US Army Corps
of Engineers®
Water Resources Support Center
Institute for Water Resources

An Examination of Planning Chief Views and Preferences for the Use of Centers of Expertise in Planning

DISTRIBUTION STATEMENT A
Approved for public release;
Distribution Unlimited

19970609 015

DTIC QUALITY INSPECTED 8

An Examination of Planning Chief Views and Preferences for the Use of Centers of Expertise in Planning

Prepared for
HQUSACE Planning Division
by
Richard Whittington
Institute for Water Resources
Programs Analysis Division
Casey Building
Alexandria, VA 22315

December 1996

IWR Report 96-R-19

DTIC QUALITY INSPECTED 3

THIS PAGE INTENTIONALLY LEFT BLANK

TABLE OF CONTENTS

Section I. Introduction 1

Section II. Summary of Centers 7

Section III. Current Levels of Planning Expertise 13

Section IV. Survey Findings 25

Section V. Current and Alternative Models for CXs 31

SectionVI. Conclusions 39

Appendix A. List of Respondents 45

Appendix B. Survey Questionnaire 51

Appendix C. Detailed List of Corps Centers of Expertise 57

Tables:

Table 1. Centers Of Expertise Summary 9

Table 2. Listing of Centers of Expertise Used in Planning Operations 10

Table 3. Types of Planning Activities by Business Functions 14

Table 4. Summary of Benefits and Drawbacks of Current and Alternative Models for CXs 35

Figures:

Figure 1. GI Funding for CW Planning FY 95 - 98 21

Figure 2. Change in CW Planning GI Funding Levels by Division FY95 - 98 22

Figure 3. Differences in CW Planning FTEs/Year (FY95-98). 22

Figure 4. Percentage change in CW Planning FTE levels by Division FY95-98 23

THIS PAGE INTENTIONALLY LEFT BLANK

AN EXAMINATION OF PLANNING CHIEF VIEWS AND PREFERENCES FOR THE USE OF CENTERS OF EXPERTISE IN PLANNING

I. INTRODUCTION

As part of the FY 96 Civil Works goals process, the Director of Civil Works has directed that the CW Planning Division examine the use of centers of expertise (CX) in planning. The focus on centers of expertise reflects the fact that the Civil Works program is currently faced with the reality of declining resources, the erosion of the planning experience base, and an uncertainty about the future scope of CW missions. In this environment, the ability to maintain a full service planning capability in every district office may not be feasible. The focus of this study is to examine the views and preferences of planning chiefs about centers of expertise as they are, and might be used, to support planning activities.

BACKGROUND

Various Engineer Regulations assign responsibilities to specified field offices in order to provide and perform functions on a Corps-wide basis. The designated office may be considered the "lead activity" in a specialized area where either capability needs to be concentrated for maximum effectiveness or the office is designated to provide a service for the sake of economy and/or efficiency for the Corps. Maintaining a competent level of expertise for a particular function, in many cases, is not feasible on the district level; there must be sufficient work present in a district in order to justify maintaining that capability. A more effective method of preserving expertise is to consolidate it and make it available to all CE commands as needed[1]. In addition, consolidation of expertise within a CX provides continuity and consistency in methodology and design within the Corps.

TYPES OF CENTERS OF EXPERTISE

Throughout the Corps numerous shops have been identified as having specialized knowledge and skills in specific areas. These CXs exist as bodies of knowledge which specialize in various subject areas. In addition to the "authorized" categories presented below, several other possibilities are offered. These options are examined in greater detail in section V, "Current and Alternative Models."

---

[1] CEMP-ET Memorandum dated 20 November 1995, Subject: Disposition of the Military Programs Mandatory Centers of Expertise, para. 4. Factors supporting the establishment and/or maintenance of a Center of Expertise.

Traditional/Authorized Centers of Expertise Categories (Current)[2]

- A *Mandatory Center of Expertise (MCX)* is a command or organization that has been approved by HQUSACE as having a unique or exceptional technical capability in a specialized subject area that is beneficial to other USACE commands. USACE commands are mandated to use the designated services rendered by the MCX by regulations or other authorized policy documents. Examples of MCXs include the Hydroelectric Design Center, the Hazardous, Toxic and Radioactive Waste Center, Marine Design Center, etc.

- A *Technical Center of Expertise (TCX)* is a command or organization that is designated by HQUSACE as having expertise and/or exceptional technical capability in a specialized subject area that is beneficial to other USACE commands. The design services or technical assistance rendered by a TCX to USACE commands are advisory. Examples of TCX include Coastal Shore Protection Planning, Preservation of Historic Structures and Buildings, Mechanical Energy Systems, Photogrammetric Mapping Center, etc.

- A *Support Center (SC)* is a portion of a Corps research laboratory or a command that is designated by HQUSACE as having a state-of-the-art competence in a specified subject area. Examples of some of the support centers include the Concrete Technology Center, the Library Cataloging Center, The Institute for Water Resources, the Navigation Data Center, etc.

- A *Center of Standardization (COS)* is a USACE command organization that is responsible for developing Department of the Army standard design packages for specific types of Army facilities. The COS is also responsible for tracking and monitoring the use of those design packages. COSs include Aviation Maintenance Hangar Design (CEHND), General Purpose Warehouses (CENPS), Child Development Centers (CEHND), Enlisted Personnel Dining Facilities (CENAO), Hazardous Material Storage Facilities (CEHND), etc.

[2] EC 5-1-49, Corps-Wide Centers of Expertise, CECW-EG.

Alternative Models

Presented below are other models that can be considered alternative organizations to the traditional centers of expertise organization. These are examined in greater detail in section V, Current and Alternative Models for CXs.

- A *Regional Center of Expertise (RCX)* is a command or organization that is recognized as having a unique or exceptional technical capability in a specialized subject area that is beneficial to other USACE commands within a specified region.

- *Virtual Center (VCs)* are centers where technical and information services can be obtained through the internet.

In general, CXs are sought by district planning divisions when special consultation, assistance, and expertise are needed for tasks or functions which are not available in-house, are not normally available through a contractor, or which require a Corps-specific methodology. Other factors which contribute to the use of a CX include regional need or requirements, cost constraints, and district workload.

STUDY OBJECTIVES AND TOPICS

The objective of this study is to explore the views of planning chiefs as to when and under what circumstances centers of expertise can be appropriate ways of addressing CW planning needs in the resource constrained and uncertain future environment likely to be facing the Corps Civil Works program.

To address this objective the study focuses on obtaining planning chiefs' views on to several key questions:

1. What are existing centers of planning expertise?
   How are they used?
   How are they structured?
2. What is the current state of the CW planning enterprise? What is the trend?
   Funding, FTEs, studies
   Use of planners (CW vs. other studies/activities)
3. What is the current planning expertise base in the Corps for CW mission areas?
4. What are likely future CW planning needs (study execution/technical review)?
5. What are alternative models for planning centers of expertise?
   Alternatives to include:
   Traditional centers (as described above).

Alternative centers.
Other Alternatives (described in Section V, Current and Alternative Models)
-contracting,
-virtual centers,
-division brokering of district services.

6. Pros and Cons of use in planning
   Flexibility - adaptability to new planning needs and requirements
   Quality products
   Customer satisfaction
7. What recommendations can be made: when and under what circumstances are the various alternative models most appropriate?

DESCRIPTION AND SCOPE OF STUDY

Information to address each of the study questions was obtained from a telephone survey of Corps Planning Chiefs. In addition, a FORCON database search, and a search of related regulations, circulars and memos, were used to provide supplemental information used in this report.

Planning Chiefs Survey

A survey of all chiefs of planning (and designees) at the district and division level was conducted to determine field-level perceptions of the planning program in general and also to gather opinions on centers of expertise as they are used for planning activities (see appendix A for list of respondents). Each district and division planning chief was questioned by telephone. The questionnaire used for the survey consisted of 22 open-ended questions, some with multiple parts (see appendix B). The topics covered in the survey were directed to gather information about the current and projected condition of the planning program, opinions and experiences with using CXs, and thoughts on how planning program business functions could be improved. Survey findings are presented in section IV.

FORCON Database

The FORCON (Civil Program Civilian **Force Con**figuration and Management) database was used to gather information on present and future FTEs and budget conditions of the planning program. The FORCON database is used by the Civil Works Directorate as a tool to develop its civil works manpower resource requirements and to determine FTE work year allocations for USACE commands. The main function of this database is to develop estimates the manpower (FTEs) needed to complete work on schedule. In addition to manpower requirements, FORCON also contains information on current and projected budget

distributions. The FTE and budget information contained in FORCON is normally presented over a period of six years, however, because of special circumstances, the version used for this study only contains information from 1995 through 1998 (the most complete information available at this time).

STRUCTURE OF THE REPORT

A summary of the types CXs used by planning in the Corps is presented in Section II. Provided in this summary is a breakout of proponent sponsors and CX commands. Section III, "Current State of Expertise," includes an overview of the scope of planning activities and a look at GI and FTE planning resource trends. Results from a survey on the perceptions of planning by district and division planning chiefs is presented in Section IV. Section V lists the benefits and drawbacks of CX models in planning applications. Lastly Section VI presents study findings and conclusions as answers to the original study questions.

THIS PAGE INTENTIONALLY LEFT BLANK

II. SUMMARY OF CENTERS OF EXPERTISE

Table 1 shows the current distribution of CXs broken down by the Corps Directorate with management oversight for the center. The six proponents of these centers are Chief Counsel (CECC), Information Management (CEIM), Real Estate (CERE), Resource Management (CERM), Civil Works (CECW), and Military Programs (CEMP). Of the 99 approved Corps CXs, the majority are support centers (42), followed by centers of standardization (26), technical centers (20), and lastly, mandatory centers (11). Most of these centers are managed by Military Programs (54 centers), followed by Civil Works (24 centers). The remaining proponents (information management, resource management, counsel, and real estate) manage a total of 21 centers. For Civil Works, fourteen are support, six are technical, four are mandatory. There are no CW centers of standardization.

