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**A SOCIOTECHNICAL SYSTEMS-BASED PROCESS TO FACILITATE THE
DEVELOPMENT OF A CHANGE INTERVENTION DEPLOYMENT PLAN**

by

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Old Dominion University in Partial Fulfillment of the
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ABSTRACT

A SOCIOTECHNICAL SYSTEMS-BASED PROCESS TO FACILITATE THE DEVELOPMENT OF A CHANGE INTERVENTION DEPLOYMENT PLAN

Jorge Luis Nadal

Old Dominion University, 2013

Co-Directors: Dr. Rafael Landaeta and Dr. Pilar Pazos

The purpose of this project was to formulate a process to facilitate the development of an effective change intervention deployment plan. The premise is that without a proper deployment plan, the successful implementation of a change intervention in an organization will be slow and require multiple revisions. This research utilized a Sociotechnical Systems (STS) approach to analyze the implementation of a major change intervention.

This research was in part prompted by a request by management of the U.S. Army Corps of Engineers (USACE) for the researcher to examine why it has taken so long to successfully implement this large-scale change initiative in this organization. Further examination prompted the following research question:

How can using a Sociotechnical Systems-based process facilitate the successful development of a change intervention deployment plan?

A related research question is: How can the design and analysis of a sociotechnical deployment plan facilitate the identification of constraints that could impede implementation of the change initiative? These questions established the foundation for this research. This study is based on two main research areas: Sociotechnical Systems analysis and Implementation of Change Initiatives.

This study found a void in current research in the development of an approach bridging an STS based implementation plan framework and change initiative implementation. An explanatory qualitative case study research methodology was used as the research tool in this study. This study was prompted by research involving implementation of a major change initiative (i.e., formal project management as a fundamental business process) in a large government agency (i.e., USACE) providing professional architectural and engineering services. The phenomenon in study is the assimilation of “project management” as a fundamental business process utilizing the USACE as the primary unit of analysis. The case study analysis revealed that even though implementation of this major initiative has been considered successful, it has taken over 25 years to realize due to numerous factors that contributed to false starts, and multiple revisions due to lack of a comprehensive deployment plan. This study found that the impediments encountered during implementation could have been avoided or anticipated, if an STS based plan had been utilized.

This dissertation is dedicated to the three greatest motivators in my life from whom I receive daily encouragement and strength. They are my wife, Teri, and my two wonderful sons, Jorel and Jonathan.

Jonathan and Jorel, your words of wisdom have been insightful and inspired me to complete this dissertation. You have taught me to be persistent, patient, and never give up on my dreams. Without your continuous and unwavering support, I would never have been able to complete this endeavor.

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CHAPTER I

INTRODUCTION

The prevailing business environment is one of unprecedented technological evolution, fierce competition, and cost reductions. The economic climate has forced public and private businesses alike to continuously seek ways to become more efficient, flexible, and cost sensitive. In order to remain viable, organizations have had to accept organizational change as a common business practice. This protocol has caused management to be sensitive to the need for change to fulfill fluctuating social and technological requirements and trends in the marketplace. One of the major challenges management face is to find ways to meet or surpass customer expectations and to do so at a cost the customer perceives as fair. Companies cannot consider downsizing as their only option to remain competitive. Companies have shifted their emphasis from cutting costs, reducing overhead, and eliminating employees to finding other ways to stay viable (Dutka, 1995). Finding more efficient and less costly ways to operate an organization is very important in the existing highly competitive marketplace. There are numerous change initiatives that, when properly implemented, have proven to be very effective. The problem is that there are numerous reasons why implementations of change initiatives fail. One of the most common is that the solution proposed or attempted does not adequately address the fundamental problem. It may be a popular change initiative or one that may have worked in another organization, but organizations and their cultures are different and one standard solution may not work for all (Robbins and Finley, 1996). This requires a thorough systems analysis of the organization. Another common problem and the primary focus of this project is if the design of the change initiative implementation plan does not take into account sociotechnical constraints of the

organization, sociotechnical constraints could impede smooth execution. Beer (1980, p.108) notes that the “interventions must be selected for their relevance to the organizational problems, not for their current popularity.” Many organizational development efforts start with an intervention like team building or Management by Objectives (MBO) because executives in the organization undergoing change are convinced by other executives that these methods will answer all of their problems.

This study explores the benefits of using sociotechnical systems analysis as a process for determining potential constraints that should be considered prior to launching the deployment of the change initiative. This research does not propose using STS as an organizational improvement initiative. This research is unique in that it uses the principles of STS as a framework for conducting the analysis necessary to identify issues, constraints, and enablers to assist in the development of the deployment plan for the change intervention. By conducting a comprehensive analysis of the organization that identifies the sociotechnical constraints in the organization, the change agent can develop a strategy that will help anticipate impediments to a successful implementation. The contribution this research project adds to the body of knowledge is the addition of the consideration of a comprehensive implementation /deployment plan. This research proposes that if the deployment plan is not carefully planned and deployed, it is very unlikely that the implementation will succeed.

This study was motivated by interest in finding out what prompted the sluggish deployment which eventually turned out to be a very successful implementation of a major change initiative in a large, project funded federal organization. The organization is the U.S. Army Corps of Engineers (USACE). For more than 200 years, the USACE

has supported the nation's river-based commerce, protected established population centers, provided disaster response, and constructed military facilities to protect the nation. The USACE is the world's largest public engineering, design, and construction management agency. As noted in Figure 1, this organization has offices worldwide and has a physical presence in over 100 countries.

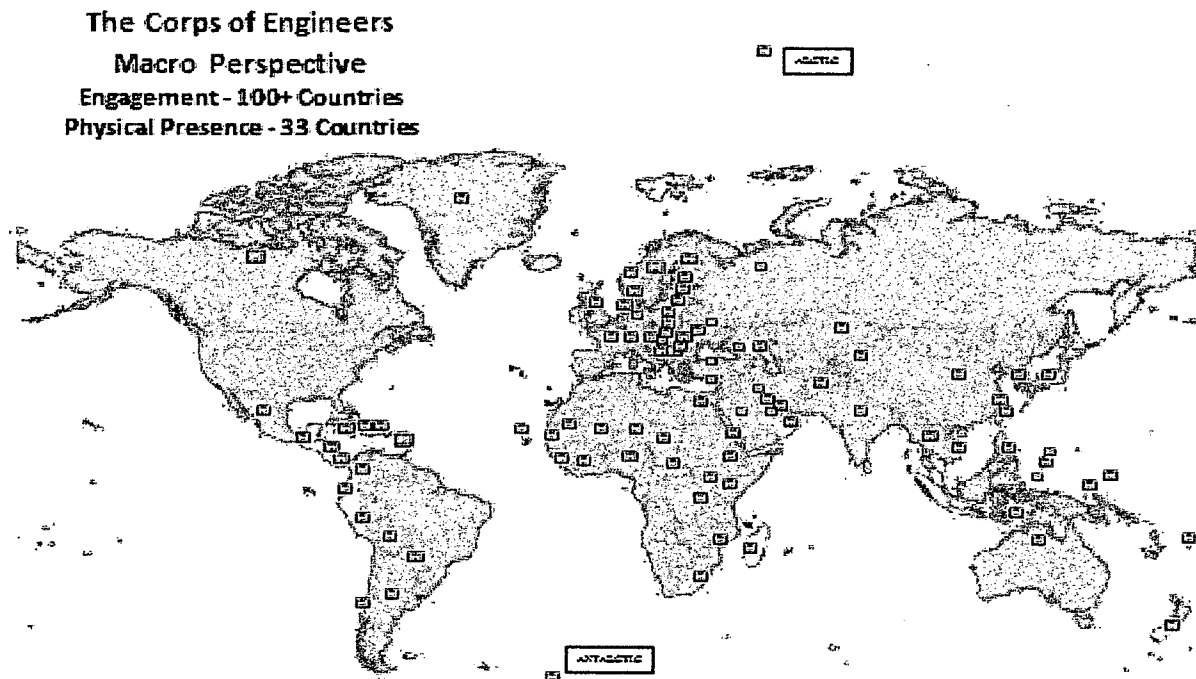


Figure 1. U.S. Army Corps of Engineers offices outside U.S.A.

THEORETICAL FORMULATION

Organizations are dynamic, complex systems that must be capable of undergoing change. Change occurs gradually and innocuously or abruptly and ostentatiously.

Organizational change either occurs naturally as the result of unpredictable

rearrangements of pre-existing conditions, or they can be planned and managed. This research focuses on the study of planned change at the U.S. Army Corps of Engineers. A case study analysis of the implementation of a major change initiative was used in the development of a sociotechnical systems-based process model. The model was used to outline and analyze the deployment of a planned and managed organizational change intervention. Before the change took place, senior management at the U.S. Army Corps of Engineers recognized that there was a need to change its business processes. Project management as a fundamental business process was identified as the appropriate change initiative to resolve the issues that had been identified. The results of this study suggest that the most significant issue with the implementation of this major initiative was the lack of a comprehensive deployment plan. The premise being that the implementation process is driven by sociotechnical issues and constraints that were taken into consideration in the planning and implementation of the change.

PURPOSE

The purpose of this research is to develop a comprehensive process to assist in planning the deployment of an effective change intervention by considering the sociotechnical factors. In short, the focus of this research is on the development of a comprehensive deployment plan that can assist in the successful implementation of the change initiative.

PROBLEM IDENTIFICATION

Planned and managed change is triggered when management or employees recognize that processes are degenerating, market needs are diminishing, the organization is not capable of keeping up with its competition, or an eminent change is about to occur

for which they have little or no control (Todnem, 2005). Diagnosing the organization before attempting any type of organizational change initiative is extremely important so that the intervention can be planned and designed as painstakingly as possible to minimize risks and adverse consequences. Since organizations are dynamic, complex systems, the management of the intervention is critical so the intervention can be altered to accommodate changes, which come about as a result of environmental transformations or other unplanned changes. This type of analysis cannot be done using a single discipline strategy; it requires a systems approach.

While there is no "one best standard" application that will work for all organizations, there are some general concepts that have proven to be effective at fostering very favorable and desired outcomes when properly incorporated. Bolman and Deal (1997) note success stories with organizational enhancing change initiatives such as Total Quality Management (TQM) at companies like Ford, Motorola, and Xerox. However, research has found that there have also been many failed attempts (Gertz and Baptista 1995; Port 1992). Researchers, such as Robbins and Finley (1996) and Beer et al. (1990), offer numerous reasons for failures with organizational change initiatives. The most prevalent reasons cited for implementation failures were lack of workforce support. The reason for the lack of support was found to be linked to the history of numerous previously failed attempts to implement a contemporary change initiative. Nearly all examples note that the change initiative was deployed, but very quickly lost momentum and interest faded away. The question the research failed to answer was whether the failed attempts were truly lack of support of the workforce, or was it due to poorly designed or non-existing implementation plan.

Another reason for failure is the implementation of an initiative that fails to address the fundamental problem in the organization. Implementing the wrong change management strategy can lead to disastrous consequences to an ailing organization. If for example, the concern is one of low productivity, a typical change technology to address that problem may be stretch targeting. But if low productivity is a symptom of another fundamental issue, such as low morale due to an overworked staff, implementing a stretch targeting initiative will very likely intensely aggravate the situation.

There are numerous "organizational enhancement initiatives" (change interventions) that address different areas for improvement in an organization. These interventions are designed to enhance issues such as quality, morale, teamwork, empowerment, motivation, efficiency, and customer satisfaction to name a few. An overview on change technologies is covered in the Review of Literature (Chapter II) of this research.

RESEARCH QUESTION

This research was in part prompted by a request of the Senior Manager in one of the District Offices (Norfolk District) of the U.S. Army Corps of Engineers for the researcher to examine why it had been so difficult and had taken so long to successfully implement large-scale change initiatives in this organization. The following research question was the focus of this investigation.

How can using a sociotechnical systems-based process, facilitate the successful development of a change intervention deployment plan?

A complementary research question is:

How can the design and analysis of a sociotechnical deployment plan facilitate the identification of constraints that could impede implementation of the change initiative?

These questions established the foundation for this research. This study is based on two main research areas: Sociotechnical Systems (STS) analysis and Implementation of Change Initiatives.

As previously stated, organizations are dynamic, complex systems. For this reason, it is imperative that the organizational analysis be multi-dimensional and holistic. In terms of sociotechnical systems, Taylor and Felten make the distinction that goals and objectives differ in terms of their time perspective. They note that goals are short-term expectations and objectives are long term (Taylor and Felten, 1993). Following this premise, a systems model of this research's goals and objectives is shown in Figure 2. This model outlines how the research questions lead to the objective (purpose) of the study. The research was conducted using a two-fold approach, theoretical basis for the application and the practical application of the research by way of an explanatory case study.

STUDY PURPOSE (OBJECTIVE)

The purpose of this project is to formulate a process to facilitate the development of an effective change intervention deployment plan.

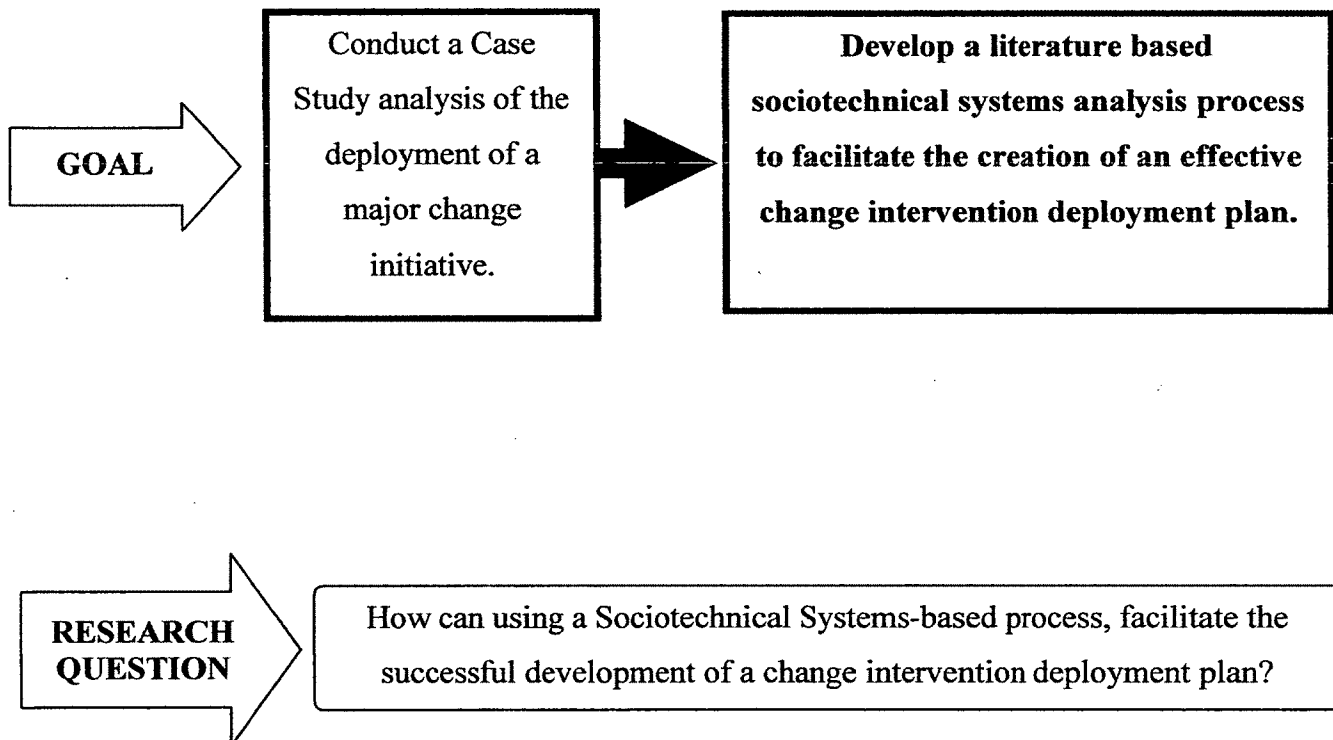


Figure 2. Systems Model of Research Goals and Objectives

METHOD AND PROCEDURE

This project addresses the formulation of an implementation plan. This research proposes that the complete process (Figure 3) follows a cyclical progression of:

1. Sensing/Recognizing
2. Assessment
3. Analysis
4. Selection
5. Implementation

In the research model, the sensing and recognizing phase occurs when management perceives a need for change. This recognition may be triggered by a number of different factors. It can be by internal (employee) or external (customer) feedback, reduction in productivity or sales, employee turnover, increased expenses, or in a number of other ways. Not only will negative factors trigger the need for change, it could be the desire to grow or improve. The key factor is the desire to change the status quo.

The assessment phase is the stage where all factors are carefully outlined. During this phase, the "organizational context/constraints are identified." The constraints are analyzed in a sociotechnical context. During the assessment phase, the "fundamental issues/problems are also identified." It is imperative that the root or fundamental issues be identified, and not the symptomatic or superficial issues. Research supporting how to most effectively conduct these types of assessments will be explored in the Review of Literature section of this research.

The analysis phase is the stage where the change agent plans and designs the best approach for dealing with the issues within the identified constraints. The resulting

output is the selection of the most appropriate change intervention(s) that will yield the desired outcome. The next steps are the implementation of the intervention(s) and the monitoring (sensing) of the implementation. As will be addressed in Chapter II (Review of Literature chapter), organizational change does not occur instantaneously and may take time to see its effects. The case study analyzed in Chapter III (Methodology chapter) of this research took over 25 years to implement what has been considered a very successful major change initiative and went through the above outlined cycle multiple times.

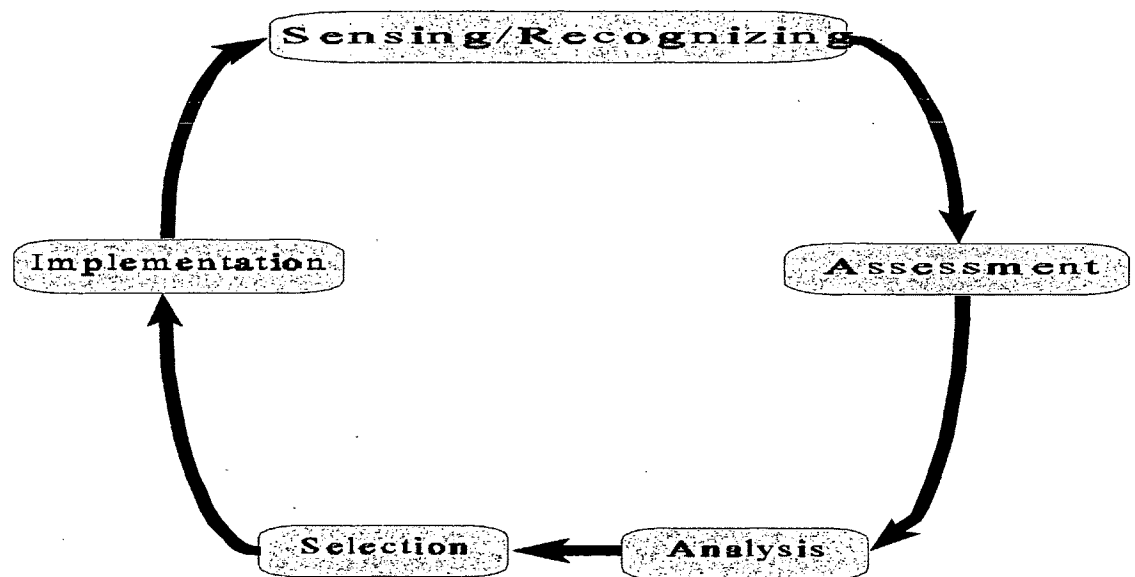


Figure 3. Research Methodology Process

This process model also very closely follows the Sociotechnical Systems (STS) process model proposed by Taylor and Felten (1993, p.5). In the Taylor and Felten model, the sensing phase occurs when management realizes that there is something that could be improved or something is not operating properly (social or technical). This

awareness can be prompted by customer feedback, employee feedback, or a tangible outcome (e.g. lower productivity, lower sales, or increased expenses). The recognition phase takes place when management realizes that there is a need for change. In this research model, the next phase is the assessment phase. The assessment phase is where the change agent needs to identify constraints (social and technical) and find the legitimate and fundamental issues that have prompted the real or perceived reason for an initiative to be pursued. When the assessment is completed and the fundamental issues are identified, the change agent can proceed to conduct the analysis. During this analysis phase, the change agent can begin to plan and design an approach that will conform to the organization being studied. The analysis will lead to the selection phase, where the change agent can begin to hone in on the area(s) of change technology themes that will best be suited to improve the organizational performance. The next stage is the implementation phase. Here is where the selected change technology is implemented. As is the case in all systems models, the change implementation has to be carefully monitored and managed and this cyclical multi-phase approach should be re-evaluated to correct for any other factors that would have changed.

Taylor and Felten's sociotechnical systems process model note that an organization operates as a sociotechnical system "if it is seen as a bounded, purposeful enterprise in a recognizable external environment that contains transformation (technical system) and people working together over time (social system)" (1993, p.1). They suggest that all organizations are sociotechnical systems. In Taylor and Felten's model, the organization is examined following a series of four phases consisting of seven steps (Figure 4).

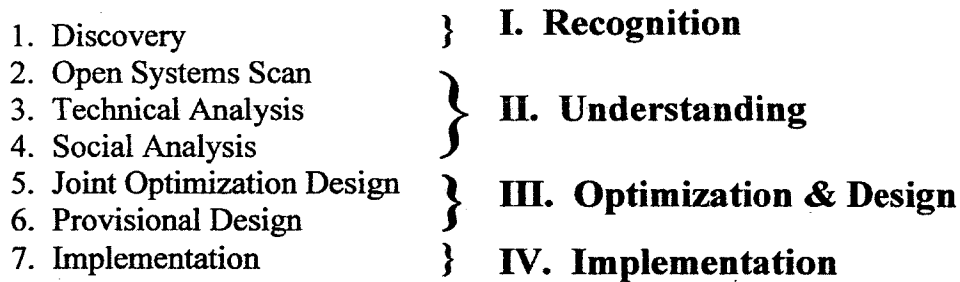


Figure 4. Sociotechnical Systems Examination Model

The main distinction between Frederick W. Taylor's Scientific Management and Taylor and Felten's Sociotechnical systems is that Frederick W. Taylor's approach was one in which management assumes that an optimal organization design can be achieved by analyzing the physical steps required to perform the tasks, while Taylor and Felten not only considered the mechanistic aspects of the organization (technical analysis), but places much greater emphasis on the humanistic aspects of the organization. French and Bell refer to this transformation in management philosophy as a change from "muscle" to "knowledge" work (French and Bell, 1999).

OVERVIEW

This research was in part prompted by a request by management of the organization for the researcher to examine why it had been so difficult and had taken so long to successfully implement large-scale change initiatives in this organization.

The case study analyzed in this research involved a federal organization that provides full service design and construction support to other federal, state and local agencies and municipalities. The case study focuses on the U.S. Army Corps of

Engineers. This federal agency is comprised of 35,000 employees with offices located worldwide. The change initiative was an organization wide top-driven initiative. This federal organization is project funded and not centrally funded by Congress. In other words, the agency is not subsidized by the government and thus must obtain its operational capital from business it secures from clients. Customer service, efficiency, effectiveness, and productivity are vital to this public organization in order to remain viable. For the most part, if clients feel they are not getting the value or service they expect, they can go to other agencies that can provide similar services.

The Case Study section in Chapter III (Methodology chapter) of this research expands on this analysis and assessment. Even though the STS model presented in this study was not used to plan or design the implementation of this major process change initiative, analysis of the implementation of the initiative, led to the systematic approach presented in this research. Moreover, what the STS representative approach lacks is a comprehensive initial deployment and implementation plan.

CHAPTER II

REVIEW OF LITERATURE AND RELATED RESEARCH

ORGANIZATIONAL PERFORMANCE

There has been much emphasis recently on organizational performance improvement. Formal origins of this movement can be traced back to Frederick Winslow Taylor's (1856-1915) well known studies on management principles (Wagner and Hollenbeck 1998).

In the early 1900's, Frederick Winslow Taylor, launched an awareness towards industrial productivity with his studies on management doctrines in "The Principles of Scientific Management." His research focused on increasing efficiency by separating the functions of management and non-management and recommended systemizing the job functions of each. He upheld the belief that it was management's job to find the "one best way" for workers to perform their duties and teach workers how to do the job. According to Taylor, it was management's job to direct workers to do exactly what needed to be done, and exactly how to do it. He believed management should then use a system of rewards to enforce the desired behaviors, and punishments to curb undesired performance.

Taylor referred to his scientific management as a "task management" system. Task management focused on carefully analyzing the operations of a job to determine the actions performed, time to perform each action, the tools and materials used, and the work sequence to complete the tasks. With Taylor's task management, the goal was to optimize the sequence of all these variables. Taylor himself recognized that this "optimization" had limited application. Its applicability was suitable for repetitive work.

Contemporary researchers such as Blanchard and Waghorn (1997), Senge (1990), and Taylor and Felten (1993), have built on Taylor's principles of analyzing organizational productivity. Their focus has shifted from a fragmented and narrow management approach, to that of a comprehensive systems approach. Not only are they evaluating productivity and technical aspects of the organization, they also place significant emphasis on the social (e.g., people, politics, culture, etc.) aspect of the organization.

Frederick W. Taylor's "one best way" approach may be applicable when dealing with an industry that conducts repetitive production with minor variance, but in a dynamic and competitive environment, there is no "one best" approach. Current business practices need to be frequently examined and refined to conform to internal and external influences. To succeed in a dynamic environment, organizations need to undergo a paradigm shift (Taylor and Felten, 1993) from Frederick Taylor's mechanistic or machine thinking to systems thinking. Taylor and Felten note that "the systems approach demands thinking in wholes and about dynamic interrelationships" (1993, p. xvii). This systems approach should include the customers who use the products or services, as well as individuals in the organization who perform the tasks routinely, should be consulted when processes are being evaluated. These individuals possess "personal mastery." Senge (1990) describes the concept of personal mastery as those individuals who possess a special level of proficiency. Drucker notes that everyone possesses a personal mastery in his/her own field. He writes "today almost everybody in modern organization is an expert with a high degree of specialized knowledge, each with its own tools, its own concerns, and its own jargon" (Drucker, 1993, pg. 61). Analyzing organizations from a

more holistic view is a systems thinking approach towards organizational analysis. This systems thinking approach towards improving organizational effectiveness lead to a field of study referred to as Organizational Development.

ORGANIZATIONAL DEVELOPMENT

Organizational Development as a management strategy focuses on improving how organizations function. French and Bell define Organizational Development as the "applied behavioral science discipline dedicated to improving organizations and the people in them through the use of the theory and practice of planned change" (1999, p.xiii). According to French and Bell, organizational development started in the 1950's "when behavioral scientists steeped in the lore and technology of group dynamics, attempted to apply that knowledge to improve team functioning and intergroup relations in organizations" (1999, p.xiv).

Ivancevich and Matteson (1993) describe organizational development as the process of preparing for and managing change. The aim of organizational development is to plan, develop, and reinforce organizational strategies, structures, and processes. It involves the analysis of an organization with the intent of identifying ways to increase the organization's effectiveness, performance, and improved quality of work life (Cummings and Worley, 1997). For an organizational development initiative to be successful, it must involve and consider individuals at all levels in the organization as well as the constraints and impediments to certain change technologies. The desired end result in organizational development is an improved organization functioning with a focus towards a common objective tied to its business strategy. Margulies and Raia (1978) propose eight distinguishing characteristics associated with organizational development.

They note that it is:

1. Planned
2. Problem oriented
3. Reflects a system approach
4. An integral part of the management process
5. Not a "fit-it" strategy
6. Focuses on improvement
7. Action-oriented
8. Based on sound theory and practice

Wagner and Hollenbeck (1998) present four additional important features which characterize organizational development:

1. Has a pronounced social-psychological orientation
2. Focuses primary attention on comprehensive change
3. Is characterized by a long-range time orientation
4. Is guided by a change agent (The change agent is an individual who serves as a catalyst for the process)

Organizational development is described by Wagner and Hollenbeck (1998, p.344) as a "process of planning, implementing, and stabilizing the results of any type of organizational change," with an emphasis on developing and assessing specific interventions, or change techniques.

Cummings and Worley describe the study of organizational development as a "system wide application applying behavioral science knowledge to the planned development and reinforcement of organizational strategies, structures, and processes for improving an organization's effectiveness" (1997, p.2). According to Adams, "Organizational Development emerged from applied Social Psychology and adult education in the early 1960's as a process for helping organizations solve problems and more fully realize their potentials" (1984, p.vii). The consensus among these researchers is that organizational development is a continuous improvement and learning process that

must be planned and monitored. In a dynamic environment, organizations must be flexible and be able to change when the marketplace changes.

Frederick Taylor's Scientific Management in the early 1900's focused on production. This Efficiency Perspective looked for ways to produce the most products or service, using the least amount of resources. But this perspective fell short in recognizing the needs of the customers, employees and administrative procedures. This gave rise to the Empowerment and Quality Perspectives (Wagner and Hollenbeck, 1998) that are the basis of so many contemporary change initiatives.

The Empowerment Perspective looks at ways to design jobs so as to give the workers a sense of fulfillment, personal growth, development and satisfaction. Worker Empowerment does not imply delegating all decisions to non-management staff. It involves the mutual responsibility of both management and non-management to make decisions (Taylor and Felten, 1993). Furthermore, empowerment cannot be a unilateral commitment. There has to be a "willingness" and drive by the employees to want to be empowered. The employee must be willing and able to take on the additional challenges that come with the empowerment responsibilities in or for the true transfer of responsibility to exist. The principle behind the empowerment theory is that the power to make certain decisions should rest on the individuals performing the tasks. The idea is for management to focus on long-term issues such as the organization's mission, marketplace, and finance while non-management staff focuses on short term decisions. These short term decisions include ways to improve the process or enhance customer satisfaction, temporarily stop production to work on a piece of equipment, or hold a meeting to resolve an issue with a staff member. Non-management staff can also focus

on long term issues that affect them directly, such as involvement on work process design, or new products. It involves the transfer of power from one individual to another, depending on who has the best skill, knowledge, and ability to make the decision. Taylor and Felten note that three conditions exist in order to have successful empowerment:

1. Power at the workplace be vested in the persons doing the job.
2. Empowerment requires putting complex systems into human scale.
3. Empowerment requires participation among all members in learning to understand (action research or study), discovering what to change (design), and in organizing to succeed (implementation).

It is important that employees recognize that with the increased "power" comes increased responsibility. Argyris (1998) notes that many times, empowerment does not work well because "CEOs subtly undermine empowerment" and "employees are often unprepared or unwilling to assume the new responsibilities it entails." He also notes that it is not effective when "it is used as the ultimate criteria of success in organizations" because it conceals many of the deeper problems that it was intended to suppress. Argyris explains that this apparent contradiction is a result of two types of commitment: external and internal.

External commitment -- or contractual compliance -- is what employees display when they have little control over their destinies and are accustomed to working under the command-and-control model.

Internal commitment occurs when employees are committed to a particular project, person, or program for their own individual reasons or motivations. Internal commitment is very closely allied with empowerment. The problem with change programs designed to encourage empowerment is that they actually end up creating more external than internal commitment. One reason is that these programs are rife with inner contradictions and send out mixed messages like "do your own thing -- the way we tell you." The result is that employees feel little responsibility for the change program, and people throughout the organization feel less empowered. (Argyris, 1998, Abstract)

Argyris recommends that organizations need to "recognize potential inconsistencies in their change programs; to understand that empowerment has its limits; to establish working conditions that encourage employees' internal commitment; and to realize that morale and even empowerment are penultimate criteria in organizations. The ultimate goal is performance" (1998, Abstract). To determine if the organization truly believes in worker empowerment and considers their merit, it is useful to observe if information (knowledge) is shared.

Within the last three decades there has been a movement towards a third perspective, the Quality Perspective (Wagner and Hollenbeck, 1998). W. Edwards Deming, Joseph Duran, and Philip Crosby are given credit for initiating this focus on quality of products and services. One such approach is known as Total Quality Management (TQM) and is described by Wagner and Hollenbeck as "emphasis on making continuous improvements in quality throughout the process of planning objectives, organizing work, designing products, undertaking production, and monitoring results" (1998, p.150). A spin-off of this approach is Quality Circles where a small group of employees work together temporarily, to identify and resolve job-related problems. Self-Managing Teams is another initiative similar to Quality Circles, but with this approach, the groups of employees are in permanent, empowered teams. These teams are then given the authority to manage themselves.

SOCIOTECHNICAL SYSTEMS

Sociotechnical systems (STS) interventions are associated with work processes and employee tasks (Cummings and Worley, 1997). Stebbins and Shani (1998) note that

at the most fundamental level, non-routine operation organizations are made up of a social sub-system (the people with knowledge, skills, and attitudes-all that is human), a technical sub-system (the inputs and the technology which convert inputs into outputs-or product-in-becoming) and an environment sub-system (comprised of customers, competitors and a host of other outside forces). Organization design seeks to pull the three sub-systems together through a better strategy, conversion process, structural configuration and organizational support processes.

Taylor and Felten offer that all organizations are sociotechnical systems. They suggest "every organization contains a technical subsystem to produce the core output and a social subsystem to coordinate activities among people to assure the flexibility and long-term survival of the enterprise" (Taylor and Felten, 1993, p.1). They go on further to state, "any organization can be considered a sociotechnical system (STS) if it is seen as a bounded, purposeful enterprise in a recognizable external environment, containing product transformation (technical system) and people working together over time to bring about that transformation (social system)" (1993, pp.51-52).

Sociotechnical Systems is a method for management and non-management staff to understand the people, technology, and work design as a comprehensive system. The synergy associated with this participatory process in theory, fosters teamwork, increased worker satisfaction and increased accountability. This holistic view facilitates the analysis of the tasks and operations. This project proposes that this same analysis can be used to develop a comprehensive change initiative implementation plan. Sociotechnical System's approach focuses on the outcome (throughput or product) (Taylor and Felten, 1993).

The origins of the Sociotechnical Systems field of study originated in the early 1950's by researchers from England's Tavistock Institute of Human Behavior in London. Researchers there set out to study why there had been problems in coal mining production in Great Britain, despite the introduction of more modern technologies. To find the cause of the problem, lead researchers Fred Emery and Eric Trist set out to make detailed observations of self-managing groups at work in the coal mines at Wales. What prompted their study was that in the 1930s and 1940s, the introduction of powered coal-digging equipment which was intended to increase productivity, actually caused demoralization and decreased productivity. Prior to using powered equipment, the coal miners worked in close-knit teams that helped each other out, coordinated tasks, and supported each other out psychologically while working in the physically demanding and hazardous mines.

The Tavistock study found that when powered coal-digging equipment was introduced, the coal mining process changed. The men were divided and were to work alone along long walls of exposed coal. This process change caused much dissatisfaction and lead to disobedience, absence, and violence. The study concluded that the machine powered technology took away the social aspects of the job that made the arduous job of mining more bearable. The researchers found that at the mines as well as in other study sites, when social interaction among workers was decreased, productivity fell. They noted that productivity was jeopardized "when either social or technical factors alone were allowed to shape work processes" (Wagner and Hollenbeck, 1998, p.147).

It can be argued that STS as a change technology may not be able to achieve its stated objective. One of the founders of STS theory, Fred Emery, noted that the original

objective of STS was to achieve a shift in organizations from bureaucratic to a democratic. In the mid 1990's though, Emery questioned STS's practicality. He felt that as a change technology, STS had outlived its purpose and was obsolete. Emery attributed the failure of STS on several factors. He claimed that the reason STS did not succeed was that it was misused and exploited. He felt that in the 1970s and 1980s when STS was popular, academics looked for ways to analyze and theorize it, consultants looked for ways to capitalize monetarily by peddling it, and politicians in Australia saw its potential to help produce high wage, high skill jobs and turned it into a way to gain votes (Fred Emery, 1995). Emery proposed that over the past 40 years, STS theory gave limited solutions that often times generated new issues, and then went on to solve those problems. In the mid-1990s, Emery redesigned his STS theory and called it Participative Design. The basis of Participative Design was to change the social context of work to optimize the decision making process with multi-skilled workforce. Two questions frame the premise of Participative Design, they are:

1. What decisions about control and coordination of work were necessary for effective group working?
2. To what extent can these decisions be located with the group doing the work?

The concern is that if decisions about coordination and control have to be made at least one level above the people who do the work, it becomes bureaucratic and closely resembles the Frederick Taylor model of organizational management (Emery, 1995).

SOCIOTECHNICAL SYSTEMS PROCESS AS A DESIGN TOOL FRAMEWORK

The vast majority of researchers who write about change initiative implementation (Robbins and Finney, 1996, Herbst, 1974, Kotter 1996), offer a very detailed step by step change implementation process, such as Robbins and Finley's

(1996, p.84):

- Announce to the team or organization what you want the outcome to look like.
- Lay out the vision for them.
- Designate an enthusiastic pilot group.
- Have them play with and modify the idea as necessary.
- Give them enough time and resources to make the change and show measurable success.
- Broadcast the successes.

Sociotechnical systems as a change initiative is alleged to be a successfully proven approach to organizational design (Pasmore, 1988, p.1-2). There is considerable literature on Sociotechnical systems as a change (i.e., organizational improvement) initiative. The vast majority of the literature on organizational change deals with successes and failures with change intervention attempts. The majority of the literature state that change should be top driven (Beer, 1980), while others (Kotter et al.) state that it is impossible for a change initiative to succeed if “most of the employees are not willing to help, often to the point of making short-term sacrifices” (1996, p.9).

Many researchers acknowledge the need for a systemic change implementation course of action, but few if any have proposed an approach. Cummings (1980, p.6-8) notes that “knowing how to manage change is fast becoming one of the most urgent functions of management, especially corporate management. At the same time, it remains one of the most difficult and least understood of all the management functions.” But like much of the literature in this subject matter, Cummings does not offer a systemic approach to a deployment or implementation plan.

When conducting the analysis to determine possible constraints that could impede the implementation of an organizational change initiative, the STS analysis model can be used to analyze social and technical limitations. This research used the open systems

theory approach to explain the process used for conducting the research.

ORGANIZATIONS AS OPEN SYSTEMS

Open Systems Theory states that a system is influenced by its surrounding, and its actions in turn affect its surroundings. All living systems, whether they are plants, animals, micro-organisms, or organizations, share this common characteristic. Hanna (1988) defines a "system" as an arrangement of interrelated parts. He explains that the individual components interact and function as whole, not as individual parts. French and Bell propose that organizations are open systems. They note that they are systems that are affected by, and influence their environment. Increased frequent changes in environmental demands, threats, and opportunities, force the organization to also change. The challenge is that as the frequency and intensity of environmental changes increase, and as the number of stakeholders' increase, the intensity in changes the organization will have to experience will also increase (French and Bell, 1999). The change initiative this project is analyzing affects over 35,000 of its members and has taken over 25 years to be considered successful. As a learning organization, refinement and continuous improvement will continue to be vital.

As shown in Figure 5, a basic open system model consists of an input, throughput, output, and a feedback loop. An integral part of this systems model is the environment, both internal and external, surrounding the process. The boundary defines the extent of the model coverage. Since it is an open system, the boundary must be seen as a permeable "fence" that is used to outline what is being studied, but what happens outside the defined boundary certainly affects the system itself. When studying an organization, the boundary can be identified as the parent corporation, or it can be much more focused

such as, a particular plant, division, or department. The input is the material, matter or resources necessary to perform the tasks. The transformation or throughput process is the performance of the task or work. The output is the result of the work produced. This includes the desired product or service as well as the undesirable by-products such as pollution and scrap. The feedback loop is the mechanism by which the system can monitor whether the output is in-line with what is desired.

The model uses the throughput process as the analysis of the input and determination of what issues or constraints need to be addressed or considered. Since organizations are in constant flux as a result of its internal and external environment, periodic monitoring and re-evaluation is essential in determining if the area identified for improvement remains unchanged. By confirming the results, and providing suggestions and making adjustments back to the input, the system can be made to be in a state of continuous improvement and learning. In the Data Analysis Process Section in the Methodology Chapter (Chapter III) of this research, this open systems model is used to describe how the evolution of the data followed the open systems model.

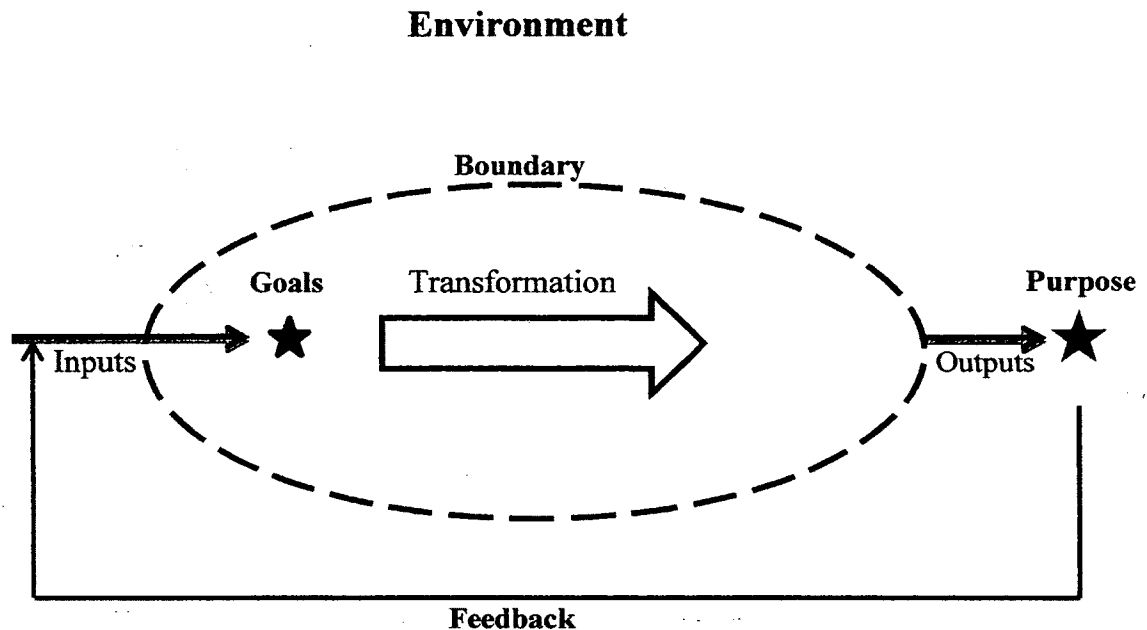


Figure 5. Basic Open Systems Model

One of the most important tasks that are needed to be accomplished is to create credibility and motivation among the staff with regards to the intervention deployment. Failed attempts to implement a change intervention will reinforce the skepticism among the staff when any future change initiative is attempted to be deployed. Kotter (1996) proposes an eight-stage process which consists of:

1. Establishing a sense of urgency
2. Creating the guiding coalition
3. Developing a vision and strategy
4. Communicating the change vision
5. Empowering employees for broad-based action
6. Generating short-term wins
7. Consolidating gains and producing more change
8. Anchoring new approaches in the culture

These recommendations serve as a philosophical guide for initiating and maintaining enthusiasm within the entire staff during the implementation of a change

initiative, but it still does not address the need to develop a deployment plan that not only identifies the organization's specific constraints and socio technical obstacles, but also enablers. Beer (1980) contends that sustaining motivation is critical but very difficult to maintain. It becomes even more difficult as time goes on. The primary reasons Beer gives for the loss of motivation are because of loss of competence, loss of relationships, loss of power, and loss of extrinsic rewards. By loss of competence, he means organizational changes can compel organizational members for new attitudes, skills, and behavior because ways in which things were done before are seen as having to be changed. In other words, the organizational culture may be altered. By loss of relationships, Beer is referring to physical changes in workplace and possible relocation of peers. Relationships and interaction patterns that may have been established as a result of having worked nearby to someone for an extended period of time may now be jeopardized. The next area Beer states causes loss of motivation shortly after a change initiative is implemented is loss of power. The reason for this is that even though it may not be intentional, change usually results in shifting of power from one individual to another. Lastly, Beer notes that loss of extrinsic rewards leads to loss of motivation implementation. This is assuming that the change leads to higher rewards for some while lower rewards for others.

In order to get individuals to recognize the need for change and be able to identify in which areas the change improvement is required, it is important to identify the organization's strengths and weaknesses as early as possible. Obtaining input from the customers, as well as employees, will substantially enhance the process of organizational development. Miles (1997) argues that the earlier large numbers of employees are

subjected to reliable information about the causes and consequences of a current or potential business performance shortfall, the sooner the drive will be to move forward with the corporate transformation process. In order to develop a long term human resource philosophy (Bolman & Deal, 1997) actions taken by management must stress and demonstrate the relationship between people and the organization.

Regarding sharing of information and right-to-know, Heil (1995) and his associates believe that there are two factors that need to be considered, first, the variety of people necessary for gathering and processing information. The second concerns the number of people involved in the effort. They deem that for an organization to be successful, it needs to give serious consideration to both. Researchers such as Senge (1990), Blanchard (1997) and others talk about the collaboration unleashed in systems thinking whereby the sum of knowledge of the whole is greater than its parts. It is imperative that management clearly demonstrate their commitment to the change. Beer et al. (1990, p.159) maintain that the reason for so many of the organizational change failures, are that "most of today's senior executives developed in an era in which top-down hierarchy was the primary means for organizing and managing. They must learn from innovative approaches coming from younger unit managers closer to the action." Member participation will reduce the perception of uncertainty, thus help with the reduction of stress that can be associated with resistance to change. Success in implementing any change initiative is contingent on the organizational commitment and worker satisfaction. Research conducted by Wagner and Hollenbeck (1998) notes that worker dissatisfaction is a major cause for declining organizational commitment.

ORGANIZATIONAL CHANGE

There is substantial research and literature on popular change initiatives. It is also important to recognize what is working successfully so it is not altered. Most change initiatives fail (Beer 1980), not because the wrong initiative was selected, but because there was a weak or non-existing deployment plan.

Organizations are dynamic open systems that undergo frequent shifts in priorities, technologies, and other environmental factors, a successful organizational change intervention deployment process must also be able to shift to meet new fluctuating objectives. The plan must contain clear, achievable goals that can be measured periodically, and must be flexible enough to allow for change. This concept which Senge (1990) referred to as "organizational learning," refers to the process where the organization systematically questions its operations, analyzes how tasks are accomplished, why they are accomplished in the manner that they are, and how it can be improved. Yet, when it comes to determining changes in business practices, many organizations place a significant emphasis on Taylor's "thinkers" (i.e., management) and lower emphasis on the "doers" (i.e., non-management) and the sociotechnical aspects of the organization.

As previously mentioned, there are numerous circumstances that may trigger a need for an organizational change. From a political perspective, financial reasons are the major factors requiring the organization to look into incorporating a change initiative. Robbins and Finley (1996) compare organizational politics to a game in which no party wants to yield any advantage to the other. Departments and functions believe that in order to "win," someone else must "lose." Robbins and Finley found that it was common

for organizations to waste more energy, feuding within the organization, than it would have taken to solve or "combat" the problems the organization faced. It would be naive to expect that an organization can easily go from having internal political disagreements, to complete accord. What can realistically happen is that the struggle between management and non-management staff be replaced with an understanding in which both sides acknowledge disagreements. As Robbins and Finley suggest, "agree with the larger purpose of survival in the marketplace" (1996, p.108).

Organizational change involves moving the organization from a current state to a desired future state. Cummings and Worley note that the transformation takes time "during which the organization learns how to implement the conditions needed to reach the desired future" (1997, p.165). They call this period the transition state, as shown in Figure 6.



Figure 6. Organizational Change as a Transition State
(Cummings & Worley 1997, p.165)

Cummings and Worley (1997, pp.165-166) note that the transition phase requires three major operations in order to be successful:

1. *Activity planning* - addresses the charting of how specific activities and events must take place in order for change to successfully take place. Discrete and achievable benchmarks must be identified and periodically validated to track progress or deviation from plan.
2. *Commitment planning* - involves the identification of key individuals whose commitment is necessary for the change to successfully occur. In addition to involving top-management, the key stakeholders who are traditionally considered, the proposed research will include non-management organizational members and customer input.
3. *Management structures* - addresses the identification of individuals who will be identified to direct and lead the change transition. The key consideration here involves selection of individuals with the appropriate interpersonal and political skills necessary to direct and lead change.

Todd Jick (2011, p. xx) notes that Linda Ackerman (1986, p. 1-8) offers a useful way of categorizing common changes in organizations. The first is *Developmental Change*. This type of change is useful when current operations and processes are working fairly well and all that is needed is fine tuning. The second category of conventional change offered by Ackerman is *Transitional Change*. It is a change that evolves slowly and is characteristic of a process change initiative. It follows the same model as Cummings and Worley's (1997). The third popular type of change proposed by Ackerman, and the most radical is *Transformational Change*. According to Jick, "Transformational Change does require a leap of faith for the organization, although often it is initiated when other options appear to have failed. It is typified by a radical reconceptualization of the organization's mission, culture, critical success factors, form, leadership, and the like" (2011, p. xxi).

Beer (1980, p. 84) points out that the description of the desired organization should be detailed and specific. He believes that managers considering an organizational

change need to “define the state of the organization they desire in the future. In effect, they must specify the outcomes they would like and how they think the organization should function to achieve them.”

While it is important and essential that the change process model have a well developed plan and commitment from its staff in order to be successfully implemented, what the approach that Cummings and Worley fails to outline is that the fundamental (root) issues that need to be addressed, have been correctly identified and that the "planned activity" has considered the sociotechnical constraints that would either prevent or at the very least, be an impediment to the implementation of the selected change technology.

Dubrin and Ireland introduce several ways in which organizational change can take place. They note that transition can take place by using one or more of the following four techniques. The first is by raising the members' awareness of designated rewards and how to achieve them. The second deals with getting the members to "transcend their self-interests" for the good of the workgroup and organization. A third technique is to help the employees focus on minor satisfactions in a pursuit for self-fulfillment. Their fourth method is to alter or expand "the group members' needs on Maslow's hierarchy of needs" (1993, pp.279-280). These techniques require that the group's leader have the capability of being able to influence the group and motivate them considerably. Dubrin and Ireland refer to this type of charismatic leader as a *transformational leader*. The transformational leader is also referred to in other literature as the change agent, and should not be confused with organizational transformation. A transformational leader is the person responsible for taking charge of either an incremental change or an

organizational transformation. These two types of organizational changes are discussed in the last portion of this section. Dubrin and Ireland note that a transformational leader "exerts a higher level of influence than does a transactional leader" (1993, p.279). According to Burns (1978), the distinction between a "transactional leader" and a "transformational leader" is that the transactional leaders "approach their followers with an eye to exchanging one thing for another (i.e., jobs for votes, or subsidies for campaign contributions). A transformational leader on the other hand, elicits their constituents' better nature and moves them towards higher and more universal needs and purposes. He describes them as visionary leaders.

Pascale et al. (1997) note that in order for improvement programs to be successful, the burden of change needs to involve the entire organization, not just a few. Research conducted by these authors on change efforts at Sears, Roebuck & Company, Royal Dutch Shell, and the United States Army, lead them to conclude that in order for organizations to regain "vital agility" and "remain in good health," they must ensure:

1. Incorporating employees fully into the principal business challenges facing the company.
2. Leading the organization in a different way in order to sharpen and maintain incorporation and constructive stress.
3. Instilling mental disciplines that will make people behave differently and then help them sustain their new behavior.

CHANGE INTERVENTIONS

An endeavor by management or consultant to design "a sequence of activities, actions, and events intended to help an organization improve its performance and effectiveness" is known as an organization development intervention (Cummings and Worley 1997, p.141). An effective intervention involves the intentional disruption of the

current state in order to implement a carefully planned and designed sequence of events or actions with the purpose of improving the effectiveness of the organization.

Cummings and Worley (1997, p.141) note that effective interventions are defined by the following three major criteria:

1. The extent to which it fits the needs of the organization.
2. The degree to which it is based on causal knowledge of intended outcomes.
3. The extent to which it transfers competence to manage change to organization members.

Cummings and Worley (1997) have identified 27 different intervention methods grouped under one of four general categories. These four general categories consist of: Human Process Interventions, Technostructural Interventions, Human Resource Management and Strategic Interventions. The four major categories and the 27 interventions are shown in Figure 7.

Human Process Interventions

- T-groups
- Process Consultation
- Third-party Intervention
- Team Building
- Organization Confrontation Meeting
- Intergroup Relations
- Large-group Interventions
- Grid Organization Development

Technostructural Interventions

- Structural Design
- Downsizing
- Reengineering
- Parallel Structures
- High-involvement Organizations
- Total Quality Management
- Work Design

Human Resource Management

- Goal Setting
- Performance Appraisal
- Reward System
- Career Planning and Development
- Managing Work-force Diversity
- Employee Wellness

Strategic

- Open Systems Planning
- Integrated Strategic Change
- Transorganization Development
- Culture Change
- Self-designing Organizations
- Organizational Learning

Figure 7. Change Interventions (Cummings and Worley, 1997, p.147)

Human Process Interventions concentrate on the members of the organization and the processes they use to accomplish the organizational goals. The focus of these interventions is an enhanced functioning of both the organization's members and the processes they use. Some popular interventions included within this category include Team Building, T-groups, and Intergroup Relations.

Technostructural Interventions revolve around the organization's technology processes including job design and task methods. Interventions associated with this category include Reengineering, Total Quality Management, and Work Design.

The *Human Resource Management Interventions* involve integrating members into the organization. Goal Setting, Managing Work-Force Diversity, and Employee Wellness are several interventions associated with the Human Resource Management interventions.

Cummings and Worley, note that *Strategic Interventions* "link the internal functioning of the organization to the larger environment and transform the organization to keep pace with changing conditions" (1997, p.150). Some interventions associated with this category include Open Systems Planning, Culture Change, and Organizational Learning.

Cummings and Worley (1997) characterize the implementation of a successful intervention as being contingent upon several factors. These major factors include the organization's readiness and commitment for change and its capability to change. The organization's capability to change encompasses elements dealing with politics, structure, and its leadership's ability to motivate. Other important factors that need to be taken into account involve how ingrained and rigid the organization's culture is, and the capability

of the change agent. There is a certain level of comfort associated with the status quo and a fear for the unknown that leads to a resistance to change.

RESISTANCE TO CHANGE

Fear of the loss of position, power, and other motives cause individuals at all levels in the organization to be reluctant to change. With advances in technology, and the growing amount of competition, change is inevitable in most markets. LaMarsh (1995) states that what is needed is to establish a mind set in the organization that is tolerant to change. She recommends that the change processes must be well structured and consistent. Foremost, trust in the process is essential because some individuals will experience or perceive fear, frustration, and sadness. LaMarsh notes that trust in the process occurs when the organization genuinely demonstrates that it values those feelings, addresses them, and assists the members get through them (1995).

Strebel proposes that change initiatives often fail because "executives and employees see change differently. For senior managers, change means opportunity, both for the business and for themselves. But for many employees, change is seen as disruptive and intrusive" (1996, p.86).

As a remedy, Strebel (1996) offers, that to close this gap, managers must reexamine the agreement between their employees and the organization. He characterizes these "personal compacts" as having three dimensions: formal, psychological, and social. He notes that members of the organization define their responsibilities, their level of obligation to their work, and the company's values by asking questions along these dimensions. How management answers these questions determines the key to effective change.

Strebel presents two case studies to illustrate the effectiveness of revising personal compacts. In one case, he describes how the CEO of Eisai, a Japanese pharmaceutical company, anticipated potential crises and created the framework for long-term change. In this case, Eisai's employees took the control in modifying their own personal compacts; as a result, the company accomplished a major strategic change. In the second case, Strebel describes how the CEO of Philips Electronics, was successful at pulling the company back from the fringe of bankruptcy by changing the company's risk-averse culture with one in which employees were committed fully to the company's goals (1996).

The organization's culture plays a major role on resistance to change. But the organization's culture is very difficult to change. Researchers having done studies on organizational culture (Bainbridge 1996; Cummings and Worley 1997), agreed that although it can be modified, incrementally changing an organization's culture is extremely difficult and can take between six to fifteen years. Cummings and Worley note that the reason why cultures are sometimes so difficult to change is that in an organization, its culture provides a strong protection against external uncertainty and risks. They also note that members in the organization have vested interests in maintaining the existing culture. The "Desired Future State," may be to mirror the "culture" of another successful organization. Even though examining another organization's apparent culture may be useful in developing a model for the plan, organizational culture is not something that can be packaged, inserted, and implemented.

Cummings and Worley (1997) suggest three major strategies for dealing with resistance to change as:

1. **Empathy and Support.** This deals with recognizing how employees are dealing with the change.
2. **Communications.** Keeping people informed will reduce fear, and uncertainty. Lack of information will usually instigate rumors that contribute to anxiety and resistance to change.
3. **Participation and involvement.** Involving the employees in the planning, design and implementation of the change initiative is one of the most effective strategies for overcoming resistance.

To overcome resistance, management must keep people informed of purpose, process, and progress, and they must lead by example. To keep people informed, many successful organizations establish workshops that can assist in emphasizing new concepts, frameworks, and viewpoints (Miles, 1997). During the workshops, management discuss short-term and long-term issues. They must demonstrate a genuine commitment to the change initiative.

In addition, leading by example will present management as proponents for change, with every feat and contribution with the larger organization, used to promote the confidence and passion for the changes being done (Bainbridge, 1996).

INCREMENTAL CHANGE VERSUS ORGANIZATIONAL TRANSFORMATION

The main distinction between an incremental change initiative and an organizational transformation is how drastic the implementation of the intervention is. Unlike incremental change initiatives, organizational transformations usually go beyond improving a specific segment of the organization, and focus on changing the way the organization views itself and its environment. Cummings and Worley (1997) describe an organizational transformation as a radical form of organizational change associated with activities directed at changing the basic character, strategic direction, structures,

processes, and behavior or culture of the organization. Most change initiatives undertaken in organizations are incremental change initiatives which focus on improving a specific segment of the organization, while organizational transformations involve changing the way the organization operates, rewards, and its principles in a major way. The risks and effort required to properly implement an organizational transformation are so extreme, it should be considered only when the organization is facing an unavoidable, and extremely unfavorable situation. This is not to imply that implementing an organizational transformation is an impossible feat. When properly designed and managed, it has proven to be very successful in many organizations including such giants as; Chrysler Corporation, Allied Signal, Southern Company, Norrell Corporation and many other large companies (Miles, 1997).

Since organizational transformation requires such significant change in the beliefs, perceptions and behaviors of individuals, these transformations rarely occur unless there is a real or perceived, usually unfavorable event about to occur (Cummings and Worley, 1997). The reason why it takes such a momentous event is that transformation requires changes in attitudes and culture which are deeply embedded within the organization. Change is difficult and requires considerable effort. Many managers have tried to stimulate the organization by invoking poorly designed change initiatives which end up doing more harm than good. As a result of so many improperly implemented change initiatives, there is considerable skepticism on the part of many individuals on any new proposed change initiative.

Cooperation and teamwork are essential for an organizational change intervention to be successful. The problem is that many organizations do not recognize the true

meaning of teamwork. Katzenbach (1997) notes that in organizations, self-professed teams seldom function as real teams. He states that real teams must follow a clearly defined restraint and control to achieve their performance potential. Furthermore, he notes that performance is the principle issue, not the promotion of team values. He also notes that for a senior level team to be effective, and be able to achieve real team performance, it must adhere to the following criteria:

1. The team must shape collective work-products - these are tangible performance results that the group can achieve working together that surpass what the team members could have achieved working on their own.
2. The leadership role must shift, depending on the task at hand.
3. The team's members must be mutually accountable for the group's results.

Katzenbach (1997) recommends that if this criterion cannot be met, the team members need to rely on the individual leadership skills that they have perfected over time.

The organization must work at analyzing, designing, and implementing the intervention as a system. Hanna (1988) describes a system as an array of interconnected parts. When referring to systems, all aspects of the organization must be taken into account in an all-inclusive manner. This not only includes management and non-management staff and technology, but also the processes, customers, and the non-tangible aspects of the organization such as its culture, the interactions between the elements and other tacit characteristics that exist within the organization.

When an organizational change is planned and designed, the change managers can track progress, or the lack thereof. Management of the intervention can facilitate the identification of any sources of problems, which can then be corrected, or re-focused before the implementation of the initiative fails.

CHAPTER III

METHODOLOGY

The purpose of this research was to explore a comprehensive process to assist in planning the deployment of an effective change intervention. The premise being that using a Social Systems-based process can facilitate the successful development of a change intervention deployment plan.

Even though project management as a concept existed in the U.S. Army Corps of Engineers (USACE) prior to the late 1980's, it was not until 1988 that there was a major initiative to make project management a formal department within each district office and make project management a process officially recognized as the USACE's formal business process (aka Project Management Business Process or PMBP). This change was top driven from the highest level within the organization. The process has taken hold and is currently being used very successfully. But it has taken over 25 years for the initiative to be successful.

This project uses a Case Study approach for analyzing "why" the implementation of the project management initiative took as long as it did. The research examines multiple sources of data. It compares and contrasts the five iterations of Engineer Circulars and Regulations (1988, 1992, 1998, 2001, and 2006) written specifically regarding the implementation of project management as a business process and how each regulation outlined why the documents had to be rewritten. Each iteration of the regulation acknowledges shortfalls in previous versions of the mandate and modifies the guidance. The study also examines two independent Engineer Inspector General (EIG) reports (Feb and Jul 1999) where failures in implementation of project management as a

business process in the USACE were found to be a nationwide issue. Other independent assessments include memorandums from the top ranking officials in the organization, Internal Audit Reviews, and a Case Study prepared by a team of senior Corps officials analyzing what had transpired with regards to the Project Management initiative implementation from 1982 through 2002. Details of the case study are provided in Chapter IV.

TYPE OF RESEARCH

Patton (1990, p.150) offers five different research methods. They are:

1. Basic Research - augments fundamental knowledge and theory. Its purpose is primarily to understand and explain a phenomenon.
2. Applied Research - concentrates on illustrating a societal dilemma. Its purpose is to propose possible solutions to human and societal problems.
3. Summative Evaluation - analyzes program effectiveness.
4. Formative Evaluation - attempts to enhance a program.
5. Action Research - focuses on solving a problem in a program, an organization, or a community.

This study is aimed at exploring a comprehensive process to assist in planning the deployment of an effective change intervention. To accomplish this, an applied research methodology was used. Patton notes that applied research is used to "contribute knowledge that will help people understand the nature of a problem so that human beings can more effectively control their environment" (1990, p.153). He states that applied researchers search for "applications of basic disciplinary knowledge to real-world problems" (1990, p.153). Patton highlights that the main difference between applied research and basic research is that applied researchers attempt to understand "how to deal with a problem" while basic researchers "try to understand and explain the basic nature of

some phenomenon." With regards to researcher involvement in applied research, Patton notes that "applied qualitative researchers are able to bring their personal insights and experiences into any recommendations that may emerge" (1990, p.154).

According to Patton, the purpose for applied research is to "understand the nature and sources of human and societal problems." The desired results of applied research then, consist of "contributions to theories that can be used to formulate problem-solving programs and interventions". The key assumption is that "human and societal problems can be understood and solved with knowledge" (1990, p.160). Patton goes on to state that, "applied researchers take the findings, understandings, and explanations of basic research and apply them to real-world problems and experiences. This means that the applied researcher searches for applications of basic disciplinary knowledge to real-world problems" (1990, p.154). This is why applied research is the appropriate research method to use in this particular study. This study is aimed at identifying and outlining why there were so many suspected false starts and rework in the project management initiative implementation by utilizing a comprehensive systems analysis (STS) approach.

This research set out to ask the question of "how" to contribute to the existing body of knowledge that has demonstrated independently, the importance and benefits of having a well thought out plan prior to launching a major initiative as was the case in this study. This applied research enables individuals to contribute to the problem solution attempted to be solved. Finally, this approach allows for interaction that takes place with the open systems theory model that was previously shown to be the case with the type of organizational research conducted in this study.

CASE STUDY RESEARCH

In addition to using applied research as the research methodology, this research utilized case study research to analyze the actual 25 year implementation of the project management change initiative at the U.S. Army Corps of Engineers.

Case study research is one of several research methodologies used in social science studies. Yin notes (1994, p.1) that "case studies are the preferred strategy when "how" or "why" questions are being posed, when the investigator has little control over the events, and when the focus is on a contemporary phenomenon within some real-life context."

Case studies have different purposes; exploratory, descriptive, or explanatory. The key to determining what type of research method to use, is the research question. Yin notes that "defining the research question is probably the most important step to be taken in a research study" (1994, p.7). The research question for this project is: How can using a Sociotechnical Systems-based process, facilitate the successful development of a change intervention deployment plan? A complementary research question is: How can the design and analysis of a sociotechnical deployment plan facilitate the identification of constraints that could impede implementation of the change initiative? Yin offers a table by the COSMOS Corporation (Figure 8) that outlines "relevant situations for different research strategies." He points out that there are three conditions that guide when each strategy should be used. They are "(a) The type of research question posed, (b) the extent of control an investigator has over actual behavioral events, and (c) the degree of focus on contemporary as opposed to historical events" (1994, 6).

strategy	form of research question	requires control over behavioral events?	focuses on contemporary events?
experiment	How, why	yes	yes
survey	who, what, where, how many, how much	no	yes
Archival analysis	who, what, where, how many, how much	no	yes/no
history	How, why	no	no
case study	How, why	no	yes

Figure 8. Relevant Situations for Different Research Strategies, COSMOS Corporation. (Yin, 1994, p.6).

As previously noted, the research questions in this study deals with answering "how." This first test ("form of question" column in Figure 8) suggests that the research can be an experiment, history, or case study. The second test ("requires control over behavioral events" column in Figure 8) refers to the extent of control the research has over the actual behavioral events. In the instance analyzed in this study, the researcher did not have any control over the actual behavioral events. The case being analyzed deals with the implementation of a major change initiative involving cultural, technical and social change over a long period of time (over 25 years) affecting thousands of individuals. Thus, this test further steers the research to be either a history or case study. The third test ("focuses on contemporary events" column in Figure 8) deals with the degree of attention on contemporary as opposed to historical events. Even though the

implementation and planning of the change initiative analyzed in the case study has been in development for over 25 years, the most significant portion of the change implementation has occurred within the last four years and is currently underway. So this research does focus on contemporary events and thus the preferred research approach would be case study analysis. Another important factor with the case study being analyzed in this research is that it is very well documented and contains a many forms of documentation to include circulars, regulations, audit reports, memorandums, and brochures. Yin notes that the unique advantage of case studies is "its ability to deal with a full variety of evidence - documents, artifacts, interviews, and observations" (1994, p.8).

One of the major criticisms against case studies is that they lend themselves to researcher bias of findings and conclusions. This research does not use the case study to conclude a theory, it uses the case study to analyze the deployment of a sluggish, but yet successful change intervention implementation. The case study also highlights the pitfalls encountered when STS constraints were not considered.

As far as viewing researcher bias as a criticism against case studies, researchers (Rosenthal 1966, Sudman and Bradburn 1982, and Gottschalk 1968) have found that biases can and do occur with experimental research, surveys, and historical research. Another concern with case studies is that critics argue how one can generalize from a single case study. Yin's (1994) response to this is that the same argument can be made even against an experiment. When multiple experiments are conducted, the fact is that the same phenomenon is replicated under different conditions. Yin (1994) notes that like experiments, case studies are "Generalizable to theoretical propositions and not to

populations or universes. The case study should not be considered a "sample," but rather to "expand and generalize theories (analytic generalization) and not to enumerate frequencies (statistical generalization)" (Yin, 1994, p.10).

Yin notes that "A case study is an empirical inquiry that - investigates a contemporary phenomenon within its real-life context, especially when, the boundaries between phenomenon and context are not clearly evident" (1994, p.13). That is why case study research is used when the contextual conditions are felt to be pertinent to the study. This is the circumstance in the case study being analyzed in this research. The core of the research model is that social and technical constraints do affect the proper implementation of a change initiative. In this research contextual conditions are an integral part of the research.

RESEARCH DESIGN

Yin notes that "research design is the logic that links the data to be collected (and the conclusions to be drawn) to the initial questions of study" (2003, p.19).

Yin (2003) proposes five components of research design. They are:

1. A study's question
2. Its proposition's (if any)
3. Its unit(s) of analysis
4. The logic linking the data to the propositions
5. The criteria for interpreting the findings

The study question of this research is: How can using a Sociotechnical Systems-based process, facilitate the successful development of a change intervention deployment plan? A related research question is: How can the design and analysis of a sociotechnical deployment plan facilitate the identification of constraints that could impede implementation of the change initiative? As was previously noted, the "How"

aspect of the research question proposes that the case study strategy is the most appropriate for this research. The study proposition is that if a sociotechnical systems based process were used in developing the change intervention deployment plan, implementation of the initiative would have had been accepted and assimilated sooner. This proposition is offered as a reason for the numerous false starts and rework in implementation of the initiative. Assimilation of “project management” as a business process in the U.S. Army Corps of Engineers, is the primary unit of analysis. This organization is the world’s largest public engineering, design and construction management agency. It is a U.S. government organization consisting of over 35,000 employees and has offices worldwide with a physical presence in over 100 countries. Although the unit of analysis in many case studies are specific individuals (Jennifer Platt, 1992a, 1992b), researchers such as Yin (2003, p.23) and Feagin et al. (1991) note that a unit of analysis for a case study can be much broader such as an organizational change or implementation process. The data being analyzed in this study consists of the numerous documents (memorandums, regulations, Inspector General reports, and studies) all generated from the highest level of the organization, outline reasons for impediments to successful initiative implementation. The logic linking the data to the propositions is charted in this research project in the chronology and analysis of the numerous rework of guidance over 25 years. When applicable, the analysis delineates enablers as well as constraints (flaws) both social and technical with each attempt to correct previous attempts to the guidance. The criteria for interpreting the findings are straight forward, and consist of the literal statements in the documents. This project does not utilize statistical analysis to study the data since there is no statistical test to compare the type of

data being analyzed. Each data point is a single event, the specific document being analyzed.

RESEARCH DATA COLLECTION

Beer (1990) proposes that there are three qualitative methods of data collection. They are (1) in-depth, open-ended interviews; (2) direct observation; and (3) written documents. The research instrument being used in this project consists of written document analysis and evaluation. Beer notes that document analysis in qualitative inquiry produces extracts, quotes, and at times, entire citations from organizational official publications and reports.

As previously stated, this project will utilize written documents as the source of data used for evaluating the implementation. The written documents consist of memorandums, regulations, Inspector General Reports, and studies, all generated from very high levels in the organization.

DATA ANALYSIS PROCESS

As was noted in the “Organizations as Open Systems” section in the Review of Literature and Related Research Chapter (Chapter II) of this study, an Open Systems Model (Figure 5) depicts the research process whereby the Boundary (Unit of Analysis) is the USACE. The “study sample” in this research does not consist of people; they are the documents that constitute the input to the model. And the output of the model are Report findings and endorsement memorandums explaining the need for a new regulation. The changes noted in these endorsement memorandums and reports constitute the feedback loop. The transformation/throughput in the center of the model is the assimilation of the initiative, or lack thereof of (Figure 9).

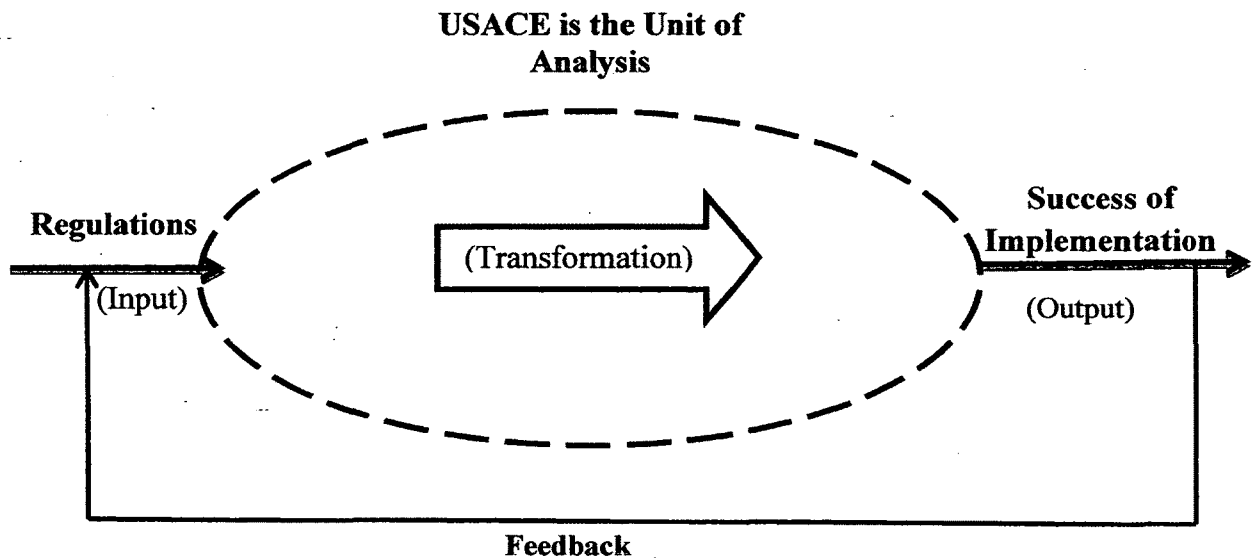


Figure 9. Research Open Systems Model

LIMITATIONS OF RESEARCH METHODOLOGY

The research methodology of this project does have limitations. For one, the initiative implementation is ongoing. An indication that Senior Management is content with the initiative's success is that there has not been a need to develop and issue any additional regulations or guidance since 2007. Occasional refresher courses and other short workshops are occasionally provided to hone the skills of seasoned employees, as well as train new employees in this now, fundamental business process. A common limitation seen in many studies is researcher bias. Though this may not be able to be totally ruled out, the researcher on this project will report on published findings and correlate the findings with data from other documents and not on the researcher's views.

CHAPTER IV

CASE STUDY

ORGANIZATION BACKGROUND

The case study analyzed in this research involved the implementation of a major change initiative (Project Management Business Process) at the world's largest public engineering, design, and construction management agency, the U.S. Army Corps of Engineers (USACE).

The organizational hierarchy of the USACE, consists of one headquarters located in Washington D.C. This headquarters is known as Headquarters US Army Corps of Engineers (HQUSACE). Directly reporting to HQUSACE are eight Division offices located throughout the United States. Thirty five stateside Districts offices report to their respective Division offices. Currently there are also seven additional District offices abroad (Asia, Europe, and the Middle East) for a worldwide total of over forty District offices.

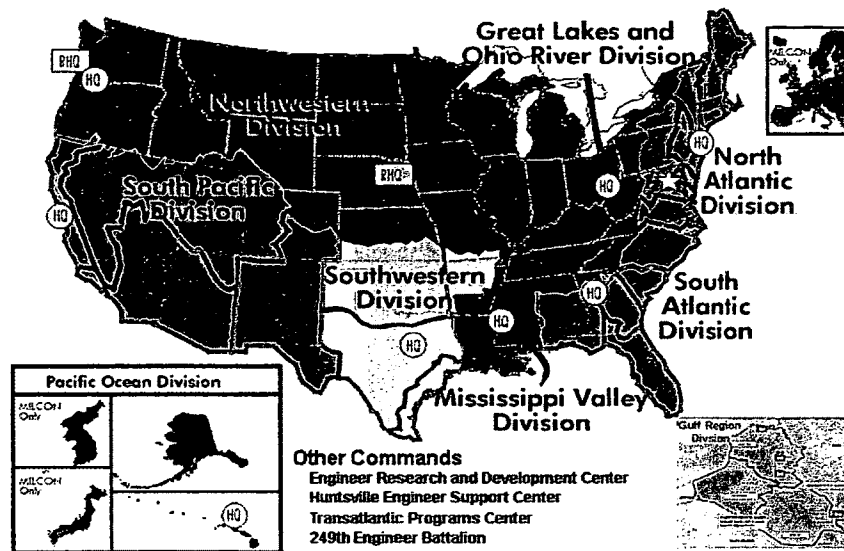


Figure 10. U.S. Army Corps of Engineers offices in the U.S.A.

The organization is a 35,000 member federal agency. The top ranking official of this organization is the Chief of Engineers (aka as “the Chief”). The position is a Lieutenant General (three-star general officer) appointed by the President of the United States and confirmed by the Senate via majority vote. The standard length of term for the Chief of Engineers is three years, but can be extended to four years. The District offices vary in size from approximately 300-2000 civilian employees each. The workforce consists of engineers, architects, biologists, geologists, hydrologists, natural resource specialists, real estate specialists, and other professionals. The mission of the organization is to provide engineering services to the nation including the military, localities, state, and other federal agencies. Typical non-military services include planning, designing, building and operating water resource type projects that involve navigation, flood control, environmental protection, and disaster response. The agency also supports the military by providing design and construction management of facilities for the Army and Air Force.

DESCRIPTION OF THE STUDY SAMPLE

After the 1970's, the pace of industry began to accelerate greatly due to new technologies and increase in global trade. Businesses began to focus more on consumer desires and because of the greater ease in availability of information, clients had more options on who to use as service providers.

With the end of the Cold War in the late 1980's, military construction spending was greatly reduced. As military funds became scarce, military "customers" became more demanding consumers and began to "shop around" for the services they needed. Up until the early 1980's, military customers did not have much choice on who could be their service providers. Agencies were highly discouraged by their major commands from seeking services from Department of Defense agencies other than their own.

As military construction funding continued to become scarce, installation commanders began to challenge the unwritten policy of staying with their own agency for professional services. Installation Commanders permitted their staff to shop around and come up with innovative ways to obtain the services needed within the constrained dollars available. This forced organizations that provided design and construction services to the military, to become more competitive and they too began to challenge the policy of making their services known to other Department of Defense agencies. This major shift in the market, caused management in most military professional services organization to realize that change was necessary in order to remain viable. The headquarters of the organization under study in this research, the US Army Corps of Engineers, began to send customer surveys to all its military customers. In the early 1980s, districts were beginning to get feedback from customers that the organization had

problems not in the technical areas, but in adhering to schedules and costs (project management). Customers were beginning to look around for alternatives. The organization's former stable market and customer base were experiencing tectonic shifts in the way they could conduct business. Some districts, sensing the turmoil, began to assess how they conducted their business and sought ways to improve business practices. One of the USACE's district's (i.e., The Seattle District) commissioned IBM in 1982 to look at their automated systems, how the district made decisions, and the role of customers. IBM trained a cross-functional team from the bottom up in their approach and over the next three months the group did a Business Systems Process Study. This study laid out how the district had to change its process to improve business with its customers. This district saw it as a whole change in their culture from functional stovepipes working in a linear process to a cross-functional concurrent form of engineering. Two other USACE districts in the southern region of the United States were making similar efforts in the early 1980s. Even though these early adopters did not call it a "project management initiative," that is what it was in form, spirit and intent. The Chief of Engineers recognized the need to become more customer-focused and be able to work seamlessly as a team, across its very well founded functional stovepipes. They recognized the need for the organization to change the way it conducted its business.

So the fundamental issues were identified as; lack of teamwork, not having a single individual manage the project from inception until completion, inadequate accounting system, and very rigid functional stovepipe in the technical areas. Some social and technical constraints were then identified. The fact that the organization was a federal agency precluded implementing anything other than a non-profit accounting

system. The organization was project funded and it was not likely Congress would be convinced to centrally fund the organization since it performed services for various other agencies and municipalities. The district workforce is overwhelmingly civilian, but the top two to five positions at each district office are military officers. The ratio of military to civilian varies by district. At each district, the numbers of civilians to military are in the magnitude of several hundred civilians for each military officer.

In this research, the study sample consists of 11 official documents (i.e. regulations, reports, memorandums, and circulars) from the Chief of Engineer's office (Headquarters). Documents from individual Districts or Divisions were not used in this research in order to minimize local, regional influence.

Since all Districts and Division fall under the Chief of Engineer's command, guidance and documents issued from that office, represents and addresses systematic, universal concerns and not isolated interests.

HISTORY OF PROJECT MANAGEMENT AS A FUNDAMENTAL INITIATIVE IN THE U.S. ARMY CORPS OF ENGINEERS

Up until the late 1980's, the U.S. Army Corps of Engineers (USACE) managed projects using project management principles but these business practices were inconsistent and not institutionalized. There was not a permanent project manager throughout the life of the project. The project manager changed every time the project changed from one phase to the next. These changes occurred from the planning phase to the design phase, then once again from the design to the construction phase. Very often, the project manager changed even during the same phase. There was little if any knowledge transfer and commitments made to the customer and requests made by the

customers were very often not passed on as the project (management) changed hands. As a result of congressional and customer dissatisfaction regarding the way the USACE managed projects, the top senior leaders of the organization realized a change in project business process was necessary. This prompted a series of changes in regulations and guidance in order to refine the direction for implementing project management as a business processes.

The following section outlines a nineteen year chronology consisting of; memorandums from the highest level of management in the organization, engineer circulars, regulations, Inspector General Reports, and a USACE assessment in the form of a Case Study assessing what had occurred from 1982 through 2002 regarding the implementation of Project Management as a Business Process initiative in the U.S. Army Corps of Engineers. In this chapter (Chapter IV, Case Study), below each reference is a brief synopsis of the key highlights of the respective document. These various iterations of guidance and regulations demonstrate that intent and direction was unclear and confusing, thus the reason for rework and subsequent versions of the documents/guidance.

In the Research Findings chapter (Chapter V) of this research, an analysis of the context of the documents is detailed and strengths and flaws of each are described.

NINETEEN YEAR CHRONOLOGY OF THE IMPLEMENTATION OF PROJECT MANAGEMENT INITIATIVE IN THE U.S. ARMY CORPS OF ENGINEERS

The following key documents (Circulars, Regulations, Inspector General Reports, Case Study, and follow-up Training) pertain to implementation of Project Management as a Business Process initiative in the U.S. Army Corps of Engineers (USACE). A brief

synopsis of the key highlights of the documents is included below. Also noted is the length, in pages of the regulations, to illustrate the changes in philosophies and the level of explanation and guidance believed to be required during the particular point in time of the initiative implementation. Each document is examined in the *ANALYSIS OF DATA* section in the Research Findings chapter (Chapter V) of this research.

- **30 June 1988**

EC 1110-2-536, Engineer Circular from Major General (MG) George R. Robertson,
Subject: Engineering and Design Project Management Systems
(APPENDIX 1)

This 37 page Engineer Circular from MG Robertson (Director of Engineering and Construction) was one of the first documents issued by U.S. Army Corps of Engineers Headquarters to the Corps staff introducing Project Management as a major change initiative throughout the organization. In the circular, it is referred to as "Initiative 88" which was explained as a way to "implement new operational efficiencies." Lieutenant General (LTG) Henry J. Hatch had just been confirmed as the Chief of Engineers on 17 June, 1988. The Circular stated that implementation of Project Management in the U.S. Army Corps of Engineers would only apply to the Corps Civil Works program.

