedent. Flood protection projects include large earth-fill, rock-fill, concrete or combination dams with their many hydraulic appurtenances such as gated and ungated spillways, stilling basins, outlet works, control gates and valves, power intake structures, tunnels, conduits and approach and diversion channels and appurtenant control structures. Local flood protection projects may include levees; floodwalls; gravity outlet and gate closure structures; pumping stations; detention basins and sewer and storm drainage structures; lined and unlined flood control channels and improvement structures. Specialized skills the incumbent must possess include the formulation and hydraulic design of major Civil Works structures, including flood control channels, pumping stations, earthen levees and floodwalls, design of interior flood control features, closure structures, diversion structures, tunnels, culverts, channel stabilization and erosion control protection designs, relocations of storm and sanitary sewers, and side drainage structures. This individual occupying this position has technical expertise recognized and used throughout the MSC, by other USACE organizations, other governmental entities, and private firms. The individual occupying this position has technical expertise recognized and used throughout the MSC, and often by other USACE organizations, other governmental entities, or private firms. The individual is recognized as a technical expert and regularly consulted by other individuals from within the MSC and often by organizations from elsewhere within USACE in order to use that expertise. The incumbent also contributes to the development of USACE guidelines, regulations, and policies in the area of expertise.

Hydraulic Engineer, GS-810-13

Serves as the regional technical specialist for hydraulic design aspects of coastal engineering facilities. Assignments involve work in a broad range of activities and highly specialized hydraulic engineering functions concerning civil works navigation and flood protection projects.

The incumbent of the position encounters many tasks or projects that involve many complicated features, i.e., develops innovative design solutions and new techniques to apply to the design and design review of projects in the Division to achieve durable, cost effective, and functional projects for Division customers. The structures to which the incumbent must apply engineering expertise are commonly large, complex, and some features may be without precedent. Coastal engineering projects include facilities such as flood protection levees, sea walls, erosion/sediment control jetties, harbors and beach nourishment measures. The individual occupying this position has technical expertise recognized and used throughout the MSC, and often by other USACE organizations, other governmental entities, or private firms. The individual is recognized as a technical expert and regularly consulted by other individuals from within the MSC and often by organizations from elsewhere within USACE in order to use that expertise. The incumbent also contributes to the development of USACE guidelines, regulations, and policies in the area of expertise.

Mechanical Engineer, GS-830-13

Serves as the regional specialist for navigation, hydropower, and other Civil Works projects. Assignments involve work in a broad range of activities and highly specialized mechanical engineering functions concerning Civil Works engineering projects. The incumbent of the position encounters many tasks or projects that involve many complicated features, i.e., develops innovative design solutions and new techniques to apply to the design of projects in the Division to achieve durable, cost effective, and functional projects for Division customers. The mechanical features to which the incumbent must apply engineering expertise are commonly large, complex, and some features may be without precedent. Navigation projects include locks and dams, especially those with features such as machinery for miter gates, lift gates, emergency gates, filling and emptying systems, dam crest gates, and emergency bulkheads and cranes. Hydropower and other Civil Works project features include pumps, piping, turbines, controls, and a variety of complex machinery. In addition, the incumbent must be knowledgeable of lock, dam and adjoining site structures/systems with the principal features being related to raw water, potable water, fire protection, sewage, compressed air and HVAC systems. Typical specialized skills the incumbent must possess include design, analysis, functionality review, operational attributes, and A-E and in-house design oversight of large machinery, piping systems, HVAC systems, and other mechanical systems related to lock, dam, and adjoining structure design. This individual occupying this position has technical expertise recognized and used throughout the MSC, by other USACE organizations, other governmental entities, and private firms. The individual occupying this position has technical expertise recognized and used throughout the MSC, and often by other USACE organizations, other governmental entities, or private firms. The individual is recognized as a technical expert and regularly consulted by other individuals from within the MSC and often by organizations from elsewhere within USACE in order to use that expertise. The incumbent also contributes to the development of USACE guidelines, regulations, and policies in the area of expertise.

Electrical Engineer, GS-850-13

Serves as the regional technical specialist for Civil Works projects. Assignments involve work in broad range of activities and highly specialized electrical engineering functions concerning Civil

Works projects. The incumbent of the position encounters many tasks or projects that involve many complicated features, i.e., develops innovative design solutions and new techniques to apply to the design of projects in the Division to achieve durable, cost effective, and functional projects for Division customers. The electrical/electronic features to which the incumbent must apply his/her engineering expertise are commonly large, complex, and some features may be without precedent. Navigation projects include locks, dams, and adjoining structures/systems with the principal features being controls, fiber optic networks, lighting, instrumentation, security, closed circuit television (CCTV), communications, power and distribution, grounding and lightning protection. Hydropower and other Civil Works project features include generators, switchyards, large power distribution systems, and controls. Typical specialized skills the incumbent must possess include design, analysis, functionality review, systems integration coordination, operational attributes, and A-E and in-house design oversight of medium-to low voltage power and distribution systems; electronic digital/analog controls; operational/safety interlocks; grounding and lightning protection systems for equipment and personnel; local site and towing industry communications; networks, etc. The individual occupying this position has technical expertise recognized and used throughout the MSC, and often by other USACE organizations, other governmental entities, or private firms. The individual is recognized as a technical expert and regularly consulted by other individuals from within the MSC and often by organizations from elsewhere within USACE in order to use that expertise. The incumbent also contributes to the development of USACE guidelines, regulations, and policies in the area of expertise.

Geologist, GS-1350-13

Serves as regional technical specialist in engineering geology involving excavations and foundations in rock. Assignments involve a broad range of skills and knowledge applied to projects of unusual scope and complexity. The incumbent is experienced in a variety of geologic settings and incorporates innovative techniques in solving problems of rock mechanics, rock slope analysis, stabilization, and foundation design. Has broad and varied design experience in projects involving tunneling, design of deep foundations bearing on rock, rock slope design, gravity structures bearing on rock, reinforcement, and foundation treatment. Analysis will involve using various computer programs such as swedge, DDDA, CRSP and equivalents. Proficiency in the statistical analysis of discontinuities, and exceptional skill in the interpretation of field studies and laboratory investigations is a requisite. Sophistication in the use of computer modeling is desired but knowledge of the available tools and their application is sufficient in some cases.

The geologist must have a comprehensive knowledge of construction techniques, products, and costs, and be able to make significant contributions to VE studies and the practicality of innovative designs. The incumbent's experience will extend through the full range of design studies including development of plans and specifications and review during construction. The geologist also provides expert advice within the region to other districts and provides independent technical reviews of design products. The individual occupying this position has technical expertise recognized and used throughout the MSC, and often by other USACE organizations, other governmental entities, or private firms. The individual is recognized as a technical expert and regularly consulted by other individuals from within the MSC and often by organizations from elsewhere within USACE in order to use that expertise. The incumbent also

contributes to the development of USACE guidelines, regulations, and policies in the area of expertise.

ADDITIONAL JOB DESCRIPTIONS
FOR
GS-13 TECHNICAL SPECIALISTS

Position Description

PD#: GV09633

Replaces PD#:

Sequence#: VARIES

INTERDISCIPLINARY

GS-**-13**

Opt:HYDROLOGY - 1315

Opt:HYDRAULIC ENGINEER - 0810

Installation: COE, JACKSONVILLE, FL

MACOM: VARIES

Command Code:
VARIES

Region: SOUTH
CENTRAL

Citation 1: OPM JFS PROF. PHYSICAL SCIENCE WORK, GS 1300, DEC 97

Citation 2: OPM PCS HYDROLOGY SERIES, GS-1315, JUN 69

Citation 3: OPM PCS CIVIL ENGR SERIES, GS-810, JUN 66

Citation 4: GGEG FOR NONSUPVY PROFESSIONAL ENGR POS GS-800 JUN 71

PD Library PD: NO

COREDOC PD: NO

Classified By: W. B. ORBISON, JR.