Table 2 lists those CXs likely to be used most often in planning operations (appendix C provides a detailed listing of all CXs in the Corps). The planning use designation of these centers is based upon the following categories:

Centers that deal directly with planning (direct applicability)
- -Anadromous Fishery Planning
- -Coastal Shore Protection Planning
- -Inland Navigation Planning

Centers indicated by planning chiefs as being used in planning applications (common usage)
- -Waterways Experiment Station
- -Hydrologic Engineering Center
- -The Institute for Water Resources
- -Hazardous, Toxic, and Radioactive Waste
- -Hydropower System - Economic Evaluation
- -Hydroelectric Design Center

Centers considered appropriate for planning based on interviews with planning chiefs about their operations (appropriate usage)
- -Management and Curation of Archeological Collection Center
- -Marine Design Center
- -Photogrammetric Mapping Center
- -Preservation of Historic Structures and Buildings
- -Construction Equipment Manual/Cost Database

-Cost Engineering Support Center
-Engineering Guidance Support Center
-Natural, Cultural, and Environmental GIS Applications on Military Installations
-Navigation Data Center
-Subsurface Exploration Center
-Survey Engineering and Mapping Center
-Tri-Service CADD/GIS Technology Center
-Water Resources Remote Sensing/GIS Technology Center

Even though CW planning operations primarily use those centers that are operated by CW they also have the option and the availability to utilize centers from other directorates, namely Military Programs (see also Appendix C: Detailed Listing of Centers of Expertise): centers maintained by other directorates which are not listed in Table 2 are also appropriate for use by planning (e.g., centers operated by real estate for land acquisition strategies - refer also to Table 3, "Types of Planning Activities by Business Functions").

Table 1. Centers Of Expertise Summary

DIRECTORATE	MANDATORY CENTERS OF EXPERTISE	TECHNICAL CENTERS OF EXPERTISE	CENTERS OF STANDARDIZATION	SUPPORT CENTERS	TOTAL
CECC	0	0	0	2	2
CECW	4	6	0	14	24
CEIM	0	0	0	8	8
CEMP	7	13	26	8	54
CERE	0	1	0	8	9
CERM	0	0	0	2	2
TOTAL	11	20	26	42	99

Table 2. Listing of Centers of Expertise Used in Planning Operations (arranged by CX category)

MANDATORY CENTERS OF EXPERTISE (MCX)			
HQ PROPONENT	CENTER DESIGNATION	ASSIGNED COMMAND	APPLICABILITY
CEMP	HAZARDOUS, TOXIC & RADIOACTIVE WASTE (HTRW)	CEMRD	COMMON USAGE
CECW	HYDROELECTRIC DESIGN CENTER	CENPD	COMMON USAGE
CECW	HYDROPOWER SYSTEM - ECONOMIC EVALUATION	CENPD	COMMON USAGE
CECW	MANAGEMENT & CURATION OF ARCHEOLOGICAL COLLECTION CENTER	CELMS	APPROPRIATE USAGE
CECW	MARINE DESIGN CENTER	CECW-O	APPROPRIATE USAGE
TECHNICAL CENTERS OF EXPERTISE (TCX)			
HQ PROPONENT	CENTER DESIGNATION	ASSIGNED COMMAND	APPLICABILITY
CECW	ANADROMOUS FISHERY PLANNING	CENPW	DIRECT
CECW	COASTAL SHORE PROTECTION PLANNING	CESAJ, CESPL	DIRECT
CECW	INLAND NAVIGATION PLANNING	CEORH	DIRECT
CECW	PHOTOGRAMMETRIC MAPPING CENTER	CELMS	APPROPRIATE USAGE
CEMP	PRESERVATION OF HISTORIC STRUCTURES AND BUILDINGS	CENPS	APPROPRIATE USAGE
CENTERS FOR STANDARDIZATION (COS)			
HQ PROPONENT	CENTER DESIGNATION	ASSIGNED COMMAND	APPLICABILITY
CEMP	HAZARDOUS MATERIAL STORAGE FACILITIES	CEHND	COMMON USAGE

SUPPORT CENTERS (SC)			
HQ PROPONENT	CENTER DESIGNATION	ASSIGNED COMMAND	APPLICABILITY
CECW	CONSTRUCTION EQUIPMENT MANUAL/COST DATABASE	CENPW	APPROPRIATE USAGE
CECW, CEMP	COST ENGINEERING SUPPORT CENTER (CACES)	CEHND	APPROPRIATE USAGE
CECW	ENGINEERING GUIDANCE SUPPORT CENTER (EGSC)	CEWES	APPROPRIATE USAGE
CECW	HYDROLOGIC ENGINEERING CENTER	CEWRC	APPROPRIATE USAGE
CECW	INSTITUTE FOR WATER RESOURCES (IWR)	CEWRC	APPROPRIATE USAGE
CECW, CEMP	NATURAL, CULTURAL, AND ENVIRONMENTAL GIS APPLICATIONS ON MILITARY INSTALLATIONS	CECER	APPROPRIATE USAGE
CECW	NAVIGATION DATA CENTER	CEWRC	APPROPRIATE USAGE
CECW	SUBSURFACE EXPLORATION CENTER	CESAM	APPROPRIATE USAGE
CECW	SURVEY ENGINEERING & MAPPING CENTER	CETEC	APPROPRIATE USAGE
CEMP, CECW	TRI-SERVICE CADD/GIS TECHNOLOGY CENTER	CEWES	APPROPRIATE USAGE
CECW	WATER RESOURCES REMOTE SENSING /GIS TECHNOLOGY CENTER	CECRL	APPROPRIATE USAGE

THIS PAGE INTENTIONALLY LEFT BLANK

III. CURRENT LEVELS OF PLANNING EXPERTISE

THE PLANNING PROGRAM AND OPERATIONS

Planning organizations at the district and MSC level perform the vital planning activities that are a necessary part of Corps operations. Even though "plan formulation," the core of planning, can be narrowly defined, planning activities can not; the scope of "planning" is very broad. Planning includes the formulation, evaluation, and coordination of studies of Corps projects and the incorporation and revision of concerns of the Corps and other parties. Planning occurs in several types of projects (e.g., development, construction, maintenance, rehabilitation, improvement) and addresses a variety of national, regional, and local needs (e.g., navigation, water supply, flood and storm damage protection, shore protection, hydroelectric power, recreation, water supply, emergency management, environmental improvement, and mitigation).

Table 3 presents a listing of activities that are associated with planning, as determined from ER 1105-2-100, and interviews with planning chiefs. Although not exhaustive, this matrix organizes the tasks that commonly occur in planning for projects in each of the Corps "business functions" into several basic categories of planning activities - plan formulation, economic, and environmental evaluation. The matrix that is thus generated in Table 3 illustrates the breadth of planning activities that can be expected to take place in a full service district.

TABLE 3. TYPES OF PLANNING ACTIVITIES BY BUSINESS FUNCTIONS

BUSINESS FUNCTIONS		Formulation	Economic Evaluation	Environmental Evaluation
Navigation	*Inland*	-Problem identification -Scoping -Government coordination -Study management -Report writing -Plan formulation -Team leaders -Risk analysis -Conditions analysis and assessment -Report technical review -Windfall benefit analysis	-Traffic demand studies -Cost estimates -Alternative transport assessment -Transport impact -Inland harbor assessment -Data gathering and analysis	-Species inventories -NEPA requirements -HTRW/testing -EPA/State coordination -Wetlands mitigation -Anadromous fish -Ecosystem impact studies -Cultural resources
	Coastal		-Traffic forecasting -Fleet assessment -Harbor needs assessment -Commodities forecasting -Data gathering and analysis	-NEPA requirements -HTRW/Testing -EPA/State coordination -Wetlands mitigation/restoration -Dredge disposal -Cultural & historic resources

Business Functions		Formulation	Economic Evaluation	Environmental Evaluation
Flood and Storm Damage	*Agricultural*	-Problem identification -Scoping -Government coordination -Study management -Report writing -Report technical review -Plan formulation -Team leaders -Risk analysis -Conditions analysis and assessment -Land acquisition -Discharge frequency calculations -Rail modifications -Infrastructure reinforcement -Flood insurance plans -Regulatory constraints/ Regulation of flood plain uses -Beach use regulations -Shore ownership issues -Land acquisition / real estate issues -Windfall benefit analysis	-Crop loss studies and projections. -Frequency curves -Annual damages -Mitigation studies -Economic impact projections	-NEPA requirements -HTRW/testing -Groundwater impact assessment -Regional regulatory review and compliance -Regional regulatory interaction -Public involvement -Cultural and historic resources -Run-off control analysis -Wetland impact and mitigation -Interior drainage evaluations -Levee residual drainage estimation -Interagency coordination -Water quality impacts
	Urban		-Flood damage assessments -Frequency curves -Annual damages -Structural/nonstructural mitigation -Economic growth projections -Cost sharing agreements -Permanent evacuation studies	-NEPA requirements -Flood protection at urban renewal projects -Urban flood damage estimates -Flood protection at urban renewal projects -Groundwater induced damages -Stormwater/sewer evaluations -Stormwater impact on aquatic ecosystem -Flood damage reduction channels -Public involvement -Interagency coordination
	Coastal		-Shore damage estimates -Economic benefits estimates -Protection costs estimates -Storm damage / local economic impacts -Frequency curves -Annual damage estimates -Cost sharing agreements	-NEPA requirements -Coastal erosion impacts -Public involvement/public coordination -HTRW of beach fill -Coastal marsh/wetland impact assessment and mitigation -Environmental impact of beach use -Park and conservation area alternatives

BUSINESS FUNCTIONS	Formulation	Economic Evaluation	Environmental Evaluation
Hydropower	-Problem identification -Scoping -Government coordination -Study management -Report writing -Technical review of reports -Plan formulation -Team leaders -Risk analysis -Conditions analysis and assessment -Future demand estimation -Pumped storage -Base system generating resources definition -Load/resource difference evaluation -Capacity value estimation -Energy value calculations -Public involvement -Utility coordination	-Power demand projections -Estimation of annual benefits -Economic justification evaluation -Estimation of annual benefits -Estimation of financial feasibility -Estimation of industry prices -Evaluation of price relationships -Computation of non-structural measures.	-Species inventories -NEPA requirements -HTRW/testing -EPA/State coordination -Wetlands mitigation -Anadromous fish -Ecosystem impact studies -Cultural and historic resources -Water quality impact -GW impact -Aquatic ecosystem impact -Pollution reduction estimations
Environmental	-Problem identification -Scoping -Government coordination -Study management -Report writing -Technical review of reports -Plan formulation -Team leaders -Risk analysis -Conditions analysis and assessment -Public access issues -Significant effects determination -Land acquisition	-Incremental costs analyses -Computation of recreation benefits -Alternative plans costs -Local economic impact -Resource assessments -Benefits and costs identification and quantification	-NEPA requirements -HTRW/Testing -EPA/State coordination -Wetlands mitigation/restoration -Cultural and historic resources

Business Functions	Formulation	Economic Evaluation	Environmental Evaluation
Recreation	-Problem identification -Scoping -Government coordination -Study management -Report writing -Technical review of reports -Plan formulation -Team leaders -Risk analysis -Conditions analysis and assessment -Proposed recreational development impacts -User demand estimates -Facility improvement estimations -Recreation and commercial navigation improvements -Recreation use forecasting -Public involvement/outreach -Land acquisition for development -Land acquisition for future use -Study area delineation -Study area capacity estimation	-Travel cost estimations -Contingent valuation estimations -Loss/gain valuation in site -Willingness to pay -Local economy impacts -Risk and uncertainty analysis -Reallocation of storage costs/impact analysis -Economic impacts on existing recreation resources	-NEPA requirements -Endangered species analysis -Water quality impacts -Erosion mitigation measures -Human impact on environment -Shore protection -Public awareness -Ecosystem protection issues -State/local interaction -Environmental impact mitigation plans