- **11 October 1990**

CECW-L Memorandum from LTG Henry J. Hatch, Subject: Programs and Project Management (PPM)
(APPENDIX 2)

This memorandum by LTG Hatch acknowledged that the guidance previously published regarding the implementation of Programs and Project Management (PPM) did not adequately address the "roles and responsibilities of PPM organizations and the technical Divisions both at the Division and District level, and at the Headquarters level." The memorandum noted that Headquarters' senior staff and he "spent two long days in a meeting at St. Michaels, Maryland working the problem." This meeting is mentioned in subsequent guidance and the meeting is referred to as "St. Michaels I." The meeting minutes (11 pages) from this important two day meeting was attached to the memorandum.

- **25 October 1991**

CECG Memorandum from LTG Hatch, Subject: Implementation of Project Management
(APPENDIX 3)

This 17 page memorandum LTG Hatch affirms that he was "concerned that the objectives of the Corps' PM System, as established over the past three years, have not been fully realized." Once again, LTG Hatch held a two day meeting with his senior

leaders to discuss issues with the implementation process. Although this second two day workshop/meeting was not held at St. Michaels Maryland, it was commonly referred to as St. Michael's II. This memorandum encloses an "Action Plan to make appropriate (organizational structure) changes to improve the system."

- **24 April 1992**

CECS Circular EC 5-1-48, from COL Milton Hunter, Chief of Staff, Subject: Implementation of Project Management (APPENDIX 4)

This 67 page Circular from COL Hunter, Chief of Staff to LTG Hatch, expands the use of project management from just the Civil Works program, to all programs managed by the Corps of Engineers. This was a major change in guidance.

- **09 October 1992**

CECG Memorandum from LTG Arthur E. Williams, Subject: Implementation of Project Management (APPENDIX 5)

This Memorandum from LTG Williams (new Chief of Engineers confirmed on 24 August, 1992), enclosed a 286 page Regulation (ER 5-7-1), dated 30 September 1992, Subject: Program Management. This is the first Corps regulation dealing with the implementation of Project Management. All prior documents were Engineer Circulars and memorandums. This Regulation went into extensive detail and included a vast number of sample forms, charts, and reports.

- **26 February 1998**

CECG Memorandum from LTG Joe N. Ballard, Subject: Program and Project Management Regulation, ER 5-1-11 (APPENDIX 6)

This memorandum from LTG Ballard, (new Chief of Engineers confirmed on 1 October, 1996), enclosed a 23 page ER 5-1-11, dated 27 February 1998, Subject: Program and Project Management. This shorter version of ER 5-1-11 supersedes the 286 page ER 5-7-1 regulation dated 30 September 1992. This regulation focuses more on "end-results" than on "individual organizational products and activities" as had been the focus in the past. It is noted to be less prescriptive and introduces the concept of 8 Program and Project Management Imperatives.

- **11 February 1999**

CEIG-I Memorandum from LTG Joe N. Ballard, Subject: Engineer Inspector General (EIG) Program and Project Management Inspection Report (APPENDIX 7)

This memorandum from LTG Ballard encloses a 53 page EIG report that resulted from an inspection by the Headquarters EIG team to assess the "effectiveness of different

organizations, techniques, and initiatives used by program and project managers to implement PPM.”

The Final Report (dated 11 February 1999) was released 14 months after LTG Ballard directed the EIG to conduct this inspection on 9 December, 1997. Inspection Directive is included in the last page of the Final Report. LTG Ballard had directed the team to “evaluate the use of Information Technology in project management, procedures for selecting and training project managers, and project management effectiveness from a customer’s perspective.” Up until this point, senior management clearly understood that there was a problem with the successful implementation of project management as a business process, but the solution was to issue top driven directives and regulations. The tasking by the Chief of Engineers to initiate this inspection was one of the first indications that an analysis and plan for implementation was necessary. In addition, the inspection was the first to include a Sociotechnical aspect of analysis.

Engineer Inspection Reports are not issued for public release and are intended for internal use only. They may only be released with written permission from the Engineer Inspector General. On 16 May, 2012, written approval was granted by The Inspector General, Mr. Frank D. Ellis of the U.S. Army Corps of Engineers to release of the subject EIG Report for the purpose of this research.

- **July 1999**

EIG Inspection Report, Subject: Teamwork in the Program and Project Management Business Process
(APPENDIX 8)

As was the February 1999 EIG Inspection, this inspection was also directed by LTG Ballard. He directed The U.S. Army Corps of Engineers Inspector General to “expand” the February 1999 inspection to include observations concerning “teamwork” to “better explain the role teamwork plays in the Program and Project Management Business Process (PMBP).”

The EIG inspection concluded that a cultural change “based on teamwork requires a change in focus from functional or product accomplishments to a focus on project delivery by teams.” In other words the implementation focus must not just focus on the technical (organizational structure and deliverables), but must also take into account the social aspects of team member interactions.

As previously noted, Engineer Inspection Reports are not issued for public release and are intended for internal use only. They may only be released with written permission from the Engineer Inspector General. On 16 May, 2012, written approval was granted by The Inspector General, Mr. Frank D. Ellis of the U.S. Army Corps of Engineers to release of the subject EIG Report for the purpose of this research.

- **17 August 2001**

CECS Engineer Regulation, ER 5-1-11, Subject: Management, U.S. Army Corps of

Engineers Business Process (APPENDIX 9)

This version of the Regulation ER 5-1-11 focuses on “Quality” (quality management, quality management plans, quality assurance, quality control, and quality systems). The covers specific processes in managing all work regardless of program or location. It emphasizes the concept that the best person to work on a project or task should be based on skill sets and not on geographic or functional area. This is a major change to prior business processes and procedures.

- **2002**

2002 Senior Leaders Conference, Case Study: Program Project Management (1982-2002)
(APPENDIX 10)

In 2002, Senior Management in the Corps were still concerned with why implementation of project management as a business initiative had been so slow in taking hold. At the 2002 Senior Leaders Conference, a team was commissioned to prepare a Case Study outlining the history of this major business process improvement initiative going back to 1982, which was six years before project management was formerly introduced as a new business process improvement in the Corps. The Case Study briefly outlines the documents analyzed in this research as well as including some of the “political” reasons why it is believed that there were so many false starts and reluctance to the new business process.

- **12 January 2007**

CECS Memorandum from COL Prettyman-Beck (Chief of Staff) encloses ER 5-1-11, dated 01 November 2006, Subject: Management, USACE Business Process
(APPENDIX 11)

In 2007, the Chief of Staff for the U.S. Army Corps of Engineers, Colonel Yvonne Prettyman-Beck, issued a memorandum explaining the reason for the need for a revised ER 5-1-11. She explains that it has been almost nine years since ER 5-1-11 was first issued in February 1998. She acknowledges that even though the principles of project management as an effective business process was and is valid, the guidance previously given where “all work is considered a project” and must all follow the PMBP principles is “NOT” rational. This new version of the ER outlines programs and types of projects that do not need to follow the mandatory project management automated information system (PM AIS, aka P2).

CHAPTER V

RESEARCH FINDINGS

OVERVIEW OF RESEARCH FINDINGS

Analysis of the change initiative implementation led to the development of the execution model illustrated in Figure 10 of this chapter. The model represents the process that took place (shown on the right half of the model) and where the researcher suggests' a major step was overlooked (shown on the left half of the same model). The researcher proposes that the process for implementation of this major change initiative in a very large federal agency was implemented without a comprehensive "implementation plan" that took into account both social and technical enablers and constraints of the organization.

In essence, the model depicts that (1) senior management recognized that there were issues with how the Corps was managing its projects and a change was needed. (2) Next private sector consultants were brought in (to several different District offices) to analyze where the issues and problems were and compare what private industry was doing to deal with similar issues. (3) An effective and proven contemporary initiative that industry was using was Project Management as an organization-wide business process. (4) For the next 20 plus years, the U.S. Army Corps of Engineers attempted to implement the initiative with varying degrees of success. Attempts included implementation in small pockets of programs, to changing the strategy to one that was totally comprehensive and included all work at all phases. Guidance (i.e., regulations and circulars) went from very flexible with little standardization to issuing very prescriptive, rigid guidance. Project management tracking tools (i.e., computer software) were required to be used as mandatory but there was little to no training. In addition, the lack of standardization in how to populate the data fields, made it impossible for higher

headquarters and managers to use the data for any type of analysis. Eventually, each one of these issues was corrected but the length of time it took for each correction caused a considerable amount of re-work and frustration by many in the organization. This fostered an increase in skepticism and opposition to the implementation of the initiative that was already slow in being put into practice.

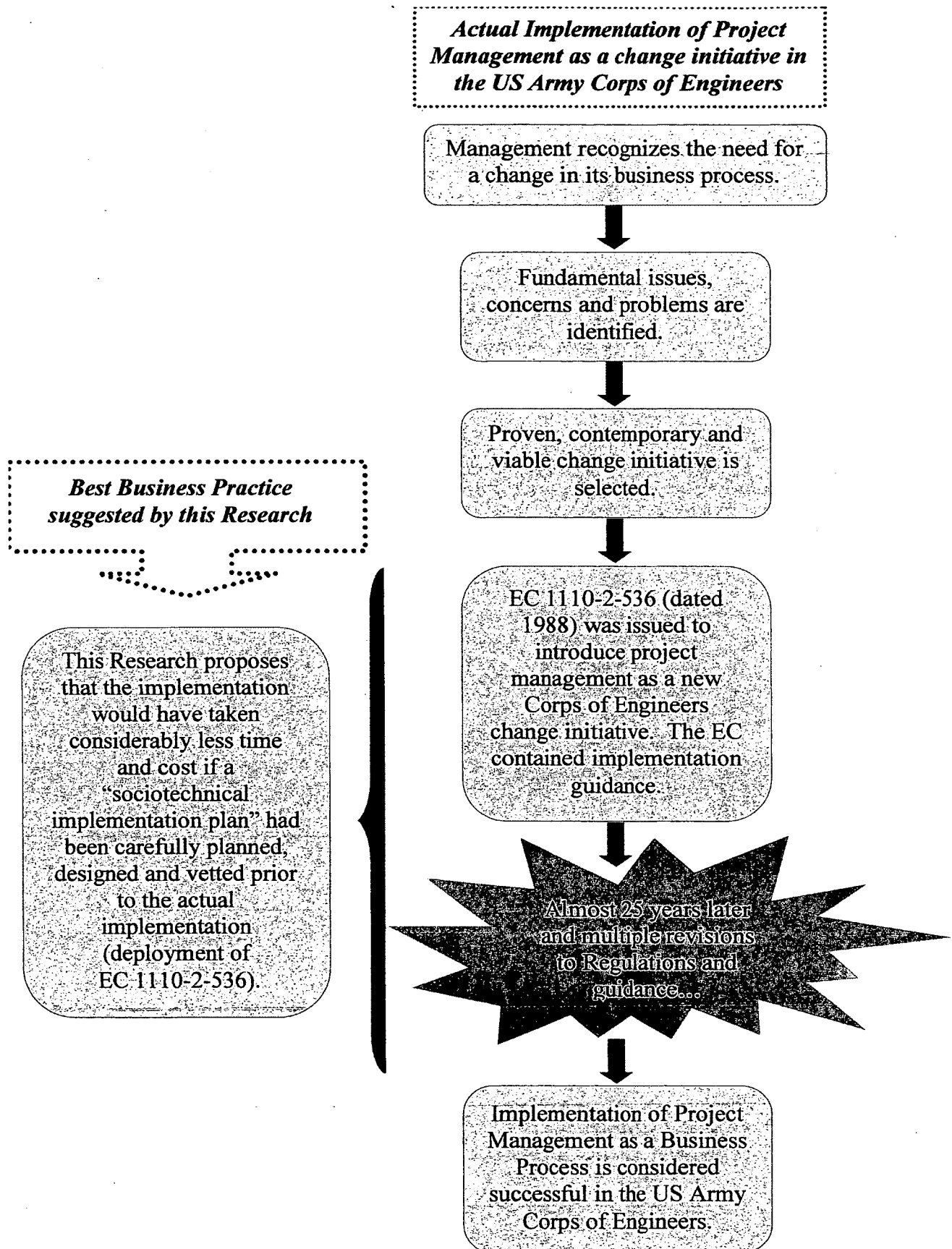


Figure 11. Project Management Initiative Implementation Model

The data analyzed in this research consists of 11 key documents (produced between 1988 and 2007) generated by senior level leaders in the U.S. Army Corps of Engineers and all specifically dealt with Project Management as a Business Process initiative. Subsequent documents and workshops (post 2007) were used to hone skills and reinforce the new “project management culture” in the organization.

ANALYSIS OF DATA

“INITIATIVE 88” (APPENDIX 1)

CEEC-E Engineer Circular EC 1110-2-536, dated 30 June 1988, Subject:
Engineering and Design Project Management Systems

Project Management was first officially identified as a performance improvement “Initiative” for the U.S. Army Corps of Engineers on 30 June, 1988 by Major General George Robertson, Director of Engineering and Construction U.S. Army Corps of Engineers, who directed the publication of Engineer Circular Number 1110-2-536. An Engineer Circular (EC) is a temporary guidance document, usually intended to serve for 12 months or less until a more formal document called an “Engineer Regulation (ER)” is issued as the final document. The 30 June 1988 EC1110-2-536 was titled “Engineering and Design Project Management System.” This was the first document that identified Project Management as an initiative (“Initiative 88”). In its Purpose statement, the document stated:

“This Engineer Circular (EC) provides guidance for the implementation of the Life Cycle Project Management (LCPM) concept through the use of Independent Project Managers (IPM) and Team Project Managers (TPM) within USACE. The new project management system is part of "Initiative '88" which is an all encompassing effort by HQUSACE to implement new operational efficiencies” (1988, p.1).

As previously noted, the Corps has four distinct program missions. Its Civil Works program is intended to support the Nation (the public within the continental U.S.

and its territories). These are projects, authorized and appropriated (funded) by Congress and the President. These types of projects include flood protection (Dams, dikes, levees, and canals), dredging, hurricane protection, and shoreline stabilization to name a few. Another major program mission is Military planning, design, and construction primarily supporting the Army and the Air Force. The Navy and Marine Corps have their own Engineering and Construction agency very similar to the Corps'. The third program mission is Environmental Restoration. This includes support to EPA with Superfund clean-up projects as well as remediation and pollution prevention at Army and Air Force active and formerly owned installations. Lastly, support to other non-Department of Defense government agencies is a program known as the Interagency and International Services Program. This program is intended to support such agencies as the Federal Aviation Administration (FAA), the National Oceanic and Atmospheric Administration (NOAA), National Aeronautics and Space Administration (NASA), and many other agencies with the types of core competencies of the Corps.

EC 1110-2-536 (1988) specifically stated that the project management initiative only applied to the Civil Works mission. It specifically excluded implementation in the other three program areas. The decision to limit implementation of the initiative only to the Civil Works program caused confusion amongst the staff and raised questions why such an initiative touted as being so beneficial, would not be implemented as a management practice with all (mission) programs.

As noted in the Review of Literature (Chapter II) of this research, under *Resistance to Change*, LaMarsh (1995) notes that individual's reluctance to "change" is due to lack of trust (in management), and that change processes need to be well structured

and be consistent. And as previously noted, Strebel (1996) proposes that change initiatives often fail because "executives and employees see change differently. For senior managers, change means opportunity, both for the business and for themselves. But for many employees, change is seen as disruptive and intrusive" (1996, p.86). In the early stages of this initiative implementation, a comprehensive implementation plan, had one been done, should have acknowledged that a piece-meal implementation of a major change initiative would be counterproductive and would lead to further resistance to change and foster skepticism. This is one of the first "socio flaws" this research finds with the implementation of this initiative. The absence of an implementation plan outlining how the implementation would be rolled out, even if it was going to be implemented one program at a time would have eased many concerns.

One of the most significant changes proposed by this initiative was the establishment of a "Project Management Organization." Prior to this EC, project management referred to a process, not a place. This document (EC 1110-2-536, 1988) does not clearly state that the Project Management Organization is a new stand-alone functional office (Division), but the roles and responsibilities of its staff is defined. It establishes a Deputy District Engineer for Project Management. In all USACE Districts there is the senior Commander (Colonel or Lieutenant Colonel) and one or two lower ranking military deputies. The newly established Deputy District Engineer for Project Management DDE(PM)) would be the senior civilian in the organization. As will be shown in subsequent documents, this Senior Civilian position is a major source of contention by the other senior civilians (Functional Chiefs) who saw this change as a loss of status and power in their current position. LaMarsh (1995, p.10) notes that fear of loss

of position, power and other motives, cause individuals at all levels in the organization to be reluctant to change. This is a social concern/issue that may not have been alleviated by an implementation plan had it been identified, but it may have brought to light how strong the resistance to the change would have been. It would also have shown that the resistant at this point would have been top driven by those who viewed the new position as causing as a threat to their power.

Reason for selecting "Project Management" as an initiative? The Corps Project Management initiative was based on the Corps' Senior Leadership's interest in a study conducted by IBM at the Seattle District Corps of Engineers where IBM suggested that the issues the Corps was facing had been successfully been addressed by utilizing Project Management as an organization-wide business process.

The EC (1988) stated as the reason for the need for this initiative was:

- a. With the enactment of the Water Resources Development Act of 1986 (PL99-662) and the subsequent increase in local sponsor participation, USACE faces one of the greatest institutional challenges in its 200+ year history of planning, designing, constructing and operating water resource projects.
- b. An integral part of this challenge involves enhancing the Corps present management system to provide a stronger project management orientation which will improve project continuity; accountability for cost, schedule (manpower and event milestones) and quality; and more effectively, reconcile Corps performance with the concerns and expectations of the LCSS (Local Cost Sharing Sponsor which is the non-federal entity which signs cost sharing agreements). The intense involvement of the IPM/TPM will allow the functional chiefs to concentrate more on their individual product responsibilities. The IPM or TPM will monitor the overall project quality from a quality assurance prospective so both the LCSS and the Corps obtain a complete project that represents the program objectives. Project managers must be proactive and able to perceive trends and problems before adverse events occur that are unalterable. Thus, the concepts of the LCPM have been developed to address the need for project continuity and accountability.
- c. The objective of the concept is to create a system which will focus the Corps' corporate leadership on the efficient production of a successfully operating project that meets the LCSS's expectations. An organizational framework and a

tracking/reporting system will be created through which the Corps may increase its effectiveness in establishing and meeting schedules and budgets for civil works projects during the planning, design and construction phases.

The tracking/reporting system referred to in paragraph "c" turned out to be a well-documented, major cause for resistance by many, to implement this initiative. This EC did note that there was a need for tracking project costs and schedules, but at the time, the system or method to be used was not identified. It was left to each district office to use whatever method they desired. This too will later be shown (in the February 1999 EIG Report (Appendix 7), to be a cause for frustration by all levels of the organization. When headquarters needed information, there was no single source to go to obtain the information. In addition, the format and interpretation of what information was being sought, varied from one District office to the next. This study finds this to be a "technical flaw" and a major contributor to the vast amount of rework caused by the various different information systems deployed with little to no training and numerous bugs in the software.

The EC (1988) did contain a general implementation schedule. It broke up the implementation into three phases as follows:

- a. Phase I: 1 Jul 88. One to five of the larger and/or sensitive projects in each district will be assigned an Independent Project Manager. Approximately 25 percent of all remaining projects fitting the criteria of this EC will be team managed.
- b. Phase II: 1 Jan 89. An additional one to five of the larger and/or sensitive projects will be assigned Independent Project Managers. Approximately 50 percent of all remaining projects fitting the criteria of this EC will be team managed.
- c. Phase III: 1 Jul 89. All remaining projects fitting the criteria of this EC will be assigned to either IPM's or TPM's.
- d. All projects scheduled to have IPM's in Phases II and III will be team managed in the interim.

For accountability and continuity purposes, subsequent Engineering Regulations recognized the need for mandating a single (ideally the same) project manager to remain as the project manager regardless of the phase the project. The 1988 EC identified two types of Project Managers (Independent Project Managers (IPMs) and Team Project Managers (TPM).

The EC noted that:

“The IPM will serve as the primary project point of contact (POC) with the local sponsor for the district/operating division throughout the project life cycle. The role of the IPM is to develop schedules, budgets, and milestones, in coordination with functional elements to monitor projects, identify issues and effect changes so that a project progresses according to an agreed schedule for cost, manpower, and event milestones” (1988, p.4).

“The Team Project Managers will be responsible for projects which are not independently project managed. The concept involves management by a team consisting of appropriate members of the functional elements (i.e., a study manager from Planning, Engineer manager (formerly called project manager from Engineering, Real Estate manager and Construction manager from Construction)” (1988, p.6).

Even though this EC intended to eliminate the status quo, the concept of the TPM was the general practice in which projects were being managed in most Districts prior to the 1988 EC. The EC also noted that there will not be any additional positions authorized “to establish the project management process” (1988, p.14). In July 1988, a two day project management orientation (training) was conducted in 4 regional locations with the goal being to explain the regulatory guidance for the Corps project management process, define the functions and responsibilities of the Corps individuals and organizations involved in the life cycle project management, identify areas to be monitored by the IPM/TPM and approach for accomplishing the monitoring, and to use selected case

studies to demonstrate the way a project manager carries out his duties through the life of a project (1988, p.15). The EC includes in its appendix, a number of standard forms to be used to manage and monitor project progress.

ST. MICHAELS "I" (1990) (APPENDIX 2)

CECW-L Memorandum from LTG Hatch for Division Engineers, Subject: Programs and Project Management (PPM), dated 11 October 1990. Memo encloses minutes of Saint Michaels I

The memorandum from the Chief of Engineers, Lieutenant General (LTG) Hatch, starts off by noting that senior staff at the USACE have realized that there are many questions that remain unanswered regarding the implementation of Programs and Project Management (PPM) within the Corps. He acknowledged that there "was a need to better define roles and responsibilities of PPM organizations and technical Divisions both at the Division and District level, and at the Headquarters level. Due to concerns with the slow implementation outlined in the 1988 EC, the most-senior leaders in the Corps decided they needed to get together at an off-site meeting to analyze why there was resistance and confusion with the guidance provided regarding implementation of the project management initiative ("Initiative 88"). A Senior Leaders Conference (later referred to as Saint Michaels I) was held on 27-28 June 1990 in St Michaels, Maryland. As a result of this conference, LTG Hatch, issued a memorandum (CECW-L MEMORANDUM FOR DIVISION ENGINEERS, SUBJECT: Programs and Project Management (PPM), dated 11 Oct 1990) endorsing the findings of the St Michaels conference. The minutes of the conference were attached to the memo. For the most part, throughout the USACE, the Districts had not implemented a separate Project Management Office (PMO), even though the model was indicated in the 1988 EC. Project management continued to be done at the functional office responsible for managing the current phase of the project.

Roles and responsibilities of the functional offices as it related to project management were not universally documented, institutionalized, and for the most part, not clearly understood. At the conference, project management as a fundamental business practice was introduced as the proper change initiative needed to address the issues and concerns of the customers and market.

One of the most significant mandates of the St. Michaels I conference was the need for a major structural change in the organization. It was deemed that in order for the initiative to be successful, it was necessary all Districts create a separate and distinct “Project Management Division.” This new Division would serve as a functional office where all Project Managers would reside and report to the Senior Civilian in the district, the Deputy District Engineer for Project Management, DDE (PM). The Project Managers would be located in this department and manage their respective projects for the entire life cycle of the project.

No mention was made of the need for a cultural change or need for establishing benchmarks, best practices, or attempts to learn from others. Another shortfall pointed out in a subsequent conference (St Michael’s II, Appendix 3) was that the representatives at the St Michael’s I conference consisted only of a select group of senior leaders from the Headquarters’ office and there was no invitees to represent key stakeholders such as Human Resources, District offices, or customers.

The CECW-L Memorandum (11 Oct 1990) states:

“We found that project management for the Corps of Engineers can best be implemented within a narrow range of action that is neither our historical handoff from one technical function to the next, nor pure task management in which all members of a project's team report to a single manager who has full authority over personnel and resources as well as budget and schedule. We recognized that the quality of our technical products is of great importance. Technical Managers

(TMs)-working under the supervision of functional Chiefs are responsible for development of these products. However, the Project Manager (PM) working under the Deputy District Engineer for Project Management DDE (PM) has overall responsibility for project schedule and cost and provides overall leadership in project implementation. We further agreed that for the project management system to work effectively, that the technical division Chief will be held accountable to the District Commander -- through the DDE (PM) --for project delivery commitments. Obviously, the coordination and cooperation between a Project Manager (PM) and Technical Managers (TM) must be continuous throughout our project management process.”

The St. Michaels I conference was the first endeavor to develop a plan for implementation of project management as a change initiative in the USACE. The desired end state was identified in a general way and roles and responsibilities of project management as a functional area as well as the roles and responsibilities of other key functional areas (Planning, Engineering, Construction, Operations, Contracting, and Real Estate) were identified.

The St. Michaels I conference noted that in order for project management to function properly, Divisions and District needed to reorganize to create a separate Project Management office in each Division and District, but no organizational changes would be made at the Headquarters (HQUSACE). A major distinction made at the conference was the difference between the roles and responsibilities of the Project Manager and the Technical Manager. The positions of Independent Project Manager (IPM) and Team Project Manager (TPM) which were outlined in the 1988 EC, were no longer mentioned.

ST. MICHAELS “II” (1991) (APPENDIX 3)

CECG Memorandum from LTG Hatch, Subject: Implementation of Project Management, (aka Saint Michaels II), dated 25 October 1991

On 25 October, 1991, Lieutenant General Hatch, (Chief of Engineers) issued a memorandum (CECG, SUBJECT: Implementation of Project Management), noting that Headquarters senior leadership had “recently completed an extensive evaluation of the

status of Project Management (PM) implementation within the Corps.”

In the memorandum, the Chief notes that the reason he asked for the evaluation is that he was “concerned that the objectives of the Corps’ PM System, as established over the past three years, have not been fully realized.” To evaluate the success of Project Management as a widespread Corps business process, he commissioned the Engineer Strategic Studies Center (ESSC). The team had conducted a series of interviews at HQUSACE, Division, and Districts and they came up with the following findings:

“burdensome reporting system and an inadequate understanding of why we (the Corps) elected to implement PM”

“some senior leaders do not support PM”

“in spite of the problems associated with PM, there is widespread support for the underlying concept of PM.”

The Chief also mentioned that the interviews supported his belief “that improved horizontal integration in developing and managing projects in the District, combined with increased customer interface, and greater attention to costs and schedules are essential to the Corps’ future.”

The memorandum goes on to state that Headquarters and Divisions are there to assist Districts to be successful at PM implementation. It says “All PM activities of Divisions and Headquarters, including upward reporting or management activities will be reviewed to insure that those activities add value to delivering quality projects on schedule and within budget. This will reinforce our concept that the focus and implementation of project management must be at the District level where it belongs. We will be working hard to let people do their jobs.” Even though this document states that Headquarters and the Divisions are there to assist the Districts do their work in an

easier manner, subsequent documents (February 1999 EIG Report, Appendix 7) indicate a very high level of frustration at the district level, with the increase in upward reporting associated with project management. It is noted that the extensive oversight by higher headquarters is actually hindering the district project managers from being able to do their jobs.

The memorandum encloses an "Action Plan to make appropriate (organizational structure) changes to improve the system." The document also provided guidance on some areas that were previously unclear. It provided the distinction between the roles and responsibilities of the project managers and the roles and responsibilities of the functional managers (formerly called in the 1988 Engineer Circular, the Independent Project Manager (IPM) and Team Project Manager (TPM), respectively). It also acknowledged that teamwork was the fundamental component to making project management work. Subsequent documents indicate that one of the principal reasons why the implementation actually fostered a culture counterproductive to teamwork, was that individuals who were selected to serve as project managers, received salaries that exceeded their peers and even the salaries of some functional supervisors in the rest of the district. It took many years, for this animosity to dwindle. Many argue the resentment continues to exist after 24 years. In addition, the project manager was identified as being the leader of the technical team members working on the project and the project manager controlled all the funds for the project. Non-project managers felt this was giving too much power to a newly established position. In closing, the Chief noted in his memorandum that he understood "that PM is a major cultural change in the way we do business and that has not happened uniformly overnight. However, the time

for delay and hesitancy, where it may exist is over. We must all make it work as a team” (1991, p. 8). This statement illustrates the frustration by the Chief of Engineers on why it has taken so long for this initiative to take hold. He realizes that the organization's culture plays a major role on resistance to change, but may not realize how difficult it is to institute a major cultural change in an organization. As noted in the Review of Literature (Chapter II) of this research, under Resistance to Change, researchers having done studies on organizational culture (Bainbridge 1996; Cummings and Worley 1997), agreed that although it can be modified, incrementally changing an organization's culture is extremely difficult and can take between six to fifteen years.

During the 2 day workshop (St Michaels II), it was acknowledged that in order to standardize project management as a process and organizational structure, headquarters had to develop and issue standard job descriptions to all senior leaders to include the newly established senior civilian position in the district, the Deputy District Engineer for Project Management. It called for all functional chiefs have a performance standard that included a critical element indicating their level of support to project management. It stated that project managers would have input into the functional chiefs evaluation. This proposal intensified the animosity against project managers and the initiative. The concept of having project managers provide input into the functional managers performance evaluations was never attained to this date, even though it is still brought up as a necessary procedure to maintain accountability and support.

The Chief notes that the reason for implementing project management is that “PM is an initiative to improve delivery of quality projects on schedule and within budget. In the past, there have been too many instances in which we have had difficulty maintaining

our commitments to the Administration, Congress, and our customers/partners to deliver quality projects on schedule and within budget.”

Kotter (1996) notes that in order to successfully implement a change initiative, senior management must present a sense of urgency. In this 1991 document, the Chief expresses a sense of urgency was needed to implement project management. He states: “We exist as an organization only as long as we serve our customers and partners. We will best serve them by establishing and maintaining a vital and effective PM system” (1991, p.4).

IMPLEMENTATION OF PROJECT MANAGEMENT (1992) (APPENDIX 4) CECS Engineer Circular EC 5-1-48 from COL Hunter (Chief of Staff), dated 24 April 1992, Subject: Subject: Implementation of Project Management

On 24 April 1992, the U.S. Army Corps of Engineers Chief of Staff, COL Hunter issued Engineer Circular 5-1-48, Subject Implementation of Project Management. This document noted several revisions to previous policy regarding project management in the Corps of Engineers. The document stated:

“The corporate leadership of USACE has been working long and hard to implement Project Management. We all agree that the effectiveness and future of the Corps are directly related to our effective implementation of this new system. Our objectives are to: (a) improve our overall performance by maintaining accountability and commitment to project schedules, baseline costs and quality in a cost-effective manner; (b) integrate our sponsors, partners and customers into the implementation process; (c) ensure consistent application of administration policy; and, (d) vest accountability for a project in a project manager (PM). HQUSACE is committed to providing policy guidance, resources, training, and a systems framework which will allow the districts to carry out these responsibilities as efficiently as possible” (1992, p.1).

As previously noted in this research, “circulars” are typically issued a year or so in advance of the final version which is called the regulation. While “circulars” are as guidance, regulations are mandatory directives. This Circular (EC 5-1-48) alluded to

changes regarding project management philosophies in the Corps of Engineers. Up until to this point, the project management initiative applied only to Civil Works projects. This circular stated: that the intention was now to “apply the principles of project management to the broadest possible base of its project related activities. These principles apply equally well to study, design, and construction activities, regardless of the total cost of the activity” (1992, pg. A-1). The circular clearly states that the principles of the project management initiative apply not only to Civil Works projects, but also to Military, Environmental Restoration, and International and Interagency (formally known as Support for Others) programs. The majority of the circular goes into great detail on how the project manager will control and manage project funds. Another major business process adjustment included in this regulation is that it contains standard job descriptions for the Deputy District Engineer for Project Management (DDE(PM)) and the Functional Chiefs. The Functional Chief’s job description state that they are “accountable” to the Commander through the DDE(PM). This can be considered a “socio flaw” as characterized in this research. Up until this point, the organization operated as a functional organization with very strong and distinct stovepipes. These seasoned civilian functional chiefs had never before had to report to another civilian. They reported directly to the District Commander who are Army officers (Lieutenant Colonel (military officer rank-O5) or Colonel (military officer rank-O6).

IMPLEMENTATION OF PROJECT MANAGEMENT (1992) (APPENDIX 5)

CECG Memorandum from LTG Williams, dated 09 October 1992, Subject: Implementation of Project Management. Memo encloses ER 5-7-1 (FR), dated 30 September 1992, Subject: Program Management

On 9 October 1992, the incumbent Chief of Engineers, LTG Williams, noted in the his endorsement memorandum that he was satisfied with the strides made to date with

the implementation of project management efforts, and now asked that no time be wasted on implementing this guidance.

Prior guidance was found to be too general and vague, so this guidance (i.e., Engineer Regulation 5-7-1, 1992) was intended to be very comprehensive and detailed. Unlike the prior regulations that were approximately 10-70 pages long, this regulation was 286 pages long and very prescriptive with numerous examples and templates. This regulation went into great detail in explaining all aspects of project management. It included numerous samples of plans, formats, and forms that would be required to fully implement project management as a business process incorporating all programs. The regulation was broken into 5 volumes. The first volume contained general project management policies and procedures. The subsequent four volumes each covered one of the major program areas (Civil Works, Military and Support for Others, Superfund, and other Environmental Restoration). What is unique about this regulation is that it provides this very thorough level of detail for each program managed in the USACE. The regulation included detailed instructions on project management plans, management controls (i.e., cost, schedule funding, contract modifications, and quality controls), roles and responsibilities of all stakeholders, reviews, reports and project management forms.

Other key elements noted in this regulation are that all projects will have a project management plan (PMP) and that the District Commander, through the Deputy District Engineer for Project Management is responsible for effective project management in the district. It also notes that corporate leadership will focus on project execution through Project Review Board (PRB) meetings at the District, at its respective Division, and at Headquarters U.S. Army Corps of Engineers (HQUSACE). Recall that all previous

regulations stated that project management would only be done at the district level.

Subsequent internal documents (i.e., engineer inspection reports, case study, and regulations) note that this regulation was overly lengthy and prescriptive, thus making it unappealing to study and comprehend. It can be argued that this “technical tool” intended to solve prior concerns with lack of detail, actually turned out to be a “socio flaw” serving as an obstacle to successful implementation because of its sheer volume and complexity.

PROGRAM AND PROJECT MANAGEMENT REGULATION (1998) (APPENDIX 6)
CECG Memorandum from LTG Ballard, dated 26 February 1998, Subject:
Program and Project Management Regulation. Memo encloses ER 5-1-11, dated
27 February 1998, Subject: Program and Project Management

This regulation, released over five years after its predecessor regulation, was endorsed with a cover memorandum from the new Chief of Engineers, LTG Ballard. In the endorsement memorandum, the Chief noted “This new regulation is not very prescriptive. It provides sufficient authority for each command to develop necessary implementation guidance to best serve its customers.” This 23 page version of the guidance noticeably took into account concerns raised with the previous version that was criticized for having been so lengthy and prescriptive. This regulation introduced a new concept at the time that is still today, very relevant and ingrained in the USACE culture after 15 years. It is the concept of project management business process (PMBP). The Chief mandates that PMBP is the business process to be used throughout the USACE to manage all programs and projects. It is touted as the way the USACE does all its business. It is more than a business process, it is a business practice. PMBP as a business process dramatically shifts the USACE business process from being a very bureaucratic functional organization, to a project manager (PM) centric matrix

organization. This is a major change (intervention/initiative) in this very large federal organization. But once again, there is no implementation plan, social or technical that takes into account potential hindrances to implementation. The belief is that issuing guidance (i.e., regulation) will cause a swift and smooth major cultural change.

**PROGRAM AND PROJECT MANAGEMENT EIG INSPECTION REPORT (1999)
(APPENDIX 7)**

EIG Inspection Report, dated February 1999, Subject: Program and Project Management

As a result of his frustration with the resistance to PMBP implementation in the USACE, the Chief of Engineers, LTG Ballard directed on 09 December 1997, the Engineer Inspector General to conduct an investigation on why there was such resistance with the implementation of this change initiative. The team conducted an investigation that included four USACE Divisions, thirteen USACE Districts, and two USACE laboratories throughout the United States. The investigation “included a review of programming documents, project review board (PRB) notes, project management plans, schedules, budgets, and other documents as needed” (p.iii).

The report concluded that even though there appeared to be a general acceptance of the initiative, “resistance was found to be at a specific detail concerning implementation of the process” (p.iii). This statement supports the premise of this research which is that the resistance to change was not due to the change, but due to the implementation process. This very thorough report identifies 8 recommendations to improve implementation. The first four deal with social aspects of the implementation. The lack of education and training lead to much misinterpretation and confusion with the intent of the regulation. The second four recommendations dealt with the technical aspects of PMBP. An automated information system was deployed as the single mandatory project

management tool to use, but it was deployed with numerous glitches. Once again, lack of social and technical planning prior to deployment is found to have been the cause for much resistance and rework with this initiative implementation.

TEAMWORK IN THE PROGRAM AND PROJECT MANAGEMENT BUSINESS PROCESS (1999) (APPENDIX 8)

EIG Inspection Report, dated July 1999, Subject: Teamwork in the Program and Project Management Business Process

Still concerned with the sluggish implementation of project management business process (PMBP) in the USACE, the Chief of Engineers, LTG Ballard once again directed the Engineer Inspector General to conduct a follow-on inspection to analyze the concept of teamwork as it relates to successful implementation of PMBP in the USACE. The inspector general investigation found that a lack of training was responsible for the different levels of commitments to the business process not only within the same USACE district, but even between different USACE districts. The report notes "One of the significant observations we made during the inspection was that teamwork does not just happen, it requires planning and nurturing at both the corporate and team level" (p.iii).

MANAGEMENT, U.S. ARMY CORPS OF ENGINEERS BUSINESS PROCESS (1999) (APPENDIX 9)

CECS Engineer Regulation, ER 5-1-11, dated 17 August 2001, Subject: Management, U.S. Army Corps of Engineers Business Process

Two years later, a new regulation is issued to further the endeavor to successfully implement Project Management Business Process as a way of conducting business within the USACE. As in the previous version, the focus continues to be general guidance on all aspects of PMBP (i.e., importance of a single project manager, keeping commitments, project management plans, teamwork, quality, budgets, schedules, communications, and seeking continuous improvement). This regulation also introduces the "Plan-Do-Check-

Act Cycle” in project management. Even though planning is a core function in the USACE, this is one of the first times it is emphasized as a key action in successful management. Recall that the premise of this research is that the lack of a well thought out sociotechnical plan prior to implementation was a key factor in why implementation of project management as a fundamental business process has taken so long to implement.

CASE STUDY: PROGRAM PROJECT MANAGEMENT (1982-2002)
(APPENDIX 10)

2002 Senior Leaders Conference, Case Study: Program Project Management
(1982-2002)

Once again, concerns by the highest level senior leaders in the USACE, over sluggish implementation of project management as a fundamental business practice throughout the organization, lead to the establishment of a team to analyze the history of implementation of project management in the organization. This Case Study identified many “political” reasons for the pockets of resistance throughout all levels in the organization. Even though the “political” issues identified were all “social factors” the lack of planning a comprehensive deployment plan is still not identified as a potential root cause for the failures in implementation.

MANAGEMENT, USACE BUSINESS PROCESS (2006) (APPENDIX 11)

CECS Memorandum from COL Prettyman-Beck (Chief of Staff), dated 12 January 2007. Memo encloses ER 5-1-11, dated 01 November 2006, Subject: Management, USACE Business Process

It has taken over 25 years since project management was introduced (i.e., “Initiative 88”) in the USACE as a business process initiative. The fact that project management is now well ingrained in the USACE as a way of doing business, and there has not been a need for any additional regulation to further define or clarify what is

PMBP may be considered as a success in the implementation of this initiative. For the most part, this 2006 Regulation which was the last issued regulation regarding project management business process, clarified not the process, but defined what types of projects must adhere to the requirements of project management documentation.

SUMMARY OF FINDINGS

The following table (Figure 12) summarizes and compares key features of each of the documents analyzed in this research (Appendices 1 through 11).

Appx No	Title of Document	Short Title of Document	Date	USACE Commanding General	# of pages	Time lapse since prior doc	Key points of document/guidance
1	CEEC-E EC 1110-2-536	"Initiative 88"	30-Jun-88	LTG Hatch	37	—	Initial USACE document identifying & employing Project Management as a performance improvement "initiative."
2	CECW-L Memorandum	St. Michaels I	11-Oct-90	LTG Hatch	11	2 yrs, 4 mo	Acknowledges lack of specificity, guidance & direction of previous document ("Appx 1"). Areas of concerns are identified.
3	CECG Memorandum	St. Michaels II	25-Oct-91	LTG Hatch	17	1 yr	Socio and technical issues are acknowledged to exist which burden the implementation of Project Management as a Business Process in the USACE.
4	CECS EC 5-1-48	Implementation of Proj Mgmt	24-Apr-92	LTG Hatch	67	6 mo	Implementation of project management as a business process is expanded to the management of all USACE programs.
5	CECG ER 5-7-1	Program Management	30-Sep-92	LTG Williams	286	5 mo	Prescriptive document provides extensive level of guidance and detail on implementation of project management.
6	CECG Memorandum	Program & Project Mgmt	27-Feb-98	LTG Ballard	23	5 yrs, 5 mo	Less prescriptive document that focuses on end results and not on "how to do it."
7	EIG Inspection Report	Program & Project Mgmt (PPM)	Feb-99	LTG Ballard	81	1 yr	Inspection report identifies socio and technical reasons for the slow and laborious implementation.
8	EIG Inspection Report	Teamwork in PPM	Jul-99	LTG Ballard	33	5 mo	The Chief of Engineers directed an expansion to the Feb 99 inspection that included looking at "teamwork" in the PMBP. Inspection findings concluded that PMBP as employed focused on functional roles not team efforts in producing a final product delivery.
9	CECS ER 5-1-11	Management, USACE Business Process	17-Aug-01	LTG Flowers	14	2 yrs, 1 mo	New Chief of Engineers changes focus of PMBP to "quality" and shifts from the need of "PM in a defined functional area" to "PM skill sets" regardless of where the PM functionally resides.
10	2002 Senior Leaders Conference	Case Study: PPM	2002	LTG Flowers	10	1 yr	Implementation of PMBP still considered unsatisfactory. Case Study team concluded that internal, high level, functional political differences was a major factor with successful implementation.
11	CECS ER 5-1-11	USACE Business Process	1-Nov-06	LTG Strock	16	4 yrs	Regulation revised and re-issued noting that PMBP is the compulsory USACE business process. Document is less prescriptive and clarifies areas previously identified as confusing and inconsistent.
	None			LTG Van Antwerp	—	0	During LTG Van Antwerp's command from 17 May 07 to 17 Jun 11, there were no new Proj Mgmt regs issued.
	None			MG Temple	—	0	During MG Temple command from 17 Jun 11 to 22 May 12, there were no new Proj Mgmt regulations issued.
	None			LTG Bostick	—	0	During LTG Bostick's command from 22 May 2012 to present, there were no new Proj Mgmt regulations issued.

Figure 12. Summary of Key Features of Documents in Appendices

SOLUTION: AN STS-BASED PLAN

The main premise of this research has been that the implementation of project management as a fundamental business process initiative in the U.S. Army Corps of Engineers could have occurred much sooner and effectively had a sociotechnical systems (STS) based plan been developed prior to deployment of the initiative. A Project Management Plan (PMP) is an essential document a project manager develops with the project team and customer, prior to initiating the project. If the implementation initiative is considered a “project,” it can be argued that an implementation PMP would have been very beneficial in the successful implementation.

The Project Management Institute proposes that key components of a PMP include an Overview which notes why the project is being performed and its primary objectives, the Scope of Work of the project, the Schedule, Budget, Quality section, Project team outlining their respective roles and responsibilities, Communication section, and Risk Management section. They also advocate several other components such as the Procurement section documenting the required procurements and purchase processes, a Closure section including the deliverables hand-off protocol, and a Changes section noting the procedures used to track changes in the project.

In a similar manner, the sociotechnical systems-based plan (STS-based PMP) proposed in this study has very similar components/sections. Assuming that project management as a fundamental business process is the correct initiative needed in the organization to improve their operations and remain competitive and viable, a plan should have developed prior to implementation.

The proposed STS-based PMP needs to start by clearly stating its *objective* and desired outcome. The *Scope of Work* for this “project” (PMBP initiative) is one of the most important components of the plan. In the research case study, it appears this component was not clearly defined in the early stages of the implementation. It evolved with the development of each subsequent regulation/document demonstrating that the scope of the initiative and how it was going to be implemented was not clearly defined or thought-out. This creates a perception that management did not realize the extent and magnitude of the initiative. The programs and types of projects to be managed using the PMBP initiative also changed as subsequent versions of the regulations were issued. The initiative was promoted as a best practice, but when it was initially implemented, the regulation (“Initiative 88”) stated that it would only apply to Civil Works projects (Civil Works Program) and was only going to be implemented at the district level. Many questioned, if the PMBP initiative was so noteworthy, why was it only being applied to one of the many programs managed at the USACE and only at the district level and not throughout the regional division offices and Headquarters.

Another issue was that a realistic *schedule* was never developed. Documents noticeably stated the frustration by multiple Chiefs of Engineers and senior managers in how long it had taken to implement the initiative. As previously noted, the implementation of this initiative required a major organizational cultural change. Research has shown it takes 7 to 10 years for a major cultural change to take effect in an organization. This research has proposed that the reason it took two to three times longer than it should have for this initiative to be implemented was that sociotechnical issues were not considered and the implementation did not take it into consideration other social

elements such as political issues (impact of the initiative to power and authority of its members), lack of training, motivation, personal accountability, retention incentives and a methods to reward desired behaviors.

There are also technical issues such as government regulations, compatibility with existing information systems (cost and scheduling), technical skills and tools that needed to be considered in the development of the plan. Two of the most significant contributors to the successful implementation of this initiative was that it was consistently top driven, and it was supported by every senior executive in command (Chiefs of Engineers).

Below is a sample Implementation Plan outline based on the research and highlighting social and technical considerations that should be considered.

SAMPLE IMPLEMENTATION PLAN

1. Objective:

This section needs to identify why the need to implement the proposed change initiative. Recall that this is an Implementation Plan, so the analysis and the selection of the particular change initiative needs to have already been made. Kotter's book, *Leading Change* (1996) has an eight-stage process can be used as an outline for this section.

2. Scope of Work:

This section needs to demonstrate that the extent and magnitude of the initiative and its implementation has been well thought out. Examples of the social and technical topics/items to be addressed (as noted in the sections below), should be stated here.

3. Team Members:

It is important that the team that develops the plan include representatives from different levels of management and working staff, and includes representatives from all offices that may be impacted by the initiative. This usually means representatives from all offices. While this may seem excessive, all individuals do not need to attend all the meetings, but excluding a function or office entirely, does cause major problems. This was the situation in the research case study and was a major contributor to the resistance to change.

4. Roles and Responsibilities:

As previously noted in the schedule section below, the role and authority of the project manager versus that of the first line supervisor must be clearly stated. Job descriptions will very likely need to be revised. Negotiations with Unions and review from personnel offices many take time that has to be taken into account in the schedule section below.

5. Schedule:

To insure the schedule is realistic and commitments are made, the schedule WBS needs to be developed, reviewed and concurred by the implementation team members. The review should include top management to insure the intent and timeframe for implementation is acceptable and be able to manage expectations.

The foremost social factor here is to recognize and state if it is believed that the initiative will require the need for an organizational cultural change. Research has shown that major organizational cultural change on average takes between 7-10 years. For example, in the research case study, the concept of individuals working as a team reporting to a project manager while still reporting to their respective first line functional supervisor was shown to be one of the major obstacles and reason for resistance to change in the implementation.

From a technical standpoint, if a new information technology system is required, the time to include in the schedule may vary depending on whether the system desired is a currently available commercial off-the-shelf system, a commercial off-the-shelf still under development, or a custom program. Training is another important factor to consider. This will have both social and technical impacts. Time consideration for training must also be taken into account when developing the schedule.

Periodic review meetings need to be scheduled with the purpose of reviewing progress and determining if revisions to the plan need to be made. Metrics may need to be developed in order to maintain accountability and determine if "success" is being achieved.

6. Budget:

A comprehensive budget must be developed and approved. It is important to ensure funding appropriated for specific uses be adhered to. For example, the plan should address what funding source should be used to cover labor expenses during training, and meetings. Physical office moves if the organizational structure or functional changes are made, tend to be a costly endeavor and shown in the budget.

Once these expenses are identified, a budget needs to be established to reflect the entire time period shown in the schedule previously developed. Funding

constraints may require the schedule to be revised.

When the plan is completed, it must be reviewed and approved (in writing) by key members of the team to include representatives from Districts as well as from Headquarters.

CHAPTER VI

CONCLUSIONS

This research examined the importance of developing and utilizing a comprehensive implementation plan prior to the deployment of a major change initiative that will ultimately change the culture of an organization. The research explored a methodical process to assist in planning the deployment of a major change intervention by considering the sociotechnical factors. This applied research used a Sociotechnical Systems (STS) approach to analyze the deployment of a major change intervention in a very large (i.e., 35,000 employee) federal organization.

The case study analysis revealed that even though, the implementation of this major initiative has been considered successful, it has taken over 25 years to realize due to numerous factors that contributed to false starts, rework and resistance to change by many. The research suggests that the numerous impediments encountered during implementation could have been anticipated and minimized or avoided, if an STS based plan had been developed and utilized to design the process and guidance prior to deployment of the initiative.

This research is unique in that it uses the principles of STS not as a change initiative, but as a framework for conducting the analysis necessary to identify issues, constraints, and enablers to assist in the development of the deployment plan for the change intervention.

This research was in part prompted by a request by management of the organization for the researcher to examine why it had been so difficult and had taken so long to successfully implement this large-scale change initiative in this organization.

This research set out to ask the question of "how" to contribute to the existing body of knowledge that has demonstrated independently, the importance and benefits of having a well thought out plan prior to launching a major initiative as was the case in this study.

A social constraint that was not properly considered in the early stages of the implementation was the complexity of the guidelines outlining how the Project Management Business Process would function. The U.S. Army Corps of Engineers (USACE) is a functional organization that undergoes few organizational changes. As is the case in many large organizations, the culture in every district office is ingrained and austere. The excerpts in the documents presented in the Appendices section of this research, confirms that this major change initiative was implemented in a directive manner with little minor consideration of socio or technical impacts. Written guidance (e.g., circulars, regulation, and other official documents) were issued in an attempt to clarify the presiding Commanding General's intent in making project management a fundamental business process in the USACE. A very notable and some may argue, a rare occurrence, is to see eight consecutive most senior level leaders (i.e., three-star Commanding General Officers, from 1988 to 2013) all supporting the same organizational initiative throughout the 25 years.

At the 1990 Senior Leadership Conference (i.e., St. Michael's I, Appendix 2), no mention was made that any comprehensive deployment plan was conducted or needed to be conducted prior to deployment. The organization (i.e., USACE) decided not to use a consultant change agent. Senior management was so enthusiastic about the prospects of the project management initiative, that once the change initiative was selected, it was

believed that the organization's leaders would deploy the concept and implementation of the desired initiative would occur.

The effort to implement this initiative ranged from a very comprehensive, rigid, and prescriptive document such as the 206 page Engineer Regulation, ER 5-7-1 (30 September 1992, Appendix 5), to the relatively short, non-prescriptive 14 page Engineer Regulation, ER 5-1-11 (17 August 2001, Appendix 9).

The 1992, two-hundred six page regulation outlined in great detail how project management was to be implemented, roles and responsibilities, and explained the upward reporting process. A 2002 case study commissioned by the Commanding General of the USACE to look into the project management initiative, noted that many in the organization found the regulation too large and complex to read and digest. The case study goes on to state that the regulation writers, "had hoped that by including a great deal of input from around organization they could create buy in, but all the input was not coherent or integrated. As a result few read it or understood it. In addition it had another serious shortcoming; creating one system cannot change a whole culture" (Appendix 10, p.9). Systems in place at the time, such as the multiple automated information systems which did not interface with each other, financial management systems, schedule management systems, performance appraisals, rewards system, and employment/promotion selection, did not properly interface with each other. These automated information systems are all crucial in the operation of the business for this organization. They are not reporting tools, but rather key elements in the day to day operation of the organization.

RESEARCH IMPLICATIONS AND DIRECTIONS

A challenge this organization faces is the natural tendency for the members of the organizations to want to regress to the state prior to the implementation of this change initiative. According to Beer (1980), the problem with sustaining change is almost inevitable. He notes that the passion and vitality associated with the “take-off” phase of change will diminish as the organization stabilizes at a new level. He notes that as time goes on, there tends to be degradation with passion and novelties that were established with the organizational improvement initiative. What Beer fails to note here is that if the change takes place over an extended period of time (over 25 years as is the case in this case study), the organizational culture has evolved where reverting to the pre-change stage is diminished because of personnel changes due to retirements, new hires, and few members are able to recall the previous organizational business process.

RESPONSE TO RESEARCH QUESTIONS

In response to the initial research questions, this research found the following:

- (1) How can a change agent systemically identify and consider constraints that could impede implementation of a change initiative?

Using a Sociotechnical analysis, the change agent, with the assistance of members of the organization, can identify constraints by looking into factors such as; are the existing mandatory automation systems in place, which are used in conducting regular operations compatible with the proposed change initiative intent and applicability? Is the organization a strong functional, project or, matrix organization and how will that blend with the desired proposed organizational end state? Is the culture of the particular sub-organization (i.e. in this case a district office) receptive to change? Is senior management

open to change from its current status to a matrix structure?

(2) How can a change agent rule out certain change technologies or implementation techniques because social or technical constraints of the organization would prevent the effective implementation?

Insight gained from the responses to the previous question will allow the change agent to identify training needs, what are enablers, in other words, factors that will assist in moving the initiative forward, and constraints that need to be overcome or are so strongly engrained that further study is imperative prior to deployment. In the case of the organization being studied, the USACE, it is a very functional organization not easily swayed to change.

(3) How can a Sociotechnical Systems-based analysis be used to facilitate the deployment of a change initiative?

Social and technical constraints and enablers should be identified to determine how to proceed in the implementation. Numerous iterations of the regulations issued, all noted deficiencies in previous versions. All problems can be easily traced to disregard to either social or technical issues prior to the deployment phase. Problems encountered were simply due failure to consider socio or technical concerns. This research proposes that before setting off in designing and implementing the deployment of a major change initiative, it is important take into consideration, and conduct a comprehensive sociotechnical analysis. *The purpose of this project was to formulate a process to facilitate the development of an effective change intervention deployment plan.* This research suggests that before implementation, a plan should have been developed taking into consideration ingrained top level socio and technical factors in the organization.

Prior to the implementation of the 1988 initiative ("Initiative 88), the USACE did not have in place an enterprise scheduling system that would interface with its new, fully functional financial system (i.e. CEFMS, aka Corps of Engineers Financial Management System). The financial management systems had to interface with a scheduling system in order to be a useful management tool. Since the USACE did not have compatible scheduling system, to interface with CEFMS, it contracted to develop a system that would interface with both automated systems. USACE spent tens of millions of dollars to develop several compatible automated scheduling system (i.e. first iteration PROMIS (Project Management Information System) then P2 and its multiple subsequent versions). The early versions of the project management regulations and guidance all referred to an enterprise "automated information system," but it was not until many years later, that there was a system in place to execute the intent of the earlier regulations. In addition, the very strong functional structure of the organization did not foster a culture for change in control of funds and schedule (project management). In addition, the higher grade structure (i.e. increased salaries) of the proposed organization member's structure in the project management structure was relentlessly disputed and challenged by the organizational members in the organization, but outside the project management organization. Sociotechnical factors such as inconsistent guidance and re-iterations of policy, working mandatory enterprise information systems, personnel (control) hierarchy and salary structure lead to numerous setbacks and rework. Lack of understanding and buy-in from working staff also lead to resistance from staff. Disregarded social and technical factors such as these, support in this research's premise.

(4) How can the success rate of a change initiative implementation be improved?

Even though research supports that significantly changing the culture of an organization can take 7 to 10 years, routinely assessing progress and member acceptance can be used to determine if the change initiative is progressing in the direction desired. The change initiative studied in this research has certainly contributed to a major organizational change in a major organization, and it should have been expected to have taken a considerable amount of time, it had not been anticipated to take 20 to 25 years to implement. This research proposes that even though, this change initiative was significant enough to have taken a equitable amount of time for a major change initiative implementation, (i.e. 7-10 years), the research proposes that the time could have been reduced by significantly if a sociotechnical analysis been conducted. This research suggests is that the lack of a plan taking into consideration the organization's culture (socio) and technical constraints contributed to the length of time it took for this initiative to take hold.

Eventually, the successful implementation of this major change initiative can be attributed to several factors. First, there was a long term commitment from management that allowed for the cultural transformation necessary for the staff to understand and accept the change. And secondly, the change initiative was strategically implemented at the highest level in the organization, but implemented and reinforced in practice, throughout all levels of the organization.

The case study emphasizes the need to properly identify impediments (social and technical constraints) that would inhibit the change technology implementation. This study found that identifying and addressing constraints prior to implementation of a

change initiative, can facilitate the change deployment process.

Multiple independent inspections and audits have been conducted to assess the success of the implementation of project management as a fundamental business process in the USACE. In the initial 10 or so years of the implementation, there were multiple assessments. The majority of which concluded the implementation was slow and not as successful as anticipated. As time went on, the implementation began to take hold and assessments became more sporadic, and positive outcomes were beginning to be reported.

The contribution this research adds to the body of knowledge is the addition of the consideration of a comprehensive implementation/deployment plan. This research proposes that if the deployment plan is not carefully planned, designed, and deployed while considering sociotechnical factors, timely implementation will be jeopardized.

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APPENDICES

- APPENDIX 1:** CEEC-E Engineer Circular EC 1110-2-536, dated 30 June 1988, Subject: Engineering and Design Project Management Systems
- APPENDIX 2:** CECW-L Memorandum from LTG Hatch for Division Engineers, Subject: Programs and Project Management (PPM), dated 11 October 1990. Memo encloses minutes of Saint Michaels I
- APPENDIX 3:** CECG Memorandum from LTG Hatch, Subject: Implementation of Project Management, (aka Saint Michaels II), dated 25 October 1991. Memo encloses an "Action Plan to make appropriate (organizational structure) changes to improve the system"
- APPENDIX 4:** CECS Engineer Circular EC 5-1-48 from COL Hunter (Chief of Staff), dated 24 April 1992, Subject: Subject: Implementation of Project Management
- APPENDIX 5:** CECG Memorandum from LTG Williams, dated 09 October 1992, Subject: Implementation of Project Management. Memo encloses ER 5-7-1 (FR), dated 30 September 1992, Subject: Program Management
- APPENDIX 6:** CECG Memorandum from LTG Ballard, dated 26 February 1998, Subject: Program and Project Management Regulation. Memo encloses ER 5-1-11, dated 27 February 1998, Subject: Program and Project Management
- APPENDIX 7:** EIG Inspection Report, dated February 1999, Subject: Program and Project Management
- APPENDIX 8:** EIG Inspection Report, dated July 1999, Subject: Teamwork in the Program and Project Management Business Process
- APPENDIX 9:** CECS Engineer Regulation, ER 5-1-11, dated 17 August 2001, Subject: Management, U.S. Army Corps of Engineers Business Process
- APPENDIX 10:** 2002 Senior Leaders Conference, Case Study: Program Project Management (1982-2002)
- APPENDIX 11:** CECS Memorandum from COL Prettyman-Beck (Chief of Staff), dated 12 January 2007. Memo encloses ER 5-1-11, dated 01 November 2006, Subject: Management, USACE Business Process

APPENDIX I

EC 1110-2-536, dated 30 June 1988, Subject: Engineering and Design Project Management Systems ("Initiative 88")

CEEC-E

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

EC 1110-2-536

30 June 1988

Engineer Circular
No. 1110-2-536

EXPIRES 30 June 1989
Engineering and Design
PROJECT MANAGEMENT SYSTEM

1. Purpose. This Engineer Circular (EC) provides guidance for the implementation of the Life Cycle Project Management (LCPM) concept through the use of Independent Project Managers (IPM) and Team Project Managers (TPM) within USACE. The new project management system is part of "Initiative '88" which is an all encompassing effort by HQUSACE to implement new operational efficiencies.

2. Applicability. The policies and procedures prescribed in this EC are applicable to the Civil Works missions within HQUSACE and FOA's. Further, the policies and procedures are applicable to Civil Works projects with a construction value of over \$3 million, excluding projects in continuing authority (discretionary) programs. Application beyond the limits indicated above is at the discretion of the FOA.

3. References.

- a. ER 10-1-3, Divisions and Districts.
- b. ER 37-1-24, Operating Budgets.
- c. ER 37-2-10, Accounting and Reporting Civil Works Activities.
- d. ER 1110-2-1150, Engineering after Feasibility Studies.
- e. EC 11-2-154, Annual Program and Budget Request for Civil Works Activities, Corps of Engineers, Fiscal Year 1990.
- f. EC 1105-2-188, Project Review and Approval Procedures.
- g. EM 1110-2-1301, Cost Estimates - Planning and Design Stages.
- h. Report of the Corps of Engineers Panel on Project Development in Partnership, U.S. Army Corps of Engineers, Mar 88

4. Project Management Background.

- a. With the enactment of the Water Resources Development Act of 1986 (PL99-662) and the subsequent increase in local

EC 1110-2-536
30 Jun 88

sponsor participation, USACE faces one of the greatest institutional challenges in its 200+ year history of planning, designing, constructing and operating water resource projects.

b. An integral part of this challenge involves enhancing the Corps present management system to provide a stronger project management orientation which will improve project continuity; accountability for cost, schedule (manpower and event milestones) and quality; and more effectively, reconcile Corps performance with the concerns and expectations of the LCSS. The intense involvement of the IPM/TPM will allow the functional chiefs to concentrate more on their individual product responsibilities. The IPM or TPM will monitor the overall project quality from a quality assurance prospective so both the LCSS and the Corps obtain a complete project that represents the program objectives. Project managers must be proactive and able to perceive trends and problems before adverse events occur that are unalterable. Thus, the concepts of the LCPM have been developed to address the need for project continuity and accountability.

c. The objective of the concept is to create a system which will focus the Corps' corporate leadership on the efficient production of a successfully operating project that meets the LCSS's expectations. An organizational framework and a tracking/reporting system will be created through which the Corps may increase its effectiveness in establishing and meeting schedules and budgets for civil works projects during the planning, design and construction phases.

d. The baseline estimate for a project will be the one developed for the recommended plan in the feasibility phase. The baseline estimate will be developed at the earliest practicable date and will be in the feature/subfeature format for consistency in tracking. Changes in costs in subsequent phases of project development will be compared to this baseline estimate. It is essential that the most technically knowledgeable and experienced personnel from the functional elements participate in the development of these baseline estimates.

EC 1110-2-536
30 Jun 88

5. Organizational Concept and Features.

a. Project Management Organizational Structure. Figure 1 shows a notional project management structure developed to its fullest. Where the number of projects do not require as elaborate a structure more modest approaches will be selected. As a transition measure, an existing deputy may also serve as the Deputy District Engineer for Project Management.

PROJECT MANAGER CONCEPT SUMMARY

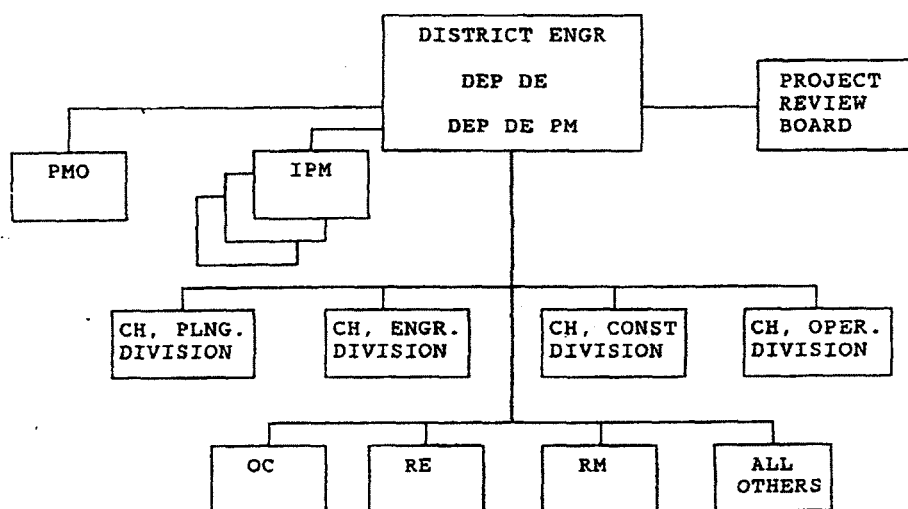


FIGURE 1.

EC 1110-2-536
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b. Project Management Organization Role/Relationships

(1) Deputy DE for Project Management (DDE(PM)): The DDE(PM):

(a) Provides staff leadership in establishing management processes to effectively schedule, budget, monitor, resolve or elevate issues and anticipate problems impacting the accomplishment of assigned projects.

(b) Manages the IPMs who develop schedules and budgets, and monitor the planning, design, and construction of projects in coordination with appropriate functional chiefs.

(c) Selects, supervises and rates performance of IPMs.

(d) Provides institutional continuity for project management and, with the IPM/TPM, maintaining project management files.

(e) Chairs the Project Review Board.

(2) Independent Project Managers (IPM): The IPM will serve as the primary project point of contact (POC) with the local sponsor for the district/operating division throughout the project life cycle. The role of the IPM is to develop schedules, budgets, and milestones, in coordination with functional elements to monitor projects, identify issues and effect changes so that a project progresses according to an agreed schedule for cost, manpower, and event milestones. The IPM will reconcile LCSS concerns and expectations with Corps performance throughout the life of the project. A project manager will be assigned to a project prior to the signing of the Feasibility Cost Sharing Agreement (FCSA). The IPM reports to and is rated by the DDE(PM). Major duties include the following:

(a) integrating and coordinating the development of the project schedules, budget, manpower needs and milestones. (A combined effort of estimating, planning, engineering, construction, real estate, legal and other disciplines.) The final results are a project schedule, budget and manpower estimate which are mutually acceptable to the IPM and the functional chiefs and meet the project needs.

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(b) monitoring and maintaining project milestone dates and budget from planning through construction and initial operations.

(c) anticipating schedule, budget, manpower or quality problems and either resolving or elevating them. Examples include:

- technical or environmental problems
- potential fiscal and physical delays
- contracts yet to be awarded
- government equipment yet to be furnished
- outstanding claims and change orders

(d) ensuring adequate cross-functional (interdisciplinary) input to preparation of project/study schedule, estimates, and budgets required to support the functional chiefs in producing products, e.g., feasibility report, GDM, LCA, contract documents, etc.

(e) forecasting and recommending use of project contingency to project completion.

(f) adjusting project cost, budget, manpower requirements and completion date as project progresses.

(g) validating project data base and disseminating current schedules, budgets and issues to functional elements.

? (h) serving as primary point-of-contact for project with non-federal sponsor and other external organizations.

(i) integrating external milestones with Corps internal project schedules. Examples include:

- sponsor review, financing, and budgeting
- higher authority approvals and project authorization
- requirements of annual budget cycle

(j) monitoring external activities and milestones and resolving conflicts with outside elements, or elevating to Project Review Board.

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(k) presenting the project at line item reviews with Project Review Board.

(l) representing the district engineer for all line item reviews and other project activities with higher authority.

(m) examining project issues in an effort to promote technical efficiencies and enhancements. Should the IPM become deadlocked on an issue with the functional chiefs, it will be elevated to the Project Review Board.

(n) visiting project site frequently during construction to assure that it is being constructed to the project objectives and evaluate the effectiveness of the life cycle project delivery system (as an example, assess the effectiveness of the QA/QC system).

P.E. added to team

(3) Team Project Managers: The Team Project Managers will be responsible for projects which are not independently project managed. The project management team concept involves management by a team consisting of appropriate members of the functional elements (i.e., a study manager from Planning, Engineer manager (formerly called project manager) from Engineering, Real Estate manager and construction manager from Construction). TPM's will be assigned to a project prior to the signing of the FCSA. Each member is responsible for activities within his function and is rated by their functional chief. The primary management responsibility will shift as a project proceeds through planning, design, construction, etc. phases. One member is designated as the lead Team Project Manager and is the member from the functional area having primary activity at that project phase. The lead TPM will have the same major duties as the IPM.

clarify

(4) Program Management Office (PMO): The PMO will provide technical advice to the DDE(PM) on the overall district program in a closely parallel role to that of the IPM/TPM. In this role the PMO will:

(a) maintain budget and other reporting requirements necessary for program monitoring and control.

(b) alert the IPM/TPM to issues relating to schedules, cost and program changes that may provide opportunity for acceleration.

(c) provide technical assistance for developing Federal and non-Federal financing alternatives.

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(d) assist in forecasts using historical and institutional perspectives.

(e) participate with the IPM/TPM to develop alternative resource and schedule recommendations for the DDE(PM) consideration.

(f) integrate the IPM/TPM project schedule with the programmed overall district workload. This office will highlight possible resource problems and recommend solutions.

(g) interpret and determine the impact of pertinent appropriations legislation and Administration action on the program and projects.

(h) provide administrative and technical support to the IPM/TPM and Project Review Board.

(i) consolidate Project Review Board reports and minutes and forward to division level PMO.

(5) Functional Chiefs - The functional chiefs will be responsible for developing their respective function's schedules, budgets and manpower requirements during the development of overall project schedules and milestones. They are responsible for producing quality deliverables within the cost, time and manpower agreed to with the IPM/TPM. This is a cooperative effort between the project manager and the functional chiefs. The functional chiefs will anticipate necessary changes and advise the IPM/TPM as soon as changes are recognized, and will submit requests for change in budget and schedule. The functional chiefs are responsible for management and supervision of functional activities and for the technical quality produced by their respective functional area. Functional chiefs remain responsible for traditional products, e.g., the Chief of Planning is responsible for the feasibility report; the Chief of Engineering is responsible for the GDM, PDM, etc., whether accomplished in-house or by A-E services. The functional chiefs ~~advise that their respective functional areas provide the IPM/TPM with technical assistance.~~

(6) Project Review Board: The Project Review Board (PRB) is chaired by the DDE(PM) and is composed of the DDE(PM), Chiefs of Planning, Engineering, Construction, Operations, Programs Management, Real Estate, Contracting, Resource Management and others as requested by the DDE(PM). The purpose of the PRB is to review and evaluate the status of projects; to resolve major project issues, concerns or problems; to assure project compliance with policy and guidance; to identify trends in the project or organization

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and foresee problems in advance to determine if adequate resources are being applied; to develop recommendations relating to the annual project development budget; to develop project management input to the district's operating budget; and to maintain focus on specific actions and guidance to accelerate and streamline the completion of projects. Appendix A contains a model district memorandum describing the charter of the PRB. Each district shall charter its project review board through publication of a local regulation.

(7) Division Office: The division office will be responsible for project review, prior to submission to HQUSACE. Following review of district PRB reports and minutes, the division PMO will prepare an executive summary for submission to PMO at HQUSACE which will contain critical issues and other information which may have higher level interest including district and division overhead.

(8) HQUSACE: Summary management information will be jointly reviewed by the Directorates of CW and E&C on a monthly basis and a summary highlight report prepared by PMO for submission to ASA(CW).

(9) PM Role in dealing with non-Federal Sponsor (Partners) and Project Users (Customers): The IPM/TPM will serve as the focal point for project contact for the LCS\$. He or she will be responsible for maintaining communications, attending public meetings and documenting agreements between the Corps, the sponsor and other appropriate agencies.

6. Criteria for Project Management - Independent Project Manager or Team Project Management.

a. The following criteria (not in order of importance) should be considered in determining whether a project should be managed by an Independent Project Manager.

(1) Total estimated project cost. All projects greater than \$10 million should receive consideration. Smaller projects can also be selected based on any of the remaining criteria.

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(2) National priority. All projects having a moderate or high national priority (e.g., Superfund projects) should receive consideration.

(3) Environmental sensitivity. All projects which are environmentally sensitive should receive consideration.

(4) Project sensitivity. Consider other project sensitivities which may warrant an IPM.

(5) All projects which are relatively complex should receive consideration.

(6) Status in project life cycle. If large and/or sensitive projects are near completion (less than \$10 million to be expended), use of Team Management may be preferred. Projects with construction scheduled to be completed during Phases I or II as defined in Paragraph 8 should not be selected unless a significant cost increase or other critical change in the project is anticipated. Projects with construction scheduled to be completed during Phase III should not be selected if less than \$10 million remains to be constructed unless a significant cost increase or other critical change in the project is anticipated.

b. Projects not selected to have an Independent Project Manager will be managed by a project management team. Projects utilizing an IPM should be selected by the district commander and approved by the division commander.

c. The district commander may convert any project from the team project management approach to independent project management. Converting from the IPM approach to the TPM requires approval at the level at which IPM was approved.

7. Project Management/Monitoring/Tracking/Reporting System.

a. Management/Monitoring Responsibility: ~~The TPM/TPM is responsible for managing the scheduling, funding, coordinating and reporting for the project. While quality control is the primary responsibility of the functional element, the TPM/TPM also has a deep interest, has a challenging responsibility and is responsible to the project sponsor for the acceptability of the finished product.~~

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b. Reports.

(1) Projects will be managed and monitored using a series of reports which are described in Appendices C thru G. The reporting hierarchy is depicted in figure 2.

(2) Reports are required for all projects covered by this EC and are to be prepared at the district level by the IPM/TPM. The DDE(PM) will be responsible for submission of all reports required by this circular. Projects that fall into the major operations and maintenance or major "work for others" categories will need forms with revised heading titles. HQUSACE will coordinate with FOA's on a case by case basis to develop heading titles for these later category projects.

will O&M
fall under
DPM

c. Project Scheduling:

(1) ~~Projects shall~~ be managed by utilization of a network analysis that defines individual activities by functional section or organization code and either has capability of analyzing, summarizing and adjusting costs, time and manpower requirements or allows the analysis and summary of these items with minimum additional effort. The system used ~~for the~~ network shall have the capability of being easily revised, displayed and updated.

(2) In the feasibility phase, the network analysis for total project, including construction, must be developed for the probable project at the earliest practical time and forms the basis of the baseline cost estimate.

(3) ~~The network analysis~~ shall be prepared in sufficient detail to define events or nodes and to permit continuing management and monitoring. For each project, it is anticipated that a series of detailed network analyses will be prepared as required for management and analysis of individual activities, and that these will have the capability of "roll-~~ing~~ into an overall project analysis giving major milestones only.

(4) ~~IPM/TPM~~ and Milestone Monitoring: The role of the IPM/TPM is to ~~ensure~~ that a project progresses according to an agreed to schedule within defined budget and manpower resources. In order to be successful, the IPM/TPM must continually monitor project status, compare that status with established ~~milestones~~, objectives and budgets, identify and resolve problems to prevent project impacts, and ~~reforecast~~ project costs and completion dates. The IPM/TPM is

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IPM/TPM

REPORTING HIERARCHY

ASA(CW)

EXECUTIVE HIGHLIGHTS FROM HQ
(includes reporting on HQ/USACE OH)
MONTHLY MANAGEMENT REPORTS (supports highlights)
PROJECT COST VS. TIME "S" CURVES (supports highlights)

HOUSACE

DIVISION EXECUTIVE SUMMARY
(includes reporting on div/dist OH)
MONTHLY MANAGEMENT REPORTS
PROJECT COST VS. TIME "S" CURVES
PROJECT MONITORING REPORT

DIVISION

DISTRICT EXECUTIVE SUMMARY
(includes reporting on district OH)
I MONTHLY MANAGEMENT REPORT
II PROJECT COST VS. TIME "S" CURVES
III PROJECT MONITORING REPORT

DISTRICT AND PRB

I MONTHLY MANAGEMENT REPORT
II PROJECT COST VS. TIME "S" CURVE
III PROJECT DIRECT LABOR COST VS. TIME "S" CURVE
IV CURRENT PHASE DIRECT LABOR COST VS. TIME "S" CURVE
V PROJECT MONITORING REPORT

DDE(PM) (available to functional chiefs upon request)

I MONTHLY MANAGEMENT REPORT
II MONTHLY COST CONTROL CHANGE REPORT
III PROJECT COST VS. TIME "S" CURVE
IV PROJECT DIRECT LABOR COST VS. TIME "S" CURVE
V CURRENT PHASE LABOR COST VS. TIME "S" CURVE

IPM/TPM

DETAILED SCHEDULE (to organization level)
PROJECT SCHEDULE AND COST CHANGE REQUEST
WEEKLY MANHOUR REPORT
ALL REPORTS SUBMITTED TO DDE(PM)

FIGURE 2.

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responsible for Life Cycle Project Management beginning no later than the signing of the feasibility study cost sharing agreement and ending when the project is turned over to the sponsor/operator, but after the initial warranty period O&M.

d. Project Schedule and Cost Change Procedures.

(1) General - A major objective of the Project Management System is to monitor and track changes in time schedules, project cost and direct manpower. Responsibility for initiating, evaluating, recommending and approving changes is established in this section of the EC as is accountability for the impacts of each change. Reports described in Appendices record changes in schedules, costs and manpower.

(2) Limits of Authority - *No changes in Commander's Contr limits or those he has re-delegated*
The limits of the district commander's delegated authority to approve changes and those of the Contracting Officer remain as established in EFARS and ERs. Nothing in this section or other sections of this EC are intended to alter those limits.

(3) Responsibility and Accountability - The description of responsibilities for completing the Project Schedule and Cost Change request and accountability for impacts resulting from the change are contained in detail in Appendix B, Project Schedule and Cost Change request. The IPM/TPM and DDE(PM) are responsible for identification of inflation changes and changes due to inadequacy of schedules and budgets and they are accountable for timely resolution of impacts of these and later changes.

e. Relationship To In-Place Reporting System.

Added by Wilcox
(1) Reporting and management under this EC should be accomplished using available data management systems as much as possible in conjunction with CORMIS. It is recognized that supplemental local software development may be necessary to provide required interface and redistribution of data. HQUSACE will pursue the development of a comprehensive interface system for use by all FOA.

(2) Potential sources of data required in this EC may be extracted from data used for the PB-2a, PB-3, PB-5, PB-6, 2101, 3011a, 3012b, PB-4, PB-5, PRISM, LARPS and local FOA reports.

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f. Line item Review.

(1) In conjunction with report preparation and submission processes, formal line item reviews will be conducted at district, division and HQUSACE levels.

(2) At district level, all projects will be reviewed formally by the Project Review Board at least once a month. Comments developed during the review will be annotated before the required reports are submitted to higher authority.

(3) At division level, review of district reports will be accomplished monthly by the appropriate functional chiefs (or designees). The division will review and prepare an executive summary highlighting those projects of special interest and requiring high level attention. Every effort should be made to conduct concurrent district and division reviews.

(4) HQUSACE will conduct a formal line item review of projects on a quarterly basis.

8. Implementation Schedule.

a. Implementation of project management initiatives Corps-wide will be in accordance with the following schedule.

(1) Phase I: 1 Jul 88. One to five of the larger and/or sensitive projects in each district will be assigned an Independent Project Manager. ~~Approximately 25 percent of~~ *Comal #2* all remaining projects fitting the criteria of this EC will be team managed.

(2) Phase II: 1 Jan 89. An additional one to five *VBHP-* of the larger and/or sensitive projects will be assigned Independent Project Managers. ~~Approximately 50 per cent of~~ all remaining projects fitting the criteria of this EC will be team managed.

(3) Phase III: 1 Jul 89. All remaining projects fitting the criteria of this EC will be assigned to either IPM's or TPM's.

(4) All projects scheduled to have IPM's in Phases II and III will be team managed in the interim.

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b. Implementation of report preparation, submissions and project reviews shall be as below. These actions are necessary only for projects covered by this EC:

(1) Reports shall be prepared and Project Review Board meetings shall be conducted at district level each month. The first reports shall be prepared and a review meeting held at district level in Aug 88.

(2) At division and HQUSACE levels, reports will be reviewed monthly. The first reports (prepared in August) must be submitted to HQUSACE by 27 Aug 88 and will be forwarded to ASA(CW) on 6 Sep 88. The first line item reviews at HQUSACE level will be conducted during the period 1 Sep to 15 Sep 88. Line item reviews will be held on a quarterly basis thereafter.

9. Manpower Resources/Staffing.

a. There will be no increased workyear authorizations to establish the project management process. The Force Configuration (FORCON) model will be amended to recognize the field developed requirements for project management.

b. Districts must designate one or more IPM's/ TPM's (sufficient to manage selected projects) by 15 Jun 88. It is recognized that these may be temporary assignments, pending permanent personnel selections.

10. Annual Operating Budget.

a. The development of an annual operating budget is a critical step in the implementation of LCPM. The operating budget and corresponding expenditure reports are the linking pins which accurately allow tracking of all costs in a manner which can permit a project manager to flag problem areas. Districts must become extremely proficient in the development and maintenance of annual operating budgets so as to have the necessary tools for successful management of their projects.

b. ER 37-1-24 prescribes the formulation and execution of annual operating budgets for each USACE element. The distinctive features of a well-prepared operating budget provide both a district-wide and an individual project

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process to permit more effective cost control. Those cost controls are determined by defining in total dollars and manpower what each district is expected to do and what it can afford, and then by approving and issuing specific operating budget cost ceilings to each element in the district. With their involvement in the process from the beginning, project managers have direct influence over workload priorities and allowable costs charged to their projects (including direct and overhead changes).

c. Another LCPM compatible feature of operating budgets is the prescribed monthly feedback on costs versus approved budgets. The data bases containing these costs are manipulative so project managers can review costs charged to the individual projects. The process of modifying the operating budget to account for revised assumptions and projections also offers the opportunity to gauge impacts on projects as a result of budget shifts.

d. ER 37-1-24 presumes the use of a Program Budget Advisory Committee (PBAC) to review/approve the FOA operating budget. While the recommended membership of the PBAC is somewhat identical to the PRB, it is a separately constituted group that deals with the entire operations of the FOA. The PBAC does not usurp the prerogatives of the PRB, but rather, uses the project decisions of the PRB as final guidance on FOA workload.

11. Project Management Training.

a. Project Management Orientation Course - This orientation course will provide expanded guidance for complying with requirements of the Corps' life cycle project management system. Emphasis will be placed on the responsibilities of the Independent Project Manager. Attendees will include those individuals from each district who will be designated either Deputy District Engineer for Project Management, Independent Project Manager or Team Project Managers. The two day orientation will be conducted in 4 regional locations during July 1988. Goals of the orientation include:

(1) Explanation of regulatory guidance for the Corps project management concept.

(2) Definitions of the functions and responsibilities of Corps individuals and organizations involved in life cycle project management.

(3) Identification of areas to be monitored by the IPM/TPM and methodology for accomplishing this monitoring.


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(4) Using selected case studies demonstrate the way a project manager carries out his duties through the life of a project, and familiarize project managers with a wide array of situations they need to be sensitive to in order to proactively manage the project.

b. Civil Works Project Management Course - The aforementioned orientation training will be evaluated to determine if more extensive training is required. If warranted, the orientation training will be supplanted by a Civil Works Project Management Course in the PROSPECT program. The target audience would include those persons involved in Project Team Management and the members of the Project Review Board as well as the Independent Project Managers.

c. Upon establishment of the PROSPECT course, training will be conducted on a recurring basis with attendance determined through the Annual Training Needs Survey conducted by the CE Training Management Division.