Classified Date: 05/21/1996

FLSA: EXEMPT

Drug Test Required: VARIES

DCIPS PD: NO

Career Program: 00

Financial Disclosure Required: NO

Acquisition Position:
NO

Functional Code: 00

Requires Access to Firearms:
VARIES

Interdisciplinary: YES

Competitive Area:
VARIES

Position Sensitivity: VARIES

Target Grade/FPL: 13

Competitive Level:
VARIES

Emergency Essential: VARIES

Career Ladder PD: NO

Bus Code: VARIES

PD Status: VERIFIED

Duties:

*Interdisciplinary position properly classified to either of the following classes:

Hydrologist, GS-1315-13
Hydraulic Engineer, GS-0810-13

SUPERVISORY CONTROLS:

Works under the general supervision of the Chief, Hydrologic **Investigation Section**. Supervisor assigns tasks in terms of overall objectives and furnishes guidance on critical issues and policy matters. Employee is expected to take the initiative to complete assigned tasks with minimum supervision. Incumbent proceeds independently in determining the scope of assignment, interpreting policy, approach, and methodology. The highly technical aspects of the work are performed independently and reviewed primarily for conformance to policy and to determine that objectives are being realized. Incumbent confers with supervisor when situations develop requiring significant deviation in policy and controversial matters that affect public interest. Discusses broad technical phases and the progress of the work with the supervisor but receives minimum guidance when engaged in the actual planning, coordinating, and execution of the technical aspects of the work. Performs duties within the framework of general technical goals and programs established by higher organizational authorities.

MAJOR DUTIES:

Incumbent will serve as the Jacksonville District Technical Expert for hydraulic water quality computer modeling. Performance of duties uniquely requires advanced knowledge in computer modeling. The incumbent must also utilize highly hydrologic water quality theory and extensive experience in hydrologic water quality developed knowledge of hydraulic and civil engineering theory, principles, techniques and methodology to plan, organize, coordinate, direct, and review the development and interaction of sophisticated water quality models. As the technical specialist on water quality, serves as the District representative on Federal and State Technical Committees to help resolve water quality issues. The duties materially affect the mission-essential operation of the Jacksonville District and the recipient agencies. Duties include:

1. Develops numerical hydrologic computer models and procedures for evaluating complex water quality issues. Develops solutions and make recommendations to solve water quality problems on a scale that affects millions of acres of wetlands, millions of people, and billions of dollars of environmental restoration efforts. Data obtained from numerical models is analyzed to evaluate water quality and quantity relationships that would result from the construction of complex projects that have multi-purposes such as water supply, flood control, irrigation, recreational uses, navigation, and fish and wildlife enhancement. Through the use of water quality models, the incumbent must solely develop new criteria and design specifications for operation of each highly specialized water quality enhancement technique. Requires developing relationship between water control

features and water quality performance. Incumbent must establish water quality operational guidelines for the Jacksonville District on such enhancement techniques as the Storm water Treatment Areas and Water Preserve Areas proposed in the Central and Southern Florida Project, Reconnaissance Report, Comprehensive Review Study, including Water Preserve Areas. Apply water quality models that will include landscape effects using both language-based and object-oriented approaches. Develop new data generation techniques, as in field data collection efforts and development of input and verification data from GIS databases. 50%

2. Represents the Jacksonville District in meetings and conferences as technical authority on water quality modeling for the unique hydrometeorological conditions within Florida. As the technical authority and primary spokesperson for all technical activities relating to water quality modeling, incumbent attends conferences and meetings with other State and Federal agencies, with Corps of Engineers Research and Development and other Districts/Divisions community, with the Corps higher authority, with architect-engineering firms, and with academic institutions. Provides expert advice and guidance across water quality related disciplines such as hydrology, hydraulics, computer modeling, and water management. Represents the Jacksonville District in any technical environment, to include meetings and conferences, that pertain to interpreting, evaluating, and summarizing the output from the numerical water quality and quantity models after the models have been developed. 25%

3. Leads Jacksonville District team efforts in multi-disciplinary work related to difficult and critical water quality problems similar to those associated with the restoration of the Everglades and designs of the Storm water Treatment Areas and Water Storage Areas. Coordinates with technical experts in other disciplines, including other Federal and State agencies, to ensure success in restoration and water quality-related projects. Coordinates with the nation's leading experts at other Federal and State agencies, academic institutions, Corps of Engineers Division Offices and HQUSACE to develop new water quality modeling capabilities. Coordinates modeling procedures which include complex interaction of multiple flood control and ecosystem restoration projects proposed and underway within the Jacksonville District. Conveys complex technical information to technical and non-technical audiences, utilizing oral and written communications skills. 25%

Performs other duties as assigned.

PHYSICAL DEMANDS AND WORKING CONDITIONS:

Work is primarily sedentary in nature and performed in a typical office setting. Coordination duties require extensive travel during attendance of meetings and conferences.

*Interdisciplinary position properly classified to either of the following classes:

Hydrologist, GS-1315-13
Hydraulic Engineer, GS-0810-13

Evaluation:

Updated Classification standards applied, JFS Position Classification Standard for Professional Work in the Physical Science Group, GS-1300

FLSA EVALUATION
PD No. 09633

Title/Pay Plan/Series/Grade: HYDROLOGY, GS-1315-13

Foreign Exemption

Availability Pay Exemption for certain Criminal Investigators

Customs Officer/Customs Pilot Exemption

Executive Exemption

Exercises appropriate supervisory responsibility (primary duty)

Customarily and regularly exercises independent judgment

80% test, if applicable

Professional Exemption

Professional work (primary duty)

Intellectual and varied work (more than dealing with procedures/precedents)

Discretion & independent judgment

80% test, if applicable

Administrative Exemption

Primary duty

Policy or

Management or general business or supporting services or

Participation in the executive/administrative FUNCTIONS of a management official

Non-manual work test

Intellectual and significant (more than dealing with procedures/precedents), or

Specialized & technical in nature requiring considerable training/experience

Discretion & independent judgment

80% test, if applicable

Comments/Explanations: Position fully meets requirements IAW 5 CFR 551.207, Professional Exemption and 5 CFR 551.205 and is classified EXEMPT.

Position Description

PD#: GI97076

Replaces PD#:

Sequence#: VARIES

HYDRAULIC ENGINEER

GS-0810-13

Installation: COE DISTRICT, ST. LOUIS, MO OR ROCK ISLAND,
IL

MACOM: VARIES

Command Code:
VARIES

Region: SOUTHWEST

Citation 1: OPM PCS CIVIL ENGR SERIES, GS-810, JUN 66

Citation 2: OPM RESEARCH GEG, JAN 76

PD Library PD: NO

COREDOC PD: NO

Classified By: BERNADETTE S. THIBEAU

Classified Date: 09/20/1997

FLSA: EXEMPT

Drug Test Required: VARIES

DCIPS PD: NO

Career Program: 18

Financial Disclosure Required:
YES

Acquisition Position:
NO

Functional Code:

Requires Access to Firearms:
VARIES

Interdisciplinary: NO

Competitive Area:
VARIES

Position Sensitivity: VARIES

Target Grade/FPL: 13

Competitive Level:
VARIES

Emergency Essential: VARIES

Career Ladder PD: NO

Bus Code: VARIES

PD Status: VERIFIED

Duties:

SUPERVISORY CONTROLS

Works under the very general supervision of the Section Chief who outlines overall objectives and sets priorities. Incumbent independently plans and carries out assignments and resolves most technical matters and problems encountered. Brings controversial, precedent setting and policy matters to supervisor's attention and recommends course of action. Completed reports, analysis and technical papers are reviewed for attainment of objectives. Controversial or novel findings and recommendations are discussed with the supervisor prior to finalization or publication. Methods used and results achieved are normally accepted as authoritative.

MAJOR DUTIES

As the District Potamologist, oversees the activities of the Applied River Engineering Center (AREC) and serves as team leader for all Potamology (river engineering) studies and projects. Using advanced technology, including tabletop micromodeling methodology, conceptualized, designed and patented by incumbent, personally performs or leads a team of engineers in performing navigation channel, bank stabilization, sediment-transport, and environmental studies and projects for Mississippi River, its' tributaries and other rivers, lakes, and streams nation-wide. Assigns project tasks and provides advice and guidance to subordinate engineers who perform portions of such studies and/or complete studies of lesser complexity. Duties require an in-depth professional knowledge of hydraulic engineering principles, concepts, techniques, and methods; extensive experience and insight in the complex river engineering field; a general knowledge of physical sciences and mathematics; and extensive knowledge of the computer hardware and software programs which analyze data and simulate river engineering conditions for micro-modeling. As such, performs the following typical but not all inclusive, duties:

1. Serves as Project Coordinator and lead engineer on special studies on site-specific river channelization problems, such as, new channels/cross-overs created during flood conditions; feasibility of proposed sites for new major harbor or port facilities; special problems with the navigation channel in curved reaches (bendways) of the river, current velocity effects on river traffic, sedimentation problems, etc. Attempts by the river to cut new channels causes a variety of immediate critical problems relating to maintenance of the navigation channel, public safety, destruction of property and impact on wildlife habitats. Each channel cross-over study presents unique river engineering problems for which existing precedents, if any, usually must be modified substantially, or, a new solution must be developed. Cross-over situations must be positively addressed in that they constitute hazards to river traffic, potential loss of the navigation channel and threaten the economy and loss of valuable property in the immediate area affected. These projects usually involve politically sensitive situations and affect the public view of the reputation of the Corps of Engineers as an agency.