Business Functions	Formulation	Economic Evaluation	Environmental Evaluation
Emergency Management	-Problem identification -Scoping -Government coordination -Study management -Report writing -Technical review of reports -Plan formulation -Team leaders -Risk analysis -Public involvement -Conditions analysis and assessment -Representative on the regional planning group -Participates in the Emergency Water Planning program -Reviews emergency procedures for projects -Regional hazard mitigation team -Report preparation for emergency activities -Project emergency funding review -Development of master scenario events list -Coordinates with state and local emergency agency contacts	-Review of projected emergency operations budget -Analysis of incident budgets -Budget projections for exercises -Shore protection /mitigation budgets -Incident economic impact studies -Determines district readiness funding requirements	-Review of impacts of emergency and exercise procedures -Water quality impact studies (F&H) -Coordination with EPA -Public participation -Emergency drinking water preparation -Coastal ecosystem impacts -Environmental impacts -Flood and Hurricane environmental impact projections -Mitigation plans -Review of post-flood damage and rehabilitation

BUSINESS FUNCTIONS	Formulation	Economic Evaluation	Environmental Evaluation
Water Supply	-Problem identification -Scoping -Government coordination -Study management -Report writing -Technical review of reports -Plan formulation -Team leaders -Risk analysis -Public involvement -Conditions analysis and assessment -Storage estimations -User needs forecasting (D,I&M) -Water right issues -Future use determinations -Recharge estimations -Water contract issues -Land acquisition issues -Reallocation studies/forecasting -Storage addition feasibility -Surplus water issues -Irrigation demands -Use in recreation	-Water supply benefit estimates -Storage costs -Replacement costs -Financial feasibility studies -Annual operating costs -Future maintenance costs -Rehabilitation costs -Cost accounts identification -Payment estimations	-NEPA requirements -Water Quality impacts -GW impacts -F&W inter action -Fill/dredge disposal and testing -Wetland creation/impact issues -Watershed impacts -Stream flow impacts -Historical/cultural issues -Local involvement/outreach

PLANNING PROGRAM TRENDS (FORCON DATABASE)

A search of the FORCON (Civil Program Civilian Force Configuration and Management) database was performed in order to gain insight into the current and projected resource trends of the planning program. The FORCON database contains data collected from the field concerning funding and manpower requirements from previous years and the future. Past records for manpower and funding are accurate. Future projections, however, reflect intended or requested resource allocations and are subject to revisions as the calendar progresses. Nevertheless, an examination of FORCON can give valuable information on resource conditions and trends of the planning program. The Corps has a number of programs, derived from various congressional authorities, to undertake a wide variety of studies and provide other services in the interest of developing and managing certain segments of the Nation's water resources. The two parameters that were examined in FORCON include funding contributions allocated from General Investigations (GI), and Full Time Equivalents (FTEs).

GI Funding

Budgetary constraints over the past several years have resulted in heightened concern in funding sources. One significant funding source of particular interest which helps support some planning operations is the GI program. GI funds are mainly used to conduct reconnaissance and feasibility studies for projects that a district is involved in. Over the past several years GI funding for CW planning has decreased thus generating concern over the future of GI funds and how to program for them.

The FORCON data for the years FY 95-98 (Figure 1) indicate a steady decline in the GI funding portion for the CW planning program (a change of -6.25%). Additionally, even more significant reductions (a change of -29%) are forecast for the planning budget as a whole (i.e., all account funds budgeted for planning).

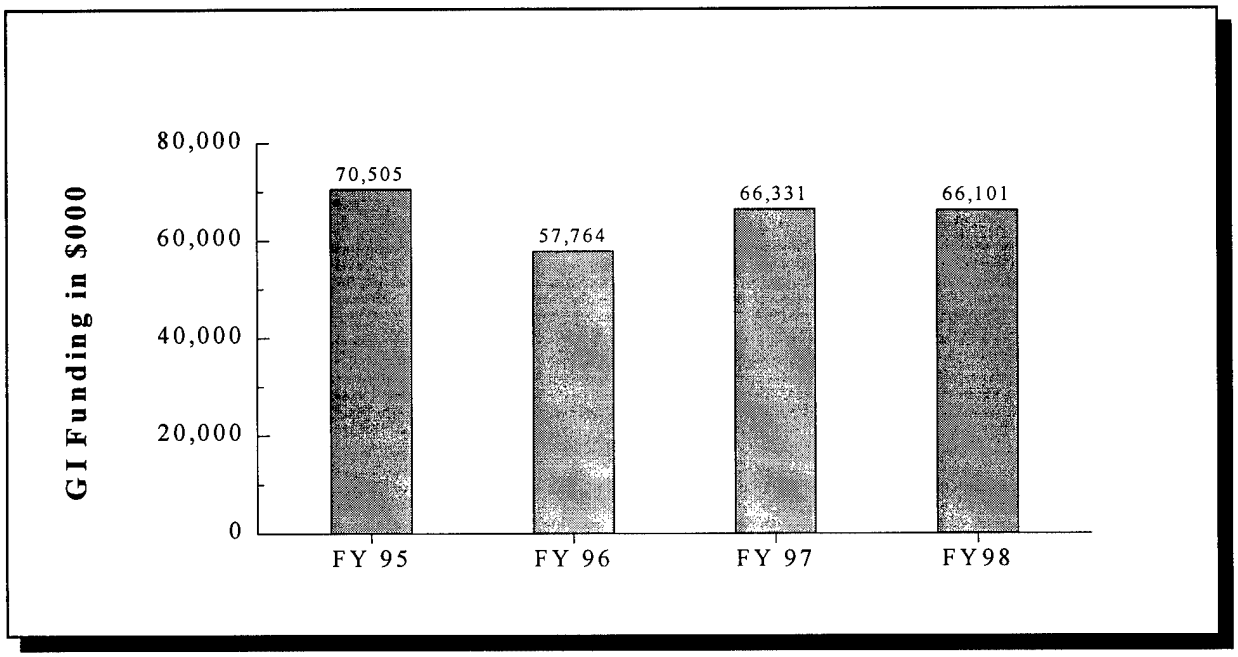

Figure 1. GI Funding for CW Planning FY 95 - 98

A breakout by divisions reveals a more dynamic pattern (Figure 2). Of the eleven CW divisions, seven are anticipated to experience reductions for their 1998 program budgets. Conversely, four divisions have and will continue to experience increases in their GI funding even as their total budget decreases. Almost all of the divisions have GI budgets programmed for FY97 and FY98 that take up greater percentages of the overall budget. This seems to be the general pattern; reductions in total budgets and GI activities, yet a percentage increase of the total budget going towards GI activities.

FTEs

Overall, the Corps is expected to experience a reduction in FTEs (Figure 3). The planning organization as a whole is currently projected to decrease by 268 FTEs[3] by 1998 (compared to 1995). A breakout by major subordinate commands shows the same trend (Figure 4). Nearly all are expected to encounter FTE reductions. Only POD will experience a slight increase in FTEs. Divisions will average a reduction of about 25 FTEs apiece (change of -17%). The greatest percent reduction in FTEs will occur in NED (-38%), SAD (-26%), and ORD (-23%). All other divisions will experience more moderate reductions.

[3] FTEs are calculated differently from division to division. Different numbers of FTEs can represent the same level of funding between divisions.