FOR THE COMMANDER:


GEORGE R. ROBERTSON
Major General, USA
Director of Engineering
and Construction

APPENDICES:

- A. Model Project Review Board Charter
- B. Project Schedule and Cost Change Request
- C. Weekly Project Manpower Report
- D. Monthly Cost Control Change Report
- E. Project Monitoring Report
- F. Monthly Management Report
- G. Continuous Project "S" Curve Report
- H. Glossary

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APPENDIX A

MODEL PROJECT REVIEW BOARD CHARTER

A. Composition. The PRB is chaired by the Deputy District Engineer for Project Management (DDE(PM)) and includes Chiefs (or their designees) from the following functional areas:

- (1) Planning
- (2) Engineering
- (3) Construction
- (4) Operations
- (5) Program Management
- (6) Real Estate
- (7) Contracting
- (8) Resource Management
- (9) others as requested by the DDE(PM)

B. Official To Whom the PRB reports. The PRB will report to the District Engineer.

C. Authority. The PRB is authorized to:

- (1) Establish overall project priorities, procedures and goals.
- (2) Act on management policy issues which do not require the attention of the DE.
- (3) Task organizational elements to provide required information.

D. Function. The PRB will function as a quasi-corporate board where all members participate in terms of the district office as a whole and are expected to discuss/debate beyond their own specific areas of responsibility. The PRB will:

- (1) Review each project on a line item basis.
- (2) Provide a forum for discussion/debate of major issues for resolution.
- (3) Clarify and refine project information and significant issue discussions for presentation to the DE.

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(4) Insure that alternative viewpoints are considered prior to decision.

(5) Provide the district leadership with a forum to assist the DE in maintaining focus on Corps goals and objectives.

(6) Review and provide the District Engineer with recommendations on the annual operating budget.

E. Procedures.

(1) The PRB will meet monthly or as requested by the DDE(PM) for line item project review and general discussion of issues.

(2) Members of the PRB will be prepared to discuss the status of project actions associated with their functional specialty and any changes, delays, or problems which may impact schedules or budgets.

(3) The DDE(PM) will coordinate preparation of meeting records; assure distribution of pertinent information; and maintain PRB files.

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APPENDIX B

Project Schedule and Cost Change Request

ENG FORM 4975-R (RCS: CEEC-E-29)

1. Purpose. This form is used to request, review, evaluate, coordinate, recommend and approve changes to project cost and schedules. The form permits the project manager to track the coordination process from receipt of request through approval. Copies of the report will be returned to the requestor and other affected functional units to indicate actions taken on the request. The form will also be used as an action document for the Project Review Board should its decisions on cost estimate and schedule changes be necessary. This form shall be retained at district level.

2. Responsibility and Accountability.

a. Initiation - Each functional unit chief, resident engineer, resident contracting officer, the project manager and the sponsor are responsible to initiate a change request in their area of activity as soon as the need for change is first recognized. Accountability for the estimated impact of the change rests with the functional chief (supervisor) to whom the initiator is accountable including the DDE(PM) in case of the IPM. Changes resulting from inflation will be initiated by the PM but will be documented using this procedure.

b. Action Officer - The IPM/TPM is responsible to take action to review, evaluate, coordinate and obtain approval for all changes exceeding authorities delegated to him/her, functional chiefs, resident contracting officers, resident engineers and area engineers.

c. Evaluation of changes - Prior to approval of any change, the project Manager will initiate the evaluation procedures. All changes which exceed the PM's authority for approval must be evaluated using the formal network analysis process.

d. Recommendation - The project Manager will develop a final recommendation to the PRB, district commander and the non-federal project sponsor/user from a review of the estimated impacts of the change provided by the initial requestor and those impacts developed by the evaluation process. The IPM/TPM will include in the recommendation the source of changed resources; that is, contingency, float or overrun.

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e. Coordination - The IPM/TPM will coordinate the recommended change with the project sponsor and affected functional chiefs. The project sponsor and functional chiefs may concur as recommended, concur with revision or nonconcur. A meeting of the project review board may be requested. If one is requested, the Project Manager will arrange for the meeting.

f. Approval.

(1) Changes within the established authority of the functional chiefs, resident engineer, resident contracting officer, area engineer or project manager will be documented on the Project Schedule and Cost Change request and be furnished to the project manager. The project manager will use copies of the request form to coordinate the change with others affected.

(2) The level of authority of the DDE(PM) for approving changes will be established by the district commander in writing as will the level of approval authority delegated to the Project Review Board.

g. Instructions and Comments. This section of the report will be used to document disapprovals, with reasons, other instructions and comments to those requesting and impacted by the changes.

h. Feedback. Copies of completed request forms will be furnished to each functional unit involved in the project to serve as a response to the request. Information in the completed request form will also serve as source data needed to complete other forms described in other appendices of this EC.

i. Detailed Instructions for Completing Form. The completion of many of the sections of the change request are primarily self-explanatory. The following paragraphs furnish additional instructions.

(1) To, From, Thru - List the names of the PM, the person initiating the request, and the functional unit chief. The district has the option of defining the functional unit at the branch or division level.

(2) Request Number - The IPM/TPM will assign a sequential request number to each request. The number will identify the project, phase and sequential order of the request.

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(3) Estimated Impact - The tabular data for estimated impact will be estimated values for each function as developed by the requestor based on their understanding of the change in dollars, time and man-months of direct labor.

(4) Evaluation - Identify the person or unit that the request is sent to for evaluation. This would normally be the person or unit responsible for developing and changing the network schedule for the project.

(5) Source - The IPM/TPM will list the percentage in each column that the dollars, time and man-months will be allocated to contingency, overrun or float.

(6) IPM/TPM Coordination with Sponsor - The IPM/TPM will enter the results of sponsor coordination in terms of concurrence with adjustments or nonconcurrence, with the date that coordination was completed.

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PROJECT SCHEDULE AND COST CHANGE REQUEST (EC 1110-2-536)				PROJECT		DIVISION		REGION		RCS: CEEC-29	
THRU: (Functional Unit)				TO: PM		FROM:		DISTRICT		BASIN	
DATE: / /				DATE: / /		DATE: / /		PROJECT PHASE		SECTION I	
REQUEST NUMBER (Sequence)				SECTION I							
ITEM OR FEATURE:				PHASE:							
REQUESTED CHANGE:				REASON FOR CHANGE:							
ESTIMATED IMPACT				SECTION II - PROJECT MANAGERS ACTION							
REQUEST UNIT				ESTIMATED IMPACT							
SPONSOR				REQUEST UNIT							
PLANNING				SPONSOR							
ENGR				PLANNING							
REAL ESTATE				ENGR							
CONTR DIV				REAL ESTATE							
CONSTR SA				CONTR DIV							
CONSTR FEATURES				CONSTR SA							
PM				CONSTR FEATURES							
OTHER				PM							
OTHER				OTHER							
TOTAL				TOTAL							
DELTA \$ IN \$200				DELTA \$ IN \$200							
DELTA TIME IN MO.				DELTA TIME IN MO.							
MAN-MONTHS				MAN-MONTHS							
EVALUATION: TO:				SECTION III							
DATE: / /				DATE: / /							
PM APPROVED AS REQUESTED: INITIAL:				ESTIMATED IMPACT							
DATE: / /				REQUEST UNIT							
PM APPROVED AS SHOWN IN IV BELOW: INITIAL:				SPONSOR							
DATE: / /				PLANNING							
REQUEST WILL BE EVALUATED (Do Not Implement)				ENGR							
DO NOT PROCEED UNTIL APPROVED				REAL ESTATE							
APPROVAL OR RECOMMENDATION BY PM:				CONTR DIV							
DATE: / /				CONSTR SA							
P.M. COORD WITH SPONSOR:				CONSTR FEATURES							
DATE: / /				PM							
SOURCE:				OTHER							
PL = FLOUT				TOTAL							
CO = CONTINGENCY				DELTA \$ IN \$200							
OV = OVERLAP				DELTA TIME IN MO.							
DELTA \$ IN \$200				MAN-MONTHS							
DELTA TIME IN MO.				NOTE: SECTIONS V AND VI WILL BE COMPLETED ONLY WHEN CHANGE EXCEEDS PM AUTHORITY							
MAN-MONTHS				SECTION V							
COORDINATION: BY PM				COORDINATION: BY PM							
INITIAL & DATE:				INITIAL & DATE:							
CONCLUR:				CONCLUR:							
CONCLUR AS MARKED-OVER ABOVE				CONCLUR AS MARKED-OVER ABOVE							
DIAGRAMS NEED PREPARE				DIAGRAMS NEED PREPARE							
MTC:				MTC:							
APPROVAL: BY DOE (PM)				SECTION VI							
DATE: / /				DATE: / /							
PM COORD WITH SPONSOR:				PM COORD WITH SPONSOR:							
DATE: / /				DATE: / /							
REQUEST UNIT				ESTIMATED IMPACT							
SPONSOR				REQUEST UNIT							
PLANNING				SPONSOR							
ENGR				PLANNING							
REAL ESTATE				ENGR							
CONTR DIV				REAL ESTATE							
CONSTR SA				CONTR DIV							
CONSTR FEATURES				CONSTR SA							
PM				CONSTR FEATURES							
OTHER				PM							
TOTAL				OTHER							
DELTA \$ IN \$200				TOTAL							
DELTA TIME IN MO.				DELTA \$ IN \$200							
MAN-MONTHS				DELTA TIME IN MO.							
SOURCE				MAN-MONTHS							
SECTION VII - INSTRUCTIONS AND COMMENTS											

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

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APPENDIX C

WEEKLY PROJECT MANPOWER REPORT

ENG FORM 4981-R (RCS: CEEC-E-28)

1. Purpose: This report tabulates and accumulates man-hours of effort applied to the project. The report tracks man-hours on a weekly basis by functional section (organizational code), project phase and product.
2. Preparation: The report will be prepared weekly by Resource Management and retained at district level.
3. Usage: The report will permit the project manager to evaluate the level of manpower being used in the various phases and features of the project and draw conclusions on the appropriate level of effort.
4. Data Source: The report is a consolidation of information extracted from the labor distribution sheets either through the COEMIS system or by manual consolidation within divisions, branches, and sections.
5. Report Development: The major column headings are by project phase with organizational total at the right hand side. The columns will be completed with man-hours for each unit or organizational code. Sub-totals for each major organization will be shown. Feature DM, Plans and Specifications and Construction columns will be expanded when these phases are completed in multiple stages. The row titles will be basically broken down by major functional organizations (Planning, Engineering, Construction, Real Estate, etc.) with sub-headings by unit (organization code); such as economics, plan formulation, specifications, structures, hydrology, etc.). Total effort will be displayed for each phase as will subtotals for each major organization.

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APPENDIX D

MONTHLY COST CONTROL CHANGE REPORT
ENG FORM 4976-R (RCS: CEEC-E-27)

1. PURPOSE: The purpose of this report is to track the project estimates and costs from the earliest stages, noting cost changes by USACE and the LCSS during each phase. The forecast and allocation of contingency amounts on a monthly basis will also be derived using this report. Trend analysis and project concerns derived from this report are to be voiced in the Monthly Management Report (Appendix F) under project problems and issues.

2. Preparation:

a. This report shall be prepared monthly by the IPM/TPM. This report shall be revised by the Project Review Board and approved by the DDE(PM).

b. This report will be reviewed during the monthly line item review. The report shall be maintained and available at the district for upward submission upon request.

3. Usage: Page 1 of this report will be used by the district and division to track schedule and cost changes. Pages 2 and 3 shall be used to document the changes as they occur and provide a historical record of the reason for the changes.

4. Data Sources: The data for these forms will come from Appendix B (Project Schedule and Cost Change Request), COEMIS, PRISM, AMPRS and other available management reports.

5. Report Development: This report consists of three pages which include a chart listing all cost changes and two pages of narrative information.

a. The chart contains life cycle data on a project as it proceeds through each phase. Horizontal row headings represent all codes of accounts and include lines for contingency amounts. Vertical columns are represented as follows:

COL 1 - Estimate. F.S. (Feasibility Study) estimate is the anchor point for each phase. It is the basis for "delta" or incremental control of project between estimates.

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COL 2 - Last Revised consists of columns 2 + 3 + 4 as of last month (or COL 5 of last months report) and include the accumulated changes up through the last month.

COL 3 - Project Authorized Changes: CE. These are the incremental changes as requested, evaluated and then authorized by project management. LCSS may need to be consulted if beyond agreed contingency amounts.

COL 4 - Project Authorized Changes: Sponsor. These are the incremental changes as requested, evaluated and approved by PM and/or DDE(PM) and district commander which were initiated by the local sponsor.

COL 5 - New Estimate. Equals original estimate (COL 2) plus all authorized incremental changes (COLS 3 and 4). Represents latest documented cost to date.

Column 3 plus 4 gives current month changes. Column 2 minus column 1 gives the accumulated changes through the last month.

"Forecast" Column represents the PM's total appraisal of current costs including assessing estimates, pending unauthorized or mandatory unevaluated changes, delays, or slippages. Key to column is that it is judgemental and forward looking. The final column "Notes" is used to refer by number to notations of explanation contained on Sheet 2 of this report.

b. The second and third sheets contain narrative descriptions of project status. The second sheet begins with a project synopsis, followed by a descriptive listing of project and feature cost changes for the month. Items III and IV following are self descriptive regarding information required. Item V should contain a brief description of status of coordination items and any recent activities. Item VI should give a rundown on status of contracts (both architect-engineer and construction). The table as shown has headings that refer to construction contracts. For A-E contracts define the column headings as follows: ADV. DATE = CBD DATE, OPEN DATE = SELECTION LIST APPROVAL, AWARD DATE = NEGOTIATION DATE, NOTICE TO PROCEED = AWARD DATE. The remaining columns stay unchanged. Item VII provides for a brief narrative statement regarding problems or major issues.

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MONTHLY COST CONTROL CHANGE REPORT (Sheet No. 2)		PROJECT:		DATE	
				Page of pages	
DIVISION:		DISTRICT:		REGION:	
				BASIS:	
PROJECT MANAGER (Type or Print)				TELEPHONE NO. (local Area Code)	
STATUS SUMMARY NARRATIVE FOR MONTH OF _____					
I. SUMMARY PROJECT SYNOPSIS (700-150 WORDS):					
II. EXPLANATION OF CHANGES FROM SHEET NO. I:					
1.					
2.					
3.					
4.					
5.					
6.					
7.					
FOR ILLUSTRATION PURPOSES ONLY <i>(Local reproduction authorized - blank masters available from local FMO)</i>					
8.					
9.					
10.					
III. MILESTONE STATUS:					
MILESTONE #					
DESCRIPTION					
SCH % COMPLETE					
ACT % COMPLETE					
SCH COMP DATE					
ACTUAL COMP DATE					
IV. FUND STATUS:					
OBLIGATIONS: (\$000)			EXPENDITURES: (\$000)		
AVAILABLE THIS FY		AVAILABLE THIS FY			
USED TO DATE		USED TO DATE			
REMAINING THIS FY		REMAINING THIS FY			

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[illegible]

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APPENDIX E

PROJECT MONITORING REPORT
ENG FORM 4980-R (RCS: GEEC-E-30)

1. Purpose: This report will be utilized to track the major project milestones and activities. The report provides a comparison of original, revised and actual milestone schedules, and cost and manpower requirements. A comparison of obligations and expenditures is also provided.

2. Preparation: This report will be prepared by the IPM or the PM, reviewed by functional representatives and approved by the DDE(PM). This report will be forwarded to the division office and HQUSACE by the twenty-seventh day of each month.

3. Report Use: This report will be used by division and HQUSACE to compare the actual progress of the major milestones and activities with the original schedule. This report will also be utilized to monitor actual work effort against scheduled work effort.

4. Data Sources: Estimated values for inclusion in the report may be extracted from existing data currently in AMPRS or PRISM data bases via automated extract routines provided by these systems proponent offices, or estimated values may be directly inserted by the user through a screen format provided by the online Interactive-COEMIS (OIC) system. Actual financial data is automatically extracted from COEMIS F&A by OIC.

5. Report Development: The row headings are divided into major activities or items.

The column headings are further subdivided into original, revised and actual values. Original values are those initially established by the project manager and will remain the same for the life of the project. Revised values will be those which have been approved via the project schedule and cost change request process defined in Appendix B. Actual values reflect completion to date. Start and completion dates shall be derived from project networks or schedules which relate directly to those items identified in column one.

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30 Jun 88

PROJECT MONITORING REPORT (EC 1110-2-536)		PROJECT		DATE		Page of page		RCS: CEEC-E-30				
DIVISION		DISTRICT		PROJECT MANAGER (Include Telephone No.)								
ITEM OR FEATURE (1)	START DATE			COMPLETION DATE			STAFFING RESOURCES					
	ORIGINAL SCHEDULE (Mo/Da/Yr) (2)	REVISED SCHEDULE (Mo/Da/Yr) (3)	ACTUAL (Mo/Da/Yr) (4)	ORIGINAL SCHEDULE (Mo/Da/Yr) (5)	REVISED SCHEDULE (Mo/Da/Yr) (6)	ACTUAL (Mo/Da/Yr) (7)	ESTIMATED TOTAL		USED TO DATE			
							ORIGINAL SCHEDULE MAN/MONTHS (8)	REVISED SCHEDULE MAN/MONTHS (9)	ORIGINAL SCHEDULE MAN/MONTHS (10)	REVISED SCHEDULE MAN/MONTHS (11)	ACTUAL MAN/MONTHS (12)	
FEASIBILITY COST SHARE AGMT.												
FEASIBILITY REPORT												
REVALUATION REPORT												
DRAFT LCA												
QOM												
DRAFT												
FINAL												
FINAL LCA AND FIN. PLAN												
ENVR. AND REG. REGT.												
(DRAFT EIS)												
(FINAL EIS)												
(SUPP EIS)												
(DOT, ADA, ROD)												
(STATE PERMITS)												
PDM'S												
NO. 1												
NO. 2												
NO. 3												
PLANS AND SPECIFICATIONS												
CONTRACT 1												
CONTRACT 2												
CONTRACT 3												
REAL ESTATE ACQ.												
CONSTRUCTION												
CONTRACT 1												
CONTRACT 2												
CONTRACT 3												
Q&M DURING CONSTRUCTION												
TRANSFER TO SPONSOR												
REMARKS												

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PROJECT MONITORING REPORT (Continued)				PROJECT		DATE		Page of pages			
DIVISION				DISTRICT		PROJECT MANAGER (Include Telephone No.)					
ITEM OR FEATURE (1)	ESTIMATED TOTAL COST (\$000)		ACTUAL COST TO DATE (\$000)		COST TO COMPLETE (\$000)		OBLIGATIONS (\$000)		EXPENDITURES (\$000)		
	ORIGINAL ESTIMATE (\$000)	REVISED ESTIMATE (\$000)	EXPENDITURES (\$000)	ORIGINAL ESTIMATE (\$000)	REVISED ESTIMATE (\$000)	AVAILABLE THIS FY (\$000)	USED TO DATE (\$000)	REMAINING THIS FY (\$000)	AVAILABLE THIS FY (\$000)	USED TO DATE (\$000)	REMAINING THIS FY (\$000)
FEASIBILITY COST SHARE AGMT.											
FEASIBILITY REPORT											
RE-EVALUATION REPORT											
DRAFT LCA											
COM											
DRAFT											
FINAL											
FINAL LCA AND FIN. PLAN											
ENVIR. AND REG. REGT.											
(B/LAT ERS)											
(FINAL ERS)											
(SUPP ERS)											
(40% 40% 20%)											
(EST. PERMITS)											
(FWS)											
NO. 1											
NO. 2											
PLANS AND SPECIFICATIONS											
CONTRACT 1											
CONTRACT 2											
CONTRACT 3											
REAL ESTATE ACQ.											
CONSTRUCTION											
CONTRACT 1											
CONTRACT 2											
CONTRACT 3											
DATA DURING CONSTRUCTION											
TRANSFER TO SPONSOR											
REMARKS											

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(ENG FORM 4900-R, Jun 88)

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APPENDIX F

MONTHLY MANAGEMENT REPORT
ENG FORM 4979-R (RCS: CEEC-E-26)

1. PURPOSE: The purpose of this report is to furnish management with a brief overview summary of status including project background, budget and cost information, schedule status, and major problems and issues, with a forward analysis as appropriate. It is issued monthly in order to structure and focus the review process. Supplemented by the project managers minutes of the completed PRB meeting, this report forms the monthly report to higher commands.

2. Preparation:

a. The report is to be prepared monthly by the IPM. It should be reviewed by the functional elements within the district which are involved in the current processes. Report approval authority will be the DDE(PM).

b. The report shall be forwarded to the division and HQUSACE offices by the twenty-seventh of each month. After HQUSACE review, the report shall be forwarded to ASA(CW) by the third workday of the following month.

3. Usage: This report will be used by the PRB to review project cost and schedule status. It will be provided to the division for submission to HQUSACE on a monthly basis. This report will be furnished to ASA(CW).

4. Data Sources: The data will be obtained from COEMIS, PRISM, AMPRS, the Network Analysis, and other project tracking systems used by the district.

5. Report Development: This report consists of four sections as follows:

I. Project Synopsis - Brief description of the project in 150 words or less (single spaced).

II. Status of Project Costs - Key summaries of codes of accounts (including separate line item contingency) tracked through all project phases.

III. Status of Project Schedule - Key milestones identified as (a) original, (b) authorized - revised, (c) forecast, and (d) actual.

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IV. Project Problems and Issues - Major project problems, issues and forward concerns are narratively summarized for input, guidance and decisions to be made. Specific areas to be addressed are:

- Status of environmental matters
- Project sensitivity considerations
- Future risk assessments
- Customer expectations

6. DERIVATION OF REPORT - Overall intent is to extract information contained in other reports described in this EC that are used to control projects at FOA. Codes of Accounts in each phase must be consistent throughout the project for analysis, critique and review to be proper.

I. Synopsis - Should be derived from the project plan description and specifications and presents the key elements.

II. Status of Project Costs - Data to be presented in a direct take-off summary from the project managers monthly report. It is presented in the same format and code of accounts. In the event that additional detail is required at line item review meetings, the PM's report can then be readily utilized.

III. Status of Project Schedule - Key milestones are extracted from the detailed monthly schedule report prepared by program management and the same format should be used.

IV. Project Problems, Issues and Concerns - Represent the project managers assessment of major problems, issues and concerns. In progress action, suggested solutions, request for decision and future concerns should be voiced for discussion or action at the PRB meetings and higher levels. As a minimum, narrative assessment would be made of status of environmental aspects identifying controversial issues which higher levels need to be aware of or act upon. An assessment of local, state, national officials concerns or those of state/Federal agencies would be addressed. The Rick Assessment would seek to give early warning of where project is most vulnerable to criticism or cost/schedule slippage. The narrative should conclude with an updated statement of where "customer" (local sponsor/user) expectations and Corps performance differ. This will help preclude surprises and reinforce the "partnership" arrangement ("customer care").

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MONTHLY MANAGEMENT REPORT (EC 1110-2-536)				PROJECT:				Page of pages		RCS: CEEC-E-26			
DIVISION				DISTRICT				DATE					
I. PROJECT SYNOPSIS													
II. STATUS OF PROJECT COSTS: (\$000)													
ITEM OR FEATURE (1)	FEASIBILITY ESTIMATE (2)	APPROVED CHANGES		QDM ESTIMATE (5)	APPROVED CHANGES		PB-2 ESTIMATE (8)	APPROVED CHANGES		CURRENT ESTIMATE (11)	PENDING CHANGES		FORECAST (14)
		USACE (3)	LCSS (4)		USACE (6)	LCSS (7)		USACE (9)	LCSS (10)		USACE (12)	LCSS (13)	
DATE (Month/Day/Year)													
DIRECT LABOR													
OTHER DIRECT													
INDIRECT COSTS													
CONSTRUCTION													
CONTINGENCIES													
TOTAL													
III. STATUS OF PROJECT SCHEDULE: (Month/Day/Year)													
MAJOR MILESTONE (1)	ORIGINAL SCHEDULE (2)	AUTHORIZED REVISED SCHEDULE (3)	FORECAST SCHEDULE (PM) (4)	ACTUAL (5)	COMMENTS (6)								
IV. PROJECT PROBLEMS AND ISSUES													
<p>PROJECT MANAGER (Type or Print)</p> <p>SIGNATURE</p> <p>TELEPHONE NO. (Incl Area Code)</p> <p>DATE</p>													

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APPENDIX G

CONTINUOUS PROJECT "S" CURVE REPORT

ENG FORM 4973-R (RCS: CEEC-E-25)

1. PURPOSE: The purpose of this report is to graphically display the overview summary of project schedules and status including cost information and manpower utilization. This form will reflect data extracted from the network schedules, the manpower data base and the finance data base and will include data summarized in the "Monthly Management Report". The plotted curves will provide the IPM/TPM with a graphic means to monitor actual costs and work effort and compare them to original and revised scheduled use.
2. PRESENTATION: This report shall be prepared each month by the IPM or the TPM. The report should be reviewed by the appropriate functional element within the district for accuracy. The DDE(PM) shall be responsible for approval at the district and submission of the appropriate portion to higher authority. Only the project costs (cumulative expenditures) versus time portion of the report for the overall project will be submitted to HQUSACE for use in reviews and submission to ASA(CW). The report shall be forwarded to the division and HQUSACE offices by the twenty-seventh day of each month and in turn shall be reviewed and forwarded to OASA(CW) by the third workday of the following month.
3. REPORT USE: The report will be used to monitor current project status and performance versus that originally planned.
4. DATA SOURCE: Network Analysis, COEMIS, AMPRS and/or PRISM.
5. REPORT DEVELOPMENT: The data displayed in the S-curves shall be consistent with the summary data in the other PM reports required by this EC. The curves will be plotted with time as the abscissa and cumulative, expenditures and man-months of direct labor as ordinates. Ordinates for other than direct labor will be plotted in dollars. Direct labor will be plotted in man-months. Each S-curve shall be plotted using (a) original (b) authorized revised and (c) actual historical data. The S-curve reports will be developed for the overall project and for each phase or product. At the top of each S-curve, the milestones noting start and completion of project phases and products will be shown.

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CIVIL WORKS PROJECT MANAGEMENT SYSTEM CONTINUOUS PROJECT S-CURVE REPORT (EC 1110-2-536)					DATE	RCS: CEEC-E-25																																																																
					Page	of pages																																																																
PROJECT:	DIVISION:	DISTRICT:	REGION:	BASIN:																																																																		
ITEM OR FEATURE:	PROJECT MANAGER:	TELE NO. (Include Area Code)	MILESTONE V START = S COMPLETE = C SOLID LINE = ORIGINAL SCH. DASH LINE = ACTUAL SCH. DOTTED LINE = REVISED SCH.																																																																			
SCHEDULED MILESTONES:																																																																						
<div style="text-align: center;"> <p>FOR ILLUSTRATION PURPOSES ONLY (Local reproduction authorized - blank masters available from local FMO)</p> </div>																																																																						
<div style="display: flex; justify-content: space-between;"> <div style="writing-mode: vertical-rl; transform: rotate(180deg);"> IN MILLIONS OF DOLLARS OR MANHOURS PROJECT COST OR WORK EFFORT </div> <div style="text-align: center;"> <table border="1"> <tr> <td>PRIOR TOTAL</td> <td>1</td><td>2</td><td>3</td><td>4</td> <td>1</td><td>2</td><td>3</td><td>4</td> <td>1</td><td>2</td><td>3</td><td>4</td> <td>1</td><td>2</td><td>3</td><td>4</td> <td>1</td><td>2</td><td>3</td><td>4</td> <td>TOTAL WHEN COMPL.</td> </tr> <tr> <td></td> <td>19</td><td>19</td><td>19</td><td>19</td> <td>19</td><td></td><td></td><td></td> <td>19</td><td></td><td></td><td></td> <td>19</td><td>19</td><td>19</td><td>19</td> <td></td><td></td><td></td><td></td> <td></td> </tr> <tr> <td colspan="4">PRIOR FISCAL YEARS</td> <td colspan="4">CURRENT FISCAL YEAR</td> <td colspan="4">BUDGET FISCAL YEAR</td> <td colspan="4">FUTURE FISCAL YEARS</td> <td colspan="4"></td> </tr> </table> </div> </div>							PRIOR TOTAL	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	TOTAL WHEN COMPL.		19	19	19	19	19				19				19	19	19	19						PRIOR FISCAL YEARS				CURRENT FISCAL YEAR				BUDGET FISCAL YEAR				FUTURE FISCAL YEARS							
PRIOR TOTAL	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	TOTAL WHEN COMPL.																																																	
	19	19	19	19	19				19				19	19	19	19																																																						
PRIOR FISCAL YEARS				CURRENT FISCAL YEAR				BUDGET FISCAL YEAR				FUTURE FISCAL YEARS																																																										

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(PROFORMA: CEEC-E)

APPENDIX 2

CECW-L Memorandum from LTG Hatch for Division Engineers, Subject: Programs and Project Management (PPM), dated 11 Oct 1990. Memo encloses minutes of Saint Michaels (I) conference, 27-28 June 1990, Saint Michaels, Maryland



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

Re: N.H. 127

11 OCT 1990

REPLY TO
ATTENTION OF:

CECW-L

MEMORANDUM FOR DIVISION ENGINEERS

SUBJECT: Programs and Project Management (PPM)

1. This is to further amplify my 5 February 1990 memorandum which called for combining Programs and Project Management in Divisions and Districts.
2. After several months, we found a number of questions remained unanswered. There was a need to better define roles and responsibilities of PPM organizations and technical Divisions both at the Division and District level, and at the Headquarters level. Headquarters senior staff and I spent two long days in a meeting at St. Michaels, Maryland working the problem. The consensus that has been reached is described in the enclosed minutes of that meeting.
3. We found that project management for the Corps of Engineers can best be implemented within a narrow range of action that is neither our historical handoff from one technical function to the next, nor pure task management in which all members of a project's team report to a single manager who has full authority over personnel and resources as well as budget and schedule. We recognized that the quality of our technical products is of great importance. Technical Managers (TMs) working under the supervision of functional Chiefs are responsible for development of these products. However, the Project Manager (PM) working under the Deputy District Engineer for Project Management DDE(PM) has overall responsibility for project schedule and cost and provides overall leadership in project implementation. We further agreed that for the project management system to work effectively, that the technical division Chief will be held accountable to the District Commander -- through the DDE(PM) -- for project delivery commitments. Obviously, the coordination and cooperation between a Project Manager (PM) and Technical Managers (TM) must be continuous throughout our project management process.
4. I and your Headquarters leadership have reaffirmed our commitment to project management and I urge you to review the enclosed minutes carefully and to take appropriate measures to assure that, within your organization, roles and responsibilities are consistent with the enclosed minutes. I expect, within a short period of time, to have the management relationships

CECW-L

SUBJECT: Programs and Project Management (PPM)

described here and depicted in FIGURE 1 to be fully operational. Future Engineering Regulations will reflect these concepts and their implementing roles and responsibilities.

5. I welcome discussion with you about these concepts, roles, and responsibilities. It is essential that there be complete understanding and commitment to Programs and Project Management.

Encl



H. G. HATCH
Lieutenant General, USA
Commanding

Minutes of the Meeting of HQUSACE Senior Leaders
on
PROGRAMS AND PROJECT MANAGEMENT

June 27-28, 1990 -- St. Michaels, Maryland

I. OVERVIEW

Guidance to all Division Engineers, combining Programs and Project Management (PPM), was contained in a memo dated 5 February 1990 signed by the Chief of Engineers. After several months, it became apparent that a broad range of interpretations of this memo was being applied. Roles and responsibilities assigned to Programs and Project Management (PPM) organizations varied considerably, resulting in a wide range of PPM Directorate and Division sizes. Much of this difference appeared to depend on individual interpretations of the 5 February memo. There were uncertainties and some frustration with what was perceived to be a lack of specificity in the memo. As a result, on June 27 and 28, senior leaders of HQUSACE met in St. Michaels, Maryland, to discuss the role of HQUSACE in leading and supporting the project management process. A list of attendees is enclosed.

While discussions clarified a wide range of opinions on a number of important issues, they also identified a strong commitment to narrowing this range. The senior leaders affirmed their collective and individual commitments to project management but identified important concerns with the definition of roles and responsibilities within the current Corps organization for project management.

A definition of project management roles and responsibilities was thought to be essential before agreement could be reached on a Headquarters organization to support project management. Meeting participants agreed on general principles of project management. The key issue was the differentiation of the responsibilities of the Program and Project Management (PPM) staff, and the roles and responsibilities of the traditional technical staff.

Agreement was reached on specific roles and responsibilities within each of the major technical Directorates and Divisions in the Corps, and in the Programs and Project Management (PPM) Directorates and Divisions. After describing the project management process, participants outlined a variety of actions that should be taken by HQUSACE to support project management and the Project Manager (PM).

In summary, senior leaders developed a clear understanding of the issues and problems of organizing for project management. They

achieved consensus on the roles and responsibilities of Project Managers (PMs), and on the differences in the roles and responsibilities of the Project Manager (PM) and the Technical Manager (TM). As a result, senior leaders at HQUSACE built a stronger team and reaffirmed their commitment to project management.

While no HQUSACE organizational changes are necessary to implement project management at this time, a variety of procedural actions should be taken. These are described below.

II. AGREEMENTS

The agreements reached can be classified in four categories: (A) agreements on general principles of project management; (B) specific agreements on the roles of the Project Manager (PM), the Technical Manager (TM), and the Programs and Project Management (PPM) organization; (C) agreements on project-related roles and responsibilities within the technical functions; and (D) agreements on actions that should be taken by HQUSACE to support project management.

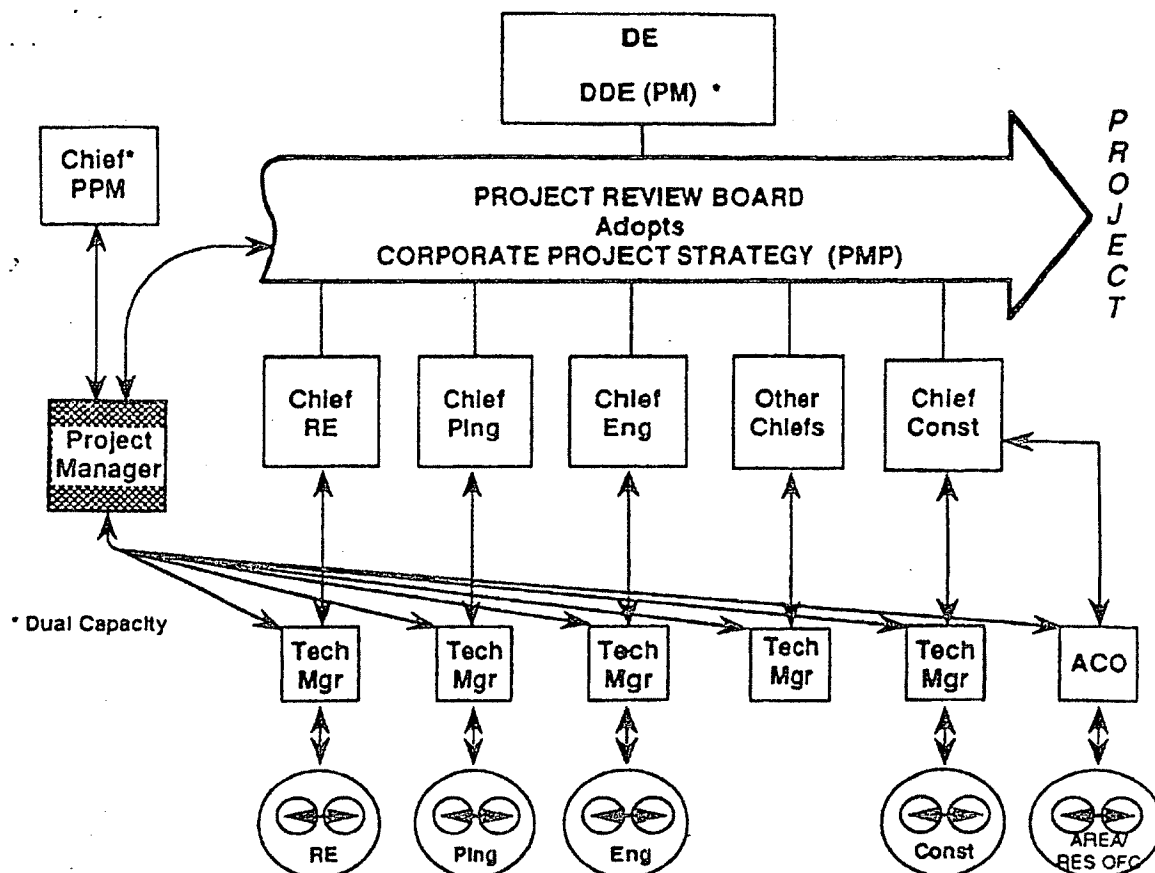
A. Agreements on general principles of project management

1. Project management is not a substitute for completed staff work.
2. No change in HQUSACE organization is needed at this time.
3. We must celebrate coordination. We must not suppress disagreement. We must not stonewall by letting actions sit.
4. The Project Manager's (PM) authority comes from the District Commander while the authority for the Technical Manager (TM) comes from the technical/functional Chief (Note: Contracting authority of the Area or Resident Engineer comes from the Contracting Officer).
5. The Corps has moved from a primarily functional (technical) approach toward a task (matrix-management) approach in managing its projects. In a pure task approach, the Project Manager (PM) would control and manage all technical assets. We are not there, and we do not intend to be there. Rather, we have moved to a mix of functional and task approaches. In a pure functional approach, the functional Chiefs would control all the management and technical assets. Seen as a continuum between the pure functional and pure

task organizations, the Corps has taken a position between these ends of the continuum.

6. The relation of the Project Manager (PM) to the Technical Manager (TM) has shifted the priorities of the Technical Manager's (TM's) job. While the Technical Manager (TM) serves on the project management team, the majority of his or her time is spent on issues of technical product management. Although the technical elements, through the Technical Manager (TM) are responsible for the content and quality of technical products, the Project Manager (PM) has responsibility and authority to challenge technical issues when necessary.
7. The USACE District Project Management System and the relationship of the Project Manager (PM) and the Technical Manager (TM) are shown in FIGURE 1.
8. The technical division Chief is accountable to the District Commander -- through the Deputy District Engineer for Project Management (DDE-PM) -- for project delivery commitments; but the technical division Chief is directly accountable to the District Commander for the overall performance of the technical function including technical product quality.
9. The Project Manager (PM) has a responsibility to raise project management issues early and to facilitate their timely resolution.
10. There should be a two-stage Feasibility Review Conference (FRC) with a rotation of the lead chair. The two-stage FRC should be co-scheduled. Planning Division is responsible for conducting the FRC and achieving necessary approvals to complete the Feasibility Report. The project manager is responsible for achieving the corporate commitment embodied in the Project Management Plan (PMP).
11. The project management process should be applied to Corps project-related work for other agencies and to work brokered among Districts.
12. This agreement on general principles is not applicable in Regulatory functions unless the issue is long-term, is inordinately complex, or involves extensive interagency hand-offs and coordination.
13. While this agreement on general principles is not applicable to the normal operations and maintenance of existing projects, it is applicable to appropriate non-

FIGURE 1 - USACE DISTRICT PROJECT MANAGEMENT SYSTEM



1. DDE(PM) and other functional chiefs form Corporate Board (the PRB) to adopt project development strategy, scope, schedule, and major issues; and approve proposed schedule, cost, quality, deliverables, etc. The DDE(PM) appoints the PM and works with other functional chiefs to establish the PM/TM team and assign other resources as necessary to the project.
2. PM - Responsible for management of overall project and integrating functions, ensuring that costs are controlled and that schedules are met. Serves as point of contact with the sponsor and other non-Corps elements. Also responsible for interfunctional coordination as necessary to assure complete project integration and optimal use of project resources.
3. PM/TM team and other resources available to the project are established at the initiation of the project. PM/TM team stays with the project until complete; other resources are assigned to the project as required.
4. TM - Responsible for coordinating intrafunctional and interfunctional disciplines in order to assure timely delivery of a quality product.
5. Functional chiefs are accountable to the DE via the DDE(PM) for project delivery requirements.
6. Counsel is a participant on the PRB and is responsible for providing legal services at all stages of and to all participants in the PRB.
7. Other Chiefs (e.g., Resource Management, Program Management, Contracting etc.) are participants on the PRB and provide services in their area of expertise.

recurring activities.

B. Specific agreements on roles and responsibilities of the Project Manager (PM), the Technical Manager (TM), and the Programs and Project Management (PPM) organization.

1. The Project Manager (PM) is responsible for:
 - a. The delivery of the project on time and within budget.
 - b. The overall integration and management of the study and project budget, cost, schedule, scope, and customer interface -- starting during reconnaissance and feasibility stages, and extending through design and construction, and into project operation. For military projects the starting point is when design guidance is received.
 - c. Obtaining costs approved by the responsible functional chief for Real Estate, Engineering and Design and Construction Management and providing them to Engineering (Cost Engineering for incorporation into the detailed project estimate.
 - d. The primary contact with sponsors, installations, customers and partners -- but not the sole contact. (see 2.h.)
 - e. The resolution of study and project budget, cost, schedule, and scope problems in the most appropriate manner.
 - f. The management of the overall project, including affordability and corporate commitments.
 - g. The project management interface with the Technical Manager (TM).
2. The Technical Manager (TM) is responsible for:
 - a. The overall development and processing of the technical products, including product quality.
 - b. The technical function's primary interface with the Project Manager (PM), including appropriate coordination on matters accomplished under paragraphs 2.e and 2.h.

- c. The coordination of all technical disciplines (sections and branches) in the development of technical products.
 - d. The coordination with other technical functions when needed in the development of technical products (e.g., Engineering Appendix of Feasibility Reports).
 - e. The principal contact for the technical function's supporting contractors.
 - f. The technical function's participation in the development of the Initial Project Management Plan (IPMP), the Project Management Plan (PMP), and in other project-related strategies.
 - g. The communication with customers' technical representatives -- always in concert with the Project Manager (PM) -- on the conduct of the study, project design, construction, and operations.
 - h. The Technical Manager (TM) is the primary contact with supporting contractors, and the Administrative Contracting Officer (ACO) is the primary contact for the coordination of contract issues during construction.
 - i. The representation of the technical function at the Project Review Board (PRB) when issues are raised.
3. The Programs and Project Management (PPM) Division at the District will be responsible for the following project-related functions:
- a. Developing all project-related cost, budget, and schedule actions with the appropriate technical functions.
 - b. Participating in the development of the Civil Works Initial Project Management Plan (IPMP).
 - c. Leading the District elements in the negotiation of Feasibility Cost Sharing Agreements (FCSAs), and the preparation and negotiation of Local Cooperation Agreements (LCAs).
 - d. Providing project management leadership within the District and at the project interfaces with sponsors and customers.

- e. Obtaining necessary input and chairing the Project Management Plan (PMP) review during the Feasibility Review Conference.
- f. Recommending and endorsing monthly project management report submittals to the Division Project Review Board (PRB) meeting.
- g. Resolving all project management-related issues.
- h. Facilitating timely resolution of project claims.
- i. Directing all matters pertaining to budget testimony.
- j. Managing the 1391 input and review as appropriate.
- k. Monitoring and reviewing planning and construction documents.

C. Agreements on project-related roles and responsibilities within the technical functions

- 1. PLANNING roles and responsibilities include:
 - a. Preparing study cost estimates.
 - b. Preparing the environmental analysis and reviewing it during design and construction.
 - c. Preparing, reviewing and processing the Environmental Impact Statement (EIS).
 - d. Preparing the economic analysis.
 - e. Preparing the Plan Formulation.
 - f. Preparing the cost sharing determination.
 - g. Reviewing the Financial Plan.
 - h. Reviewing and processing the Reconnaissance Report and the Feasibility Report.
 - i. Insuring the technical adequacy of all planning products.
 - j. Providing input to the Project Management Plan (PMP).

- k. Marketing Corps capabilities in traditional mission areas.
 - l. Developing and managing the Continuing Authority program and projects consistent with the principles of project management.
 - m. Reaffirming the recommended plan during Pre-Construction Engineering and Design (PED).
 - n. Resolving planning issues raised during the Washington Level Review.
 - o. Chairing Reconnaissance and Feasibility Review Conferences (RRC and FRC).
2. ENGINEERING roles and responsibilities include:
- a. Managing and executing design whether accomplished in-house or by contract.
 - b. Preparing, coordinating and collecting engineering input for these technical products:
 - Design Memoranda (DMs), plans, specifications, and cost estimates.
 - Engineering studies and investigations for the life cycle of projects (e.g., H&H, GeoTech, models, etc.)
 - c. Preparing the detailed estimate for all construction features and for incorporation of the non-construction feature costs provided by the project manager.
 - d. Insuring the technical adequacy of all engineering products.
 - e. Coordinating and processing design documents and products during their preparation and review.
 - f. Chairing technical review conferences and resolving functional technical issues raised by the Project Review Board (PRB) or during the Washington Level Review.
 - g. Participating in the development of a project strategy and providing input to the Initial Project Management Plan (IPMP) and the Project Management Plan (PMP).

- h. Managing design in accordance with Project Management Plan (PMP).
- i. Informing and coordinating with the Project Manager (PM) on changes as soon as they are known or forecast (e.g., changes in the basis of design, project cost, design budget, or schedule).
- j. Provide continuous technical assistance when required throughout the project for life.

3. CONSTRUCTION AND OPERATIONS roles and responsibilities include:

- PM → FUNDS → PMD/DIST. a. Conducting Biddability, Constructability, Operability (BCO) Reviews to include maintainability.
- DIST/NO b. Performing construction contract administration.
- DIST/NO c. Performing Supervision and Administration (S&A) management and rate allocation.
- NO d. Insuring contract cost control.
- NO e. Insuring contract schedule control.
- Eng & Ops f. Assuring construction quality.
- DIST/NO g. Providing continuous technical assistance during project life.
- DIST/NO h. Conducting claims management.
- DIST/NO i. Operating and maintaining existing projects.

4. CONTRACTING roles and responsibilities include:

- a. Participating in the development of the Project Management Plan (PMP).
- b. Developing the Solicitation Schedule and Provisions.
- c. Participating in the preparation and review of acquisition plans.
- d. Soliciting and awarding contract actions.

- e. Monitoring, facilitating, or accomplishing business processes, such as market analysis, process selection, price and cost analysis.
- f. Advising on technical contract issues, such as clauses, waivers, deviations, approvals, and Business Clearance Memoranda (BCMs).

5. REAL ESTATE roles and responsibilities include:

- a. Preparing all Cost Estimates for real estate.
- b. Preparing and coordinating the Land Acquisition Schedule.
- c. Assuring the inclusion of the Cost Estimates for real estate and the Land Acquisition Schedule in the Project Management Plan (PMP).
- d. Participating in Feasibility Review Conferences (FRCs), Issue Resolution Conferences (IRCs) and other meetings.
- e. Monitoring land acquisition activities (e.g., title evidence, closings, condemnation, PL 91-646 payments, etc.)
- f. Conducting appraisal review.
- g. Certifying the availability of Lands, Easements, Rights-of-Way, Relocations, and Disposal (LERRD).
- h. Processing and approving LERRD credit requests.

D. Agreements on actions that should be taken by HQUSACE to support project management

- 1. No HQUSACE organizational changes are necessary, at this time, to implement project management.
- 2. HQUSACE organization for project management and for programs management does not need to match the Division or District Programs and Project Management (PPM) organizations. The management functions and roles are different for Headquarters than for Divisions and Districts. At Headquarters, project management has a downward focus, while programs management must focus up and on interagency coordination with the Office of Management and Budget (OMB) and Congress. Therefore,

Project Management and Programs Management at Headquarters should remain separate.

3. The final technical review of project-related planning and engineering products should occur at the Division level or at appropriate centers of expertise. Final HQUSACE action should audit and validate the field's technical reviews. Through its involvement, HQUSACE assures nationwide consistency and conformance with policy and standards. However, it is essential that this involvement occur in the early PM process. At HQUSACE, Planning and Engineering functions are currently early review participants. Other offices, including Chief Counsel and Real Estate, are committed to becoming actively involved in the early project stages. When the early review process is fully implemented, there should be no need for an indepth project review at Headquarters -- except where this is deemed necessary in the project development strategy and in the Project Management Plan (PMP).
4. HQUSACE must enhance training for staff involved in project management -- including the staff of functional/technical elements as well as in Programs and Project Management (PPM) organizations. Indepth training for project managers, similar to the Planning Associate training program, should be developed as a joint effort by Headquarters Project Management and Programs Management leaders.
5. HQUSACE must hold Division and District Commanders accountable for the implementation of effective project management. Divisions are key to the successful implementation of project management within the Corps. The Division PRB brings both a higher level of technical expertise and nearly total independence to the review of the project manager's plans and reports. Essentially all policy and technical issues which were not identified elsewhere in the Corps review process, should be identified, documented and resolved through this mechanism. We would expect issues to be initially identified and resolved through the Division PRB rather than the HQUSACE PRB.

1 Encl
List of Attendees

HQUSACE Senior Leaders Meeting
on
Programs and Project Management
June 27-28, 1990 -- St. Michaels, Maryland

LIST OF ATTENDEES

LTG Hatch, CECG
MG Kem, CEDC
MG Kelly, CECW-ZA
Mauldin, CECW-ZB
Steinberg, CECW-L
Cluff, CECW-B
Elmore, CECW-O
Bates, CECW-P
McPherson, CECW-E
Carton, CEMP-ZB
Dunnam, CEMP-M
Kennon, CEMP-E
Hanson, CEMP-C
Watling, CEMP-R
Wallace, CERM-ZA
Edelman, CECC-ZA
Murdock, CEWRC-ZA
Frankel, CERE-ZA
Wischmann, CEPR-ZA

Encl

APPENDIX 3

CECG Memorandum from LTG Hatch, Subject: Implementation of Project Management, (aka Saint Michaels II), dated 25 October 1991. Memo encloses an "Action Plan to make appropriate (organizational structure) changes to improve the system"



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

REPLY TO
ATTENTION OF:

CECG

MEMORANDUM FOR SEE DISTRIBUTION

25 Oct 91

SUBJECT: Implementation of Project Management

The Headquarters senior leadership team recently completed an extensive evaluation of the status of Project Management (PM) implementation within the Corps. I requested the review when I became concerned that the objectives of the Corps' PM System, as established over the past three years, have not been fully realized. These objectives include:

- a) Making projects the central focus of Corps activities, and vesting leadership and overall accountability for a project in a single individual -- the project manager;
- b) Strengthening the corporate commitment at all levels, to establish and maintain baseline costs and schedules for all studies and projects;
- c) Ensuring that quality projects are planned, designed, and constructed in a cost effective manner;
- d) Integrating project sponsors, partners, and customers into the implementation process, so that their views are fully understood and they are fully aware of all financing, policy, and other project constraints;
- e) Improving our performance in providing decision makers with the necessary quality information so that the appropriate decisions can be rendered and that the schedules and commitments consistent with these decisions, can be maintained;
- f) Ensuring consistent application of Administration policy across all projects.

In developing the conclusions contained in this memorandum, I have worked closely with the Assistant Secretary of the Army for Civil Works and have her full support. I have also had the advantage of frank and open discussions among senior leaders of the Headquarters and the Secretary's office. To assist in this effort, the Engineer Strategic Studies Center (ESSC) was commissioned to analyze the District, Division, and Headquarters perceptions of how well PM is working. The results of ESSC's analysis are contained in 5 baseline data summaries and an executive summary. (Copies are being distributed under separate cover.) The Headquarters senior leaders reviewed the results of the ESSC analysis and

SUBJECT: IMPLEMENTATION OF PROJECT MANAGEMENT

recently completed a two-day workshop during which many aspects of our PM System were evaluated.

The results of the ESSC analysis are loud and clear, and I appreciate the candid responses from those interviewed. The interview statements talk about a burdensome reporting system and an inadequate understanding of why we elected to implement PM. In addition, there were statements that some senior leaders do not support PM. It also came through loud and clear in the ESSC interviews that, in spite of the problems associated with PM, there is widespread support for the underlying concept of PM. The interviews also reinforced my belief that improved horizontal integration in developing and managing projects in the District, combined with increased customer interface, and greater attention to costs and schedules are essential to the Corps' future.

The Headquarters senior leadership and I agree that the effectiveness of the Corps of Engineers is directly related to our effective implementation of PM. Through this recent assessment, we have strengthened our collective and personal commitment to PM. First, our Headquarters senior leaders agreed that they would do everything in their power to ensure the success of PM. Second, we refined the Headquarters and Division roles, with regard to PM. The Headquarters and Division elements will focus on providing the appropriate degree of management oversight and guidance to allow project management to be most effective at the District level. All PM activities of Divisions and Headquarters, including upward reporting or management activities, will be reviewed to insure that those activities add value to delivering quality projects on schedule and within budget. This will reinforce our concept that the focus and implementation of project management must be at the District level where it belongs. We will be working hard to let people do their jobs. Our people are the backbone of the Corps of Engineers and have made the Corps what it is today.

Let there be no mistake, the corporate leadership of USACE has reaffirmed its commitment to the full and effective implementation of PM. We believe that developing quality projects on schedule and within budget can best be accomplished by combining the strength of our existing functional elements with a strong PM organization. We recognize that differing perspectives among our functional elements and project management are inherent in such a system. However, enabling the Project Manager to challenge technical products within the context of maintaining project costs, schedules and budgets helps to ensure that quality projects are built for the least cost in the most reasonable time frame. The functional managers must continue to be accountable for the technical integrity, cost, schedule and quality of their products, to include management of any A-E products. Project managers and functional personnel must work together for all to be

SUBJECT: IMPLEMENTATION OF PROJECT MANAGEMENT

successful. Thus, such a system is totally dependent upon cooperation and teamwork by all members of the Corps team. Giving birth to a new management system, such as PM, is difficult. We are making progress. However, more hard work, greater cooperation, and clarity of communication are necessary. I am convinced that we will make these changes in our management approach if we focus on our future, not our past.

During our review of PM, we gave full consideration to a range of approaches from the use of functional elements as project managers to adoption of full matrix management. (Similar to systems used by private industry.) We concluded that our current system, built upon teamwork and the Project Team (which includes the Project Manager as the team leader and technical managers from the functional elements), is where we need to be for PM. This approach to Project Management was the underlying basis of the current regulation (ER 5-7-1) implementing Project Management and this is where we will remain. One of our objectives will be to achieve a more common understanding of what this requires from all levels within the Corps. Toward that end, we will also give increased emphasis to standard organizational structure at the District, Division, and Headquarters to reinforce effective implementation of the Project Team and PM system.

An effective project management system is built upon teamwork; with the Project Team on the frontline of our future endeavors. The Project Team, under the leadership of a Project Manager, will be composed of technical managers from all functional elements involved in the planning, design, construction, and operation of a project as well as our key members from Real Estate, Resource Management, Counsel, etc. The Project Manager will be responsible for delivery of a quality project on time and within budget. In accomplishing this objective the project manager must effectively control all project funds. We expect the project manager to allocate funds to functional elements on a periodic basis, and to review the progress of each period's work before additional funds are allocated. The functional chiefs support the Project Manager in this undertaking and, in that capacity, are responsible for delivering the individual products required for a project to the Project Manager. The specific products required to plan, design, construct, and operate a project remain the responsibility of the functional elements through the development, review and approval process. The functional elements retain this responsibility because the quality of

SUBJECT: IMPLEMENTATION OF PROJECT MANAGEMENT.

those products is inextricably tied to the technical strength of the people and established systems within those functional elements. However, this totally integrated project management system allows the strength of our project and functional elements to be synergistically combined into a team effort which can assure project success. To assist in reinforcing integrated teamwork and better support the District Engineer's performance evaluation of the DDE (PM) and affected functional chiefs, I have directed the Director of Human Resources to work with the Directors of Military Programs and Civil Works to develop personnel management procedures to assure that as a minimum:

- a) All performance standards of project technical managers or others who provide functional support include a critical job element for supporting project management; and
- b) Provide for other accountability performance measures including Project Managers' input to functional chiefs in their evaluation of supporting project technical managers, or others who provided functional support.

One of the things which came out of the Headquarters' recent review of PM, was that there has been some lingering uncertainty in the field concerning why we implemented PM. PM is an initiative to improve delivery of quality projects on schedule and within budget. In the past, there have been too many instances in which we have had difficulty maintaining our commitments to the Administration, Congress, and our customers/partners to deliver quality projects on schedule and within budget. If we are to improve on our past performances and meet the challenges of changing external expectations, we must deliver on our commitments. When we commit to completing a study or project for a specified amount of money and by a certain time, that is a contract. We must all be committed to honoring that contract. PM provides us with the management focus to control our operating costs, maintain our schedules, and meet our contracts. We exist as an organization only as long as we serve our customers and partners. We will best serve them by establishing and maintaining a vital and effective PM system.

As I have previously stated, PM is predicated on teamwork. That teamwork occurs not only on the Project Team at the District but also at and among the District, Division, and Headquarters. The Division and Headquarters support mission accomplishment by providing direction and oversight of the

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Civil Works, Military, Environmental Restoration, and Support for Others Programs. We, the Headquarters senior leadership, are committed to this course of action. We expect the Districts to manage their projects in conformance with policy. We at Headquarters are to guide and support the Districts. The same is true for Divisions.

Project Managers are located at Districts and operating Divisions. Senior leadership must provide the policy framework and the resources for project management at all levels of the organization. That is what we will be focusing on in the future. While there will be some variation in the implementation of PM between the Civil Works and Military Programs, the Divisions and all Washington elements of USACE must commit to a project's schedule and costs and be held accountable for doing their part to insure that the agreed upon schedule and cost estimate are maintained. Accordingly, for Civil Works projects, I expect Division, HQUSACE, and, WLRC and BERH to adhere to the approved Initial Project Management Plan (IPMP) and the Project Management Plan (PMP). These elements above the District will then be responsible for assuring that their reviews and processing of project products are performed in accordance with the approved IPMP or PMP. The Assistant Secretary of the Army for Civil Works is equally committed to this process and to the accomplishments of the scheduled milestones set forth in the management plans. Each element of the organization has a vital role to play in helping us realize the benefits of PM. There is important work to be performed at all levels of the organization. If we try to do each other's work, we will be inefficient.

Here is a brief outline of the roles and responsibilities of the Headquarters, Divisions, and Districts in PM.

A. HEADQUARTERS ROLES

Headquarters must be committed to providing policy development, resources, training, and a systems framework which will allow the Districts to carry out their responsibilities as efficiently as possible. Headquarters must also be prepared to assist the Project Manager in resolving individual project issues when called upon to do so. Through bi-monthly Project Review Boards, Headquarters will focus on overall program evaluation, as well as address individual project concerns, as needed. We expect Districts to carry out their project management responsibilities according to policy and direction, and we will hold Districts and Divisions accountable for that.

SUBJECT: IMPLEMENTATION OF PROJECT MANAGEMENT

To reinforce this direction over the next several months, we will be reviewing the upward reporting requirements of Project Management and related reports of functional elements, with the objective of determining what data is needed and how it can be most efficiently transmitted in order to provide appropriate upper level management oversight. This does not mean that we will eliminate the requirement that Project Executive Summaries of all projects be included in a corporate data base. Such a data base is essential if upper management is to fulfill its obligations and commitments. Our objective will be to support higher level management information needs, while minimizing the burden that the collection and maintenance of data base places on individual project managers.

Specifically, Headquarters will be accountable for:

- 1) Policy promulgation
- 2) Development of training strategy and resources
- 3) Development of a National program management system
- 4) Leading and nurturing of PM
- 5) Establishing strategy for development of tools,
- 6) Management of the PM system
- 7) Resolving unique and exceptional problems on individual projects
- 8) Timely oversight of documents requiring Washington level review, comment, and approval
- 9) Identification and evaluation of programmatic trends and performance measures

B. DIVISION ROLES

The Divisions' main responsibility is to resolve issues and to facilitate communication between Districts and the Headquarters. The Division PRB will be a vital link in this communication. The Division offices will be accountable for:

- 1) Ensuring policy adherence
- 2) Issue resolution in accordance with approved IPMP or PMP
- 3) Development of a regional program management system and implementation
- 4) Providing "value added" oversight to ensure quality of products and projects
- 5) Training program guidance
- 6) Resolving unique and exceptional problems
- 7) Timely action on documents requiring Division level review, comment, and approval
- 8) Oversight of District project execution

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C. DISTRICT ROLES

The District will be accountable for:

- 1) Policy execution
- 2) Project management and execution
- 3) Primary customer interface
- 4) District level training implementation

One of the key areas the senior leaders focused on was the most effective approach for District project management. These discussions centered around the Project Manager and the Project Manager's Team roles and relationships with the technical elements. We came to 4 primary conclusions.

1. The Project Manager is the Project Leader throughout the life of the project and serves as the primary interface with our external customers/partners. Accordingly, the Project Manager must be empowered to identify issues across organizations and to initiate problem resolution vertically as well as horizontally.

2. The functional elements' (Planning, Engineering, Construction, Real Estate, Operations, etc.) role is to support the Project Manager. In effect, the Project Manager, in addition to being the project leader, is the "internal customer" of the functional elements.

3. The Project Manager "contracts" with the functional elements for work required on the project. In essence, the Project Manager buys the product from the functional element and records the agreement in the IPMP or PMP. Accordingly, the Project Manager is empowered to effectively negotiate a performance agreement (what/when/how much) for a functional product with the functional chief. To accomplish this, the Project Manager will allocate funds to the functional element for the PM's project. The PM will also review the progress of products before additional funds are allocated.

4. Project teamwork must be emphasized for the system to work. The entire District must feel a commitment to the successful completion of a quality project on time and within cost. District members must support the Project Manager by representing the project's interests within their respective functional organization and by providing the Project Manager adequate information on technical product status to ensure that it is being delivered as agreed upon.

SUBJECT: IMPLEMENTATION OF PROJECT MANAGEMENT

The figure of enclosure 1 portrays these concepts and should serve as an illustration of the District Management approach in the future.

In closing, it is imperative that all of us, at each level, work together to ensure the effective implementation of PM. The corporate leadership is committed to the process and will make appropriate changes to improve the system. Enclosure 2 is our initial PM action plan. We will involve the field in addressing many of these actions. The Project Management Regulation (ER 5-7-1) will be revised to incorporate recommendations from the PM action plan. Until we do revise it, that ER remains in effect except as specifically modified by this headquarters. Also, all functional element proponent regulations will be reviewed and revised for consistency with this PM action plan. Revisions to functional proponent regulations and instructions will emphasize increased team participation and focus less on redundant reporting requirements through functional channels.

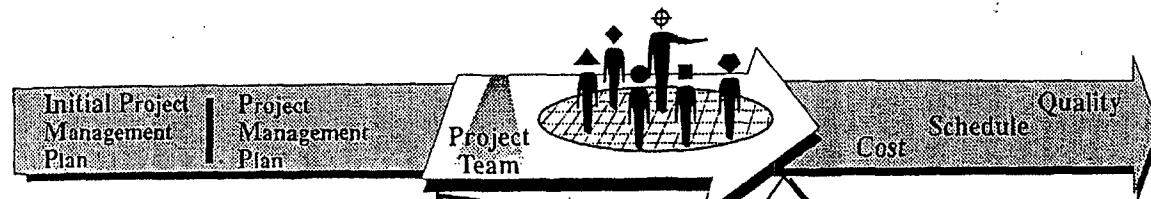
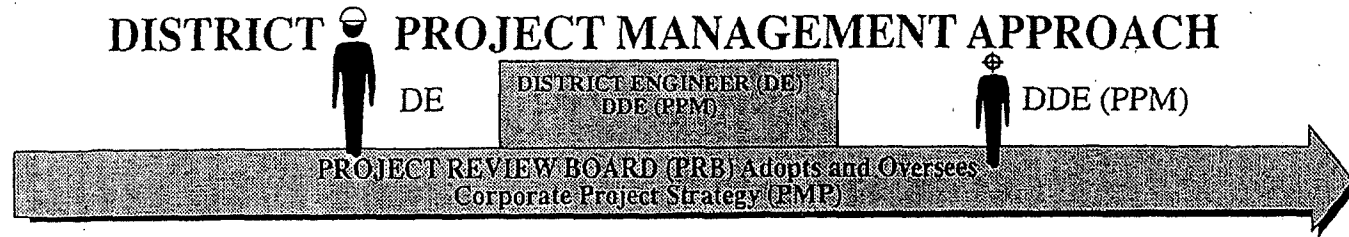
I fully understand that PM is a major cultural change in the way we do business and that it has not happened uniformly overnight. However, the time for delay and hesitancy, where it may still exist, is over. We must all make it work as a team. Remember.....our PM goal is the completion of a successful project. We will have succeeded when every functional Chief, manager and all of our other family members acknowledge that the most critical aspect of their job is the success of Project Management, with the delivery of a quality project on time and within budget. When this occurs PM will be a success. Essayons!

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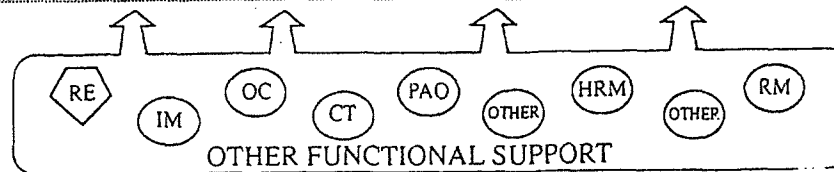
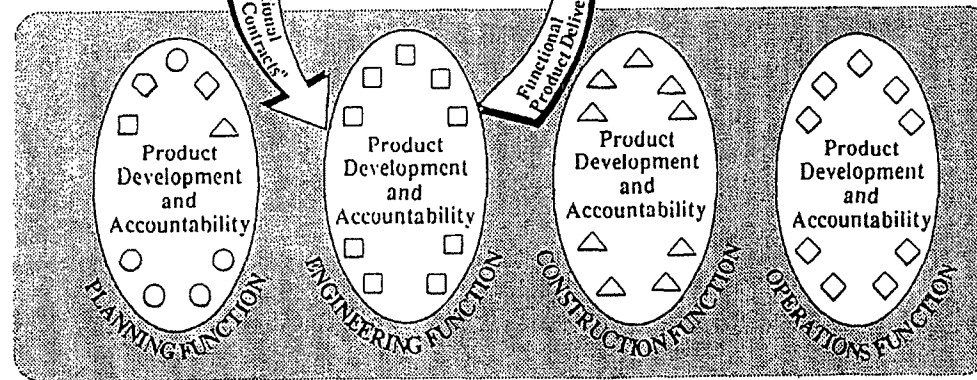
H. J. HATCH
Lieutenant General, USA
Commanding

DISTRICT PROJECT MANAGEMENT APPROACH



P
R
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T

*"Functional
Management
Supports
Project
Management"*



Legend



PM Action Plan		
Task	Person (*Lead)	Due Date
<p><u>1. Eliminate the Performance Evaluation Transmittal Summary PRB Grading System and replace with measures of accountability by developing and using Program and System Measures.</u></p> <p>Define a system of project rollup information into a program system which indicates the performance and implementation of the PPM system. The focus will be on execution of programs within the Division.</p>	<p>CW* MP</p> <p>CW* MP</p>	<p>1 Nov</p> <p>31 Dec</p>
<p><u>2. Validate the PM Data Requirements.</u> At each level of management, review the current data requirements. HQUSACE is already aware and concerned about the resources required to meet existing data requirements; therefore, this task should be coordinated with the Data Scrub Review Team.</p> <p><u>Redefine the PM Reporting Systems.</u> Based on the results of the PM Data requirement validation, restructure the PRB/PES reporting systems for MP/CW in order to minimize the burden imposed on PMs by the need for upward reporting. Closely related to this task is the availability of adequate project management tools and appropriate information systems so that Project Managers can provide the needed data at the lowest cost.</p>	<p>CW* IM MP RE CC</p>	<p>1 Mar (Depending on decisions in task 1.)</p>
<p><u>3. Training: Skills Development.</u> Identify training skills needed by personnel involved in meeting the objectives of PM. The skills identified will include both those required by personnel involved directly in PM and other functional elements that serve the Project Manager as an "internal" customer.</p>	<p>CW* MP HR</p>	<p>31 Dec</p>
<p><u>4. Specify Standard PM Organization.</u> In consultation with the field and working through in a step-wise process, look at HQ, Division, and District organizations, and determine the feasibility of developing a standard PM organization for MP/CW programs at HQ, Division, and District level. This effort will concentrate first on PM organizations and how the PM organization impacts on the rest of the organizational structure. This effort will also include impacts of other action plan issues on a standard PM organization.</p>	<p>RM* CW MP</p>	<p>15 Jan</p>

PM Action Plan		
Task	Person (*Lead)	Due Date
<p><u>5. Develop Performance Incentives for Teams and Individuals</u></p> <p>a. Devise a mechanism to reward team performance</p> <p>b. Tie job performance/standard to cost/schedule/quality indicators.</p> <p>c. Develop system which allows project managers input to functional chiefs on their evaluation of supporting project technical managers and others who provide functional support.</p>	<p>HR*</p> <p>MP</p> <p>CW</p>	15 Dec
<p><u>6. Develop System to Measure Cost/Benefits.</u> Define indicators or key elements which will measure the performance of the project management system.</p> <p><u>Explain Rational and Benefits of PM From District to Headquarters.</u> Develop the step-wise process of how to effectively communicate the intent, philosophy and success of PM in USACE.</p>	<p>RM*</p> <p>MP</p> <p>CW</p> <p>CW</p> <p>RM</p> <p>MP</p>	28 Feb
<p><u>7. Develop Full Range of PM Tools</u></p> <p>In support of PM and the functional Chiefs, pull together cross-functional small team of a PM, Plng Ops, Eng, Const, Real Estate, and IM to:</p> <p>a. Evaluate all available tools, systems and processes that would assist the Project Management process. Such tools would include group process techniques, scheduling/resourcing techniques, and integrated reporting systems.</p> <p>b. Evaluate current tools, systems, and processes currently being used by USACE.</p> <p>c. Evaluate available tools, systems, and processes used by other agencies.</p> <p>d. Create a tool box of available tools and/or develop additional tools.</p> <p>e. Develop training package and implementation plan to field for available tools.</p>	<p>IM*</p> <p>HR</p> <p>MP</p> <p>CW</p>	<p>30 Jan</p> <p>30 Dec</p> <p>30 Dec</p> <p>15 Jan (Available tools)</p> <p>15 Apr</p>

<u>PM Action Plan</u>		
Task	Person (*Lead)	Due Date
8. <u>Secure Acceptance for PM Structure Outside USACE.</u> Explain to the ASA(M&RA) the PM philosophy, organization, and method of operation in USACE. USACE PM grades and structure are being challenged by CPEA audit teams in the field. Only the ASA (M&RA) can resolve this issue.	RPO* HR	15 Dec
9. <u>Develop a O & A Process Mechanism to Communicate PM System Information to Field.</u>	OSI* CW MP PAO All Staff	15 Dec
10. <u>Develop HQ PM Action Team.</u> a. Establish a PM Implementation Team (6-10 People) composed of chiefs from PM and functional elements. b. HQ team will develop PM principles, guidance, tool box, and group process. This team will be expected to articulate in detail, the specific functions that Project Managers and functional elements are expected to perform. c. Team will go to Districts/Divisions and conduct workshops throughout the Districts/Divisions, listen to District/Division issues, work up solutions and decide on approach consistent with approved policy. d. Provide a follow-up, feedback system.	CW* MP	31 Dec 15 Jan 15 Jan - 15 Jun within 30 days following visit
11. <u>Develop Career Paths for Support of PM System, which permits greater accessability to positions across functional areas.</u>	MP* CW HR	28 Feb
12. <u>PM Project Definition.</u> Define what entails a civil works, military, and environmental project. This definition should include when a project begins and ends and which projects require a PM from the Project Management Division.	CW* MP	15 Dec

PM Action Plan		
Task	Person (*Lead)	Due Date
<p><u>13. Clarify Roles & Responsibilities in Job Descriptions.</u> Develop a comprehensive strategy to insure the PM concept is working as directed in the field and that guidance provided by ASA(M&RA) is clearly articulated to classifiers in the field. Specific items include:</p> <p>a. Review classifications practices and develop accurate job descriptions for DDE(PM), PMs, TMs, and functional supervisors at District/Division/HQ;</p> <p>b. Develop a guidance package that describes a standard set of PM and functional job descriptions; and,</p> <p>c. Develop a checklist for PM and functional job descriptions to eliminate duplication, layering.</p>	HR* MP CW	28 Feb
<p><u>14. Define HQ PRB Purpose/Objective/Structure and Operating Procedures.</u> Develop common CMR with PRB performance measures and publish a HQ Operating Manual.</p>	MP* CW	15 Jan
<p><u>15. Examine feasibility of combining Project Management and Program Development elements in headquarters.</u></p>	CW*	31 Dec
<p><u>16. Recommend a mechanism to perform the headquarters clearinghouse function for PM.</u></p>	MP*	17 Nov
<p><u>17. Establish steering committee to review/coordinate/oversee implementation of the PM Action Plan.</u></p>	MP* CW	31 Oct
<p><u>18. Update ER 5-7-1 and all functional Proponency Regulations consistent with "the Implementation of Project Management" guidance dated 25 Oct 91.</u></p> <p>a. Develop a procedure by which the PM will allocate funds to the functional elements on a periodic basis for the PM's project.</p> <p>b. Develop process by which the PM will review the progress of products required for project implementation.</p> <p>c. Eliminate redundant reporting requirements through functional channels.</p>	CW MP ENV	15 Apr

Note: ESSC to perform a supporting role in implementing the action plan.

PM ACTION PLAN

PERFORMANCE

1. ELIMINATE PRB GRADING SYSTEM - REPLACE WITH MEASURES OF ACCOUNTABILITY USING PROGRAMS & SYSTEM MEASURES
- 2A. VALIDATE PM DATA REQUIREMENTS
- 2B. REDEFINE THE PM REPORTING SYSTEM
5. PERFORMANCE INCENTIVES
6. DEVELOP SYSTEM TO MEASURE COSTS/BENEFITS

PM ACTION PLAN

COMMUNICATIONS

- 8. ACCEPTANCE FOR PM STRUCTURE OUTSIDE USACE
- 9. Q & A PROCESS MECHANISM TO COMMUNICATE PM SYSTEM INFO TO FIELD
- 10. DEVELOP HQ PM ACTION TEAM
- 17. COMMITTEE TO REVIEW/COORDINATE/OVERSEE IMPLEMENTATION OF PM ACTION PLAN

PM ACTION PLAN

GUIDANCE AND TRAINING

- 3. TRAINING/SKILLS DEVELOPMENT
- 7. DEVELOP FULL RANGE OF PM TOOLS
- 12. PM PROJECT DEFINITION
- 14. DEFINE PRB PURPOSE/OBJECTIVE/STRUCTURE
AND OPERATING PROCEDURES
- 18. UPDATE ER 5-7-1/FUNCTIONAL PROPONENCY REGS

PM ACTION PLAN

ORGANIZATIONAL TASKS

- 4. STANDARD PM ORGANIZATION
- 11. CAREER PATHS
- 13. ROLES & RESPONSIBILITIES
- 15. COMBINE PROGRAMS & PROJECT MANAGEMENT
- 16. HEADQUARTERS CLEARINGHOUSE

APPENDIX 4

CECS Circular EC 5-1-48 from COL Hunter (Chief of Staff), dated 24 April 1992,
Subject: Subject: Implementation of Project Management

CECS
Circular
No. 5-1-48

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

EC 5-1-48

24 April 1992

EXPIRES 30 SEPTEMBER 1992
Management
IMPLEMENTATION OF PROJECT MANAGEMENT

1. **Purpose.** This circular provides the policies and procedures for the "Implementation of Project Management" with regards to some of the Action Plan Tasks (see paragraph 3b below).

2. **Applicability.** This circular is applicable to all team members of HQUSACE/OCE elements, major subordinate commands(MSCs), districts, laboratories, and field operating activities having Civil Works, Military Programs, and/or Support for Others activities.

3. **References.**

a. ER 5-7-1(FR), Project Management (Advance Copy).

b. CECG Memorandum, dated 25 October 1991, Subject: Implementation of Project Management, enclosing an Action Plan to make appropriate changes to improve the system.

4. **Discussion.** The corporate leadership of USACE has been working long and hard to implement Project Management. We all agree that the effectiveness and future of the Corps are directly related to our effective implementation of this new system. Our objectives are to: (a) improve our overall performance by maintaining accountability and commitment to project schedules, baseline costs and quality in a cost-effective manner; (b) integrate our sponsors, partners and customers into the implementation process; (c) ensure consistent application of administration policy; and, (d) vest accountability for a project in a project manager(PM). HQUSACE is committed to providing policy guidance, resources, training, and a systems framework which will allow the districts to carry out these responsibilities as efficiently as possible. Our approach to Project Management was the basis of the current ER 5-7-1(FR), dated 1 March 1991. Newly developed policy guidance will be in the revised ER 5-7-1(FR) currently scheduled to be published in September 1992. However, the guidance developed to date, which is provided in the five appendices to this circular, is to be implemented immediately. In all instances where conflicts may be found between the enclosed guidance and ER 5-7-1(FR), the enclosed guidance will take precedence.

5. **Appendix A. PM PROJECT DEFINITION FOR PROJECT MANAGEMENT IMPLEMENTATION (Action Plan Task 12).** It is the intention of the Army Corps of Engineers to apply the principles of project management to the broadest possible base of its project-related activities. A PM from the project management element will be assigned to the projects and activities prescribed in this appendix.

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6. Appendix B. PROJECT MANAGER CONTROL OF FUNDS (Action Plan Tasks 18a and 18b). The PM and the functional technical managers (TMs) will implement the process contained in this appendix, for the assignment and control of funds assigned to the functional elements having responsibility for the work required for the planning, design, and construction of projects. Applicable procedures are outlined in this appendix.

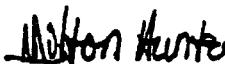
7. Appendix C. CHECKLIST OF ROLES AND RESPONSIBILITIES OF THE DDE(PM) AND FUNCTIONAL CHIEFS (Action Plan Task 13c). This chart prescribes the relationships of responsibilities between the Deputy District Engineer for Project Management (DDE(PM)) and the functional chiefs, e.g., Chief, Engineering Division, etc.

8. Appendix D. CHECKLIST OF ROLES AND RESPONSIBILITIES PROJECT MANAGER AND TECHNICAL MANAGER (Action Plan Task 13c). This chart prescribes the relationships of responsibilities between the PM and the functional TMs.

9. Appendix E. STANDARD JOB DESCRIPTIONS FOR DDE(PM) AND CHIEF, PROGRAMS AND PROJECT MANAGEMENT DIVISION AND GUIDELINE JOB DESCRIPTIONS FOR FUNCTIONAL CHIEFS (Action Plan Task 13b). This appendix contains copies of two Corps of Engineers Standard Job Descriptions (CE SJD) reflecting duties and responsibilities to be assigned to the DDE(PM). The DDE(PM) will be assigned to CE SJD 1 when serving in a dual capacity as the Deputy District Engineer and as Chief, Programs and Project Management Division. The DDE(PM) will be assigned to CE SJD 2 when the position serves only as the Deputy. Further HQUSACE guidance will be provided separately regarding implementation of the DDE(PM) job descriptions. Guideline job descriptions for functional chiefs of Planning, Engineering and Construction, specifying their relationship with the DDE(PM), are also included. They are to be used to update current job descriptions for these functional chiefs. Guideline job descriptions for chiefs of Resource Management, Real Estate and Contracting will be provided in the near future. Pending issuance of further guidance, Appendices C and D are to be used as guidance in updating job descriptions for all PMs and functional TMs.

FOR THE COMMANDER:

5 Appendices as introduced
in paragraphs 5 thru 9 above


MILTON HUNTER
Colonel, Corps of Engineers
Chief of Staff

APPENDIX A

EC 5-1-48
24 Apr 92**PM PROJECT DEFINITION
for
PROJECT MANAGEMENT IMPLEMENTATION**

It is the intention of the Army Corps of Engineers to apply the principles of project management to the broadest possible base of its project related activities. These principles apply equally well to study, design, and construction activities, regardless of the total cost of the activity. A project manager from the project management element will be assigned to the following activities:

A. Military Programs Activities**1. Military Construction Program**

Project: All military construction projects contained in the Defense and Military Authorization and Appropriation Acts and Non-Appropriated Funds (NAF) projects.

- a. Begins when a project is assigned to a District or Operating Division for design and/or construction execution by HQUSACE or customer directive or other authorizing document.
- b. Ends at fiscal closeout of design or construction activity or expiration of warranties, whichever is later.

2. Military Mission Related Support for Others

Project: Scope of a project is customer defined.

- a. Begins when a project is assigned to a District or Operating Division for design and/or construction execution by HQUSACE or customer directive or other authorizing document.
- b. Ends at fiscal closeout of design or construction activity or expiration of warranties, whichever is later.

3. Installation Restoration Program

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Project: All environmental restoration activities executed by USACE on an active DoD installation.

- a. Begins when any portion of a project is assigned to USACE. The recipient may be either THAMA or a Division/District.
- b. Ends at fiscal closeout of the final remediation activity.

4. Formerly Used Defense Sites

Project: All environmental restoration activities executed at eligible FUDS sites.

- a. Begins when any portion of a project is assigned to a Division/District by HQUSACE.
- b. Ends at fiscal closeout of the final remediation at the FUDS site.

5. Other Projects

Activities not covered above, but at the discretion of the District Commander, warrant special attention.

B. Superfund Activities

Project: All Federal lead environmental restoration activities executed by USACE.

- a. Begins when a project is assigned to a Division or District.
- b. Ends at fiscal closeout of final remediation activity at the Superfund site.

C. Support for Others Activities

Project: All Support for Others projects executed by the Corps for other agencies under a Memorandum of Agreement (MOA).

- a. Begins when the project is assigned.
- b. Ends when the project is complete as specified in the MOA.

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D. Civil Works Activities

1. All projects and related studies with specifically budgeted and/or appropriated amounts in the General Investigation, Construction General, and MR&T construction accounts.
 - a. For Civil Works projects specifically authorized by the Congress, which begin with a Reconnaissance Study, the Project Manager will not be assigned until the Reconnaissance Study is nearing completion. In this case, the Project Manager will participate in the preparation of the Initial Project Management Plan, the document which defines the study scope, schedule, and contains an estimate of the study cost. This will allow the project manager to maintain the study schedule and allocate the funds as necessary to the technical elements.
 - b. Ends when the Construction General account is closed/end of warranty period.
 2. Non-recurring O&M activities funded by the Construction General or the construction portion of the MR&T account.
 - a. Begins when major rehabilitation report is initiated.
 - b. Ends when Construction General account is closed/end of warranty period.
 3. Other Projects
- Activities not covered above, but at the discretion of the District Commander, warrant special attention.
4. Exception

Continuing Authorities Program (CAP)

CAP will be managed by the Planning Divisions consistent with the principles of project management. Whenever a project in this program involves a Federal share that exceeds \$2 million, or when a project of any size has been approved for construction by the Assistant Secretary of the Army, Civil Works, the project will be

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included in the Life Cycle Project Management Reporting System (LRS), Project Executive Summaries will be updated as appropriate, and data will be maintained which permits a comparison of planned work to actual work accomplished. HQUSACE will prepare and submit to the HQUSACE Project Review Board (PRB), a status report of the entire CAP three times a year (at every other HQUSACE PRB).