Proposed new river harbor and port facilities are critical to the river transportation industry, and to the economy of large geographic areas. Authorized to approve or reject request for permits to construct such facilities based on studies for feasibility of location, river bed structures, and in conjunction with District environmentalists. Utilizes an in-depth knowledge and experience of river engineering, AREC facilities, and technology to conduct advanced research projects including those conducted for other districts, divisions, and/or federal, state and local agencies. Participates in advanced research, or applied engineering projects in conjunction with laboratories and research centers. Projects and studies are highly visible, subject to intense Congressional interest, are of extreme importance to special interest groups, navigation industry, individuals, farmers, businesses, local, state and federal elected officials which may receive intense media coverage. 40%

2. incumbent is assigned continuing responsibility for monitoring and assuring maintenance of the Mississippi River navigation channel. Published guidelines are frequently nonexistent, or inadequate, for these highly specialized studies necessitating the use of specialized river engineering experience, ingenuity, and conception and development of novel or untried concepts and methodologies to harness the rivers' energy in maintaining the required channel, which may include obtaining U.S. patents of apparatus designed by the incumbent. Extensive experimentation with various concepts, use of mathematical model data, state-of-the-art computer technology, and design of physical test models are used to other data and test theories in order to develop new concepts and methodologies. Solves problems which have historically been resistant to resolution. Devices and structures installed to redirect the rivers' hydraulic forces must consider and balance navigation requirements in addition to fish and wildlife habitat needs and other environmental aspects. Extensive coordination is required with the environmental community including the U.S. Department of the Interior, Fish and Wildlife Service, Departments of Natural Resources'. State Departments of Conservation, hydrographic mapping, District elements, navigation industry representatives or organizations, contractors. and universities/scientific community. These structures require research and development of innovative and unique features specifically designed to accomplish multiple purposes simultaneously. Structures must be environmentally sensitive while achieving maximum benefit to channel maintenance. Determines type of structure(s) required (e.g., Bendway Weirs, other underwater structures, chevron dikes, dikes, etc.) based on results of studies and model testing. Prepares specifications for the structural design, location, angle, size, spacing, estimated costs, alternate plans, etc. Conducts follow-up evaluation studies after installation of channel control structures to determine navigation, bank stabilization. siltation sediment transport, and environmental benefits. 40%

3. Develops scopes-of-work for hydraulic/potamology engineering contracts to be performed by architect/engineer firms and academic/scientific institutions for the District. Makes periodic field inspection trips to observe proposed sites for channel control structures. construction of channel improvement works. and evaluation of completed structures. Monitors initial contractor technical plans and performance to ensure work will accomplish the objectives of the project. Identifies sites, and/or specifications for monitoring of river engineering structures for the crews of District data collection vessels and offices. These vessels are equipped with hydro-acoustic, bathometric, batho-acoustic, and potamologic devises. These evaluations are performed before, during, and after projects in order to assess problems and/or effectiveness of structures. Evaluates detailed bathometric channel sweep surveys, for example, conducted by or for the District- Reviews completed work for adequacy,

accuracy, and overall acceptability. 10%

4. Represents the Hydraulics Branch at conferences with Waterways Experiment Station (WES), Hydraulic Engineering Center (NEC), Cold Regions Research and Engineering Laboratory (CRREL), Division, ALSACE representatives and other agencies to discuss particular problems, or present proposed solutions to problems on specific projects within and outside the St. Louis District. Meets with representative of other federal, state, and local agencies, representatives of industry, levee commissions, local land owners, and other interested groups and individuals concerning Corps policy, current projects and other river related subjects. Contributes detailed technical reports, technical papers and publications, to the professional engineering and scientific community, including national and international organizations. 5%

5. Tracks labor and materials cost for all applied river engineering projects at AREC, including specialized morphology studies, sedimentation studies, microreader studies, and all other studies as they apply to AREC. Administers the designation of specific labor tasks for AREC staff, utilizing each individual based on their particular area of expertise. Conceive and develop future expansion, growth, and marketing schema for AREC, including maintaining dialogue and interaction with potential customers on future projects. Conducts budget analysis of existing and future projects at AREC. Executes the control of all funding through the Corps of Engineers Financial Management System (CEFMS) and AREC custom funding spreadsheet. Supplies guidance and expertise to engineering gaff on miscellaneous administrative functions. 5%

Performs other duties as assigned

Incumbent of this position must file an SF-450, Confidential Financial Report, as required Chapter 7. Section 3, Paragraph 7-3(io of DOD Directive 5500.7.

Evaluation:

Not Listed

Position Description

PD#: FU06240

Sequence#: VARIES

Replaces PD#:

GEOLOGIST

GS-1350-13

Installation: CORP OF ENG, NEW ENGLAND DISTRICT

MACOM: VARIES

Command Code:
VARIES

Region: NORTHEAST

Citation 1: OPM PCS GEOLOGY SERIES, GS-1350, JUN 64

PD Library PD: NO

COREDOC PD: NO

Classified By: CPO FU

Classified Date: 08/08/1997

FLSA: EXEMPT

Drug Test Required: VARIES

DCIPS PD: NO

Career Program:

Financial Disclosure Required:
YES

Acquisition Position:
NO

Functional Code: 32

Requires Access to Firearms:
VARIES

Interdisciplinary: NO

Competitive Area:
VARIES

Position Sensitivity: VARIES

Target Grade/FPL: 13

Competitive Level:
VARIES

Emergency Essential: VARIES

Career Ladder PD: NO

Bus Code: VARIES

PD Status: VERIFIED

Duties:

MAJOR DUTIES

Incumbent serves as **NAE authority** and technical expert in the fields of hydrogeology and environmental geology involving hazardous waste, geological, and geotechnical engineering. Is assigned complex technical problems of field investigation, analysis, design, and construction, where he applies extensive knowledge of management, engineering, and scientific discipline concepts, principles, methods, practices, and processes. Applies a broad technical background and experience in various functions and has an extensive in-depth understanding of the Corps of Engineers procedures and processes. Controls and manages assigned projects budgets and schedules. Assures that NAE commitments to customers are met. Serves as the Districts primary point-of-contact for customers, congressional interests, NAD, HQUSACE, and external agencies on assigned hydrogeology and environmental geology projects. Applies extensive experience, expert knowledge, and judgment in identifying problems, developing alternative solutions, and evaluating their impact. Integrates customer requirements and participation into a comprehensive management plan that is fully coordinated with all contributing agencies and organizations, including various District functional elements. Provides special expertise in support of the Environmental Protection Agency's (EPA) Superfund Program, the Department of Defense Environmental Restoration Program (DERP), and Base Realignment and Closure Program (BRAC).

1. Serves as NAE technical specialist/expert as project hydrogeologist and/or a multi-disciplinary team member. Provides hydrogeological and geo-environmental expertise in site assessments, feasibility studies, and remedial actions. Specific remedial actions include pump and treat systems, soil vapor extraction, and natural attenuation.

a. Serves as the NAE specialist on hydrogeological problems. Provides factual information to key NAE personnel and to scientific, engineering, and regulatory personnel of participating Federal, state, and local agencies. Works cooperatively with other Army agencies and design divisions, including the Mandatory Center of Expertise (MCX) and the WES Laboratory to keep current of, and apply, the latest appropriate technologies.

b. Performs site visits including quality assurance and performance inspections of special field activities, such as extraction wells and soil vapor extraction components. Responds to requests to provide expert consultation at HTRW construction projects. Provides on-site guidance/recommendations to management.

c. Attends and participates in meetings and conferences involving geo-environmental issues. Prepares technical papers related to hydrogeologic activities at NAE for presentation and/or publication.

d. Designs exploration and testing programs, and is responsible for the design and execution of groundwater modeling to delineate areas of contaminated soil and groundwater. Acts as a technical team leader in groundwater modeling and other hydrogeologic activities performed in-house.

e. Reviews work of hydrogeologists employed by Architect/Engineer contractors and partners with them to develop appropriate and innovative solutions to geo-environmental problems. Serves as NAEs hydrogeologist in assisting the EPA in its studies and projects to remediate soil and groundwater.

f. Meets with senior staff of Architect/Engineer firms, NAE technical and project managers, State and EPA regulators, and potentially responsible parties (PRPs) to identify, propose, and discuss solutions to outstanding issues and problems.

g. Maintains numerous personal contacts with key personnel at other agencies (e.g. USGS and EPA), universities, and private industry to exchange information on advanced and/or state-of-the-art technologies in remediation of soil and groundwater.

h. Receives mandatory training and medical surveillance for participation in assigned environmental program.