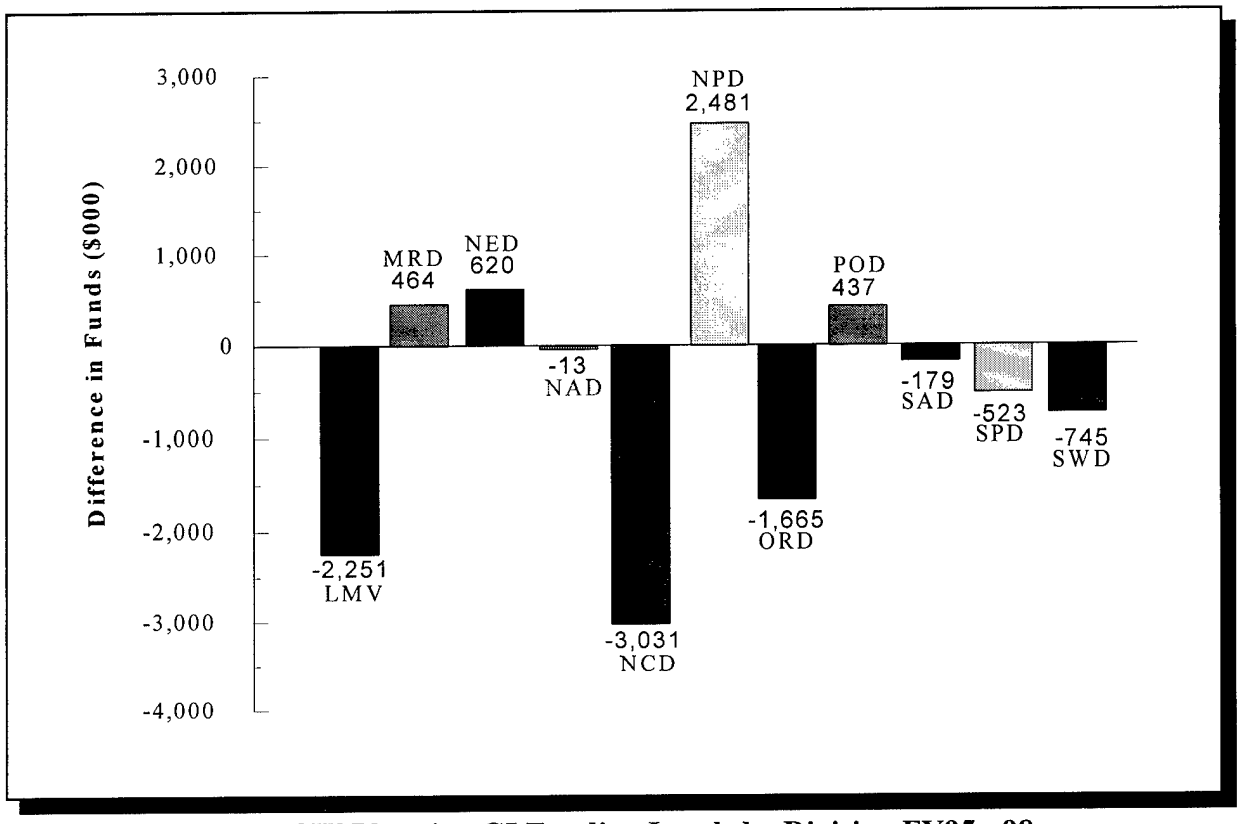

Figure 2. Change in CW Planning GI Funding Levels by Division FY95 - 98

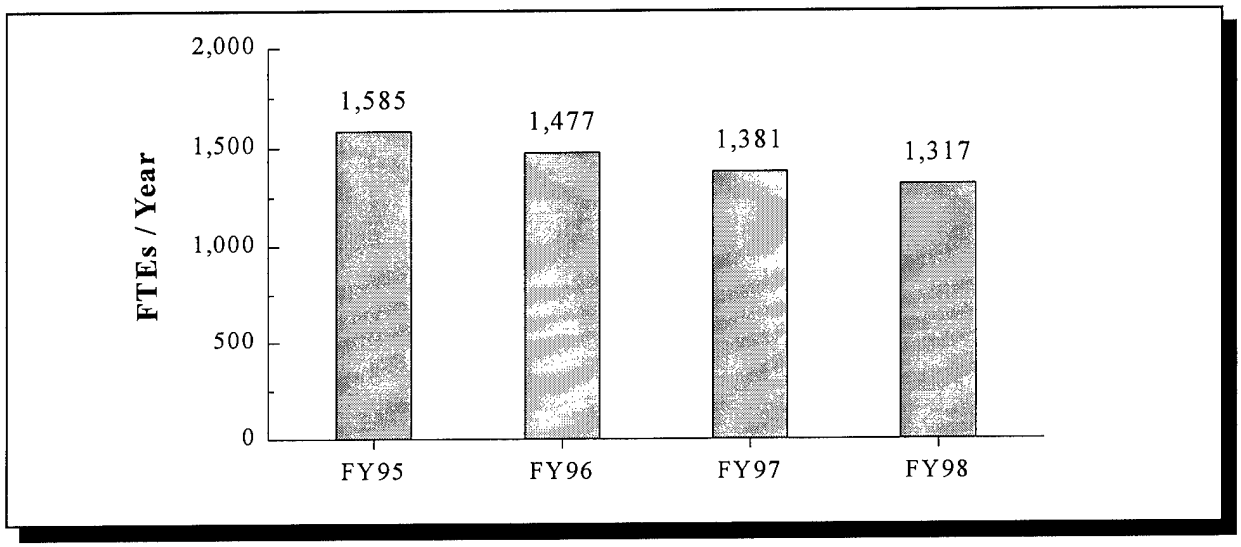

Figure 3. Differences in CW Planning FTEs/Year (FY95-98)

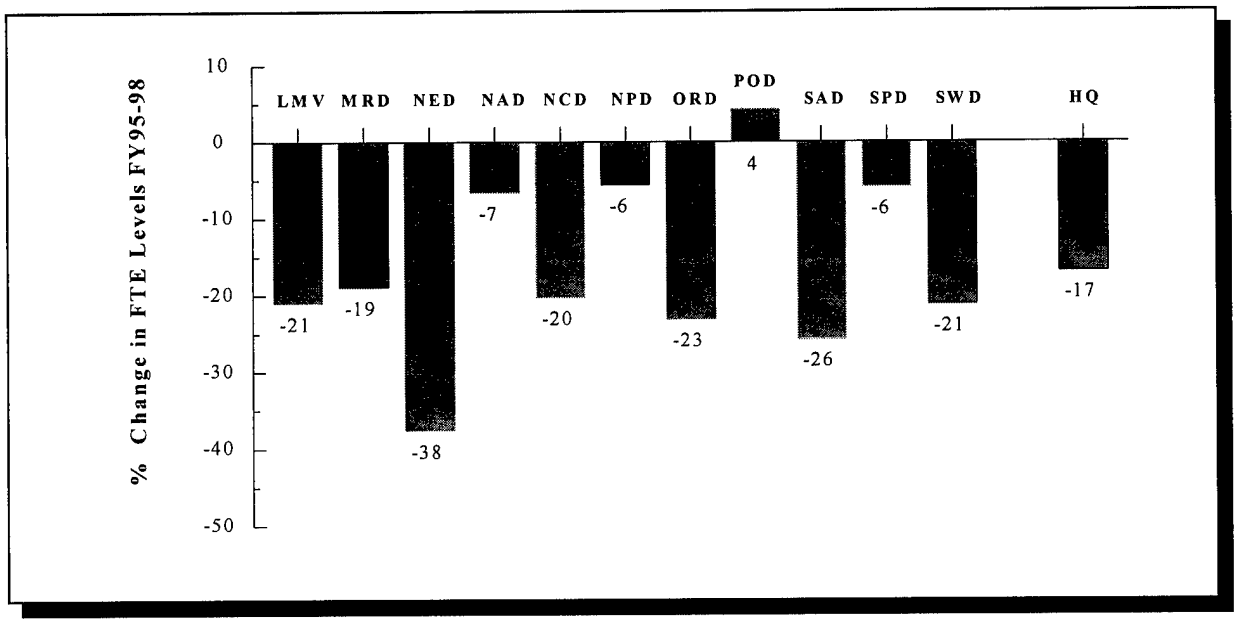

Figure 4. Percentage change in CW Planning FTE levels by Division FY95-98

Conclusions

Overall, it can be seen that the planning division in the Corps will experience reductions in both GI funding and FTEs. Observations and comments of survey participants support these findings (see Section IV, Survey Findings). Of those that are experiencing reductions, some are optimistic that with the right budget programming and justification, financial support of programs can be secured. Others however, foresee a continuing decline in resources.

THIS PAGE INTENTIONALLY LEFT BLANK

IV. SURVEY FINDINGS

The survey portion of this study consisted of telephonically interviewing all of the Chiefs of Planning on the district and division levels (this includes 11 division and 36 district chiefs of planning). Their perspectives, experience, and opinions were sought in order to get a more thorough understanding of the planning program as a whole and how CXs could best be utilized. The survey questionnaire consisted of 22 open-ended questions and was broken down into the following topics:

- how CXs are defined or understood,
- how CXs are being used for planning,
- the current state of planning expertise in the districts,
- challenges facing planning in the future,
- opinions of the current and alternative models of organization for CXS,
- and problems and recommendations for CW planning in the future.

The findings that are presented below consolidates responses for each of the above topics. Because these questions were open-ended, the tabulation of the types of responses to specific questions could not be performed within the time limits of this study.

DEFINITIONS

- Respondent's definitions of a "center of expertise" is generally consistent across the board. Nearly all the respondents met a generic definition of a center of expertise (a body of persons with specialized knowledge in a specific area that provide technical information and assistance to districts).

USE OF CXS FOR PLANNING FUNCTIONS

- Use of CXs varies across the board. Some use them on a frequent basis and others hardly at all. Additionally, some centers seem to be used regularly:

  -Waterways Experiment Station, Vicksburg, MS,
  -Hydrologic Engineering Center, Davis, CA,
  -Hydroelectric Design Center, CENPD,
  -The Institute for Water Resources, Alexandria, VA
  -Hazardous, Toxic, & Radioactive Waste, CEMRD and,
  -Hydropower System - Economic Evaluation, CENPD.

- Respondents indicated that they mainly use CXs to work on technical problems. Some of the more frequent uses include numerical and physical modeling, economic evaluations, risk and uncertainty analyses, inland navigation studies, and cultural and environmental impact analyses, etc. It was indicated that these studies represented situations that were complex or unique in nature and could not be adequately addressed with the expertise and/or resources at the district. Additionally, it was also noted that CXs are sometimes used to meet manpower deficiencies.

- Respondents are generally well-pleased with CXs performance and products. There have been some complaints concerning CXs responsiveness and adherence to deadlines. This seems to vary among CXs.

CURRENT STATE OF PLANNING EXPERTISE IN THE DISTRICTS

- Some districts are recognized as being defacto centers in the sense of having a special regional expertise (i.e., Gulf Coastal management, inland navigation for the lower Mississippi, etc.). It was also noted that districts rely on the help of sister districts with projects of either large proportions, strict deadlines, or when overwhelmed with other workloads. It was recognized that this did not necessarily qualify assisting districts as "defacto" centers. Lastly, few districts considered themselves or others as candidates for a CX. A couple of districts clarified that CXs are reserved for the "experts" (staffs with an advanced knowledge of specific topics that are used for difficult projects). District staffs are good at performing routine planning activities but occasionally problems occur that are outside the knowledge base of the district staff. CXs are utilized to address these types of problems.

- Expertise that is resident in the districts varies. Some districts indicated that they were well-staffed and were confident in their ability to address problems within their district. These districts did not commonly use CXs. Instead, they were employed for unique situations which only the center was equipped to address (e.g., physical modeling of harbors, hydropower design). Other districts responded that even though they did have expertise on staff, they could not afford the manpower drain (e.g., expertise requirements of competing projects, magnitude of the study, timelines, and depth of district expertise). Instead, CXs were used to work on a problem and district personnel are used to supervise and/or monitor their work.

- Many of the chiefs interviewed indicated that an emerging area of district expertise was in the areas of environmental protection, restoration, and cleanup. The interviewees indicated that this area of expertise had been developed over many years and involved everything from ordnance disposal to toxic waste cleanup. Still, the "traditional" planning activities (e.g.,

coastal navigation and protection, flood control, inland navigation, economic evaluation, dredge materials disposal, etc) were considered to be the strongest areas of district expertise. The degree and depth of expertise in each of these areas was strongly influenced by regional conditions and geography.

- For future workload projections, almost all recognize the impending budgetary impacts. Most of the respondents concede that staffs will reduce in size and possibly workload. Currently, most say they have the same level of work. In most cases, future capacity and capability to do work are seen to be declining (indicators include budget and policy restrictions). Only a few districts indicated that budgetary constraints would not have a significant impact on their workload or their capacity to do work because of aggressive marketing to States, Localities, and other Federal agencies.

CHALLENGES FACING PLANNING IN THE FUTURE

- Some of the key problems facing planning in the future are training, turnover, and budgetary constraints.

  -Training was considered important because of the special implications involved with planning functions. These include not only the technical aspects but also those of public interaction and knowledge of Corps rules, regulations, and policies.

  -Policy, long range mission and planning, and overall Corps leadership and guidance were also considered factors that impacted the future of planning in the Corps. It was noted that changes in policies, missions, and leadership made it difficult to pursue a consistent relationship with customers. As a result, customers often became frustrated with policy changes, deadlines, and associated responsibilities.

  -Changes in key personnel were also seen as a problem. Reductions in staff and budget were seen to result in increased turnover. The uncertainty of career futures provides an incentive for personnel to seek more secure positions inside and outside the Corps. Also, with diminished budgets, fewer projects could be pursued. As a result, it is difficult to keep the best and the brightest challenged.