APPENDIX B

CECW-LP
CEMP-M
CEMP-R

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POLICY AND PROCEDURES

PROJECT MANAGER CONTROL OF FUNDS

APPLICABILITY: Civil Works (CW), Military (MP), and HTRW Programs. Where the text material only applies to a particular program, the program acronym will be inserted in parentheses. The IPMP applies only to the CW & HTRW programs.

SUBJECT: Tasks 18 (a & b) - Develop a procedure by which the PM will:

- a) Assign funds to the functional elements on a periodic basis for the project;
- b) Review the physical and fiscal progress of work on a periodic basis as a basis for adjusting funds allocation.

STATEMENT OF ISSUE:

Develop a procedure whereby, consistent with the Chief's 25 October 1991 Memorandum, Subject: "Implementation of Project Management," the Project Manager will review progress on products required for a project before additional funds are allocated. And based upon that review, the Project Manager will control and assign funds to the functional elements having responsibility for the work required for the planning, design, and construction of projects.

DEFINITIONS:

A graphical representation of the hierarchial association of the following definitions in a work breakdown structure for a Civil Works Project is shown on attachment A, for a Military Programs Project on attachment B, and for an HTRW Project on attachment C.

1. **PROJECT:** The overall project to be planned, designed, and constructed. The project represents Level 1 of the Work Breakdown Structure. (Refer to the "Definition of a Project" paper for a discussion of which project phases of the lifecycle of a project are to be managed by a Project Manager from the Programs and Project Management organization).
2. **LIFE CYCLE PHASE:** The major phases of project implementation. For Civil Works Projects, these phases are represented by level 2 of the Work Breakdown Structure and are as follows:

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- a) Reconnaissance Phase
- b) Feasibility Phase
- c) Pre-Construction Engineering and Design (PED)
- d) Construction
- e) OMRR&R (where OMRR&R is to be a local responsibility)

For Military Projects, the major phases are:

- a) Design
- b) Construction

For HTRW Projects, the major phases are:

- a) PA/SI
- b) RI/FS
- c) RD
- d) RA
- e) O&M

3. **PRODUCT:** The principal reports, agreements, or documents that are required for each life cycle phase of the project (Level 3 of the Work Breakdown Structure). Examples of products are for the reconnaissance phase of a Civil Works Project, the Reconnaissance Report, the Feasibility Cost Sharing Agreement (FCSA) and the Initial Project Management Plan (IPMP). Examples of products for the design phase of a Military Project would be the concept design and the final design.

4. **SUBPRODUCT:** The reports, agreements, or documents that are required for the development of the products required for each life cycle phase of the project. Examples of subproducts for a Civil Works project would be for the Feasibility Report Product: The Engineering Appendix, Real Estate Appendix, Plan Formulation Appendix, Environmental Impact Statement, or the MCACES Cost Estimate. For the Pre-Construction and Design phase of a Civil Works project for the Design Memo Product, examples of subproducts would be the Geotechnical Analysis Report, the H&H Report, the Real Estate Report, and the EIS Supplement. Examples of subproducts for a Military Project for the Concept Design product would be the outline specifications and the MCACES Cost Estimate. The subproduct is normally defined as level 4 of the Work Breakdown Structure.

5. **WORK ELEMENT:** The specific tasks which have a beginning and end date and whose accomplishment can occur within one organizational element. An example of a work element for a Civil Works Project would be a flood damage

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assessment report for River Miles 5 to 15 which is required for the economic appendix subproduct for the feasibility report product. A Military Programs example would be the structural description or outline plans for a concept design. Work elements are normally associated with level 5 and below of the Work Breakdown Structure.

6. **ACTIVITY:** The specific undertaking required to develop a work element normally characterized by man hours. A Civil Works example of an activity Associated with the work element described above would be inventorying property losses associated with a 100 year flood event for River Miles 5 to 15. A Military Programs example would be the structural analysis to support the structural description or outline plans for the concept design. The activity is associated with the lowest level of the Work Breakdown Structure.

7. **FLAT RATE:** A percent of the total estimated construction cost which is established for supervision and administration (S&A) of the construction contract. The flat rate is prescribed for all Military Construction Projects (Including DERP).

BACKGROUND:

1. One of the objectives of an effective Project Management system is cost control and performance measurement. This was acknowledged in the Chief's Memorandum dated 25 October 1991, Subject: "Implementation of Project Management," in which he states: "The Project Manager will be responsible for delivery of a quality project on time and within budget. In accomplishing this objective, the Project Manager must effectively control all project funds." Based on procedures outlined in this paper, the Project Manager will assign funds to functional elements on a quarterly basis in accordance with the approved IPMP/PMP, and will review monthly the physical progress of each sub product.

2. ER 5-7-1, Project Management, in paragraph 7.c Resource Control, page I-5 states in part: "The PM will manage, analyze, allocate and control all project and study costs and budgets in accordance with the approved IPMP/PMP." Appendix I-B of ER 5-7-1 further outlines a procedure by which the Project Manager is to control all direct charges to their project accounts. That Appendix provides for all direct charges to studies or projects to be assigned in conformance with the approved IPMP, PMP, CPM or Network Analysis (NAS) as appropriate. The scope of work, cost and schedule are to be developed and negotiated between the functional elements, the customer, and the PM and approved by the District PRB. The study or project funds are received by the District Commander. The Project Manager in turn, assigns funds to the functional elements in accordance with the approved IPMP and

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PMP. Work orders are established as appropriate and periodically reviewed. The Project Manager must review all work orders and revisions. The appendix further states that the Project Manager shall review all direct labor charges to the project on a bi-weekly basis and direct charges other than labor at least once a month. The Project Manager is also required to review contract modifications and claims proposals which are not within the contingencies or authorities delegated to the ACO to assure that the issues associated with the contract modification or claims are resolved promptly by the appropriate organizational element. The Project Management Regulation (ER 5-7-1) will be updated to reflect the process outlined in this paper.

DISCUSSION:

1. As has been previously established, the Project Manager must monitor physical and fiscal progress of all work required for the completion of a project and based on that review, effectively manage all project funds. This paper establishes a procedure whereby the Project Manager will assign funds quarterly in accordance with the approved IPMP/PMP and will monitor or approve the reallocation of funds as provided for in paragraph 3. below.

2. The IPMP/PMP constitutes a contract between the Project Manager and the Technical Manager(s) relative to the assignment and use of project funds. The procedure established for funds control must be flexible enough to allow individual districts, Project Managers and functional chiefs to manage funds and other resources at the level that is appropriate. The level of funds control will vary depending on the complexity of the project and the duration of the design and construction stages of a project.

3. The effective review and tracking of physical progress of all work required for the planning, design, and construction of a project is essential to optimize the districts resources and to deliver quality projects on schedule and within budget. Such review and reporting by the Project Manager in conjunction with the Technical Manager of physical progress must occur for each subproduct at least monthly with the Project Manager reporting the overall physical progress of all ongoing projects at each District PRB.

4. In order to effectively manage project funds while providing adequate control to the functional elements to deliver quality products, funds must be assigned at the subproduct level based on cost estimates developed for all activities and work elements associated with each subproduct consistent with the Work Breakdown Structure for the project, which have clear beginning and end dates and are consistent with the approved IPMP/PMP. For example, defining the Work

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Breakdown Structure for funds control purposes at the product level (Feasibility Study or Design Memorandum) which could have start and completion dates of several years apart, does not provide adequate management of project funds. Further, defining the Work Breakdown Structure work elements too narrowly, such as to individual drawings, would be overly burdensome and limit the technical manager's ability to manage his or her resources to deliver a quality product in the shortest time and for the least cost.

5. Finally it should be noted that the life cycle phases, the appropriation processes, and the statutes governing the use of funds vary significantly between Military, Civil Works, and HTRW projects. The Chief of Engineers recognized this difference in his 25 October 1991 Memorandum, Subject: "Implementation of Project Management," when he stated in part: "While there are some variations in the implementation of PM between Civil Works and Military Programs, the Divisions and all Washington elements of USACE must commit to a project's schedule and costs and be held accountable for doing their part to insure that the agreed upon schedule and cost estimate are maintained." For Military Projects, these variations are driven by their relatively smaller size (Average programmed amount is approximately \$1.8 million), the relative speed of construction (Approximately 18 months), statutory constraints against expending Congressionally appropriated Planning and Design (P&D) funds (Notably 10 USC 2807), and the OSD mandated flat rate system for S&A.. Further, the fact that the bulk of the military design effort is accomplished by A-E (Approximately 75%) requires variations in the general method of funds management. Finally, the loss of future P&D appropriations for military projects by failure to fully obligate current funds within the fiscal year of the appropriation has dictated a highly centralized system of allocation which provides no contingency funding to the field.

FUNDS MANAGEMENT:

1. FUNDS ASSIGNMENT:

A. Work allowances (CW); project directives (MP) and project directives and Interagency Agreements (IAG's) (HTRW): will be received by project in the District by the Programs and Project Management Division. Funding authorization documents for all programs will be received by project in the District by the Resource Management Office.

B. Appropriate internal funds allocation authorization documents for each project will be originated by the Programs and Project Management Division. The Resource Management Office will then assign control for those funds to the Project Manager for the project.

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C. The Resource Management Office will establish procedures whereby charges by functional divisions or separate offices will not be applied against a cost account for that project unless such charges are consistent with the PRB approved resource plan for that project or in accordance with paragraph 3 below.

D. The IPMP/PMP and the Network Analysis Schedule (NAS) for a project will include all Corps management activities required for the life cycle of the project.

E. On a quarterly basis, The Project Manager will assign all funds other than those specified in paragraph 1.F. below to each organizational element required to accomplish all subproducts as contained in the IPMP and/or PMP. The funding requirements for each subproduct will be based on a quarterly allocation of funds required to accomplish activities required for each work element to produce each subproduct (See Attachment D).

F. The Project Manager will assign all contract funds required, based upon negotiated or bid amounts to support contract awards. In some cases, these funds may be assigned to functional elements in other MSCs. The technical manager for the functional element for the executing MSC will then be responsible for assuring that the work elements and activities identified in the IPMP/PMP are completed on time and within the funds allocated. All contract progress payments and final closeout payments will be managed by the functional divisions. The project manager must be kept fully informed on the physical progress and payment schedule for each contract so that the PM can keep track of the overall project schedule.

2. PROGRESS REPORTS:

The PM will compare monthly physical progress for each subproduct with fiscal performance utilizing the earned value approach as described in Section 2 of ER 5-7-1, "Project Management" or other approach for measuring physical progress as contained in the PMP. The technical manager will be responsible for reporting physical progress to the Project Manager for all work elements assigned. Progress and funding will be monitored and managed by the PM in accordance with the IPMP/PMP and reported monthly at the PRB meeting.

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3. CHANGE CONTROL:

Changes in funds requirements for work on a project will be controlled by the following procedure:

A. The lead technical manager can reallocate funds between activities, work elements, or subproducts as long as subproduct(s) schedule and total quarterly funds documented in the IPMP/PMP are not exceeded or the quality of the affected subproducts are not adversely impacted. If the reallocation of funds is from one functional division to another, the Technical Manager from the functional division which is losing funds, must indicate concurrence with the change by initialing the transfer document. Any such transfers must be documented in writing to the Project Manager for incorporation into the IPMP/PMP.

B. All proposed changes in subproduct(s) funds and/or schedules identified by Technical Managers except for the condition described in paragraph 3.A. above, will require a Schedule and Cost Change Request (SACCR) to be prepared by the lead Technical Manager in coordination with the supporting technical manager(s) and submitted to the Project Manager. The PM will incorporate approved schedule changes into the IPMP/PMP and reassign funds as appropriate.

C. All proposed changes in subproduct(s) funds and/or schedules identified by the Project Manager will require a fully coordinated SACCR initiated by the Project Manager.

4. CONTINGENCY MANAGEMENT:

Construction contract contingency funds will be managed by the PM and be consistent with the Administrative Contracting Officer's (ACO) or Contracting Officer's authority. The Project Manager will assign 2% of each construction contract awarded, at the time of award, to the ACO for contingencies on that contract. ACO's are required to: (1) exercise management controls to assure contingency use is limited to only mandatory changes, and (2) provide continuous feedback to the Project Manager with regard to the current and projected schedule and status of funds. However, for changes that exceed the ACO's assigned authority, the 2% assigned contingency, are outside the scope of the contract, and all proposed elective changes will be processed by a SACCR for proper staffing and resolution.

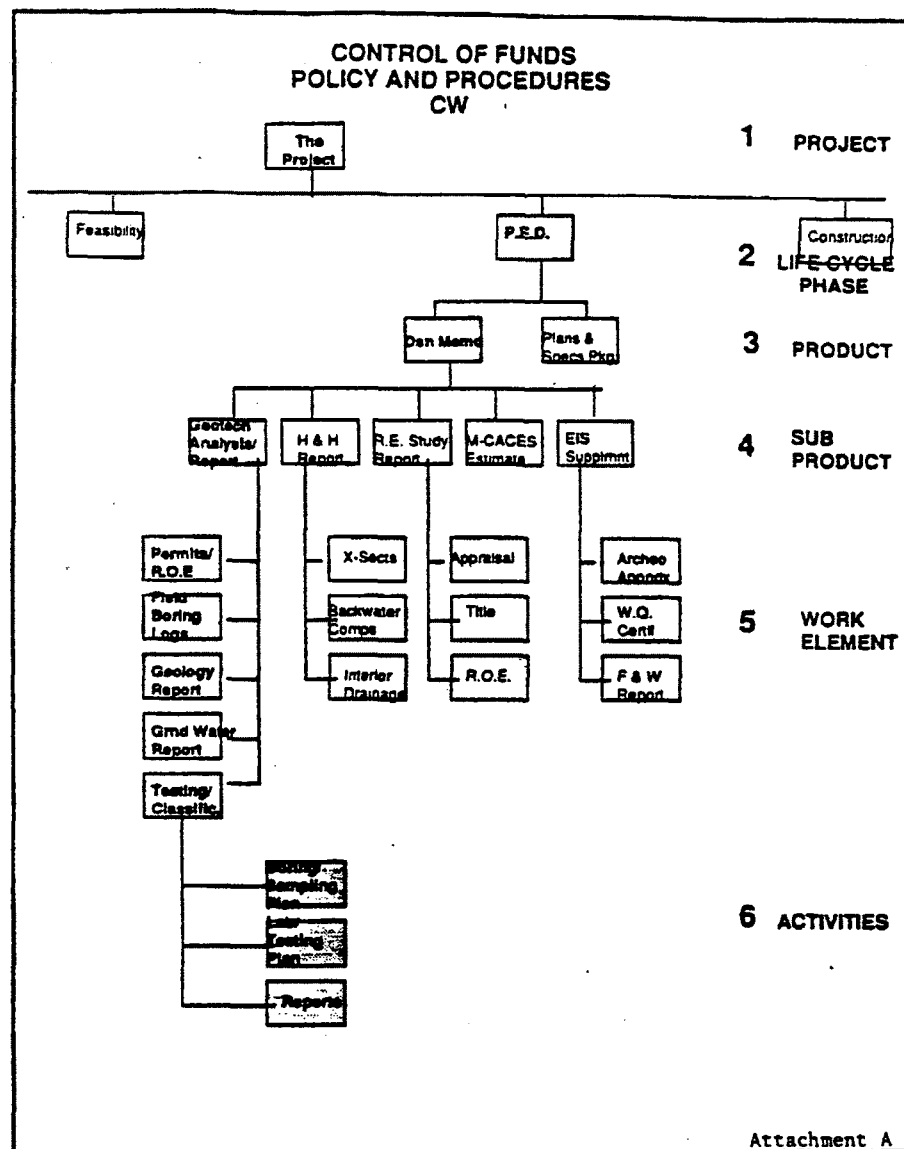
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5. SUPERVISION AND ADMINISTRATION OF CONSTRUCTION

A. MILCON, O&MA, DERA, & Other Flat Rate Accounts: Income and expenditures of the flat rate accounts will be managed as part of the districts command operating budget. The S&A accounts will be managed by the Chief of Construction Division consistent with annual MILCON S&A ceilings. Note that actual S&A costs for a particular project may exceed the flat rate. However, on a district program basis, expenses should not exceed the assigned ceilings. Corps wide, S&A income is collected on each contract by multiplying the Corps flat rate times contract placement. At the start of each fiscal year the Chief of Construction will, based in part on design execution data provided by the PM and on-going construction contracts, develop a construction placement and income projection for the year. Application of the assigned S&A rate to the placement estimate will in turn establish the flat rate portion of the budget available to the district. The projected income from the flat rate income accounts will be included in the command operating budget and expenses will be reviewed by the Program and Budget Advisory Committee (PBAC) to assure effective management of the accounts.

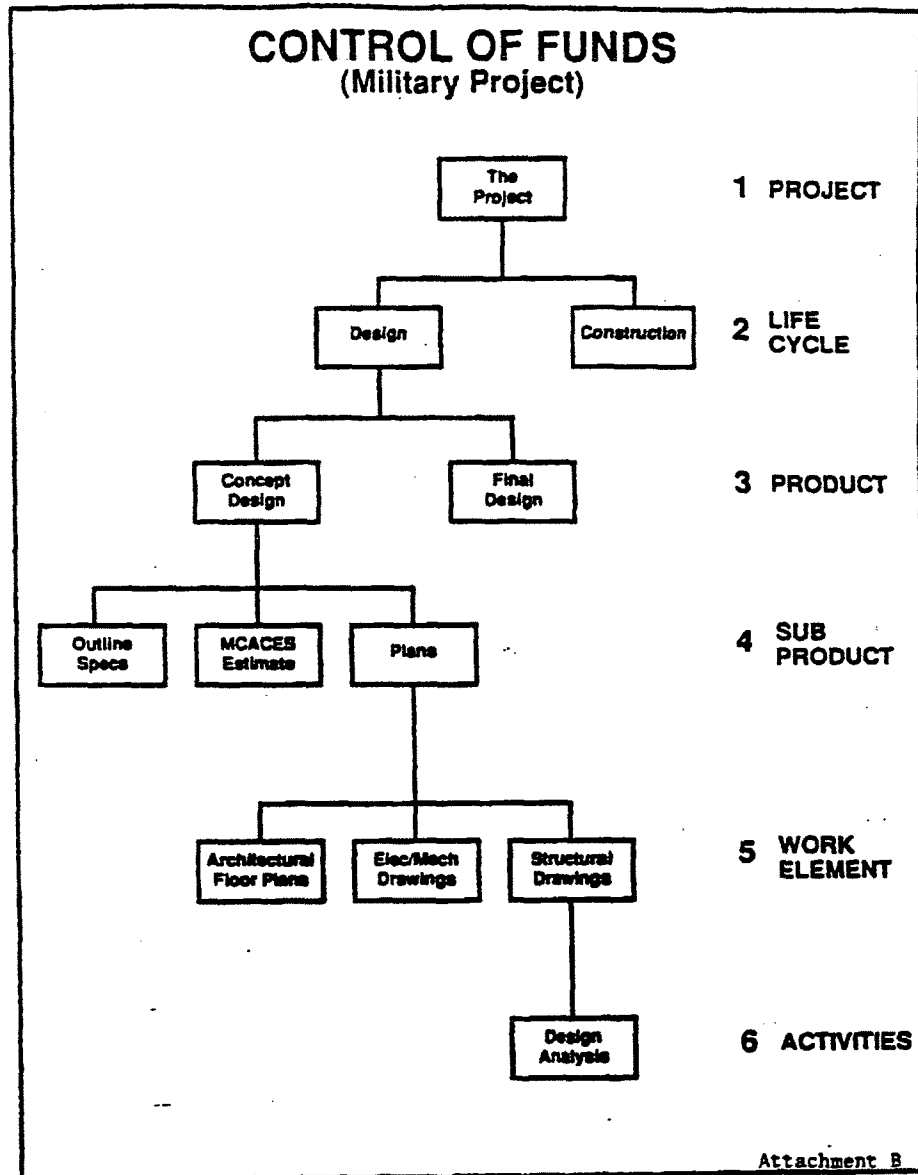
B. Civil Works, Superfund, and Reimbursable S&A (NAF, Support for Others): The PMP for non flat rate projects will show the budget that the Chief of Construction contracts with Project Management to deliver the quality construction product. The S&A services will be provided on an actual cost basis. The Chief of Construction Division shall provide such services as established in the PMP and its change control processes where applicable. Budget and expenditure of these funds will also be part of the command operating budget and will be subject to review by the PBAC. Normally, S&A funding for other than Civil Works Projects may be specified under a memorandum of understanding or agreement that identifies a target S&A rate with the understanding that the customer will pay the actual cost of constructing the project.

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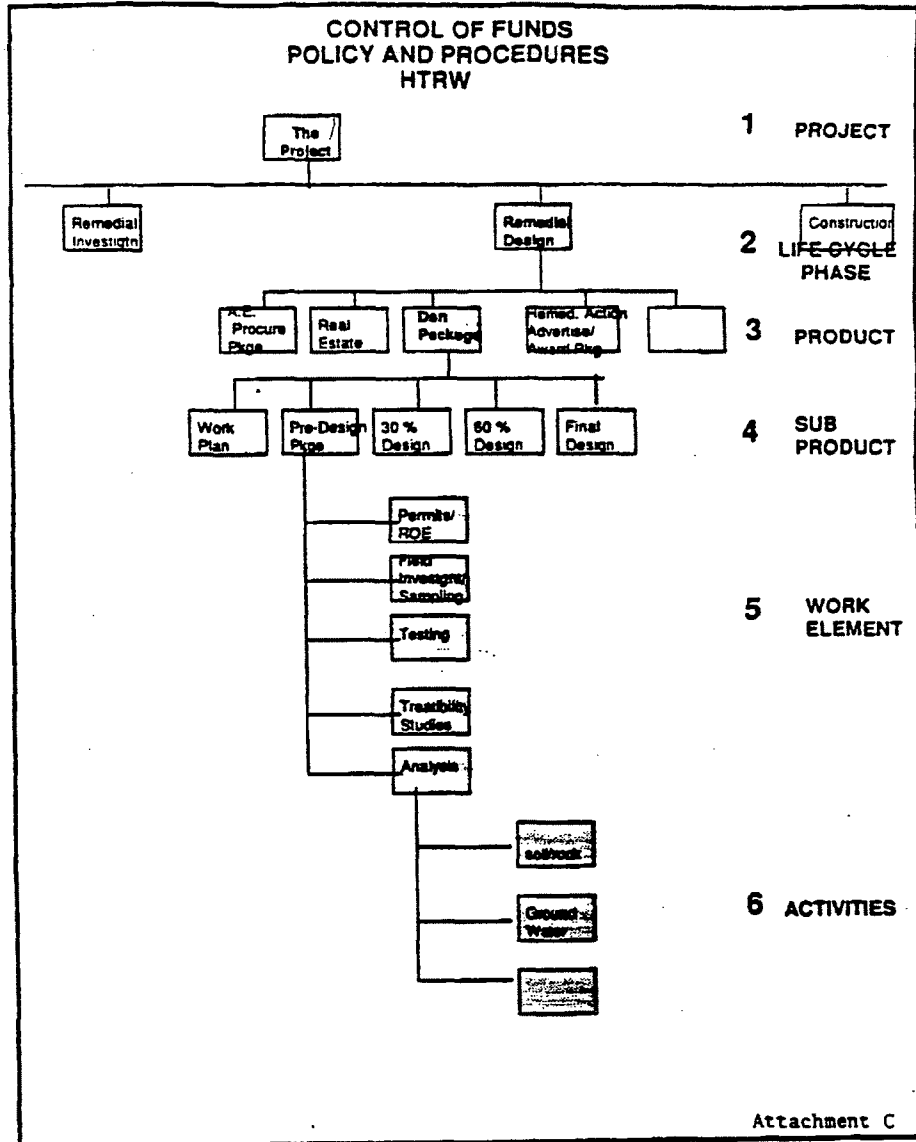


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		Example			
		CW PFD FUNDS ASSIGNMENT			
		DESIGN REORGANIZATION FOR ARCHITECT, P/M			
		Quarter I	Quarter II	Quarter III	Quarter IV
ENCLOSURE					
Gen. Inv. Budget	200,000	25,000	75,000	10	10
Permit O.E.					
Fast Burg. Light	50,000	0	0	0	0
General Budget	0	100,000	0	0	0
General Work Budget	25,000	0	100,000	0	0
Telling Construction	100,000	0	75,000	0	0
Lighting Services Fee	150,000	0	150,000	0	0
Lab Testing Fee	150,000	0	150,000	0	0
Survey	115,000	0	125,000	0	0
MANUFACT	50,000	170,000	250,000	50,000	0
1. Labor	30,000	30,000	0	0	0
Buy/View Costs	150,000	150,000	50,000	0	0
Travel Charge	0	150,000	200,000	50,000	0
W-CASS ESTIMATES	0	0	50,000	50,000	0
TOTAL ENCLOSURE BY BUDGET	250,000	1,075,000	1,270,000	150,000	0
PLANNED					
ES Subproject	100,000	150,000	50,000	0	0
Architectural Appraisal	10,000	0	25,000	0	0
W/O Construction	10,000	0	50,000	25,000	0
PAV Fee	0	0	75,000	25,000	0
TOTAL PLANNED BY BUDGET	100,000	1150,000	150,000	100,000	0
REAL ESTATE					
Real Estate Budget	0	50,000	100,000	100,000	0
Acquire	0	0	50,000	25,000	0
Tie	0	0	0	50,000	0
ROI	0	0	0	25,000	10,000
TOTAL REAL ESTATE BY BUDGET	0	50,000	100,000	100,000	10,000
TOTAL PROJECT	350,000	1,275,000	1,420,000	150,000	10,000

Attachment D

CHANGE CONTROL:

Changes in funds requirements for work on a project will be controlled by the following procedure:

A. The lead technical manager can reallocate funds between activities, work elements, or subproducts as long as subproduct(s) schedule and total quarterly funds documented in the IPMP/PAF are not exceeded or the quality of the affected subproducts are not adversely impacted. If the reallocation of funds is from one functional division to another, the Technical Manager from the functional division which is losing funds, must indicate concurrence with the change by including the transfer document. Any such transfers must be documented in writing to the Project Manager for incorporation into the IPMP/PAF.

B. All proposed changes in subproduct(s) funds and/or activities identified Technical Managers except for the condition described in paragraph 3.A. above, will require a Schedule and Cost Change Request (SACCR) to be prepared by the lead Technical Manager in coordination with the supporting technical manager(s) and submitted to the Project Manager. The PM will incorporate approved schedule changes into the IPMP/PAF and reassign funds as appropriate.

C. All proposed changes in subproduct(s) funds and/or activities identified by the Project Manager will require a fully condensed SACCR initiated by the Project Manager.

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CHECKLIST OF ROLES AND RESPONSIBILITIES DOE/PMA AND FUNCTIONAL CHIEFS

DOE (PMA)	PROBLEMS AND PROJECT MANAGEMENT DIVISION	PLANNING DIVISION	ENGINEERING DIVISION	CONSTRUCTION DIVISION
• (See Footnote)				
1. Primary Interface With Specifier/Contractor				
a. Makes Critical commitments on scope, time, cost, quality.	a. Develops standardized problem. Includes awareness of the problem and its impact. Participates and actively involved in scope, time, cost, quality and safety function in scope, time, cost, quality to meet customer/partner expectations prior to negotiation. Supports DOE (PMA) in negotiations prior to negotiation. Supports DOE (PMA) in negotiations as required on technical issues.	a. Develops PMP in coordination with DOE/PPM. Participates and actively involved in scope, time, cost, quality to meet customer/partner expectations prior to negotiation. Supports DOE (PMA) in negotiations prior to negotiation. Supports DOE (PMA) in negotiations as required on technical issues.	a. Participates and actively involved in scope, time, cost, quality to meet customer/partner expectations prior to negotiation. Supports DOE (PMA) in negotiations prior to negotiation. Supports DOE (PMA) in negotiations as required on technical issues.	a. Participates and actively involved in scope, time, cost, quality to meet customer/partner expectations prior to negotiation. Supports DOE (PMA) in negotiations prior to negotiation. Supports DOE (PMA) in negotiations as required on technical issues.
b. Responsible for the negotiation of LCA, FCB, MOU, UO's.	b. Participates and provides management input.	b. Participates and provides technical assistance.	b. Participates and provides technical assistance.	b. Participates and provides technical assistance.
2. Meets Commitments To Project Management				
a. Ensures commitments to and from agencies are met.	a. Responsible for monitoring and recording of commitments as met.	a. Meets PMP/PPM commitments.	a. Meets PMP/PPM commitments.	a. Meets PMP/PPM commitments.
b. Establishes PMP with functional elements (schedule, cost, scope, quality, time, budget and quality).	b. Participates in development of PMP. Develops standardized negotiation plan. Responsible for development of PMP.	b. Responsible for preparation of PMP. Negotiates support required. Participates and supports PMP development.	b. Negotiates with PM on cost, schedule, scope and quality. Responsible for negotiating Engineering PMP with Planning Division.	b. Negotiates with PM on schedule and O&M fees.
c. Develops schedule and Cost of Funds to Work between DOE PMA and PMA.	c. Manages division of funds to other divisions.	c. Manages funds absorbed.	c. Manages/controls technical products.	c. Manages funds absorbed.

• Central participants in the life cycle of the PMA and is responsible for providing legal services at all stages and to all the participants.

CHECKLIST OF ROLES AND RESPONSIBILITIES DDE(PM) AND FUNCTIONAL CHIEFS

DDE (PPM)	REAL ESTATE DIVISION	RESOURCE MANAGEMENT	CONTRACTING DIVISION
* (See Footnote)			
1. Primary Interface With Sponsor/Customer			
a. Makes District commitments on scope, time, cost, quality.	a. Participates and actively involved in scope, time, cost, quality to meet customer/partner expectations prior to negotiation. Supports DDE(PPM) in negotiations as required on technical issues.	a. Supports DDE(PPM) in financial/Budget/Resource matters. Helps develop non-federal financing plan.	a. Participates and actively involved in scope, time, cost, quality to meet customer/partner expectations prior to negotiation. Supports DDE(PPM) in negotiations as required on contracting issues.
b. Responsible for the Negotiation of LCAs, FCSAs, MOUs, UAGs.	b. Participates and provides technical assistance.	b. Supports DDE(PPM) by performing research on financial viability of sponsor.	b. Supports DDE(PPM) in negotiations as required on contracting issues.
2. Meets Commitments Thru Project Management			
a. Ensures commitments to and from sponsors are met.	a. Meets PMP commitments.	a. Supports DDE(PPM).	a. Supports DDE(PPM).
b. Establishes PMPs with functional elements (products, schedules, cost, scope, acquisition plan, budget and quality).	b. Negotiates with PM on cost, schedule, scope and quality as related to real estate and land acquisition. Negotiates real estate division support to PMP with planning division.	b. Supports DDE(PPM).	Supports DDE(PPM) in negotiations as required on contracting issues.
c. Directs Allocation and Control of Funds to Work elements MW (PMP) and PMPs.	c. Manages funds allocated.	c. Assesses overhead, and any application of BAA are appropriate. Allocates funding for projects. Assesses apportionment schedule adequate for project schedule. Provides input to DDE(PM). Allocates	c. Manages funds allocated.

* Council participates in the full scope of the PPM and is responsible for providing legal services at all stages and to all the participants.

CHECKLIST OF ROLES AND RESPONSIBILITIES DOE(PM) AND FUNCTIONAL CHIEFS

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DDE (PPM)	PROGRAM AND PROJECT MANAGEMENT DIVISION	PLANNING DIVISION	ENGINEERING DIVISION	CONSTRUCTION DIVISION
* (See Footnote)				
4. Oversees and approves Formulation of District Operating Budget.				
a. Approves final District Estimation:	a. Provides input to RM. Estimates costs/manpower.	a. Provides input to RM. Estimates costs/manpower.	a. Provides input to RM. Estimates costs/manpower.	a. Provides input to RM. Estimates costs/manpower.
1. Income from all sources				
2. costs				
b. Approves targets for O.H., A&A, B&O, etc.	b. Provides input and serves as member of PBAC.	b. Provides input and serves as member of PBAC.	b. Provides input and serves as member of PBAC.	b. Provides input and serves as member of PBAC.
c. Approves performance measures.	c. Develops and tracks project performance measures.	c. Develop and tracks product performance measures.	c. Develop and tracks product performance measures.	c. Develop and tracks product performance measures.
d. Chooses PBAC/RMAC to:	d. Prepares and submits division portion of operating budget and manpower requirements.	d. Prepares and submits division portion of operating budget and manpower requirements.	d. Prepares and submits division portion of operating budget and manpower requirements.	d. Prepares and submits division portion of operating budget and manpower requirements.
1. Approves adjustments for changed conditions;				
2. Approves manpower allocations.				

* Cannot participate in the full scope of the PPM and is responsible for providing legal services at all stages and to all the participants.

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CHECKLIST OF ROLES AND RESPONSIBILITIES DDE(PM) AND FUNCTIONAL CHIEFS

DDE (PPM)	REAL ESTATE DIVISION	RESOURCE MANAGEMENT	CONTRACTING DIVISION
a. (See Footnote)			
4. Oversees and approves Formulation of District Operating Budget.			
a. Approves final District Estimates:	a. Provides input to RM. Estimates cost/manpower to RM office.	a. Formulates district operating budget and corresponding rates and presents to PBAC; develops and recommends manpower allocations to PBAC.	a. Provides input to RM. Estimates cost/manpower to RM office.
1. Increase firm all sources			
2. each.			
b. Approves targets for OJA, ALA, MD, etc.	b. Provides input and serves as member of PBAC.	b. Provides staff management and analysis of district operating budget, rates, manpower allocations and budget execution review.	b. Provides input and serves as member of PBAC.
c. Approves performance measures.	c. Develops and tracks product performance measures.	c. Monitors execution versus budget allocations and recommends appropriate adjustments to PBAC during periodic execution reviews.	c. Develops and tracks product performance measures.
d. Chair PBAC/PBAC is:	d. Prepares and submits division portion of operating budget and manpower requirements.	d. Serves as Executive Secretary and acting member of PBAC.	d. Prepares and submits division portion of operating budget and manpower requirements.
1. Approves adjustments for changed conditions;			
2. Approves manpower allocations.			

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WORKSHEET OF ROLES AND RESPONSIBILITIES PROJECT MANAGER AND TECHNICAL MANAGER

PLANNING	TECHNICAL MANAGER RESPONSIBILITIES	ENGINEERING TECHNICAL MANAGER RESPONSIBILITIES	CONSTRUCTION TECHNICAL MANAGER RESPONSIBILITIES
1. Leadership 1.a. Leader of project team of technical managers Responsible for management of overall project consistent with corporate constraints	Responsible for the quality and technical support of all Pmg products and feasibility Report consistent with the Pmg and Pmg.	Responsible for the quality and technical management of the Eng/p products consistent with the Pmg and Pmg.	Responsible for the quality and technical management of the Const. products consistent with the Pmg and Pmg.
1.b. Serve as the primary POC of customers on project issues. Regularly update customers on progress, review and monitor customer's compliance with requirements, participate in resolution of technical issues with the customer, ensure customer's understanding of funding and schedule requirements for project execution.	Serve as the POC of customers on technical issues. Assure Pmg updating on discussions with the customers, and Pmg participation in the resolution of issues.	Serve as the POC of customers on technical issues. Assure Pmg updating on discussions with the customers, and Pmg participation in the resolution of issues.	Serve as the on site POC with the customer for construction matters and conflict administration. Assure Pmg updating on discussions with the customers, and Pmg participation in the resolution of issues.
1.c. In conjunction with forming TM, participate in the preparation of the FCSA and issue negotiations with sponsor.	Responsible for preparing the FCSA in coordination with Pmg and other functional managers. Support Pmg during nego.	Support, participate and provide technical assistance in the development and nego.	Support, participate and provide technical assistance in the development and nego.
1.d. As leader of project team, responsible for the development and negotiation of UDA, WDA, and other customer agreements.	Support, participate and provide technical assistance to Pmg in the development and nego. of agreements.	Support, participate and provide technical assistance to Pmg in the development and nego. of agreements.	Support, participate and provide technical assistance to Pmg in the development and nego. of agreements.
2. Pmg 2.a. In conjunction with Planning TM, participate in the preparation of the Pmg.	Responsible for preparing the Pmg in coordination with Pmg and other functional managers.	Support, participate, and provide technical assistance in the development of Pmg.	Support, participate, and provide technical assistance in the development of Pmg.
2.b. Establish performance measurement criteria to assess project progress and include the criteria in the Pmg.	Establish w/pd the performance measurement to be used for each Pmg product identified in the Pmg.	Establish w/pd the performance measurement to be used for each Eng/p product identified in the Pmg.	Establish w/pd the performance measurement to be used for each Const. product identified in the Pmg.
2.c. Responsible for preparing the completed Pmg to the customer and the Pmg for endorsement and approval.	Support, participate, and provide technical assistance to the Pmg.	Support, participate, and provide technical assistance to the Pmg.	Support, participate, and provide technical assistance to the Pmg.

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CHECKLIST OF ROLES AND RESPONSIBILITIES PROJECT MANAGER AND TECHNICAL MANAGER

PROJECT MANAGER RESPONSIBILITIES	REAL ESTATE TECHNICAL MANAGER RESPONSIBILITIES	RESOURCE MANAGEMENT RESPONSIBILITIES	CONTRACTING RESPONSIBILITIES
1. Leadership 1.1. As leader of project team of technical managers, responsible for management of overall project consistent with corporate commitments	Responsible for the quality and technical management of the RE products consistent with the PMP and PMP.	Provides services of a project accountant who serves as PM's resident financial expert.	Responsible for the quality and management of Contracting products consistent w/ PMP and PMP.
1.2. Serves as the primary POC with customer on project issues. Regularly updates customer on project status, claims and monitor customer's compliance with project terms. Participate in resolution of technical issues with the customer, ensure customer understanding of financing and schedule requirements for project execution.	Serve as the POC with customer on real estate issues. Assures PM updating on decisions with the customer, and PM participation in the resolution of issues.	Supports PM in finance, budget, and resource matters.	Support.
1.3. In conjunction w/ Planning TM, participate in the preparation of the FCSA and leads negotiations with sponsor.	Support, participate and provide technical assistance in the development and nego.		Support, participate and provide technical assistance in the development and nego.
1.4. As leader of project team, responsible for the development and negotiation of LOAs, MOUs and other customer agreements.	Support, participate and provide technical assistance to PM in the development and nego. of agreements.	Supports PM by performing research on financial viability of the sponsor.	Support, participate and provide technical assistance to PM in the review of agreements.
2. PMP 2.1. In conjunction w/ Planning TM, participate in the preparation of the PMP.	Support, participate, and provide technical assistance in the development of PMP.	Support, participate, and provide technical assistance in the development of PMP.	
2.2. Establish performance measurement criteria to assess physical program and include the criteria in the PMP.	Establish with the performance measurement to be used for each RE product identified in the PMP.		Establish with the performance measurement to be used for each Contracting product identified in PMP.
2.3. Responsible for presenting the completed PMP to the customer and for PRB for endorsement and approval.	Support, participate, and provide technical assistance to the PM.		Support, participate, and provide technical assistance to the PM.

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CHECKLIST OF ROLES AND RESPONSIBILITIES PROJECT MANAGER AND TECHNICAL MANAGER

PROJECT MANAGER RESPONSIBILITIES	REAL ESTATE TECHNICAL MANAGER RESPONSIBILITIES	RE-SOURCE MANAGEMENT RESPONSIBILITIES	CONTRACTING RESPONSIBILITIES
3. PMF			
3.a. As leader of team, responsible for preparing PMF, to include a baseline cost estimate. Coordinates endorsemments and approval of PMF. NOTE: The PMF is the PM's product.	In conjunction w/ PM, ensure the integration of all RE data required to prepare PMF.	Helps prepare the non-federal financing plan.	In conjunction w/ PM, ensure the integration of all contracting data required to prepare PMF.
3.b. Establish project performance measurement to assess physical progress of the project and products, and include these measurements in the PMF.	Establish w/ PM the performance measurement to be used for each RE product identified in the PMF.		Establish w/ PM the performance measurement to be used for each Contracting product in the PMF.
3.c. Present the PMF at the Feasibility Review conference.	Support, participate and provide technical assistance to PM.	Assure overhead and application of S&A are appropriate.	
3.d. Present complete PMF to PHS and customer for endorsemment and approval.	Support, participate and provide technical assistance to PM.	Attend PHS and participate as member.	Support, participate and provide technical assistance to PM.
4. ASSIGN/MANAGE			
4.a. Assign project funds on a quarterly basis to each district element consistent with overall budget, and based upon data in PMF/PMF for subproducts, work elements and activities.	Utilize funds allocated to assure consistency with the PMF and PMF.	Set up resource accounts consistent with PMF/PMF. Determine/assess capital expense charges as a % p.y.o.	Utilize funds allocated to assure consistency with the PMF and PMF.
4.b. Assign all contract funds required, based upon negotiated or bid amounts to support contract awards. The PM must be kept fully informed on the physical progress and payment schedule for each contract so the PM can keep track of the overall project schedule.	Assure that the work elements and activities identified in the PMF/PMF are completed on time and within the funds allocated. Manage all contract progress payments and close out payments.		

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CHECKLIST OF ROLES AND RESPONSIBILITIES PROJECT MANAGER AND TECHNICAL MANAGER

* (see footnote)			
PROJECT MANAGER RESPONSIBILITIES	PLANNING TECHNICAL MANAGER RESPONSIBILITIES	ENGINEERING TECHNICAL MANAGER RESPONSIBILITIES	CONSTRUCTION TECHNICAL MANAGER RESPONSIBILITIES
4 c. Approve all reassignment of funds between subproducts, work elements or activities which exceed the total quarterly funds documented in the IPMP/PMP or the subproduct(s) completion schedule. Update the IPMP/PMP and reassign funds as appropriate.	Lead TM, with support of functional TM's prepare Schedule And Cost Change Request (SACCR) and submit to PM for resolution.	Lead TM, with support of functional TM's prepare Schedule And Cost Change Request (SACCR) and submit to PM for resolution.	Lead TM, with support of functional TM's prepare Schedule And Cost Change Request (SACCR) and submit to PM for resolution.
4 d. Receive written documentation of all reassignments of funds made by TMs and incorporate them into the IPMP/PMP.	The lead TM can reallocate funds between activities, work elements or subproducts as long as subproduct(s) schedule and total quarterly funds documented in the IPMP/PMP are not exceeded or the quality of the affected subproducts are not adversely impacted. If reallocation is from one functional division to another, the TM for the division which is losing funds must indicate concurrence with the change by initiating the transfer document. Furnish Documentation to the PM.	The lead TM can reallocate funds between activities, work elements or subproducts as long as subproduct(s) schedule and total quarterly funds documented in the IPMP/PMP are not exceeded or the quality of the affected subproducts are not adversely impacted. If reallocation is from one functional division to another, the TM for the division which is losing funds must indicate concurrence with the change by initiating the transfer document. Furnish Documentation to the PM.	The lead TM can reallocate funds between activities, work elements or subproducts as long as subproduct(s) schedule and total quarterly funds documented in the IPMP/PMP are not exceeded or the quality of the affected subproducts are not adversely impacted. If reallocation is from one functional division to another, the TM for the division which is losing funds must indicate concurrence with the change by initiating the transfer document. Furnish Documentation to the PM.
5. MANAGE/MONITOR			
5 a. Manage actual project resource utilization (funds and manpower) to ensure compliance with IPMP/PMP and effective utilization of funds.	Provide technical management for all Ping work, incl. feasibility rept., to assure completion on time and w/in resources IAW IPMP/PMP.	Provide technical management for all Engrg work to assure completion on time and w/in resources IAW IPMP/PMP.	Provide technical management for all Const. work to assure completion on time and w/in resources IAW IPMP/PMP.
5 b. Monitor physical progress of products underway, and assess physical progress of the project in relationship to the physical progress of the products IAW established measurement criteria in IPMP/PMP.	Assess the physical progress of Ping products IAW criteria established in the IPMP/PMP. Manage available resources as identified in IPMP/PMP to maintain expected progress.	Assess the physical progress of Engrg products IAW criteria established in the IPMP/PMP. Manage available resources as identified in IPMP/PMP to maintain expected progress.	Assess the physical progress of Const products IAW criteria established in the IPMP/PMP. Manage available resources as identified in IPMP/PMP to maintain expected progress.
5 c. Utilizing the "earned Value" approach, reports monthly on physical/fiscal progress at PRB meeting.	Reports physical progress monthly to PM for all work elements assigned.	Reports physical progress monthly to PM for all work elements assigned.	Reports physical progress monthly to PM for all work elements assigned.

* Counsel participates in the full scope of the PPM and is responsible for providing legal services at all stages and to all the participants.

CHECKLIST OF ROLES AND RESPONSIBILITIES PROJECT MANAGER AND TECHNICAL MANAGER

PROJECT MANAGER RESPONSIBILITIES	REAL ESTATE TECHNICAL MANAGER RESPONSIBILITIES	RESOURCE MANAGEMENT RESPONSIBILITIES	CONTRACTING RESPONSIBILITIES
<p>4.c. Approve all reassignment of funds between subproducts, work elements or activities which exceed the total quantity funds documented in the PMP/PMP or the subproduct's completion schedule. Update the PMP/PMP and reassign funds as appropriate.</p> <p>4.d. Receive written documentation of all reassignments of funds made by TMs and incorporate them into the PMP/PMP.</p>	<p>Lead TM, with support of functional TMs, prepare project schedule and cost change request (RACON) and submit to PM for resolution.</p> <p>The lead TM can relocate funds between activities, work elements or subproducts as long as subproduct's schedule and total quantity funds documented in the PMP/PMP are not exceeded or the quality of the selected subproducts are not adversely impacted.</p> <p>If relocation is from one functional division to another, the TM for the division which is losing funds must indicate concurrence with the change by including the transfer document, written documentation to the PM.</p>	<p>Works with servicing FAO to provide proper supporting documentation and detailed audit trails for project costs.</p>	<p>Produce physical progress of contracting products (AW) clients established in the PMP/PMP. Manage available resources as identified in PMP/PMP to maintain expected progress.</p>
<p>5. MANAGE MONITOR</p> <p>5.a. Manage actual project resources utilization (funds and manpower) to ensure compliance with PMP/PMP and effective utilization of funds.</p> <p>5.b. Monitor physical progress of products underway, and assess physical progress of the project in relationship to the physical progress of the products (AW) established management criteria in PMP/PMP.</p> <p>5.c. Utilizing the "earned value" approach, reconcile monthly on physical progress of products with PMP/PMP.</p>	<p>Provides technical management for all RE work to ensure completion on time and with resources (AW) PMP/PMP.</p> <p>Assess the physical progress of RE products (AW) clients established in the PMP/PMP. Manage available resources as identified in PMP/PMP to maintain expected progress.</p> <p>Reports physical progress monthly to PM for all work elements assigned.</p>	<p>Supports PM with relevant financial data to form basis of construction and SFO budgeting.</p>	<p>Assess physical progress of contracting products (AW) clients established in the PMP/PMP. Manage available resources as identified in PMP/PMP to maintain expected progress.</p>

* Counsel participates in the full scope of the PPM and is responsible for providing legal services at all stages and to all the participants.

CHECKLIST OF ROLES AND RESPONSIBILITIES PROJECT MANAGER AND TECHNICAL MANAGER

PROJECT MANAGER RESPONSIBILITIES	PLANNING TECHNICAL MANAGER RESPONSIBILITIES	ENGINEERING TECHNICAL MANAGER RESPONSIBILITIES	CONSTRUCTION TECHNICAL MANAGER RESPONSIBILITIES
5. d. Assess environmental considerations/commitments are incorporated into the project and honored through successful phases.	Assess environmental considerations are incorporated into the planning and authorization of the project. Support the PM in assessing environmental aspects at all stages of the project.	Assess environmental considerations are incorporated into the engineering and design of the project. Support the PM in assessing environmental aspects at all stages of the project.	Assess environmental considerations are incorporated into the construction of the project. Manage compliance during construction.
6. ISSUE IDENTIFICATION/RESOLUTION 6. a. Ensure early identification of project related issues (impacting scope, quality, cost, budget and schedule).	Provide early identification of potential issues that may impact meeting commitments made in the PM's PMP. Notify PM of those issues not resolvable with the resources control available to the PM.	Provide early identification of potential issues that may impact meeting commitments made in the PM's PMP. Notify PM of those issues not resolvable with the resources control available to the PM.	Provide early identification of potential issues that may impact meeting commitments made in the PM's PMP. Notify PM of those issues not resolvable with the resources control available to the PM.
6. b. Facilitate the resolution of issues in the most appropriate manner. Refer to the PM those issues not solvable by the PM.	Support, participate and provide technical assistance.	Support, participate and provide technical assistance.	Support, participate and provide technical assistance.
6. c. Facilitate issue resolution through the PM's keeping commitments to the sponsor/customer in focus.	Support, participate and provide technical assistance to the PM in the resolution of issues.	Support, participate and provide technical assistance to the PM in the resolution of issues.	Support, participate and provide technical assistance to the PM in the resolution of issues.
6. d. Forecast project schedules and costs based upon actual performance.	Support, participate and provide technical assistance to the PM in the identification of potential areas of cost or schedule changes.	Support, participate and provide technical assistance to the PM in the identification of potential areas of cost or schedule changes.	Support, participate and provide technical assistance to the PM in the identification of potential areas of cost or schedule changes.
7. PM/PM/PM MAINTENANCE 7. a. Maintain the PM's PMP, including baseline issues, in being documents reflects of changes that have occurred to the customer's expectations and commitments, as well as scope, quality, schedule, estimated construction costs or estimated budgets.	Provide related information in a timely manner, submitting change requests as necessary to reflect changes to PM's PMP commitments.	Provide related information in a timely manner, submitting change requests as necessary to reflect changes to PM's PMP commitments.	Provide related information in a timely manner, submitting change requests as necessary to reflect changes to PM's PMP commitments.

* Counsel participates in the full scope of the PPM and is responsible for providing legal services at all stages and to all the participants.

CHECKLIST OF ROLES AND RESPONSIBILITIES PROJECT MANAGER AND TECHNICAL MANAGER

PROJECT MANAGER RESPONSIBILITIES	PLANNING TECHNICAL MANAGER RESPONSIBILITIES	ENGINEERING TECHNICAL MANAGER RESPONSIBILITIES	CONSTRUCTION TECHNICAL MANAGER RESPONSIBILITIES
<p>• (see footnote)</p> <p>PROJECT MANAGER RESPONSIBILITIES</p> <p>for production.</p> <p>8. PROJECT MANAGEMENT REPORTS</p> <p>8.1. Prepare and distribute required project management reports.</p> <p>8.2. MANAGE THE PMO/PMU/EDC</p> <p>8.2.1. Support the PMO/PMU as co-chair of EDC</p> <p>8.2.2. Participate in issue resolution and design review conference.</p> <p>8.2.3. Participate in review and endorsement of all project documents for consistency with commitments prior to submission to the customer, higher authority or outside agencies. Provide on quality of the project and on consistency w/ policy, regulation and guidance to the appropriate element.</p> <p>8.2.4. Feasibility Studies</p> <p>8.2.5. PED</p>	<p>PROJECT MANAGER RESPONSIBILITIES</p> <p>for production.</p> <p>8.1. Provide input to, and receive information from, the PM on project status.</p> <p>8.2. Support the PM as co-chair of EDC.</p> <p>8.2.1. Conduct EDCs, participate and provide technical assistance to EDCs and design conf.</p> <p>8.2.2. Manage the review of project documents, for which lead corporate responsibility has been assigned, for consistency w/policy, regulation and guidance.</p> <p>8.2.3. Manage preparation of the feasibility study (AW, PMP, integrate work from other functional elements providing support to the completion of the study, responds to all comments).</p> <p>8.2.4. Support, participate and provide technical assistance in the completion of PED products.</p>	<p>ENGINEERING TECHNICAL MANAGER RESPONSIBILITIES</p> <p>for production.</p> <p>8.1. Provide input to, and receive information from, the PM on project status.</p> <p>8.2. Support, participate and provide technical assistance.</p> <p>8.2.1. Conduct EDC and design review conference.</p> <p>8.2.2. Manage the review of project documents, for which lead corporate responsibility has been assigned, for consistency w/policy, regulation and guidance.</p> <p>8.2.3. Manage preparation of the EDC input to the feasibility study. Support, participate and provides technical assistance in completing the study.</p> <p>8.2.4. Prepare PED products, AW/PMU integrating work from other functional elements providing support to the completion of PED. Responds to all comments.</p>	<p>CONSTRUCTION TECHNICAL MANAGER RESPONSIBILITIES</p> <p>for production.</p> <p>8.1. Provide input to, and receive information from, the PM on project status.</p> <p>8.2. Support, participate and provide technical assistance.</p> <p>8.2.1. Support, participate and provide technical assistance.</p> <p>8.2.2. Manage the review of project documents, for which lead corporate responsibility has been assigned, for consistency w/policy, regulation and guidance.</p> <p>8.2.3. Manage preparation of the Const. input to the feasibility study. Support, participate and provides technical assistance in completing the study.</p> <p>8.2.4. Support, participate and provide technical assistance in the completion of PED products.</p>

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CHECKLIST OF ROLES AND RESPONSIBILITIES PROJECT MANAGER AND TECHNICAL MANAGER

PROJECT MANAGER RESPONSIBILITIES	REAL ESTATE TECHNICAL MANAGER RESPONSIBILITIES	RESOURCE MANAGEMENT RESPONSIBILITIES	CONTRACTING RESPONSIBILITIES
for production.			
8. PROJECT MANAGEMENT REPORTS 8.A. Prepare and distribute required project management reports.	Provides input to, and receive information from, the PPM on project status.	Provides financial input on project status.	Provides input to, and receive information from, the PPM on project status.
9. MANAGEMENT OF "PM/PPM" EXEC. 9.A. Supports the OCE PPM as co-chair of PMO	Support, participate and provide technical assistance.		
9.B. Participate in issue resolution and design review on the project.	Support, participate and provide technical assistance.		Support, participate and provide technical assistance.
9.C. Participate in review and endorsement of all project documents for consistency with requirements prior to submission to the customer, higher authority or outside agencies. Provide crisis on quality of the project and on consistency of policy, regulation and guidance to the appropriate element.	Manage the review of project documents for which they coordinate responsibility has been assigned for consistency of policy, regulation and guidance.	Reconciles desired contract files with payments to construction and provides status reports to PPM. Provides financial control to ensure payments are earned and are recorded in financial records.	Review the quality of project documents for which they coordinate responsibility has been assigned for consistency with policy, regulation and guidance.
9.D. (U) Feasibility Studies	Manage preparation of the RE input to the feasibility study. Support, participate and provide technical assistance in completing the study.		
9.E. (U) PED	Support, participate and provide technical assistance in the completion of PED products.		

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CHECKLIST OF ROLES AND RESPONSIBILITIES PROJECT MANAGER AND TECHNICAL MANAGER

* (see footnote)			
PROJECT MANAGER RESPONSIBILITIES	REAL ESTATE TECHNICAL MANAGER RESPONSIBILITIES	RESOURCE MANAGEMENT RESPONSIBILITIES	CONTRACTING RESPONSIBILITIES
for production.			
6. PROJECT MANAGEMENT REPORTS			
6.a. Prepare and distribute required project management reports.	Provide input to, and receive information from, the PM on project status.	Provides financial input on project status.	Provide input to, and receive information from, the PM on project status.
6. MANAGEMENT OF PMP/PMF EXEC.			
6.a. Support the DOE (PM) as co-chair of FRC	Support, participate and provide technical assistance.		
6.b. Participate in issue resolution and design review conferences.	Support, participate and provide technical assistance.		Support, participate and provide technical assistance.
6.c. Participate in review and endorsement of all project documents for consistency with commitments prior to submission to the customer, higher authority or outside agencies. Provide input on quality of the project and on consistency w/ policy, regulation and guidance to the appropriate element.	Manage the review of project documents, for which lead corporate responsibility has been assigned, for consistency w/ policy, regulation and guidance.	Reconciles detailed contract files with payments to contractors and provides status reports to PM. Provides internal control to ensure payments are correct and are recorded in financial records.	Review the quality of project documents for which lead responsibility has been assigned for consistency with policy, regulation and guidance.
6.c.(1) Feasibility Studies	Manage preparation of the RE input to the feasibility study. Support, participate and provide technical assistance in completing the study.		
6.c.(2) PED	Support, participate and provide technical assistance in the completion of PED products.		

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CHECKLIST OF ROLES AND RESPONSIBILITIES PROJECT MANAGER AND TECHNICAL MANAGER

* (see footnote)			
PROJECT MANAGER RESPONSIBILITIES	PLANNING TECHNICAL MANAGER RESPONSIBILITIES	ENGINEERING TECHNICAL MANAGER RESPONSIBILITIES	CONSTRUCTION TECHNICAL MANAGER RESPONSIBILITIES
9.c.(3) Leads LCA preparation, review and endorsement of the PFB and higher authority.	Support, participate and provide technical assistance in the completion of the LCA.	Support, participate and provide technical assistance in the completion of the LCA.	Support, participate and provide technical assistance in the completion of the LCA.
9.c.(4) Final Design Products.	Support, participate and provide technical assistance in the completion of final design products.	Prepares final design products, integrating work from other functional elements providing support. Responds to all comments.	Support, participate and provide technical assistance in the completion of final design products.
9.c.(5) Construction Contract Packages			
(a) Bid Item List - supports	Support	Prepares	Provides input
(b) BCO Review - supports	Support	Incorporates comments	Conducts
(c) Ready - To - Advertise Status - supports	Support	Prepares	Supports and reviews
(d) Bid proposals and recommendation of acceptance of addives or deductions - supports	Support	Support	Perform pre - award survey
(e) Contract documents supports	Support	Prepares	Support
(f) Recommend award to R.O. - leads	Support	Support	Support
9.d. Reviews, endorses, and obtains approval of Sponsor requested credits.	Support, participate and provide technical assistance.	Support, participate and provide technical assistance.	Support, participate and provide technical assistance.
9.e. Manages project contingencies to ensure efficient and effective utilization of project funds through:			
9.e.(1) Development of project contingencies (AW PFB/PMP)	Provide input on the development of contingencies through discussions of unknown factors that may contribute to added project or product costs.	Provide input on the development of contingencies through discussions of unknown factors that may contribute to added project or product costs.	Provide input on the development of contingencies through discussions of unknown factors that may contribute to added project or product costs.

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CHECKLIST OF ROLES AND RESPONSIBILITIES PROJECT MANAGER AND TECHNICAL MANAGER

PROJECT MANAGER RESPONSIBILITIES	REAL ESTATE TECHNICAL MANAGER RESPONSIBILITIES	RESOURCE MANAGEMENT RESPONSIBILITIES	CONTRACTING RESPONSIBILITIES
9.c. (3) leads LCA preparation, review and endorsement of the FHS and higher authority.	Support, participate and provide technical assistance in the completion of the LCA.	Reviews financial records for adherence and compliance with LCA.	
9.d. (4) Final Design Production	Support, participate and provide technical assistance in the completion of final design production.		
9.e. (5) Construction Contract Packages	Support		Support
a) Bid Item List - supports	Support		Support
b) RCO Review - supports	Support		Support
c) Ready - 30 - Address Status - supports	Carries necessary real estate available	Provides financial status on land availability for awards	Support and review
d) Bid proposals and recommendation of award	Support		Review and estimate bids/proposals
e) Contract documents supports	Support		Participate in all pre - award activities
f) Recommendation award to R.O. - leads	Support	Carries land availability	Obtain required reviews and approvals, and execute contract documents
9.f. Review, endorse, and obtain approval of sponsor requested credits	Support, participate and provide technical assistance	Incorporates credits into project accounts	
9.g. Manage project contingencies to ensure delivery and execution of project funds			
9.h. Management of project contingencies (AW, FHS, FHS)	Provides input on the development of contingencies through discussions of unknown factors that may contribute to actual project or product costs	Provides financial status on contingency funding	

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CHECKLIST OF ROLES AND RESPONSIBILITIES PROJECT MANAGER AND TECHNICAL MANAGER

PROJECT MANAGER RESPONSIBILITIES	PLANNING TECHNICAL MANAGER RESPONSIBILITIES	ENGINEERING TECHNICAL MANAGER RESPONSIBILITIES	CONSTRUCTION TECHNICAL MANAGER RESPONSIBILITIES
9.1. Review change proposals for impacts on project consequences. Provide appropriate approvals.	Manage assigned work activities, providing change proposals indicating changes made from PMP/PAP.	Manage assigned work activities, providing change proposals indicating changes made from PMP/PAP.	Manage assigned work activities, providing change proposals indicating changes made from PMP/PAP.
9.2. Provide PMP monthly status of contingency usage and availability.	Identify changes and recommend use of contingencies to PM.	Identify changes and recommend use of contingencies to PM.	Identify changes and recommend use of contingencies to PM.
9.3. Participate in pre-selection boards for A-E contracts on assigned projects, as necessary.	Manage A-E contracts in support of Planning products.	Select recipients and manages A-Es in support of EIR products. Evaluates A-Es.	Manage construction management and construction contracts. Participates in pre-selection boards for A-E contracts in support of construction products.
9.4. Ensures deficiencies are corrected in a timely manner.	Provide support to the PM in the environmental areas to assure full compliance as anticipated in the completed project.	Provide support to the PM in the identification of deficiencies and the acceptable resolution of such. Pursues A-E responsible actions.	Conduct construction inspections, and have deficiencies corrected to an acceptable resolution.
9.5. Ensures timely preparation of O&M manuals, as-built, resolution of outstanding claims, completion of final audits and handing of project.	Provide input to O&M manuals as required. Resolves outstanding A-E claims and final audits.	Prepares O&M manuals and as-built where required. Resolves outstanding A-E claims and final audits.	Provide O&M manuals and as-built where required. Resolves outstanding contract claims and final audits. Execute transfer of constructed project. Provides A-E and construction contractor evaluations.
9.6. Ensures warranties are enforced and deficiencies are corrected through established procedures.	Provide support to the PM in the environmental areas to assure full compliance as anticipated in the completed project.	Provide support to the PM during the trial operating phase to assure the project functions as intended during design and construction.	Enforces warranties and correction of deficiencies. Provide support to the PM during trial operating phases to assure project functions as intended.

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CHECKLIST OF ROLES AND RESPONSIBILITIES PROJECT MANAGER AND TECHNICAL MANAGER

* (see footnote)			
PROJECT MANAGER RESPONSIBILITIES	REAL ESTATE TECHNICAL MANAGER RESPONSIBILITIES	RESOURCE MANAGEMENT RESPONSIBILITIES	CONTRACTING RESPONSIBILITIES
9.a (2) Review change proposals for impacts on project contingencies. Provide appropriate approvals.	Manage assigned work activities, providing change proposals indicating changes made from PMP/PPMP.		
9.a (3) Provide PMA security status of contingency design and analysis.	Identify changes and recommend use of contract services to PMA.		
9.b Participate in pre-selection boards for A-E contracts on assigned projects, as necessary.	Support, participate and provide technical assistance.		Support, participate and provide technical assistance.
9.c. Ensure deficiencies are corrected in a timely manner.	Provide support to the PMA in the Real Estate areas as required.		Support.
9.d. Ensure timely preparation of O&M manuals as well as timely completion of final plans and format of project.	Provide input to O&M manuals as required.	Determine resources capital and expenses changes as appropriate. Assist in project changes of financial documents.	Support, participate and provide technical assistance.
9.e. Ensure warranties are enforced and deficiencies are corrected through established procedures.	Support, participate and provide assistance.	Carries general ledger and property records as in system. Certification becomes part of project official records.	Support, participate and provide technical assistance.

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CHECKLIST OF ROLES AND RESPONSIBILITIES PROJECT MANAGER AND TECHNICAL MANAGER

* (see footnote)			
PROJECT MANAGER RESPONSIBILITIES	PLANNING TECHNICAL MANAGER RESPONSIBILITIES	ENGINEERING TECHNICAL MANAGER RESPONSIBILITIES	CONSTRUCTION TECHNICAL MANAGER RESPONSIBILITIES
9.i. Ensures project fiscal closeout, resolution of financial status and proper disposition of remaining funds.	Support, participate and provide assistance.	Support, participate and provide assistance.	Support, participate and provide assistance.
9.k. Monitor to ensure control of direct charges to the project.	Review Planning direct charges to assure proper accounting to products.	Review Engineering direct charges to assure proper accounting to products.	Review Construction direct charges to assure proper accounting to products.
10. OPERATING BUDGET/PROGRAMMING			
10.a. Provide input to district operating budget during formulation, related to projects for which PM has responsibility.	Provide input to the IPMP and PMP which will serve as PM input.	Provide input to the IPMP and PMP which will serve as PM input.	Provide input to the IPMP and PMP which will serve as PM input.
10.b. Monitors performance against IPMP/PMP and provides early indications of effects on projects due to changes in available funding or overhead rates.	Monitor Planning overhead rates for critical changes. Apprise Ch. Planning of changes noted.	Monitor Engrg overhead rates for critical changes. Apprise Ch. Engrg of changes noted.	Monitor Const. overhead rates for critical changes. Apprise Ch. Const. of changes noted.
10.c. In conjunction w/ Prog. Mgmt., prepare and submit annual and 10 yr. program budget reports.	Assure that budget projections in the IPMP/PMP are accurate for PMA use.	Assure that budget projections in the IPMP/PMP are accurate for PMA use.	Assure that budget projections in the IPMP/PMP are accurate for PMA use.
10.d. Ensure that Prog. Mgmt. prepares and submits necessary reprogramming documents to reflect agreed to changes in IPMP/PMP.	Provide PM w/funding reallocation requirements, on work assigned, as soon as potential exists.	Provide PM w/funding reallocation requirements, on work assigned, as soon as potential exists.	Provide PM w/funding reallocation requirements, on work assigned, as soon as potential exists.

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CHECKLIST OF ROLES AND RESPONSIBILITIES PROJECT MANAGER AND TECHNICAL MANAGER

PROJECT MANAGER RESPONSIBILITIES	REAL ESTATE TECHNICAL MANAGER RESPONSIBILITIES	RESOURCE MANAGEMENT RESPONSIBILITIES	CONTRACTING RESPONSIBILITIES
9.1. Ensures project fiscal checkout, resolution of financial issues and proper disposition of remaining funds.	Support, participate and provide assistance.	Assists in the project close-out and the establishment of depreciation schedules.	Support, participate and provide technical assistance.
9.2. Monitor to ensure control of direct charges to the project.	Review Real Estate direct charges to ensure proper accounting to projects.	Provides a mechanism to ensure control of direct charges to the project. Reviews direct charges to projects for propriety.	
10. OPERATING BUDGET PROGRAMMING			
10.a. Provide input to direct operating budget during formulation, related to projects for which PM has responsibility.	Provide input to the PPM and PMP which will serve as PM input.	Provides staff management of direct operating budget, track, manpower allocations and budget execution.	Provide input to the PPM and PMP which will serve as PPM input.
10.b. Monitors performance against PPM/PMP and provides early indications of effects on projects due to changes in available funding or overhead rates.	Monitor R.E. overhead rates for critical changes. Approves Ch. R.E. of changes noted.		
10.c. In conjunction with Prop. Mgmt. prepares and submits annual report and 10. R. Program budget reports.	Assess that budget projections in the PPM/PMP are accurate for PMA use.		
10.d. Ensure that Prop. Mgmt. prepares and submits necessary reprogramming documents to reflect agreed to changes in PPM/PMP.	Provide PMA regarding reprogramming requirements on work assigned, as soon as potential exists.		

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CHECKLIST OF ROLES AND RESPONSIBILITIES PROJECT MANAGER AND TECHNICAL MANAGER

* (see footnote)			
PROJECT MANAGER RESPONSIBILITIES	REAL ESTATE TECHNICAL MANAGER RESPONSIBILITIES	RESOURCE MANAGEMENT RESPONSIBILITIES	CONTRACTING RESPONSIBILITIES
9.J. Ensures project fiscal closeout, resolution of financial status and proper disposition of remaining funds.	Support, participate and provide assistance.	Assists in the project close-out and the establishment of depreciation schedules.	Support, participate and provide technical assistance.
9.K. Monitor to ensure control of direct charges to the project.	Review Real Estate direct charges to ensure proper accounting to projects.	Provide a mechanism to ensure control of direct charges to the project. Reviews direct charges to projects for propriety.	
10. OPERATING BUDGET/PROGRAMMING			
10.a. Provide input to district operating budget during formulation, related to projects for which PM has responsibility.	Provide input to the IPMP and PMP which will serve as PM input.	Provides staff management of district operating budget, rates, manpower allocations and budget execution.	Provide input to the IPMP and PMP which will serve as PM input.
10.b. Monitors performance against IPMP/PMP and provides early indications of effects on projects due to changes in available funding or overhead rates.	Monitor R.E. overhead rates for critical changes. Apprise Ch. R.E. of changes noted.		
10.c. In conjunction w/ Prog. Mgmt., prepare and submit annual and 10 yr. program budget reports.	Assure that budget projections in the IPMP/PMP are accurate for PMs use.		
10.d. Ensure that Prog. Mgmt. prepares and submits necessary reprogramming documents to reflect agreed to changes in IPMP/PMP.	Provide PM w/funding reallocation requirements, on work assigned, as soon as potential exists.		

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APPENDIX E

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DEPARTMENT OF THE ARMY JOB DESCRIPTION <small>For use of this form, see CFR 801: the statement agency to DCSPER.</small>		1. JOB NUMBER CE SJD 1							
2. INSTALLATION OR HEADQUARTERS OFFICE U.S. Army Corps of Engrs		3. ORGANIZATIONAL LOCATION (Complete on organization copy only)							
4. CITATION TO APPLICABLE STANDARD AND THE DATE OF ISSUANCE a. U. S. OPM, Pos Class Hdbk. b. U. S. OPM, PCS, GS-1601-0. c. U. S. OPM, PCS, GS-800-0. d. U. S. OPM, PCS, GS-340-0.		5. TITLE Program Manager (Engineering & Science) <table border="1"> <tr> <td>6. PAY SCHEDULE GM</td> <td>7. OCC CODE 340</td> <td>8. GRADE 15</td> </tr> <tr> <td colspan="2"> 9. FAIR LABOR STANDARDS ACT <input checked="" type="checkbox"/> EXEMPT <input type="checkbox"/> NONEXEMPT </td> <td> 10. COMP LEVEL CESJDI- </td> </tr> </table>		6. PAY SCHEDULE GM	7. OCC CODE 340	8. GRADE 15	9. FAIR LABOR STANDARDS ACT <input checked="" type="checkbox"/> EXEMPT <input type="checkbox"/> NONEXEMPT		10. COMP LEVEL CESJDI-
6. PAY SCHEDULE GM	7. OCC CODE 340	8. GRADE 15							
9. FAIR LABOR STANDARDS ACT <input checked="" type="checkbox"/> EXEMPT <input type="checkbox"/> NONEXEMPT		10. COMP LEVEL CESJDI-							
11. EVALUATION APPROVAL TITLE, PAY SCHEDULE, OCC CODE, AND GRADE OF THIS JOB HAVE BEEN FIXED IN ACCORDANCE WITH OFFICIAL POLICY AND GRADE LEVEL STANDARDS <div style="display: flex; justify-content: space-between;"> <div>_____ (Signature)</div> <div>_____ (Date)</div> </div>									
12. JOB CONTENT APPROVAL (COMPLETE ON ORGANIZATION COPY ONLY) a. I CERTIFY THAT THIS IS AN ACCURATE STATEMENT OF THE MAJOR DUTIES AND RESPONSIBILITIES OF THIS POSITION AND ITS ORGANIZATIONAL RELATIONSHIPS AND THAT THE POSITION IS NECESSARY TO CARRY OUT GOVERNMENT FUNCTIONS FOR WHICH I AM RESPONSIBLE. THIS CERTIFICATION IS MADE WITH THE KNOWLEDGE THAT THIS INFORMATION IS TO BE USED FOR STATUTORY PURPOSES RELATING TO APPOINTMENT AND PAYMENT OF PUBLIC FUNDS AND THAT FALSE OR MISLEADING STATEMENTS MAY CONSTITUTE VIOLATIONS OF SUCH STATUTES OR THEIR IMPLEMENTING REGULATIONS. <div style="display: flex; justify-content: space-between;"> <div>_____ (Signature of Approving Supervisor)</div> <div>_____ (Date)</div> </div>									
13. STATEMENT OF DUTIES AND RESPONSIBILITIES SUPERVISORY CONTROLS <p>Works under the general administrative direction of the District Commander who makes assignments of a very broad and general nature covering long range program plans, objectives and policies. The Commander relies on incumbent to carry out the assigned responsibilities with minimum guidance. Exercises considerable independent responsibility for accomplishing the District mission referring to the Commander only on those matters involving major problems. Guidelines include HQUSACE and Division regulations, policy and procedures for Civil, Military, Environmental and Support for Others Programs. Recommendations and conclusions by the incumbent are considered as authoritative. Work is reviewed primarily in terms of the incumbent's effectiveness in accomplishing corporate goals and objectives. Performance is evaluated in terms of performance appraisal standards established by the Commander.</p> <p style="text-align: center;">MAJOR DUTIES</p> <p>Summary: Incumbent serves as the Deputy District Engineer for Project Management and Chief of the Programs and Project Management Division.</p>									

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PREVIOUS EDITIONS OF THIS FORM MAY BE USED.

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As the Commander's Deputy the incumbent is delegated full authority for management decisions related to major district Civil, Military, Environmental and Support for Others Programs and Projects. Assures continuity of management in the Executive Office at times of change in commanders and/or military deputies. Applies an extensive knowledge of management concepts, principles, methods, practices as well as knowledge of methods, practices and processes of engineering and science disciplines. Management responsibilities involve projects requiring substantial technical effort by functional elements including Planning, Engineering, Construction, Real Estate, and Contracting Divisions as well as a variety of support organizations. Projects may span several years and/or have potentially sensitive issues. Typical projects include civil works projects such as flood control, hydroelectric, storm damage prevention, navigational projects such as channel improvements and lock & dam construction, water supply, environmental restoration, river stabilization, harbor development etc.; military projects such as but not limited to hospitals, airfields, barracks, industrial plants, training facilities, armories, etc.; environmental projects typically include excavation of contaminated soils, groundwater pump and treatment systems, alternate water supply, and incineration of contaminated wastes.

Oversees and directs Program and Project Management Division activities. Interfaces both internally and externally to assure that the corporate effort will result in quality projects. Provides leadership in establishing and maintaining effective management processes and a work environment conducive to effective integration of technical functions of planning, engineering, construction, real estate, contracting, resource management with project management.

1. Serves as the Deputy District Engineer for Programs and Project Management. Works closely with Commander and other Deputy District Engineers to assess district mission and work requirements. Confers with corporate managers to establish broad mission requirements and objectives, plan for accomplishment, review status and progress, provide management guidance and direction, and furnish advice and/or decision on policy matters. Establishes corporate goals on schedule, cost, scope and budget in the PMP in coordination with functional elements. Provides overall continuity in corporate leadership to ensure commitments to and from customers/partners are met and project execution achieved. Implements controls to assure charges to projects reflect commitments to customers/sponsors on cost, quality and schedules. Oversees and approves the formulation and controls the District operating budget. Conducts the District Project Review Board (PRB) and elevates issues not resolved by the PRB to the District Commander for resolution.

1a. Directs the formulation of the District Ten Year Civil Works program and annual program budget. Forecasts Military Construction and Support for Others. Prioritizes Civil Works program elements. Monitors study, design and construction fiscal progress, analyzing deviations, problems, and develops solutions to assure commitments are met. Directs the preparation, compilation, review, analysis, and submission of all program data required for the district's program/budget. Evaluates and interprets directives and policy instructions regarding civil works programs and estimates income; establishes tables of overhead and indirect costs and

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applies performance measures. Chairs the Program Budget Advisory Committee (PBAC) and Resources Management Advisory Committee (RMAC). Directs the development of force configuration data. Approves manpower allocations based on data analysis.

1b. As primary interface with customer/sponsor, represents the District Commander at meetings, briefings, conferences, hearings, etc. with officials of other federal agencies, state county and local authorities and the public on matters related to proposed and approved projects. Makes district commitments and speaks with the authority of the District Commander in furnishing responses, solutions, and commitments to policy level questions and issues. Serves as the responsible district spokes-person between the district and project sponsors/customers. Ensures commitments to and from sponsors are met. Resolves controversies among district elements, other Corps offices, Federal agencies, and non Federal sponsors. As the responsible district authority, develops and executes Feasibility Cost Sharing Agreements, Local Cooperation Agreements, Memorandums of Understanding, and similar agreements. Establishes and maintains partnership with military and civil works project sponsors. Insures that customers are informed of the status of work and funds. Conducts periodic coordination meetings and program reviews to insure full understanding and communication on critical project issues, budget and schedule.

2. As Chief of the Programs and Project Management Division supervises a staff of program and project managers and administrative and technical support positions. Directs the staff through one or more supervisory levels typically organized into a programs branch and one or more project management branches. Develops long range organizational plans and goals through subordinate organizational chiefs, assigns work.

2a. Defines the district's Program and Project Management goals. Develops coordinated position with sponsors/customers and makes programming decisions that impact long-range courses of action of critical importance. Serves as an authoritative source for decisions and guidance dealing with compromises and changes in project objectives. Implements overall project guidance and policy. Manages actual project resource utilization (funds and manpower) to ensure effective resource utilization in compliance with IPMP/PHP and initiates action to align those resources as appropriate and initiates action to align costs within the IPMP/PHP.

2b. Plans, directs and reviews all project specific Project Management Plans (PMP). Participates with functional divisions in development of Initial Project Management Plan (IPMP). Establishes PMPs with functional elements to assure optimum product schedule, cost, scope, acquisition plan, budget and quality. Directs allocation of project resources in accordance with PMPs to assure objectives and commitments are effectively met. Oversees all phases of major projects to assure integration and coordination within established time frames and maintains corporate goals and objectives, consistent with commitments and policy, as well as measurable performance criteria. Conducts periodic program review and analysis briefings to compare progress with objectives and established milestones. Identifies areas where slippage is occurring and determines required corrective action to bring project in line with established schedules. Reviews project progress, including contract modifications.

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monitors and analyzes project data and reports to assess progress relative to established milestones objectives and corporate commitments. Identifies needed changes in emphasis during any project phase and either initiates or approves changes recommended by technical functions to maintain approved schedules and cost, assuring proper coordination. Provides guidance for functional managers to facilitate the effective resolution of technical problems, conflicts, and controversial issues, ensuring that project issues are quickly solved. Serves as Executive Secretary of PRB. Allocates funds consistent with data contained in the IPMP/FMP.

3. Supervises and Directs Program and Project Management Division. Establishes personnel and financial resources to support division mission. Develops organizational structures which provide for effective and economical accomplishment of work. Develops long range organizational plans and through subordinate organizational chiefs, assigns work to subordinates determining work schedules and priorities. Provides advice, counsel and instruction on work and administrative matters. Reviews and approves the full range of personnel actions recommended by subordinate supervisors. Selects, reassigns, establishes performance standards for and appraises performance of subordinate supervisors. Recommends performance based awards and bonuses for subordinate supervisors. Provides advice, counsel and instruction on work and administrative matters. Hears and resolves employee complaints, group grievance and more serious actions recommended by subordinate supervisors. Exercises position management responsibilities, assuring that subordinates' job descriptions are current and accurate. Designs and structures subordinate positions to insure optimum effectiveness, and economy according to position management policies and programs.

4. Supports District's readiness posture by developing and periodically updating emergency and mobilization plans for the assigned organization. Analyzes possible missions and prepares for the execution thereof through planning, training, and commitment of resources (i.e., alternate files, MOBTA, etc.). Supports the "District's first team" concept of making experienced, trained personnel available for critical emergency missions.

5. EEO Responsibilities. Assures that the equal opportunity programs for minority groups, women, and disadvantaged persons are implemented and operational, and maintains responsibility for the accomplishment of all EEO goals and objectives in accordance with the policies of the DA and COE.

Performs other duties as assigned.

SPECIAL REQUIREMENTS

This key position of the U. S. Army Corps of Engineers requires extensive experience in managing and directing highly complex organizations coupled with technical knowledges, skills and abilities sufficient to plan, organize, review and otherwise supervise the work through others of a diverse technical team comprised of professional and technical members of engineering and scientific disciplines.

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EVALUATION NOTES

Reference: a. U. S. OPM, Position Classification Handbook.
 b. U. S. OPM, Position Classification Standards, GS-1601-0.
 c. U. S. OPM, Position Classification Standards, GS-801-0.
 d. U. S. OPM, Position Classification Standards, GS-340-0.

1. Grade of military position of District Commander/District Engineer is evaluated at SES level by comparison to referenced standards. While position classification standards for SES positions are not described in referenced standards, the commander's position substantially exceeds requirements for the GS-15 level.

2. As the Deputy District Engineer for Programs and Project Management, position is determined to substantially equal that of a full deputy position. Although position is not in the direct chain of command for support positions (i.e., personnel, comptroller, logistics), all line missions of the district are under the purview of subject position. The organization is structured under matrix management concept with additional delegations by the District Commander in areas such as external commitments with public and private customers/partners and authority for budgeting and finance which affect all organizations in the district. One grade below the hypothetical SES of the Commander's position is determined appropriate.

3. As Deputy, the position supervises through a matrix management structure division, branch and section chiefs, a diverse work force comprising professional and technical nonsupervisory positions in grades GS-11 through GS-13. Comparison to referenced standards indicates that base level of work directed is GS-13. Subordinate managers are established at the GM-15 level (two grades above base level). Three grades above the base level of GS-13 is determined appropriate for grade of Commander.

4. As Division Chief, the position supervises through branch and section chiefs, a diverse work force comprising professional and technical nonsupervisory positions in grades GS-11 through GS-13. Comparison to referenced standards indicates that base level of work directed is GS-13. Subordinate supervisors are established at the GM-14 level. Two grades above the base level of GS-13 is determined appropriate for evaluation of division chief responsibilities.

5. Since position is graded at GM-15 based on deputy responsibilities and GM-15 based on division chief responsibilities, position is properly graded at GM-15 level.

6. Position is placed in GS-340 series since management responsibilities are determined to be paramount for performance. It is recognized that successful performance will require knowledges, skills and abilities of engineering and scientific disciplines. These are determined to be selective qualification criteria which will be used to determine highly qualified candidates for the position.