65%

2. Prepares and coordinates scopes work and schedules for hydrogeological/geotechnical investigations. Manages related delivery orders, provides input for cost estimating, and recommends contract payments.

15%

3. Serves as NAE project hydrogeologist, or multi-disciplinary team member.

Coordinates and completes complex assignments in the field of engineering geology. Assignments involve disciplines such as: hydrogeology, geochemistry, glacial geology, geophysics, sedimentation/stratigraphy, and environmental geology. Plans and directs explorations for geotechnical designs and for source borrow materials. Makes detailed technical evaluations and recommendations for use by design engineers on factors involving excavations, rock quality, groundwater conditions, drainage, and water supply. Prepares and reviews contract drawings and specifications. Plans and directs preparation of geotechnical drawings, maps, and plates. Conducts field trips to projects under construction to inspect work for geological requirements and makes recommendations for corrective or remedial measures.

20%

PERFORMS OTHER DUTIES AS ASSIGNED

This position requires:

-Advanced professional knowledge of hydrogeology to serve as **NAE authority** and technical expert/specialist on hydrogeological issues and to advise other geologists and engineers within the Corps on complex hydrogeological concerns.

Specialized knowledge of the principles and practices of related engineering fields.

-Knowledge of the principles, practices, laws and procedures applicable to environmental protection and remediation. Ability to interpret and apply Federal and state environmental regulations and directives.

-Ability to plan, schedule, coordinate and direct concurrent technical activities in different organizations, reconcile different views and accomplish the work effectively through others.

-Ability to communicate effectively orally and in writing to individuals and large groups of people in a variety of formal and informal situations in which the oral and/or written presentations are critical to successful outcome.

Evaluation: Not Listed

Position Description

PD#: FU06750

Replaces PD#:

Sequence#: VARIES

CIVIL ENGINEER

GS-0810-13

Installation: CORP OF ENG, NEW ENGLAND DISTRICT

MACOM: VARIES

Command Code:
VARIES

Region: NORTHEAST

Citation 1: OPM PCS CIVIL ENGR SERIES, GS-810, JUN 66

PD Library PD: X

COREDOC PD: X

Classified By: CPO FU

Classified Date: 10/28/1998

FLSA: EXEMPT

Drug Test Required: VARIES

DCIPS PD: X

Career Program: 18

Financial Disclosure Required: YES

Acquisition Position:
X

Functional Code:

Requires Access to Firearms:
VARIES

Interdisciplinary: NO

Competitive Area:
VARIES

Position Sensitivity: VARIES

Target Grade/FPL: 13

Competitive Level:
VARIES

Emergency Essential: VARIES

Career Ladder PD: NO

Bus Code: VARIES

PD Status: VERIFIED

Duties:

SUPERVISORY CONTROLS

Performs work under the general supervision of the Section Chief, who provides initial guidance on policy matters, instructions on program objectives to be achieved and changes in work priorities. Incumbents recommendations and decisions in the functional area are relied upon as technically sound and are generally accepted as New England Districts (NAE) final commitments. Keeps the supervisor informed of project progress and work status, referring only major policy issues for decision with a recommended course of action. Completed work is only reviewed to assure coordination of work efforts; achievement of technical, economic, and time objectives and regulatory compliance.

MAJOR DUTIES

Serves as NAEs technical specialist in geotechnical engineering, design, repair/rehab and construction of major earth and rock-fill dams, and in the evaluation of integrity and safety of existing major earth, rock-fill dams, spillways, outlet structures, energy dissipators\stilling basins, diversion systems, earth retaining structures, and associated facilities. Responsibilities include serving as technical authority, consultant, advisor and reviewer for plans for investigations, design, construction, performance evaluation and repair/rehab of projects. Provides guidance to the district on dam safety related items such as the design, construction, inspection, stability evaluation and long term safety evaluation of new and existing dams on various foundations. Utilizes broad knowledge in geotechnical engineering and design and construction of dams to make site visits as a periodic inspection team member to all high-hazard dams and projects, review as-built drawings, current instrumentation data and visual examination data to evaluate the continuing safety and integrity of existing high hazard dams and related structures. Acts as an authoritative source of technical leadership and guidance in the theoretical and practical geotechnical aspects of dam design, repair and rehabilitation for all flood control projects and related programs within NAE. Unique geotechnical features at projects may require development of new procedures which may have Corps-wide application. This requires that NAEs technical specialist in dam design, possess and apply a broad base of geotechnical engineering knowledge and expertise to conventional and unconventional projects with unique and complex geotechnical features. Remains current with changes in technology to ensure quality designs that are in the best interest of the government and user/owner.

1. Geotechnical Engineering Design. 45%

a. Designs encompass a substantial diversity of structures and geotechnical criteria, e.g., buildings; earth and rock-fill dams; reservoirs, channels, levees, shore protection structures; roads, recreation areas; underground structures, airfield pavements; etc. Designs require consideration of new and continuing, state-of-the-art advances in geotechnical engineering. Work involves the preparation of geotechnical design memoranda; design of soil and embankment features of earth and rock-fill dams, levees, and channels; design of pavements and foundations for military construction projects; and, the development of exploration, sampling, and testing programs in

connection with the foregoing design, and for soil foundations for all types of structures. The work also includes assisting other District elements in developing scopes, estimates and budgets for future geotechnical investigations and studies; and, reviewing the completed work of others (e. g., local interests and professional Architect-Engineering firms) for thoroughness and adequacy. Projects are predominantly of a more complex nature. Investigations and designs are accomplished under extremely rigid time schedules, and are subject to unforeseen and unpredictable changes in scope and requirements.

b. Performs review of technical design documents as designer or ITR member. Evaluates and recommends necessary changes pertaining to the soil mechanics, dam design and foundation engineering applications within planning, design and construction documents. Ensures compliance with established criteria, sound engineering principles, standard practices, and existing building codes. Detects omissions, discrepancies, inadequacies, and non-conformance with approved criteria. Develops new criteria in special situations where none exists, or adapts existing criteria to the unique and specific geotechnical site conditions encountered. In the consideration of site selection, reviews the purpose and layout of the facility in question, the surrounding topography, the distribution and properties of soils, the associated geological foundations, seismic anomalies, and construction materials. Analyzes functional and operational aspects to determine if proposed work is technically sound. Provides guidance, recommendations and comments to appropriate personnel of the serviced organization, e.g., Division/District technical specialists, using service, MACOMs, HQUSACE, etc. Evaluates and responds to questions raised by others as a result of technical engineering review comments. Ensures that the design satisfies the intended project purpose(s).

c. Performs reviews of Value Engineering (V-E) proposals for improvements to geotechnical design features. Validates appropriateness to project, adequacy of design, and economical use of materials. Recommends acceptance or rejection of proposals. Assures project funding, scheduling, and cost estimates for design features are appropriate and reasonable. Recommends District preparation of additional supportive technical documentation (such as geotechnical and seismic investigations, analyses, tests, etc.) to substantiate project design.

d. Confers with engineers in other organizational units of the New England District engaged in various aspects of engineering design and construction to resolve conflicts or delays to the timely completion of work. Proposes, develops and, recommends solutions to problems with engineering representatives of the using agency, HQUSACE, and members of the District engineering staff concerning matters of design criteria.

e. Performs field inspections of proposed or existing works, and evaluates design during and after construction. Makes inspection trips to Area Offices and construction project sites. Observes construction methods and practices being used to ensure conformance with intent of design, plans and specifications, and to offer guidance and advice on peculiar and unforeseen conditions encountered. Inspects projects while under construction and determines if conditions encountered require changes in original design, and if so, directs and supervises development of necessary changes to solve such construction problems as encountered. Maintains liaison with key members of the Construction-Operations Division in connection with special problems involved during construction progress. Determines whether the designed items function as planned with respect to existing soil and foundation conditions, or if connective measures should be

incorporated into current and future projects. Participates in HQUSACE-sponsored construction evaluation and post-completion inspection team visits to projects under construction and projects which have been completed.

f. Initiates and directs geotechnical investigations, evaluates available boring and laboratory test results, ascertaining the need for and planning a program for further borings and laboratory tests deemed essential for obtaining additional data. Makes inspections of site conditions in field, appraising potential problems and planning programs for attacking and solving such problems. Performs analytical studies for such problems as stability of flood walls and slopes; settlement and bearing capacity of foundation systems; control of seepage by berms, drainage systems and relief wells; and earth retaining structures. Evaluates the use of geosynthetics during design and the selection of and economic use of available materials. Participates in the inspection of the Districts projects, and makes recommendations for remedial measures. Prepares scopes for and/or performs subsequent investigations, analyses, and design for remedial measures. The aforementioned work requires considerable familiarity with the best modern practices in the field of geotechnical engineering including the most recent developments and advances described in technical literature.