- Navigation, flood damage reduction and coastal protection were generally viewed as the main areas that the Corps needs to maintain for the future. Environmental restoration was overwhelmingly viewed as the area that the Corps needs to become more active in.

PLANNING CHIEF'S PREFERENCES REGARDING CENTERS OF EXPERTISE

- Most of the chiefs preferred keeping planning work in-house as much as possible. CXs are mainly used when a special or difficult problem presents itself. In the case of several districts, contractors are preferred because they seem to be faster and more cost-effective than CX's. CXs, on the other hand, are more flexible than contractors, are familiar with the rules and regulations of the Corps, and are not subject to the formal contract modification procedures that are encountered with AE firms.

- In most cases, MCXs are not viewed as a preferred model for CX functions. This type of CX usually is seen to result in higher cost, delayed deadlines, and decreased customer satisfaction. On the other hand, MCXs offer consistency in design and product over time throughout the nation. TCXs and SCs were preferred because of a competition factor; that is, since they were not required to be used they were more likely to be responsive to the needs of the customer. TCXs and SCs were seen as more customer-oriented and usually produced high quality products.

- The main benefits of using a CX (especially an SC and a TCX) are product quality and customer service. CXs are generally easier to work with and they are more flexible than contractors. Additionally, some districts use CXs to assist with projects that require substantial levels of work. Time and cost are seen as the two major drawbacks to using a center. In some situations it is cheaper to use a contractor rather than a CX. Several respondents also indicated that CXs often missed deadlines.

- The reaction to the use of virtual centers[4] is luke-warm. Some respondents feel that this should be aggressively pursued while others offer that it's an unworkable model. Some of the respondents stated that this should be the push for the future for access to centers. Several planning chiefs indicated that this mode of interaction has great potential especially for information dissemination and for marketing efforts. One respondent noted that existing centers should utilize both conventional and internet means of access. The problems that have been identified in setting up a virtual center include administration, funding, organization, and criteria for priority setting (what projects come first). Lastly, it was noted that this type of center lends itself mainly to technical types of work.

- The most important factors in CX selection include reputation, availability, cost, adherence to deadlines, and flexibility.

---

[4] As explained in greater depth in section V, virtual centers link experts from across the country via computer. Access would most likely be through the internet. A variety of services can be offered in this fashion.

PLANNING CHIEF'S KEY ISSUES AND RECOMMENDATIONS

- Many respondents do not favor the use of MCX's and, as a result, do not want to see the establishment of a center within a MCX framework.

- Many planning chiefs do not favor the use of CXs for plan formulation work noting that plan formulation must take into account regional issues (e.g., intimate site knowledge, contacts, local concerns, etc.). There is concern that centralized CXs would have great difficulty in being able to address these issues. Planning chiefs are more inclined to favor centers that offer technical expertise (e.g., economics, environmental, etc.) as the most appropriate use of national CX with respect to planning activities.

- A major concern voiced by the planning chiefs is the observation that the reconnaissance/feasibility study phase is unnecessarily long. In many cases, study and report preparation becomes too detailed in situations where benefit/cost evaluations are obviously greater than 1. Furthermore, extensions in time and costs of executing these studies annoys sponsors, especially those who contribute a majority of the cost share. Funding and FTE allocations can be more efficiently exercised through quicker execution of the reconnaissance/feasibility phase. Recommendations offered include streamlining the reconnaissance/feasibility phase by shortening the deadline requirements (statutorily), instituting policies that favor faster studies, and encourage minimizing the level of detail of these studies unless warranted. Several respondents also suggested that the reconnaissance and feasibility stages of the investigatory process be consolidated. The money saved from streamlining and consolidation could be used towards marketing or other types of work. An expansion in work could contribute to greater job satisfaction thus retaining FTEs and expertise. Secondly, an increase in the number of projects could eventually result in work for CXs.

- Several planning chiefs advocated the establishment of regional CXs rather than national CXs. These respondents see regional centers as being more in touch with regional political issues and would also have a technical expertise that is specific to the region (e.g., inland navigation for the lower Mississippi, cold regions flood protection - North Central, Gulf coastal protection, etc.).

- Many respondents were unaware of all the CXs that are available. Those districts that do use CXs on a regular basis only use a handful and were unaware of the others. Districts expressed a desire for better marketing of these centers so they know what is available to them.

- Respondents appreciated being asked their views on the use of CXs, recognizing that changes are likely and appreciated that their views would be considered in deliberations about the uses of CX for planning activities.

- Several of the planning chiefs indicated that conditions were sufficient for the establishment of centers of expertise in environmental protection & restoration and for technical review of reconnaissance and feasibility reports.

  -Several chiefs commented that the field of environmental restoration and protection was an area that needed greater coordination and development in the Corps. Additionally, it was commented that it is difficult for districts to gather, maintain, and implement the diverse methodologies and practices that are available in this area.

  -Several of the planning chiefs also noted that it would be beneficial to have a center specializing in the technical review of reconnaissance and feasibility reports. Some of the reasons cited include the need for an outsider's eye in the review, and also the benefit of having experts in several areas provide comment.

V. CURRENT AND ALTERNATIVE MODELS FOR CXs

Provided below are more detailed descriptions of model CXs and the benefits and drawbacks as reported by planning chiefs. Table 4, provided at the end of this section, summarizes these findings.

Current/Traditional Models

MCX

Mandatory centers are set up in order to provide "unique or exceptional" technical capabilities for other Corps commands. Their use is directed under regulation if certain conditions are met. The mandatory center organizational concept has several benefits. First, it allows for the perpetuation of technical capabilities that are unique to Corps operations. Districts do not have the burden of trying to maintain a particular expertise at their level especially when the workload does not justify their resource use to maintain that expertise. Additionally, it provides consistency in products (designs, specifications, studies, testing, etc.) throughout the nation and over time. Because the use of these centers is mandatory, their funding base is more secure and can thus operate more confidently. Many of the drawbacks are also related to their required use; due to regulation, MCXs are noncompetitive. They do not have to compete for resources as other centers do. The three main customer complaints about using an MCX include the lack of adherence to project schedules, unresponsiveness to customer needs and requests, and in many cases, unforecasted funding increases. Another complaint that was offered is that sometimes the product did not address the original project intentions, instead, the project goals were modified during development making the product inappropriate for the intended problem. This was more common for R&D facilities.

TCX/SCs

Technical centers and support centers are very similar to each other. As a result, they share many of the same characteristics. Technical centers and support centers are similar to MCXs in the fact that they provide technical expertise in numerous specialties that are utilized to some degree by Corps districts. The main difference with TCX/SCs is that they are competitive; Corps elements are not required to use them. Even though services offered by TCX/SCs are focused to Corps situations, districts have the option of addressing these tasks either in-house (within the Corps) or through other outside services. TCX/SCs are more responsive to customer needs than MCXs yet have similar problems with time and cost constraints. Compared with contractors, TCX/SCs in many respects are a better option because of their knowledge of Corps operations and policies. In many cases contractors have to learn these requirements and procedures during the course of work.

CoS

Centers of standardization are responsible for developing, monitoring, and tracking Army standard design packages. These centers are supported by military programs. Services offered are architectural in nature. None of the districts or divisions indicated that they used any CoSs for planning activities.

ALTERNATIVE MODELS

VIRTUAL CENTERS OF EXPERTISE (VCX)

The basic concept underlying a virtual center and its variants is the use of linking, communicating, and distributing information through the internet. Several variations of internet communications are currently in use by the Corps and other organizations. One interesting application of virtual communications in use by the Corps today is the concept of the "Regional Village" in use by the South Atlantic Division. As part of a suite of communication tools, workgroup members of a project from different districts within the division are linked to each other through the internet. The benefits associated with using the internet is the speed of transmission of various media. The media that can be sent over the internet include text, audio, video, graphics, databases and other large files. Possible applications that can be considered for use by planning are described below.

Virtual Center of Expertise

A virtual center of expertise would operate much in the same way as a physical center of expertise. However, instead of being located in a central physical location, experts in a particular field would be linked electronically. Because experts can be remotely linked, they would not have to be relocated to a central physical location. As a result, expertise can be utilized on a national level and at the home district. VCXs can also be created to address short-term needs and gracefully dismantled, if warranted. Other benefits include speed of information transmission, and reduced overall costs (particularly for travel, administration, overhead, and maintenance costs associated with maintaining a physical location). Disadvantages include hardware and software requirements, administration, organizational structure, and operating procedures (e.g., procedures for funds transfer, charge rates, work prioritization, and staffing).

Planning Homepage

Another alternative that has been considered is the establishment of a "Planning" home page on the internet. The homepage could act as a "planner" communication center. Services that could be offered include postings (announcements, notices, events, conferences, meetings), links to a virtual resource center and online discussion forums , and links to other homepages.

A homepage would provide an interactive forum for planners to interact with one another and to obtain useful resources.

Virtual Resource Center
This is the equivalent of a digital library. Conceptually, this type of virtual communication would provide materials electronically (e.g., maps, reports, guidance and policy documents, presentation materials, etc.) which could aid the planning process. These could be downloaded to the user's computer and modified.

Online Discussion Forums
Also known as a "chat" room. This is the computer's version of a conference call. The main difference is that people type their conversation instead of talking. For planning, forums could be set up to address issues relating to public involvement, economics, real estate issues, problems in the plan formulation process, environmental issues, funding, GIS issues, coordination with other government agencies, etc. This application is relatively easy to set up and is already in use by several Corps functions. In addition, video-conferencing hardware and software is being developed that can be utilized in the near future.

REGIONAL CENTER OF EXPERTISE (RCX)

A regional center of expertise is an institution that is dedicated to addressing specific technical needs of a division or contiguous divisions that experience problems that are intrinsic to their region; regional centers of expertise would address problems of regional concern. Several benefits could be derived from establishing such a center. Foremost, the center could be supported by the resources of a division(s). The services provided by such a center, if needed, would be supported by the division directly benefiting from it's utilization; it would not have to be maintained to support all divisions. Facility and maintenance costs could be minimized if established within a district or division HQ. Funding could also be facilitated by the division which maintains it. Lastly, because it is regionally located, it would maintain the element of issue and contact familiarity and accessibility. The services that this type of center would provide would be determined by the sponsors and division proponent (e.g., Lower Mississippi Navigation, Mississippi Harbors construction, South Eastern Coastal Protection, etc.).

OTHER ALTERNATIVES

CORPORATE DIVISION

The corporate division concept portrays the division office acting as a corporate head for the districts. The division office would be responsible for making itself aware of the depth and

breadth of the different areas of expertise residing in each district within the division and would "broker" necessary expertise and FTEs between districts. The benefits of using this type of model include keeping a knowledge of a regional perspective, potential cost benefits, and proximity of experts. The main drawback to this type of model is communication. It is vital that the division office stays aware of the activities within each of the districts. Secondly, a division may not have the expertise that is required for a particular project. It is probable that in some circumstances none of the districts would be able to assist.