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DEPARTMENT OF THE ARMY JOB DESCRIPTION <small>For use of this form, see CFR 501. The Department Agency is DCSPER</small>		1. JOB NUMBER CE SJD 2											
2. INSTALLATION OR HEADQUARTERS OFFICE U. S. Army Corps of Engrs		3. ORGANIZATIONAL LOCATION (Complete on organization copy only) 											
4. CITATION TO APPLICABLE STANDARD AND THE DATE OF ISSUANCE a. U. S. OPM, <u>Pos Class Hdbk.</u> b. U. S. OPM, PCS, GS-1601-0. c. U. S. OPM, PCS, GS-800-0. d. U. S. OPM, PCS, GS-340-0.		5. TITLE Program Manager (Engineering & Science) <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 33%;">6. PAY SCHEDULE</td> <td style="width: 33%;">7. OCC CODE</td> <td style="width: 33%;">8. GRADE</td> </tr> <tr> <td style="text-align: center;">GM</td> <td style="text-align: center;">340</td> <td style="text-align: center;">15</td> </tr> </table> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 66%;">9. FAIR LABOR STANDARDS ACT</td> <td style="width: 33%;">10. COMP LEVEL</td> </tr> <tr> <td> <input checked="" type="checkbox"/> EXEMPT <input type="checkbox"/> NONEXEMPT </td> <td style="text-align: center;">CESJDI-</td> </tr> </table>		6. PAY SCHEDULE	7. OCC CODE	8. GRADE	GM	340	15	9. FAIR LABOR STANDARDS ACT	10. COMP LEVEL	<input checked="" type="checkbox"/> EXEMPT <input type="checkbox"/> NONEXEMPT	CESJDI-
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11. EVALUATION APPROVAL TITLE, PAY SCHEDULE, OCC CODE AND GRADE OF THIS JOB HAVE BEEN FIXED IN ACCORDANCE WITH OFFICIAL POLICY AND GRADE LEVEL STANDARDS <div style="display: flex; justify-content: space-between;"> <div>_____ (Signature)</div> <div>_____ (Date)</div> </div>													
12. JOB CONTENT APPROVAL (COMPLETE ON ORGANIZATION COPY ONLY) I CERTIFY THAT THIS IS AN ACCURATE STATEMENT OF THE MAJOR DUTIES AND RESPONSIBILITIES OF THIS POSITION AND ITS ORGANIZATIONAL RELATIONSHIPS AND THAT THE POSITION IS NECESSARY TO CARRY OUT GOVERNMENT FUNCTIONS FOR WHICH I AM RESPONSIBLE. THIS CERTIFICATION IS MADE WITH THE KNOWLEDGE THAT THIS INFORMATION IS TO BE USED FOR STATUTORY PURPOSES RELATING TO APPOINTMENT AND PAYMENT OF PUBLIC FUNDS AND THAT FALSE OR MISLEADING STATEMENTS MAY CONSTITUTE VIOLATIONS OF SUCH STATUTES OR THEIR IMPLEMENTING REGULATIONS. <div style="display: flex; justify-content: space-between;"> <div>_____ (Signature of Approving Supervisor)</div> <div>_____ (Date)</div> </div>													
13. THIS JOB DESCRIPTION WITH SUPPLEMENTAL MATERIAL IS ADEQUATE FOR PURPOSE OF EVALUATION. <div style="display: flex; justify-content: space-between;"> <div>_____ (Signature of Position Classification Specialist)</div> <div>_____ (Date)</div> </div>													
12. STATEMENT OF DUTIES AND RESPONSIBILITIES <div style="text-align: center;">SUPERVISORY CONTROLS</div> <p>Works under the general administrative direction of the District Commander who makes assignments of a very broad and general nature covering long range program plans, objectives and policies. The Commander relies on incumbent to carry out the assigned responsibilities with minimum guidance. Exercises considerable independent responsibility for accomplishing the District mission referring to the Commander only on those matters involving major problems. Guidelines include HQUSACE and Division regulations, policy and procedures for Civil, Military, Environmental and Support for Others Programs. Recommendations and conclusions by the incumbent are considered as authoritative. Work is reviewed primarily in terms of the incumbent's effectiveness in accomplishing corporate goals and objectives. Performance is evaluated in terms of performance appraisal standards established by the Commander.</p> <div style="text-align: center;">MAJOR DUTIES</div> <p>Summary: Incumbent serves as the Deputy District Engineer for Project Management.</p>													

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PREVIOUS EDITIONS OF THIS FORM MAY BE USED.

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As the Commander's Deputy the incumbent is delegated full authority for management decisions related to major district Civil, Military, Environmental and Support for Others Programs and Projects. Assures continuity of management in the Executive Office at times of change in commanders and/or military deputies. Applies an extensive knowledge of management concepts, principles, methods, practices as well as knowledge of methods, practices and processes of engineering and science disciplines. Management responsibilities involve projects requiring substantial technical effort by functional elements including Planning, Engineering, Construction, Real Estate, and Contracting Divisions as well as a variety of support organizations. Projects may span several years and/or have potentially sensitive issues. Typical projects include civil works projects such as flood control, hydroelectric, storm damage prevention, navigational projects such as channel improvements and lock & dam construction, water supply, environmental restoration, river stabilization, harbor development etc.; military projects such as but not limited to hospitals, airfields, barracks, industrial plants, training facilities, armories, etc.; environmental projects typically include excavation of contaminated soils, groundwater pump and treatment systems, alternate water supply, and incineration of contaminated wastes.

1. Serves as the Deputy District Engineer for Program and Project Management. Works closely with Commander and other Deputy District Engineers to assess district mission and work requirements. Confers with corporate managers to establish broad mission requirements and objectives, plan for accomplishment, review status and progress, provide management guidance and direction, and furnish advice and/or decision on policy matters. Establishes corporate goals on schedule, cost, scope and budget in the PMP in coordination with functional elements. Provides overall continuity in corporate leadership to ensure commitments to and from customers/partners are met and project execution achieved. Implements controls to assure charges to projects reflect commitments to customers/sponsors on cost, quality and schedules. Oversees formulation and controls the District operating budget. Conducts the District Project Review Board (PRB) and elevates issues not resolved by the PRB to the District Commander for resolution.

2. Directs the formulation of the District Ten Year Civil Works program and annual program budget. Forecasts Military Construction and Support for Others. Prioritizes Civil Works program elements. Monitors studies, design and construction fiscal progress, analyzing deviations, problems, and develops solutions to assure commitments are met. Directs the preparation, compilation, review, analysis, and submission of all program data required for the district's program/budget. Evaluates and interprets directives and policy instructions regarding civil works programs and estimates income; approves tables of overhead and indirect costs and applies performance measures. Chairs the Program Budget Advisory Committee (PBAC) and Resources Management Advisory Committee (RMAC). Directs the development of force configuration data. Approves manpower allocations based on data analysis.

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3. As primary interface with customer/sponsor, represents the District Commander at meetings, briefings, conferences, hearings, etc. with officials of other federal agencies, state county and local authorities and the public on matters related to proposed and approved projects. Makes district commitments and speaks with the authority of the District Commander in furnishing responses, solutions, and commitments to policy level questions and issues. Serves as the responsible district spokes-person between the district and project sponsors/customers. Ensures commitments to and from sponsors are met. Resolves controversies among district elements, other Corps offices, Federal agencies, and non Federal sponsors. As the responsible district authority, develops and executes Feasibility Cost Sharing Agreements, Local Cooperation Agreements, Memorandums of Understanding, and similar agreements. Establishes and maintains partnership with military and civil works project sponsors. Insures that customers are informed of the status of work and funds. Conducts periodic coordination meetings and program reviews to insure full understanding and communication on critical project issues, budget and schedule.

4. Reviews Project Management Plans (PMP) with functional elements to assure optimum product schedule, cost, scope, acquisition plan, budget and quality. Directs allocation of resources in accordance with PMPs to assure objectives and commitments are effectively met. Identifies areas where slippage is occurring and determines required corrective action to bring project in line with established schedules. Reviews project progress, including contract modifications, monitors and analyzes project data and reports to assess progress relative to established milestones objectives and corporate commitments.

5. EEO Responsibilities. Assures that the equal opportunity programs for minority groups, women, and disadvantaged persons are implemented and operational, and maintains responsibility for the accomplishment of all EEO goals and objectives in accordance with the policies of the DA and COE.

Performs other duties as assigned.

SPECIAL REQUIREMENTS

This key position of the U. S. Army Corps of Engineers requires extensive experience in managing and directing highly complex organizations coupled with technical knowledges, skills and abilities sufficient to plan, organize, review and otherwise supervise the work through others of a diverse technical team comprised of professional and technical members of engineering and scientific disciplines.

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EVALUATION NOTES

Reference: a. U. S. OPM, Position Classification Handbook.
 - b. U. S. OPM, Position Classification Standards, GS-1601-0.
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2. As the Deputy District Engineer for Programs and Project Management, position is determined to substantially equal that of a full deputy position. Although position is not in the direct chain of command for support positions (i.e., personnel, comptroller, logistics), all line missions of the district are under the purview of subject position. The organization is structured under matrix management concepts with additional delegations by the District Commander in areas such as external commitments with public and private customers/partners and authority for budgeting and finance which affect all organizations in the district. One grade below the hypothetical SES Commander's position is determined appropriate.

3. As Deputy, the position supervises through a matrix management structure division, branch and section chiefs, a diverse work force comprising professional and technical nonsupervisory positions in grades GS-11 through GS-13. Comparison to referenced standards indicates that base level of work directed is GS-13. Subordinate managers are established at the GM-15 level (two grades above base level). Three grades above the base level of GS-13 is determined appropriate for grade of Commander.

4. Since Commander's position is graded above the GM-15 level, Deputy position is graded at GM-15 level, the same grade as subordinate division chiefs.

5. Position is placed in GS-340 series since management responsibilities are determined to be paramount for performance. It is recognized that successful performance will require knowledges, skills and abilities of engineering and scientific disciplines. These are determined to be selective qualification criteria which will be used to determine highly qualified candidates for the position.

EVALUATION NOTES

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CORPS OF ENGINEERS GUIDELINE JOB DESCRIPTION
CHIEF, ENGINEERING DIVISION
SUPERVISORY CONTROLS

Works under the very general administrative direction of the District Commander who makes assignments of a very broad and general nature covering long range program plans, objectives, and policies. The Commander relies on the incumbent to carry out the assigned responsibilities with minimum guidance. Exercises considerable independent responsibility for accomplishing the engineering and design responsibilities in support of the District mission, referring to the Commander only those matters involving major problems. Guidelines include HQUSACE and Division regulations, policy, and procedures for Civil, Military, Environmental, and Support for Others programs. Recommendations and conclusions by the incumbent are considered authoritative. Work is reviewed primarily in terms of the incumbent's effectiveness in accomplishing corporate goals and objectives. Performance is evaluated in terms of performance appraisal standards established by the Commander.

MAJOR DUTIES

1. As Chief of the Engineering Division, is responsible for total management of the engineering program of the District. The engineering program contains both water related Corps of Engineers Civil Works projects and Army, Air Force, other Department of Defense Agency, and Support For Others Projects. Projects may span several years and/or have potentially sensitive issues. Typical projects include Civil Works projects such as flood control, hydroelectric, storm damage prevention, navigational projects such as channel improvements, lock and dam construction, water supply, environmental restoration, river stabilization, harbor development, etc.; Military projects such as but not limited to large sophisticated hospitals, airfields, barracks, industrial plants, training facilities, armories, etc.; Environmental projects typically include excavation of contaminated soils, groundwater

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pump and treatment systems, alternate water supply, and incineration of contaminated wastes. In assuming the overall technical and management responsibilities of the engineering program the incumbent controls organizing, coordinating, budgeting and scheduling the efforts of the subordinate technical branches within the Division. The incumbent is accountable to District Commander through the Deputy District Engineer for Project Management for engineering commitments, as documented in the project management plans (PMP's). As member of Project Review Board (PRB), provides corporate leadership, assuring that product commitments are met in support of project execution.

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2. Acts as the principle consultant and advisor to the District Engineer and the Deputy District Engineers on all engineering matters and represents the District Engineer at conferences with higher echelons on engineering matters. Serves as the technical authority in the engineering and scientific disciplines which support the Engineering Division function. Assures that programs incorporate the most advanced methods and technology. Insures that the technical program is structured, staffed, and managed to be responsive to project requirements. Establishes the technical framework and guidance for accomplishing objectives within the Division's in-house and contractual capability. Manages A-E contracts as needed to supplement the in-house engineering workforce.

3. Participates in the development and execution of the District operating budget.

4. Consults with technical engineering specialists of higher headquarters, State agencies, technical experts of contractors, consultants, representatives of other Federal agencies, and others, relative to the technical aspects of the work being performed when necessary to insure a quality project.

5. Manages district's Value Engineering program. Coordinates program with higher headquarters. Insures full implementation and quality results.

6. Responsible for coordination and execution of District A/E selection process. Approves negotiations made by subordinates under authority delegated by the Contracting Officer for all A/E contracts.

7. Directs technical visits to field projects for the purpose of

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inspecting work under construction and completed work to determine adequacy of design. Insures compliance with sound engineering practices, often conferring with Resident Engineers and contractors on work underway or proposed. Evaluates the effectiveness of all phases of work.

8. Participates in staff conferences with other functional division Chiefs for the purpose of supplying information and technical data on various phases of the design work and coordinating the work of the Engineering Division with the overall program of the District.

9. Supports District's readiness posture by developing and maintaining emergency and mobilization plans. Analyzes possible missions and prepares for implementation of plans. Supports the District's "first team" concept of making experienced, trained personnel available for critical emergency missions.

10. Responsible for timely identification of actions required in the Engineering function. Recommends personnel requirements and the allocation of manpower spaces. Develops organizational structures which provide for effective and economical accomplishment of the work. Analyzes the utilization of manpower in relation to requirements. Conducts periodic program review and analysis briefings to compare progress with objectives and established milestones. Identifies areas where slippage is occurring and determines required corrective action to bring specific programs in line with established schedules.

11. Develops long range organization plans and through subordinate organizational chiefs, assigns work to subordinates, determining work schedules and priorities. Provides advice, counsel and instruction on work and administrative matters. Reviews and approves the full range of personnel actions recommended by subordinate supervisors. Selects, reassigns, establishes performance standards for, and appraises the performance of subordinate supervisors. Recommends performance based awards and bonuses for subordinate supervisors and other key team members in Engineering Division. Provides advice, counsel and instruction on work and administration matters. Hears and resolves employee complaints, group grievances and more serious actions recommended by subordinate supervisors. Exercises position management responsibilities, assuring that subordinates' job descriptions are current and accurate. Designs and structures subordinate positions to insure optimum effectiveness, and economy according to position management policies and programs.

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12. EEO Responsibilities. Assures that equal opportunity programs for minority groups, women, and disadvantaged persons are implemented and operational, and maintains responsibility for the accomplishment of all EEO goals and objectives in accordance with the policies of the DA and COE.

13. Performs other duties as assigned.

NOTE: SPECIAL QUALIFICATION REQUIREMENT:

Incumbent serves as the principal advisor to the District Engineer on matters pertaining to the total management of the engineering design program for the District. Functions performed by the Engineering Division and the final decisions made by the incumbent have a direct and critical bearing on public health and safety. Compliance with State laws is essential. As Chief, Engineering Division the incumbent's public image is of the utmost importance. Contract administration and negotiations and effective working relationships with outside engineers and officials of both private businesses and government agencies are considered to be critical elements of the position. Due to this exceptional level of responsibility and nature of duties professional engineering registration is required for placement into this position.

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CORPS OF ENGINEERS GUIDELINE JOB DESCRIPTION 2/6/92

CHIEF, PLANNING DIVISION - GM-15

SUPERVISORY CONTROLS

Works under the very general administrative direction of the District Commander who makes assignments of a very broad and general nature covering long range program plans, objectives and policies. The Commander relies on the incumbent to carry out the assigned responsibilities with minimum guidance. Exercises considerable independent responsibility for accomplishing the planning responsibilities in support of the District mission, referring to the Commander only those matters involving major problems. Guidelines include HQUSACE and Division regulations, policy and procedures for Civil, Military, Environmental, and Support for Others Programs. Recommendations and conclusions by the incumbent are considered authoritative. Work is reviewed primarily in terms of the incumbent's effectiveness in accomplishing corporate goals and objectives. Performance is evaluated in terms of performance appraisal standards established by the Commander.

MAJOR DUTIES

As Chief, Planning Division, serves as the principal technical advisor and consultant to the District Commander, other District organizations, public and private interests and higher authority on all aspects of the District planning mission including conservation and development of water and land resources, environmental issues and policy matters, and flood plain management services. Planning Division program activities encompass (DESCRIBE REGION) and involve highly complex studies and issues, of regional or national significance, and frequently of great political sensitivity. In assuming the overall technical and management responsibilities of the planning program, the incumbent controls organizing, coordinating, budgeting and scheduling the efforts of subordinate technical branches within the Division. As a member of the PRE, provides corporate leadership and assures that corporate commitments are met in support of project execution. Is accountable to the District Engineer through the DDEPM for planning commitments documented in PMPs.

1. Exercises broad overall management and direction of Planning Division work, programs, and functions. Provides advice and recommendations to the Commander concerning planning programs and major studies. Makes recommendations to the Commander concerning the resources to be devoted to planning studies, the schedules of

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such studies and the changes and emphasis necessary to achieve District and Corps of Engineers program goals. Organizes and formulates long range District planning goals and objectives for current and future program requirements in order to respond to changing national and regional needs.

2. Directs the conduct of studies leading to reconnaissance reports and feasibility reports for Congressional authorization of Civil Works projects for navigation, flood control, storm damage prevention, environmental restoration, recreation, hydropower and other water resources development and conservation needs. These include the economic, social, environmental, archeological and historical analyses necessary to formulate plans for reconnaissance, feasibility, and reevaluation studies and incorporation of the input of engineering, construction, operations and real estate elements. Also provides planning input to Engineering, Construction, Operations, and Real Estate Divisions and other District elements, as required. Responsible for the preparation of IPMPs and FCSAs. Directs the Continuing Authorities Program in its entirety.

3. Oversees the development of the scope, level, and degree of technical analysis to be employed in planning studies necessary to obtain quality results within cost and schedule as documented in the IPMP. Technical functions encompass the synthesis of environmental, economic, and engineering investigations and design to determine the feasibility of proposed projects, as well as the development of master plans, environmental statements, and comprehensive economic studies and analyses. Makes decisions concerning those portions of planning functions that can be effectively and efficiently accomplished in-house and those which must be accomplished by contract. Exercises general direction and control over review and coordination of planning work carried out by AE firms under contract and by research organizations. Considers all conflicting interests and ensures the resolution of problems and differences that may arise between subordinate branch chiefs and with other District organizations.

4. In the context of plan formulation and evaluation: Assures District compliance with all Federal and state environmental legislation, including Acts related to protection and restoration of cultural resources, fish and wildlife resources and recreation resources; Is responsible for all environmental analyses; and oversees requirements related to state water quality certification, manages water quality studies and prepares water quality reports. Develops environmental data, analysis, and evaluation for all recon, feasibility, reformulation, and special reports. Reviews other agency environmental impact statements, project reports, construction plans and programs for compatibility with Corps plans, programs, and projects.

5. Assures District compliance with regulations and requirements for economic justification. This includes oversight of technical analysis in reconnaissance reports and project formulation in

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feasibility reports, and current economic analysis required for budgeting purposes for PED and construction. In consultation with the Chief, Operations, oversees economic analysis requirements of Operations and Maintenance and Rehabilitation projects.

6. Directs the planning support for military customers. Issues may be national in scope and cut across District boundaries. Support includes assistance in development and conduct of environmental baseline and monitoring studies, preparation of environmental assessments and impact statements, landscape architectural planning, cultural resources studies, flood plain studies, mobilization planning, and others, as required.

7. Assures that optimum participation by interested members of the public (including environmental groups, port and navigation interests, flood control interests, private citizens, and others) is obtained during the planning process. Attends conferences and meetings with local interest groups to apprise them of the program for development of water resources in the District. Meets with legislative representatives, state and local agencies and interests in connection with the current and future planning program. Maintains continuing contact with internal and external points-of-contact necessary for the receipt and/or exchange of information which bears on the activities and missions of the District and the Corps of Engineers. Identifies new initiatives within the current mission.

8. Provides advisory services to state, local, and other Federal agencies on flood plain management and comparable technical areas and directs the preparation of flood insurance studies.

9. Supports the District's readiness posture by developing and periodically updating emergency and mobilization plans. Analyzes possible missions and prepares for the execution thereof through planning, training, and commitment of resources. Supports the District's "first team" concept of making experienced, trained personnel available for critical emergency missions.

10. Participates in the development and execution of the District operating budget.

11. Responsible for timely identification of actions required in the planning function. Recommends personnel requirements and the allocation of manpower spaces. Develops organizational structures which provide for effective and economical accomplishment of the work. Analyzes the utilization of manpower in relation to requirements. Conducts periodic program review and analysis briefings to compare progress with objectives and established milestones. Identifies areas where slippage is occurring and determines required corrective action to bring specific activities in line with established schedules.

12. Develops long-range organizational plans and through subordinate organizational chiefs, assigns work to subordinates,

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determining work schedules and priorities. Provides advice, counsel and instruction on work and administrative matters. Reviews and approves the full range of personnel actions recommended by subordinate supervisors. Selects, reassigns, establishes performance standards for, and appraises the performance of subordinate supervisors. Recommends performance based awards and bonuses for subordinate supervisors and other key officials in Planning Division. Hears and resolves employee complaints and group grievances. Serves as the deciding official in disciplinary actions recommended by subordinate supervisors. Exercises position management responsibilities, assuring that subordinate job descriptions are current and accurate. Designs and structures subordinate positions to insure optimum efficiency, effectiveness, and economy according to position management policies and procedures.

13. Assures that equal opportunity programs for minority groups, women and disadvantaged persons are implemented and operational, and maintains responsibility for the accomplishment of all EEO goals and objectives in accordance with the policies of DA and COE.

THIS JOB IS INTERDISCIPLINARY AND MAY BE CLASSIFIED TO ANY DISCIPLINE IN THE ENGINEER AND SCIENTIST CAREER PROGRAM (CP 18).

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February 25, 1992

CORPS OF ENGINEERS GUIDELINE JOB DESCRIPTION

Chief of Construction

GM-15

SUPERVISORY CONTROLS

Works under the very general administrative direction of the District Commander who makes assignments of a very broad and general nature covering long range program plans, objectives and policies. The Commander relies on the incumbent to carry out the assigned responsibilities with minimum guidance. Exercises considerable independent responsibility for accomplishing the construction responsibilities in support of the District mission, referring to the Commander only on those matters involving major problems. Guidelines include HQUSACE and Division regulations, policy and procedures for Civil, Military, Environmental, and Support for Others Program. Recommendations and conclusions by the incumbent are considered authoritative. Work is reviewed primarily in terms of the incumbent's effectiveness in accomplishing corporate goals and objectives. Performance is evaluated in terms of performance appraisal standards established by the Commander.

MAJOR DUTIES

As the Chief of the Construction Division, is responsible for management and technical control for all assigned District construction work programs and for technical layout and inspection of District hired labor construction. The Chief of Construction has an active role in the preparation of project study budgets and baseline cost estimates and schedules to assure that adequate funds are included for construction personnel to successfully accomplish their mission. Negotiates with the Deputy District Engineer for Project Management (DDE(PM)) on the preparation, schedule and execution of construction non-flat S&A rate. The program is characterized by a wide variety of major civil works; military works; environmental restoration; hazardous, toxic and radiological waste restoration; and work for others construction projects dispersed over a large geographical area (an entire state or portions of several states). Typically provides staff or directs supervision of the construction work program and staff at several area, resident and field offices. Manages a large construction division organization typically divided into several subordinate branches/area offices which are further subdivided into sections

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and units with each organizational segment having a separate supervisory organization chief. As a member of the Project Review Board (PRB) provides corporate leadership assuring construction product commitments are met in support of project execution. The work of the position requires the application of a highly developed professional knowledge of the theories and principles of civil engineering and technical construction management. Is accountable to the District Engineer through the DDEPM for all construction commitments documented in the Project Management Plans (PMPs).

1. Serves as the technical manager of the District multi-million dollar construction program for new construction and alteration of single and multiple purpose civil works water resource projects; military construction projects; environmental restoration; hazardous, toxic and radiological waste remediation; and work for others projects, throughout the area of jurisdiction. Provides expert technical construction engineering expertise, responsible for development and managing execution of the construction portion of project PMPs. When circumstances result in changes to the construction portion of the PMP, the Chief of Construction Division will coordinate changes with the DDEPM and the District Commander. The major projects involved are multi-purpose/facility, require several years or more to construct, are dispersed over a wide geographic area (typically a state or portions of several states); with different and critical geological/soils conditions and/or involve the installation of highly complex specialized structures/technical equipment.

a. Participates in the development and execution of the Districts operating budget on a ten-year basis. Plans for, requests and negotiates the acquisition of all necessary resources to support the organization and prepares input for budgets. Anticipates resource requirements (both in-house and contractor) and/or changes in organization or functional assignments necessary to accommodate projected work loads, and organizes or reorganizes the Division to meet those needs. Establishes overall priorities within which work is to be accomplished. Performs continuing review of construction activities to ensure that management objectives are being met. Continually evaluates the status of the District's construction programs through reports, program reviews and analyses, goals and objectives, and periodic discussions with the staff, DDEPM, and other operating officials. Takes corrective action as required by reformulating local guidance or otherwise redirecting staff efforts. Makes changes in those operations or recommends changes in objectives when problems are identified that have an adverse impact on mission accomplishment.

b. Implements laws, higher authority directives, policy, and develops local guidance. Establishes reporting procedures and priorities to ensure compliance with program directives and goals established by higher headquarters and/or project management in the PMPs. Coordinates the work of the Division with the DDEPM, other District elements, local sponsors, and other organizations and activities. Establishes and maintains cooperative relationships

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with higher headquarters, other operating officials, agencies, and political entities.

c. Manages and directs contract administration of all District construction contracts. Reviews and approves or modifies detailed program plans and recommends changes in construction designs, drawings, and specifications prior to contract awards. Recommends prequalification of bidders when authorized. Reviews bids, abstracts, and contractors dossiers and recommends the award of advertised construction contracts. Negotiates supplemental agreements as required and negotiates construction contracts as required. As representative of Contracting Officer on matters pertaining to multimillion dollar contractor claims, consults with and assists District counsel in proposing claim settlements, confers with contractor's representatives and lawyers, and appears before Board of Contract Appeals.

d. Assures adequate supervision and inspection to assure contract compliance and maximize schedule attainment. Directs adequate site inspections of major construction activities to insure adequacy of labor, equipment and supply, adherence to construction schedules and safety plans, and conformance of construction with plans, specifications, and acceptable construction practices. Reviews operations of field offices to determine general adequacy, efficiency, and adherence to criteria, policies, and instructions pertaining to the major aspects of construction. Issues instructions to correct deficiencies and improve efficiency.

2. Serves as consultant and technical advisor for the District in all matters pertaining to contract construction activities. Renders technical advice to the District Commander and staff in establishing policies, program objectives, and resolving problematical situations. Coordinates and recommends changes in overall plans, policies, and objectives based upon continuous observation and analysis of assigned functions to insure the successful and efficient accomplishment of the contract construction activities of the District. Coordinates construction activities with the District Commander through the DDEPM and staff elements of the District for the purpose of discussing such matters as methods of construction, establishment of construction contract completion periods, and design and construction problems noted during review of plans and specifications and occurring during construction. Conducts negotiations with contractors, when negotiations by Area Engineers and District staff have not succeeded, and recommends appropriate action to the District Commander. Acts as Chief negotiator or technical member of the negotiation team on contract modifications, and termination of contracts for the convenience of the Government. Keeps the District Commander through the DDEPM informed on the status of construction, particularly in the areas of problems encountered, adequacy of design and contractor performance, and contract claims and appeals. Serves as authorized representative of the Contracting Officer on all construction contracts to assure

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effective contract administration is accomplished.

3. Coordinates with the District staff and represents the District at meetings with officials from other Districts, higher echelons, contractors, and/or local, state and other Federal agencies, concerning current and long range construction programs, specific projects and changes thereto, and rendering advice and guidance on matters relating to construction problems. Similarly meets, confers with, and coordinates actions of visiting officials to successfully accomplish objectives(s) of visit.

4. Responsible for timely identification of actions required in the Construction function. Recommends personnel requirements and the allocation of manpower spaces. Develops organizational structures which provide for effective and economical accomplishment of the work. Analyzes the utilization of manpower in relation to requirements. Conducts periodic program review and analysis briefings to compare progress with objectives and established milestones. Identifies areas where slippage is occurring and determines required corrective action to bring specific programs in line with established schedules.

5. Develops long range organizational plans and through subordinate organizational chiefs, assigns work to subordinates, determining work schedules and priorities. Provides advice, counsel and instruction on work and administrative matters. Reviews and approves the full range of personnel actions recommended by subordinate supervisors. Selects, reassigns, establishes performance standards for, and appraises the performance of subordinate supervisors. Recommends performance based awards and bonuses for subordinate supervisors and other key officials in the Construction Division. Hears and resolves employee complaints, group grievances and more serious actions recommended by subordinate supervisors. Exercises position management responsibilities, assuring that subordinates' job descriptions are current and accurate. Designs and structures subordinate positions to insure optimum effectiveness, and economy according to position management policies and programs.

6. Assures that equal opportunity programs for minority groups, women, and disadvantaged persons are implemented and operational, and maintains responsibility for the accomplishment of all EEO goals and objectives in accordance with the policies of the DA and COE.

7. Supports District's readiness posture by developing and periodically updating emergency and mobilization plans for the assigned organization. Analyzes possible missions and prepares for the execution thereof through planning, training, and commitment of resources (i.e., alternate files, MOBTA, etc.). Supports the District's "first team" concept of making experienced, trained personnel available for critical emergency missions.

8. Performs other duties as assigned.

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Notes: The incumbent of this position is required to file a DD 1555, Statement of Affiliations and Financial Interest form. Registration as a professional engineer is a requirement factor for appointment to this position.

EC 5-1-48
24 Apr 92

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APPENDIX 5

CECG Memorandum from LTG Williams, dated 09 October 1992, Subject: Implementation of Project Management. Memo encloses ER 5-7-1 (FR), dated 30 September 1992, Subject: Program Management

In order to reduce the number of superfluous pages in this manuscript, the "appendices" at the end of each volume in this regulation (Appendix 5) has been intentionally omitted.



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

ER 5-7-1 (FR) (992)
S/O by ER 5-1-11
27 Feb 98

REPLY TO
ATTENTION OF:

CECG

9 OCT 1992

MEMORANDUM FOR All USACE Commands

SUBJECT: Implementation of Project Management

1. References:

- a. ER 5-7-1(FR), Project Management, 30 Sep 92.
- b. ER 5-7-1(FR), Project Management (Advance Copy), 1 Mar 91.
- c. CECG Memorandum, Implementation of Project Management, 25 Jun 92.
- d. EC 5-1-48, Implementation of Project Management, 24 Apr 92.
- e. CECG Memorandum, Implementation of Project Management, 25 Oct 91.
- f. CECS Memorandum, Division and District Programs and Project Management (PPM) Organizations, 5 Feb 90.

2. I am pleased to transmit Engineer Regulation 5-7-1(FR), Project Management to you for immediate implementation. You may reproduce the ER locally while awaiting distribution through normal channels.

3. This regulation contains the results of intensive efforts on the part of many individuals including yourselves over the past few years. In particular, our efforts especially within the past year have been exemplary. I want to personally thank you and your team members for helping us achieve our goal to promulgate a final regulation that will guide our project management efforts into the future.

4. We at the Headquarters are of one accord in our commitment to project management and we know that you are too. Most of you have made significant strides toward implementation of previous project management guidance referenced above. I know that you will waste no time in completely implementing the guidance contained in reference 1a. and future guidance as well. In that regard, enclosure 2 provides an update on the status of all tasks outlined in the HQUSACE PM Action Plan contained in reference 1e.

Encls

Arthur E. Williams
ARTHUR E. WILLIAMS
Lieutenant General, USA
Commanding

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

ER 5-7-1(FR)

CECW-L
CEMP-M
CEMP-R

Regulation
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Management
PROJECT MANAGEMENT

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

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30 September 1992

Management
PROJECT MANAGEMENT

VOLUME 1 - Project Management Policy and General Procedures

1. Purpose. This Engineer Regulation (ER) provides project management policy, guidance, and procedures for all projects assigned to the US Army Corps of Engineers (USACE), consistent with the USACE project management philosophy (reflected in Appendix 1-B, Implementation of Project Management). To streamline its use, this ER has been organized in five volumes as follows, with Volumes 2-5 being subordinate to Volume 1:

a. Volume 1. Project Management Policies and General Procedures

b. Volume 2. Project Management Policies and Procedures for the Civil Works Program

c. Volume 3. Project Management Policies and Procedures for Military and Support for Others Programs

d. Volume 4. Project Management Policies and Procedures for the Environmental Protection Agency (EPA) Superfund (SF) Program

e. Volume 5. Project Management Policies and Procedures for the Defense Environmental Restoration Projects (DERP) under the Defense Environmental Restoration Program, Base Realignment and Closure and Support for Other Customers

2. Applicability. This regulation applies to all HQUSACE/OCE elements, major subordinate commands (MSCs), districts, laboratories, and field operating activities (FOA).

3. References. See Appendix 1-A, References.

4. Objective. The objective of project management is to focus USACE leadership on the successful completion and delivery of quality projects to customers within established budget and schedule. The goals of the project management system are to:

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- a. Improve USACE management performance while addressing the concerns and expectations of our customers;
- b. Increase accountability for scope, quality, cost, budget, and schedule; and
- c. Improve project management continuity.

5. Policy.

a. Management Requirements. Projects and activities (hereinafter referred to as projects) described in Appendix 1-C, Project Definition, will be managed, planned, and executed under the project management system in accordance with this regulation. The following principles of project management shall be applied to the broadest possible base of USACE project and related activities.

(1) Projects undertaken by USACE will be executed under the leadership of a Project Manager (PM) who will be the primary point of contact with the customer, USACE, and external interests.

(2) The project will be managed according to a written Project Management Plan (PMP) that includes baseline cost and schedule estimates. The PMP will span project requirements such as real estate, planning, design, engineering studies, construction and other types of work, whether performed by USACE, customer or by contract. The PMP will be appropriately developed for the size and complexity of the project.

(3) The completion of quality projects within baseline schedules and costs is a fundamental objective of project management. Baseline schedules and cost estimates will be established early in the management process and will be a permanent part of the record under which project management is executed and evaluated.

(4) A schedule and cost estimate for the work will be one which identifies USACE, customer and contractor activities for the total project consistent with its work breakdown structure (WBS).

(5) Contingencies will be separately identified in the cost estimates.

(6) The District Commander, through the Deputy District Engineer for Programs and Project Management DDE(PPM), will be responsible for effective project management in the district.

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(7) The corporate leadership of USACE will be focused on project execution through Project Review Board (PRB) meetings at the district, MSC, and HQUSACE levels.

b. Management Personnel Requirements. A standard job description for the DDE(PPM)/Chief, PPMD has been developed. Performance standards for all key management personnel will be developed utilizing these job descriptions and relating to project execution, customer interface, scope, quality, budget, cost, performance, and schedules. Commanders will ensure that project execution related performance standards are included as critical elements in the evaluations of deputies, subordinate commanders and their directorate, division and staff chiefs to include project managers, technical managers and all members of the PRB. The performance standards and ratings will be part of the existing annual performance appraisal system for both military and civilian personnel.

6. Project Management Plan (PMP).

a. PMP Development. A PMP will be developed for each project. The PMP provides a common understanding between the customer and USACE district, MSC, and HQUSACE offices; reduces uncertainties; and provides a basis for managing and monitoring the project. The PMP is a contract between the PM and furnished elements to develop and deliver products in accordance with commitments made therein. The PMP will establish scope, schedule, budgets, interface with the customer and technical performance requirements for the management and control of the project. The PMP will provide performance measurement criteria including major milestones. The project schedule will be developed depicting interrelationships of tasks and activities, milestones, durations and costs. The assumptions associated with the baseline estimate will be included in the PMP. In addition, the PMP will document the USACE and customer commitments required for project development. The content and level of detail of the PMP evolve over the life of the project. Refer to appropriate programmatic volumes for additional guidance regarding the development of the PMP.

b. PMP Requirements.

(1) A PMP is a working-level document to be developed by the PM in conjunction with district functional elements and the customer. The PMP and/or revisions thereto are to be presented to the customer for endorsement and to the District PRB for approval.

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(2) The project scope must be defined in sufficient detail to allow the customer and district elements to establish parameters for the planning and execution of required tasks. The definition of project elements and design and quality parameters will be developed by the PM with the support of the district functional elements and in coordination with the customer.

(3) The schedule for the total project, including customer participation, USACE efforts, other government agencies, and architect/engineer and construction contracts, must be developed for each project and continually refined and adjusted throughout the life of the project. The schedule is to be prepared to the level of detail commensurate with the stage of development of the project and in sufficient detail to provide for the day-to-day management of the project. The breakdown of the schedule will be consistent with a WBS and will include appropriate document submittal, approval, and execution milestones, as applicable. For each project, a schedule is developed using a network analysis system (NAS) for management and analysis. The NAS will provide the capability to roll up individual phases and products into an overall schedule which depicts major milestones. See appropriate programmatic volumes for a list of required major milestones.

(4) The project cost estimates, both baseline and current, will be developed from the WBS. The WBS is a product-oriented hierarchy which breaks the project down into several levels of detail. Estimates will include contingencies based on the degree of uncertainty associated with the project and will be managed in accordance with the procedures in the programmatic volumes.

(a) The baseline cost estimate (BCE) is the total project cost estimate developed during the early stages of the project and fixed in the PMP to serve as the basis of measurement of district management efficiency and project performance.

(b) The current project cost estimate will be reviewed, maintained, updated, and approved in accordance with USACE regulations for cost estimates and procedures in the programmatic volumes of this regulation.

(5) Thresholds and approval levels for formal acquisition plans for construction projects/programs are established in Engineer Federal Acquisition Regulations Supplements. These acquisition plans are a part of the PMP and guidance for their preparation is provided in programmatic volumes and through USACE contracting elements. Regardless of project size, acquisition planning must be accomplished for all projects, and the PMP is the record of that planning.

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(6) Real Estate costs and schedules, if applicable, will be an integral part of the PMP. The PM will ensure that land acquisition schedules developed by Real Estate Divisions are incorporated in the network for the total project. The BCE will include real estate costs from the Real Estate Division at a level of accuracy and detail commensurate with the detail for other project features, with appropriate contingencies.

(7) The PMP will include a Value Engineering Plan (including funding) for all projects. Value Engineering (VE) definition, guidance and procedures are found in OMB Circular A-131, Value Engineering; and AR 5-4, DA Productivity Improvement Program. It is USACE policy to perform VE studies for projects and portions thereof with estimated construction cost estimates of \$2 million or more when cost effective. See programmatic volumes for additional guidance.

(8) The content and level of detail of the PMP evolve over the life of the project. The PMP will be a living document that records the past history of the project and depicts the planning for the future direction of project development and execution. The PMP will document all commitments, particularly those with higher authorities, necessary for project execution. Changes made to the PMP are to be endorsed by the customer and approved by the district PRB.

7. Management Control.

a. Cost Control.

(1) Project Cost Estimates. The baseline and current cost estimates contained in the PMP are components against which project success and district performance are measured. The current estimate will be maintained and adjusted throughout the life of the project and at milestones specified for each program. The cost estimate is composed of all costs to complete the work regardless of funding source or funds type including contingencies associated with each product.

(2) Contingencies. A contingency for each project is an allowance for uncertainty in project development. The prudent and judicious management of contingencies to accommodate uncertainty in the project is the shared responsibility of district and MSC management. Mechanisms for development and utilization of contingencies are presented in appropriate programmatic volumes.

(3) Changes to Current Project Cost Estimate. Although the USACE project management system is designed to minimize the

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instances when costs estimates must be increased, the current project cost estimate may require adjustments within the limits prescribed in the programmatic volumes. Increases in the total current cost of the project must be documented and accounted for in a formal manner. The source of cost growth, price inflation, time growth, changes to project scope, and errors or omissions must be reported in a timely fashion. Each project is subject to specific regulatory and statutory limits on cost growth. Project management and cost engineering requirements include the periodic and timely review, update and maintenance of the current project cost estimate and the processing of cost change requests.

b. Schedule Control.

(1) Network Development. The scheduling system must define individual activities of participating elements and allow for the analysis, adjustment, and summary of cost, time, and manpower. The scheduling system must have the capability to be readily revised, displayed and updated. The degree of development of the network must be commensurate with the stage of project development. The activities will be consistent with the project WBS and will provide all milestones for submittal, approval and execution. Most projects will require networks for individual products that may be rolled up into an overall project network.

(2) Major Milestones. The network for each project will contain major milestones described in each programmatic volume. These may represent initiation or completion of a critical activity and/or juncture in the development of the project which are of particular interest to the customer or higher authority.

(3) Changes to Project Schedule. The project schedule may be adjusted at the district level consistent with Appendix 1-D, Project Manager Control of Funds if the adjustments do not affect any major milestones. Formal requests to make changes to the schedule which affect major milestones must be coordinated with the customer and submitted for approval to higher authority. The programmatic volumes provide detail on changes and approvals.

c. Control of Funds. Appendix 1-D of this volume provides guidance for PM control of funds, and Appendix 1-E of this volume provides guidance for PM control of direct charges. Greater PM control of funds is essential for the following reasons:

(1) To enhance the PM's responsibility and authority for the overall management of the Project;

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(2) To monitor project performance to more effectively assure that funds are expended in accordance with the approved IPMP/PMP;

(3) To assure that all funds assigned are managed and controlled consistent with fiscal law and policies.

d. Contract Modifications. When a design or construction contract must be modified, the party initiating the modification must prepare an appropriate project Schedule and Cost Change Request (SACCR) for the project. Before the modification is issued it is subject to the availability of funds, coordination and assessment of impacts on cost and schedule, and obtaining the required approvals. Nothing in this regulation is intended to supersede or interfere with the authorities and responsibilities of either the Administrative Contracting Officer (ACO) or the Contracting Officer (KO), established in the Federal Acquisition Regulations (FAR) and supplements thereto. If the modification is within the ACO's authority, as defined in the Engineer Federal Acquisition Regulations Supplement (EFAR), the modification will follow normal district procedures. For modifications which are outside of the scope of the contract or exceed the ACO's authority and contingencies, the PM has the responsibility of ensuring that all required reviews have been obtained prior to final action by the Contracting Officer.

e. Quality Management. High standards of quality are essential in all aspects of project development, from planning, design, land acquisition, construction, and operations, to the establishment and conduct of relationships among all project participants. A quality product, delivered on time and within budget, is the result of understanding and support at all levels of management and staff. Among the most important duties of the PM are the determination of customer expectations regarding quality, the recording of those expectations and any subsequent understandings that evolve, and the tracking over the life of the project of any changes to quality. The PMP becomes the documentation and record of quality and agreements on changes to quality for architectural themes and treatments, facility and site integration and functional objectives of the project. Changes to quality may be made only with recognition and concurrence of the customer.

8. Project Management Roles and Responsibilities.

a. HOUSACE. The Directors of Civil Works and Military Programs have primary responsibility for assuring the successful accomplishment of project management objectives. Responsibilities

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of the Project Management and Environmental Restoration Divisions include:

- (1) Enhance the project management system to provide stronger project orientation. Improve project management continuity and accountability for scope, quality, cost, budget, and schedule. Work with HQUSACE functional chiefs to develop policies, procedures, guidance and training for a wide range of people--technical personnel, PMS, and customers in the project management system.
- (2) Serve as principal staff liaison with the Office of the Assistant Secretary of the Army (OASA) and customers on project management issues.
- (3) Expedite resolution of issues through functional channels on projects referred to HQUSACE, and work with functional elements to minimize impacts on schedules and budgets of affected projects.
- (4) Provide project-specific analysis to the HQUSACE PRBs and develop appropriate submittals to OASA, Office of the Secretary of Defense (OSD), and customers.
- (5) Develop and coordinate feedback from the HQUSACE PRBs to MSCs on project issues.
- (6) Conduct periodic reviews of MSC and district execution of project management and recommend necessary corrective actions as required.
- (7) Review and recommend to the Director approval/disapproval of all project schedules and costs presented to OASA, OSD, Office of Management and Budget (OMB), or Congress.

b. Major Subordinate Command (MSC). The MSC Commander, through the Director, Programs and Project Management Directorate (PPMD), has primary responsibility for assuring the successful accomplishment of programs and project management objectives within the MSC and for each district. The responsibilities of the Director, PPMD, or his designated representative include:

- (1) Act as the MSC point of contact in communicating with the HQUSACE Project Management and Environmental Restoration Divisions, DDE(PPM)s and PMS.
- (2) Receive, interpret, disseminate and implement programs and project management guidance, direction and correspondence from higher authority.

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(3) Conduct MSC PRBs, prepare minutes and the MSC Commander's Executive Summary (MSCCES) of the PRB meeting and transmit required reports and the MSCCES to HQUSACE. Provide comments and results of the MSC PRB to the district.

(4) Review and endorse annual budget submissions to the Congress and reprogramming documents for projects.

(5) Review and endorse/approve schedule or cost changes requiring MSC level approval or submission to HQUSACE.

(6) Support districts in their delivery of the project by facilitating various project products through the MSC.

(7) Conduct periodic field reviews of district execution of programs and project management and take necessary corrective actions as required.

(8) Establish and be responsible for inter-district/inter-MSC project management continuity for those projects in the MSC affected by this project management mechanism. See paragraph 8e below for additional detail.

c. District. The District Commander, through the DDE(PPM), who is also the Chief, Programs and Project Management Division, has primary responsibility for assuring the successful accomplishment of project management objectives in the district. The functions of the Programs and Project Management Division will be included in ER 10-1-3. The roles and responsibilities of the DDE(PPM) and district functional chiefs are described in Appendix 1-F. Additionally, figure 1-B-1, District Project Management Approach, illustrates working relationships of project management at the district level.

d. Project Manager. Responsibility for managing the project parameters (cost, budget, schedule, scope and quality), as well as interfacing with those involved in the project process (customers, functional elements, government and non-government entities), is vested in an individual. This individual is designated by the DDE(PPM) as the PM for the assigned undertaking. Projects will be assigned to a PM by the DDE(PPM) to ensure early involvement in the project. Although the technical elements, through the technical managers (TMs), are responsible for the content and quality of technical products, the PM has the responsibility and the authority to challenge technical issues, when necessary. The roles and responsibilities of the PM are described in Appendix 1-G.

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e. Inter-district/Inter-MSD Project Management Continuity.

Instances may arise for the accomplishment of certain projects wherein responsibility is shared by more than one district or more than one MSD. In these cases, the process of inter-district/inter-MSD project management continuity will be applied. The basic objectives and goals of project management, explained in other parts of this regulation, shall be protected. The PM and other permanent project team members, in both district and MSD offices, must be identified early in the process and must participate fully in the project development and execution. For Superfund, DERP, or Base Realignment and Closure (BRAC) Environmental Restoration Projects with shared responsibilities between districts, the PM will reside in the designated Hazardous, Toxic, and Radioactive Waste (HTRW) Design District or Environmental Support District. For Civil Works (CW) projects, the PM will be in the CW geographic district. For HTRW Support for Others/International Activities (SFO/IA), the PM designation shall be in accordance with the signed Memorandum of Understanding or Interagency Agreement. Conditions for the application of this project management mechanism, the approvals required, and the administration and control of the process, are explained in the appropriate programmatic volumes.

f. PM/TM Team.

The technical elements through the TM are responsible for the content and quality of technical products. The PM has the responsibility and authority to challenge technical issues when necessary. TMs, working under the supervision of functional chiefs, are responsible for development of these products. While the TM serves on the project team, the majority of his or her time is spent on technical product development. In coordination with the PM, the TM (via ACO/Contracting Officers Representative (COR) authority) is the primary district contact with supporting contractors, and the ACO is the contact for contract administration. However, the PM, working under the DDE(PPM), has overall responsibility for project schedule and cost and provides overall leadership in project implementation. The functional division chief will be held accountable to the District Commander, through the DDE(PPM), for product delivery commitments. The roles and responsibilities of the functional chiefs are described in Appendix 1-F. The roles and responsibilities of the TMs are described in Appendix 1-G.

g. Customer.

The customer, in partnership with USACE, has many roles and responsibilities which are generally defined in the programmatic volumes. These roles and responsibilities may be expressed in the form of a Memorandum of Agreement, Project Cooperation Agreement/Local Cooperation Agreement (PCA/LCA), Memorandum of Understanding, or in a Department of Defense

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Directive which designates USACE as the design and construction agent for various programs. USACE has a professional responsibility to each customer to provide an introduction, orientation, and understanding of project management and how it affects the customer. USACE, primarily through the district PM, is to provide to the customer:

- a. Documentation in the PMP of customer expectations through the description of basic project parameters such as scope, quality, cost, budget, and schedule. The PMP will be endorsed by the customer as prescribed in the programmatic volumes of this regulation.
- b. Full disclosure of activities and specific understandings and access to the various boards and meetings in which the customer may participate.
- c. Explanation of the customer's responsibilities in the process so that there is clear understanding among all parties of what is required and what the impacts will be if the customer's responsibilities either are not fulfilled or are not fulfilled in a timely manner.
- d. Consistent, fair, reasonable and timely responses and decisions in the project process irrespective of the USACE activity or individual responding.
- e. Fiscal and financial information for the project, either monthly or as needed by the customer, consistent with public law, regulation and good business practice.
- f. Support of the customer as the project or program proponent in achieving approvals and making changes to the project within USACE abilities as prescribed by statute, regulation and professional ethics.
- g. Quality in service and products while maintaining the budget and schedule for the project(s).

10. Management Reviews.

- a. General. To facilitate senior management oversight and coordination, PRB meetings will be held at the district, MSC and HQUSACE levels. Districts will hold monthly PRB meetings. MSCs are required to hold PRB meetings in the month preceding HQUSACE PRB meetings. In the month of a HQUSACE PRB meeting, the MSC PRB meeting will be held at the MSC Commander's discretion. HQUSACE PRB meetings will be held six times a year on a bimonthly basis. HQUSACE, MSC and district offices will charter their respective

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PRBs to prescribe their compositions, roles and responsibilities. Meetings at the district level will be open to customers. Schedules will be established by District and MSC Commanders (subject to the specific procedures described in the appropriate programmatic volumes) and for HQUSACE by the appropriate Director. The schedules, which in most cases will involve projects from various programs, should be designed to make full use of results presented at a single PRB session.

b. HQUSACE Review. The HQUSACE PRB will be chaired by the Director or designee, and include the functional chiefs whose functions are integral to the USACE role in the projects covered during a single PRB session (see appropriate programmatic volumes for additional guidance). The HQUSACE PRB will:

- (1) Review and evaluate the status of projects submitted by MSCs, annotate the project management reports, and provide appropriate feedback to MSCs.
- (2) Facilitate resolution of major project issues, concerns, or problems through functional channels.
- (3) Evaluate each MSC's performance with regard to project management and provide feedback as required.
- (4) Make recommendations to the Director regarding project cost increases and schedule changes appropriate for the program as established in the programmatic volumes.

c. Major Subordinate Command Review. The MSC Commander or designee will chair the PRB. The PRB will include the directors of the functional elements whose functions are integral to the USACE role during a single PRB session (see the appropriate programmatic volumes for additional guidance). The MSC PRB will:

- (1) Recommend to the MSC Commander which projects require special MSC attention.
- (2) Review and evaluate the status of projects for compliance with PMPs and provide comments on the district project management reports.
- (3) Facilitate resolution or elevate to the MSC Commander or higher authority major project issues, concerns, or problems.
- (4) Develop measurable performance indicators for use in evaluating district project management effectiveness.

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(5) Maintain focus on specific actions and provide guidance to accelerate their resolution and reduce the cost of projects.

(6) Evaluate the districts' project management performance and provide feedback to the districts.

(7) Monitor the adequacy of project contingencies and cost of known changes against the approved project cost estimate.

(8) Take action on SACCRs in accordance with the authority limitations as defined in the programmatic volumes.

d. District Review. The District Commander or designee will chair the PRB. The PRB will include the functional chiefs of the divisions and offices whose functions are integral to the USACE role in the projects covered during a single PRB session (see the appropriate programmatic volumes for further guidance). The district PRB will:

(1) Review and approve the PMPs.

(2) Review and evaluate project execution and management for compliance with PMPs and annotate project management reports. The PRB will identify actions required to resolve major project issues, concerns or problems.

(3) Take action on SACCRs in accordance with the approval authority limitations as defined in the programmatic volumes and monitor utilization of contingencies.

(4) Evaluate the district's performance on projects and provide status to the District Commander and feedback to PMs and designated team members on project management performance.

(5) Identify quality, scope, cost, budget, and schedule trends in projects and recommend additional manpower, organization change, or other actions to minimize adverse impacts.

II. Management Reports.

a. General. The project management reports serve to focus attention of the USACE management on project delivery and the activities necessary to complete the project within specified scope, cost and time constraints. Along with the project network, the reports represent a summation of the data necessary to: assess the status of project activities, identify trends and issues, forecast changes to project schedule and cost, and monitor the accomplishment of project objectives. The reports

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will be used in conjunction with the networks for managing and monitoring projects. More detailed guidance is contained in the appropriate programmatic volumes.

b. Report Description. PMs are responsible for the timely preparation, submission, accuracy and validity of data contained in the project management reports.

(1) Project Schedule and Cost Change Request (SACCR). A SACCR will be initiated by the district element which first recognizes the need for change. Changes will in some cases be originated by the customer. The initiator provides the request to the PM for approval of impact assessment, evaluation of project impacts, coordination with the customer, and action by the appropriate district element(s).

(2) Project Executive Summary (PES). The PES provides an overview of project status to senior management at district, MSC and HQUSACE. It serves to structure and focus the review process and to provide indicators of trends, issues, and progress in a clear, concise format. This report is prepared by the PM, reviewed by the district PRB, and transmitted to the MSC through the Life Cycle Project Management Reporting System (LRS). It may not be modified. It may be annotated only by a PRB approved comment to the report. PESs are to be discussed with and made available to the customer on a regular basis.

(3) MSC Commander's Executive Summary (MSCCES). The MSCCES is a standard format for summarizing the significant discussions at MSC PRB meetings. The format for the MSCCES is included in the programmatic volumes. It will highlight issues for those projects of special interest and requiring higher level attention, indicate what actions will be taken at the reporting level to resolve any issues or problems, and indicate what actions may be required at higher levels.

c. Report Submission and Review.

(1) The DDE(PPM) will submit PESs through LRS or similar system to the MSC for review. The MSC will submit to HQUSACE, at a minimum, reports identified in the programmatic volumes, and projects designated by the MSC or HQUSACE.

(2) The MSCCES will accompany each submission of selected PESs from the MSC to HQUSACE. The HQUSACE PRB will review the reports and provide guidance and comments.

(3) HQUSACE may also conduct a formal line item review or require submission of detailed reports for specific projects.

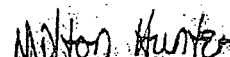
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(4) Selected reports will be submitted to OASA on a periodic basis.

(5) The Chief of Engineers will be provided summary reports on a periodic basis for review and comment.

12. Internal Management Control of Project Management. Each project management organization will establish sufficient internal management controls to ensure that all functions are conducted in a cost-efficient manner in accordance with the requirements of this regulation. The Internal Management Control Review Checklist for project management of USACE projects is included as Appendix 1-H. This checklist will be used in establishing local internal management control programs. Completion of the checklist is mandatory on a 5-year cycle as published in the annual Army Management Control Plan.

FOR THE COMMANDER:


MILTON HUNTER
Colonel, Corps of Engineers
Chief of Staff

8 Appendices

- APP A - References
- APP B - Memorandum: CECG, 25 Oct 1991, subject: Implementation of Project Management
- APP C - Project Definition
- APP D - Project Manager Control of Funds
- APP E - Project Manager Control of Direct Charges
- APP F - Checklist of Roles and Responsibilities Deputy District Engineer for Programs and Project Management DDE(PPM) and Functional Chiefs
- APP G - Checklist of Roles and Responsibilities Project Manager (PM) and Technical Manager (TM)
- APP H - Internal Management Control Review Checklist

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Management
PROJECT MANAGEMENT

VOLUME 2 - Project Management Policy and Procedures for the Civil Works Program.

1. Purpose. This Volume of Engineer Regulation 5-7-1(FR) provides project management policy, guidance, and procedures for all projects assigned to the US Army Corps of Engineers (USACE) for Civil Works, consistent with the USACE project management philosophy (reflected in Appendix 1-B, Implementation of Project Management). To streamline its use, this ER has been organized in five volumes as follows, with Volumes 2-5 being subordinate to Volume 1:

a. Volume 1. Project Management Policies and General Procedures

b. Volume 2. Project Management Policies and Procedures for the Civil Works Program

c. Volume 3. Project Management Policies and Procedures for Military and Support for Others Programs

d. Volume 4. Project Management Policies and Procedures for the Environmental Protection Agency (EPA) Superfund Program

e. Volume 5. Project Management Policies and Procedures for the Defense Environmental Restoration Projects (DERP) under the Defense Environmental Restoration Program, Base Realignment and Closure and Support for Other Customers

2. Defining the Civil Works Program. All projects and activities (hereinafter referred to as projects--see Appendix 1-C, Project Definition) that are assigned to Civil Works for execution are to be managed in accordance with the project management procedures of Volume 1 and specific procedures of Volume 2 of this regulation. Through project management, the US Army Corps of Engineers (USACE) will provide a unity of control of quality, scope, schedule, budget and costs for its projects from inception to turn-over and operation.

3. Organizational Roles and Responsibilities for Civil Works Projects.

a. Headquarters (HQUSACE). The Director of Civil Works, through the Project Management Division, has responsibility for ensuring the successful accomplishment of project management

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objectives. HQUSACE responsibilities for project management are specified in Volume 1, paragraph 8a. Further responsibilities related to the Civil Works Program include:

- (1) Enhance training for staff involved in project management including the staff of functional/technical elements as well as in programs and project management organizations.
- (2) Ensure projects are managed utilizing project management principles.
- (3) Ensure data consistency between project management and other management reports.

b. Major Subordinate Command (MSC). Roles and responsibilities of the Programs and Project Management Directorate at the MSC level are specified in Volume 1, paragraph 8b.

c. District. Roles and responsibilities of the Programs and Project Management Division at the USACE district level are specified in Volume 1, paragraph 8c. Additional requirements of the Deputy District Engineer for Programs and Project Management (DDE(PPM)) in Civil Works include:

- (1) Meet the requirements of Volume 1, paragraph 9, Customer, as it relates to the overall program and ensure that each Project Manager (PM) meets these requirements as they relate to individual projects.
- (2) Ensure that schedules include the use of concurrent reviews where practical to facilitate the review process.

d. Inter-district/Inter-MSC Project Management Continuity. There may be instances when accomplishment of a project will be the shared responsibility of more than one district or more than one MSC. In these instances, a management arrangement will be made between districts or MSCs to accomplish the mission. Permanent, predesignated, and approved team members with a single PM or leader will be established. The PM will execute the required activities in accordance with the Initial Project Management Plan (IPMP) or Project Management Plan (PMP) for the project. A Memorandum of Agreement (MOA) clarifying the roles, responsibilities, accountability and products may be necessary to augment the PMP. Approval of the Director of Civil Works is required for the use of inter-district/inter-MSC project management continuity on a Civil Works undertaking when two or more MSCs are involved. Requests for such approval shall be made to HQUSACE, ATTN: CECW-L, accompanied by the background, reasons

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for the requirement and the proposed management control in the form of the IPMP/PMP including an MOA as appropriate. The objectives of project management as stated in other paragraphs of this regulation will be followed. Contracting of products to another district within the same MSC or similar actions often referred to as "brokering" is governed by other guidance and is not precluded by this regulation.

4. Customer.

a. Definition. In Civil Works the terms sponsor, non-Federal sponsor, local interests, customer, and partner are used to identify the people and organizations with whom USACE is joined in a shared study or project. Accordingly, the term partner is generally used throughout this volume in place of the term "customer" used in the generic context of Volume 1. In some instances however, the term "sponsor" is used for consistency with certain agreements or documents which use the term sponsor to identify the non-Federal partner.

b. Roles and Responsibilities. The partner is a full participant in the planning, design, land acquisition, utility and facility relocations, and construction of all cost-shared Civil Works projects. As such, the partner is to be afforded the opportunity to participate in all aspects of the project. Specifically, the partner should be made a full member of the study or project implementation team; participate in and sign the IPMP and PMP; be notified of and encouraged to attend all district Project Review Boards (PRBs) and participate in and approve the schedule for planning, design, land acquisition, and utility and facility relocations and construction; and mutually agree with the District Commander when a feature of a project is completed and is to be turned over to the partner for operation, maintenance, repair, replacement and rehabilitation (OMRR&R).

5. Project Manager (PM) and Technical Manager (TM). The PM, working under direction of the DDE(PPM), has overall responsibility for project--scope, quality, schedule, budget and cost. The PM provides overall leadership for the planning, design, construction and initial operation of the project. The PM's responsibility for integration of the study and project budget, cost, schedule, scope, and partner interface starts during the reconnaissance stage and extends through feasibility, design, land acquisition, utility and facility relocations construction, and into project operation. Projects will be assigned to the PM by the DDE(PPM). The assigned individual will retain project management responsibilities for that project through all phases of development as long as there is USACE involvement. While the district elements through the TMs retain

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responsibility for the development of their individual products, the PM is the leader and point of contact for the life of the project. The duties of the PM and TM include those defined in Appendix 1-F of this regulation and the following:

a. Relationship of PM and Cost Engineer. The cost engineer is an important member of the project management team upon whom the PM depends for a well documented construction cost estimate through the life cycle of the project as well as input to the construction schedule. The estimate and schedule with design assumptions are major tools of project management. The PM has responsibility to ensure that the cost engineer is provided with the most current project information for assembling and updating cost estimates including scope and schedules. The cost engineer is responsible for preparing a constant dollar price level project cost estimate that includes all features of the project. The PM is then responsible for ensuring that the constant dollar estimate is escalated for inflation through construction establishing the fully funded total project cost estimate. See Appendix 2-B, Cost Engineering.

b. Relationship of PM and Operations Functions. The PM must ensure that an assessment of future OMRR&R of features and facilities provided in the assigned project is included in the PMP and other project documents. This assessment is to include the scope and projected cost of future OMRR&R (operations, maintenance, replacement, repair, & rehabilitation) work directly associated with the features and facilities of the constructed project. The PM must also ensure that the plan developed with the partner for financing construction of the project recognizes the future OMRR&R responsibilities of the partner. The PM must ensure that the operations function provides information relevant to the OMRR&R of the assigned projects.

c. Project Cost Sharing. The PM is the primary point of contact for the partner. The PM, in coordination with the Resource Management Office, has the responsibility to ensure accountability of the local share of project costs, that they are documented on a timely basis in the district's finance and accounting system, and that the partner's contributions are provided to the government in accordance with the Project Cooperation Agreement/Local Cooperation Agreement (PCA/LCA). ER 1165-2-131, Local Cooperation Agreements for New Start Construction Projects, contains procedures and responsibilities for specifically authorized new construction starts. The PM, in conjunction with the TMs and separate offices, as appropriate, must ensure that specific procedures are in place between the district and the partner to achieve the following:

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(1) Value the lands, easements, rights-of-way, relocations and disposal areas (LERRD) that are eligible for credit and to provide appropriate credit therefor;

(2) value the authorized work-in-kind that are eligible for credit and to provide appropriate credit therefor;

(3) conduct routine monitoring of partner's financial participation and evaluation of eligible credits and cost-related items, including contract costs, engineering and design (E&D), supervision and administration (S&A), LERRD, and authorized work-in-kind;

(4) periodically recompute and validate credits and cost-related items not yet validated and approved;

(5) assure that both estimated and approved credits and cost-related items are appropriately entered into the finance and accounting system and periodically reconcile the records of the PM, partner, Real Estate and Resource Management Offices with respect to credits and cost-related items;

(6) assure that partners provide their cash contribution for all fiscal years of construction in accordance with the PCA/LCA;

(7) assure that the partner's share of costs for Continuation of Planning and Engineering studies (CP&E) obligated after 1 October 1985, and all advance engineering and design (AE&D) and preconstruction engineering and design (PED) costs are recovered in the first fiscal year of construction and that any shortfalls of cash that develop are remedied promptly in accordance with the PCA/LCA. (Reference the "Annual Program and Budget Request for Civil Works Activities");

(8) assure that partner provides the funds in advance for work to be accomplished by the Corps of Engineers that is outside the scope of project construction but is to be accomplished under the terms of an PCA/LCA in conjunction with project construction;

(9) annually report on compliance with financing and cost sharing policies through the PRB;

(10) provide, at least quarterly, statements to the partner of actual and anticipated expenditures for the period of construction. (Section 10 of Public Law 100-676, the Water Resources Development Act of 1988, directs at least semi-annual statements); and

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(11) ensure early identification and resolution of outstanding policy, technical, and partner issues as they arise in order to avoid potential conflicts in the partner's understanding of cost sharing requirements.

6. Project Management Plan (PMP).

a. General. A PMP is developed for all projects managed under the project management system at a level of detail commensurate with the size and complexity of the work to be performed for the project. The PMP is developed in two distinct stages. The first stage covers the products from completion of a reconnaissance level study through completion of a feasibility level study and culminating with an authorization to accomplish the project. An initial PMP (IPMP) is used to plan, define, and control the development and delivery of the products of this first stage. The second stage covers the products following project authorization and continuing through engineering, land acquisition, utility and facility relocations, design, construction and an initial warranty period until the project is turned over to the partner for OMRR&R, as required. A PMP is used to plan, define, and control the development and delivery of the products of this second stage. The PM will assure that the IPMP and PMP address the roles, responsibilities, rights, obligations and level of participation of the USACE, customer and other parties during all phases of a project. The PMP is further discussed in the paragraphs that follow and in Appendix 2-A of this regulation. IPMP/PMP development is also discussed in Appendix 2-A for: (1) current projects; (2) projects developed prior to September 1989 and any others which did not have a IPMP or which did not result in a Feasibility Report with Engineering Appendix; and (3) Major Rehabilitation projects.

b. The IPMP. The IPMP is developed by the planning TM in coordination with the PM other TMs, and the partner during the Reconnaissance Phase of a study. The IPMP will cover studies through completion of the feasibility study and culminate with issuance of the Chief of Engineers report and authorization of the project. The IPMP will be presented to the customer for endorsement and to the district PRB for approval. The PM will be the primary point of contact with the partner and will be responsible for presenting the completed IPMP to the partner for endorsement and to the PRB for approval. The approved IPMP is used to develop the Feasibility Cost Sharing Agreement (FCSA) but will not be appended to the FCSA. All projects that proceed into feasibility or a similar formulation process (i.e. General Reevaluation), including those studies which are not cost shared, will have an IPMP. For General Reevaluation studies, the IPMP is limited to that work required to complete the General

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Reevaluation Report (GRR). The IPMP will be revised as necessary in response to higher authority comments on the FCSA following coordination with and endorsement by the partner. Changes to the IPMP will be endorsed by the partner and approved by the district PRB.

(1) The IPMP will be used by the PM, TMs, and the partner to ensure that the work required to be performed in the Feasibility Phase has been carefully developed and considered. The IPMP will include a baseline estimate of total study costs, including identification of all non-Federal costs and activities to be performed by the partner. The IPMP will also include a Work Breakdown Structure (WBS) for the study phase, compiled into a network which can be used as the basis for assigning tasks within USACE and to the partner, as well as for establishing the value of in-kind services from the partner. As explained in paragraph 5a(3), the IPMP must include a mechanism which allows the PM to measure the progress and performance of all study efforts.

(2) The IPMP must address the efforts needed to complete the Feasibility Study, including:

(a) The WBS and associated work tasks and their milestones, costs, and assignment of responsibilities for accomplishment.

(b) USACE and other criteria required to assess the adequacy of the completed work effort and to ensure that the study conforms to all existing Federal policies.

(c) Procedures for reviewing and accepting work of all parties.

(d) Schedule of performance as represented in the network.

(e) Coordination mechanism between all parties.

(f) References to statutes, regulations, and other guidance needed to conduct the work.

(g) An allowance for the partner's participation in reviews, including Washington level.

(3) Following completion of the study schedule and budget in the IPMP, the PM's focus turns to comparing actual schedule and cost performance to the schedule and cost estimate. Based upon the actual performance measurements, which must be available to the PM at a minimum, on a bi-weekly basis, the PM develops

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statistical performance measurements using the earned value analysis and estimates the cost at completion and date of completion. Changes may be made to the IPMP in conjunction with the partner, the planning TM, and the technical elements but must be approved by the PM and the district PRB. Significant changes to the IPMP may require a formal change request (see Paragraph 6a(3) and modification of the FCSA. The planning TM will be responsible for the preparation of the FCSA in coordination with the PM. The PM will lead the district in negotiation of the FCSA with the partner and any modifications thereto.

(4) The PM is involved with the substantive technical development of the study in scoping the work packages, analyzing proposed scope changes, and in insuring that the deliverables of each work package fulfill the commitments. Responsibility for the technical products and the methods of production are with the TMs and the technical organizations.

c. The PMP.

(1) The focus of the feasibility phase (reformulation phase in the case of General Reevaluation) is to produce a package that includes a Feasibility Report (or GRR), with an Engineering Appendix, a Real Estate Plan, and accompanying EIS or EA/FONSI. This package, coupled with a Microcomputer Aided Cost Engineering System (MCACES) cost estimate and PMP comprise an attainable commitment to the partner, the administration and the Congress as to project scope, schedules, and costs.

(2) The scope of the PMP is developed for all projects under the project management system. The PMP covers products and activities to be accomplished that follow project authorization. Twenty-three (23) elements have been identified which have a significant impact on cost, schedule, and quality of projects. All of these elements must be addressed in the PMP for each project proceeding beyond the feasibility phase of study. These elements are explained in Appendix 2-A, Guidelines for Project Management Plans. A PMP is prepared for projects undergoing reevaluation (culminating in a GRR) that results in a recommendation of Federal participation. The PMP should address the remainder of PED, construction and initial warranty period prior to turning the project over to the local sponsor for OMRR&R, as required. A PMP will not be prepared if Federal participation in the project is not recommended.

(3) Development of the PMP for the project is initiated by the PM during the latter stages of the feasibility (or General Reevaluation) phase of study. It should reaffirm the basic assumptions made in the IPMP and be consistent with the scope of

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the project described in the Feasibility Report with an Engineering Appendix and a Real Estate Plan. It should also reflect the technical findings of the feasibility phase of study and the rationale for proceeding with engineering activities and technical studies therein described.

(4) The PMP is to be developed by the PM in coordination with the TMs and the partner. The partner will endorse the PMP and the district PRB will approve it. The PMP is a district management tool and as such will be retained at the district. The PM, in consultation with the TMs and the partner, will be responsible for future revisions to the PMP. The PM will obtain endorsement and subsequent approvals of the revised PMP from the partner and the district PRB, respectively.

7. Management Control. Each product of the project is the responsibility of the functional area to which it is assigned. Civil Works projects are managed by the PM through use of the PMP.

a. Cost Control.

(1) Civil Works Project Cost Estimates: The approved method of cost estimating for Civil Works projects is the MCACES. The system is an integrated software and database package that structures the estimate in a common WBS. Guidance for specific application for MCACES is contained in separate USACE publications. No Civil Works project will be proposed for authorization or budgeting as a construction new start unless the cost estimate is in the MCACES form. Refer to Appendix 2-8, Cost Engineering, for additional definitions and procedures.

(2) Contingencies. Each study or project cost estimate contains a contingency that will be utilized during the life cycle of the project. Contingencies must be managed, monitored, and documented in sufficient detail to be audited. Contingencies are an allowance to cover unknowns that are not possible to adequately evaluate from the data on hand at the time the estimate is prepared, but must be represented in a sufficient amount to cover the identified risks. Once a baseline cost estimate (BCE) has been established, contingencies associated with the construction features will not be used during PED to support shortfalls in lands and damages, engineering and design or anticipated changes to construction management until the design is refined and/or completed for features or portions of features previously identified to have high risks and uncertainties. For multiple contract projects this philosophy will be continued into the construction phase of the project. In either case any release of the construction feature contingencies

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requires an updated construction feature cost estimate as the supporting document. In the opposite sense, contingencies should not be continually maintained at a high level as work is completed and previously identified risks are reduced. The prudent and judicious management of these contingencies is an MSC and district responsibility: contingencies must be utilized in the appropriate manner. At construction contract award, a minimum contingency allowance of five percent of the contract amount of each contract award must be available for potential construction changes. In the event that construction contingencies are depleted below an acceptable level, a new project cost estimate with contingencies sufficient to complete the project must be developed and submitted through the PRB process to the Director of Civil Works for approval. Refer to Table 2-1, Project Contingency Change Approval.

(3) Cost Estimate Changes.

(a) Feasibility Cost Changes for Cost Shared Studies. The BCE for a cost shared feasibility effort is established in the Feasibility Study Cost Sharing Agreement (FCSA). The FCSA may have provisions to facilitate changes to the feasibility cost up to a limit, also provided for in the FCSA, which is mutually agreed to by both the district and the partner. Requests for increases to the FCSA estimate for Feasibility Studies must be submitted to the MSC for approval. Requests are to be submitted on the Schedule and Cost Change Requests (SACCR) explained in Appendix 2-C of this regulation.

(b) Feasibility Cost Changes for Non-Cost Shared Studies. The BCE for a non-cost shared feasibility effort is established in the approved Reconnaissance Report. Any increase in the cost estimate of a non-cost shared feasibility study must be submitted to the Director of Civil Works for processing for approval from the ASA(CW). Requests are to be coordinated with the sponsor and submitted to HQUSACE, ATTN: CECW-L, through the MSC Program and Project Management Directorate on the SACCR form explained in Appendix 2-C of this regulation.

(c) Continuing Authorities Cost Changes. Requests for increases in cost over the approved BCE must be submitted to the MSC for approval.

(d) Project Cost Changes. The PM is authorized to adjust the project contingencies and feature and subfeature costs within limits based on the size of the project, and the cumulative percentage of contingency used as long as there is no associated increase in total project cost. Districts and MSCs have authority to make greater changes in contingencies and feature

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and subfeature costs, but within the same total project cost increase restrictions. All changes require the SACCR form to be processed. Once the BCE is established, changes which result in total project costs (including contingencies) exceeding the current approved estimate require specific approval of the MSC. Requests for specific approval to increase the project cost must be made by the PM using a SACCR supported by an approved decision document such as a design memorandum, revised cost estimate, reevaluation report, or post authorization change report and submitted to the MSC for approval. For those projects whose cost estimates require revision but no specific decision document has been developed, a SACCR with specific backup information to permit reasonable and prudent assessment will be required. When the construction feature costs are increased, a new MCACES summary sheet to the feature level will be submitted with the SACCR. In all cases, the SACCR will also be accompanied by a Project Executive Summary (PES) in which the forecast cost estimate and/or forecast schedule match the SACCR data, along with a signed Total Project Cost Summary Sheet (see Appendix 2-B of this regulation).

(e) PMs shall establish and maintain a centralized project cost history for each project for audit purposes and for cost estimating of future projects.

b. Schedule Control. The PM is responsible for ensuring the development, revision, and adherence to the schedule and the associated networks required by this regulation. All projects subject to project management procedures must be scheduled using a Network Analysis System (NAS). Real Estate activities must be an integral part of any schedule and network. The schedule and the cost estimate for any project are interdependent and the one can not be adjusted without a reexamination of the other. While the choice of software used to produce the network is not restricted by regulation, the software must have the capability to analyze, summarize and adjust the basic parameters including cost, time, and manpower. The system must be capable of being easily revised and displayed and must be compatible with the automated reporting requirements.

(1) Network development.

(a) Feasibility. The network will be developed in cooperation with the partner and all TMs. The conditions of the FCSA and the participation of the partner are critical components of the network since the feasibility study, with few exceptions, is a cost-shared activity. The level of detail of the alternative plan evaluation and the scope of detailed studies historically achieved after completion of feasibility, but

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executed during feasibility to reduce uncertainties, must also be included in the network development.

(b) Project. Using the network developed as part of the PMP in the feasibility phase adjusted for post study actions, the PM, in conjunction with the TMs, will ensure the continued development of the project. It is the PM's responsibility to ensure the approval and validity of the network at all times in the life cycle of the project, i.e., during design, land acquisition, utility and facility relocations, construction, and operation, as needed. Networks are developed by contractors for separate construction award packages; these must be integrated into the total project network.

(2) Major Milestones. Table 2-D-1 is a list of major milestones to be used for projects. The PM is to ensure that the progress of the project is in accordance with the approved schedules and networks. During the development of the IPMP, and continuing through the development of the PMP, major milestones will be associated with a percentage of project completion and will be defined in the PMP. These percentages will be based on the PM's assessment of that milestone and its relative importance to the overall completion of the project. These percentages will be used by the PM to assess the physical progress of the work and to prepare the required management reports.

(3) Schedule Changes.

(a) Feasibility Schedule Changes. The baseline feasibility schedule is established in the FCSA for a cost shared feasibility effort, and in the approved reconnaissance report for a non-cost shared feasibility effort. Requests for changes to the baseline schedule or requests for changes to the date of the MSC Commander's Notice, must be submitted to the MSC for approval.

(b) Continuing Authorities Schedule Changes. Requests for changes in baseline schedule duration must be submitted to the MSC for approval.

(c) Project Schedule Changes. The PM is authorized to revise project schedules that do not impact the major milestones specified in Appendix 2-D, Table 2-D-1. Changes to the milestones of Table 2-D-1 must be referred through the district PRB to the MSC PRB for action and approval. Changes that affect the completion dates of PED or project completion for budgeted projects beyond the completion dates of the current approved estimate must be submitted to the MSC with a SACCR. Changes that affect the completion dates of PED or construction for budgeted projects beyond the completion dates in the current approved

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estimate may not be forwarded to Congress unless the changes have been formally submitted in advance to the MSC for approval.

c. Control of Funds. The PM will manage, analyze, assign and control all project and study costs and budgets in accordance with the approved IPMP or PMP. Volume 1, Appendix 1-D contains guidance for PM control of funds; and Volume 1, Appendix 1-E provides guidance for PM control of direct charges.

d. Current Benefits Control. An element of the PMP, the Current Benefits Plan, is provided as an aid for the PM to incorporate the periodic review and updating of project benefits into the project management framework. The PM is responsible for ensuring that the project benefits are updated to meet current requirements. The actual updating of project benefits is the responsibility of, and a product of, the Planning Division. However, the PM must ensure that this element of the PMP, as all the elements of the PMP, is maintained in the most current status. Project benefits should be treated in the same manner as project costs in that indexing is not an acceptable method of updating. Budgetary and PCA/LCA guidelines require that a current estimate of project benefits be approved for supporting budgetary and new construction start decisions. An estimate of benefits is not considered current if more than two years have elapsed since the latest approved estimate.

8. Management Reviews.

a. Project Review Boards (PRBs). PRB meetings will be held at the district, MSC, and HQUSACE to provide the oversight and coordination necessary for management of civil works projects. The PRB may address other USACE programs while the PRB is convened. The sequence of the PRB from the district to the MSC to HQUSACE must be designed to permit the effective and efficient upward flow of information and data. The OASA(CW) will be provided certain project management reports.

b. HQUSACE Review. The Civil Works PRB will be chaired by the Director of Civil Works, or designee, and will include the Chief, Project Management Division, who serves as secretary to the PRB, and the Chiefs of Programs, Policy and Planning, Engineering, Operations, Construction and Readiness, Contracting, Real Estate, Counsel, Resource Management, and others, as appropriate.

9. Management Reports. The project management reports described herein are to be utilized by the PM on a continuous basis in managing the project schedule, costs and budgets, and measuring the performance against the PMP. The PM will be responsible for

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the quality and accuracy of all project data in the management reports. Summary information extracted from these reports will be utilized for upward reporting through the PRB system.

a. The Life Cycle Project Management Reporting System. LRS is the USACE automated reporting system to be used for upward reporting of project management data. In lieu of providing hardcopy reports, the district is responsible for the entry of data electronically into the LRS with the proper reporting elements. Data in the LRS system may be accessed by HQUSACE for periodic reviews. Each district/MSO is responsible for maintaining all data in the electronic reporting system. The LRS User Documentation for version 1.01.03, January 28, 1991, contains the Data Definitions for LRS. Project data will be entered into LRS by each district/MSO for all projects in that district or MSO managed as part of the project management system.

b. Report Descriptions.

(1) Project Manager's Working Reports. There are two basic reports required for the PM to effectively manage the schedules, costs and budgets of a project. These reports identify data elements that provide a historical perspective of change of the project as work progresses and a means to analyze performance measurement. Formats for these reports will be based on the capabilities of the project management scheduling software and other software utilized at the district level.

(a) ENG Form 5040-1-R, Project Schedule and Cost Change Request (SACCR)--Civil Works Program. This is a mandatory report used to request, review, evaluate, coordinate, recommend and approve changes to project costs, schedules, and funding. The form permits the PM to expedite the coordination process from receipt of request through approval. Copies of the report will be returned to the requesting organization and other affected district elements to indicate actions taken on the request. The form will also be used as an action document for the PRB or higher authority should its decision on cost estimate, schedule, and funding changes be necessary. A copy of the completed form will be retained by the PM to document disposition of the requested change. See Appendix 2-C.

(b) ENG Form 5040-2-R, Project Executive Summary (PES)--Civil Works Program. This report provides senior management with an overview of project status including project background, cost information, schedule, and major problems and issues. The report serves to structure and focus the review process and provide indicators of trends and progress. The PM shall include on this report comments regarding significant project issues and

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concerns. The data elements for the PES are defined in the LRS User Documentation for Version 1.01.03, January 23, 1991. See Appendix 2-D.

(2) ENG Form 5040-3-R, Project Cost and Schedule Performance Curves (Earned Value)--Civil Works Program. These curves graphically display an overview of scheduled and actual project expenditures. The curves will reflect data extracted from the networks, financial data base, and include data summarized in the PES. The plotted curves will provide the PM and senior management with the graphic means to monitor expenditures as well as physical progress of the project. See Appendix 2-E.

(3) MSC/District Commander's Executive Summary (MSCCES/DCES). The MSCCES is a standardized format for monthly submittal to HQUSACE based on the minutes of the MSC PRB. The DCES is a standardized format for monthly submittal to MSCs based on the minutes of the district PRB. See Appendix 2-F of this regulation.

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TABLE 2-1
PROJECT CONTINGENCY CHANGE APPROVAL

PROJECT COST	INDIVIDUAL CONTINGENCY APPROVAL AUTHORITY (\$000)			CUMULATIVE CONTINGENCY APPROVAL LIMITS
	0 TO <u>50,000</u>	50,000- <u>100,000</u>	OVER <u>100,000</u>	ALL <u>PROJECTS</u>
PROJECT MANAGER 1/	100	100	100	30%
DDE (PPM)	250	400	500	45%
DISTRICT PRB	500	750	1,000	60%
DISTRICT ENGINEER 2/	-----	UNLIMITED	-----	80%
MSC PRB 3/	-----	UNLIMITED	-----	100%

1/ Additional authority may be conferred by the PRB for small modifications.