2. Technical Specialist. 40%

a. Serves as the NAE specialist in geotechnical engineering, design repair/rehab and construction of major earth and rock-fill dams. Maintains awareness of current practices and latest advances in soil mechanics and foundation design. Remains current with the latest technical advances which may impact engineering features of studies/projects, including: the state-of-the-art knowledge in geotechnical design for earth embankment design/rehab; the use of finite element analysis for seepage and load-deformation in soils; and stability and seismic analyses for foundations and embankments. Performs special studies of geotechnical materials, and design and construction methods relating to geotechnical engineering. Analyzes and evaluates possible applicability to NAE projects, and makes recommendations based on findings. Incorporates knowledge of technical advances when reviewing designs. Recommends inclusion of improved procedures, practices and materials as appropriate.

b. Serves as NAEs technical specialist in performing complex probability and reliability analyses for major dam rehabilitation projects in accordance with Corps of Engineers policy. Assists other Districts and offices and functions as a authoritative source in applying the methodology and procedures to specific projects.

c. Promulgates and reviews technical criteria proposed by higher headquarters and Corps laboratories for application to specific geotechnical conditions of NAB. Provides input to and recommends research efforts to Corps Labs/HQUSACE.

d. Serves as consultant on complex geotechnical problems to other organizational elements within District and to outside agencies. Reviews geotechnical work for projects prepared by outside consultants. Serves as expert witness to Office of Counsel on geotechnical aspects of contractors claims. Provides advice and staff review on designs and correspondence related to assigned projects prepared by other organizational elements.

Position Description

PD#: FU05010

Replaces PD#:

Sequence#: VARIES

CHEMICAL ENGINEER

GS-0893-13

Installation: CORP OF ENG, NEW ENGLAND DISTRICT

MACOM: VARIES

Command Code:
VARIES

Region: NORTHEAST

Citation 1: OPM PCS CHEMICAL ENGR SERIES, GS-893, JUN 72

PD Library PD: X

COREDOC PD: X

Classified By: CPO FU

Classified Date: 01/31/1995

FLSA: EXEMPT

Drug Test Required: VARIES

DCIPS PD: X

Career Program: 18

Financial Disclosure Required: YES

Acquisition Position:
X

Functional Code: 21

Requires Access to Firearms:
VARIES

Interdisciplinary: NO

Competitive Area:
VARIES

Position Sensitivity: VARIES

Target Grade/FPL: 13

Competitive Level:
VARIES

Emergency Essential: VARIES

Career Ladder PD: NO

Bus Code: VARIES

PD Status: VERIFIED

radioactive wastes. Develops hazardous spill contingency plans for reservoir projects and provides training to implement contingency planning requirements for project personnel. Provides guidance and training in chemical engineering to interns and junior members of the Branch. Serves as technical advisor on computer programs and systems for HTRW activities. Recommends and assists in selecting, developing, and implementing related chemical engineering and HTRW microcomputer programs and systems in the Division. Presents talks and lectures at colleges and at professional meetings on HTRW technology.

15%

PERFORMS OTHER DUTIES AS ASSIGNED.

FACTOR 1. Knowledge Required by the Position FL 1-8 1550 pts

- Knowledge and skill to serve as NED technical expert in chemical engineering as applied to chemical unit operations and processes to investigate, evaluate, isolate, or render harmless chemical contaminants in wastewater, soil, landfills, and groundwater.
- Mastery of chemical engineering concepts, principles and techniques to develop new approaches and systems and to evaluate new technologies for the solution of unique and complex problems in HTRW remediation.
- Good working knowledge of related engineering fields, such as environmental, hydraulic, mechanical, electrical, structural and civil.
- Knowledge of and experience in applying Federal and state environmental regulations and requirements.
- Ability to communicate well both orally and in writing.

FACTOR 2. Supervisory Controls FL 2-5 650 pts

The supervisor determines the overall responsibilities and available resources and provides administrative supervision and policy guidance. The supervisor and incumbent in consultation develop the work to be completed, funds needed, deadlines, and priorities. Being a technical expert, the chemical engineer plans the work, resolves all technical problems, coordinates work with others, determines approach and methods to be used, and carries out the work. The supervisor is kept informed of potentially controversial matters and anything with far-reaching implications. Completed work is accepted as technically conclusive, and is reviewed only for meeting the overall objectives.

FACTOR 3. Guidelines FL 3-4 450 pts

Guidelines are broadly stated Corps of Engineers regulations and policy statements,

engineering manuals and design codes, and Federal and state environmental laws and regulations. These guidelines are rarely adequate for solving the complex and unusual problems which the employee may encounter, thus requiring the employee to propose applications of innovative technologies and to exercise considerable judgment and ingenuity in extending existing methodology to develop new methods to resolve problems.

FACTOR 4. Complexity FL 4-5 325 pts

Assignments involve the entire range of HTRW remediation projects in the New England states and the entire range of technologies used to investigate and remediate environmental problems. Responsibilities include the review of pre-design, design and construction activities, the development of new methods and processes for the treatment and/or disposal of unusual combinations and concentrations of hazardous materials, and the investigation and evaluation of innovative technologies for the solution of processing problems. Considerable inventiveness, versatility, and judgment are required to resolve problems involving multiple complex features.

FACTOR 5. Scope and Effect FL 5-5 325 pts

The purpose of the work is to provide expertise in chemical engineering for the evaluation of complex existing and innovative techniques and processes, and the extension of existing methods or development of new ones, for the treatment and remediation of hazardous wastes in a variety of combinations and environments. The work efforts affect the efficacy and efficiency of the clean-up of hazardous wastes in the New England states and beyond, and thus indirectly the public health and welfare.

FACTOR 6. Personal Contacts FL 6-4 110 pts

Contacts are with top-level officials of Federal and state agencies, executives of A-E and construction contracting firms; and with key scientific and engineering personnel of other agencies, universities, and industry.

FACTOR 7. Purpose of Contacts FL 7-31 120 pts

The purpose of the contacts is to advise on the adequacy of existing technologies and the availability and applicability of new technologies which will improve processing safety and/or results; and to persuade other agencies and contractors to agree to the use of non-traditional methods where there are conflicting financial and technical interests and opinions.

FACTOR 8. Physical Demands FL 8-1 5 pts

The work is primarily sedentary, with occasional trips to work sites which require some walking and standing.

FACTOR 9. Work Environment FL 9-1 5 pts

The work is performed primarily in an office environment. Occasional trips to work sites do not include entrance into exclusion areas.

Evaluation:

EVALUATION STATEMENT

Job Number: 05010

Date: 27 January 1995

Location: Engineering Directorate, Water Control Division, Environmental Engineering & Hydraulics Branch

1. References: a. OPM PCS for Chemical Engineering Series GS-893, June, 1972
- b. OPM PCS for Environmental Engineering Series GS-819, April, 1978

2. Title and Series Determination: The work involves professional work in chemical engineering including design, evaluation, and improvement of processes for changes in the chemical composition or physical state of materials. The position is properly classified as Chemical Engineer GS-893.

3. Grade Determination:

By application of Reference a:

Nature of assignments: GS-12 chemical engineers apply knowledge of a broad or unusually complicated specialized area in assignments which typically require use or understanding of advanced plant equipment for carrying out unit processes. Available technical data and background information usually have major discrepancies, are inadequate, or are scanty. Related precedents are lacking, and advanced equipment is involved.

At GS-13, chemical engineers undertake unique and controversial assignments with a major specialized but complex area. Individual projects involve state-of-the-art technology. As technical advisors or program coordinators, they are responsible for a specialized area of a broad and varied chemical engineering program, whereas GS-12 engineers do not have responsibility for programs of such broad scope. The GS-13 engineer must apply originality, initiative, judgment, and a broad knowledge of chemical engineering theories, practices and precedents to assignments characterized by unique or controversial problems. The work has direct impact on extensive and important engineering programs.

The subject position meets the GS-13 level of the standard. As at that level, the program is broad, involving state-of-the-art technology as applied to an evolving field in which problems are frequently unique and controversial, affecting as they do the public health and welfare.