CONTRACTOR USE

Because TCXs and SCs are not mandatory, districts have the option of addressing problems through contractors or other outside services (such as universities). There are several benefits to using a contractor. These include the range of services offered, cost, timeliness, and responsiveness. Many of the planning chiefs have stated that contractors offer many more Corps-related services now than they did in the past. A few have even stated that they felt comfortable contracting out any and all portions of their work. This appears to be more often the exception rather than the rule. The majority opinion is that contractor use should be limited to non-plan formulation types of work. Nevertheless, contractors do offer a wide variety of services applicable to the planning process. Contractors are also seen to offer time and cost savings. Additionally, contractors can usually be found locally (a big plus in the time, cost, and responsiveness categories). Lastly, contractors are sometimes seen as being more responsive to the customer's needs.

One of the main drawbacks to using AE firms and other contractors is their general lack of knowledge of the various Corps regulations, policies, and guidelines. Therefore, their use is limited with respect to the planning process. The majority of the planners agreed that they should not be used in activities that are involved in plan formulation or that require public interaction. Instead, contractor work is better suited for data gathering and technical types work. Experiences with the use of contractors in plan formulation is mixed. Some planning chiefs have had great success with them, others have not. The degree of success with using contractors in this fashion is dependent on their experience and knowledge of the planning process and Corps guidelines. Lastly, as a plan for a project develops, the scope of work changes. As a result, considerable amounts of time are used in writing contract modifications. Better results in contractor utilization are achieved when the original contract is written for well-defined technical tasks.

Table 4. Summary of Benefits and Drawbacks Associated with Current and Alternative Models for CXs

Center of Expertise	Benefits	Drawbacks
MANDATORY CENTER OF EXPERTISE	• Perpetuation of Corps-unique skills • Provide consistency in products over time • Secure funding base • Longevity in operations • Knowledge of Corps regulations and policies • Limited to exceptional or unique problems	• Noncompetitive • Lack of customer focus • Deadline slippage • Cost
TECHNICAL CENTER OF EXPERTISE SUPPORT CENTER	• Competitive • Customer focus • Knowledge of Corps regs and policies	• Unsecured funding base • Cost • Deadline slippage
CENTER OF STANDARDIZATION	• Provides continuity and consistency in facility and structure design • Knowledgeable of DA regs and guidelines • Reduces need to seek contractor support	• Limitation to services provided • Lack of region knowledge/issues • Limited applicability for planning

Center of Expertise	Benefits	Drawbacks
VIRTUAL CENTER OF EXPERTISE	• Speed in information transfer • Easy access • Cost effective • Direct access to expertise • Knowledge of Corps regs and policies • Variations are currently in use (Regional Village)	• Limits to technical assistance • Administration • Funding set-up • Hardware and software set-up • Training in technology • Remoteness from client • Lack of regional knowledge
PLANNING HOME PAGE	• Speed in information transfer • Cost effective • Easy access to substantial amounts of information resources	• Hardware and software set-up • Training in technology • Maintenance • Limitation to types of services that can be provided • Administration • Prioritization of work • Supervision
VIRTUAL RESOURCE CENTER	• Availability and access to information • Speed in communication/transmission	• Hardware and software set-up • Training in technology

Center of Expertise	Benefits	Drawbacks
REGIONAL CENTER OF EXPERTISE	• Proximity to customer • Regional knowledge • Maintenance of region-specific expertise • Customer focused	• Cost • Administration and set-up • Availability of secure funding
CORPORATE DIVISION (BROKER)	• Availability of FTEs and funding • Regional knowedge • Maintenance of regon-specific knowledge • Maintenance of full capacity	• Unavailability of expertise • Administration
CONTRACTOR USAGE	• Often less expensive • Customer focused • Variety of capabilities offered	• Lack of Corps knowledge (regs/policies/methodologies) • Limitations for use in plan formulation process

THIS PAGE INTENTIONALLY LEFT BLANK

VI. CONCLUSIONS

In order to determine the current and projected state of planning, this study examined GI funding data, FTE allocations, and perceptions of district and division planning chiefs. Data from the FORCON database from FY95 through FY98 indicates projected downward trends in both GI funding and FTEs. The outlook of district planning chiefs is mixed. Presented below are the responses to the study's objectives organized from the data collected through this study. Additional findings which indirectly addressed these conclusions are presented under "Key Findings".

What is the current state of the CW planning enterprise? What is the trend?
The FORCON data collected in this study indicates a downward trend in GI funding and FTE allocations. Also, planning chief observations generally indicate an attrition of the planning expertise base. Nearly all district and division planning chiefs concede that improvements need to made in the way Planning does business in order to overcome these impediments. These factors indicate serious impairments to the Corps ability to perform planning activities and a need to concentrate and coordinate planning expertise.

What is the current planning expertise base in the Corps for CW mission areas?
As Table 3 suggests, each planning branch requires the capability to execute a variety of tasks. Although the majority of these tasks differ, there are certain elements that are common throughout. The erosion of expertise for any of these kinds of activities (especially with limited resources) would indicate the need to seek assistance from outside the district either in the form of contracting or CXs.

Comments of planning chiefs coincide with this observation. The effects of downsizing (in the form of retirements, buyouts, transfers, and job hunting) has resulted in a thinning of personnel and expertise in the districts. As a result, certain areas in the districts do not have the depth they formerly had. This has lead some planning chiefs to the conclusion that in order to maintain effectiveness in the planning arena, improvements in their planning business processes will have to occur.

What are the existing centers of planning expertise?
The information collected in Section 1 identifies and examines the different types of centers that currently exist, how they are structured, and what areas they address. Of the 99 centers that exist in the Corps, 24 are maintained by Civil Works. The majority of these are SCs (14) and TCXs (6). Four are MCXs. Although six of these centers are commonly used in

planning (as identified by the planning chiefs) nearly all are applicable in the support of planning activities. Even though contractor support could be sought in these areas it is unlikely that they could effectively address Corps concerns to the same degree that CXs do.

What are likely future CW planning needs?
In the light of projected reductions in FTEs and resources, Planning is faced with the task of first reinforcing it's existing levels of resources. Planning chiefs identified training (in general) and keeping key personnel as priority areas that need to be addressed. They also see a need for the Corps to maintain consistent policies on cost-sharing and the types of projects they can pursue. Changes in these factors impedes planning's ability to do business with the customer.

Planning chiefs also expressed concern that the Corps needs to maintain the traditional areas of navigation, flood damage reduction, and coastal protection for the future. Additionally, environmental restoration was indicated as an area the Corps should become more active in.

What are the alternative models for planning centers of expertise?
In addition to the conventional models of CXs, several other models were examined that address the consolidation and coordination of expertise in planning and the Corps. The alternative models that were explored in this study included virtual centers, regional centers and corporate divisions. The variations of the virtual center are the most versatile models. The main benefit of this type of center is their speed and accessibility of communication and information transfer. Drawbacks include administration issues and deficiencies in interpersonal interactions. Regional centers, on the other hand, offer speed of response, interpersonal interactions, knowledge of regional issues, and accessibility. Like other physical centers, problems of administration and funding would have to be resolved. The division broker model advocates brokering of expertise within the division. Although the benefits would be similar to those for the RCX, it is unlikely that the depth of expertise could be matched.

Pros and Cons of CX use in planning
In the environment of continued downsizing, an effort of consolidation and coordination of resources will most likely occur. CXs are viewed by planning chiefs as being one of the possible solutions to this problem. Different services are emphasized in each of the different models examined in this study. Common to all is the ability of the center to provide a technical service that cannot be effectively maintained or justified on the district level. In addition to offering these services, CXs offer flexibility that is not usually found with contractor services. CXs also have an established reputation for producing quality products.

However, there is an almost unanimous opinion across the board that CXs cost too much, take too much time, and are generally not as responsive to the customer's needs as they should be.

What recommendations can be made: when and under what circumstances are the various alternative models for planning centers of expertise most appropriate? What are the "key" findings?

KEY FINDINGS

- Existing CXs and districts need to better publicize and market their capabilities

  By Centers of Expertise
  One of the most predominant comments of the respondents was the fact that they were not aware of all the centers of expertise that existed (Table 1: Summary of Centers of Expertise). It may be the case that some of these centers are being under-utilized. If so, there may be some centers that offer services that are valuable to the district but the district is unaware of; districts are not utilizing all the resources that are available to them. This underuse is attributable to lack of knowledge. Some centers, such as those located at WES, are well known and do not have to advertise that much. Most others, however, are not well known and need to market their services.

  By Districts
  In the same vein, districts need to become more active in marketing their capabilities. Some of the more successful districts indicated that they are constantly marketing their districts to potential customers. Clients consist mainly of State and local organizations, but Federal agencies are also sought.

- Examine the feasibility of establishing virtual centers

  Advances in internet technology and the general receptiveness by the planning community indicate that this type of information exchange would be beneficial. A committee should be assembled to review the possibility of implementing virtual centers for planning. Details that need to be addressed include hardware start-up requirements, initial services offering, funding issues, software assessments and capabilities, market identification, projected customer usage, customer requirements and expectations, performance measures, management, and long-range planning for growth. Procedures for periodic review should also be established.

- Criteria needs to be set up for CX establishment and review

  Criteria for establishment
  The creation of new centers could compound the problem of resource allocations by diverting much needed resources from the districts to the centers. Thus, great care must be taken in order to consider all the details of their establishment. Criteria should be established that ensure their necessity, use, and productivity. Any proposed CX for planning support must make significant contributions to planning. Criteria are currently being developed by Military Programs which examine the validation of existing military-sponsored centers of expertise. It would be beneficial to consider these results for planning CXs.

  Sunset and review provisions
  Prior to the establishment of a CX certain review deadlines need to be established which examine the operations and performance of a center. Reviews would need to be designed to evaluate their effectiveness and necessity. The sunset clause would provide for the termination of a center if certain justification criteria are not. Thus, it is would be beneficial for CXs to be established, at least initially, so that they can be easily dismantled.

- Wide support exists for establishing a CX in environmental restoration. There is a mixed reaction for establishing a center for technical review.

  Ecosystem Restoration and Protection
  Numerous respondents indicated that they were in favor of a CX for environmental restoration and protection. They indicated that there was a need to standardize ecosystem remediation, restoration, and protection methods throughout the Corps. The ecosystem restoration field is in an early stage and has not fully matured. New methods of remediating sites are continually being refined and different ways of restoring and enhancing ecosystems are being developed.