2/ Unlimited up to the 80% cumulative contingency approval limit. The district engineer may approve contingency use within this limit or may elevate it to the MSC for approval.

3/ Unlimited up to the 100% cumulative contingency approval limit.

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Management
PROJECT MANAGEMENT

VOLUME 3 - Project Management Policy and Procedures for Military and Support for Others Programs

1. Purpose. This Engineer Regulation (ER) provides project management policy, guidance, and procedures for all projects assigned to the US Army Corps of Engineers (USACE) for Military Programs, consistent with the USACE project management philosophy (reflected in Appendix 1-B, Implementation of Project Management). To streamline its use, this ER has been organized in five volumes as follows, with Volumes 2-5 being subordinate to Volume 1:

- a. Volume 1. Project Management Policies and General Procedures
- b. Volume 2. Project Management Policies and Procedures for the Civil Works Program
- c. Volume 3. Project Management Policies and Procedures for Military and Support for Others Programs
- d. Volume 4. Project Management Policies and Procedures for the Environmental Protection Agency (EPA) Superfund Program
- e. Volume 5. Project Management Policies and Procedures for the Defense Environmental Restoration Projects (DERP) under the Defense Environmental Restoration Program, Base Realignment and Closure and Support for Other Customers

2. Defining the Military and Support for Others Programs.

a. All projects in the Military and Support for Others Programs that are assigned to the Directorate of Military Programs for execution are to be managed in accordance with the general procedures of Volume 1 and the specific procedures contained in this volume, both included in this regulation. Paragraph headings in this volume generally correspond sequentially to paragraphs in Volume 1 and are in some cases supplemented with additional sub-paragraphs where required to point out differences or for added emphasis.

b. Military Construction Projects. In addition to the general guidance in Volume 1, all military projects, except for medical and Non-Appropriated Funds (NAF) projects, will be planned and designed in accordance with Architectural and

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Engineering Instructions (AEI), design criteria.

c. DOD Medical Projects. In addition to the minimum general guidance in Volume 1, medical projects shall be managed and executed in accordance with Engineering Regulation (ER) 1110-345-721, Engineering Design, Architect-Engineer Selection and Design Procedures for Medical Facilities, and AEI, medical design standards. Headquarters US Army Corps of Engineers (HQUSACE) is the primary point-of-contact with the centralized customers for medical facilities; CEMP-MD is responsible for directives and funding issues, CEMP-EM provides support on technical issues. These centralized customers are: the Defense Medical Facilities Office (DMFO) which is responsible for overall development and funding of the DOD Medical Program; the Army SG Health Facility Planning Agency (HFPA) which is the user of Army medical facilities; and the AF and Navy medical facilities design offices (MFDO) which represent those departments for medical facility project design.

d. NAF Projects. NAF projects do not have the same fiscal and regulatory constraints as Appropriated Funds projects. NAF projects will follow current Army Regulation (AR) 215-series publications. PMS for these types of projects must be familiar with these AR requirements.

e. Base Realignment and Closure (BRAC) Projects. The proponent for the planning and execution of all Army BRAC activities is the Army Major Command (MACOM). For Army BRAC Program projects, the MSC Commanders have been assigned the overall management responsibility for the execution of the engineer functions in support of the respective MACOM/installation identified in this highly sensitive program. BRAC Program guidance is contained in:

(1) Memorandum, CEMP-MB, dated 14 May 90, subject: Project Management for Army Base Realignment and Closure (BRAC) Program as Specified in P. L. 100-526 (BRAC).

(2) Memorandum, CEMP-MB, dated 15 March 92, subject: Project Management for Army Base Realignment and Closure (BRAC) Program as Specified in P.L. 101-510 (BRAC 91).

(3) Memorandum, CEMP-MB, dated 14 Jul 92, subject: BRAC Program Integration.

Availability of the above memoranda can be found in Volume 1, Appendix 1-A, References.

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3. Project Management Plan (PMP).

a. PMP Development. A PMP will be developed for each project when the initial design directive is received. The plan will establish all requirements for the management and control of the project through design and construction. In addition to the above, see Appendix 3-A of this volume for PMP guidelines and minimum requirements. Our goal is to have PMPs approved within three months of the initial project authorization directive, unless otherwise specified. Once the PMP is approved, the baseline costs and schedules are locked and cannot be further adjusted.

b. Project Management Plan Requirements. The following requirements apply in addition to the requirements in paragraph 6 of Volume 1:

(1) For Army BRAC Program projects, the MSC Commander is the approving official for the PMP, unless this authority is delegated to the MSC PRB or district PRB.

(2) When an Army standard design exists for the project facility type under development, use of the standard will be required for the project. Available standard designs are mandatory in the Army for planning, designing, and constructing the facility types for which they are intended. Standard designs developed under the Department of Army Facilities Standardization Program are identified in Architectural and Engineering Instructions, Design Criteria. The complete family of available standard designs is listed in Engineer Pamphlet (EP) 1110-345-2. The PMP will include status of any request for waivers to these standards. On programs other than Army, design standards will be in accordance with customer guidance/agreements. For complex projects requiring specialized technical expertise, whether obtained from US Army Corps of Engineers (USACE) or the commercial sector, execution planning must be done early and fully documented in the PMP to ensure mechanisms are in place to provide quality design and reviews. Further details for documenting complex technical projects are contained in Memorandum, CEMP-ET, dated 8 May 91, subject: Project Execution Planning (For availability of this memorandum, see Volume 1, Appendix 1-A, References).

(3) The schedules will also account for any other appropriations that are managed by USACE and/or have a direct impact on the project schedules for design or construction. For other multiple funded projects, any separate work funded by other appropriations that does not affect project scheduling is not

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required in the PMP. For a listing of the milestones see Appendix 3-F, Major Milestones, at the end of this volume.

(4) Project cost estimates will contain all costs associated with the project and will be in accordance with existing regulations. Army Regulation (AR) 415-15, Military Construction Program Development and Execution, contains programming and budgetary cost estimating guidelines for project construction costs. The baseline cost estimate (BCE) is the project estimate developed based on the budgeted design costs and the construction costs for the scope and criteria furnished in the initial HQUSACE/customer directive with Department of Defense (DD) Form 1391 or similar programming document. This is the estimate established in the Project Management Plan (PMP). It contains all costs associated with the project including design funds, construction costs, and other appropriations if these funds impact the project schedule or are managed by USACE. Baseline schedule is the schedule that supports the BCE as established in the PMP. For Military Programs the baseline reflects all activities from design through construction. It is recognized that establishment of the BCE during the early stages of the project using the initial data from the DD Form 1391 or similar programming document as a basis for the construction portion of the project costs is not a true measuring indicator for USACE military project management efficiency since this programming document is the responsibility of the customer and usually developed without input from the districts. Therefore, in addition to the documentation of total design and construction costs into a BCE, USACE commands are also required to provide to management, the current working estimate (CWE) developed for project construction costs at budget submission and the actual CWE at construction contract award. These two construction estimates--CWE at submission to Congress (35 percent for MCA projects, 10 percent design for MCAF, etc.) and construction award CWE--are the traditional performance indicators for district management of projects. The budget CWE reflects how well the districts have estimated project construction costs when compared to the programmed amount and the actual construction award CWE. The construction award CWE allows for the tracking of contract cost growth, which is a major concern of not only USACE and our customers, but also ASA, OSD and Congress. The OSD target for contract cost growth is 5 percent.

(5) Real Estate. Base Realignment and Closure (BRAC), Non-Appropriated Fund (NAF) programs, etc. that require real estate actions shall be in accordance with customer memorandums of agreement. Real estate acquisition for military construction will be in accordance with AR 405-10, Acquisition of Real Property and Interests Therein. The PM must ensure the early and

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continued integration of Real Estate Division in the planning, engineering, design, land acquisition, and construction phases of the project. Real Estate will provide cost estimates and other pertinent data for development of the BCE and DD Form 1391. Real Estate will prepare a Real Estate Planning Report (REPR) for the most viable alternative. The real estate cost estimate will include costs from Real Estate Division at the same level of accuracy and detail as the rest of the project features, with appropriate contingencies. The baseline schedule for land acquisition and cost estimate for real estate are to be managed in conjunction with total project costs and schedules.

(6) Performance Measurement. During the development of the PMP, project completion percentages will be assigned to each major milestone. These percentages will be based on the subjective assessment of the PM in conjunction with the functional elements as established in the PMP. Each milestone's physical contribution to the overall completion of the project must be determined in addition to the phase (design or construction) completion status. These percentages will be used by the PM during the life of the project as indicators of scheduled project progress and for preparation of the Project Executive Summary (PES) as described in paragraph 8 of this volume.

4. Management Control

a. Cost Control

(1) Project Cost Estimates. Project cost estimates include all costs associated with the project that are managed by the district or that impact the project. These costs could include advance planning, design, and construction funds. Cost estimates shall be in accordance with AR 415-17, Cost Estimating for Military Programs, and Technical Manual 5-800-2, Cost Estimates Military Construction. These regulations contain methodology and standard procedures for construction cost estimating. Government estimates for construction are prepared by using the latest version of Micro-Computer Aided Cost Engineering Support System (MCACES). Management policies and procedures for control of MCA design funds (P&D) are contained in ER 415-35-1, Control of DA Execution Programs Through Authorization And Funding Actions. This regulation is supplemented by directives issued periodically by HQUSACE to reflect changing funding conditions. Management policy and procedure for construction management funds (S&A) are contained in ER 415-1-16, Construction Fiscal Management.

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(2) Contingencies.

(a) Each project has a construction contingency rate that will be utilized as identified in the DD Form 1391 or similar programming document. The prudent and judicial management of contingencies to accommodate uncertainties in the project is the responsibility of the PM. Any revisions, after award of the construction contract, made to the estimated construction costs of a primary feature/support feature within the work breakdown structure (WBS) will have equal and opposite change to the contingency. The net result to the total project cost estimate will be zero as long as sufficient contingencies exist. In the event that construction contingencies are drawn down below the allocation in the district or operating MSC, a revised project cost estimate with contingencies sufficient to complete the project must be developed and submitted through the appropriate approval levels in accordance with existing guidance/regulations as delineated in the PMP. Contingency use shall be in accordance with memorandums of agreement (MOA), configuration control board guidelines, and/or established Corporate Group procedures as outlined in DAEN-ECC-A letter, subject: Planning and Design Management (PDMS) Corporate Group, dated 3 Jul 84, and AR 415-15, Military Construction Program Development and Execution. ER 415-345-42, Cost Estimating and Reserves for Contingencies, contains cost control procedures.

(b) Generally, on Military Programs projects, contingencies are managed and separated into two distinct parts: USACE district PM-managed contingencies (2 percent) and HQ and/or customer management reserve contingencies (3 to 8 percent). The rates used for contingencies are governed by existing programming guidance, regulations, or MOAs and the percentages may vary dependent upon program appropriation, type of work, or customer controls. In general, the USACE Commands authorized field contingency funds are limited to fund within scope contract modifications of an operating nature to be directed pursuant to the "Changes" clause, "Differing Site Conditions" clause, and other contract clauses as required to provide a complete and useable facility. Proposed changes of an enhancement nature that are originated by the using organization, installation or MACOM/customer, and/or changes relating to incorporation of MACOM/customer, installation or using unit criteria, mission changes or facility use requirements must be concurred in by the MACOM/customer responsible for programming the project and comply with Corporate Group procedures, configuration control boards or as specified in individual PMPs or MOAs with customers.

(c) Construction contract contingency funds will be managed by the PM and be consistent with the Administrative Contracting

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Officer's (ACO) or Contracting Officer's authority. Contingency management shall be in accordance with Appendix 1-D of this regulation and any supplemental configuration management plans developed in the PMP.

(3) Changes to Current Project Cost Estimate. The project manager (PM) may adjust the current project cost estimate within the limits prescribed in existing USACE guidance and regulations as delineated in the PMP.

b. Schedule Control.

(1) Network Development. The project manager is responsible for answering the development, updating, revision, and adherence to the schedule and the networks required by this regulation. All Military Programs projects must be scheduled and managed using an automated network. If applicable, Real Estate activities must be an integral part of the schedule and network. The network and the estimate are interdependent and the one may not be adjusted without a reexamination of the other. The software must have the capability to analyze, summarize and adjust the basic parameters including: cost, time, and manpower. The system must be capable of being easily revised and displayed and must be compatible with the automated reporting requirements.

(2) Major Milestones. A list of the minimum milestones required for management is in Appendix 3-F of this regulation. In addition to this minimum list of upward reported general milestones, districts and MSCs should report any other milestones deemed to be significant/major critical path type milestones, particularly for contract methods other than firm-fixed-price or projects with real estate (RE) acquisition activities. Milestones such as definitization of letter contracts, request for proposals (RFP) development/ evaluation action dates, initiate RE acquisition, etc., should be reported for those types of procurements.

(3) Changes to Project Schedule. Changes to major milestones listed in Appendix 3-F of this regulation require the approval of district PRB or higher authority as indicated in the PMP. Change control shall be in accordance with Appendix 1-D of this regulation and any supplemental configuration management plans developed in the PMP.

c. Quality Management. The PMP must consider criteria contained in the DD Form 1391, Architectural Engineering Instructions or other similar programming/guidance documents.

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Specific details for quality management are contained in EC 1110-1-71, Engineering and Design Quality Management; and ER 1180-1-6, Construction Quality Management. These details provide general policy and guidance for establishing quality management procedures and services for the execution of design and construction contracts. They also define the related responsibilities and roles of both the contractor and the Government. Each USACE command will be required to develop a design quality control plan for all in-house design work. For contract work, a similar project-specific plan will be required from the architect-engineer (A-E) firm prior to contract negotiations. It is recommended that a requirement for these plans be included in the PMP and that the results be incorporated into the technical performance requirements for each project. Certain projects may require specialized technical expertise for design quality verification. ERs 1110-3-109 and 1110-34-1 explain the missions and functions of the centers of expertise established for specialized technical fields. Role of these centers of expertise should be included in the PMP, if applicable.

5. Project Management Roles and Responsibilities.

a. HQUSACE.

(1) The Project Management Division, Directorate of Military Programs, has primary responsibility for assuring the successful implementation of the project management system and accomplishment of project management objectives for military and assigned Support for Others projects. The Chief, Project Management Division reports directly to the Director of Military Programs (DMP).

(2) The primary role of HQUSACE Project Management Division (CEMP-M) is Program Management. Program management at HQUSACE embodies five major functions: leadership, resourcing, development of training strategy and programs, equipping and empowering, and evaluations of trends and performance. Leadership sets the direction, through establishment of policy and provision of guidance, consistent with the Corps mission. Resourcing provides the program dollars and manpower to execute the programs assigned. The training programs, developed at and executed by the headquarters, provide the expertise at all organizational levels that is required to provide quality projects, within budget, scope and schedule, to satisfy our customers. Equipping and empowering the field organizations addresses a broad range of activities from assuring adequate program policy, technical guidance and criteria to the provision of management information systems. In short, it is the provision

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of the assets and program guidance required to professionally accomplish the assigned mission. Programmatic performance evaluation, both on an organizational and a program basis, coupled with trend analysis of the past and the future, provides the necessary "lessons learned" and feedback to organizationally improve and posture ourselves for enhanced quality support to the nation.

b. Major Subordinate Command (MSC) and District. The MSC and district roles and responsibilities are provided in Volume 1 or its appendixes.

c. Project Manager (PM). In addition to the PM roles and responsibilities provided in Volume 1, Appendix 1-G of this regulation, the following apply for Military Programs PMs:

(1) The PM shall monitor project obligations to ensure expiring funds are returned to customers/HQUSACE prior to their actual expiration and shall prepare requests for replacement with new unexpired funds if necessary. Technical Managers are responsible for coordinating with PMs if assigned funds are expiring. Further guidance is contained in Memorandum, CERM-FM/CERM-BA, dated 30 Aug 91, subject: Closing Expired & Merged Accounts.

(2) The PM also has the fiscal responsibility to review and manage project funding commitments against the funds allotted to the district to ensure the return of excess project funds to HQUSACE or the customer. Timely return of project savings, even if these funds are not nearing expiration, allows for the programming of additional work or the reprogramming of savings for other project shortfalls. This also applies to projects with multiple funding sources for procurement, such as an MCA project with other appropriations (i.e., OPA, OMA funds) identified for equipment, etc., that are provided to USACE for procurement purposes only.

(3) Installation Project Manager. An individual project manager should be assigned to each large, significant or highly visible project whenever possible. It is recognized this is not always possible because of project size variations, workload distribution inefficiencies or manpower constraints. In these cases, districts should use an Installation Project Manager to handle large groups of smaller sized projects at the same installation/location. This will allow districts to effectively manage their resources, maintain a central point of contact for all of the customers at a particular installation/location, and have the added feature of allowing a project manager to become involved and acquainted with all aspects of that installation/

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location. Installation PMs will have the same duties and responsibilities as stated in paragraph 8d, "Project Manager", in Volume 1. In addition, the Installation PM will also serve as the district's designated primary point of contact for support of that installation. These duties will be fully defined by the Deputy District Engineer for Programs and Project Management (DDE(PPM)) or designated branch chief, and include as a minimum the following:

(a) Acts as customer advocate and serves as primary point of contact for installation support or services.

(b) Meets with the installation commander and/or the Director of Engineering and Housing (DEH) to identify their needs, problems, and priorities to the proper district functional and technical elements.

(c) Periodically assesses the quality of district services and products, makes recommendations for improvements, and keeps the DDE(PPM) informed of these actions.

(d) Manages the DD Form 1391 input and reviews documentation as appropriate.

d. Inter-district/Inter-MSD Project Management Continuity. When a project is executed in two or more districts within the same MSD, the MSD Commander will assure that the provisions for continuity are described in the PMP. When a project is executed in two or more MSDs, the MSD Commanders will determine who has the responsibility for taking the lead to maintain management continuity for the life of the project. For projects in programs with a Chief of Engineers designated Program Manager, this assigned individual is responsible for maintaining project management continuity and delineating the roles and responsibilities of each district/MSD involved. The role of each MSD and district involved shall be established clearly in the PMP. If a Memorandum of Agreement is used as the formal document to delineate the roles and responsibilities of all involved parties, this document shall be referenced and included in the PMP appendix. In these continuity cases, the PMP should be used to ensure that sharing of data is easily attainable by specifying, if required, the type of scheduling software, etc., to ensure that the same or compatible management tools are being used by the involved organizations.

f. Relationship of PM and Cost Engineer. The cost engineer is an important member of the project delivery team upon whom the PM depends for a well documented estimate, as well as for input to the construction schedule. The estimate and schedule, with

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design assumptions, are major tools of project management. The PM has responsibility to ensure that the cost engineer is provided with the most current design and information relevant to real estate, if applicable, for preparing and updating of cost estimates including scope and schedules. The cost engineer is responsible for preparing a project construction cost estimate that includes all features of the project.

6. Customer.

a. The PM, in addition to being the project leader and primary interface with our external customers, is also the "internal customer" to the district functional elements. The PM is responsible for clarifying the project scope/customer's expectations, and defining, with the project delivery team, the WBS required in sufficient detail to provide the necessary management controls of the project parameters for the successful performance of the project and for ensuring that all district commitments made to the customer are met or exceeded to the satisfaction of all parties.

b. To accomplish a successful project to the customer's satisfaction, the requirements of the customer must be fully defined and documented up-front in the PMP. The PMP will include the commitments to be fulfilled by the district as well as those by the customer. This document must be fully coordinated with the customer and approved by the district PRB in a timely manner. If the management of the customer's program or project is already documented in a separate memorandum of understanding or agreement, the PM should include that document as a part of the PMP. The PM is responsible for ensuring that the customer understands the USACE project management system; in particular, use of the PMP and the management information available.

7. Management Reviews.

a. General. PRBs should be scheduled six months in advance to allow for the planning of calendars. Attendance by principal members is encouraged and substitutions should be the exception.

b. HQUSACE Review. The HQUSACE PRB will include the Military Programs Chief of Project Management (chairperson) and Chiefs of Engineering, Construction, Contracting, Real Estate, Counsel, Resource Management, and others as necessary, as designated by the Director of Military Programs. The HQUSACE PRB will be held six times a year in bi-monthly sessions. The shift to bi-monthly HQUSACE PRB meetings will not affect project management responsibilities at any level of the organization.

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The MSCs must continue to carry out their daily functions in terms of project management oversight and execution support to the districts. Project issues requiring HQUSACE action or awareness must be addressed promptly and need not wait until subsequent HQUSACE PRB meetings.

(1) The PRB is designed to focus USACE senior management on problems and issues associated with project execution. The basic management principle endorsed is that problems should be resolved in a timely manner at the lowest possible level in the organization. Generally only problems/issues that exceed MSC authorities, funds or are politically sensitive should come forward to HQUSACE. Problems/issues that are forwarded will be resolved or assigned to the appropriate HQUSACE functional elements for immediate resolution. Project Management Division will provide feedback to MSCs and follow up to assure timely response. PRB submittals do not replace standard operating/funding procedures or documentation requirements (i.e. reprogramming overruns, waivers, concept design or construction award forecast slippages, request for additional construction funds, etc.). Having senior management cognizant of project problems and issues should facilitate processing of project specific actions.

(2) The Director for Military Programs will have direct oversight of HQUSACE PRB sessions and will task follow-up assignments during the PRB sessions or through the HQUSACE PRB Executive Summary.

(3) Project Management Division will be responsible for recording the minutes of each PRB session, preparation and staffing of the HQUSACE PRB Executive Summary for the signature of the director or his designee. Project Management Division will transmit the HQUSACE PRB Executive Summary by electronic mail (CORPSMAIL System) to the USACE Commands and throughout HQUSACE.

c. MSC Review. The MSC PRB will include the Directors of Programs and Project Management, Engineering, Construction, Real Estate, Counsel, Resource Management, Contracting and others as requested by the chairperson and designated by the MSC Commander.

(1) MSCs are required to hold PRB meetings in the month preceding Military Programs HQUSACE PRB meetings. In the month of a HQUSACE PRB meeting, the MSC PRB will be held at the MSC Commander's discretion.

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(2) The MSCs are responsible for ensuring that any lessons learned (e.g., specific comments made on a project) are disseminated throughout their command. HQUSACE is responsible for disseminating any lessons learned among MSCs.

d. District Review. The District PRB will include the Chiefs of Programs & Project Management, Engineering, Construction, Real Estate, Counsel, Resource Management, Contracting, and others as designated by the District Commander. Districts are required to hold PRB meetings on a monthly basis.

8. Management Reports.

a. General. See Table 3-2, Criteria for Report Use, in this volume.

(1) The management reports used for Military Programs projects are described in the appendixes of this volume. Our goal for information management is to develop a reporting system where reports are a by-product of management.

(2) The LCPM Reporting System (LRS) was developed by CEWES for HQUSACE. LRS will be used for electronic transmission of the Project Executive Summary (PES) reports. The district is responsible to populate the LRS on a monthly basis so that the proper reporting data elements can be accessed by MSCs to facilitate monthly reviews and the PRB process. Each district is responsible for maintaining data in this electronic reporting system. The actual data elements that the districts/MSCs are responsible for populating have been identified in LRS by HQUSACE and were furnished by separate CEWES correspondence with a LRS User Documentation Manual.

(3) Military Programs is using LRS as an interim system for the upward transmission of the PES reports until the deployment of PROMIS (Project Management Information System). PROMIS will be a mandatory management tool that provides PMs the capability to manage project budgets, schedules, and track actual expenditures/costs in a timely manner through the use of a network analysis system, a work breakdown structure, and the ability to interact with the Corps of Engineers Financial Management System (CEFMS), and any other system databases (i.e., RMS, EMS, REMIS, SAACONS, etc.) loaded into the district Corporate Oracle database. This system will allow for data elements used by PMs to be updated automatically into the district corporate database and alleviate some of the burdensome upward reporting since reports will be generated as a by-product of project management. PROMIS/CEFMS deployment will start in FY 93.

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(4) An electronic method of updating the LRS program files has been developed by WES. This method involves the use of the WES CEAP computer system as a storage and access point for the installation diskettes. LRS users can access these WES instructions and directly update your LRS software by using your VISTACOM communication package to access a memorandum by WES in a file named "README.TXT" on the CEAP computer. Office to contact for further information is CEWES-IM-C, (601) 634-2922.

b. Report Description. The project management reports are the PM's assessment of project progress and issues. PMs are responsible for the timely preparation, submission, accuracy and validity of data contained in the project management reports. Detailed report descriptions, specific formats, and instructions are in the appendixes of this volume.

(1) ENG Form 5-41-1-R, the project Schedule and Cost Change Request (SACCR)--Military and Support for Others, will be initiated by the district element which first recognizes the need for change. Changes will in some cases be originated by the customer. The initiator provides the request to the PM for evaluation of project impacts by the appropriate district elements, coordination with the customer, and approval authority identified in the PMP. Instructions for the use of the form are contained in Appendix 3-B.

(2) Project Summaries. The Project Summaries include the Project Executive Summary (PES), Project Expenditure Curves, and MSC Commander's Executive Summary. Project Summaries, are to be discussed with and made available to the customer on a regular basis.

(a) ENG Form 5041-2-R, Project Executive Summary (PES)--Military and Support for Others, provides an overview of project status to senior management at the district, MSC and HQUSACE levels. It serves to structure and focus the review process and to provide indicators of trends, issues, and progress in a clear, concise format. This report is prepared by the PM, reviewed by the district PRB, and transmitted to the MSC through the Life Cycle Project Management Reporting System (LRS). The PES may not be modified. It may be annotated only by a PRB- approved comment to the summary. Instructions for the use of the form are contained in Appendix 3-C.

(b) The Project Expenditure Curves graphically display an overview summary of project cost information and, through inclusion of milestones, are used to measure both schedule and cost performance in comparison to the baseline. This project requirement is mandatory for cost reimbursement types of

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procurement contracts only. Instructions for the use of the form are contained in Appendix 3-D.

(c) The MSC Commander's Executive Summary (MSCCES) is a standard format for summarizing the significant discussions at MSC PRB meetings. It contains a listing of the projects (PES reports) transmitted to HQUSACE and a highlight of the project issues/problems.

c. Report Submission and Review.

(1) The DDE(PPM) will submit Project Executive Summary reports to the MSC for review. Districts should only input into LRS and upload to the MSCs those projects with a construction cost/program amount (PA) of over \$20 million, sensitive projects, or projects with problems that require HQUSACE resolution. The MSCs shall screen those projects and determine which projects to monthly upload via LRS into the HQUSACE database on the mainframe computer at WES. These projects should only be those with significant issues or have problems that require HQUSACE resolution or those that were designated sensitive by the MSC or HQUSACE. District PES data will be furnished in a timely manner as directed by the MSCs. MSCs shall upload LRS for HQUSACE by close of business on the last working day of the month preceding the month of a HQUSACE PRB session.

(2) The MSC Commander's Executive Summary to HQUSACE should only list those projects that the MSC determines to have significant issues or importance to HQUSACE senior management or have been specifically identified by HQUSACE for upward reporting. MSCs are required to provide their MSC Commander's Executive Summary (MSCCES) to HQUSACE by electronic mail (CORPSMAIL System). MSCCES documents should be prepared as "WordPerfect" (currently using Version 5.1) or as ASCII text file format and loaded as an attachment to your CORPSMAIL message. The message should be sent to the CORPSMAIL box for CEMP-MP with the subject as follows: _____ MSC COMMANDER'S EXECUTIVE SUMMARY. (Insert your MSC name in the blank space). The body of the message should indicate the contents and type of software package used to create the attachment (i.e., WordPerfect 5.1 or ASCII text file). Put a page break after the body of the message before attaching the MSCCES file to your message. This assures that your attachment (MSCCES document) starts printing at the top of the page. The deadline for HQUSACE receipt of your MSCCES is the last working day of the month before the month of a HQUSACE PRB session. Refer to your CORPSMAIL (Micro Mail II) manual for more specific instructions. Contact your Information System Security Officer (ISSO) for a user ID and password; and your

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Electronic Mail (EM) Coordinator for your mail box setup if you do not have these requirements.

(3) Project Expenditure Curves are not required to be submitted upward unless specifically requested by higher authorities.

(4) Selected Project Summaries will be submitted on a periodic basis to the ASA and/or Chief of Engineers.

(5) Table 3-1, Project Management Reports Submission Summary, in this volume provides a summary of project management report submission requirements.

TABLES:

- 3-1 Project Management Reports Submission Summary
- 3-2 Criteria for Report Use

APPENDICES:

- 3-A Guidelines for Project Management Plans (PMPs) (Military and Support for Others Programs)
- 3-B ENG Form 5041-1-R, Project Schedule and Cost Change Request (SACCR)--Military and Support for Others Programs
- 3-C ENG Form 5041-2-R, Project Executive Summary (PES)--Military and Support for Others Programs
- 3-D ENG Form 5041-3-R, Project Expenditure Curves--Military and Support for Others Programs
- 3-E MSC Commander's Executive Summary (MSCCES)
- 3-F Major Milestones

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Table 3-1

Project Management Reports Submission Summary

<u>Report Title 1/</u>	<u>Submitted to MSC by District 2/</u>	<u>Submitted to HQUSACE by MSC 3/</u>	<u>Submitted to ASA by HQUSACE 4/</u>
ENG Form 5041-1-R, Project Schedule and Cost Change Request (SACCR)	Optional	Not Submitted	Not Submitted
ENG Form 5041-2-R, Project Executive Summary (PES)	Required	Required	Required
ENG Form 5041-3-R, Project Expenditure Curves	Optional	Not Submitted	Not Submitted
MSC Commander's Executive Summary (MSCCES)	Not Applicable	Required	Required

1/ Reports shown as Optional may be requested by MSCs or HQUSACE at any time. The bottom three reports are the "Project Summaries" required for management reviews unless noted otherwise.

2/ Project Summaries for all projects greater than twenty million dollars or otherwise directed will be submitted to the MSC by its districts. Reports shown as "Optional" must be prepared at the district; however the MSC will determine whether or not its districts must submit the reports.

3/ Project Summaries for selected projects will be transmitted to HQUSACE by the MSC in accordance with paragraph 8c. All Project Executive Summary reports must be transmitted by the MSC electronically to HQUSACE by the MSC by the COB of the last working day of each month. The MSCCES is required only during months when the HQUSACE PRB is in session.

4/ Project Summaries for selected projects will be submitted on a periodic basis to OASA by HQUSACE.

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TABLE 3-2
Criteria for Report Use

REPORT TITLE	PROJECT SIZE (Construction Costs)	
	< \$5 million	\$5 million or greater, or designated sensitive by higher authority
ENG Form 5041-1-R, Project Schedule and Cost Change Request (SACCR)	Recommended*	Mandatory
ENG Form 5041-2-R, Project Executive Summary (PES)	Mandatory	Mandatory
ENG Form 5041-3-R, Project Expenditure Curves**	Mandatory	Mandatory
MSC Commander's Executive Summary (MSCCES)	Mandatory***	Mandatory ***

* The report shown as "Recommended" is for information only. This recommended report contains suggested formats for capturing project data at the district. Districts may continue to use existing management systems or existing report formats in lieu of this recommended report.

** Project Expenditure Curves are only mandatory for projects using cost reimbursement types of procurement contracts.

*** Not Applicable to districts.

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Management
PROJECT MANAGEMENT

VOLUME 4 - Project Management Policy and Procedures for the
Environmental Protection Agency (EPA) Superfund (SF) Program

1. Purpose. This Engineer Regulation (ER) provides project management policy, guidance, and procedures for all projects assigned to the US Army Corps of Engineers (USACE) for EPA SF, consistent with the USACE project management philosophy (reflected in Appendix 1-B, Implementation of Project Management). To streamline its use, this ER has been organized in five volumes as follows, with Volumes 2-5 being subordinate to Volume 1:

a. Volume 1. Project Management Policies and General Procedures

b. Volume 2. Project Management Policies and Procedures for the Civil Works Program

c. Volume 3. Project Management Policies and Procedures for Military and Support for Others Programs

d. Volume 4. Project Management Policies and Procedures for the Environmental Protection Agency (EPA) Superfund (SF) Program

e. Volume 5. Project Management Policies and Procedures for the Defense Environmental Restoration Projects (DERP) under the Defense Environmental Restoration Program, Base Realignment and Closure and Support for Other Customers

2. Scope. This volume and volume one of this regulation are generally applicable to SF projects involving both Remedial Design (RD) and Remedial Action (RA) for which USACE furnishes the contracting officer(s) (KO). Not all parts of this regulation are applicable to SF projects which are assigned to USACE for RA only. This regulation is applicable to a new SF project which has an initial scope of work described in an Interagency Agreement (IAG) with an effective date later than the effective date of this regulation. This regulation is applicable to any existing Remedial Investigation/Feasibility Study (RI/FS), excluding Technical Assistance (TA) and Enforcement Oversight (EO), with a Start Feasibility Study milestone scheduled after the effective date of this regulation. This regulation is applicable to any existing RD, excluding TA and EO, with a Final Start milestone scheduled after the

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effective date of this regulation. This regulation is applicable to any existing RA, excluding TA and EO, for which USACE furnished the RD KO and with physical completion scheduled more than 120 working days after the effective date of this regulation. Notwithstanding the above requirements, this regulation is not applicable to any RI/FS, RD or RA that is scheduled to terminate within 90 working days after the effective date of this regulation unless a subsequent USACE assignment other than TA or EO will ensue. The Environmental Restoration Division (CEMP-R) may designate specific projects to be managed in accordance with this regulation regardless of the above criteria.

3. Project Management Plan (PMP).

a. PMP Development. The PMP shall be prepared, coordinated and approved within 90 working days of the receipt of an executed IAG for a new project's initial assignment, and within 120 working days of the effective date of this regulation for existing projects. The Project Manager (PM) shall develop the PMP in close conjunction with the EPA Remedial Project Manager (RPM) and USACE supporting and executing elements and document their concurrence.

b. PMP Requirements.

(1) Modifications to the PMP shall be coordinated with the EPA RPM and USACE supporting and executing elements, and approved by the district or operating Major Subordinate Command (MSC) Project Review Board (PRB). Modifications to the PMP which exceed the authority delegated by EPA to USACE shall be approved by EPA. Coordination, review and approval shall be documented.

(2) The project scope in the PMP shall include the scope as described in the Record of Decision (ROD) and the IAG for projects with USACE-provided KO(s) for RD and RA. The project scope shall be adjusted appropriately when USACE furnishes the KO for RA only.

(3) The PMP shall document contract acquisition strategy planning.

(a) The PM shall establish and lead a contract acquisition strategy team for each project. The team shall include, as a minimum, representatives from design, construction, procurement and counsel. When the RD and RA phases of the project will be executed by different USACE districts or operating MSCs, the requirements of paragraph 4e, below, Inter-district/Inter-MSC Project Management Continuity, apply.

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(b) The team shall formulate, analyze and provide a consolidated contract acquisition strategy recommendation to the KO based on project-specific requirements. The team shall consider all practical alternatives, and shall document their analysis and recommendation in a Memorandum For Record (MFR). The MFR shall include a brief description of the USACE SF assignment, indicate the full anticipated USACE role(s), identify all contract acquisition alternatives considered, and briefly indicate the reasons why an alternative is either recommended or not recommended. All members of the team shall sign and date the MFR. The signed MFR shall be forwarded to the KO for approval. This approved MFR shall be incorporated into the PMP by reference and a copy enclosed as an exhibit. This MFR is the minimum requirement. Any more stringent applicable Federal Acquisition Regulations (FAR) requirement will supersede this minimum requirement.

(c) As applicable during the preliminary, intermediate and final design reviews, the contract acquisition team members shall meet to examine the current contract acquisition strategy and revise the MFR as appropriate. All team members again shall sign and date the MFR to document these reviews/changes. A copy of the MFR shall be submitted to the KO for consideration. As appropriate, the KO shall approve changes to the contract acquisition strategy in the PMP. All approved changes to the acquisition strategy shall be documented by modifying the PMP to fully describe the new acquisition strategy.

(4) A Real Estate Planning Report (REPR) shall be prepared for every project when it is first assigned to USACE. The REPR shall be revised as appropriate to ensure it remains effective as a project management tool.

4. Management Control.

a. Cost Control.

(1) Project Cost Estimates.

(a) Estimating tools. The primary tools recommended for estimating costs of SF projects are the USACE Microcomputer Aided Cost Engineering Support, Gold (MCACES GOLD) and, after promulgation, the EPA Remedial Action Cost Estimating System (RACES). MCACES GOLD can use both detailed quantity input and non-detailed lump sum input. RACES will use parametric analysis to estimate treatment and control technology costs for which there is little or no design or which is based on performance specifications.

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(b) Estimate format. A work breakdown structure (WBS) distributed by USACE shall be used to categorize cost estimates. Estimates of RA costs shall be developed to the level that describes permanent construction features or lower if appropriate. The cost estimate breakdown shall support the reporting requirements of this regulation.

(c) Responsibilities. The PM is responsible for ensuring that the cost estimates are prepared or reviewed by the cost engineering element. The PM and Chief of Cost Engineering shall ensure that other appropriate district or operating MSC and construction elements participate in preparing or reviewing cost estimates. The Chief of Cost Engineering is responsible and accountable for preparing or reviewing and coordinating the cost estimates in accordance with the schedule agreed upon with the PM.

(d) Baseline Cost Estimate (BCE). The PM shall include the BCE in the PMP. The BCE shall be developed for the scope of work defined in the PMP and a stated base date. The BCE shall include contingencies associated with relevant WBS products and inflation from the base date to the mid-point of RA. The district or operating MSC PRB shall review and approve the estimate with supporting documents. The BCE shall be fixed upon approval of the PMP, however, CEMP-R may approve changing the BCE for unusual circumstances such as a change in scope caused by a modification of the ROD. The project BCE shall include costs for the following activities and items if they are in the project scope:

(i) Real Estate. Costs shall be developed for all real estate activities including, but not limited to, preparation of REPRs, appraisals, title evidence, relocation assistance, negotiations, rights-of-entry, and the acquisition of interests in real property by lease, purchase, or condemnation.

(ii) Engineering and Remedial Design. Costs shall be developed for all engineering and RD activities.

(iii) Remedial Action. Costs shall be developed for each contract requiring RA activities.

(iv) Construction Management. Costs shall be developed for each contract for all construction management including, but not limited to, in-house labor, materials, equipment, facilities and support contracts.

(v) Overhead. Costs shall be developed for USACE overhead.

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(e) Current Fiscal Year Baseline Cost Estimate (CFYBCE). The CFYBCE is the BCE adjusted for actual incurred inflation and current estimates of future inflation. The PM shall ensure that the CFYBCE is developed annually for a stated, current date from the BCE by adjusting the inflation assumed at the base date to the actual inflation incurred from the base date to the current date plus an estimate of future inflation developed from the current Tri-service Military Construction Program (MCP) Index issued annually by HQUSACE, CEMP-EC.

(f) Current Approved Cost Estimate (CACE). The CACE is the current estimate of the total project cost most recently approved by the district or operating MSC PRB. The PM shall ensure that the CACE is developed from the BCE or an earlier CACE by revising the scope, schedule, inflation indices, contingencies or other parameters as needed to complete the project, developing current costs and obtaining the appropriate level of approval.

(g) Forecast Cost Estimate (FCE). The PM's prediction of the total project cost or a project subset considering pending scope and schedule changes, perceived risks and trends, and adjustments reflecting the current MCP Index.

(2) Contingencies. The PM and Chief of Cost Engineering shall ensure that each appropriate WBS product in the BCE is assigned a contingency proportional to the uncertainty of the cost estimate for that WBS product. These contingencies shall be developed in conjunction with the project's designers and cost engineers. RD WBS product contingencies shall be summed and this subtotal project contingency shall be included in the BCE. RA WBS product contingencies shall be summed and this subtotal project contingency shall be included in the BCE. The RD and RA subtotal contingencies shall be summed and this total project contingency shall be included in the BCE.

(a) Contingency Management. Differences between a WBS product's actual cost and its CACE shall be charged or credited to the contingency. If a project includes RA, the contingency at RA contract award shall be a minimum of ten percent of the RA contract award amount for projects under two million dollars and eight percent for projects of two million dollars or more.

(b) Contingency Changes - The project contingency may be used within the limits of authority presented in Table 4-1, and within the limit of the current IAG funding amount. The PM shall coordinate with the EPA RPM and prepare and process a project Schedule and Cost Change Request (SACCR) for approval of changes. The SACCR may be initiated by the EPA RPM, the PM or other USACE elements supporting or executing the project.

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b. Schedule Control. All SF projects managed under this volume shall be scheduled and managed using a project Network Analysis System (NAS).

(1) Network Development. The PM shall develop and maintain a project NAS. The NAS shall incorporate the applicable major milestones listed in Appendix 4-E of this regulation, the standard, project-type-specific milestones supported by the CleanLan SF project tracking and reporting system, and all supplemental milestones selected by the PM to ensure effective project management. The NAS shall be refined throughout the life of the project to ensure that it remains accurate, valid and effective as a schedule management tool. The level of detail of the NAS shall be commensurate with the stage of development of the project. NAS task descriptions shall be consistent with the WBS. The NAS and cost estimates shall be mutually consistent when developed and modified.

(2) NAS Software. NAS software shall have the capability to analyze, summarize and report resource requirements including cost, time and manpower. The software shall support the NAS requirements defined in this volume. The software shall, to the extent possible, support the data submitted under the reporting requirements in this volume. The software shall be compatible to the extent possible with project management software used by EPA.

(3) Baseline Project Schedule (BPS). The BPS is the fixed prediction of the total project schedule. The PM shall include the BPS in the PMP. The project BPS shall be developed for the scope of work defined in the PMP. The district or operating MSC PRB shall review and approve the BPS. The BPS shall be permanently fixed upon approval of the PMP, however, CEMP-R may approve changing the BPS for unusual circumstances such as a change in scope caused by a modification of the ROD.

(4) Current Approved Schedule (CAS). The CAS is the current estimate of the project schedule most recently approved by the district or operating MSC PRB. The PM shall develop the CAS from the BPS or an earlier CAS by revising the milestone completion dates as needed to complete the project, completing a SACCR, and obtaining appropriate approval.

(5) Pending Changes. The PM shall revise or recommend revision of the CAS as needed to manage the project effectively. The PM shall coordinate proposed CAS changes with the EPA RPM. The PM may authorize schedule changes that do not affect a major milestone as defined in Appendix 4-E. The PM shall submit a SACCR to the district or operating MSC PRB for approval or referral of requested changes exceeding the PM's authority. A

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SACCR may be initiated by the EPA RPM or any USACE element performing or supporting project execution.

5. Project Management Roles and Responsibilities.

a. Headquarters US Army Corps of Engineers (HQUSACE). CEMP-R, Directorate of Military Programs, has primary responsibility for ensuring the successful implementation of the SF project management system and accomplishment of project management objectives. The Chief, CEMP-R reports directly to the Director of Military Programs. The Chief, EPA SF Branch of CEMP-R shall be responsible for developing and integrating SF project management policies and goals in coordination with all other HQUSACE elements, and for reviewing MSC implementation of the project management system. The responsibilities of CEMP-R shall include:

- (1) coordinating with HQEPA and, when appropriate, with EPA Regions,
- (2) obtaining information only directly from the PM, and
- (3) participating in SF Management Reviews (SMRs).

b. Major Subordinate Commands (MSCs). For projects in some EPA regions RD responsibility is presently at CEMRD while RA activities are at a geographically local district. Decentralization of pre-RA responsibility to MSCs located near or within each EPA region is in progress. The MSC Commander, through the Director, Programs and Project Management Directorate (PPMD), shall provide project management leadership and assign responsibility for implementation of the project management system within the executive office. The duties of the assigned organization shall be fully defined by the MSC Commander consistent with guidance; however, they shall include participating in SMRs.

c. District/Operating Major Subordinate Command (MSCs). The district or operating MSC that manages/oversees the RD provides the PM for the life of the project. When USACE provides the KO for RA only, the RD has usually been prepared by an EPA contractor with some technical oversight (TA or EO) by USACE. During RD and RA, the USACE element managing or overseeing the design shall coordinate with the RA element which will execute the RA. Although TA and EO assignments are not required to be placed under full project management during RD, the PM should use all appropriate planning and control tools provided by project management. The PM should remain aware that the project will be managed during RA under project management guidelines to the

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greatest extent feasible, and should prepare accordingly. The district or operating MSC shall participate in SMRs when requested.

d. Project Manager. Projects shall be assigned to the PM by the Deputy District Engineer for Programs and Project Management DDE(PPM) as early as possible, consistent with the assignment from EPA, and preferably during the RI/FS to ensure early PM involvement in the project. The PM shall be the USACE point of contact with EPA when USACE participates during the RI/FS. The duties of the PM shall be fully defined by the DDE(PPM); however, these duties shall include the responsibilities stated in Volume 1.

e. Inter-district/Inter-MSC Project Management Continuity. RD responsibility is in CEMRD, or in a designated design district of a MSC or in a designated operating MSC. RA responsibility usually is in a district or operating MSC that has normal construction responsibility for the geographic location of the project. Projects may be passed between MSCs/districts with different chains of command when RD is complete and RA ensues. Continuity of project management over the life of the project is ensured by the following mechanisms:

(1) The district/operating MSC that manages or oversees the RD assigns the PM for the duration of USACE involvement in the project. During pre-RA activities, the PM fully coordinates with the project Technical Manager (TM) in the RA operating MSC or district and with the district's parent MSC to enable a smooth transition to RA. The PM will recognize that the TM in the RA element is a member of the project team.

(2) The RA district/operating MSC assigns a TM for the RA as early as possible to provide coordination continuity. The TM is not required to participate in RD district or operating MSC PRB's, but should do so when appropriate.

(3) The RA district/operating MSC executes the IAG with EPA that provides RA funding. The RA district/operating MSC Resource Management Office accepts the IAG. The PM in the RD district/operating MSC maintains control of project funds by authorizing the RA district/operating MSC Resource Management Office to disburse project funds to project cost accounts determined by the PM. The PM's control of funds must be consistent with the authorities of the KC, Administrative Contracting Officer (ACO) and TM. This process mirrors the PM's control of project funds for RD district functional divisions.

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(4) The TM fully uses the RA district/operating MSC organization to accomplish project goals and resolve issues. The TM keeps the PM fully informed of all issues and supports the PM's management requirements including funds control, SACCRs, management reports and any other requested support.

(5) The PM is the project's primary point of contact with entities outside the RA district and its parent MSC or operating MSC. Formal issue resolution and SACCR approval is through the PM and RD district/operating MSC chain of command and PRB.

6. Customer (See Volume 1, Paragraph 9).

7. Management Reviews.

a. General. All SF PRBs shall be scheduled to efficiently integrate with PRBs of other programs and with the scheduled SMRs. Subordinate echelon PRB schedules shall be coordinated with superior echelon PRB schedules to ensure timely reporting and prompt responses to project issues.

b. HQUSACE Review. The HQUSACE PRB shall be chaired by the Chief of the Environmental Restoration Division or a designee, and shall include the chiefs of Engineering, Construction, Contracting, Real Estate, Counsel, Resource Management, and others as necessary.

c. Major Subordinate Command Review. The MSC PRB shall be chaired by the Commander or his designee and shall include the chiefs of Engineering, Construction, Real Estate, Counsel, Resource Management, Contracting and others as requested by the Chair. Each MSC shall charter its PRB to prescribe its composition, roles, and responsibilities. The responsibilities of the MSC PRB shall include the following:

(1) reviewing Project Executive Summaries (PESs), resolving issues or escalating them to the HQUSACE PRB, providing comments and feedback to district/operating MSC PRBs and reporting to HQUSACE;

(2) taking action on SACCRs in accordance with the authority limitations as defined by Table 4-1 of this regulation; and

(3) designating the MSC SF coordinator to serve as the Executive Secretary for MSC PRB meetings.

d. District Review. The district PRB shall be chaired by the District Engineer (DE) or his designee and shall include the

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Chiefs of Engineering, Construction, Real Estate, Counsel, Resource Management, Contracting, and others as requested by the Chair. Each district shall charter its PRB to prescribe its composition, roles, and responsibilities. EPA RPMs with projects reviewed by the district shall be invited to participate as non-voting members of the PRB.

e. Operating Major Subordinate Command Review. Operating MSC PRBs shall perform district and MSC review functions.

8. Management Reports.

a. Report Description and Preparation. All SF project management reports are described and instructions for completing them are included in appendices to this volume.

(1) ENG Form 5042-1-R, Project Schedule and Cost Change Request (SACCR)--EPA Superfund Program. A SACCR is used to request, review, evaluate, coordinate, recommend, approve, and document changes to project costs, schedules and funding. For EPA-requested changes, the PM shall prepare a SACCR. The report is prepared in accordance with Appendix 4-A of this regulation.

(2) ENG Form 5042-2-R, Project Executive Summary (PES)--EPA Superfund Program. This report provides senior management at all echelons with a brief overview of project status including project background, cost information, schedule, and major problems and issues. The report serves to structure and focus the PRB review process and provide indicators of trends and progress in a clear, concise format. The report may include remarks from the PM on significant project issues and concerns. The PM prepares the PES in accordance with Appendix 4-B of this regulation.

(3) ENG Form 5042-3-R, Project Obligations Graphs (POGs)--EPA Superfund Program. POGs graphically display a summary of project cost information and, through inclusion of milestones, display schedule and cost performance in comparison to baseline. The PM prepares this report in accordance with Appendix 4-C.

(4) MSC Commander's Executive Summary (MSCCES). The MSCCES documents the MSC PRB. The MSC PRB Executive Secretary prepares the report in accordance with Appendix 4-D. It shall highlight those projects of special interest and requiring higher attention, indicate what actions will be taken at the HQUSACE level to resolve any issues or problems, and indicate what actions may be required at higher levels.

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b. Report Submission and Review Procedures.

(1) The DDE(PPM) shall submit PESSs, POGs, and, when appropriate, SACCRS for all projects managed under the project management system to the MSC monthly. Copies of these reports shall be provided promptly to the responsible EPA RPM after each district/operating MSC PRB session. The PM shall ensure that the CleanLAN database is updated biweekly. The MSC shall submit to HQUSACE bi-monthly PESSs, POGs and, when appropriate, SACCRS, for projects requiring HQUSACE action or approval and an MSCCES. Table 4-2 provides a summary of project management reporting requirements. The MSC shall submit one high-quality copy (suitable for reproduction) or an electronic transmission of the required reports to arrive at HQUSACE (CEMP-R) by COB on the last working day of the month following the reported month.

(2) HQUSACE shall coordinate with HQEPA before submitting project reports to OASA.

(3) Formal project reviews shall be conducted in conjunction with report preparation and submission processes. All projects managed under this regulation shall be reviewed by district/operating MSC PRBs monthly and by MSC PRBs bi-monthly or more frequently at the Commander's discretion. Any comments or changes by the PRBs shall be annotated on the reports reviewed by each PRB and transmitted to the next higher and/or lower echelon of authority as appropriate.

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TABLE 4-1

Project Schedule and Cost Change Request (SACCR) Approval Limits
For Contingency Funds Use

	Single SACCR Approval Limit 1/			Cumulative Contingency Use Approval Limit
	Project Total Cost (\$000)			All Projects
	0- 50,000	50,000- 100,000	>100,000	
Authorized Approver				
Project Manager 2/	\$50,000	\$75,000	\$100,000	30%
DDE (PPM)	\$250,000	\$400,000	\$500,000	45%
District PRB	\$500,000	\$750,000	\$1,000,000	60%
District Engineer 3/	- UNLIMITED /1 -			80%
MSC PRB 4/	- UNLIMITED /1 -			90%
HQUSACE PRB	- UNLIMITED /1 -			100%

1/ The total project cost including contingency shall not exceed the current IAG funding amount. Neither a single SACCR, nor the sum of all project SACCRs, shall use more of the contingency than allowed by the Cumulative Contingency Use Approval Limit

2/ Additional authority may be conferred by the district/operating MSC PRB for small modifications.

3/ Unlimited up to the 80% cumulative contingency approval limit. The District Engineer may approve contingency use within this limit or may elevate it to the MSC for approval.

4/ Unlimited up to the 90% cumulative contingency approval limit.

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TABLE 4-2

Project Management Reports Submission Summary

<u>Report Title</u>	Submitted to MSC by <u>District 2/</u>	Submitted to CEMP-R by <u>MSC 3/</u>	Submitted to ASA(CW) by <u>HQUSACE 4/</u>
Project Schedule and Cost Change Request (SACCR)	When Appropriate 1/	When Appropriate 1/	Not Applicable
Project Executive Summary (PES)	Required	When Appropriate	When Appropriate
Total Schedule and Current FY Project Obligations Graphs (POGs)	Required	With PES	When Appropriate
MSC's Commander's Executive Summary (MSCCES)	Not Applicable	Required	When Appropriate

1/ SACCRs must be submitted to the next higher echelon for approval when the approval authority limits of Table 4-1 are reached.

2/ A Project Executive Summary plus Total Schedule and Current FY Project Obligations Graphs for all projects will be submitted to the MSC by its districts on a schedule defined by the MSC. The CleanLAN database shall be updated biweekly.

3/ Reports for all projects needing HQUSACE action or approval will be submitted to CEMP-R by the MSC. The MSC shall submit one quality copy (suitable for reproduction) or an electronic transmission of the required reports to arrive at HQUSACE (CEMP-R) by COB on the last working day of the month following the reported month.

4/ Project Summaries for selected projects will be submitted to OASA(CW) by HQUSACE on an exception basis.

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Management
PROJECT MANAGEMENT

VOLUME 5 - Project Management Policy and Procedures for Defense Environmental Restoration Projects (DERP) under the Defense Environmental Restoration Program, Base Realignment and Closure and Support for Other Customers.

1. Purpose. This Engineer Regulation (ER) provides project management policy, guidance, and procedures for all projects assigned to the US Army Corps of Engineers (USACE) for DERP, consistent with the USACE project management philosophy (reflected in Appendix 1-B, Implementation of Project Management). To streamline its use, this ER has been organized in five volumes as follows, with Volumes 2-5 being subordinate to Volume 1:

a. Volume 1. Project Management Policies and General Procedures

b. Volume 2. Project Management Policies and Procedures for the Civil Works Program

c. Volume 3. Project Management Policies and Procedures for Military and Support for Others Programs

d. Volume 4. Project Management Policies and Procedures for the Environmental Protection Agency (EPA) Superfund Program

e. Volume 5. Project Management Policies and Procedures for the Defense Environmental Restoration Projects (DERP) under the Defense Environmental Restoration Program, Base Realignment and Closure and Support for Other Customers

2. Scope. Defense Environmental Restoration Program (DERP) projects and Base Realignment and Closure Environmental Restoration (BRAC-ER) projects are covered by this volume. All environmental restoration projects executed by USACE, for any customer, will be subject to the basic principles of project management as described in "Project Management Policy and General Procedures", Volume 1 of this ER. In addition to the reporting requirements of Volume 1 for the Installation Restoration Program (IRP) and the Formerly Used Defense Sites (FUDS), as a minimum, all projects or sites listed or scheduled to be listed on the national priority list (NPL) will be reported to Headquarters US Army Corps of Engineers (HQUSACE). Other DERP project reports will be submitted as directed by HQUSACE (CEMP-R). All BRAC-ER projects are to be reported. Documentation for small projects

This regulation supersedes ER 5-7-1(FR), 1 Mar 91, Advance Copy

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should match project complexity. Required small project documentation is limited to the Project Executive Summary (PES) and the Project Management Plan (PMP).

3. Definition of a Project.

a. Installation Restoration Program: All environmental restoration activities executed by USACE on an active DoD installation. Restoration activities include all study phases, Record of Decision (ROD) preparation and signature, design, remediation and monitoring. An IRP project:

(1) Begins when any portion of a project is assigned to USACE. The recipient may be either the US Army Corps of Engineers Toxic and Hazardous Materials Agency (CETHA) or a Major Subordinate Command (MSC)/district.

(2) Ends at fiscal closeout of the final remediation activity.

b. Formerly Used Defense Site: All environmental restoration activities executed at eligible FUDS. Restoration activities include Potential Responsible Party (PRP) negotiations, removal site investigation (SI) and/or engineering evaluation and cost analysis, remedial SI and/or remedial investigation/feasibility study (RI/FS), removal/remedial design, removal/remedial action, and/or operation and maintenance. A FUDS project:

(1) Begins when any portion of a project is assigned to a MSC/district by HQUSACE.

(2) Ends at fiscal closeout of the final removal or remediation activity.

c. Base Realignment and Closure Environmental Restoration: All BRAC-ER restoration activities executed by USACE on an active DoD installation identified for closure under BRAC legislation. Restoration activities include all study phases, ROD preparation and signature, design, remediation and monitoring. A BRAC-ER project:

(1) Begins when any portion of a project is assigned to USACE. The recipient may be either CETHA or a MSC/district.

(2) Ends at fiscal closeout of the final remediation activity.

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d. Other Projects: Activities not covered above, but at the discretion of the MSC/district Commander warrant special attention.

4. Project Management Roles and Responsibilities.

a. HOUSACE. The Environmental Restoration Division (CEMP-R) is responsible for implementing project management for DERP and BRAC-ER, and accomplishing project management objectives. Chief, Installation Restoration Branch (CEMP-RI) and Chief, Formerly Used Defense Sites Branch (CEMP-RF) are responsible for developing project management policies and goals in coordination with other USACE elements, and reviewing USACE participation in the environmental project management program.

b. Major Subordinate Commands, Districts, and Field Operating Activities (FOA). Commanders shall provide environmental project management leadership and assign responsibility for implementation of the environmental project management system within their executive offices.

c. Project Manager (PM). The PM is the primary USACE point of contact for the project with responsibilities as described in Volume 1, paragraph 8d of this ER. The District PM is the primary interface with the client Installation, Major Command (MACOM), regulators and public. For IRP and BRAC-ER, during the study phases (PA/SI and RI/PS) which CETHA executes, CETHA will be the primary contact with the client installation and regulatory agencies. CETHA will keep the district PM fully informed of all activities along with providing copies of all reports and correspondence. A single primary PM will be appointed for each installation or eligible FUDS and will be responsible for project scope, budget, cost, schedule and quality of the environmental restoration products in addition to customer advocacy for Military Programs and Civil Works Directorate activities. In the event that a site or installation is complex and has multiple operable units (OUs), additional PMs may be assigned to augment the overall primary PM's role. In all cases the lead primary PM has the responsibilities as described above.

d. Inter-Office Project Management Continuity. Execution of environmental restoration projects often involves more than one USACE organization (e.g., Major Subordinate Commands; Hazardous, Toxic, and Radiological Waste (HTRW) design districts; geographical and other districts; mandatory centers of expertise (MCKs); field operating activities). Such projects will routinely be managed using a team approach. The management team will be formed by directive from the geographic division. The management team will include a representative of each USACE

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organization with a major role in the project. For example, during the RI/FS, CETHA or a non-geographic HTRW district may have the lead as the technical manager (TM) supporting the PM; when the work shifts to remedial design (RD), the TM shifts to the HTRW design district for the lead; then the TM lead shifts to the geographic district for remediation. TMs are active throughout the life of the project. While one TM may be more active at a certain period, they all participate through the full cycle of the project. Throughout the process, the district PM still maintains the overall Life Cycle Project Manager's role.

e. CETHA.

(1) For IRP projects executed by CETHA, CETHA will execute from initial stages through the RI/FS (ROD). Responsibilities will then transfer to either the HTRW design district or the Environmental Support District (ESD) for execution.

(2) For BRAC-ER projects executed by CETHA, CETHA and USACE districts shall negotiate mutually acceptable schedules (IFMPs as required) and budgets for Preliminary Assessments (PA), SI, and RI/FS, thereby facilitating planning of follow-on work by USACE districts. CETHA shall execute the PA, SI, and RI/FS which shall stay within the agreed upon schedules and budgets, thereby facilitating execution of follow-on work by USACE districts. USACE districts shall execute remedial designs and actions, and interim remedial actions and associated studies.

(3) For IRP and BRAC-ER projects, CETHA will provide project status and planning information as requested by the District PM assigned for an installation by the geographic MSC. For IRP and BRAC-ER projects, the District PM will be involved in all technical aspects of the RI/FS and will receive all project deliverables as they are produced, thereby facilitating project management decisions on viability of removal and interim remedial actions and associated studies. The District PM will be the single USACE Military Programs Directorate elements point of contact for the overall IR program at the installation. For BRAC-ER, the District PM will be the single USACE point of contact for the full range of BRAC activities at the installation, (NEPA, ER, Real Estate, Design/Construction, etc.) and that CETHA will function as the TM. Negotiations with the regulators would be a joint responsibility partnership as CETHA has been the primary contact to date for BRAC 1 and BRAC 91 studies they are executing and will continue to do so for BRAC 93 and beyond studies that they execute as well. The District PM will be informed of all meetings, but may choose not to attend unless it affects cost or schedule. The District PM will be responsible for coordinating information obtained from CETHA with

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the necessary USACE elements for the purposes of planning and preparation of efforts beyond the RI/FS phase. The District PM will also be responsible for the feedback for USACE technical comments and requirements to CETHA and the installation during the RI/FS phase.

5. Program Execution Responsibilities.

a. DERP-IRP and BRAC-ER: The district responsible for IRP and BRAC-ER project management for an installation will be designated by the geographic MSC. In the event that there are multiple operating MSCs for a particular site, the PM lead will be from the MSC having jurisdiction over the military construction for that site. The district will be the HTRW design district or the Environmental Support District (ESD). Any exceptions will be approved by CEMP-RI. The responsible district will assign a PM as the primary point of contact to manage all phases of remedial activities for an installation. For BRAC-ER, at installations where USACE or CETHA are currently working, they would continue to do so in the future. For BRAC-ER, for those installations where there is no ongoing RI/FS, USACE and CETHA will jointly develop a plan for execution. The district or operating MSC responsible for military construction support of an installation or site within the MSC's boundary will execute all remedial actions.

b. DERP-FUDS: The geographic MSC will designate a district responsible for project management of all activities at an eligible FUDS site. The responsible district will assign a PM as the single point of contact to manage all phases of removal or remedial activities for the site. Any exceptions to the following will be approved by CEMP-RF.

(1) The geographic district will be designated with project management responsibility for those sites involving Ordnance and Explosive Wastes (OEW) and less complicated cleanup activities such as Containerized Hazardous, Toxic, and Radiological Waste (CON/HTRW) and Building Demolition and Debris Removal (BD/DR).

(2) The HTRW design district will be designated with project management responsibility should any site involve more complicated cleanup activities such as HTRW projects involving RI/FS, RD, or assigned PRP negotiations. The HTRW design district will utilize the geographic district for public affairs; interface support with state and local regulatory agencies; and execution of CON/HTRW, BD/DR, interim response actions, and remedial/removal actions (RA).

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(3) Sites involving PRP activities require special handling and extensive and close coordination by all participants. Sites involving PRP activities will be assigned to the HTRW design district for project management. However, the division/district executing the PRP negotiations is considered the TM and will have authority for all PRP activities at the site during the PRP negotiation phase.

6. Project Management Plans (PMPs). Appendix 2-A of this regulation, Guidelines for Project Management Plans, describes the components of PMP. Some of the components (e.g., Current Benefits Plan, and Local Cooperation Plan) are unique to Civil Works projects, and do not apply to DERP or BRAC-ER. Other PMP components will not apply to every DERP or BRAC-ER project. However, most of the components described in Appendix 2-A will, to some extent, appear in every DERP or BRAC-ER project PMP, and the first six components (i.e., Scope of Work, Work Breakdown Structure (WBS), Organizational Breakdown Structure, Responsibility Assignment Matrix, Schedules, and Budgets and Cost Estimates, plus Value Engineering Plan) are fundamental to every PMP. When the direction to manage IAW this regulation is given prior to, or during, execution of a PA/SI or RI/FS, then an Initial PMP (IPMP) will be prepared. When the direction to manage IAW this regulation is given after completion of such studies, then a PMP will be prepared.

7. Preparation, Coordination, Review, and Approval of the Initial Project Management Plan (IPMP). The focus of the IPMP is on the RI/FS, as a phase of a project or projects. The IPMP shall be prepared by the USACE element responsible for execution of the RI/FS. The IPMP shall be coordinated with all members of the project management team, the installation and their respective headquarters for which the project is to be executed. The IPMP shall be reviewed and approved by the district Project Review Board (PRB), and furnished to the MSC and Environmental Restoration Division, HQUSACE for information. Unless directed otherwise, the IPMP shall be prepared, coordinated, reviewed, approved, and furnished to the MSC and Environmental Restoration Division, HQUSACE, within 60 days of receipt of the applicable directive or in the case of EUS, from the date USACE approves the inventory project report (IPR). Coordination, review, and approval shall be documented. For IRP projects executed by CETHA, the IPMP will be prepared at CETHA in consultation with the district PM, the installation and MACOM. An IPMP prepared by CETHA will be reviewed and approved by the CETHA PRB functional equivalent. The IPMP and its updates will be provided to the installation and the District PM for use in developing the PMP and CLMP-R for information.

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b. Preparation, Coordination, Review, and Approval of the PMP. As soon as the environmental problem has been defined and described to the extent that removal actions or interim remedial actions can be identified, or an optimal solution planned, the PMP shall be prepared. The focus of the PMP is on the RD and RA necessary to solve the environmental problem in the best way. The PMP shall be prepared by the PM with input from the HTRW design district that is tasked by the MSC with execution of RD. The PMP shall be coordinated with all members of the project management team, the installation and their respective headquarters for which the project is to be done. The PMP shall be reviewed and approved by the district PRB, and furnished to the MSC and Environmental Restoration Division, HQUSACE, within 60 days of receipt of the applicable directive or in the case of FUDS, from the date USACE approves the inventory project report (INPR). Coordination, review, and approval shall be documented. Approval of the PMP supersedes the IPMP.

7. Management Control.

a. Project Cost Estimates. The IPMP and PMP shall include cost estimates as described in this volume. The IPMP and the PMP estimates shall be used to assist the installation with preparation of their RCS-1383 report for initial submittal and subsequent updates. The PM will insure that the estimate is properly reflected in the current applicable IRP, FUDS or BRAC-ER documents (i.e. work plans, five year plans, databases, etc.). IPMP cost estimates shall delineate the following as applicable: PA and SI report preparation; PA and SI report review (by agency); PA and SI project management; development of the RI/FS work plan; sampling and analysis; RI and FS report preparation; RI and FS report review (by agency); and, RI and FS project management. The PMP includes estimates of costs associated with RD and RA. Where RD and RA are to be accomplished by different districts, each shall prepare the cost estimates associated with its assigned activity. PMP cost estimates shall delineate the following: real estate activities including, but not limited to, preparation of real estate planning reports, appraisals, title evidence, relocation assistance, negotiations, rights-of-entry, acquisition of interests in real property by lease, purchase or condemnation, and disposal of real property; engineering and design activities; remedial action activities; remedial action management including, but not limited to, in-house labor, materials, equipment, facilities and support contracts; and, USACE overhead. As applicable, concise real estate requirements for projects must be determined on a case to case basis depending upon the program, IRP, FUDS or BRAC-ER. All cost estimates shall be in the Work Breakdown Structure format specified in the references. All cost estimates shall have the concurrence of all

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members of the project management team and coordinated with the installation for use in preparation of the RCS-1383 report for submittal and updates.

(1) Baseline Cost Estimate (BCE). BCE shall be included in the IPMP and the PMP as the first official cost estimate for each management plan. BCE shall be developed as the total costs for the defined scopes of work and a stated base date. BCE shall include inflation from the base date to the mid-point of construction/execution. The BCE shall be permanently fixed upon concurrence with the installation and approval of the IPMP or PMP.

(2) Current FY Baseline Cost Estimate (CFYBCE). The CFYBCE is the BCE adjusted for actual inflation and current estimates of future inflation. The CFYBCE shall be developed from the BCE annually, for a stated current date, by adjusting the inflation assumed at the base date to the actual inflation incurred from the base date to the current date plus an estimate of future inflation developed from the current tri-service Military Construction Program (MCP) index issued annually by Cost Engineering Branch, Engineering Division, Directorate of Military Programs. Non-construction elements of the project will be adjusted using the O&M factors in the inflation guidance issued annually by HQDA (DACS-PBC) and available through Resource Management channels.

(3) Current Approved Cost Estimate (CACE). The CACE is the current estimate of total project cost most recently reviewed and approved IAW this volume. Developed from the BCE (or an earlier CACE), the CACE reflects approved changes to the scope, schedule, inflation indices, and other parameters.

(4) Forecast Cost Estimate (FCE). The FCE is the PM's prediction of the total project cost considering pending changes, perceived risks and trends, and adjustments reflecting the current MCP index.

b. Schedule Control. All projects managed under this volume shall be scheduled and managed using microcomputer-based network analysis systems (NAS). Any exceptions are to be approved by CEMP-R. One system shall be chosen for each project by the project management team. Schedules (networks) shall have the concurrence of all members of the project management team including the installation.

(1) Network Development. NAS shall incorporate the applicable milestones listed in Appendix 5-D, and all supplemental milestones selected by the PM, district, MSC, FOA, the installation or Environmental Restoration Division to ensure

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effective project management. NAS shall be refined throughout the project life to ensure accuracy, validity, and effectiveness as a schedule management tool. NAS task descriptions shall be consistent with the Work Breakdown Structure. The NAS shall be consistent with the IPMP and PMP.

(2) NAS Software. NAS software shall have the capability to analyze, summarize and report resource requirements including cost, time and manpower. The software shall support NAS requirements defined in this section. The software shall support the data submitted under the reporting requirements in this section.

(3) Baseline Project Schedule (BPS). BPS shall be included in the IPMP and the PMP as the first official project schedule for each management plan. BPS shall be developed for the defined scope of work and consistent with any standing Federal Facilities Agreements (FFA), notice of violation (NOV) or consent decrees (CD) that the facility may be currently operating under. The BPS shall be permanently fixed upon approval of the IPMP or PMP.

(4) Current Approved Schedule (CAS). The CAS is the version of the project schedule most recently reviewed and approved by the MSC PRB.

(5) Forecast Schedule (FS). The FS is the PM's prediction of the probable project schedule considering pending changes, and perceived risks and trends.

(6) Pending Changes. The PM shall recommend revision of the CAS as needed to manage the project effectively. The PM may authorize schedule changes that do not affect a milestone as defined in Appendix 5-D. A Project Schedule and Cost Change Request (SACCR), described in Appendix 5-A, shall be submitted to the district PRB for approval or referral of requested changes exceeding the authority of the PM. Any schedule/cost change that will adversely impact the BRAC mandated deadlines must be forwarded from the district PM to HQUSACE for approval. The Project Schedule and Cost Change Request may be initiated by any USACE element or the installation and their respective headquarters.

8. Management Reviews.

a. General. Environmental Restoration Division will schedule the HQUSACE environmental Project Review Board (PRB). The HQUSACE environmental PRB will, to the extent possible, be scheduled to coordinate with PRB of other programs and with other scheduled program reviews (e.g., quarterly reviews by the Army).

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Subordinate element environmental PRB schedules shall be coordinated with superior element environmental PRB schedules to ensure timely reporting of data and allow timely response to project issues.

b. HQUSACE Review. The HQUSACE environmental PRB will be chaired by Chief, Environmental Restoration Division and include the following: Chief, Engineering Division; Chief, Construction Division; Chief, Programs and Project Management; Principal Assistant Responsible for Contracting; Director of Real Estate; Chief Counsel; Director of Resource Management; and, others as necessary.

c. MSC and District Review. MSC and district environmental PRBs will be chaired by the MSC and District Commander or designee, respectively, and shall include chiefs of all functional elements with execution or support roles in the environmental restoration program. MSC and districts shall charter respective PRB to prescribe composition and responsibilities. The responsibilities of the PRB include taking action on Project Schedule and Cost Change Requests in accordance with the authority limitations as defined by Table 5-1 of this regulation.

9. Management Reports.

a. Report Submission and Review Procedures. Table 5-2 provides a summary of project management reporting requirements.

(1) The PM shall submit required reports to MSC monthly for review. MSC shall submit required reports to Environmental Restoration Division, HQUSACE monthly by the close of business 15 days after the last working day of the each month.

(2) A Commander Executive Summary shall accompany each monthly submission from the MSC to the Environmental Restoration Division, HQUSACE. The format for the Commander Executive Summary is included in Appendix 5-C. It shall highlight those projects of special interest and requiring higher level attention, indicate what actions will be taken at the reporting level to resolve any issues or problems, and indicate what actions may be required at higher level.

b. CETHA. CETHA will provide project reports to the District PM in accordance with this volume. As a minimum, the PES, described in Appendix 5-B, will be required.

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10. Funding. HQUSACE and divisions are funded through a Management and Support account, while districts use project funds. Costs identified with a specific project must be charged to that project. Costs not identified with a specific project are charged to the technical indirect account or overhead account. Funding for IRP projects executed by CETHA will continue to be provided directly and managed by CETHA in lieu of the PM. For BRAC-ER, contingent upon availability of funds and once schedules and budgets are agreed upon, HQUSACE will furnish CETHA funds for the total program on an annual basis. If sufficient funding is not available to permit an annual release, the funds will be allocated on a quarterly basis. Any deviations from the established or approved budget will be coordinated through the district and HQUSACE for approval by HQDA.

11. The PM Reporting System (Under Development).

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TABLE 5-1

Project Cost Change Approval Authorities

<u>Project Cost</u>	<u>All Projects</u>	<u>RA<\$5,000,000</u>	<u>RA>\$5,000,000</u>
PM	\$50,000 (IRP) \$50,000 (FUDS)	\$50,000 (IRP) \$50,000 (FUDS)	\$100,000 (IRP) 1/ \$50,000 (FUDS)
CEMP-R	<\$200,000 (IRP) <\$4,000,000 (FUDS)		
CETHA	<\$200,000 (IRP)		
DAEN-2CZ	>\$200,000 (IRP) >\$4,000,000 (FUDS)		

1/ Contingencies provided for RA contracts awarded 1Q or 2Q FY, unobligated funds must be returned NLT 1 Sep of execution year.

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TABLE 5-2

Project Management Report Submission Summary 1/

Report Title	Submitted to MSC by District 2/	Submitted to CEMP-R by MSC 3/	APPENDIX
ENG Form 5043-1-R, Project Schedule and Cost Change Request (SACCR)	Optional	Upon Request	5-A
ENG Form 5043-2-R Project Executive Summary (PES)	Required	Required	5-B
MSC/FOA Commander's Executive Summary	Not Applicable	Required	5-C
USACE Major Milestones	Not Applicable	Not Applicable	5-D

1/ Submittal of reports shown as "Optional" or "Upon Request" may be required by CEMP-R at any time.

2/ Reports shown as "Optional" must be prepared at the district or CETHA. MSC will determine whether or not "Optional" reports prepared by a district must be submitted.

3/ For reports to be submitted to CEMP-R by MSC, one copy (suitable for reproduction) shall be submitted in time arrive at HQUSACE (CEMP-R) not later than close of business, fifteen days after the last working day of each month.

APPENDIX 6

CECG Memorandum from LTG Ballard, dated 26 February 1998, Subject: Program and Project Management Regulation. Memo encloses ER 5-1-11, dated 27 February 1998, Subject: Program and Project Management

26 Feb 98

MEMORANDUM FOR COMMANDERS, MAJOR SUBORDINATE COMMANDS, FIELD
OPERATING ACTIVITIES, AND LABORATORIES

SUBJECT: Program and Project Management Regulation, ER 5-1-11

1. I am personally transmitting the subject new regulation for program and project management to underscore my philosophy and to stress the importance of reinforcing our corporate commitment to delivering projects to our customers. The governing guidance for project management, issued as ER 5-7-1 (FR) in 1992, is replaced by this guidance. In line with our vision, I have directed the strengthening of the U.S. Army Corps of Engineers (USACE) Program and Project Management Business Process (PMBP) to revolutionize our effectiveness to remain relevant and competitive in the future. My intent is for USACE to follow a common business management process by having each of you to use the principles of the PMBP and apply it to all work accomplished by USACE.
2. I expect each of you to implement these policies and ensure your organizations are aligned to support the PMBP effectively. Our focus must be on the end results – execution of programs/projects, and customer satisfaction, and not just the individual organizational products and activities. This new regulation provides for a strengthened integrative project management business process that expands the project manager's controls over project resources by empowerment from the Commanders. The PMBP also requires all work to be placed under centralized program management to facilitate corporate decision making and effective use of resources.
3. This new regulation is not very prescriptive. It provides sufficient authority for each command to develop necessary implementation guidance to best serve its customers. The program and project management imperatives are our template for success. I expect that your management of the "below the line" requirements will enhance our reputation as "the world's premier engineering organization."

Encl

//SIGNED//
JOE N. BALLARD
Lieutenant General, USA
Commanding

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	Management PROGRAM AND PROJECT MANAGEMENT	
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CEMP/CECW
 DEPARTMENT OF THE ARMY
 U.S. Army Corps of Engineers
 Washington, D.C. 20314-1000

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Regulation
 No. ER 5-1-11

27 February 1998

Management
 PROGRAM AND PROJECT MANAGEMENT

1. Purpose. This engineer regulation establishes philosophy, policy, and guidelines for management of all programs and projects assigned to the U.S. Army Corps of Engineers (USACE).
2. Applicability. This regulation applies to all USACE Activities. It takes precedence over all other USACE regulations, circulars, directives, letters, memoranda, and operating procedures with respect to program and project management. Operational guidance that may be issued from time to time must conform to the precepts of this regulation.
3. References.
 - a. AR 11-2, Management Control.
 - b. ER 5-1-10, Corps-wide Areas of Work Responsibility.
 - c. ER 10-1-2, U.S. Army Corps of Engineers Division and District Offices.
 - d. ER 37-1-24, Operating Budgets
 - e. ER 37-2-10, Accounting and Reporting for Civil Works Activities.
 - f. ER 37-345-10, Accounting and Reporting for Military Activities
 - g. ER 1110-1-12, Quality Management.
4. Distribution. Approved for public release, distribution is unlimited.
5. General.
 - a. The Program and Project Management Business Process (PMBP) is the corporate

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management approach for execution of all USACE programs and projects.

(1) It is the intent of USACE to employ a management system that makes the entire USACE entity a project management oriented organization focused on business processes that are uniform throughout the command. In the past, USACE's management approach to delivering quality projects to its customers revolved around cooperative interactions between function oriented (stovepipe) organizations. More recently, a new system of project management was built around yet another organization (Programs and Project Management Division (PPM)), created for the purpose of integrating the efforts of the functional organizations. Projects were accomplished by having each organizational element manage its resources to produce products that, when combined, became the total project. This concept continued to emphasize traditional stovepipes, allowed for management layers by having project managers (PM) and technical managers with often overlapping responsibilities, did not include certain important mission elements (Operation & Maintenance, General, for example), and did not effectively integrate program management. This approach created management redundancies, accountability questions, and did not always produce horizontally integrated work.

(2) While not mandating a process whereby all the resources are placed under the direct supervision of the PM, this new regulation reflects a paradigm shift to focusing attention on the program/project execution process, rather than the individual organizations. The Program and Project Management Business Process (PMBP) described in this regulation is the process by which all work is accomplished by USACE, without exclusion. The guidance in this regulation emphasizes the importance of project teams and the role of the project manager, whose focus is on the overall process and the members of the team, who are empowered to act on behalf of their functional organizations. It focuses attention on the end results -- execution of projects and programs, and customer satisfaction. This business process also integrates program management by requiring all work in the command to be under corporate oversight, and by centralizing programmatic information to give the Commander ready access to and one location for data, so appropriate corporate decisions can be made and resources managed effectively.

b. The USACE PMBP consists of two major components: the management of individual projects, i.e., project management; and the oversight of collective projects, activities and services derived from assigned missions, i.e., program management. It is the policy of USACE to apply the PMBP as defined herein to all projects. Further, principles of the program management component of the PMBP shall apply to all work.

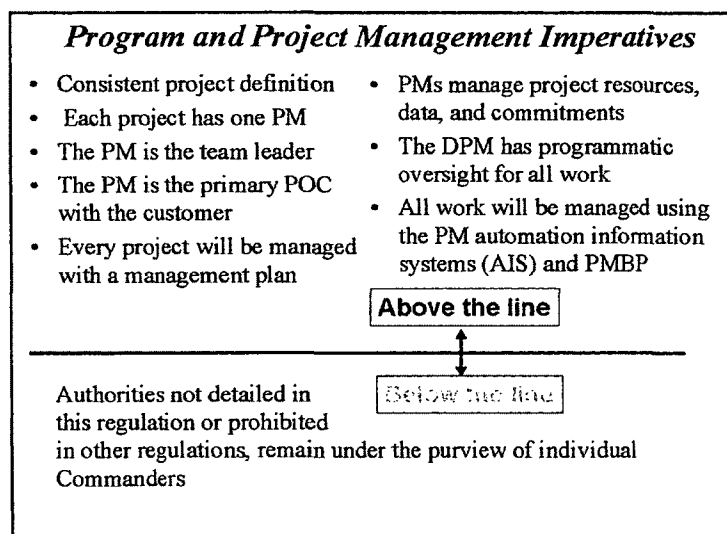
c. This regulation focuses on USACE divisions and districts; however, the philosophies and requirements of the USACE program and project management business process embodied in this regulation are applicable to all USACE activities (i.e., laboratories, field operating activities

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(FOAs), and centers). Each Commander has the responsibility for ensuring his or her organization is aligned to support the PMBP.

d. The representation below prescribes the essential elements of the USACE PMBP. These "above the line" requirements are to be followed across USACE. Authorities not detailed in this regulation or prohibited in other regulations, are considered "below the line" and remain under the purview of individual Commanders.



6. Definitions.

a. Project - is any work (products, services, etc.) intended to produce a specific expected outcome or solution to a customer problem or need. Customer, in this sense, is used in a broad manner and refers to discrete (even localized) entities, organizations internal or external to the Corps and, in some cases, the Nation as a whole.

A project has the following characteristics: (1) Requires the application of one or more of the following professional practice and knowledge areas: planning, engineering, construction, operations and maintenance, real estate, and environmental science. (2) Is performed by the Corps for a customer, either a specific entity or the Nation as a whole. (3) Has a defined scope, schedule, cost and criteria for performance measurement. Accordingly, the term "project" refers

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to work in the planning (preauthorization) stage, the engineering and design stage, the construction stage, the operation and maintenance stage or a combination of these. It also refers to certain one-time missions such as emergency response actions, high-visibility regulatory actions, stand alone real estate assignments, etc.

Specific projects will be identified and further defined by the appropriate Corps national program directors (i.e., Directors of Civil Works, Military Programs, Real Estate, or Research and Development), or by the District/Division Commander, if the project is not part of a larger USACE program.

Services comprising recurring activities (e.g., routine regulatory activities, flood plain management services, etc.), are not typically subject to the project management component but are subject to program management oversight.

b. Program - is a group of projects, services or other activities that may be categorized by funding source, customer requirements or other common criteria for which resources are allocated and collectively managed.