Level of responsibility: The GS-12 chemical engineers work is assigned in terms of general objectives, reviewed primarily for the nature of findings and recommendations, and assumed to be technically accurate. The subject position has these characteristics and in addition meets the GS-13 level in that the incumbent must prepare his own

work plans, establishing guidelines and new techniques where existing ones are inadequate. As technical expert for the New England Division, his recommendations and decisions are of major importance to the activity. Technical supervision is unavailable. Personal contacts are also comparable to the GS-13 level.

A cross-series comparison has also been made to the standard for the Environmental Engineering Series GS-819, which is in the Factor Evaluation format.

Position Description

PD#: FS05749

Sequence#: VARIES

Replaces PD#:

CIVIL ENGINEER

GS-0810-13

Installation: COE, NEW YORK, NY

MACOM: VARIES

Command Code:
VARIES

Region: NORTHEAST

Citation 1: OPM PCS CIVIL ENGR SERIES, GS-810, JUN 66

PD Library PD: NO

COREDOC PD: NO

Classified By: COE CPO

Classified Date: 10/08/1981

FLSA: EXEMPT

Career Program: 18

Functional Code: 21

Competitive Area:
VARIES

Competitive Level:
VARIES

Bus Code: VARIES

Drug Test Required: VARIES

Financial Disclosure Required:
YES

Requires Access to Firearms:
VARIES

Position Sensitivity: VARIES

Emergency Essential: VARIES

DCIPS PD: NO

Acquisition Position:
NO

Interdisciplinary: NO

Target Grade/FPL: 13

Career Ladder PD: NO

PD Status: VERIFIED

Duties:

SUPERVISORY CONTROL

Performs duties under the general supervision of the Chief Design Branch. As the Coastal Engineering expert for the District is assigned the responsibility for Planning, coordinating, and controlling the Districts mission in connection with the conduct and development of engineering designs including monitoring programs regarding coastal engineering projects. Planning or construction directives from OCE outline the basic requirements. Incumbent develops time and cost parameters. Direction from supervisor is largely administrative in nature. Completed work is reviewed for performance to policy and attainment of objectives. Overall performance is evaluated in terms of performance standards established by the supervisor

MAJOR DUTIES

AS the Districts expert in Coastal Engineering is technically responsible for carrying out the Districts responsibilities for Coastal Engineering designs and development of detailed plans and specifications including special and unique monitoring programs for projects along Coastal areas and inlets for the purposes of beach erosion control hurricane protection and navigation improvements.

1. Exercises technical direction of branch engineers engaged in developing designs for projects along coastal areas and inlets, requiring expertise in tidal hydraulics, design of coastal structures and project development. Plans and schedules work, directs employees, establishes priorities, and periodically evaluates program activities to ascertain if program objectives are being met. Establishes methods and procedures for effective accomplishment of the work, and reviews and approves completed work for soundness of engineering techniques and compliance with policies. Resolves problems, provides staff recommendations, and participated in the resolution of technical studies, scopes of work, scheduling conflicts, etc. by providing direction to Section, Branch and/or Division Chief on conflict resolution.
2. Coordinates and consults with the Planning Division on the gathering and preparation of basic data for testing of hydraulic models for the solution of problems encountered in connection with design, and operation of coastal engineering projects for beach erosion control, hurricane protection and estuarine navigation. Provides recommendations for the conduct of Special wind, wave, erosion and accretion studies. Exercises the critical Judgements necessary to gather only essential data at a minimum of cost. Undertakes the design of floodwalls, levees, tidegates, backfills, jetties, groins and seawalls, etc.
3. Reviews technical portions of field and office investigations, research, development, assessment of data, and integration of data accomplished in connection with the preparation of design investigations on coastal engineering matters. Determines short, cuts or compromises that may be considered extreme within the context of standard guidance, procedures etc. or establishes procedures and methods where none exist. Responsible for design computations to support designs for coastal projects.
4. Provides technical guidance and assistance to project managers and technical sections in Design Branch on all coastal matters. Responsible for the preparation of the draft write-up of technical aspects of designs concerning coastal engineering. Directs and, supervises field investigations and inspections recommends courses of action for approaches to coastal engineering design. Anticipates problem areas and takes positive

action to reduce or eliminate loss of time and maximize u usage of key and limited resources.

5. Serves as the Districts representative at meetings and conferences with representatives of other governmental agencies, public and civic officials, business interests and other engineers in the development of design and construction plans. Consults with groups and individuals requiring technical information and guidance in regard to coastal engineering designs. Technical, analytic and interpretive work is accepted as authoritative based on expertise as recognized. Coastal Specialist:

6. Reviews coastal engineering designs for technical adequacy, which have been prepared by architect-engineer firms. Approves and disapproves changes as necessary to improve the design. Reviews shop drawings submitted by contractors for compliance with contract documents.

7. Applies engineering and technical know-how in the design and in the review of design to eliminate gold plating and/or to develop alternative, action which, will produce cost reductions under the Value Engineering program. Prepares summary Value Engineering reports, which identify distinct functional components and associated values of cost or cost reduction. Computes savings as the difference between two alternative costs or as a direct cost savings and properly identifies the contract, project or activity.

Performs other duties as assigned.

Employees may review the official standards and guides by which their jobs are classified.

Evaluation:

Job.No: 5749

Title, Code & Grade: Civil Engineer, GS-810-13

Org Location: U. S. Army Engineer District, New York
Engineering Division, Design Branch, Office of the Chief

POSITION EVALUATION REPORT

1. Background; This position was originally located in the Coastal Engineering Branch of the Engineering Division. Due to a reorganization the position is now located in the Office of the Chief, Design Branch. The incumbent serves as technical expert in matters relating to coastal engineering. (Design of flood- walls, tide- gates, jetties etc. and special areas relating to Beach erosion control, hurricane protection, and navigation improvement).

2. Series and Title Determination: Duties of the position entail serving as the Districts expert in engineering matters pertaining to the planning, coordination and control of the Districts mission as it relates to the conduct and development of coastal engineering design and construction projects. These duties compare favorably with the series definition for the GS 810 standard. This series includes work involving "planning,

designing, constructing, and/or maintaining structures and facilities that provide shelter, support transportation systems, and control natural resources;

3. Grade determination:

Incumbent is a key person in terms of the Districts coastal engineering projects. Incumbent is relied upon to develop expert recommendations and in-put relating to large scale and extremely complex projects. Incumbent has delegated authority to approve and disapprove changes as needed to improve coastal engineering designs prepared by architectural/engineering firms and to provide technical advice to other in-house staff. Incumbent is expected to develop new procedures and methods as needed. His work is not suspect to technical review; review is in terms of his meeting over all objectives as established by supervisor personnel. All of this compares favorably with the standard criteria for GS 13 engineers. At the GS 13 level the standard cites the GS-13 engineer as the technically responsible specialist in a subject matter or functional area; operating without technical review but within a frame work established by higher organizational authority. The standard also cites under the GS-13 criteria that the engineer often leads efforts of a team and that projects are complex due to the broad range of elements, novel problems etc. This compares with the subject position in that the incumbent is delegated the authority to exercise technical direction over branch engineers in developing designs for many and varied projects. These projects are complicated by many factors including scope, public safety and public relations. Also the incumbent is assigned to represent the District at high level meetings and conferences. This level of assignment and involvement is typical of the GS-13 specialist as discussed in the standard GS-13 criteria, p.22 and 23.

4. Merit Pay Determination; Position is not covered by Merit Pay; incumbent functions as an expert, however, policy is determined at a higher level and & this position does not otherwise meet the definition of a Manager or of a supervisor.