  Reconnaissance and Feasibility Report Technical Review
  Several respondents indicated that there may be need for a group that could perform outside independent technical review of reconnaissance and feasibility reports for the districts. The arguement for their establishment include providing consistency in review Corps-wide. Many of the districts have stated that even though they currently perform reviews in-house, they prefer that an outside independent peer review be performed. Lastly, a new technical review process

has been implemented. This process should be monitored further before any other discussions of establishing a center for technical review.

- CXs in the form of TCXs and SCs are more likely to be embraced by the planning community than MCX's.

- Examine accounting structure for CX funding.

  One of the impediments of a district to employ a center is the accounting practices used in Corps budgeting. Under the current policies, districts are required to spend a certain percentage of their budget for contracting. Many districts feel that use of a center of expertise should qualify as a contracting type of expenditure. However, current accounting practices do not recognize funds-to-centers as contract purchases and are reflected as part of the internal district budget. Because of this situation, districts are often reluctant to use CXs because these funds can be better used to meet contracting quotas.

THIS PAGE INTENTIONALLY LEFT BLANK

Appendix A

List of Survey Respondents

THIS PAGE INTENTIONALLY LEFT BLANK

Appendix A. Respondent List for Survey of Centers of Expertise for Planning

Division/District	Field Planning Chiefs or Representative	Office Symbol
New England	Joseph Ignazio	CENED-PL
North Atlantic	Sam Tosi	CENAD-PL
Baltimore	James Johnson	CENAB-PL
New York	Stu Piken	CENAN-PL
Norfolk	Bob Ogle	CENAO-PL
Philadelphia	Robert Callegari	CENAP-PL
South Atlantic	Frank McGovern	CESAD-PD
Charleston	Richard Jackson	CESAC-EN-P
Jacksonville	A.J. Eddie Salem	CESAJ-EN
Mobile	N.D. McClure	CESAM-PD
Savannah	Myron Yuschishin	CESAS-PD
Wilmington	Wilber Payner (act)	CESAW-PD
North Central	Barry Pritchard (act)	CENCD-PE-PD
Buffalo	Philip E. Berekeley	CENCB-PE-P
Chicago	Philip Bernstien	CENCC-PD
Detroit	David Dunlang (act)	CENCE-EP
Rock Island	Dudley Hanson	CENCR-PD
St. Paul	Robert Post (act)	CENCS-PE
Ohio River	Dan Steiner (act)	CEORD-PE-P
Huntington	Jim Everman	CEORH-PD
Louisville	Rob Fuller	CEORL-PD
Nashville	Joe Caffy	CEORN-EP-P
Pittsburgh	Larry Prather	CEORP-PD

Division/District	Field Planning Chiefs or Representative	Office Symbol
Missouri River	Terry F. Schlaht	CEMRD-ET-P
Omaha	Ken Cooper	CEMRO-PD
Kansas	Mike Bart	CEMRK-EP-P
North Pacific	John E. Velehradsky	CENPD-ET
Alaska	Ken Hitch	CENPA-EN-PL
Portland	Pat Obradovich	CENPP-PE-P
Seattle	J. Stevens Foster	CENPS-EN-PL
Walla Walla	Matt Laws	CENPW-PL
Pacific Ocean	Paul Mizue (act)	CEPOD-ED-P
South Pacific	Robin Mooney	CESPD-PD
Los Angeles	Robert Joe	CESPL-PD
Sacramento	Walter Yep	CESPK-PE-P
San Francisco	William Angeloni	CESPN-PE-P
Southwestern	Larry Newbolt (act)	CESWD-ETP
Albuquerque	Jim White	CESWA-ED-P
Fort Worth	William Fickel, Jr.	CESWF-PL
Tulsa	David Steel	CESWT-PL
Galveston	Mike Kieslich	CESWG-PL
Little Rock	Ken Carter	CESWL-PL

Division/District	Field Planning Chiefs or Representative	Office Symbol
Lower Mississippi Valley	Randy Hanchy	CELMV-PE
St. Louis	Owen Dutt	CELMS-PD
Memphis	Donald M. Dunn	CELMM-PD
New Orleans	Bob Shroeder	CELMN-PD
Vicksburg	Bill B. Hobgood	CELMK-PD

THIS PAGE INTENTIONALLY LEFT BLANK

Appendix B

Survey Questionnaire

THIS PAGE INTENTIONALLY LEFT BLANK

District: Rep name:
Date:

Centers of Expertise District Planners Survey

DEFINITION

1. How would you define a center of expertise?

USE OF EXISTING CENTERS OF EXPERTISE

2. Within the last three years have you used any CXs for planning services?

   Which ones?
   How many times?
   For what purposes?

3. How would you characterize the quality of service you receive from these centers?

4. If you do not use a center of expertise, please indicate the reasons you do not do so?

CURRENT STATE OF PLANNING EXPERTISE IN DISTRICTS

5. Do you have a "full service" planning capability?
   -If yes, what services do you offer?
   -If no, what services are you missing?
   -Concerning a definition, how do you define it, or what do you mean by "full service?"

6. Would you consider any element in your district/division to have a specialty skill/expertise that is considered a "defacto" center of expertise (i.e., it is commonly recognized regionally or throughout the Corps that your division has a special area of expertise and is utilized by other districts for advise and assistance)?

   -What are the benefits and drawbacks of using a defacto center?
   - Does anybody come to you for help? Is the expertise in your district used by other agencies?
   - What do they use you for?

- Do you believe that your district has sufficient depth of experience and expertise to be identified as a CX (for this planning function)?

7. Are there other districts which could be considered a CX in a planning service area (i.e. you have used them, or consulted with them or would if you had the need)? Which ones, in what areas? Why? Do you know if anybody else uses them?

8. What is your planning program like?
   A. Current and future trajectory in terms of dollar value of program, number of studies, types of studies, types of planning activities, use of planning personnel? [Generally - increasing, decreasing, staying the same]

   B. From a broad perspective (i.e., not just focusing on your own program), is the GI program (recon and feasibilty reports) in trouble?

   -What is happening to the GI program?
   -Why is it occurring?
   -Any ideas about what should be done?

FUTURE OF CW PLANNING NEEDS

9. What are the top three problems facing planning in the future? (Probes: maintaining experience base, keeping best and brightest challenged) How do CX relate to these key problems?

10. What are the key planning services that CW needs to have in the future?

    That has now - maintain...
    That doesn't have - needs to get...

11. How willing are you going to be to use a center of expertise in the future?

PREFERRED AND ALTERNATIVE MODELS OF CENTERS OF EXPERTISE / MODEL BENEFITS AND DRAWBACKS

12. What is your preferred organizational model for meeting your CW planning needs (i.e, in-house, CX, other district/division consultation, contractor, etc.)? Why? [Refer back to first question]

13. What planning services lend themselves to the current centers of expertise models (TCX, MCX, SC, CoS)? (i.e. centralized advisory source of expertise/advise)? Why?

14. What are the top two (2) benefits of using a center of expertise?

15. What are the top two (2) disadvantages of using a center of expertise?

16. All officially designated centers of expertise are located in a distinct physical location (Huntsville, Ft. Belvoir, Omaha, etc.). Some other organizations/affiliations that perform functions similar to a center are loosely organized: that is, they utilize experts from across the country (universities, trade associations, government, private industry). These coalitions communicate and exchange information either by telephone, mail, or electronically. Electronic centers have been termed as "virtual" centers. Have you ever used a virtual center of expertise?

A) If so, what for (planning service, other type of service - computers, finance, personnel, regulatory, etc.)?
B) Were you pleased with it's service? [Also what was noteworthy about it's use]

17. What would you consider the benefits and drawbacks of using
A) Physical centers?
Benefits:
Drawbacks:

B) "Virtual" centers?
Benefits:
Drawbacks:

18. What planning services lend themselves to the use of virtual centers of expertise?

19. What planning areas lend themselves to contractor services? What would be the benefits and drawbacks of using this type of center?[quasi-contractor]

OTHER QUESTIONS

20. If you were considering using a CX to assist in planning activities/tasks, what factors would enter into your evaluation? What would you look for in a center?

21. What key issues or concerns about the use of CX in planning do you have?

22. What recommendations would you make concerning future use\organization of centers of expertise that assist planning functions?
- What are centers of expertise doing right that they should maintain?
- What should they do differently in the future?

Appendix C

Detailed Listing of Centers of Expertise

THIS PAGE INTENTIONALLY LEFT BLANK

Appendix C. Detailed Listing of Centers of Expertise by Type

(Bolded selections indicate CXs that are used or can be used by planning - see Section II: Summary of Centers of Expertise)

MANDATORY CENTERS OF EXPERTISE (MCX)		
HQ PROPONENT	CENTER DESIGNATION	ASSIGNED COMMAND
CEMP	ARMY RANGE AND TRAINING LAND PROGRAM (RTLP)	CEHND
CEMP	**HAZARDOUS, TOXIC & RADIOACTIVE WASTE (HTRW)**	**CEMRD**
CECW	**HYDROELECTRIC DESIGN CENTER**	**CENPD**
CECW	**HYDROPOWER SYSTEM - ECONOMIC EVALUATION**	**CENPD**
CEMP	INTRUSION DETECTION SYSTEM (IDS)	CEHND
CECW	**MANAGEMENT & CURATION OF ARCHEOLOGICAL COLLECTION CENTER**	**CELMS**
CECW	**MARINE DESIGN CENTER**	**CECW-O**
CEMP	ORDINANCE & EXPLOSIVE WASTE (OEW)	CEHND
CEMP	PROTECTIVE DESIGN (PD)	CEMRO
CEMP	TRANSPORTATION SYSTEMS	CEMRD
CEMP	UTILITY MONITORING & CONTROL SYSTEM (UMCS)	CEHND

TECHNICAL CENTERS OF EXPERTISE (TCX)		
HQ PROPONENT	CENTER DESIGNATION	ASSIGNED COMMAND
CEMP	AIRCRAFT HANGAR FIRE PROTECTION	CETAD
CECW	**ANADROMOUS FISHERY PLANNING**	**CENPW**
CECW	AUTOMATED PERFORMANCE MONITORING OF DAMS	CELMS
CEMP	AUTOMATED REVIEW MANAGEMENT SYSTEM (ARMS) FOR ENGINEERING DESIGN	CESPK
CECW	**COASTAL SHORE PROTECTION PLANNING**	**CESAJ, CESPL**
CEMP	DEMAND SITE MANAGEMENT (DSM)	CEHND
CECW	ENGINEERING OF WATERWAYS SIGNS	CENCS
CEMP	HEATING, VENTILATING AND AIR CONDITIONING (HVAC) CONTROL SYSTEMS	CESAS
CERE	INDUSTRIAL LEASING	CESAM, CEMRO, CEORL
CECW	**INLAND NAVIGATION PLANNING**	**CEORH**
CEMP	INTERIOR DESIGN	CEMRO
CEMP	MECHANICAL ENERGY SYSTEMS	CESAM
CEMP	OPERATION AND MAINTENANCE ENGINEERING ENHANCEMENT (OMEE)	CEHND
CECW	**PHOTOGRAMMETRIC MAPPING CENTER**	**CELMS**
CEMP	**PRESERVATION OF HISTORIC STRUCTURES AND BUILDINGS**	**CENPS**
CEMP	SANITARY ENGINEERING	CESAM
CEMP	SEISMIC MITIGATION & HAZARDS REDUCTION	CENPD