A program has the following characteristics: (1) Accomplishes a unified mission or purpose. (2) Utilizes a pool of resources that must be prioritized and corporately managed. (3) Is normally developed and budgeted as an entity, usually as an appropriation account, or appropriation line item, by either the Corps or another agency.

c. Project Management - is the component of the PMBP used by USACE for delivering individual projects to our customers. The project management business process embodies leadership, systematic and coordinated management, teamwork, partnering, effective balancing of competing demands, and primary accountability for the life-cycle (including the warranty period and, often, operation and maintenance) of a project. It reflects the USACE corporate commitment to provide customer service that is seamless, flexible, effective, efficient, and focuses on the customers' expectations, participation, and satisfaction, consistent with law and policy.

d. Program Management - is the component of the PMBP used by all USACE levels to manage a collection of similar projects, activities and services derived from assigned missions. It consists of the development, justification, management, defense and execution of programs within available resources, in accordance with applicable laws, policies, and regulations, and includes accountability and performance measurements. Under program management, the entire district's or division's programs, projects and other commitments are aggregated for oversight and direction by the organization's senior leadership. Program management takes project management to a greater level of interdependencies and broadens the corporate perspectives and responsibilities.

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7. Program and Project Management Relationship.

a. Program management and project management are separate and distinct yet integral to one another. Throughout its life cycle, a project typically encounters many changes. Changes in program requirements can affect individual projects within that program; therefore, projects and programs share an interdependent relationship. The requirements defined in the PMBP apply to both program and project management because of this integrated nature.

b. Project management is normally performed at the USACE execution level (i.e., districts, FOAs, and laboratories, etc.). Program management is performed at all levels of the organization, with increased emphasis at levels above the execution level (i.e., MSCs, HQUSACE, etc.). This structure allows each management level to concentrate on issues and concerns of importance to the customer.

8. Organizational Relationships.

a. The strength of USACE is the professionalism, diversity and expertise of its people. It is this strength, demonstrated through a unified team effort, that provides quality in the projects and services the Corps delivers to its customers and to the Nation. Providing quality products is essential to corporate success and is a shared corporate responsibility. PMs and functional chiefs have a shared responsibility for quality of projects. Successful execution of quality projects requires that all functional elements and disciplines work together. The functional roles and responsibilities of division and district elements are provided in ER 10-1-2. Quality procedures, practices and tools are provided in ER 1110-1-12.

b. The District/Division Commander has the ultimate responsibility for each project and his or her district/division program as a whole. The Commander is accountable and responsible for ensuring that the actions and products of his or her staff produce the desired results.

c. The Deputy for Programs and Project Management (DPM) is the District Commander's civilian deputy. The DPM is responsible to the Commander for effective program and project management in the district, and oversees the PMBP. This deputy is responsible for the vertical and horizontal integration of products to produce the projects and manage the program for the district. The DPM is the senior civilian on the district staff who provides leadership to a corporate board comprising senior staff. The DPM provides continuity of corporate leadership in developing and assessing mission and work requirements and in developing corporate programs, plans, goals, and objectives. All work in the district program is assembled under the DPM's oversight so that priority decisions can be made corporately. To assist in reinforcing integrated teamwork, the DPM will provide input to the Commander concerning the performance of the functional chiefs for their contributions to project delivery.

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At the division level, the Director of Programs Management provides the integrating assistance to the Division Commander and is the key division staff member for regional program development, justification, defense and execution oversight.

d. The chiefs of technical functions are responsible for developing and maintaining a professional, technically competent workforce; establishing and maintaining the necessary systems, technical processes and environment to produce quality products; providing the technical oversight to assure production of quality products; and serving as principal members of the district corporate board. The functional chiefs are also responsible and accountable for the quality of the organization's technical products, assigning qualified members to the project teams, keeping commitments made in management plans, and for ensuring that their technical processes produce the desired results.

e. The individual PM is assigned by the Commander or DPM and serves as an advisor and consultant to the corporate board and each of its members. The PM is responsible and accountable for successful completion and delivery of assigned projects to customers within established costs, schedules and quality parameters. For assigned projects, the PM is an extension of the Commander, keeping him or her, and the DPM, informed and integrating the individual efforts that make a project successful. The PM provides leadership to a multi-disciplined project team with responsibility for assuring that the project stays focused on the customer's needs and expectations and that all work is integrated and done in accordance with a management plan and approved business processes. The PM assures that the customer's interests are properly represented within USACE and serves as the primary point of contact between the customer and the Corps. The PM keeps the functional chiefs apprised of the customer's expectations and the status of the project's progress, assists in early identification and resolution of problems, and identifies where additional talent and effort may be required to meet the district's commitments established in the management plan. The PM can make district commitments within preassigned constraints as defined in the management plan in coordination with the functional elements.

f. The customer is responsible for providing USACE its project requirements with respect to budget, scope, quality, and schedule as well as any changes to these requirements. The customer is expected to be a part of the project team and to evaluate USACE performance. The customer is the client and as such is the party that must be satisfied with the USACE product, consistent with laws, policies and national priorities.

9. Program and Project Management Business Process (PMBP). The objective of the policies set forth in this regulation is to institute business processes that will enhance service to Corps customers, provide a focal point for interface with customers, place emphasis on completing projects and programs rather than just individual products or phases, and enhance USACE's reputation as the world's premier engineering organization. The changing nature of workloads and customers, and reduced resources demand that USACE employ business processes that will

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permit the organization to more effectively leverage available resources across functional and geographic boundaries so that it can continue to produce high quality cost-effective services and products to customers and remain relevant and competitive in the future.

a. Key Elements in the PMBP.

(1) Project Manager - To ensure single point accountability for a project, the overall management and leadership of each project is to be placed in the hands of a single individual-- the Project Manager.

(a) The PM is the primary representative of the Commander for his or her project and is empowered through the DPM. The PM is the leader of the team assembled to execute a project, is responsible and accountable for insuring that the team takes effective, coordinated actions to deliver the completed project, and is the primary interface with the customer and among the functional elements. The PM is responsible for ensuring that the organization speaks with one voice by coordinating all matters relating to the project, and acting as the customer's representative within USACE to ensure requirements are conveyed, understood, and met.

(b) To effectively and efficiently deliver quality projects on time and within budget, the PM manages the project resources. The PM is responsible for facilitating corporate decision-making to ensure the products and services of the team meet the quality, expectations, and cost/schedule commitments made to the customer. All projects must be in compliance with applicable laws, policies, regulations, and customer requirements.

(c) The PM is responsible for optimizing corporate and customer resources and for across-the-board incorporation of lessons learned and success stories on similar initiatives. Technical members will complement this effort by incorporating lessons learned in their areas of responsibilities.

(d) Each project will have a single PM regardless of how many USACE organizations are represented on the team. Generally, this PM will reside at the geographic district. All work performed outside assigned geographical or functional responsibilities must be conducted in accordance with ER 5-1-10.

(2) Teamwork - USACE must act in unison across district and division boundaries to draw on its strengths regardless of geographical location. Project delivery and program execution must appear seamless to the customer. Each USACE level must commit itself to support project priorities and provide the necessary resources and fortitude to meet commitments made to customers. The DPM and his or her supporting staff must foster teamwork to establish universal linkages to facilitate seamless customer service. The PMBP must be flexible to accommodate customer requirements for service.

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(a) Project teams shall work in concert to deliver projects that are consistent with customer expectations and corporate needs. The PM will ensure that the direction and efforts of the team are unified, focused, and coordinated.

(b) Each member of the project team must keep his or her respective organizational element/functional chief informed at all times, especially of high priority or sensitive project issues.

(3) Customer Care - The key to customer care is meeting the customer's expectations within the limits of established policy, law, program, and project requirements. The PM is responsible for ensuring that the customer understands the PMBP, that USACE understands the customer's expectations, and that an effective and continuous interface is established and maintained regardless of where the work is being performed. The PM must inform the customer of all financing, contracting, policy, technical, and other project constraints, as well as integrate the customer's views throughout the process. The project team will place the highest priority on communications, service, safety, and customer satisfaction throughout the life of the project. Customer care also means executing assigned missions consistent with the national interest. Some projects may have multiple customers with conflicting requirements which require resolution and tradeoffs. Partnering sessions are effective methods of communications to resolve conflicts among multiple stakeholders, build service commitments, and assure customer satisfaction at critical stages of the project.

d. Business Practices.

(1) It is mandatory that all work activities assigned to the Commander are placed under centralized program management oversight by the DPM and his or her supporting staff. This will provide the Commander with one central location for programmatic information so corporate decisions can be rendered in a timely manner.

(2) A PM will be assigned by the Commander or DPM as soon as a work assignment is made. The PM will generally be assigned to the DPM/PPM organization. The management of a project of limited scope may be performed by an individual located in a functional organization. In this instance, this person is a PM and reports to the DPM concerning PM responsibilities.

(3) A project team will be formed early to identify the resources required to assure that completed projects are technically sound and cost effective. The project team shall consist of the customer(s), the PM, and multi-disciplined representatives from the technical/functional elements necessary to execute the project.

(4) The PM shall document and manage commitments to achieve the customer's expectations by obtaining agreement on project scope and requirements based on an awareness of applicable laws, policies, and regulations; technical soundness; environmental acceptability; safety and health

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considerations; and schedule, budget, and resource constraints.

(5) Corporate automation information systems (AIS) for project and financial management shall be used to manage each project and program. Developing, defending and maintaining budgetary data and all other information necessary to manage a project is the responsibility of the PM. Supervision of this process, along with development and maintenance of all program data and oversight of the AIS, is the responsibility of the DPM. The DPM will also supervise the aggregating of program and project data so as to facilitate review and management recommendations by the district/division senior staff, and informed decision-making by the Commander.

(6) Each project shall be managed in accordance with a plan. This management plan must be developed by the PM with the customer and the other team members. The plan will be developed and maintained at a level of detail commensurate with the size and complexity of the project. It is a living, working level document that records the history, documents commitments by USACE and the customer, and depicts the future direction of the project. The management plan is a binding agreement among all elements supporting the project that details how the work will be executed and how resources will be expended. It defines the baseline scope, schedule, resources, including contingencies, and provides a configuration (change) management plan for the project. The schedule and funding levels shall be realistic and reflect overall program and budget constraints and realities. It will consider all project requirements including real estate, planning, design, engineering, construction, environmental, operations, and other types of work whether performed by USACE, customer, or by contract. The customer and the Project Review Board must approve the management plan and all subsequent changes that are beyond the PM's delegated authority.

(7) The controls placed on the management of each project shall be consistent with the risks (sensitivity, complexity, uncertainty, etc.) associated with that project and tailored to meet customer requirements consistent with national priorities and policies. This ensures efficient use of program resources.

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(8) All projects will be periodically evaluated by the project team against the baseline requirements (scope, schedule and cost) established in the management plan. The PM has the responsibility to challenge work in progress, identify variances and evaluate alternatives. The project team's focus for meeting project execution goals is to maintain the baseline requirements in the management plan. Controls must be in place to facilitate timely corrective actions to ensure that changes do not exceed performance thresholds or limitations established by laws, policy or regulations. All changes within project resource requirements defined in the management plan will be approved by the PM.

(9) Staff responsibility for establishing and managing a system to track program and project commitments, thus ensuring they are kept, and for managing and approving reprogramming actions for all programs and projects belongs to the DPM. This responsibility includes assuring that all pertinent staff members fully understand and comply with the commitments and that the Commander is presented with information in a timely manner to permit required decision-making regarding these commitments.

(10) Fiscal Stewardship is making prudent financial decisions that consider all influencing factors such as technical issues, cost impacts, customer guidance, and applicable laws and/or regulations. Maintaining fiscal stewardship is a shared team effort. It requires all project team members to be responsive in meeting commitments in a timely manner. These responsibilities include, but are not limited to, maintaining fiscal integrity, receipt and management of customer funds, funds control, liquidation of obligations, labor charges, construction-in-progress (CIP) reporting, project audits and closeouts, transfers to plant-in-service, and timely return of any savings. The PM has the primary responsibility for fiscal integrity and authority to control project funds to ensure they are used appropriately and in accordance with the management plan. The PM, in coordination with appropriate functional elements, is also responsible for taking prompt action to correct problems identified from internal and external evaluations.

(11) The PM shall provide the customer with full disclosure of activities, appropriate access to meetings, explanation of the USACE business process and what is required of the customer. The PM will also provide timely response to inquiries/questions, fiscal and financial information (subject to disclosure rules on budgetary information), support the customer as the project or program proponent, and quality service and products while maintaining the budget and schedule for the project.

(12) The project team shall use appropriate techniques and tools to continuously improve customer service. For example, use of technologies developed by USACE research and development organizations may provide many opportunities to enhance technical processes.

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(13) Project/Program Review Board (PRB) meetings shall be held periodically to keep senior management informed of progress, resolve issues and assess performance. PRBs comprise the Commander and his or her designated senior staff members. Customers should participate in PRB meetings as appropriate.

(14) Evaluating project performance produces opportunities to further improve Corps business processes, in terms of execution, productivity, cost effectiveness, streamlined processes, timeliness, quality standards, and customer service. Project experiences, including success stories, should be documented by the PM and the team to share lessons learned throughout the Corps.

10. Process Assessment.

a. Initiatives to improve program performance are encouraged. Guidance contained in this regulation encourages MSC Commanders and Directors to seek opportunities to leverage the total USACE as an organization to provide seamless support to all Corps customers. Information technology and leveraging research and development capabilities allow USACE to organize and deliver its products and services in innovative, cost-efficient ways.

b. Program Management at HQUSACE embodies USACE program and project management business process leadership, resourcing, execution oversight, development of training strategy and programs, equipping and empowering, and evaluations of trends and performance. In the case of the Civil Works Program, leadership and oversight of program development, defense and justification are also HQUSACE program management responsibilities. The Military Programs Directorate has similar responsibilities; however, the responsibility for program development is often shared with customers. HQUSACE continually assesses policies and guidance and periodically reviews MSC implementation of the USACE PMBP to evaluate effectiveness.

c. The MSCs shall establish and maintain documented procedures to implement this regulation through Program Review Boards and periodic site visits. The Director of Programs Management at MSCs will periodically review their own as well as their executing organizations' implementation of the USACE PMBP to evaluate the effectiveness of their quality assurance, efficiency, and execution.

d. Executing organizations (i.e., districts, FOAs, laboratories, etc.) shall periodically assess their project and program management processes and practices to ensure effective implementation of this regulation.

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11. Management Control Evaluation Checklists. Management controls, like quality controls, are the responsibility of the District Commander. The MSCs should provide oversight and quality assurance for districts. A management control checklist for the program and project management business process is provided in Appendix A. The Programs and Project Management organization in each district is responsible for completing the checklist at Appendix A-1; and the Directorate of Programs Management at the MSC is responsible for completing the checklist at Appendix A-2. No upward reporting is required. If a management weakness requires the awareness of the next higher level of management, it is a material weakness. Material weaknesses discovered are reported through the chain of command. The report must specify corrective actions taken or planned. The highest echelon receiving the report will evaluate the corrective actions, provide assistance, if needed, and track progress. Consult AR 11-2 for help in determining whether a weakness is material.

FOR THE COMMANDER:

1 Appendix
App A- Management Control
Evaluation Checklist:
App A-1- District Checklist
App A-2- MSC Checklist



ALBERT J. GENETTI, JR.
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APPENDIX A
MANAGEMENT CONTROL EVALUATION CHECKLIST

Appendix A-1. District Checklist

FUNCTION. The function covered by this checklist is USACE Program and Project Management.

PURPOSE. The purpose of this checklist is to assist programs and project management organizations in USACE districts in evaluating key management controls in the management of the project management business process. It is not intended to cover all controls.

INSTRUCTIONS. Become thoroughly familiar with the contents of the Program and Project Management ER and read paragraph 11 before completing the checklist. Answers must be based on actual testing of key management controls (e.g., document analysis, observation, sampling, simulation, other). Answers which indicate deficiencies must be explained and corrective actions indicated in supporting documentation. These management controls must be evaluated at least once every two years.

TEST QUESTIONS:

1. General.

- (a) Is the "Program and Project Management Business Process" (PMBP) described in this regulation the process by which all work is accomplished by the district?
- (b) Is the program and project management business process as defined herein applied to all projects? Are program management principles applied to all work?
- (c) Are the district's organizations aligned to support the program and project management business process?

2. Organizational Relationships.

- (a) Is providing quality products a shared corporate responsibility?
- (b) Does the Deputy for Programs and Project Management (DPM) oversee the Program and Project Management Business Process?

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(c) Is the DPM responsible for the vertical and horizontal integration of products to produce the projects and manage the programs for the district?

(d) Does the DPM provide: leadership to a corporate board? Continuity of corporate leadership in assessing mission and work requirements and in developing corporate programs, plans, goals, and objectives?

(e) Is all work in the district program assembled under the DPM's oversight?

(f) Does the DPM provide input to the Commander concerning the performance of the functional chiefs for their contributions to project delivery?

(g) Is a professional, technically competent workforce developed and maintained by the functional/technical chiefs?

(h) Are functional/technical chiefs establishing and maintaining the necessary systems, technical processes and environment to produce quality products?

(i) Are functional/technical chiefs providing the technical oversight to assure production of quality products?

(j) Do the functional chiefs assign qualified staff members to the project team?

(k) Do the functional chiefs keep commitments made in the management plans?

(l) Is the Project Manager (PM) assigned to work assignments by the Commander or DPM?

(m) Does the PM serve as a consultant to the corporate board?

(n) For assigned projects, does the PM act as an extension of the Commander, keeping him or her and the DPM informed? Does the PM successfully integrate the individual project efforts?

(o) Does the PM provide leadership to a multi-disciplined project team with responsibility for assuring that the project stays focused on the customer's needs and expectations and that all work is done in accordance with a management plan and approved business processes?

(p) Does the PM assure that the customer's interests are properly represented within USACE and serve as the primary point of contact between the customer and the Corps?

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(q) Does the PM: keep the functional chiefs apprised of the customers expectations and the status of the project's progress? Assist in early identification and resolution of problems? Identify where additional talent and effort may be required to meet the district's commitments established in the management plan?

(r) Does the PM make district commitments within preassigned constraints as defined in the management plan in coordination with the functional elements?

(s) Does the customer provide USACE its project requirements with respect to budget, scope, quality, and schedule as well as any changes to these requirements?

(t) Is the customer a member of the project team?

(u) Does the customer evaluate USACE performance?

(v) Is the customer satisfied with the USACE product, consistent with laws, policies, and national priorities?

3. The Project Manager's Role in the PMBP.

(a) Is the overall management and leadership of each project in the hands of the Project Manager? Is the PM the primary representative of the Commander for his or her project? Is the PM the primary interface with the customer and the functional/technical elements? Does the PM ensure that the organization speaks with one voice in all project matters? Does the PM act as the customer's representative to ensure requirements are conveyed, understood, and met?

(b) Does the PM manage the project resources? Does the PM facilitate corporate decision making to ensure that the products and services of the team meet the quality, expectations, and cost/schedule commitments made to the customer? Does the PM ensure that projects are in compliance with applicable laws, policies, regulations, and customer requirements?

(c) Does the PM assure that corporate and customer resources are used effectively? Does the PM incorporate lessons learned and success stories on similar initiatives? Do technical members incorporate lessons learned in their areas of responsibilities?

(d) Does each project have only a single PM regardless of how many USACE organizations are on the team? Does this PM reside at the geographic district? Is all work performed outside assigned geographical or functional responsibilities conducted in accordance with ER 5-1-10?

4. Teamwork in the PMBP.

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- (a) Does the district draw on USACE strengths for expertise regardless of geographical location?
- (b) Does project delivery and program execution appear seamless to the customer?
- (c) Does each USACE level support project priorities and provide the necessary resources to meet commitments made to customers?
- (d) Does the Programs and Project Management (PPM) organization foster teamwork to establish universal linkages to facilitate seamless customer service?
- (e) Does the PMBP accommodate customer requirements for service?
- (f) Does the project delivery team work in concert to deliver projects that are consistent with customer expectations and corporate needs?
- (g) Does the PM ensure that the direction and efforts of the project team are unified, focused, and coordinated?
- (h) Does each member of the team keep his or her respective organizational element informed at all times, especially of high priority or sensitive project issues?

5. Customer Care in the PMBP.

- (a) Does the PM ensure: that the customer understands the PMBP? That USACE understands the customer's expectations? That an effective and continuous interface is established and maintained regardless of where the work is being performed? The customer is informed of all financing, contracting, policy, technical, and other project constraints? The customer's views are integrated throughout the project delivery process?
- (b) Does the project team place the highest priority on communications, service, safety, and customer satisfaction throughout the life of the project?

6. Business Practices in the PMBP.

- (a) Do all work activities assigned to the Commander come under centralized program management oversight by the DPM and his or her supporting staff?

(b) Is a PM assigned: by the Commander or DPM as soon as a work assignment is made? Generally to the DPM/Programs and Project Management (PPM) organization?

(c) Is the project team formed early to identify the resources required to assure that completed projects are technically sound and cost effective? Does the project team consist of the customer(s), the PM, and multi-disciplined representatives from the technical/functional elements necessary to execute the project?

(d) Does the PM document and manage the commitments to achieve the customer's expectations by obtaining agreement on project scope and requirements based on an awareness of applicable laws, policies, and regulations; technical soundness, environmental acceptability; safety and health considerations; and schedule, budget, and resource constraints?

(e) Are corporate automation information systems (AIS) used for project and financial management of each project and program? Does the PM develop, defend and maintain budgetary data and all other information necessary to manage the project? Does the DPM supervise the development and maintenance of all program and project data and provide oversight of the AIS? Does the DPM supervise the aggregating of program and project data to facilitate review and management recommendations, and informed decision making by the Commander?

(f) Is each project managed in accordance with a plan? Is this management plan developed by the PM with the customer and the other team members? Developed and maintained at a level of detail commensurate with the size and complexity of the project? Does this management plan detail how the work will be executed, and how resources will be expended? Does the plan define the baseline scope, schedule, resources, including contingencies, and provide a configuration (change) management plan for the project? Are the schedule and funding levels realistic and do they reflect overall program and budget constraints and realities? Does the plan consider all project requirements including real estate, planning, design, engineering, construction, environmental, operations, and other types of work whether performed by USACE, customer or by contract? Is the management plan approved by the customer and the Project Review Board? Do the customer and the Project Review Board approve all subsequent changes to the management plan that are beyond the PM's delegated approval authority?

(g) Are the controls placed on the management of each project consistent with the risks (sensitivity, complexity, uncertainty, etc.) associated with that project and tailored to meet customer requirements consistent with national priorities and policies?

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(h) Are all projects periodically evaluated by the project team against the baseline requirements (scope, schedule and cost) established in the management plan? Does the PM have the responsibility to challenge work in progress, identify variances and evaluate alternatives? Is the project team's focus for meeting project execution goals to maintain the baseline requirements in the management plan? Are controls in place to facilitate timely corrective actions to ensure that changes do not exceed performance thresholds or limitations established by laws, policy or regulations? Are all changes within project resource requirements in the management plan approved by the PM?

(i) Does the DPM provide staff responsibility for establishing and maintaining the system to track program and project commitments? Does the DPM manage and approve reprogramming actions for all programs and projects? Does the DPM assure that all pertinent staff members fully understand and comply with commitments? Is the Commander presented with information in a timely manner to permit required decision-making regarding these commitments?

(j) Is fiscal stewardship a shared team effort? Are all project team members responsive in meeting commitments in a timely manner? Does the PM have primary responsibility for fiscal integrity and authority to control project funds to ensure that they are appropriately used in accordance with the management plan? Is the PM, in coordination with appropriate functional elements, responsible for taking prompt action to correct problems identified from internal and external evaluations?

(k) Does the PM provide: the customer with full disclosure of activities, appropriate access to meetings, explanation of the USACE business process and what is required of the customer? Timely response to inquiries/questions, and fiscal and financial information? Support to the customer as the project or program proponent? Quality service and products while maintaining the budget and schedule for the project?

(l) Does the project team use appropriate techniques and tools to continuously improve customer service?

(m) Are Project Review Board (PRB) meetings held periodically to keep senior management informed of progress, resolves issues and assess performance?

(n) Are project experiences, including success stories, documented by the PM and the team to share lessons learned throughout the Corps?

7. Process Assessment.

- (a) Are initiatives to improve program performance encouraged?
- (b) Does the executing organizations periodically assess their project and program management processes and practices to ensure effective implementation of this regulation?

[NOTE: Help make this a better tool for evaluating management controls. Submit suggestions for improvement to HQUSACE (CECW-BD/CEMP-MP), Washington, D.C. 20314-1000.]

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APPENDIX A
MANAGEMENT CONTROL EVALUATION CHECKLIST

Appendix A-2. MSC Checklist

FUNCTION. The function covered by this checklist is USACE Program and Project Management.

PURPOSE. The purpose of this checklist is to assist Directorates of Programs Management in USACE Major Subordinate Commands (MSC) in evaluating key management controls in the program and project management business process. It is not intended to cover all controls.

INSTRUCTIONS. Become thoroughly familiar with the contents of the Program and Project Management ER and read paragraph 11 before completing the checklist. Answers must be based on actual testing of key management controls (e.g., document analysis, observation, sampling, simulation, other). Answers which indicate deficiencies must be explained and corrective actions indicated in supporting documentation. These management controls must be evaluated at least once every two years.

MSC TEST QUESTIONS:

1. General.

- (a) Is the "Program and Project Management Business Process" (PMBP) described in this regulation the process by which all work is accomplished by the MSC?
- (b) Are program management principles applied to all work?
- (c) Is the MSC's organizations aligned to support the program and project management business process?

2. Organizational Relationships.

- (a) Is providing quality products a shared corporate responsibility?
- (b) Is the Director of Programs Management (DPM) responsible for the integration of products for the MSC?

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3. The Program and Project Management Business Process (PMBP).

- (a) Is the MSC implementing the PMBP as defined in this ER in a manner that will result in high quality cost-effective services and products to our customers?
- (b) Are controls in place to ensure compliance with applicable laws, policies, and regulations?

4. Teamwork in the PMBP.

- (a) Does the MSC act in unison across district and division boundaries to draw on USACE strengths regardless of geographical location?
- (b) Does the MSC ensure that project delivery and program execution appear seamless to the customer?
- (c) Does the MSC support project priorities and provide the necessary resources to meet commitments made to customers?
- (d) Does the DPM organization foster teamwork to establish universal linkages to facilitate seamless customer service?

5. Customer Care in the PMBP.

- (a) Does the PMBP accommodate customer requirements for service?
- (b) Is the Corps meeting the customer's expectations consistent within the limits of established policy and law?
- (c) Are assigned missions executed consistent with the national interest?
- (d) Are partnering sessions encouraged to facilitate communications, build service commitments, and resolve conflicts?

6. Business Practices in the PMBP.

- (a) Do all work activities assigned to the Commander come under centralized program management oversight by the DPM and his or her staff?
- (b) Are corporate automation information systems (AIS) used for project and financial management of each project and program? Does the DPM supervise the process for the development, defense and maintenance of budgetary data and all other related information and

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provide oversight of the AIS? Does the DPM supervise the aggregating of program and project data to facilitate review and management recommendations, and informed decision making by the Commander?

- (c) Does the DPM's organization ensure that program and project schedules and funding levels are realistic and reflect overall program and budget constraints and realities?
- (d) Are the management controls consistent with national priorities and policies?
- (e) Are controls in place to facilitate timely corrective actions to ensure that changes do not exceed performance thresholds or limitations established by laws, policy or regulations?
- (f) Does the DPM provide staff responsibility for establishing and maintaining the system to track program and project commitments? Does the DPM manage and when appropriate approve reprogramming actions for all programs and projects? Is the Commander presented information in a timely manner to permit required decision-making regarding program commitments?
- (g) Is maintaining fiscal stewardship a shared team effort? Are team members responsive in meeting program commitments? Are prompt actions taken to correct problems identified from internal and external evaluations?
- (h) Are appropriate techniques and tools used to continuously improve customer service?
- (i) Are Program Review Board (PRB) meetings held periodically to keep senior management informed of progress, resolve issues and assess performance?
- (j) Are program/project experiences, including success stories, documented to share lessons learned throughout the Corps?

7. Process Assessment.

- (a) Are initiatives to improve program performance encouraged?
- (b) Does the MSC seek opportunities to leverage the organization to provide seamless support to all customers?

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(c) Does the MSC conduct periodic site visits at their executing organizations (i.e., districts, centers, labs, etc.) to ensure implementation of this ER, assess compliance with the PMBP and to evaluate the effectiveness of their program/project execution and quality assurance procedures?

[NOTE: Help make this a better tool for evaluating management controls. Submit suggestions for improvement to HQUSACE (CECW-BD/CEMP-MP), Washington, D.C. 20314-1000.]

APPENDIX 7

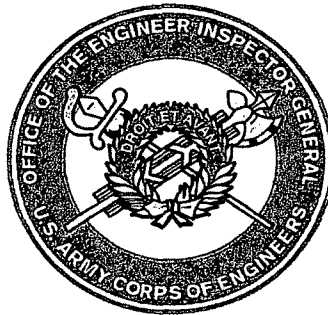
EIG Inspection Report, dated February 1999, Subject: Program and Project Management

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US Army Corps
of Engineers.

U.S. Army Corps of Engineers Engineer Inspector General Inspection Report



Program and Project Management

February 1999

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

REPLY TO
ATTENTION OF:

CEIG-I (20-1g)

11 Feb 99

MEMORANDUM FOR ALL HQUSACE ELEMENTS AND USACE COMMANDS

SUBJECT: Engineer Inspector General (EIG) Program and Project Management Inspection Report

1. I approve the enclosed EIG Program and Project Management Inspection Report. My approval or disapproval of each of the report's recommendations is indicated at Enclosure 1.
2. The responsible officials will take appropriate action on all approved recommendations.

2 Encls

1. Summary of Recommendations
2. EIG Program and Project Management Report

[Signature]
JOHN HALLARD
Lieutenant General, USA
Commanding

*This is an outstanding report!
The EIG has clearly captured my intent for project management. PPM is the process we use to do our work. "Teamwork" is the key. I expect all leaders and anyone involved with PPM to read this report.*

[Signature]

SUMMARY OF RECOMMENDATIONS

Understanding the Project Management Business Process (PMBP)

1. That the proponents of ER 5-1-11 validate and modify, as necessary, the expectations of the key elements of the PMBP contained in this report and provide guidance on their use to the entire organization as part of the existing program and project management education process.

APPROVED *JS* DISAPPROVED _____ DISCUSS _____

Role of the Project Manager

2. That the proponents of ER 5-1-11 create expectations for both civil works program managers and military program managers and provide guidance on their use as part of the existing program and project management education process.

APPROVED *JS* DISAPPROVED _____ DISCUSS _____

HQUSACE Support to the PMBP

3. That the USACE Chief of Staff direct a review of all HQUSACE policies and practices to insure that they are consistent with and support the PMBP.

APPROVED *JS* DISAPPROVED _____ DISCUSS _____

PMBP Application to the Labs

4. That the HQUSACE Director of Research and Development provide implementing guidance to translate the principles of the PMBP in terms consistent with laboratory business practices.

APPROVED *JS* DISAPPROVED _____ DISCUSS _____

PROMIS

5. That the PROMIS Functional Proponents complete their effort to develop clear, detailed expectations for the corporate Project Management Automated Information System (PM AIS).

APPROVED *JS* DISAPPROVED _____ DISCUSS _____

6. That the PROMIS Functional Proponents develop a defensible economic analysis of the realistic costs and quantifiable benefits based on those expectations.

APPROVED PO DISAPPROVED _____ DISCUSS _____

7. That the Board of Directors, utilizing this economic analysis, approves or rejects further development and use of the corporate PM AIS.

APPROVED PO DISAPPROVED _____ DISCUSS _____

8. That, if further development and use of the corporate PM AIS is approved, Division Commanders report the costs and benefits associated with this AIS and brief them at the quarterly Command Management Reviews.

APPROVED PO DISAPPROVED _____ DISCUSS _____

DC6 —
lay out a schedule
to capture and track
the content of each
recommendation.
PO 2/11/99

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EXECUTIVE SUMMARY

This report responds to the Commander's directive that the Engineer Inspector General (EIG) conduct a USACE-wide inspection of Program and Project Management. We were directed to evaluate the commitment to the Program and Project Management Business Process (PMBP) described in ER 5-1-11. We selected four Corps divisions, thirteen Corps districts, and two Corps laboratories to inspect. During our visits, we interviewed personnel involved in the PMBP, both in and out of the Project Management organization, as well as selected customers. Our inspection also included a review of programming documents, project review board (PRB) notes, project management plans, schedules, budgets, and other documents as needed.

In every organization we inspected, we found that the senior leadership clearly accepted and supported the Project Management Business Process. Most commanders and their Deputies for Program and Project Management (DPM) were anxious to show us their initiatives and how well they were applying the PMBP in their organization. The depth that this level of support went into the organization varied, but we encountered few places where there was active resistance to the overall process, as they understood it. When we did find resistance, it was usually directed at a specific detail concerning implementation of the process.

Although we found almost universal acceptance of the PMBP, the application of the process in the organizations we visited varied greatly. We found that the majority of the organizations did not fully understand the real philosophy behind the PMBP. Fifteen percent of the organizations we inspected showed little understanding of the PMBP, still operating essentially as a functionally oriented organization. Thirty five percent of the organizations demonstrated a good understanding and general application of the PMBP throughout the organization. The remainder of the organizations fell somewhere in-between, with varying degrees of understanding and application in the organization.

The objectives of the PMBP will never be consistently achieved without an organization-wide understanding of the intent of the process. ER 5-1-11 was intentionally less directive than previous regulations to allow organizations to develop their business practices based on their unique requirements, while staying within the framework of the Project Management Business Process. Unfortunately, the regulation's flexibility has caused some confusion in the implementation of the PMBP. For organizations that understand the intent of the PMBP, the regulation contains sufficient guidance and direction. Conversely, those organizations that do not understand the PMBP can use the vagueness in the regulation to justify practices that are not consistent with the PMBP. We did not see organizations practicing inconsistent processes out of resistance to the concept of project management, rather they were interpreting the regulation relative to the existing culture in their organization without grasping the implications of their actions. The intent of

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the regulation was to allow for flexibility of implementation procedures, not to allow room for interpretation of the most basic tenets of the program.

Because of the variety of interpretations of the regulation we encountered, we found it necessary to develop our own expectations for the key elements of the PMBP. In Chapter 2 of our report, we present these expectations as a gauge to determine compliance or non-compliance with the philosophy of the PMBP. This chapter provides examples of practices we observed during our inspection in an effort to clarify the intent of the regulation and eliminate misapplication of the process.

Chapter 3 of our report uses a similar approach to define the Project Management Imperatives listed in the regulation. Again, these were being interpreted in many different ways by organizations in the field. Our approach in this chapter is to present our interpretation of the imperative and provide illustrations from the field that deviate from the intent of the PMBP.

Finally, in Chapter 4, we make eight recommendations that we feel must be accomplished for the PMBP to be applied consistently throughout USACE. The most significant recommendation addresses the extent of misunderstanding of the PMBP in the Corps. It stresses the need for continued emphasis on educating the organization on the PMBP. We have also recommended that additional guidance be developed concerning the roles of program managers and determining how the laboratories should apply the PMBP. Furthermore, we identified several issues dealing with the application and support of the PMBP at HQUSACE and recommended a review of policies and procedures to ensure they are consistent with the PMBP. The final four recommendations address the USACE corporate PM Automated Information System (AIS.) We found that the current PM AIS is not working at it was intended to and the field has considerable reservations about using it to manage projects. We have recommended actions to ensure that future decisions are based on a clear understanding of the expectations of the system and the costs and benefits associated with future developments are considered in the decision-making process.

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INTRODUCTION

The Commander, U.S. Army Corps of Engineers, directed that the Engineer Inspector General (EIG) conduct a MACOM-wide inspection of program and project management in the Corps of Engineers. The directive is enclosed at Appendix A. We were charged with conducting a systemic inspection that examined the organization's commitment to the goals and objectives of the Project Management Business Process (PMBP) described in ER 5-1-11. We coordinated our efforts with the Chief of the Program Management Division in the HQUSACE Directorate of Civil Works (CECW-B), and the Chief of the Programs Management Division in the HQUSACE Directorate of Military Programs, (CEMP-M.)

REGULATIONS AND GUIDANCE

The primary reference for program and project management in USACE is Engineer Regulation (ER) 5-1-11, *Program and Project Management*, dated 27 February 1998. This regulation establishes the philosophy, policy, and guidelines for management of all programs and projects executed by the U.S. Army Corps of Engineers. The regulation applies to all USACE activities, including divisions, districts, laboratories, field operating activities, and centers. This regulation replaced ER 5-7-1, *Project Management*, dated 30 September 1992. Additional references are listed in Appendix E.

PROGRAM AND PROJECT MANAGEMENT OVERVIEW

At the direction of the Secretary of the Army, the Corps of Engineers began to study the process of implementing Project Management in 1988. From 1988 to 1992, the leadership of the Corps debated the processes and organizational changes that would be required to transform USACE. The results of these discussions were captured in the guidance of ER 5-7-1 in 1992. The Engineer Strategic Study Center conducted a survey in 1993 to gauge the level of acceptance of project management in the Corps. The results showed that very little progress had been made in implementing project management throughout the Corps.

Upon becoming Chief of Engineers, LTG Ballard determined the Corps' transformation to project management either needed to be re-energized or scrapped. The Board of Directors overwhelmingly voted in 1996 that project management should be the way the Corps does work, now and in the future. In February 1998, a new regulation, ER 5-1-11, was published which provided new guidance on the program and project management business process for the US Army Corps of Engineers.

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Engineer Regulation 5-1-11 outlines a philosophy for USACE to follow to support the strategic vision. The regulation states, "The Program and Project Management Business Process (PMBP) described in this regulation is the process by which all work is accomplished by USACE, without exception. The guidance in this regulation emphasizes the importance of project teams and the role of the project manager, whose focus is on the overall process and the members of the team, who are empowered to act on behalf of their functional organizations. It focuses attention on the end results--execution of projects and programs, and customer satisfaction"

The objectives of the PMBP listed in ER 5-1-11 are to:

- Enhance service to Corps customers.
- Provide a focal point for interface with customers.
- Place emphasis on completing projects and programs rather than just individual products or phases.
- Enhance USACE's reputation as the world's premier engineering organization.

The PMBP philosophy described in ER 5-1-11 supports the goals of the *Strategic Vision* by outlining a process that emphasizes Corps teamwork, customer satisfaction, and accountability. The regulation provides general implementing guidance without specifying procedures, techniques, or detailed standards for implementation.

INSPECTION APPROACH

Prior to the inspection, we reviewed existing guidance and policies that relate to project management. We also attended USACE sponsored training courses and a course in project management provided by a private management organization. We asked for inspection recommendations from key members of the HQUSACE staff and developed an inspection concept and plan that incorporated their suggestions. The Chiefs of CECW-B and CEMP-M gave us extensive guidance and we integrated their particular needs and concerns into our plans. We also participated in the USACE Project Delivery Team Conference in July 1998.

We selected four Corps divisions, thirteen Corps districts, and two Corps laboratories to inspect. These organizations are listed in Appendix C. These organizations represented a mix of USACE capabilities, encompassing a variety of military and civil works missions, locations, and customers.

During our visits we interviewed commanders, deputies for Programs and Project Management (DPMs), program managers, project managers (PMs), project team members, members of the corporate board, functional chiefs, program analysts, and other USACE team members. Our visits also included a review of programming documents, project review board (PRB) notes, project management plans, schedules, budgets, and other documents as needed. We provided commanders, or their representatives, with both an

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entrance briefing detailing the inspection objectives and an exit briefing highlighting local concerns and significant issues. A list of the inspection team members is at Appendix B.

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CHAPTER ONE

Commitment to the Program and Project Management Business Process

The inspection directive from the Chief of Engineers directed us to evaluate the organization's commitment to the Program and Project Management Business Process (PMBP.) To make this determination, we looked at two areas. First, we examined the organization's acceptance or resistance to the process. We then looked at how well they were applying the process.

Acceptance of the PMBP

In every organization we inspected, we found that the senior leadership clearly accepted and supported the Project Management Business Process. Most commanders and their DPMs were anxious to show us their initiatives and how well they were applying the PMBP in their organization. The depth that this level of support went into the organization varied, but we encountered few places where there was active resistance to the overall process, as they understood it. When we did find resistance, it was usually directed at a specific detail concerning implementation of the process.

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Application of the PMBP

Although we found almost universal acceptance of the PMBP, the application of the process in the organizations we visited varied greatly. In fact, once we looked below the surface into the procedures and relationships that existed in the organizations that we visited, we found that the majority of the organizations did not fully understand the real philosophy behind the PMBP. A summary of what we found is displayed below:

<u>MINIMAL</u> <u>UNDERSTANDING</u> (Very Limited Application of PMBP)	<u>MIXED</u> <u>UNDERSTANDING</u> (Partial Application of PMBP)	<u>GOOD</u> <u>UNDERSTANDING</u> (General Application of PMBP)
15%	50%	35%

ER 5-1-11 allows organizations "below the line" flexibility to develop their own definitions and criteria for PMBP implementation. Allowing this flexibility assumes that there is a universal understanding of the intent of the PMBP. We found that this was not always the case. Three examples that demonstrate a misunderstanding of the PMBP are used to illustrate this point.

"The regulation only applies to the PM"

We found that some organizations viewed ER 5-1-11 as simply a Program and Project Management Division (PPMD) regulation, applying primarily to project managers. Organizations that viewed the PMBP this way tended to focus on the PM as a project reporter, responsible for briefing the Project Review Board and keeping project financial status. The functional stovepipes independently executed their piece of the project and provided status to the PM. These organizations did not emphasize either corporate or project teamwork.

The organizations that understood the PMBP viewed the regulation as affecting the entire organization. The PMBP was viewed as the process used to manage all work that utilized shared resources in the organization. The corporate board set the example for the organization by working together to establish corporate priorities and objectives. Functional chiefs represented the entire organization, not only their particular area, when they evaluated projects as a member of the corporate board. These organizations viewed the PM as the leader of a team responsible for a project, not the individual solely responsible for the project. The PM worked for the corporate board, not the Program and Project Management Division, when managing a project. These distinctions recognized the role every team member and functional area played in completing the project. This approach emphasized working together as a team to satisfy the commitments made to the customer by all team members and their respective functional organizations.

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"This is how we've always done business"

Some organizations did not see the PMBP, as defined in ER 5-1-11, as anything different from what they were already doing. They made narrow interpretations of the requirements of the regulation and used the broad flexibility built into the regulation to keep from having to change how they were currently operating.

The organizations that understood the PMBP saw it as new way of doing business and took deliberate actions to modify their processes to align with the intent of the PMBP.

"We only have to focus on the Imperatives to comply with the regulation"

As part of our inspection, we asked organizations where they thought they were in implementing the PMBP. Most of the organizations rated themselves using the "above the line" imperatives. Those that did not fully understand the PMBP limited their evaluation to the "imperatives" and usually rated themselves fairly high. They tended to create their own interpretations of the "imperatives" and developed their own rules to measure their status. In many cases, organizations molded these definitions to mirror how they were presently operating. The following examples illustrate how an organization's interpretation of compliance with the "above the line" imperatives can differ from the intent of the PMBP:

An organization had a PM assigned for each project on paper and he/she was referred to as the team leader. From the organization's perspective, they were complying with the imperative. We found, however, that the PMs had little to do with the execution of the project beyond preparing reports for the PRB, contrary to the PMBP.

An organization had created a document they called a project management plan at the start of each project. From the organization's perspective, they were complying with the imperative, "Every project will be managed with a management plan." We found, however, that these plans were usually incomplete and were not being used to manage the project since most of the plans were never referred to during the execution of the project.

Those organizations that understood the PMBP recognized the considerable effort involved in changing the way they operate and usually rated themselves fairly low in compliance with the ER. They may have used the "above-the-line" imperatives as part of their self-evaluation, but also considered the cultural aspects required to fully implement the process. Chapter 2 of this report discusses the challenges we found in organizations struggling with implementing the PMBP. Chapter 3 contains specific comments regarding each of the "above the line" imperatives. Chapter 4 states our recommendations.

CHAPTER TWO

Implementing the Program and Project Management Business Process

Understanding the project management philosophy is critical to establishing an organization that uses the Project Management Business Process to execute all work. The PMBP involves a complex relationship between the customer, the corporate board, the PM, and the project team in executing projects. We found that the level of understanding of these relationships varied greatly in the organizations that we visited and it is the greatest single obstacle to fully implementing the PMBP throughout the Corps.

In this chapter, we will describe the practices that we observed during our inspection and explain why some of these are not consistent with a full understanding of the Project Management Business Process. Our discussion will focus on the three key elements of the PMBP listed in the regulation: Teamwork, the Project Manager, and Customer Care. We organized our observations around the three key elements of the PMBP rather than the eight imperatives because they allow for a better examination of the organizational interactions, while eliminating duplicative observations. We discuss the eight imperatives in more depth in Chapter 3.

During the course of our inspection, we developed certain expectations of actions and practices we should observe in an organization that was applying the Project Management Business Process. In developing these expectations, we not only analyzed the ER and other written guidance from the headquarters, but also had numerous discussions with the proponents of the regulation and senior leaders at both the headquarters and in the field. Within the following sections, we will describe our expectations for each of the three key elements of the PMBP as well as our expectations for the major activities associated with each element.

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TEAMWORK

The Project Management Business Process stresses the importance of teamwork. We found that to fully apply the PMBP, teamwork must exist at two levels in the organization, the corporate level and the project level. Since the roles and responsibilities are different at each level, we have separated our discussion into two sections - Corporate Teamwork and Project Teamwork. Under each section, we further broke down our discussion into the major activities at each level.

CORPORATE TEAMWORK

Expectation of Corporate Teamwork: The corporate board is aware of all resource requirements in the organization and evaluates new work against these requirements before making new commitments. The board monitors all aspects of the organization's workload, evaluating actual performance against commitments. The board coordinates the interaction of the projects and acts to balance the overall performance of the organization in meeting commitments made to customers. When necessary, the board prioritizes resource requirements in line with overall organizational goals and objectives.

Identifying Projects and Resources

Expectation: The corporate board is aware of all work and resource requirements in the organization. The board evaluates the impact new work will have on the organization's ability to complete existing internal and external commitments before making new commitments to customers.

Although most organizations were attempting to bring all work under the oversight of the corporate board, we did not see a system currently in place anywhere that completely identified all work and resource requirements. Most organizations had not developed written internal definitions, rules or a standardized process for identifying projects or classifying work. Most assigned work based simply on "how we did it in the past" which resulted in some work being funneled directly to functional areas. In some cases, functional chiefs were accepting work and committing corporate resources without consulting the corporate board.

A common example of this is in the Civil Works Operations and Maintenance arena. Most districts generally understood the guidance provided in the USACE Memorandum dated 2 March 1998, SUBJECT: *Operations, Regulatory, and Emergency Management*

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and were in various stages of conversion to comply with the guidance. However, most had not yet determined their criteria for differentiating between work considered a project managed by a PM and work considered routine maintenance managed in Operations Division. We observed cases where multi-million dollar repairs were classified as routine maintenance without a PM assigned. The operations manager directly coordinated this work with a technical representative, usually from Engineering or Construction, to execute the project. Without a PM assigned, this work was seldom visible to the DPM and the corporate board.

Other examples of work classification and resource allocations made unbeknownst to the corporate board involved special programs that traditionally flow directly through "stovepipe" channels for execution. Functional chiefs frequently viewed this type of work as specialized and affecting very few members of the organization outside of their functional area. In many cases, they did not recognize the importance of identifying the resource requirements to the corporate board, choosing instead to manage the work internally as a project of limited scope. The real issue is not the decision of where to manage the project. The issue is ensuring the corporate board is aware of the resource commitments and expenditures. We found that when the functional areas designated work as a "project of limited scope" without corporate involvement, the resource commitments and expenditures were usually not visible to the corporate board.

IMPACT: The lack of a systemic approach to accepting and assigning work makes it difficult to ensure that the corporate board is fully aware of all organizational resource requirements. If the corporate board is not aware of all organizational resource requirements, they cannot make optimal decisions when accepting new work and resolving resource conflicts.

Prioritizing Corporate Resources

Expectation: The corporate board prioritizes resource expenditures to best support corporate goals and objectives.

For the corporate board to properly prioritize expenditure of corporate resources in executing projects, they must have clearly defined corporate goals and objectives and use them in making these decisions. Beyond fiscal execution, we seldom saw any formalized goals or objectives used in this manner. The majority of the organizations we examined evaluated project performance at the corporate level based purely on the expenditure of funds. HQUSACE reporting processes, specifically the Command Management Review, assess project performance by comparing actual fiscal execution versus projected fiscal execution. We found that this reporting process resulted in many organizations focusing on the spending of money rather than evaluating project status based on scheduled work completed (earned value.) We found that most districts briefed project schedules only as an

exception, usually when a funding problem developed or a major milestone was in danger of being missed. In many cases, this was the first time the corporate board was made aware of a schedule problem.

Of all the organizations we visited, only one, Jacksonville District, had set up a systematic process to evaluate projects against both a baseline schedule and budget. The PMs at Jacksonville reported project status at their monthly PRB meetings based on the baseline and revised schedule and budget.

One reason for the focus on fiscal execution is the lack of a corporate automated information system (AIS) that captures all corporate resource requirements. CEFMS provides adequate information to support corporate decisions based on fiscal execution. However, the corporate system available to provide similar data concerning labor and schedule information, PROMIS, does not presently satisfy the information requirements to support similar corporate decisions based on labor and schedules. Lacking a corporate tool, organizations either developed their own system for tracking other corporate resources, as in Jacksonville, or concentrated solely on the financial information provided by CEFMS.

IMPACT: Focusing on the fiscal execution of a project does not always identify schedule issues early enough to allow the corporate board to reevaluate corporate resource priorities and fully pursue alternatives. The corporate board can not effectively prioritize resources if they can not evaluate completely the extent of resources required and the impact of any reprioritization.

COMMENTS ON PROJECT REVIEW BOARDS

The Project Review Board was the most common forum used by the corporate board to review project status reports and evaluate the organization's requirements versus available resources. There was no standard format or frequency for these meetings. Some organizations held the PRB monthly, others every two months and a few held them quarterly. Although the procedures used at PRBs are a "below the line" issue, we have highlighted a few practices we observed that seemed to give the corporate board a more complete picture of the work in the organization.

Organizations that appeared to conduct their PRBs more effectively held pre-PRB meetings to address routine issues and discuss project details. The DPM usually chaired these pre-PRBs with project managers and functional representatives as members. Project team members, section chiefs, and branch chiefs would attend if required to participate in specific discussions. These pre-PRBs focused on individual project performance with the intent of resolving resource issues at the lowest possible level. This allowed the PRB to concentrate on major management issues without the distraction of numerous project details.

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Some locations preferred to address projects at the PRB "by exception", where only projects with issues of concern made the PRB docket. PRB meetings held using the "by exception" rule allowed some projects to remain invisible until a major issue occurred. This created a crisis management situation that could have been avoided by earlier identification of potential trouble to the corporate board. In contrast, the organizations that we felt were most aware of the ongoing work held PRB meetings that addressed all projects. They listed all projects in their PRB briefing materials, presented a brief overview of the project status, and if no one raised an issue or question, moved to the next project. This approach allowed corporate board members, who may not have a direct involvement in a particular project, an opportunity to comment on potential project impacts.

Another successful approach we observed at PRB meetings incorporated presentations showing baseline and revised budgets and schedules. These PRBs recognized that concentrating solely on the fiscal execution of a project gives only a partial picture of the project status. These PRBs listed project milestones, responsible individuals, and financial information on the project summary sheet that the corporate board received before the meeting. The board had this information available to assist them in identifying corporate resource conflicts, prioritizing projects, and developing strategies to meet their commitments. This information allowed PRB members to review current work as well as consider future requirements.

Supporting Project Commitments

Expectation: The entire organization recognizes the importance of meeting the commitments made to the customer through the project manager and project team. The organization makes resources available to support project commitments based on corporate priorities.

To successfully support project commitments under the PMBP, an organization must move beyond viewing a project as a series of "stovepipe" produced products that somehow come together in order to give the customer something. The focus of the entire organization must be on working together as a team to meet or exceed the customer's requirements. While all organizations believed they focused on the customer and teamwork, we found that many still had practices that were preventing them from transitioning from a product to project focus. Failure to recognize and support project teams makes it difficult to view projects in their entirety rather than a collection of individual products. This shift in attitude is critical for the PMBP to be successful. The following illustrations highlight practices that we observed that negatively impacted the organization's support to project commitments.

We observed that most functional representatives made long term commitments to projects via Project Management Plans without knowing if they could meet them. In most

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organizations, it was the functional supervisor's responsibility to analyze existing workload before accepting new commitments. We found very few functional supervisors who were evaluating the long-term impact of adding new work to their section. Most manually scheduled the workload in their section no more than two months out. Their focus appeared to be on product execution irrespective of project schedules (i.e., keeping people busy.) This resulted in employees being juggled between jobs and some work being neglected based on the perceived "priority of the day." Part of the problem here is that functional chiefs had no automated system available to assist them in determining what effect committing to new work would have on existing work.

In addition to the individual functional area review of commitments, the corporate board must also evaluate the corporate impact of the resource commitments made to customers. Most organizations accomplished this by having the PRB review and approve the Project Management Plans. Unfortunately, most of these reviews appeared to focus on satisfying a requirement of the regulation rather than verifying that the commitments in the plan were supportable by the organization.

IMPACT: Lack of integrity in project commitments strikes at the foundation of the PMBP. If the PM and project team have no confidence in project and product commitments there can be no confidence in the assurance we provide our customers. Lack of a system that tracks project commitments weakens the veracity of the commitments.

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PROJECT TEAMWORK

Expectation of Project Teamwork: The project team is a group of individuals, with a variety of functional skills, responsible for providing the USACE effort necessary to complete a project. Project team members monitor all aspects of their contributions to the project, evaluating actual performance against commitments made to the overall project in the Project Management Plan. The project team members work with the project manager to ensure that their particular product continuously supports the overall performance objectives of the project. Project team members coordinate corrective actions with the project manager and their respective functional elements if the product commitments change or are not expected to be met.

Working as a team

Expectation: Project team members work together toward a common goal of customer satisfaction by meeting or exceeding the customer's expectations. Project team members recognize the specific services or products they are responsible for and understand how they relate to the project. The team members agree to provide these services or products, to the best of their abilities, according to the scope, budget, and quality commitments made to the other members of the project team and the customer. The team members acknowledge the responsibility to keep the rest of the team informed on the status of the services or products.

We noticed a distinct difference between those team members who felt they were working as a member of a project team and those who felt they were providing a product to a project manager. This attitude, though difficult to quantify, often manifested itself in how employees affiliated themselves in the organization. When we asked them where they worked, some employees said they worked for their section, i.e. "I work for design branch." Other employees defined their work by projects, i.e. "I work on the Smith Lock and Dam Project" or "I'm part of the runway expansion team." This difference was usually a direct indicator of the strength of project teamwork in the organization.

In those organizations where project teamwork was weak, we found that most people did not consider themselves part of a project team, even if they were listed as a team member on a specific project. They viewed product development as a technical task that was the responsibility of the function, branch, or section without regard to the overall project. Project team member's loyalty was usually to their section or branch, not to a particular project as part of a team. Functional chiefs were responsible for making the resource decisions to meet the project schedule. Project team members had very little influence in meeting the product commitments made to the PM since they responded to the priorities established by their functional supervisors. There was little incentive for project

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team members to consider themselves part of a project team since they were not really empowered to make commitments or act without consulting with their functional supervisor.

In addition, organizations that did not recognize and support the importance of teamwork often failed to clearly identify a "project team" for the PM to lead. In some cases, the organization determined that the team need only consist of the PM and a Technical Leader (TL), reasoning that the PM had no need to interact closely with technical personnel. When this occurred, the PM was usually unaware of who was working on his team and relied on the TL to monitor all product development issues. This approach hindered any development of project loyalty and commitment among those working on the project. The importance of working as part of a team was minimized by the actions of the organization. We observed a few instances in which section chiefs removed team members from a team without consulting the PM. In the worst case, the team member never notified the PM, who apparently was unaware of the change.

Organizational attitudes and support were not the only factors influencing the ability of the organization to execute projects through effective teamwork. In some cases, the ability, or inability of the project manager affected how the team operated. We saw cases where the project manager never properly organized the project team. These PMs rarely met collectively with the team to discuss the project, rather they dealt individually with the team members to address their specific product issues. This infrequent interaction did little to emphasize the group effort that was supporting the project. We observed that regular project team meetings increased "team ownership" of the project and kept everyone apprised of the project status. These meetings allowed team members to comment and contribute on project issues not necessarily associated with their product specialty.

IMPACT: Failure to create and support project teams to execute projects results in separate elements concentrating on specific parts of the job without understanding or caring about the complete project. Understanding the scope of the entire project helps each member define their role in the project and recognize the relationship their effort has with the other team members in assuring project success. Without strong project teamwork, an organization will not be able to transform itself from a product-focused organization to a project-focused organization as envisioned in the Project Management Business Process.

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Fostering Effective Teamwork

Expectation: The leadership of the organization emphasizes and encourages effective teamwork. Project team members recognize how they contribute to the success of the team. They work with and encourage other team members to ensure the project is successful.

The regulation states that, "the PMBP is a significant change in how we do business." It reflects a "cultural change" for USACE that affects everyone in the organization. To make this transformation, functional supervisors must understand how their roles and responsibilities change under the PMBP. Team members must also understand how they fit into the PMBP since their support is critical in the successful formation of a team.

In most organizations, we found that the vast majority of employees below the functional chief level did not really understand the intent of the PMBP. In these organizations, the current training approach focused almost solely on the PMs role in the organization and ignored the remainder of the organization's responsibilities. Only a few organizations we visited had done any training specifically focused on team members working effectively as part of teams. We noticed that those organizations that had done this type of training had recently participated in the Army Communities of Excellence (ACOE) program. While not recommending this program as a requirement for the PMBP, this program appeared to support the creation of the organizational teamwork necessary for success in the PMBP. It generally resulted in a more pronounced sense of teamwork in these organizations than the others we visited. While we found examples of teamwork in every organization, we felt that Huntington, Seattle, and Tulsa districts were the most effective districts in fostering project teamwork throughout the entire organization.

Although we saw some instances where teams were rewarded for outstanding achievements, we did not see any organization that had developed a team award system that had supplanted the standard system based on individual performance. Although difficult, a shift in the award focus from individual to team achievement can be helpful in fostering teamwork.

IMPACT: Failure to educate the entire workforce on the intent of the PMBP will result in a continuance of the "stovepipe" emphasis in project execution. The organization must support the PMBP in words and action, recognizing project teams for their performance. If this is not done, the PMBP will continue to be viewed as only a PM responsibility and the organization will not attain the full benefits available through this synergistic process.

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COMMENTS ON THE PROJECT DELIVERY TEAM CONFERENCE

We thought one of the more positive initiatives from HQUSACE was the Project Delivery Team (PDT) conference in July 1998. This conference brought together representatives from several functional areas in the Corps to discuss how we execute projects. The conference did not concentrate on one functional area, rather it addressed the interactions between them in an effort to identify more effective methods of project delivery. This focused the energies of those attending the conference on the process of delivering projects – the Project Management Business Process.

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PROJECT MANAGER

Expectation of the Project Manager: The project manager is the individual an organization holds responsible for the execution of a project. The PM is the integrator of the USACE support necessary to meet a customer's requirement on time, on budget, and with expected quality. The project manager monitors all aspects of the project, evaluating actual performance against commitments. The project manager coordinates the interaction of the project team and takes action to balance the performance of each area without sacrificing the overall performance objectives of the project

PM Accountability

Expectation: The organization holds the PM accountable for the success or failure of the entire project. He is responsible for coordinating and monitoring all project supporting activities and controlling corrective actions.

We found that most organizations considered the PM, "the person you go to for project information and status" rather than the person responsible for ensuring a project is completed on time, on budget, and meets the customer's quality expectations. As a result, they do not really hold PMs accountable for project performance. We found that many PMs were concentrating on preparing reports rather than directing the project team. Most PMs were aware of the high level issues of a project but were unaware of the project details. Without the project details, project managers were incapable of anticipating project resource conflicts and developing a corrective plan.

The PM was usually the individual who reported project status and issues to the corporate board. However, once these issues were identified, many organizations viewed the development of solutions as the responsibility of the technical representatives and their respective functional chiefs. Questions concerning product status (not technical issues) at the PRB were often directed to technical representatives rather than the PM. Addressing the issues through a functional representative, rather than the PM, focuses attention on product development. It reinforces the message that the PM is not expected to be accountable for products that make up the project. The PM must be accountable for coordinating all aspects of the project with team members and their supervisors. While there is a shared responsibility for project execution, the corporate board must clearly recognize the PM as the individual who unifies the effort.

IMPACT: If the organization does not hold the PM accountable and expect him/her to coordinate and report on all elements of the project, the PM will not get beyond being a project reporter. If the PM is not held accountable for the success or failure of the entire

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project, then no one, other than the commander, is accountable for the entire project.

PM as Leader

Expectation: The PM is responsible for guiding the actions and performance of a multi-disciplined team. The PM ensures each team member understands and fulfills his/her obligations as a team member.

In most of the organizations we visited, team members did not view the PM as the team leader. They looked to technical leaders or functional supervisors for guidance and leadership and saw the PM as a status reporter. We saw two primary reasons why the PMs were not accepted as project team leaders. The first reason involved the level of management responsibilities assigned to the PM. The second reason involved the individual leadership skills and abilities of the PM. The next two sections present observations relative to these two areas.

Management Expectations

There are a number of management tasks that must be performed for every project: customer coordination, team building, budgeting, status reporting, etc. Similarly, there are a number of tasks that must be performed to develop a technical *product* (i.e. a design or study.) The accomplishment of certain of these project management tasks is almost universally accepted as being the responsibility of the project manager. Likewise, there are some management activities associated with *product* development that are almost always performed by a technical leader (TL) in a functional organization. The remainder of the management tasks, however, overlap and it is not always easy to differentiate between what is a project management task and what is a *product* management task. The determination of where to draw this line in assigning management responsibility, to a PM or a TL, is a "below the line" decision. Because of this, we saw a great disparity in the level of management expected of PMs in different organizations.

In some organizations we visited, the PMs were only expected to be involved in the major issues with their projects, usually dealing only with funding and high level customer interface. In these organizations, we observed PMs assigned as many as 50 projects. With the PM busy overseeing a great number of projects, the technical leaders were left managing the majority of the details. This often included coordinating the efforts of the multi-disciplined team needed to develop the product. With the technical leads doing most of the day-to-day problem solving and coordination, it was no wonder that the majority of the people in the organization viewed the TL as the "leader" of the project team rather than the PM.

In other organizations, the PMs were expected to be involved in all aspects of their

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projects. In these organizations, the technical lead had a very limited management role. Requiring more from each PM resulted in less projects assigned per PM and more overall PMs in the organization. In these organizations, the PMs were clearly viewed as the leader of the project team. However, this increased management role also resulted in more PM hours charged against the project, which became an issue when projects were small and funds were limited.

The majority of the organizations that we visited were somewhere between these two extremes. Unfortunately, few had clearly documented the respective roles of the PM and TL in the Project Management Plan. Without a consistent, clear understanding of each person's role and responsibilities, we saw inefficient duplication of effort, confusion on who to go to by team members, and a lack of good teamwork. The determination of individual roles and responsibilities of project team members is, and should be, a "below the line" decision. However, it is critical that these roles and responsibilities are clearly defined and PMs are assigned a "reasonable" number of projects so that they can fulfill the responsibilities that they are given.

Leadership Skills

The personality, individual skills, and experience of a PM greatly influenced his/her success as a team leader. Without a doubt, the Corps is gifted with some extremely talented project managers. Conversely, there are some PMs that are not as effective. We observed many cases where the PM did not carry out the leadership responsibilities associated with the PM assignment. They did not demonstrate that they knew how to coordinate the interaction of the team members and their products.

Most PMs we talked to had been selected for their positions under the previous regulation, ER 5-7-1. That regulation did not emphasize the role of the PM as a project team leader the same way ER 5-1-11 does. Under the requirements of the old regulation, organizations often selected project managers based on their technical background and experience rather than an evaluation of their leadership skills and their understanding of project management. Most organizations acknowledged that some of their PMs were not their best leaders or managers and accomplished little more than reporting project progress. When team members had little to no confidence in the abilities of the PM, they attempted to work around them whenever possible.

Only two of the organizations we inspected, Seattle and Tulsa, had a process to corporately evaluate PM performance. In addition to project execution rates, the corporate board discussed the PM's success based on how well the team worked together. This process assisted the functional chiefs and the DPM in developing stronger project teams by matching PM and team member personalities. It also helped the corporate board identify individuals as potential PMs based on how they demonstrated their understanding of the PMBP through their participation on project teams.

Most of the assigned PMs we interviewed had attended some sort of project management training, normally a Proponent Sponsored Engineer Corps Training (PROSPECT) course. We did not find a correlation between the training an individual attended and their success as a project manager. The Project Management PROSPECT courses we attended (General Project Management, Civil Works Project Management, and Military Project Management) stressed project management procedures, documentation, and techniques. These courses do not teach a PM how to be a team leader. They do not emphasize the general management skills, such as leadership, communications, and motivation, a PM needs to synchronize a multi-disciplined team.

IMPACT: There will continue to be a duplication of effort, split project team loyalties, and resource and reporting inefficiencies if the PM position is not recognized and supported by the entire organization. The project team's effort will not be coordinated if the PM is incapable of leading and directing the project. The PM will not be able to guide the actions of the team if the roles and responsibilities of each team member, including technical leaders, is not clearly outlined. Improperly selected and trained PMs will continue to lack the skills required to extract the synergistic efforts of a unified team.

COMMENTS ON PM AUTHORITY:

We found organizations debating how much authority the USACE PMBP gave the PM. Some organizations and individuals believed the intent of the regulation was to create a matrixed organization while others interpreted the regulation as validating the need for a projectized organization. The real issue being debated is the level of authority or direct supervisory control that the PM needs in order to be effective. A matrixed organization limits PM supervisory control while a projectized organization provides the PM a great deal of supervisory control.

In most organizations, the PMs said that they had very little management or supervisory control over project team members. The functional chiefs were responsible for assigning work to employees to keep them productively engaged. While the functional chiefs considered input from PMs, they were not always able to fill the PM's requests for specific team members due to the overall work priorities. The same holds true concerning the decision to perform work in-house or by contract. Functional chiefs considered PM input concerning the production method but they were ultimately responsible for the decision. Some PMs felt that this arrangement made it impossible for them to do their job to the extent envisioned by the regulation. The majority of the PMs, however, recognized the limitations placed on them and they worked with section and branch chiefs to arrive at the best possible alternative. They then organized the resources they received to best execute the project.

We found that PMs did not need formal authority to be effective if the organization worked as a team in addressing issues. The PMBP relies on a focus by the entire

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organization to provide the necessary resources to support project commitments. Functional chiefs support their subordinates' roles as team members and help them meet the commitments they have made to the projects through the PMPs. The more successful PMs demonstrated their leadership in influencing product development by establishing informal chains of authority with branch, section, and division chiefs. Working together, these elements resolved conflicts by staying focused on project commitments.

The HQUSACE proponents of ER 5-1-11 acknowledged that it is not inconsistent with the PMBP for functional chiefs to have higher grades and more supervisory control over project team members than the PMs. In a matrixed organization, project management authority is not based on supervisory power or control. Successful project management requires a difficult balance of leadership ability and team cooperation. PMs should manage project resources using leadership, team cooperation, and corporate board support - not necessarily through direct supervisory authority.

Establishing Performance Objectives

Expectation: The PM uses the Project Management Plan (PMP) to identify and record USACE and customer requirements, roles, responsibilities, and commitments to the project. It establishes the project baseline and is used by the PM to monitor project performance.

In general, we found that most projects did not have adequate PMPs. We found organizations did not emphasize the importance of using a PMP to identify project commitments and responsibilities. They did not treat the PMP as a project contract between the team members and the customer. Consequently, commitments were never clearly identified and enforced.

PMs we interviewed had a variety of reasons for not using PMPs. Most did not consider preparation and maintenance of PMPs to be an important aspect of their job. One PM said: "I have a PMP, but it is in my head." Another said: "I have more important things to do than to maintain a PMP." Many of those who acknowledged the value of a PMP said they did not have time to prepare and maintain a PMP. Some PMs were assigned as many as 50 projects to manage. Others commented that they did not need PMPs for small projects with short duration. This lack of emphasis extended even to senior leaders who did not view the PMP as a plan for success but as a requirement of the regulation.

Major PMP deficiencies included:

- Little evidence of coordination with the customer.
- Little evidence of team member input in the PMP preparation.
- No baseline schedule or budget, or only a partial schedule or budget for the project.
- For projects with a schedule, almost none had been updated to reflect current

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- project status.
- No configuration management plan.
- No parameters for quality.
- No plan at all.

In a few instances, we found PMPs that did a good job documenting commitments for the major products required to complete the project. These PMPs assigned responsibility and milestones for the major products comprising the project. For these projects, we observed that team members were more responsive to the PM and the project team worked together in a more cohesive manner.

IMPACT: Projects will not be executed in the most efficient manner if a well-coordinated plan is not created before the start of the project. The plan represents the internal commitments of the project team and the external commitments made to the customer. The plan is the foundation for the project. It describes what needs to be done and who is responsible for doing it. Without a good plan, project commitments and responsibilities will never be clear to everyone in the organization.

Monitoring Project Performance

Expectation: The PM receives product development information from project team members and evaluates it against the overall project objectives. The PM acts to ensure project commitments are met internally and are consistent with customer expectations.

We found that most PMs monitored project execution by reviewing project data they received from team members. In most cases, this information related to project funds or schedules.

PROJECT FUNDS

Most PMs concentrated on the financial performance of the overall project to evaluate project status. This sometimes misrepresented the status of the project by assuming, incorrectly, that spending funds at a projected rate correlated to the project being on schedule. This process fails to identify ongoing projects as over or under budget relative to the amount of work that was expected for the budgeted amount. Compounding the difficulty in tracking project performance based on fiscal execution was the process used by PMs to develop project budgets. Almost all projects had an initial project budget. However, in most cases, the actual product expenditures did not match the initial baseline budget due to changes in the project. We found that most PMs did not incorporate these product budget changes in the baseline budget of the PMP. As a result, the budget did not always reflect the true costs of the project.

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For most projects, funds flowed through the PM via the Corps of Engineers Financial Management System (CEFMS), thereby giving the PM initial control of the project funds. Some project managers were very competent in performing the CEFMS function required to support a project. Others, however, only had a minimal working knowledge of CEFMS or did not have the time to set up multiple charge accounts for every project. In these cases, a Program Analyst (PA) usually played a significant role in assisting the PM with monitoring the distribution and expenditure of project funds.

After the initial disbursement, the level of control PMs exerted over project funds varied substantially between Corps offices and among PMs within the same office. Some PMs were very protective of the project funds while others tracked expenditures from a higher level. The level of disbursement determined how much control and influence the PM had over the budget. The most protective PMs set up charge codes for each office or person performing work on the project, and personally monitored the expenditure of funds. In some cases, the PM would fund the accounts for only part of the projected cost of the work, thereby requiring the team members to periodically review project performance with the PM prior to receiving additional funds. While this process was time consuming, these PMs had excellent control of the funds.

Other PMs exercised less stringent control of project funds. These PMs would transfer funds to the section or branch responsible for providing a specific product in support of the project. In some cases, the product was defined very broadly, i.e. everything Engineering Division needs to provide. The PM relied on a product leader from Engineering Division to monitor how the money was allocated and spent within the section thereby losing track of more specific product development costs. In other cases, PMs disbursed funds based on a more specifically defined product, (i.e. plans and specs.) and would either monitor execution himself or have a program analyst track the funds. The method and level selected to disburse and monitor fund expenditures is a below the line management decision.

SCHEDULE

The methods of scheduling and recording project commitments varied greatly between PMs. The good news is that almost every PM had some form of schedule for his/her projects. The bad news is that the utility of some of these schedules was minimal.

We found that most PMs did not coordinate all of the activities of the project team into a baseline schedule that covered the project from start to finish. They often used individual product schedules to monitor performance. For example, PMs connected study plans prepared by Planning Division, design schedules prepared by Engineering Division, and construction schedules prepared by Construction Division to create their project schedule. This technique of merely combining product schedules overlooks the relationship between the products and is not effective in identifying concurrent and redundant activities. These product schedules often did not have enough milestone or product development

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information to allow the PM to actively monitor and question progress of the products.

Those project managers that did a good job coordinating the project team schedule usually included the team members in the schedule development process. The PM received the product schedules and discussed the details with each of the technical representatives that were responsible for a product. This method allowed each team member to understand the relationship between all of the products that made up the projects. They were aware of the impact a delay had on the other products and the overall project. Including the team members in scheduling appeared to strengthen the commitments made to the project.

Most PMs used some form of network analysis system (NAS) software to prepare their initial schedules. NAS programs we observed in use included "Microsoft Project", "Primavera", "SurTrak", and "Open Plan." In most cases, however, we found that PMs were not using the NAS program as a tool to actively track project performance. They prepared an initial schedule of activities using an NAS but almost never updated the baseline information. The most standard practice we saw entailed the PM creating a completely new schedule to reflect actual/current completion dates. This practice of creating a completely new schedule without consideration of the baseline limited the schedule's usefulness as a tool to review actual project performance versus scheduled project performance.

IMPACT: Project Managers will not be able to take action to ensure commitments are met if they do not have a system that compares the initial project commitments against the actual project performance. Focusing on fiscal execution at project level rather than at product level does not provide adequate information regarding actual versus scheduled performance. Lacking this information makes it difficult to conduct a detailed analysis of the performance and thereby developing actions required to redirect the activities of the project team.

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CUSTOMER CARE

Expectation of Customer Care: The entire organization recognizes the customer as the entity that commissions us to provide products or services. We work together and focus our energies to meet or exceed their expectations in all areas of project execution. Customer care includes developing clear communications with the customer to identify his or her requirements for the products and services (function, delivery date, quality) and to explain our ability to support the requirements (scope, budget, schedule) within the limitations of laws, regulations, current workload, and available technology. We ensure the customer understands the products and services they will receive. We keep the customer apprised of the project status and make sure they are consulted, as an active project team member, if deviations to the project scope, budget, or schedule are required.

The overwhelming majority of Corps employees we interviewed understood the importance of satisfying the customer. They recognized that it is the responsibility of the entire organization to meet the commitments made to the customer. We also saw outstanding examples of organizations exercising the "One Door the Corps" philosophy through sharing information, referring customers to other USACE activities, and making efforts to ensure the customer was satisfied.

Communications with the Customer

Expectation: The organization establishes clear, consistent, and coordinated communications with the customer. The PM coordinates team members' discussions with the customer to ensure the delivery of a consistent message.

Organizations that are still struggling with the implementation of the PMBP did not always speak with one voice when working with the customer. We saw some situations where the customer received conflicting or confusing information from different Corps representatives. Although each representative's intent was to satisfy the customer, they often only provided information based on their particular perspective of the project without regard to the other aspects of the project. As a result, the customer received bits and pieces of information and was often confused by what appeared to be conflicting or contradictory information. The cause of the majority of these problems was a failure of the project team to outline the roles and responsibilities of each member concerning communications with the customer.

We found that some organizations were finding it difficult to establish clear communications with the customer in cases where the project appeared to have multiple customers or no direct or interested customers at all. Large civil works projects often involved many different communities and interested parties. In the case of MILCON for the

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United States Air Force, the PMs and project team members often received conflicting guidance from the MAJCOM, the Base Commander, the Base Civil Engineer (BCE), and/or the facility occupant. To deal with this, some of the organizations we inspected simplified communications by requiring all information regarding a specific project to pass through the PM. The PMBP does not require the use of this particular technique when communicating with customers. What is important is that each member of the team understands his or her role and limits in these discussions. This will help prevent the customer from "shopping around" the various USACE representatives on a project in search of a response they prefer.

We saw that in the most successful examples of project coordination, the PM and team members carried on an active dialogue to keep each other informed about their discussions with the customer. Each team member acted with the knowledge and consent of the rest of the team. In this situation, if a team member received information or a question he or she was not directly responsible for, they could convey the inquiry to the proper member of the project team. The entire team was responsive to the customer, however, each team member clearly understood that only the PM could make changes in the project scope, budget, or quality requirements in his/her capacity as the team leader.

IMPACT: Providing the customer with what he or she wants will be difficult without the coordinated effort of the entire team. Without a clear line of communication with the customer, project requirements will not be clearly identified. Customers become confused and lose confidence in the Corps if they receive different information from members of the same team.

One door to the Corps

Expectation: The organization identifies a primary point of contact (POC) for the customer, usually the PM. The point of contact acts as the customer's advocate and actively seeks solutions to customer problems by using the network of experts in the Corps. The POC adds to the team whatever assets are required to satisfy a particular requirement. In some cases the POC serves as a marketer, recommending USACE solutions to customer problems unrelated to the current project that is being done.

One of the purposes of the PMBP is to make it easier for the customer to get access to the full capabilities of the Corps of Engineers. This service eliminates the need for the customer to search for the right Corps office. We saw very few examples in which a customer seeking USACE support from one organization was told, "we can not help you, but you might try calling this other organization." In almost all cases, the initial USACE contact established a link with the organization that could provide the service the customer needed and guided the customer through the initial contacts. Consequently, district boundaries are becoming invisible in our quest to provide full service support to the

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customer.

In a very few cases, we found that the responsibility for the customer remained with the customer's initial contact. In these instances, the initial contact chose to service the work request rather than turn it over to a project manager for execution. This situation occurred for many reasons: familiarity between the initial contact person and the customer; lack of established procedures to identify projects; or work not being considered a project. We observed that when this work was not assigned a PM, access for the customer to the entire resources of the Corps was diminished.

During the inspection, we also observed some good initiatives concerning the use of "Virtual Teaming." In these cases, project teams were formed by gathering team members from different USACE organizations, with each team having only one PM. These teams overcame geographical separations by using a variety of information technologies to communicate and perform their project tasks. The teams we observed operating in this manner were enthusiastic and seemed to work together well. The unique nature of the "virtual team" requires both the team members and their supervisors to be flexible in the way they work. The Project Management Business Process plays an important role in the success of these teams by defining the function and responsibilities of each team member. Operating in this manner clearly demonstrates that access to the many resources of the Corps can be achieved through a single point entry.

IMPACT: We will not be perceived as the premier engineer organization in the world if someone who comes to us for service is turned away because they did not ask the right question or contact the correct office. We will lose customers if we do not help them identify what they need and then convince them that we are the best agency to support their needs.

Satisfying Customer Needs

Expectation: The PM focuses the action and performance of the team to satisfy the customer's needs - not simply to provide a product to the customer.

Some of the PMs we talked to did not seem to understand the difference between simply providing the product a customer requests and truly satisfying the customer's needs. Two examples demonstrate this.

At one organization, we were told about a civil works project where the construction was finished on schedule, however, the user could not operate the facility because the Corps had not yet issued the permit to do so. If the PM was focused on satisfying the customer's needs, issuing the permit would have been on the project schedule and coordinated well in advance of the completion of construction.

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customer.

In a very few cases, we found that the responsibility for the customer remained with the customer's initial contact. In these instances, the initial contact chose to service the work request rather than turn it over to a project manager for execution. This situation occurred for many reasons: familiarity between the initial contact person and the customer; lack of established procedures to identify projects; or work not being considered a project. We observed that when this work was not assigned a PM, access for the customer to the entire resources of the Corps was diminished.

During the inspection, we also observed some good initiatives concerning the use of "Virtual Teaming." In these cases, project teams were formed by gathering team members from different USACE organizations, with each team having only one PM. These teams overcame geographical separations by using a variety of information technologies to communicate and perform their project tasks. The teams we observed operating in this manner were enthusiastic and seemed to work together well. The unique nature of the "virtual team" requires both the team members and their supervisors to be flexible in the way they work. The Project Management Business Process plays an important role in the success of these teams by defining the function and responsibilities of each team member. Operating in this manner clearly demonstrates that access to the many resources of the Corps can be achieved through a single point entry.

IMPACT: We will not be perceived as the premier engineer organization in the world if someone who comes to us for service is turned away because they did not ask the right question or contact the correct office. We will lose customers if we do not help them identify what they need and then convince them that we are the best agency to support their needs.

Satisfying Customer Needs

Expectation: The PM focuses the action and performance of the team to satisfy the customer's needs - not simply to provide a product to the customer.

Some of the PMs we talked to did not seem to understand the difference between simply providing the product a customer requests and truly satisfying the customer's needs. Two examples demonstrate this.

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Another example involves civil works studies. In some organizations, we were told that a PM from PPMD would only be assigned to manage a study if there was a high likelihood that the study would result in further work. If it appeared that a study would not lead to further work for the Corps, a technical representative out of Planning Division would perform the PM functions. The problem with this situation is that the study manager was usually focused only on completing the study, not satisfying the ultimate needs of the customers. The study manager realized that if the study lead to further work, then a PM from PPMD would be assigned to manage the follow-on work.

IMPACT: A focus on simply providing the customer the product he/she requests can lead to instances of customer dissatisfaction. If we want to truly "delight" our customers rather than just satisfy them, we must understand the customer's needs and anticipate customer requirements. To do this, the PM must constantly focus on satisfying the customer's overall needs and not get too focused on simply providing the customer the product requested.

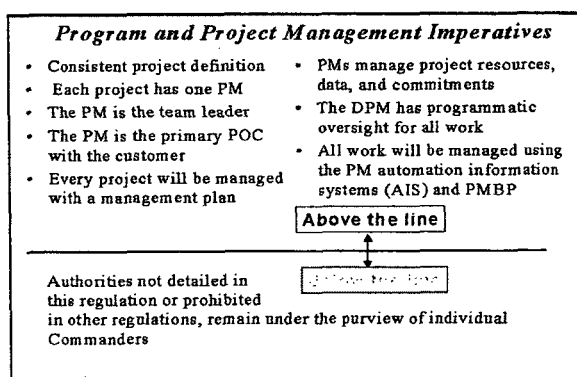
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CHAPTER THREE

Compliance with the Program and Project Management Imperatives

The regulation identifies eight "essential elements of the USACE PMBP" and states that these 'above the line' requirements are to be followed across USACE. They appeared in the figure below:



These imperatives were considered by most people we talked to as the only strict requirements of the regulation. They were used by most organizations to gauge their compliance with the PMBP. In fact, we also used them in this manner during our inspection. However, the further we went along in the course of our inspection, the more confusion we saw about what the imperatives really meant. We found many interpretations of the imperatives that were not consistent with a full understanding of the PMBP. (In fact, our own interpretations changed during the course of our inspection.)

This chapter outlines our final interpretations for each imperative. We developed these interpretations from studying the ER and other written guidance from HQUSACE, in addition to our observations and discussions with leaders from both HQUSACE and the field. Under each imperative we have listed the most common misinterpretations we heard, along with our explanation of why we felt these were inconsistent with a full understanding of the requirements of the ER and the PMBP.