5. Conclusion; Position is classified as civil Engineer, GS 810-13.

Appendix P

Hydraulics & Hydrology Professional Training Plan To Meet Capability Requirements

Hydraulics & Hydrology Professional Training Plan To Meet Capability Requirements

April 2001

1. Training/education for entry-level H&H engineers

- University courses
 - Open channel flow
 - Statistics for engineers
 - Fluid mechanics
 - Hydrology
 - Water resource systems
 - Introduction to Numerical Modeling
- Basic HEC-RAS (PROSPECT)
- Basic HEC-HMS (PROSPECT)
- Introduction to GIS (PROSPECT)
- Effective Writing, Report Writing, or Technical Writing (USDA)
- Basic Communication or Briefing Techniques (USDA)

2. Training journeyman H&H engineers

- University courses
 - Sediment Transport
 - Applied Mathematics

General

- Risk-Based Analysis for Flood Reduction Projects (PROSPECT)
- Flood Frequency Analysis (PROSPECT)
- Hydrologic Engineering Applications for GIS (PROSPECT)
- Interdisciplinary Ecosystem Restoration (PROSPECT)
- Water & the Watershed (PROSPECT)
- Sedimentation Analysis (PROSPECT)
- A-E Contracting (PROSPECT)

Hydrology

- Advanced HEC-HMS (PROSPECT)
- Statistical Methods in Hydrology (PROSPECT)
- Hydrologic Analysis for River and Wetland Restoration (PROSPECT)
- Reservoir Systems Analysis (PROSPECT)

Hydraulics

- Advanced HEC-RAS (PROSPECT)
- Hydraulic Design of Flood Control Channels (PROSPECT)
- Unsteady Flow HEC-RAS (PROSPECT)

- TABS-MD Hydrodynamics (PROSPECT)
- Channel Stabilization (PROSPECT)
- Tidal Hydraulics (Workshop)

Water Control Management

- Real Time Water Control (PROSPECT)
- Hydrologic Data Management with HEC-DSS (PROSPECT)

Coastal Engineering

- Coastal Engineering (PROSPECT)
- Coastal Planning (PROSPECT)

3. Additional training for journeyman H&H engineers depending on assignments/responsibilities

General

- Fundamentals of Wetlands Ecology (PROSPECT)
- Wetlands Development and Restoration (PROSPECT)
- Environmental Restoration Planning and Evaluation (PROSPECT)
- Streambank Protection (PROSPECT)
- Dam Safety (PROSPECT)
- Water Quality Management (PROSPECT)
- Planning for Hydrologic Engineers/Hydrologic Engineering in Planning (PROSPECT)

Hydrology

- Interior Flooding Hydrology (PROSPECT)
- Reservoir System Analysis (PROSPECT)
- Groundwater Hydrology (PROSPECT)
- Groundwater Modeling (PROSPECT)
- Hydrology for Constructed Mitigation Wetlands (PROSPECT)

Hydraulics

- Ice Engineering and River Ice Management (PROSPECT)
- Sediment Transport (HEC-6) (PROSPECT)
- Planning and Design of Deep Draft Navigation Channels (PROSPECT)
- Planning and Design of Shallow Draft Navigation Channels (PROSPECT)
- Pumping Station Design (PROSPECT)
- Hydraulic Design of Outlets and Spillways (PROSPECT)
- Advanced Streambank Protection (PROSPECT)
- Multi-dimensional Numerical Modeling of Sediment Transport (Workshop SED-2D)

Water Control Management

- Corps Water Management System (CWMS) Workshop/User Training
- GIS Intermediate (PROSPECT)
- Management of Hydropower Operations and Maintenance (PROSPECT)

Water Quality

- Engineering and Design of Constructed Wetlands for Water Quality (PROSPECT)

Coastal Engineering

- University Courses
 - Geological Oceanography/Coastal Geomorphology
 - Meteorology
 - Sediment Transport
 - Linear Wave Theory/Wave mechanics
 - Dredging
 - Coastal Structures
 - Coastal Ecology (PROSPECT)
- Coastal Engineering Education Program

Appendix Q

Miscellaneous Actions / Deferred Items

Miscellaneous Actions / Deferred Items

Of the many actions considered by the Task Force, there were several that were considered highly desirable, but less urgent and important than the major recommendations. (Chapter 5 contains a summary of “Actions Considered,” along with the disposition of each item.) The following items are described in more detail below, as potential future actions:

- (1) an expanded role for the technical committees and advisory boards
- (2) technical assistance program for flood control
- (3) measures to increase the usefulness of the Registry of Skills

(1) Expand role of technical committees and advisory boards

An item for future consideration is the expansion of the role of the four H&H technical committees to meet growing needs for a quickly mobilized, technically expert, advisory group as described in below.

Discussion: The four Corps technical committees (Tidal Hydraulics, Channel Stabilization, Water Quality and Hydrology) are unique technical assets vertically cutting across organizational boundaries, providing a framework for valuable coordination between HQ, Labs, MSCs and Districts (see fact sheet attached). This is especially important to HQ, which has become more isolated from the field and is too lightly staffed to provide technical advice/review. The committees define, promote and project the Corps’ H&H vision to the Districts and should be called upon to do the same for outside interests. Advice from the committees is important to HQ and the Labs in tailoring and monitoring research. Consulting to districts fills a special need when other sources such as WOTS and DOTS are not appropriate.

The committees should expand their role to include independent review for Districts; however, current funding is inadequate to accomplish this goal. Technical expertise at the Districts must be used on the committees to compensate for the diminishing technical staff at HQ and MSC. Yet district representation demands a significant increase in funding (labor, travel, and per diem). Since salary and time commitments for the committees are the responsibility of the employing organization, committee members are constrained in their level of participation. As a result, only a modest expansion of the committees’ responsibility is possible within the existing salary/time structure. An expanded role for the committees would require additional resources; funding each of the four committees at \$100K per year out of general expense (\$400K total) would allow for 2-4 additional annual meetings and allow the committees to handle unscheduled “hot button” items.

Within this expanded funding, the committees could act as consultants for HQ and MSC by monitoring the overall health of each of the technical areas they cover. Annually, they could provide HQ/MS information on strengths and weaknesses, recommendations for recognition, identify future training needs, and support research and development.

Committee input should remain advisory and by invitation. To promote the expanded role of the committees, and as a quality initiative to supplement existing District review processes, each

Division Commander should be encouraged by the Director of Civil Works to nominate projects for advisory review by one of the technical committees as part of their annual planning. HQ would then prioritize nominations and assign committee reviews as funds allow.

(2) Strive to establish technical assistance programs in all major business areas, including flood control.

An item for future consideration is the initiation of a HQ working group to recommend ways to establish a technical assistance program for flood control as a beginning to addressing the overall need across all business processes.

Discussion: One of the most important responsibilities of the MSCs and HQUSACE is to assure that adequate engineering support is available to the districts. H&H is a critical element in this support. H&H engineering support are divided into two activities. The first deals with the sharing of the experiences gained by the districts in individual project development and implementation. Increased MSC and HQUSACE awareness of specific project development activities as discussed in other sections of this report can address this responsibility. The second is the identification of new methods and procedures of analysis developed through USACE R&D programs and by others and the transfer of new technology to districts for application in project implementation. In the environmental and dredging areas, centrally funded programs such as Water Operational Technical Support (WOTS) and Dredging Operational Technical Support (DOTS), have proven highly successful over more than ten years in meeting this need. These programs are supported by line item O&M funding and allow for minor maintenance and updating of USACE developed software and provide the districts with a “free” source of assistance in the application of newly developed technology to specific project problems. At present there is not a similar program for flood damage reduction. Recently ERDC proposed such a program, entitled Flooding and Coastal Technical Support (FACTS, see attachment) which would be centrally funded under the GI appropriation. The Task Force believes that establishing such a program is critical to future USACE needs and strongly encourages CECW-E, CECW-P and ERDC work toward identifying appropriate funding and implementing this recommendation.

(3) Measures to increase the usefulness of the Registry of Skills

An item for future consideration is the implementation of measures to make the Registry of Skill more useful to the H&H discipline.

Discussion: The Registry of Skills (ROS) in its current form does not have keywords that adequately cover the range of skills in the H&H discipline. This makes it difficult to locate personnel in any given specialty area. The ROS could be improved by developing and adding a standard list of H&H keywords, and encouraging a wider use by the field. The list of keywords would need to be developed by a group of experienced H&H personnel, with broad experience in the discipline.

CORPS OF ENGINEERS TECHNICAL COMMITTEES FACT SHEET

Authority: ER 15-2-14, 24 April 1992 (copy attached)

Committees and Focus Areas:

- Tidal Hydraulics – channel shoaling, hurricane & coastal storm surges, saltwater intrusion, navigation, etc. in tidal waters
- Channel Stabilization –bank stabilization, erosion control, geomorphology, sediment transport, and open channel hydraulics.
- Water Quality – determination, prediction and control for reservoirs, inland waterways and coastal/estuarine.
- Hydrology – watershed rainfall-runoff modeling, flood routing, project design floods, flow frequency, low-flows, risk, ground water, sediment yield, etc.

Funding: Level funding at \$100K/year for all committees (actually after HQ holdouts, about \$20K each) from general expense. Pays only for some travel/per diem and limited outside consultants. Corps employee labor born by employing organization.

- Objectives:**
- apprise state-of-the-art technology
 - identify problem areas and recommend studies, investigations, and research to provide improved techniques
 - disseminate pertinent information
 - render consulting services on specific problems as requested by various Corps elements
 - participate in guidance development

Committee Activity Matrix: Each committee has evolved in it’s own way to meet it’s particular challenges. The following table attempts to illustrate comparisons in this regard.