CEMP	SHARED ENERGY SAVINGS (SES)	CEHND
CEMP	THIRD PARTY CONTRACTING (TPC) FOR ENERGY OR FUEL	CEHND
CENTERS FOR STANDARDIZATION (COS)		
HQ PROPONENT	**CENTER DESIGNATION**	**ASSIGNED COMMAND**
CEMP	ARMY CHAPELS	CEMRO
CEMP	ARMY RESERVE CENTERS AND NATIONAL GUARD ARMORIES	CEORL
CEMP	AVIATION MAINTENANCE HANGARS	CEHND
CEMP	BASIC TRAINEE BARRACKS	CESWT
CEMP	BOWLING CENTERS (REQUEST FOR PROPOSAL)	CEORL
CEMP	BRIGADE AND BATTALION HEADQUARTERS	CESPK
CEMP	CENTRAL ISSUE FACILITIES	CENPS
CEMP	CHAPEL FAMILY LIFE CENTERS	CEMRO
CEMP	CHILD DEVELOPMENT CENTERS	CEHND
CEMP	COMPANY OPERATIONS FACILITIES	CESAS
CEMP	CRIMINAL INVESTIGATION COMMAND FACILITIES	CEMRO
CEMP	ENLISTED PERSONNEL DINING FACILITIES	CENAO
CEMP	FAMILY HOUSING (REQUEST FOR PROPOSAL)	CENAO
CEMP	FIRE STATIONS	CEHND
CEMP	GENERAL PURPOSE WAREHOUSES	CENPS

CENTERS FOR STANDARDIZATION (COS)		
HQ PROPONENT	CENTER DESIGNATION	ASSIGNED COMMAND
CEMP	HAZARDOUS MATERIAL STORAGE FACILITIES	CEHND
CEMP	INFORMATION SYSTEMS FACILITIES	CENAD
CEMP	MILITARY ENTRANCE PROCESSING STATION (MEPS)	CESAS
CEMP	PHYSICAL FITNESS FACILITIES	CEHND
CEMP	RELIGIOUS EDUCATION FACILITIES	CEMRO
CEMP	TOE VEHICLE MAINTENANCE FACILITIES	CESAS
CEMP	TROOP ISSUE SUBSISTENCE ACTIVITY FACILITIES	CENAO
CEMP	UNACCOMPANIED ENLISTED PERSONNEL HOUSING (BARRACKS)	CESAS
CEMP	UNACCOMPANIED OFFICER PERSONNEL HOUSING	CESWT)
CEMP	VISITING OFFICERS QUARTERS	CESWT
CEMP	YOUTH ACTIVITY CENTERS	CEHND

SUPPORT CENTERS (SC)		
HQ PROPONENT	CENTER DESIGNATION	ASSIGNED COMMAND
CEMP	AE CONTRACT ADMINISTRATION SUPPORT SYSTEM (ACASS)	CENPD
CEMP	BUILDING LOAD ANALYSIS & SYSTEM THERMODYNAMICS CENTER (BLAST)	CECER
CEIM	CEAP - PROCESSING CENTER	CEWES, CENPD

SUPPORT CENTERS (SC)		
HQ PROPONENT	**CENTER DESIGNATION**	**ASSIGNED COMMAND**
CERM	CENTRALIZED PAYROLL CENTER	CEMRO
CECW	CONCRETE TECHNOLOGY CENTER	CEWES
CEMP	CONSTRUCTION CONTRACT APPRAISAL SUPPORT SYSTEM (CCASS)	CENPD
CECW	**CONSTRUCTION EQUIPMENT MANUAL/COST DATABASE**	**CENPW**
CECC	CORPS OF ENGINEERS AUTOMATED LEGAL SYSTEM (CEALS) PROJECT CENTER	CECC
CECW, CEMP	**COST ENGINEERING SUPPORT CENTER (CACES)**	**CEHND**
CEIM	DA RADIO PROGRAM	CELMK
CERE	DEPARTMENT OF THE ARMY RELOCATION SERVICES FOR EMPLOYEES (DARSE)	CENAB
CECW	EARTHQUAKE PREPAREDNESS	CESPD
CEIM	ELECTRONIC BULLETIN BOARD SUPPORT CENTER	CECRL
CECW	**ENGINEERING GUIDANCE SUPPORT CENTER (EGSC)**	**CEWES**
CERE	HOMEOWNERS ASSISTANCE PROGRAM (HAP)	CEMRO, CENAB, CEORL CESAS, CESPK, CESWF
CECW	**HYDROLOGIC ENGINEERING CENTER**	**CEWRC**
CECW	**INSTITUTE FOR WATER RESOURCES (IWR)**	**CEWRC**
CEIM	LIBRARY CATALOGING CENTER	CEHEC, CELMN, CEWES
CEIM	LOCAL AREA NETWORK DESIGN AND CERTIFICATION CENTER	CELMV
CECW	METALLURGY & WELDING ENGINEERING SUPPORT CENTER (MWESC)	CESAJ

SUPPORT CENTERS (SC)		
HQ PROPONENT	**CENTER DESIGNATION**	**ASSIGNED COMMAND**
CEMP	MICRO PAVER SUPPORT CENTER	CECER
CERE	NATIONAL SECURITY AGENCY TECHNICAL SUPPORT CENTER	CENAB
CECW, CEMP	**NATURAL, CULTURAL, AND ENVIRONMENTAL GIS APPLICATIONS ON MILITARY INSTALLATIONS**	**CECER**
CEIM	NATURAL DISASTER HIGH FREQUENCY RADIO PROGRAM	CEMRO
CECW	**NAVIGATION DATA CENTER**	**CEWRC**
CECW	PAINT TECHNOLOGY CENTER	CECER
CECC	PATENTS, TRADEMARKS, AND COPYRIGHTS CENTER	CEHEC
CEIM	PROCUREMENT CENTER FOR INFORMATION RESOURCES	CEORH, CENAP
CEMP, CECW	PROJECT MANAGEMENT INFORMATION SYSTEMS (PROMIS) DEVELOPMENT CENTER	CEWES
CEMP	RAILER ENGINEERING MANAGEMENT SYSTEM (EMS) SUPPORT CENTER	CECER
CERE	REMIS FUNCTIONAL & TRAINING SUPPORT CENTER	CESAD
CERE	REMIS QC SUPPORT CENTER	CEMRO, CESPL, CESAM CEORL, CENAB, CENPS CELMN, CESWT
CERE	REMIS SUPPORT CENTER (RSC)	CESAD
CEMP	ROOFER SUPPORT CENTER	CECER
CECW	**SUBSURFACE EXPLORATION CENTER**	**CESAM**

SUPPORT CENTERS (SC)		
HQ PROPONENT	CENTER DESIGNATION	ASSIGNED COMMAND
CECW	**SURVEY ENGINEERING & MAPPING CENTER**	**CETEC**
CERE	TAD TECHNICAL SUPPORT CENTER	CESAS
CEMP, CECW	**TRI-SERVICE CADD/GIS TECHNOLOGY CENTER**	**CEWES**
CERM	USACE FINANCE CENTER	CERM-A
CERE	U.S. ARMY SOUTH (USARSO) TECHNICAL SUPPORT CENTER	CESAM
CEIM	VIDEO COMMUNICATIONS NETWORK MANAGEMENT	CESAM
CECW	**WATER RESOURCES REMOTE SENSING /GIS TECHNOLOGY CENTER**	**CECRL**

REPORT DOCUMENTATION PAGE

Form Approved
OMB No. 0704-0188

Public reporting burden for this information is estimated to average 1 hour per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate and any other aspect of this collection of information, including suggestions for reducing this burden, to Washington headquarters Service, Directorate for Information Operations and Reports, 1215 Jefferson Davis Highway, Suite 1204 Arlington, VA 22202-4302, and to the Office of Management and Budget, Paperwork Reduction Project (0704-0188), Washington, DC 20503.

1. AGENCY USE ONLY *(Leave blank)*

2. REPORT DATE
December 1996

3. REPORT TYPE AND DATES COVERED
Final

4. TITLE AND SUBTITLE
An Examination of Planning Chief Views and Preferences for the Use of Centers of Expertise in Planning

5. FUNDING NUMBERS

6. AUTHOR(S)
Richard Whittington

7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES)
USACE, Water Resources Support Center
Institute for Water Resources
Casey Building, 7701 Telegraph Road
Alexandria, VA 22315-3868

8. PERFORMING ORGANIZATION REPORT NUMBER
IWR Report 96-R-19

9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES)
Headquarters, U. S. Army Corps of Engineers
Directorate of Civil Works
20 Massachusetts Avenue, NW
Washington, DC 20314-1000

10. SPONSORING/MONITORING AGENCY REPORT NUMBER

11. SUPPLEMENTARY NOTES
Available from the National Technical Information Service, 5285 Port Royal Road, Springfield, VA 22161, (703) 487-4650

12a. DISTRIBUTION/ AVAILABILITY STATEMENT
Approved for public release; distribution unlimited

12b. DISTRIBUTION CODE

13. ABSTRACT (Maximum 200 words)

This document examines how Corps Centers of Expertise are currently used by the planning community and how they can be used in the future. Objectives of this study include the examination of current and projected trends of operational planning (use, funding, needs, and experience base) and the identification of current and alternative models of operation of centers and their operational benefits and impediments. A compilation of the results of a survey of planning chiefs indicates field perceptions of various aspects of the use of these centers. Finally, key findings and conclusions are presented which outline efforts that the planning community should endorse within the context of this study. A copy of the questionnaire and a list of survey respondents are attached as appendices.

14. SUBJECT TERMS
Center of standardization, center of expertise, Civil Works, experience, FORCON, FTE, GI, mandatory center, marketing, planning, planning expertise, support center, technical center, technology, virtual center

15. NUMBER OF PAGES
69

16. PRICE CODE

17. SECURITY CLASSIFICATION OF REPORT
Unclassified

18. SECURITY CLASSIFICATION OF THIS PAGE
Unclassified

19. SECURITY CLASSIFICATION OF ABSTRACT
Unclassified

20. LIMITATION OF ABSTRACT
Unlimited

NSN 7540-01-280-5500