Committee:	Tidal Hydraulics (TH)	Channel Stabilization (CS)	Water Quality (WQ)	Hydrology (HY)
Composition:	1 ERD-HE (Chair) 1 ERD-EE 1 WRC-NDC 1 CW-EH (Liaison) 1 CW-OD 1 Div 6 coastal Districts 2 consultants	1 CW-EH 1 CW-OE 1 ERD-EL 3 ERD-CHL (Chair) 2 Div 5 Dist	1 CW-EH (Chair) 1 CW-PO 1 CW-OM 1 HEC 1 ERD-CRREL 1 ERD-E 1 ERD-H All Divisions	1 CW-EH (Chair) 1 CW-P 1 HEC 1 Div 7 Dist

Meetings per year:	Generally 1	Generally 1	Generally 2	Generally 1
Reviews research programs:	Yes, on occasion. Has no specific tidal hydraulics research program area.	Not recently.	Yes	Yes, serves as field review group. HEC-HMS program development.
Recommends new research areas:	Tries but is hampered due to lack of specific tidal hydraulics research program.	Yes to Flood Damage Reduction Research Program	Yes	Yes, serves as field review group
Hosts workshops / conferences:	Not recently. Formerly put on semi-annual TH training course.	Not recently	Yes, WQ Seminar	Urban Hydrology Seminar
Consults on specific District problems	At each annual meeting and through special sub-groups	At each annual meeting and through special sub-groups	Some limited with loaned district/lab expertise	Hydrologic engineering review of selected projects at annual meeting.
Develops guidance:	Authored tidal Hydraulics EM, no recent efforts. Reviewed Coastal EM and Deep Draft Navigation EM	Reviewed EM1110-2-1418 and Hydraulic Design Guidance for Channel Restoration Projects	Authored WQ ER, Hydropower ER and WQ EM since 1990. None recently.	No

Perspective:

- TH, CS and HY committees have much greater District representation than WQ, which uses HQ, Divisions and labs. TH uses outside paid consultants. Labs and HQ are well represented. CS now lacks rep from HQ engineering.
- Meetings, formerly 2-4 per year, have recently been held in general annually primarily due to funding and time constraints.
- WQ and HY have been more active in reviewing and proposing research.
- WQ leads the pack in tech transfer by sponsoring the semi-annual WQ Seminar.
- TH and CS have a much greater focus consulting on specific District problems.
- In the past, HQ identified complex H&H problems during their review of District projects. The committees were often called on to provide advice based on a wide range of Corps of Engineer expertise. Currently, there is no Corps wide entity that is aware of specific

- problems. Committee members identify problem areas, which limits the range to areas that they are familiar with.
- All committees could do more in terms of guidance preparation, monitoring technical health and performance of programs and specialties, recommending management actions, direction and vision to senior leaders (MSC & HQ), if needed.
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- All committees are excellent vehicles for bringing in outside reviewers that are already familiar with Corps missions and functions, so that authoritative reviews can be quickly formulated without spending lots of time getting them up to speed. Consultants also help spread the Corps' message to the public.

Future:

- All committees provide the framework for valuable coordination between HQ, Labs, MSCs and Districts. This is especially important to HQ, which has become more isolated from the field of late and is too lightly staffed to provide technical advice/review.
- The committees serve an excellent roll in defining, promoting and projecting the Corps H&H vision to the Districts and could if called upon do the same for outside interests.
- Advice from the committees is important to HQ and the Labs in tailoring and monitoring research.
- Corps needs to be involved in estuarine H&H research as well as riverine/reservoir and coastal.
- Consulting to districts fills a special need when other sources such as WOTS and DOTS are not appropriate. The committees could do more of this to include independent review for Districts, however current funding prohibits any significant activity in this area. Technical expertise at the Districts must be utilized to compensate for the shrunken technical staff at HQ and MSC offices. District representation demands a significant increase in funding if more consulting is desired.
- More use of District folks on committees would require paying labor as well as travel/per diem. Since all salary expenses and time commitments for committee business is the responsibility of the employing organization, committee members are constrained in their level of participation. Thus, it would be unreasonable to greatly expand committee's responsibility within existing salary/time constraints.
- Any expanded role for the committees would require more funds, say in the order of \$100K/committee/yr, as current funding is a limitation.
- Vertical integration of H&H in the Corps is possible using the committee framework as one avenue of attack.
- An effective role for the committees would to be to act as consultants for HQ and MSC to monitor the overall health of each of the technical areas they cover. They could provide HQ/MSC information on an annual basis of corporate performance, recommendations for recognition, point out weaknesses, identify future training needs, support research and development, etc., recommendations for recognition, point out weaknesses, identify future training needs, support research and development, etc.
- Committee input has been advisory in nature and delivered only upon request and should remain so.
- As a quality initiative to supplement existing District review processes, annually, each Division Commander should be encouraged to nominate at least one project for advisory

review by one of the technical committee. HQ will prioritize nominations and assign committee reviews as funds allow. Provision must also be made to allow for unscheduled committee services relating high priority problems that come up unexpectedly.

- In the past, HQ has nominated committee members with concurrence of their employing organization. Due to the decreased role of HQ in committee activities, it is recommended that 1) HQ appoint the committee chairman, and 2) nominations for new committee membership be the responsibility of the existing committee members themselves. Letters of nomination would continue to be sent to the nominated member's supervisor by HQ.

APPROPRIATION TITLE: General Investigation, FY 2002

1. FLOOD AND COASTAL STORM DAMAGE REDUCTION

- a. Flood and Coastal Storm Damage Reduction, Emergency Management, Water Supply

Flooding and Coastal Technical Support (FACTS) Program

SUMMARIZED FINANCIAL DATA

Allocation for FY 2001	\$ 0
Allocation for FY 2002	\$1,000,000

AUTHORIZATION: Under basic project authority in conjunction with general authorities contained in various laws.

JUSTIFICATION: Assuring that the Nation's flood damage reduction and storm damage reduction projects are utilizing the latest state-of-the-art technology throughout the life cycle of each project is of utmost importance. Utilization of the latest technology in flood and coastal storm damage reduction projects reduces overall project costs, improves effectiveness, and enhances both project functionality and the ecosystem. The Flood and Coastal Technical Support (FACTS) Program provides comprehensive and interdisciplinary technology transfer, technology application, and necessary training for all Corps flood damage and storm damage reduction projects. FACTS is managed as a centralized program to maximize cost effectiveness and assist in implementing the Nation's policies, laws and regulations and complex technical application in a consistent manner for all watersheds, river basins, coasts and shorelines. The FACTS program provides a means for rapid and efficient application of latest state-of-the-art technology and research results to field problems. FACTS provides immediate access to an up-to-date technology base assuring rapid response as technical issues arise promoting consistency and sound engineering management for all flood and coastal storm damage reduction projects. Short-term work efforts to address generic Corps wide technical problems for application to Corps flood damage and coastal storm damage reduction projects is an important FACTS program activity. The FACTS program encompasses study and evaluation processes and the associated infrastructure with flood damage and coastal storm damage reduction projects. In response to new research results and continuing staff reductions, the FACTS program will provide technology support to all flood damage and storm damage reduction projects in FY 2002.

MAJOR FEATURES: Special emphasis is placed on transfer of technology developed by the Corps and others that deal with the life cycle of flood damage and storm damage reduction projects. Typical technology transfer includes innovative spillway capacity and dam gates design and operation technology, channel restoration technology, beach fills, coastal armoring and erosion control technologies, risk based technologies applied to all components of flood damage and storm damage reduction projects, river stabilization and training and shore protection technologies, numerical simulation techniques for rivers, inland flood plains and coastal storm areas, protection of threatened and endangered species and innovative techniques for reducing problematic watershed erosion , sediment transport and shoaling in streams, rivers and in the coastal zone.

Training of Corps staff, cost sharing sponsor staff and others who have responsibility for flood damage and storm damage reduction projects on the latest environmental and engineering techniques associated with the life cycle of flood damage and storm damage reduction projects is an vital link to the success of these projects. Typical training will consist of the following; enhancement of project feature and performance evaluation; utilization of interagency coordination to assure use of latest technologies; system-scale impacts assessments; latest technology available for determining EPA standards for TMDL's for watersheds and streams, fluvial geomorphic aspects of altering channels and/or restoring channel systems by integration of ecosystem restoration into the flood damage reduction projects; dredging and dredged material disposal practices as they apply to inland and coastal flooding; technology transfer of new and emerging techniques used to determine compliance with environmental protection statues regarding sediment management for flood damage and/or coastal storm damage reductions; jointly developed technical manuals with EPA and others that implement compliance guidance for streams, rivers and coastal areas; utilization of optimization techniques for use in river basins with multiple water control structures.

Technology Support Program (Existing vs. Proposed)