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Imperative No. 1: Consistent Project Definition

EIG Interpretation:

To comply with this imperative, organizations must assign management responsibilities to projects consistent with the PMBP. The leadership of the organization must analyze all of their work, especially work that uses shared resources, and assign project management responsibilities to the individual or organization that can best support corporate and customer objectives. This imperative does not require organizations to develop strict rules and categories for various types of work, nor does it require different organizations to treat projects identically.

Comments from the field regarding this imperative:

"Headquarters needs to provide us definitions that specify what is a project and how we are supposed to manage them."

This interpretation illustrates the misunderstanding of the intent of this imperative. Organization's are waiting for HQUSACE definitions and not internally assessing how they classify work and assign project management responsibilities.

"Every project has to be defined and managed the same way under the PMBP."

There is no requirement in the regulation for project management responsibilities to be assigned using a strict set of rules or guidelines. The PMBP requires the organization to assess each element of work individually and consider its unique characteristics before assigning management responsibilities.

"We've been doing this work without a PM for years. There is no need for us to change how we manage this program."

This interpretation, made in functional areas, usually involved special projects that were managed by a technical manager, not a PM from PPMD. Functional organizations determining how to manage a project eliminates the corporate board from work assignment, contrary to the PMBP. It assumes that continuing to do business as usual is in the best interest of the organization.

Imperative No. 2: Each project has one PM.

EIG Interpretation:

To comply with this imperative, each project must have a Project Manager whose role is to coordinate the efforts of the various USACE elements involved with the project. The PM ensures the products and support required to complete the project are available when required. The PM maintains project awareness of all segments of the project from its beginning to its end (life cycle orientation.) There will only be one PM at any given time during the project. This interpretation recognizes that it may not be possible for the same individual to be the PM for the entire project, however, changes to the PM must be carefully evaluated and not made to simply match changes in project phases.

Comments from the field regarding this imperative:

"Only formal projects required PMs."

In this interpretation, the PM refers to a project manager from PPMD. The intent of the PMBP is to establish a person who is in charge of the project. The regulation states this person is generally from PPMD, however, exceptions are allowed. The important point is that one person is clearly identified and responsible for coordinating the USACE support to a customer.

"The PMBP requires the project manager to stay with the project from start to finish."

"I can't use a PM position as a developmental assignment because once an individual is assigned to PPMD, he can never leave."

The regulation recognizes that events may occur that necessitate changes to the project manager. The regulation requires that replacing the project manager not be done arbitrarily without considering the impact on the organization and customer.

"We have a PM assigned on paper for every project and he reports to the PRB but he really does not get involved with project activities. The technical leaders get the work done."

This interpretation leads to confusion concerning who is actually the PM. In some organizations, the technical leaders functioned as the PM for their product. There appeared to be a different PM for each product with no one individual responsible for integrating the overall project.

"We assign a study manager to coordinate the studies of work when we are not sure if it will lead to construction. We will assign a project manager if it goes beyond the study phase."

This interpretation may be contrary to the PMBP if the decision not to assign a PM from PPMD is not made by the corporate board. While the PMBP requires a single PM with a life cycle project focus, it does not prohibit the corporate board from assessing the

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likelihood of a study leading to construction. The PMBP allows the corporate board to make what they view as the best business decision after evaluating the risks associated with their actions. If the board decides not to assign a PM from PPMD because of unlikely construction follow-up, they must have a contingency plan in place to address the management of the project if their assumptions are wrong and construction occurs. The intent of the regulation is for this to occur in only extremely rare occasions and after complete evaluation of the circumstances. The PMBP does not allow changing the PM merely because the project moves from planning to engineering then to construction. This prevents life cycle project management.

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Imperative No. 3: The PM is the team leader.

EIG Interpretation:

To comply with this imperative, the organization must internally recognize the PM as the person responsible for guiding the action and performance of the project team.

Comments from the field regarding this imperative:

“Functional representatives do not need to report to the PM. They work for their functional chief and he decides what they should be doing.”

“Technical leaders can control everything that goes on in their functional area without consulting the PM.”

This interpretation does not support the formation of a project team led by the PM. The PM guides the action of the team to meet commitments made to the customer by the project team. The PM, team members, and their supervisors work together to meet these commitments.

“The PM doesn’t need to lead a team, he gathers information and reports to the PRB.”

This interpretation does not recognize the PM’s role as leader of the project team. The team must understand that the PM’s function goes beyond project reporting. The PM guides the team in meeting the commitments they made to the customer. The PM works with supervisors and the corporate board to secure the resources and support necessary to ensure success of the entire team.

“The PM, as team leader, directs all the activities of every team member.”

“To be the leader, the PM needs full authority over the team members.”

The PMBP does not require the PM to have supervisory control of team members. The PM works with team members and their supervisors to ensure commitments are met.

Imperative No. 4: The PM is the Primary POC with the customer.

EIG Interpretation:

To comply with this imperative, the organization must ensure that customers receive clear, consistent, and coordinated communications from the Corps. They do this by identifying a responsible individual, usually the PM, for customer interaction. In this role the responsible individual will ensure the customer is informed and consulted of project status, decisions, and financial status. This imperative allows technical discussion between USACE technical staff and the customers within limits agreed upon by the PM and the team members. This imperative implies that the PM and the team members communicate frequently to keep each other apprised of project status to ensure a consistent message is conveyed to the customer.

Comments from the field regarding this imperative:

“Only the PM can talk to the customer.”

This interpretation ignores the technical skills assembled on the project team. The PMBP does not prohibit team members from meeting with customers. It does require that the PM and team members understand what they can and cannot do in meetings with the customer. This imperative allows flexibility to determine how best to interact with the customer to meet his/her needs. The PM and team members must keep each other informed of all interactions with the customer to ensure a consistent message is communicated.

“Since the PM is the only one talking to the customer, he will have to make technical decisions.”

The PMBP does not shift technical responsibility to the PM. It requires that the PM, as leader of the team, use the talents of the team to provide support to the customer. The PM and the team must establish a protocol for conducting discussions with the customer to prevent conflicting decisions being made.

“Technical representatives can discuss technical issues with the customer and make any decisions and agreements with the customer as long as it only pertains to their product.”

The PMBP does allow technical representatives to make decisions, however, the limits and level of these decisions must be agreed to with the PM prior to the start of the project.

“The PM only needs to talk to high level customers.”

The PMBP does not limit who the PM meets with. The PM must meet with the customer or customers associated with the project and coordinate the project team to provide coordinated USACE support and information to the customer(s.)

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"Assigning an installation support coordinator or a "PM Forward" to coordinate USACE support for an installation violates the PMBP because the PM is no longer the primary POC with the customer."

We did not feel the use of an installation support coordinator or "PM Forward" violated the PMBP if the roles and responsibilities between the PM and the "PM Forward" were clearly defined and understood by everyone involved. The imperative considers the PM as usually the best person to interface with the customer. However, we saw examples where the PM was not the primary POC. In some cases, geographical separation made it more convenient for the customer to contact a local Corps representative rather than the PM concerning USACE support. This situation worked as long as one individual was designated as the primary POC with the customer, the roles and responsibility of this individual was well understood, and there was good communication between the project team.

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Imperative No. 5: Every project will be managed with a management plan.

EIG Interpretation:

To comply with this imperative, a coordinated plan must be developed at the beginning of a project and used as a guide to execute the project. This plan documents project team members' commitments to the project scope, schedule, and budget. It is used to measure actual performance compared to projected performance. The plan identifies the organization's assets required to complete the project and allows these assets to be evaluated and prioritized relative to competing organizational demands. Additionally, the plan serves as a historical document that reflects actual project execution.

Comments from the field regarding this imperative:

"You can't manage a project by following a PMP."

"The PMP is just an administrative requirement. It doesn't help us get the work done."

"We don't have time to develop a plan for each project."

These interpretations identify a failure to recognize the importance of developing a complete list of activities and responsibilities necessary to complete a project, before the project starts. The commitments recorded in the PMP should reflect the organization's plan for accomplishing the work. The development process of the PMP must emphasize the preparation and contribution of the best possible estimates by all team members. Functional chiefs and the corporate board must evaluate and approve these plans relative to the workload of the entire organization.

"This is a small project so it does not need a PMP."

This interpretation represents a common misconception that a PMP must follow a standard format. The regulation lists the minimum requirements of a PMP but allows flexibility in format. This flexibility recognizes that the level of planning required for a large project is not the same as for a small project. The regulation emphasizes, however, the importance of having a plan that identifies how we will meet commitments made to the customer, regardless of project size.

"The Project Management Plan is a PM document."

This interpretation fails to recognize the teams' responsibilities in developing the plan. The PMP documents the entire organization's commitment to the project. The PM consolidates the input and monitors the organization's execution of the work.

"Every project has changes so there is no need to update the PMP once the project starts."

This interpretation discounts the usefulness of the PMP as a management tool and for identifying systemic issues in projects. If the PMP is properly developed, the team can assess the impact of changes on the project and evaluate alternatives. Updating the PMP

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Imperative No. 6: PMs manage project resources, data, and commitments.

EIG Interpretation:

To comply with this imperative, the PM must monitor project performance and coordinate the USACE activities necessary for ensuring the project will be completed on budget, on schedule, and to the expected quality as established in the PMP. The PM ensures project team members meet their commitments by working closely with them and their supervisors. The PM is responsible for identifying issues concerning resources and commitments. The PM raises issues they can not be resolved at the project team level to the corporate board for action.

We considered "project resources" to be the project funds and labor, including in-house and contract staff, needed to produce technical products and information in support of the project. "Data" is all information about the project to include, budget, schedule, customer requirements, and all other pertinent information. "Commitments" include binding agreements formally identified in the PMP requiring team members, contract personnel, customers, and others to deliver products or information necessary to successfully complete the project.

Comments from the field regarding this imperative:

"The PM must have complete authority over all team members and resources to manage the project. This gives the PM power to control the project."

The project manager's responsibility is to make sure team members meet their project commitments. The PMBP does not require or prohibit the PM from having direct control of team members. The PMBP allows the corporate board to describe the PM/project team relationships as a below the line management issue. This allows the board to assess each project and assign management responsibilities to match the management requirements. In some cases, the PM may be given supervisory authority over team members, but in most cases, he/she will not.

"The PM only prepares the reports for the project, functional areas manage the work and only go to the PM when they need more money. Technical representatives manage the resources for their product."

The PMBP holds the PM responsible for project performance, however, every member of the team shares the responsibility of meeting project commitments. The PMBP does not direct the level of involvement that the PM must have in day to day resource expenditures, but it does require an active participation beyond simply reviewing CEFMS charges. The PMs can not merely send the money to the technical lead for product development and assume everything is fine. They must establish procedures with the project team to track resource expenditures and identify shortfalls early.

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"The PM doesn't have enough technical experience to get involved with my product development."

The PMBP allows the PM the authority to challenge any and all work being done in support of the project. The PM should challenge work that adversely effects or potentially impacts project performance. The PMBP does not require the PM to make technical decisions but does expect him to explore alternative solutions with team members and their supervisors if a technical issue is impacting the commitments made to the customer. The corporate board must decide who makes the final determination concerning this type of decision involving potentially conflicting requirements. The PM then presents the issue and recommendations to the customer, if appropriate, for comment or decision.

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Imperative No. 7: The DPM has programmatic oversight for all work.

EIG Interpretation:

To comply with this imperative, all work in the organization must be under the oversight of the DPM, as "the senior civilian on the district staff who provides leadership to a corporate board comprising of senior staff." Centralized programmatic oversight, under the DPM, allows the corporate board to consider all requirements when establishing the organization's resource priorities.

Comments from the field regarding this Imperative:

"The DPM makes all resource decisions in the organization."

The PMBP establishes the DPM as the senior civilian in the organization. The DPM is the team leader of the corporate level team. The DPM does not make all resource decisions on his/her own, rather he/she coordinates the corporate board activities and decisions to best serve the needs of the entire organization and its customers.

"The DPM does not need to have programmatic oversight of work unless the work is managed by a PM from PPMD."

The DPM and the corporate board must be aware of all demands on corporate resources in order to establish priorities in the organization. Work done without a PM from PPMD must also be visible to the corporate board, to include work done for internal customers, for consideration when evaluating resource priorities.

Imperative No. 8: All work will be managed using the PM AIS and the PMBP

EIG Interpretation:

To comply with this imperative, the organization must manage projects and evaluate project information using the USACE approved automated tools, currently PROMIS and CEFMS. Additionally, all work done in the organization will follow the principles of the Project Management Business Process. (Expectations concerning the key elements of the PMBP are discussed in Chapter 2 of this report.)

Comments from the field regarding this Imperative:

"We only need to use PROMIS as an upward reporting tool. We can manage our projects better by using other software packages."

The regulation states clearly that, "Corporate automation information systems (AIS) for project and financial management shall be used to manage each project and program." Not using PROMIS to manage projects, for whatever reason, violates the regulation as presently written.

"As long as I follow the imperatives, I'm in compliance with the regulation."

"We're doing all eight of the imperatives so we must be following the PMBP."

The imperatives provide the organization with indicators of performance for some essential elements of the PMBP. However, we found that when organizations relied too heavily on them in evaluating their performance, they failed to look beyond them in addressing the cultural issues associated with changing the way they have operated in the past. Although it may be overlooked, the eighth imperative states that, "All work will be managed using the PM AIS and the PMBP." Managing all work using the PMBP requires teamwork, PM leadership, and a focus on the customer - some of which are not clearly addressed in the other imperatives.

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CHAPTER FOUR

Recommendations

The first three chapters of this report outline our observations on the current acceptance and application of the Project Management Business Process in USACE. These previous chapters are intended to highlight both good and bad practices we found during our inspection. In this chapter, we identify several actions that we feel must be accomplished for the Program and Project Management Business Process to be applied consistently throughout USACE.

Understanding the Project Management Business Process

The Project Management Business Process (PMBP) is not yet the way all work is being done in the Corps of Engineers. Our inspection revealed that resistance is no longer a major issue. The most significant issue preventing the full implementation of the PMBP is the apparent lack of a complete understanding of the process.

ER 5-1-11 was intentionally less directive than previous regulations to allow organizations to develop their business practices based on their unique requirements, while staying within the framework of the Project Management Business Process. Unfortunately, the regulation's flexibility has caused some confusion in the implementation of the PMBP. For organizations that understand the intent of the PMBP, the regulation contains sufficient guidance and direction. Conversely, those organizations that do not understand the PMBP can use the vagueness in the regulation to justify practices that are not consistent with the PMBP. We did not see organizations practicing inconsistent processes out of resistance to change, rather they were interpreting the regulation relative to the existing culture in their organization without grasping the implications of their actions. The intent of the regulation was to allow for flexibility of implementation procedures, not to allow room for interpretation of the most basic tenets of the program.

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The objectives of the PMBP will never be consistently achieved without an organization-wide understanding of the intent of the process. The entire workforce must be educated as to what the PMBP represents and what their role is in the process. This education process must include a consistent message from all the PROSPECT courses related to project delivery – not just the courses for project managers. Clear expectations of the process will help eliminate the variety of interpretations that have been made throughout the organization.

RECOMMENDATION:

That the proponents of ER 5-1-11 validate and modify, as necessary, the expectations of the key elements of the PMBP contained in this report and provide guidance on their use to the entire organization as part of the existing program and project management education process.

Role of Program Managers

ER 5-1-11 states that, “the requirements defined in the PMBP apply to both program and project management...” Paragraph 6d, defines Program Management as “the component of the PMBP used by all USACE levels to manage a collection of similar projects, activities and services derived from assigned missions. It consists of the development, justification, management, defense and execution of programs within available resources, in accordance with applicable laws, policies, and regulations, and includes accountability and performance measurements. Under program management, the entire district’s or division’s programs, projects and other commitments are aggregated for oversight and direction by the organization’s senior leadership. Program management takes project management to a greater level of interdependencies and broadens the corporate perspectives and responsibilities.”

During our inspection, we talked to both project and program managers. The regulation gives significant guidance on the role of the project manager, however, it is silent on the expectations of the role of the program manager. Since the regulation states that the requirements of the PMBP apply to both program and project management, we attempted to apply the same criteria to an evaluation of these program management positions that we used in our evaluation of project management positions.

As stated previously, the regulation lists the three key elements of the Program and Project Management Business Process as “Customer Care”, “Teamwork”, and “Project Manager.” In attempting to create expectations for the Program Manager, we found the parallels between the roles of program managers and project managers with respect to these key elements quickly broke down.

We talked to only a handful of program managers that had a relationship with a customer that approached anything near the relationships expected of project managers. Most were "managing" programs that did not have a single identifiable customer (e.g. all Army projects in the Division area of operations, or all CAP projects.) Some Civil Works program managers told us that HQUSACE or Congress were the customers of their programs. Even those that had identifiable customers for their programs were usually not the "primary POC with the customer", sharing that customer with program managers from Districts and other USACE Divisions (e.g. all INS work in the Division, or all work for a specific Army MACOM.) It was unclear to most during the course of our inspection how the designation of a National Account Manager will effect the role of program managers in Districts and Divisions.

With respect to "Teamwork", we did not see program managers establishing any cross-functional teams to manage programs. Occasionally "Ad hoc" teams were established to address a specific problem, but the routine "management" of programs was accomplished solely within the Program Management Division. Since teams were not formed to manage programs, the program managers were not required to be, or looked to as, team leaders. The true teamwork in managing programs took place at the commander/corporate board level.

Finally, the actions required of the program managers differed considerably from the expectations of project managers as described in the regulation. In most cases, the program managers' primary responsibility was in monitoring program execution. They did not prepare formal Program Management Plans to identify and record USACE and customer requirements, roles, responsibilities, and commitments. Except for fiscal objectives for Civil Works programs, we did not see any formal program performance objectives established by program managers and used to manage program performance. Since no program performance objectives were established, except fiscal objectives for Civil Works projects, we found few program managers that were held accountable for success or failure of programs. Overall, except for fiscal management of Civil Works programs, the program managers that we observed were not "managing" their programs in accordance with the PMBP defined in ER 5-1-11. In reality, the corporate board was responsible for managing programs.

Military program managers performed even less program management functions than their Civil Works counterparts. At district level, they appeared to serve as an advisor or supervisor for the individual project managers. They could not establish program objectives for military programs simply because of the way projects are developed and funded. They could not move money between projects to support a program. At division level, the role of the program managers becomes less obvious. Most of the Military program managers we interviewed at divisions saw themselves as a higher level of troubleshooter. Their principle function was to keep their Division Commander apprised of the status of "high profile" military projects and step in if a customer was not satisfied with the service they were getting from a district. They were not managing a program in the

sense intended in the PMBP.

Our observations are not meant to say that the Program Managers we talked to were not doing important or productive work. In most cases they were doing exactly what their leadership was asking them to do. However, calling them program managers under the PMBP of ER 5-1-11 implies they are responsible for program management, a standard to which we observed is not being supported. The skills and abilities required to be a good project manager are not necessarily the skills and abilities necessary to be a good program manager in the roles they are currently performing. In many cases, the program managers were serving more as resource monitors, ensuring the fiscal execution goals of the organization were met.

RECOMMENDATION:

That the proponents of ER 5-1-11 create expectations for both civil works program managers and military program managers and provide guidance on their use as part of the existing program and project management education process.

HQSACE Support to the PMBP

Throughout the inspection we were approached by Corps employees who said, "You need to look at the Headquarters because they do not function as a PM organization." When we asked them what they meant, their comments usually revolved around guidance and directives from the HQ that they viewed as being inconsistent or in conflict with other HQ guidance or directives. Additionally, we saw examples of "stovepipe organizations" contacting their field equivalents directly for project specific information or with project specific guidance, bypassing the PM.

One illustration of a perceived conflict with guidance issued by HQSACE involves the recent discussion concerning the role of Resource Management (RM) in the Corps. During our inspection, we observed the process underway to define the roles and responsibilities of the RM element and how they should be structured to meet the changing needs of the Corps. Most of the people we talked to felt that this effort was a RM initiative being handled by the RM stovepipe. In one district for example, we saw the Chief of RM presenting the argument that project managers did not need to track financial execution of projects - that was a RM function. The issue was being addressed in terms of where do the program analysts sit and who controls them rather than what is the best system to track fiscal execution under the PMBP. The RM guidance to the field is contained in Engineer Circular (EC) 10-1-2, dated 17 December 1998. This EC states, "Key to making this reorganization successful is identifying and transferring the resources currently performing this work to your Resource Management organization." Although perhaps not intended, this EC is being interpreted as reinforcing the importance of the stovepipe organization and

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effectively eliminates the flexibility of the field to structure their organization to best support the way they do business. This approach is contrary to the PMBP. Many of the organizations we inspected discussed this issue with us during the inspection, wondering why such an important issue was not being addressed in terms of the role of the RM in the PMBP.

Another example supporting the perception that HQUSACE is not operating as a project management organization is the preparation of the Quality Management Regulation. The initial drafts of the QM regulation made little reference to the PMBP, the process by which all work is to be accomplished by the Corps. The QM regulation addresses procedures to be used in the engineering and construction "stovepipes", ignoring the other elements necessary for creating a district-wide quality management system. The process being used to staff and validate this ER reinforces the stovepipe structure of the Corps, sending a strong message to functional organizations in the subordinate elements that, in this case, quality is an engineering and construction issue only.

A final illustration of systemic conflict with the PMBP in HQUSACE involves the process used to evaluate feasibility studies. The present process in place involves the Chief of Planning at a district sending the study to HQUSACE for review and then it being returned to the Chief of Planning in the district for incorporation of comments. The PMBP requires these studies to have a project manager. The present staffing procedures bypass the PM by reinforcing the stovepipe importance of the planning review process. The district can institute procedures at their level to ensure the participation of the PM in the study review, however, without parallel support from HQUSACE, this process will continue to be inefficient and confusing for those tasked to execute it.

The regulation states that all work will be accomplished using the PMBP. The headquarters must set the example for the organization by fully supporting the processes put in place by subordinate organizations. By not demonstrating they can use the same teamwork and customer care requirements the PMBP requires of their subordinates, the HQ will continue to reinforce the "stovepipe" culture making it more difficult for the field to fully commit to the PMBP.

RECOMMENDATION:

That the USACE Chief of Staff direct a review of all HQUSACE policies and practices to insure that they are consistent with and support the PMBP.

PMBP Application to the Labs

The regulation states that the PMBP applies to all USACE organizations, however,

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the terminology used in the regulation is geared to USACE districts and divisions. The terms do not directly apply to the labs because their structure, positions, titles, and data requirements are different from the districts. For example, the regulation states that the DPM must have oversight of all work. Labs do not have DPMs, they have Directors. But, these Directors have different roles in the labs than the DPMs have in districts. Is this consistent with the PMBP outlined in the regulation?

One of the purposes of the PMBP is to develop a process that is common throughout the Corps. What we found in our inspection was that the labs were attempting to translate their existing policies and procedures in the words of ER 5-1-11 without necessarily analyzing or modifying their processes to align with the principles of the PMBP. To illustrate this point, one of the labs had positions they equated to "project managers", however, they did not have the responsibilities or duties expected of a PM according to the regulation. We felt they served more as program managers with the bulk of the project management tasks being performed by another person in the organization. This becomes an issue when customers approach the organization, expecting a certain level of service comparable to other Corps offices, only to realize that in this office the PM does not really work as a PM does in a district.

The PMBP establishes a process through which an organization provides quality products to the customer, on time, and on budget. If the labs do not analyze the way they do business in terms of the PMBP, they may or may not be performing work according to the PMBP. USACE will not have consistent, systemic management of all work we do unless all organizations follow the tenets of the PMBP.

RECOMMENDATION:

That the HQUSACE Director of Research and Development provide implementing guidance to translate the principles of the PMBP in terms consistent with their business practices.

PROMIS

Although most were working diligently toward implementing PROMIS, none of the organizations we inspected were successfully using PROMIS to manage their projects. We met very few individuals that were using PROMIS to do basic project management tasks. Most were managing their projects using commercial NAS programs or some other method. The majority of people we talked to viewed PROMIS' primary function as an upward reporting tool, not a project management tool. Project managers did not see it as tool to help them ensure better project performance. PMs expressed frustration about the amount of time needed to enter and update data in PROMIS. They felt that keeping the data current in PROMIS required too much time and effort. They felt that the time spent using PROMIS encroached on the time they had available to manage the project. We saw

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We did interview a few individuals that were comfortable using the system. Almost all of these people gained their expertise by working on a team involved with the development or initial testing of PROMIS. They were familiar with the operation of the system and were usually able to demonstrate or discuss the full concept of PROMIS. They were instrumental in providing comments and suggestions for improvement to the development staff. The development staff was constantly updating and improving the program in an effort to meet the needs of the field, however, they were not able to keep up with the number of modifications required.

Basically, what started as a great initiative to support project delivery is viewed as an administrative burden that is negatively impacting project delivery. The premature fielding of PROMIS, before it could function as envisioned, has created such a level of disdain and distrust in the program that its eventual acceptance as a useful tool will be difficult.

The problems that we encountered with PROMIS were many of the same problems we encountered with the majority of the IT systems in USACE during our inspection of the Acquisition of Information Technology (report published in April 1998.) In our IT report, we stressed that "committed, knowledgeable, active executive involvement" is critical for major IT initiatives to succeed. Despite the efforts of Mr. Caver and Mr. Browning to maintain an active dialogue with the senior leadership in the field concerning PROMIS, executive involvement with this program is not evident at the user level. The most recognizable "point man" in HQUSACE for PROMIS development is a Captain. Although he is extremely capable and dedicated, the fact that a Captain is perceived as the senior person who is actively involved in PROMIS development speaks volumes about executive level involvement in an automated system that affects the basic business process for all work done by the Corps of Engineers.

We also stressed in our report the need to treat IT projects as significant investments and manage them accordingly. To do this, quantifiable benefits must be weighed against realistic cost estimates to determine if it is a good investment decision to initiate or continue a project. PROMIS is currently our corporate PM AIS, however, it may or may not be our future PM AIS – the PROMIS functional proponents are currently examining alternatives. Unfortunately, no one we talked to could clearly outline the expected benefits and costs of fielding PROMIS, or its replacement, in a defendable, quantifiable manner. In fact, no one could tell us what we really expect the system, in its final configuration, to do.

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That the PROMIS Functional Proponents complete their effort to develop clear, detailed expectations for the corporate PM AIS.

That the PROMIS Functional Proponents develop a defensible economic analysis of the realistic costs and quantifiable benefits based on those expectations.

That the Board of Directors, utilizing this economic analysis, approves or rejects further development and use of the corporate PM AIS.

That, if further development and use of the corporate PM AIS is approved, Division Commanders report the costs and benefits associated with this AIS and brief them at the quarterly Command Management Reviews.

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APPENDIX A

INSPECTION DIRECTIVE



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

9 Dec 97

REPLY TO
ATTENTION OF:

CEIG-I (20-1g)

MEMORANDUM FOR THE ENGINEER INSPECTOR GENERAL

SUBJECT: Program and Project Management Inspection

1. You are directed to conduct a systemic inspection of Program and Project Management (PPM) within the Corps of Engineers.
2. Your inspection will determine the organization's commitment to the goals and objectives of the Project Management Business Process described in ER 5-1-11. Your efforts will encompass program and project management activities at all levels within the Corps. You will focus on examining the effectiveness of different organizations, techniques, and initiatives used by program and project managers to implement PPM. As part of your inspection, evaluate the use of information technology in project management, procedures for selecting and training project managers, and project management effectiveness from the customer's perspective.
3. HQUSACE staff and subordinate headquarters will provide the necessary advice, information and assistance to ensure a thorough inspection.
4. At the conclusion of your inspection, present me a report of your findings, including recommendations for improving the PPM process.

Coordinate with HQ, H2 to ensure the personnel report of PM is in place.

JOE N. BALLARD
Lieutenant General, USA
Commanding

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JOHN BAILLARD
Lieutenant General, USA
Commanding

*Coordinate with HQ, HR
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APPENDIX 8

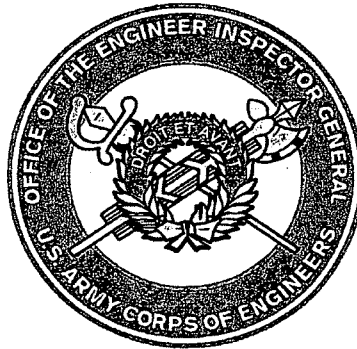
EIG Inspection Report, dated July 1999, Subject: Teamwork in the Program and Project Management Business Process

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**US Army Corps
of Engineers®**

U.S. Army Corps of Engineers Engineer Inspector General Inspection Report



Teamwork in the Program and Project Management Business Process

July 1999

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EXECUTIVE SUMMARY

This report responds to the Commander's request that the Engineer Inspector General (EIG) expand the observations concerning "teamwork" contained in the EIG Program and Project Management Inspection Report (Feb 1999) to better explain the role teamwork plays in the Program and Project Management Business Process (PMBP). We supplemented our original inspection results by conducting additional site visits to include revisiting some of the organizations we originally visited during the PM inspection.

Creating a culture based on teamwork requires a change in focus from functional or product accomplishments to a focus on project delivery by teams. This cultural change requires each organization to align the roles, processes, and procedures in the organization to this philosophy. The organizations we visited are in various stages of transition towards becoming project focused. We observed three basic types of teams: teams in name only, developing teams, and high performing teams. "Teams in name only" were essentially a group of functionally oriented individuals who were identified as being affiliated with a particular project but did not work or contribute outside their functional area of expertise. "Developing teams" associated themselves with the project, recognized the PM as the team leader, but were still struggling with balancing their team responsibilities with their functional obligations. The "high performing teams" were the teams that worked together, were clearly focused on the success of the project, and balanced their team and functional obligations by following procedures designed to accommodate both their project and functional responsibilities.

During our inspection, we compared and contrasted teams to determine the significant factors that affected their success in responding to the needs and demands of the customer. We categorized these factors, discussed in more detail in the report, as: Corporate Support to Teamwork and PM/Team Interaction. We found that the ideal environment to nurture teamwork was one in which corporate support and PM/Team interaction were both strong.

Corporate support to teamwork manifests itself in a variety of ways. We found that in the more successful organizations the senior leaders lead by example, using the principles of the PMBP and teamwork to get things done. They support teamwork by making organizational and personnel changes as necessary to establish and maintain effective teams. They create expectations for the PM and the team and hold them accountable for meeting them. Finally, the leadership empowers the team with the authority they need to execute the project.

At the team level, we found that the PM's leadership and skills were critical to building an effective team. The PM needs to understand how to organize, challenge, and motivate the individuals on his/her team to work together for the good of the project. We

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also found that communications between the team members, the PM, and the customer greatly influenced the group's ability to work together. We have included some of the good initiatives we observed pertaining to leadership and communication in the body of the report.

One of the most significant observations we made during the inspection was that teamwork does not just happen, it requires planning and nurturing at both the corporate and team level. We found that creating an organization that embraces teamwork must involve everyone. In those organizations that we felt displayed the best teamwork, personnel from every area in the organization contributed to the development of the processes and procedures the organization used to execute work. We saw that the journey these organizations took to get where they are today required them to recognize the needs of the entire organization and to put those needs above their individual or section needs. We found that individuals in organizations that had used this approach to develop their processes and procedures appeared to have a greater ownership and commitment to teamwork and the PMBP. Conversely, we found that organizations that continued to rely on command or functional edicts to develop their processes and procedures were finding it more difficult to institutionalize teamwork.

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INTRODUCTION

The Commander, U.S. Army Corps of Engineers, directed the Engineer Inspector General (EIG) to expand the observations concerning "teamwork" contained in the EIG Program and Project Management Inspection Report (Feb 1999). The Commander's intent was for us to better describe the role teamwork plays in the Program and Project Management Business Process (PMBP). Part of this effort was to evaluate existing teams to determine the internal and external factors that contributed to their success or failure. Additionally, we attempted to identify some best practices or processes used by the more successful teams to share throughout the organization.

REGULATIONS AND GUIDANCE

The primary reference for program and project management in USACE is Engineer Regulation (ER) 5-1-11, *Program and Project Management*, dated 27 February 1998. This regulation establishes the philosophy, policy, and guidelines for management of all programs and projects executed by the U.S. Army Corps of Engineers.

TEAMWORK IN THE PMBP

The Corps of Engineers has selected the Project Management Business Process as the method used to deliver projects and products to its customers. Teamwork is an essential piece of the process. Engineer Regulation 5-1-11 states: "The Program and Project Management Business Process (PMBP) described in this regulation is the process by which all work is accomplished by USACE, without exception. The guidance in this regulation emphasizes the importance of **project teams** and the role of the project manager, whose focus is on the overall process and the **members of the team**, who are empowered to act on behalf of their functional organizations. It focuses attention on the end results-- execution of projects and programs, and customer satisfaction (emphasis added)." The Commander, USACE, emphasized this point on the first page of the EIG Project Management Report, by noting, "PPM is the process we will use to do our work. "Teamwork" is the key!"

INSPECTION APPROACH

We supplemented our original inspection results by conducting additional site visits to include revisiting some of the organizations we originally visited during the PM inspection. The teamwork inspection includes data collected from observations made at four Corps divisions, sixteen Corps districts, and two Corps laboratories. These organizations are listed in Appendix B.

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CHAPTER ONE

WHY TEAMWORK?

There was a general acknowledgement, in every organization that we inspected, that our business has changed; our traditional way of doing work no longer meets the needs of our customers. Competition, customers that are more demanding, technology enhancements, and our changing workforce have created an environment in which maximum productivity from every employee is essential for an organization's survival. The Strategic Vision of the Corps recognizes these trends and their implications for the organization and sets a direction for USACE to meet these challenges. The "Vision" recognizes that, working together as a team, USACE can: deliver products or services to a customer faster and respond more quickly to fixing problems; meet or exceed customers expectations by clearly establishing the criteria for success; and provide these projects and services at a cost the customer is willing to pay---FASTER, BETTER, CHEAPER.

Within USACE, we found that the term "Teamwork" is usually associated with the interaction within a project delivery team (PDT). These project delivery teams are the operating levels of the organization, the front line of delivering projects to customers. During our inspection, we saw groups and activities that are organized and operated like teams but are generally not thought of as teams. We saw examples of corporate level teams that operate at the strategic level in the organization. We also saw many mid-level management teams, often technically or functionally oriented, that address organizational short term resourcing. Regardless of what these groups are called, they each require people to work together toward a common goal. While we have focused this report on the PDT, many of the observations apply to these other teams as well. We saw that most people in an organization work on more than one team. For teamwork to succeed throughout the entire organization, it is important for each member of the organization to understand what teams they are on, how these teams interact with other teams, and to identify the customer or purpose of the team. These steps are sometimes ignored by organizations that limit usage of the term teamwork to the PDT.

Types of Teams

Not surprisingly, all the organizations we visited said they managed projects with a project delivery team and had established the PM as the team leader. We expected this, considering the command guidance and the current emphasis on the PMBP. However, we found that creating a team requires more than simply calling a group of individuals a team. During our inspection, we looked at many different groups or people that organizations called teams. We evaluated each of these groups and categorized the level of interaction

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into three broad categories to better explain how the term "team" is being applied throughout the Corps.

Category I: Team in name only

We found many cases where, even though the organization designated a group as a team, there was little to no affiliation with the project by team members. Each functional element operated independently within its respective "lane" of responsibilities. The PM's primary function was to funnel reports and information to the PRB. On this type of team, the team members often acknowledged that they do not respond to the PM regarding schedule issues, rather they responded to their functional representative. In one case, a team member told us that he did not need to inform the PM of product scheduling changes because there was nothing the PM could do about it. In addition, the PM usually had little control over all the project resources. The PM issued funds to functional areas and either failed to monitor execution relative to a product or was not kept informed regarding product development by the team member.

Category II: Developing Team

These teams' members recognized the need to work together, however, internal or external influences, experience, or team maturity have prevented the team from evolving into a high performing team. On these types of teams, the PM is generally acknowledged as the team leader, actively guiding, controlling and coordinating the team's activities. Each team member knew who the other team members were and they were generally aware of how they contributed to the project success. The PM usually addressed issues one-on-one with functional representatives on the team when an issue arose in their "lane". There was a noticeable increase in the sense of responsibility towards the team and satisfying the customer. We saw that in many cases, teams formed for a short period did not evolve beyond this level.

Category III: High Performing Team

These teams have built upon the strengths of the category II teams and operated as self-directed teams. There was a clear affiliation with the project and its customer by all team members. All members of the team knew the scope of the project and the parameters for success. The PM orchestrated the team's activities by keeping all team members apprised of the current project status. The level of team communications allowed and encouraged team members to participate in the project, even if there was no current activity occurring in their "lane". As an example, during the design of a civil works project in Tulsa, the resident engineer who would be overseeing the project construction provided invaluable

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insight into the likes and dislikes of the local population that would be affected by the project. This insight was based on his past experiences in the area and reduced the number of design changes on the project. As another example, the Fort Hood project team in the Fort Worth district provided coordinated support to the installation by working together in identifying customer requirements. The PM and the resident engineer, stationed at the installation, used their contacts to find new work for the district. They then presented this work to the project team for inclusion in their installation project list for team execution and oversight.

What made the difference?

The idea of working in teams sounds simple, but implementation is not. The challenge for the organizations we inspected is to eliminate the Category I teams and create an environment that encourages teams to move towards becoming Category III, high performing teams.

During the course of the inspection, we were able to compare and contrast the teamwork in many organizations in the Corps. We examined organizations to determine the significant factors that affected the success of teams to respond to the needs and demands of the customer. These factors, discussed in more detail in following chapters can be put into two categories: Corporate Support to Teamwork and PM/Team Interaction.

We found that the ideal environment to nurture teamwork was one in which both corporate support and PM/Team interaction were both strong. We did find, however, examples of successful teams operating when both were not strong. For example, we saw successful project delivery teams operating in districts where corporate level support to project teams was not very strong. These teams were able to overcome the lack of corporate support by relying on a strong project manager and dedicated team members. We also observed project teams, with weak PMs, where the strength of the individual team members and extraordinary support from functional chiefs, made up for the PM's shortcomings.

How do you get there?

We began our inspection with the hope of uncovering the "silver bullets" of success for creating teamwork that we could share throughout the organization. What we found was that there is no easy way of developing teamwork, no magical formula that when followed always leads to success. During our inspection, we observed many initiatives underway throughout the Corps that are geared at creating teams that are more effective. These techniques appear to be working in their respective organizations, however, that does not necessarily mean they are universal solutions to creating the perfect team. We observed that what is more important than the solution is the journey the organization took in

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developing its strategy. This journey required personnel from every area in the organization to contribute to the development of processes and procedures based on teamwork and the PMBP. The individuals in the successful organizations felt ownership of these processes and procedures and were convinced they were the right way to go. Each team, each district, and each division are different and must address its own particular set of variables to create a corporate environment based on teamwork. The pace will be faster in some than in others. With that said, we present in the next two chapters, some of the steps along the journey that various organizations have taken. We present these observations not as "silver bullets" but as aids that organizations may consider to help reduce the length of their journey or eliminate a few wrong turns along the way.

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CHAPTER TWO

CORPORATE SUPPORT TO TEAMWORK

One clear distinction in organizations that best implemented the Project Management Business Process philosophy was that the leadership of the organization emphasized teamwork throughout the organization. Strong support for teamwork at the corporate level is essential to developing effective teamwork throughout the organization. Districts we observed that demonstrated strong teamwork at the corporate level had the most effective project teams.

Conversely, in those districts still struggling with the teamwork concept, we found that successful project teams were isolated and usually the result of an individual PM using his/her skills to create a unified team. While the leadership did not discourage or undermine the team, discord at the senior level concerning policies, procedures, and team member roles left the impression that matrixed teams were tolerated but not encouraged. Functional chiefs did not prevent their subordinates from working directly with the project manager, but their reluctance to allow them to make decisions regarding the project was evident. These functional chiefs often made it clear to the project team that they could influence the project by holding back resources, independent of the corporate board, if they were not happy with the direction the project manager and the team was going.

The following sections identify some of the corporate level activities we observed that appeared to help the organization support the development and sustainment of effective teamwork.

Leading by Example: The corporate board (senior leaders) operates as a team.

Working together to develop solutions- One of the districts we visited had recently finished reorganizing the resource management processes in the organization based on the HQUSACE guidance in EC 10-1-2. The decision affected over 80 people working in six different divisions/offices.

The corporate board formed a study team representing the parties that had an interest in the RM decision. The issue was very contentious, each member of the team bringing their own personal viewpoint to the meetings. Members of the corporate board told us that it was a very difficult process for the group, requiring each member to reflect on issues they may not have considered before the group meeting. In the end, the group arrived at a solution that they felt was best for the district.

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The corporate team was allowed to work together in developing the solution. This process, although painful, resulted in a decision that the entire corporate board fully supported. It is unlikely that this support would have existed if either the division commander or the district commander had simply mandated the new organization requirements to the district.

Recognizing team deficiencies- A few of the districts we visited said one of the initial problems they had with the PMBP was understanding what they were supposed to do. They knew they were supposed to work as a team but were having problems organizing corporate level teams. These districts were not afraid to acknowledge that they did not have all the answers and needed help. They brought in consultants to conduct teaming sessions for the corporate board and key leaders in the district based on their perceived weaknesses. The consultants they used were then able to cater more directly to their needs. The training of the corporate leaders in teamwork helped the district team work together better. It also sent the workforce a message that teamwork is the new way of doing business and everyone needs to learn how to do it better.

Organizing teams to address issues- HQUSACE has recently reevaluated the process it is using to rewrite the Quality Management Regulation. In our PM inspection report, we commented that the initial approach appeared to be based on traditional "stovepipe" responsibilities and missed the intent of the PMBP. Recognizing this, USACE headquarters has put together a team to evaluate the business process the regulation is to address. The team is staffed with people representing many aspects of the Corps formed around a single focus of preparing a regulation that will provide adequate guidance to USACE. This approach sends a strong message to the field that Quality, as the PM regulation states, is a responsibility shared by the PM, the project team, and the entire organization.

Making Organizational Changes: The corporate board (senior leaders) makes changes to the organization, and/or the roles and responsibilities of personnel as necessary to facilitate effective teamwork.

One of the most important functions of the corporate board in fostering teamwork in the organization is ensuring that the organizational structure and staffing support the goals of the organization. The corporate board can reduce the emphasis on stovepipe activities by focusing on its business processes and directing both organizational and personnel changes that further accomplishment of the goals.

During our inspections, it was quite evident that one person or a coalition of people can sidetrack the implementation of the PMBP. The more successful districts do not subscribe to the old adage that "the Corps will change one retirement at a time" but take an active role in eliminating the inhibitors to the process. They identify the problems, at

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whatever level, and work to remove the impediments. These activities include redefining roles, responsibilities and performance objectives, retraining, and if necessary, removing personnel from key positions. Although sometimes these measures are drastic, they are necessary to eliminate conflicting actions in the district.

Redefining roles and responsibilities- In one of the districts we visited, the organization eliminated the competition between the DPM and the Chief of Engineering and Construction by establishing identical performance objectives for both individuals. The decision to do this was based on the recognition that success for the organization depended on these two individuals and their organizations working as one. In this relationship, the organization will succeed or fail together. The effects of this high level relationship appear to have spread throughout the organization, reducing the distrust between functional activities.

Directing organizational changes- Many of the districts we visited had combined their Engineering and Construction divisions or combined their Construction and Operations divisions. In most of these cases, these organizational changes have enhanced teamwork by eliminating some of the problems encountered when handing off work between engineering and construction or construction and operations.

We found, however, that improved teamwork does not result from simply changing titles or an organization chart. The success of combining organizations appears to be the result of the careful planning and thorough analysis of business processes and practices that occurred before reorganization. The new organizations were formed after clear roles and responsibilities, consistent with the PMBP, were established.

Creating new roles- Some districts have assigned responsibilities for the day to day resource leveling to groups of mid-level managers. These empowered groups of branch and section chiefs have a variety of names, "Working PRB", "Pre-PRB", or the "Gang of Six", but they all have something in common. They were all created after the district analyzed its business processes and identified the need to improve resource allocation at a level below the corporate board. These groups conduct regular meetings to formulate district strategies for teamwork and project execution. They have a common goal to improve the district's project execution through the best use of available resources.

Creating and Evaluating Teams: The corporate board considers the needs of the organization and the customer when assembling the team and evaluates the team's success in meeting those needs.

An important role of the corporate board is the formation of the right project teams, including selection and evaluation of PMs and team members. We observed several approaches to PM selection, team formation, and evaluation that demonstrate good techniques for fostering effective teamwork.

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Selecting PMs- The selection criteria for PMs is critical for successful team formation. In one district, several PM positions were filled from displaced employees whose jobs were abolished through a Reduction in Force. Some of these PMs did not have good leadership or organizational skills. Consequently, their project teams were less effective. In the most successful districts, PMs were carefully selected primarily based on leadership skills and experience. For example, some districts include experience in leading teams as a rating criteria for selection of PMs. Technical competence, while important, is secondary to leadership qualities. Sacramento District has a good example of Knowledge, Skills and Abilities (KSA) score sheets for PM positions that weighs leadership and team experience heavily.

Using 360-degree evaluations- Some of the districts we inspected were developing and testing the use of team leader and team member 360-degree evaluations in their project teams. None of the districts had integrated this process into the formal evaluation system, rather, they were using the comments as the basis for team member performance counseling and team evaluation. Comments from the PM and team members were shared with their respective supervisors who could then use these comments to help develop their subordinates. An example of the evaluation form from Seattle District is at Appendix C.

In one of these districts, a functional chief routinely solicited written input from team members outside his functional area to help evaluate employee performance on project teams. This supervisor commented that it is a good tool for identifying who was working well with others in the organization. It provided him enough information to allow him to counsel an employee was not contributing to his team. With this information, the supervisor focused his energy on developing the employee, motivating him to change by explaining that the organization could not afford to carry him as overhead, and he needed to contribute to projects or move on. These 360-degree evaluations can be a useful tool to encourage employees to focus on teamwork as an important part of job performance.

Determining PM grade level- In most districts, PM positions were graded at the GS-12 or GS-13 level, depending on the size and complexity of the projects they managed. While most districts attempted to assign the most difficult projects to the senior PMs, we found this was not always the case. The assignment process sometimes breaks down because of the timing of the receipt of new work, existing number of projects for the senior PMs, or another PM has the desired expertise or experience with that type of project. The result is that it is often difficult to distinguish the difference between a junior PM and a senior PM, an issue constantly pointed out to us by the junior PMs.

Generally, we found that PMs at the GS-13 level had more project management and leadership experience than the GS-12 PMs. Assigning projects to PMs commensurate with their grade and experience is important. We found that it was easier for the PMs, regardless of grade, to establish themselves as the project leader when the assignment was made

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considering project complexity, team member experience and customer requirements.

Evaluating team performance- In some of the districts we visited, the corporate board had instituted a program to evaluate team performance and make personnel changes to enhance the team. Most of these assessments were informal and usually took place after a defining moment (a complaint from the customer, a missed milestone, an angry team member, etc.) The most common forum involved the Commander, the DPM, Chiefs of Engineering and Construction, and other supervisors as required. They would discuss the performance of the team and develop solutions to fix the teams performance. Solutions ranged from replacing the PM or a specific team member to allowing the team to continue as is but with increased supervision. Again, the key was that the corporate leadership was directly involved in taking an action to improve the effectiveness of a team.

Bringing in consultants- A few of the districts invested time and money to bring in outside consultants to work with dysfunctional teams. The key to this is the early identification by the district leadership that the team is having a problem. Because of the expense, districts usually only brought in a consultant for teams expected to be together for a long time or involved in a high priority project.

In one district, we observed a team that was clearly functioning as a high performing team. The team was embarrassed to point out that they had not always worked so well together. They explained that they had some significant problems at the start of their project. The corporate board directed them to attend a teaming session conducted by an outside consultant. Every member of the team credits the insight and information they received from the consultant as one of the major factors in the team's current success.

Rewarding Teams- We started our inspection with the idea that a corporate policy of presenting team awards was important to the success of teamwork. We were surprised by the variety of responses and opinions we received concerning this issue. Many of the teams we talked to felt uncomfortable receiving a team award. They felt that these awards did not recognize everyone that had a role in the success of the project. They believed that they recognized the most visible members of the team, not necessarily the team members that did the most work. One team told us that they once tried to recognize every team member, and ended up with 114 people that had contributed to the project. They felt that this level of recognition, though difficult, really showed the district and the customer just how many people were involved in the project. Our conclusion is that a corporate program recognizing project teams can help reinforce teamwork, however, if improperly applied, can undermine it.

Empowering the Team: The corporate board gives project teams the authority they need to execute the project.

Implementation of the PMBP represents a significantly new way of doing business

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for some organizations. Merely stating to the work force, "We will now operate as a project management organization" does not create a project management organization. The leadership must develop a comprehensive strategy that transforms the organization to meet the expectations of the matrixed organization. The leadership must develop their expectations for the organization, outlining organizational, procedural, and personnel changes necessary to make the process work.

The following excerpt from a USACE training manual (Human Resource Management II) highlights one of the significant difficulties in moving from a functionally oriented organization to a teamwork focused organization.

"A major paradox in managing in a team environment is that even though employees themselves become empowered, the new managers/team leaders do not delegate themselves out of their jobs. Even after a team takes primary control of its day-to-day work, other activities need to be done. For instance, the new role of the manager becomes one of reconciling short-term team goals with long-term corporate goals, seeking out and passing along timely information, securing necessary resources, recreating value for products and services, and balancing the interests of different teams. The new leaders survive and prosper not by jealously guarding their traditional power, but by giving it away."

The corporate leadership must determine to what extent they will allow project teams to control their project. Empowering the team to make decisions and holding it accountable for its action leads to ownership and more cooperation on the project team. During our inspection, we saw no formal or written policies from the corporate boards to the project teams on empowerment. Lack of these policies, however, did not seem to bother the PM or the project teams from feeling empowered to contribute to the project.

In reality, the actions of the corporate leadership and middle managers in the districts established the empowerment of the teams. The level of empowerment varied throughout the organization, from supervisor to supervisor. To address these differences, some of the organizations have developed principles and standards of behavior for team members and supervisors. This approach of providing expectation guidelines corporately allows supervisors and their subordinates the ability to negotiate their empowerment based on individual capabilities or project requirements. We have placed some of these standards at Appendix D.

Most of the project team members told us they were comfortable acting on behalf of their functional organizations when working on a project team. These individuals indicated that as long as they kept their supervisor informed of the various issues, they indeed could make decisions on behalf of their organization. None could explain the level of decisions they were allowed to make versus decisions they needed to consult their functional supervisor about. However, they all seemed comfortable that they had enough flexibility to

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support the PM and make decisions in the best interest of the project. We did find some examples of project team members that were not empowered to make any decisions unless they consulted with their supervisors. In these cases, the project teams did not truly function as a team but rather as a group of functional representatives. The good news is that these occurrences have declined since our PM inspection, with team members who have been empowered on a project not settling for anything less on another project.

One supervisor indicated that project teams were beginning to understand that they were empowered. This individual added that project managers were being told that they were empowered to make decisions and at the same time project managers and team members are being held responsible and accountable for their actions. Most project managers and team members like being empowered and are cautiously beginning to make decisions.

Developing Expectations for the PM: The corporate board determines to what extent they will hold the PM responsible for project execution.

Most of the districts we inspected stated that they have clear expectations for the PM: the PM is the person they hold responsible for the project, they lead the project team, they control the project resources, and they are the primary POC with the customer. These expectations alone do not provide enough description to how the district will use the PM and project teams to execute projects. Districts need to develop detailed expectations for each of these areas to describe what they really expect the PM to be responsible for.

As an example, we found that some organizations have 10 PMs and others, with approximately the same workload, have 30 PMs. These situations raise the question: How can 10 people be doing the work of 30 when they have the same stated expectations? Obviously, they can not. The expectations for the PMs are in fact different.

The workload of individual PMs greatly influences the ability of PMs to lead teams and foster teamwork. Too many projects cause the PM to manage the project from a higher level with less direct involvement with the team. The corporate board must decide what level of involvement they expect. The less direct involvement the PM has with the team, the more another team member must assume some of the management responsibilities. The corporate board should define the management relationship and responsibilities they expect between the PM and the technical leaders that make up the project team. Once these expectations are developed, they must create the environment that allows the PM a reasonable opportunity to meet the expectations. They must constantly evaluate whether or not the PM is performing to their expectations and take action to either change the expectations, the environment or the PM.

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Enforcing the Creation of Project Management Plans

(PMPs): The corporate board ensures that every project has a plan that addresses the personnel and resources required to meet the customer's expectations before the project starts.

One of the major deficiencies we found is that organizations do not enforce the development and monitoring of projects against a plan. Without a plan, it is difficult to hold anyone accountable for project performance. The district leadership must develop and follow a process that requires all projects to be executed following a plan. Leadership must address the perception that the PMP is not an important document and is not worth the time to prepare. They must ensure that the PMP is a useful tool for the organization and the project team.

We did not find any organization that had developed a complete systemic process for the corporate review of PMPs, though many are moving in that direction. In the better organizations, the senior leaders got involved in the review of PMPs for the high profile projects. PMPs for the smaller projects were the responsibility of the PM. Many of these smaller projects often did not have plans; the reasoning being that the project would be done before the plan was approved. During the inspection, members of one district's corporate board told us that they did not need PMPs and that they were a waste of time. Their reasoning was that everyone associated with the project knew what they were supposed to do.

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CHAPTER THREE

PM/TEAM INTERACTION

Project teams are formed with a common purpose; to complete a project on schedule, within budget, and meeting the customer's expectations. Teams work best when they get optimal contributions or input from every team member. The team must be empowered to manage individual project work items efficiently. In order to be highly successful every element of the district (corporate board, functional chiefs, and the project teams) must be mindful of overall missions and goals, since ultimately, everyone in a district is a member of the team.

The PM, as the leader of the project team is responsible for ensuring that each team member is optimally contributing to the team. The PM constantly reinforces the team's common purpose, with both the corporate board and project team members. The PM creates the environment that supports team members and their individual tasks. The PM makes sure that team members understand the importance of continuously keeping each other and the customer informed of changes. The PM must stress that each element is part of a team. They must keep each other abreast of resource allocations, project status, and quality issues that affect the team.

If you could handpick your team, dedicate them to one project, and fully resource them - they would more than likely do well. Emergency response missions are an excellent example of this situation. Most of the organizations we talked to said they usually assign their most experienced people to these missions. They do not have to deal with the day to day distractions of the district. There is clearly a common purpose and sense of ownership in the team. Team members have a thorough understanding of overall project requirements, and simply do whatever is necessary to get the job done. Schedules are usually very tight but funding to support these operations is usually more than adequate. Unfortunately, not every project team can be made up of handpicked people, people that have worked together for decades, or be as exciting as emergency response.

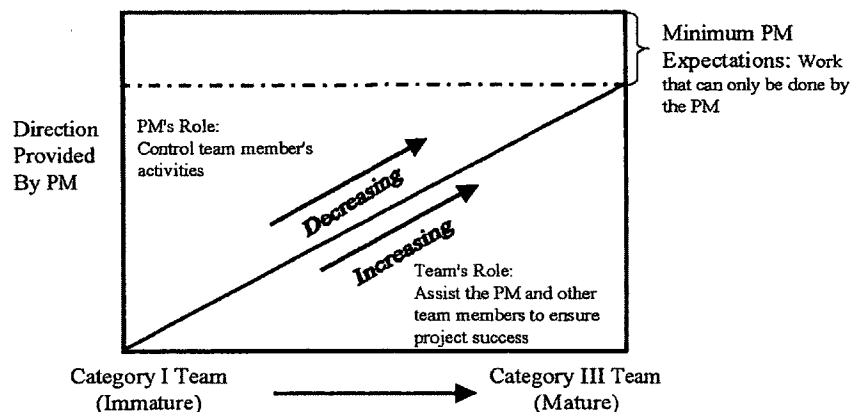
This section will identify some techniques we observed in the field, at project team level, that helped enhance teamwork. These techniques revolved around two major areas: the PM leadership and skills, and the communications within the team.

PM Leadership/Skills: The PM possesses the leadership ability and management skill necessary to form and lead a team through the evolving phases of a project.

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We found that PMs with strong leadership skills were essential to high performing teams at the project level. The PM is the individual that must build a coalition among the team members. The PM has to have the ability to evaluate the team's performance and adjust his leadership style to provide as much, or as little, direct oversight as is required. During our inspection we saw that the best PMs were able to change their leadership style to match the developmental level of the team. The chart below shows the necessity for the PM to be aware of the team's needs and adjust styles to maintain high performance.



As the project team matures, the PM may appear to be more of a project coordinator than a project leader because he/she has encouraged the entire team to assume responsibility for the project. It is important that the organization's leadership understands this relationship. As discussed in the previous chapter, the corporate board must create the minimum expectations for the PM in his/her role as the leader of the project team.

In addition to providing direction to the team, we noted some other consistent characteristics in the better PMs.

Organizational skills- In order to effectively lead project teams, we found that PMs needed to have good organization skills. PMs who were not well organized did not usually have effective project teams. The teams looked to the PM to keep track of the project records. They depended on the PM for validation of their work effort to their supervisors. The team members depended on the PM to provide an orderly structure to the project by maintaining a schedule of meetings, activities, milestones, status updates, etc. PMs that could not do this were not as effective as those that had good organizational skills.

Ability to develop relationship with functional chiefs- Another factor that appeared to be related to the effectiveness of project teams was the quality of relationship the PM had

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with the functional chiefs. Functional chiefs recruit, train, supervise, and select team members to serve on project teams. We observed that PMs who had an excellent working relationship with the functional chiefs were able to share their opinions concerning the selection or non-selection of team members for project teams. This leads to individuals on teams that were more suited for the work, or whose personalities were best matched to the rest of the team. This relationship with the functional chief was particularly important when problems arose that affected the success of a project. Since the PM and the functional chiefs had worked closely together in forming the team, they appeared to have an interest in working together to ensure the success of the team rather than placing the blame for team failure.

Possess team building skills- The project team does not develop as a team unless someone brings them together. The PM is the person responsible for scheduling meetings, maintaining and sharing project information, encouraging participation, and keeping everyone focused in the same direction. To develop a singular focus, we saw one PM in Huntington that brought the entire project team to visit the project site. This trip, that included transportation and a site tour for everyone from chief to clerk, was mentioned by every one of the team members as helping them understand the project. We heard of other examples in which the PM and the team participated in a non-work related activity, some as simple as going out to lunch or someone bringing in ice cream for the group. One PM in Sacramento developed internal operating procedures for his team and conducted training sessions for new team members. The effect of these team-building activities was the development of a sense of pride, affiliation, and ownership among the members of the project team.

Communications: The project team ensures coordinated activities, focused on customer satisfaction, by keeping fellow team members, supervisors, and the customer apprised of their activities.

Every team we interviewed said communications was essential to the success of the team. Good communication was the most commonly cited reason for successful teamwork. We found that most districts did not have formal requirements for project team communications. Each PM and project team developed their own techniques to support their particular needs. The most common forms of transferring project information were team meetings, telephone calls, and E-mail. Additionally, we observed several methods used by successful project teams that appeared to enhance the effectiveness of their communications.

PM forward- Several districts we visited had relocated PMs for select projects from the district office to the military installation where their projects were to be constructed. This approach, commonly referred to as "PM forward" was a successful method for enhancing the level of communication between the Corps and the customer. The PM forward,

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working with the customer on a daily basis, was better able to develop lines of communication, trust, and a sense of common purpose with the customer. For example, Seattle District has collaborated with Fort Lewis in creating an engineer Business Center. This center fuses the Corps and the DPW assets to meet all the engineering needs of the customer, eliminating his need to shop around for services. The installation support approach may not be practical for all projects because of the costs associated with dedicating a team to an installation. However, when the PM forward is deployed properly to support key customers, they can improve communications significantly.

Co-location of team members- Several districts we visited had relocated some PMs and project team members from their usual physical location to a common location. This approach was used for large projects where a dedicated project team worked almost full time on the project. In other cases, the district relocated the PM closer to the project team members, to decrease emphasis on Project Management as a stovepipe. In those districts, people told us that the co-location of team members improved communication and enhanced teamwork by increasing focus on the project, and breaking down the "stovepipe" mentality.

Increased focus on customer involvement as a team member- All project teams viewed the customer as a team member. However, we observed several successful teams that engaged the customer in a more prominent manner than on most Corps projects. These teams worked with the customer on a daily basis and included the customer in regular team meetings. In one district, the customer had a representative physically located in the district office. This approach may not be possible or appropriate for all projects because of the unavailability of the customer. However, for some projects, maximizing regular contact with the customer and involving the customer in routine project activities can improve communications and ensure a satisfied customer.

Customer feedback- All districts relied on customer comments to gauge customer satisfaction. Most districts received customer feedback only on an informal, irregular, or infrequent basis. However, one district we visited requested the customer to rate the district, on a scale of one to five, for every project submittal the district presented to the customer. Project team members were held accountable for low customer ratings. This approach created a high level of attention to customer satisfaction.

Internet websites- We found several innovative uses of the Internet and district Intranets to convey and share project information. During our inspection, we observed a virtual team consisting of team members from several districts. These team members effectively used an Internet website to share project information. The PM maintained a common calendar for all team members to use in scheduling project meetings and activities. Another team set up a website that included the Project Management Plan. The Internet and Intranets are effective tools for communicating project information to team members and other interested parties. Most people felt that we are just beginning to tap this areas potential.

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Partnering sessions- Some teams we interviewed had attended partnering sessions led by professional facilitators. These teams said the sessions were helpful in establishing a framework for developing effective communications and teamwork. Partnering sessions were more effective because of participation by actual team members. One district we visited conducted a partnering session with the customer at the project location. Walking the ground with the customer gave the project team invaluable insight into what the customer needed.

We observed that partnering sessions are also important in the formation of virtual teams. We interviewed members of a virtual team that represented four districts. This team's members were able to meet in a central location and develop team rules and responsibilities before the start of the project. This was extremely important since each district performed work differently. The face-to-face partnering appeared to be the most effective technique in bringing teams together, however, it is not always practicable. We did see other virtual teams that were successful using teleconferencing to conduct their partnering sessions. Again, what was important is that each team member participated in the development of the procedures and responsibilities of the team.

Design charette (Acquisition Strategy)- Several teams used design charettes to verify design criteria and to develop a concept design for the project. Some districts have modified the design charette to make it useful in the civil works arena. This approach was a very successful method for establishing lines of communication and "buy-in" with the customer at an early stage in the project. The process ensures that all team members understand the customers needs and are singularly focused in satisfying them. By involving the customer in the design formulation, these teams said they decreased the chance for misunderstandings and a dissatisfied customer. An example of the format used by Louisville district is attached at Appendix E. The PMs admitted they did not fill out the entire form for every project, however, they felt that it did provide a good guide for them, and the team, to use when developing the project.

Project Management Plans (PMPs)- While PMPs are an above-the-line requirement of the PMBP, we still found that most projects do not have adequate PMPs. However, we observed that communications and teamwork were more effective when the project had a good PMP. At a minimum, the PMP should include the scope of work, a list of team members, team member responsibilities and commitments to the project, the project schedule, and the budget. The PMP should be updated as the project progresses to document the history of the project. A few of the project teams have posted their PMPs, along with other project information on their project internet or intranet sites.

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A note on training:

As we mentioned in the EIG Program and Project Management Report, training is an important element in creating the common direction for the organization. The organization's executives, program managers, project managers, and project team members must work together for the journey to succeed. HQUSACE has a team that is reviewing the training programs presented by the Corps to ensure they are consistent with the intent of the PMBP. This effort may take some time, however, the team has already developed nine team capability areas that may assist organizations to focus their training efforts right now. The nine capability areas the team identified are:

- Building customer relationships
- Developing talents and strengths/managing weaknesses
- Facilitating learning
- Using Corps business processes
- Systematically thinking/integrating work, tasks and people
- Understanding and changing organizational culture
- Leadership
- Building teams
- PM technical knowledge and skills

This team's efforts towards developing a comprehensive training strategy for USACE is commendable, however, it will take time for USACE to fully develop the formalized training courses necessary to support full implementation. Organizations should not wait for this effort to be completed before addressing their training needs. We observed that some organizations are already evaluating themselves, relative to these capability areas, to determine their organization's strengths and weaknesses. They are using these strengths and weaknesses to develop their own training strategy that addresses their specific, high priority training requirements. These organizations are using a variety of training methods, including existing PROSPECT courses, in-house training, outside consultants, university courses, and other techniques to train their employees. This type of training is a good interim solution while waiting for the HQUSACE training program to be completely developed.

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APPENDIX A

ENGINEER INSPECTOR GENERAL

COL Frank D. Ellis, *The Engineer Inspector General*

INSPECTION TEAM

LTC Calvin Evans, *Chief, Inspections Division*

MAJ John Peloquin, *Team Chief*

Mr. Charles Gadson, *Assistant Inspector General*

Mr. Al Scheller, *Assistant Inspector General*

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APPENDIX B

USACE ACTIVITIES INSPECTED

Headquarters, U.S. Army Corps of Engineers

U.S. Army Engineer Division, Great Lakes and Ohio River

U.S. Army Engineer Division, South Atlantic

U.S. Army Engineer Division, South Pacific

U.S. Army Engineer Division, Southwestern

U.S. Army Engineer District, Alaska

U.S. Army Engineer District, Albuquerque

U.S. Army Engineer District, Buffalo

U.S. Army Engineer District, Chicago

U.S. Army Engineer District, Detroit

U.S. Army Engineer District, Ft. Worth

U.S. Army Engineer District, Huntington

U.S. Army Engineer District, Jacksonville

U.S. Army Engineer District, Little Rock

U.S. Army Engineer District, Los Angeles

U.S. Army Engineer District, Louisville

U.S. Army Engineer District, Mobile

U.S. Army Engineer District, Nashville

U.S. Army Engineer District, Sacramento

U.S. Army Engineer District, Seattle

U.S. Army Engineer District, Tulsa

U.S. Army Construction Engineering Research Laboratory

U.S. Army Topographic Engineering Center

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APPENDIX C

(Developed by Seattle District)

PROJECT TEAM MEMBER EVALUATION

TEAM MEMBER BEING EVALUATED: _____

DUTIES ON PROJECT: _____

DURATION OF TASK: (Man-days of Effort) _____

<u>ELEMENT</u>	<u>EVALUATIVE CRITERIA</u>	Exceeded Expectations	Met Expectations	Needs Improvement	Serious Problem
Technical Quality	Completeness; accuracy; technical proficiency	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Effort	Works hard and efficiently; pitches in to help others	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Documents	Proficiency in preparation of written documents and drawings (as applicable)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Timeliness	Expeditious completion of tasks	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Dependability	Consistency; promises kept; credibility, trustworthiness	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Creativity	Exhibits creativity, looks for innovative solutions/approaches	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Cooperativeness	Responsiveness; flexibility; approachability; courtesy	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Communication	Communicates effectively with team members and client; provides timely information on progress/problems	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Attitude	Cooperative attitude with other team members and client; self-starter; pleasant to work with	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Professionalism	Team Member conducts himself/herself in a professional and ethical manner	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Other Comments: _____

Evaluator's Name (required): _____

Date: _____

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C-2

PROJECT MANAGER EVALUATION

PM BEING EVALUATED: _____

ELEMENT

EVALUATIVE CRITERIA

Exceeded Expectations	Met Expectations	Needs Improvement	Serious Problem
-----------------------	------------------	-------------------	-----------------

Planning & Scoping	Developed Draft Project Mgmt Plan in concert with the team (including customer) and made the plan available to team members. Team member roles clearly defined and budgets based on specific level of effort required. Scope of project and customer expectations effectively communicated.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Change Mgmt	Kept team informed of scope and/or schedule changes and made appropriate budget adjustments.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Issue/Problem Mgmt	Addresses team issues in a timely and professional manner. Resolved in the best interest of the team and the customer.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Leadership	Provides team members with information required in order to give them the greatest opportunity for success. Ability to fulfill role as team member, customer point of contact and team leader. Provides "corporate" view of project execution.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Effort	Works hard and efficiently; pitches in to help others	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Timeliness	Expedient completion of tasks	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Dependability	Consistency; promises kept; credibility; trustworthiness	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Creativity	Exhibits creativity; looks for innovative solutions/approaches	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Cooperativeness	Responsiveness; flexibility; approachability; courtesy	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Communication	Communicates effectively with team members and client; provides timely information on progress/problems	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Attitude	Cooperative attitude with other team members and client; self starter; pleasant to work with	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Professionalism	Conducts himself/herself in a professional and ethical manner	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Other Comments:

Evaluator's Name (required): _____

Date: _____

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APPENDIX D

(Acquired from Savannah District)

TEAM MEMBER STANDARDS

Team Member standards: "As team members, it is important that they conduct themselves in a manner reflecting trust, honesty, integrity, efficiency, and responsiveness to customers and other team members. These and other standards of conduct provide a basis for achieving execution excellence!"

- Always be helpful to customers and provide them the high quality service you would expect.
- Know whom you serve and provide them services that meet their expectations of quality and efficiency.
- Know the needs of your internal and external customers so that we may deliver the products and services they expect.
- Fully support others in the Savannah District in performing their work for our customers.
- If you see a project or an action being improperly accomplished by a team member or contractor, make the responsible person aware that it should be corrected.
- Continuously identify defects and make corrections.
- Always perform your job consistent with laws and standards and maintain your professional integrity.
- Conduct yourself in a manner that reflects high ethical standards.
- Always make positive comments about team members, customers, and other Corps offices.
- Be an ambassador for the Corps and District within and outside the workplace.
- Recognize that Government property is the responsibility of every person.
- Take pride and care in your personal appearance and work.
- Conserve Government resources.
- When sending mail messages always be courteous.
- Use proper telephone etiquette, and if using voice mail, make messages to the caller short and concise. Respond within a day to caller's messages.
- Be knowledgeable of District personnel standards for leave, work hours, breaks, overtime, etc., and follow those standards.

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D-1

(Acquired from Seattle District)

TEAMWORK

Principles

Working Together – "all of us are more effective than any one of us"

Common Goals with "everyone feeling personally accountable for the whole"

Working Together

Behaviors:

Consistent	Inconsistent
<ul style="list-style-type: none"> <input type="checkbox"/> Working with, rather than for <input type="checkbox"/> Improving performance through motivation <input type="checkbox"/> Peers acknowledging and recognizing each other <input type="checkbox"/> Sharing resources and information with teammates <input type="checkbox"/> Treating each other with respect <input type="checkbox"/> Having fun and celebrating successes 	<ul style="list-style-type: none"> <input type="checkbox"/> Finger –pointing or getting even <input type="checkbox"/> dominating others <input type="checkbox"/> Brow beating anyone into volunteering <input type="checkbox"/> Forcing solutions on the group

Common Goals

Behaviors

Consistent	Inconsistent
<ul style="list-style-type: none"> <input type="checkbox"/> The habit of planning & working to win <input type="checkbox"/> Recognizing that "someone to do something might as well be me" <input type="checkbox"/> Pride in one's team <input type="checkbox"/> Passion for work and team success <input type="checkbox"/> Pitching in to cover for each other 	<ul style="list-style-type: none"> <input type="checkbox"/> Concerned only about my piece of the job <input type="checkbox"/> "Nine-to-five" mentality <input type="checkbox"/> "it's not my job" <input type="checkbox"/> Squelching creativity <input type="checkbox"/> Blaming others when things go wrong

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APPENDIX E

Acquisition Strategy Meeting (Louisville)

Project Name:	
Project Location:	

Project No.:	Program Year	Programmed Amt.	CCL:
--------------	--------------	-----------------	------

Date:	Time:	Location:
-------	-------	-----------

Scope Source Document

Funding Source:

☐ MILCON

Project Scope

☐ OMA☐ DERA

Key Requirement

☐ BRAC☐ OPA☐ Reimbursable☐ Other _____

District Commander's Involvement with contracts required?

☐ Yes ☐ No

Comprehensive Interior Design Required?

☐ Yes ☐ No

UNICOR?

☐ Yes ☐ No

Waiver required?

☐ Yes ☐ No

Value Engineering Study Required (project > \$2 million)?

☐ Yes ☐ NoIf > \$2M and "No" is checked,
has a waiver been requested?☐ Yes ☐ No (explain)

Permits Required?(List below) (Example: KY 401 KAR 5.005; Permits to construct modify or operate a facility)

☐ Yes ☐ No

NEPA Complete?

☐ Yes ☐ No ☐ N/A☐ Record of Environmental Consideration☐ Environmental Assessment/FNSI☐ Environmental Impact Statement/ROD

Construction Site Clearance Complete?

☐ Yes ☐ No ☐ N/A☐ Level I (clean site)☐ Level II☐ Level III

Force Protection Measures Required?

☐ Yes ☐ No

Physical?

☐ Yes ☐ No

Electronic?

☐ Yes ☐ No

NAS req'd from designer?

☐ Yes ☐ No

1354 Requirements.

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Warranty Requirements:**ATTENDEES**

Customer:	Project Management:
Engineering Division:	Construction Division:
Contracting Division:	Planning Division:
Real Estate Division:	Resource Mgmt Office:
Office of Counsel:	Information Mgmt Office:
Others:	

Design**Construction**

Conventional	In-house	Conventional	ETCM
Design/Build	Architect/Engineer-CBD	RFP	Partnering <input type="checkbox"/> Yes <input type="checkbox"/> No
8(a)?	Indefinite Delivery A/E	8(a) Set-Aside	8(a) Competitive
Simplified Design Method	Other District/Agency	IDAQ <input type="checkbox"/> JOC <input type="checkbox"/> SmART <input type="checkbox"/> PRAC <input type="checkbox"/> TERC <input type="checkbox"/> Other	
Partnering <input type="checkbox"/> Yes <input type="checkbox"/> No		Partnering? <input type="checkbox"/> Yes <input type="checkbox"/> No	GFE? <input type="checkbox"/> Yes <input type="checkbox"/> No
Other		Other	

MAJOR MILESTONES

	Environmental
A/E NTP or I/H Start	
Project Definition Complete/Concept Approval	
60% Design Submittal	
90% Design Submittal	
Ready-to-Advertise	
Award	
Beneficial Occupancy	
Parametric Estimate	

FUNDING REQUIREMENTS

Customer	
Project Management	
Value Engineering Study	
Engineering Division	
Construction Division	
Contracting Division	
Total	

PROJECT TEAM MEMBERS

ED -	Customers
CD -	

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RE -	
OC -	
PM -	
CD -	
PD -	
RM -	
IM -	

Other:

I believe these minutes accurately reflect the results of our meeting. Corrections will be accepted for five work days after the date of the meeting.

Project Manager

Copy Furnished
Official Project File
All Attendees

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APPENDIX 9

CECS Engineer Regulation, ER 5-1-11, dated 17 August 2001, Subject: Management,
U.S. Army Corps of Engineers Business Process

CECS
Regulation
No. ER 5-1-11

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

ER5-1-11

17 August 2001

Management
U. S. ARMY CORPS OF ENGINEERS BUSINESS PROCESS

1. Purpose. This regulation establishes philosophy, policy, and guidelines to accomplish all work performed by the U.S. Army Corps of Engineers (USACE).
2. Applicability. This regulation applies to all USACE activities and all its functional areas.
3. Distribution. Approved for public release, distribution is unlimited.
4. References.
 - a. AR 5-1, Army Management Philosophy
 - b. AR 11-2, Management Control
 - c. FM 22-100, Army Leadership
5. Definitions. Appendix A provides definitions for the purpose of assuring a common understanding of key and essential terms between all USACE personnel, especially project delivery team members, and others who read the doctrine in this regulation.
6. General.
 - a. First and foremost, USACE employees' overriding responsibility is to represent the public interests. As public servants, all USACE employees have taken an oath to represent the best interests of the United States and its citizens. Accordingly, all USACE employees, including project managers, must make decisions based on the best interests of the Nation, the Army and the public. Recognition of this preeminent responsibility is critical to properly balancing the many interests that USACE faces in executing various military, civil works, and Support for Others projects.
 - b. USACE operates as a single public corporate entity serving the Army and the Nation. All customers are entitled to the full depth and breadth of Corps resources worldwide.

This regulation supersedes ER 5-1-11, Program and Project Management, 27 Feb 1998

ER 5-1-11
17 Aug 01

USACE seeks to operate with business efficiency to meet the nation's needs as efficiently and effectively as possible. To achieve this, people with the right skills and tools must work on the right job. PMs and other team members shall be chosen for their skills and abilities to successfully execute the project, without regard to their assigned functional or geographic locations within USACE. Virtual and matrix teams shall be used to align USACE efforts and focus on quality project delivery. All organizations must act in unison across boundaries to draw on combined strengths and leverage the resources of the public and private sectors to meet national needs. USACE shall make resource decisions based on what is best for the mission, the nation, and the public, understanding impacts to all customers. Project delivery and program execution across organizational boundaries must appear seamless to customers. Leaders facilitate smart use of resources, project-focused operation, technical competency, and innovation across the organization.

7. USACE Business Process. The fundamental USACE business process used to deliver quality projects and services, to include support services provided within USACE, is the Project Management Business Process (PMBP). The PMBP applies to planning, development, and management of programs as well as projects, and is used at all echelons of USACE.

a. **Central Tenet of PMBP.** The heart of the PMBP is project-focused teamwork. We draw on the diverse resources of the Corps worldwide to assemble strong multi-disciplined Project Delivery Teams (PDT), unlimited by geography or organizational boundaries, to best meet the customers' needs, and the national/public interests. This regulation empowers PDTs with the authority and responsibility for delivering quality products and services, in accordance with PMBP.

b. **PMBP Imperatives.** There are seven imperatives that govern the PMBP. It is the responsibility of senior leaders to ensure these principles are followed across USACE for all work.

USACE Business Process Imperatives	
1.	<i>One project, one team, one project manager</i>
2.	<i>Plan for success and keep commitments</i>
3.	<i>The PDT is responsible for project success</i>
4.	<i>Measure quality with the goals and expectations in the PMP</i>
5.	<i>Manage all work with the PMBP, using corporate automated information systems</i>
6.	<i>Build effective communications into all activities and processes</i>
7.	<i>Use best practices and seek continuous improvement</i>

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17 Aug 01

(1) ***One project, one team, one PM.*** Each project is placed in the hands of a PDT and a single PM for management and leadership of the projects its entire life cycle, even when more than one USACE district or activity is involved. The Deputy District Engineer for Program and Project Management (DPM) consults with other senior leaders and selects a PM based on the individual's abilities to best lead the specific project, without regard to assigned organizational element. Generally, the PM will reside at the geographic district, but can be elsewhere as needed to meet the project requirements. The PM and PDT are responsible and accountable for ensuring the team takes effective, coordinated actions to deliver the completed project according to the PMP. The PM manages all project resources, information and commitments, and leads and facilitates the PDT towards effective project development and execution. The PDT shall consist of everyone necessary for successful development and execution of all phases of the project. The PDT will include the customer(s), the PM, technical experts within or outside the local USACE activity, specialists, consultants/contractors, stakeholders, representatives from other federal and state agencies, and vertical members from division and headquarters that are necessary to effectively develop and deliver the project. The customer is an integral part of the PDT. The customer's primary "door" to the Corps is the PM, who must seamlessly integrate USACE efforts to deliver the best possible solutions for the customer. The PM is the primary interface with the customer for the specific project. So that the organization speaks with one voice, the PM coordinates all matters relating to the project, and ensures that the customer's requirements are conveyed and understood. In performing such functions, the PMs must operate consistent with their responsibilities as a public servant (Federal official), as summarized in paragraph 6.a. PMs will encourage and facilitate team members in communicating directly with the customer organization on issues related to execution of their specialty area of the project. It is critical that the PDT member keep the PM and other PDT members informed of issues, customer concerns and circumstances for the project.

(2) ***Plan for success and keep commitments.*** Requirements for quality must be addressed during the planning phase, rather than waiting until the review or inspection stage. It is important to build trust with customers and coworkers by clarifying expectations, keeping commitments, and ensuring projects are delivered as promised. To meet these objectives, all work will be managed under a management plan.

(a) Project Management Plans.

1 A Project Management Plan (PMP) is a roadmap for quality project delivery. The PMP helps the PDT maintain a constant focus toward project delivery and the customers' needs, wants and expectations. As a federal agency, USACE represents the public interest and ensures the properly balancing the varied and possibly competing interests in delivering quality projects and defining project goals and expectations in the PMP. The PMP is an agreement between USACE and the customer that defines the customer's

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17 Aug 01

desired outcomes. To be an effective management and communication tool, the plan must be a living document that is updated as conditions change. The PM and PDT, to include the customer, will develop and maintain the PMP at a level of detail commensurate with the scope of the project. The PM will ensure the customer endorses all objectives in the PMP. The PMP will include customer expectations and consensus objectives, to include project-specific quality control procedures appropriate to the size, complexity, acquisition strategy, project delivery, and nature of each product. The PM will coordinate any changes to the project with the customer and PDT, and update the PMP as appropriate.

2 The content of the PMP is dictated by the five tasks key to the success of a project: obtaining agreement on project goals and expectations (particularly regarding scope, project quality and safety, costs, and schedule); developing a plan for acquiring and delivering a project that meets customer expectations, objectives, and needs; establishing a good internal and external communication strategy; defining and controlling the scope of the project; and defining the resources necessary for project success. By addressing these tasks, the PMP establishes a general framework for execution. The PDT must address these five tasks in a manner that makes sense to the team and customer and best supports their endeavor to succeed.

(b) Program Management Plans

1 There are two general types of programs. One type of program is a collection of individual projects, typically for external customers. The second type of program is comprised of recurring services for external customers or internal support services. Programs comprised of projects that do not have individual plans are managed with a Program Management Plan (PgMP). A PgMP is used to allocate funds and resources and establish program goals, objectives, acquisition strategy, and priorities on an annual basis. Services comprising recurring activities such as routine regulatory activities, flood plain management, logistics management services, real estates services, or research and development services are addressed in a PgMP, but not necessarily exclusive of a PMP. A PgMP is optional if the projects within the program are each covered under individual management plans. A PgMP is a necessity when mission success requires synergy and integration between individual projects on a program. Templates of standard process, components, and checklists should be considered to accompany a PgMP for programs with projects of recurring services, when an individual PMP is impractical.

2 If a project is not covered under a PgMP for recurring services, a Project Mgmt Plan (PMP) is required. A separate PMP is required for work intended to produce a specific expected outcome or solution to a customer problem or need. When an individual activity or project under a program is of such scope that it is no longer manageable under the PgMP, it shall be managed with a separate PMP for the activity or project.

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(3) ***The PDT is responsible for project success.*** The PDT is responsible and accountable for delivering a quality project to the customer. The team is empowered and supported by senior organizational leaders to make project decisions within the bounds of the approved PMP. The senior leaders are responsible to ensure the team has the resources, tools, skills and experience needed to deliver a quality project. PMBP often requires a multi-disciplinary team of personnel to execute the project successfully. Though projects may include many distinct, separate phases, they must be approached from an integrated, life-cycle perspective, focused on meeting the project's goals, objectives, and expectations as defined in the PMP. The team will expand to include all necessary expertise on a specific issue, and will include a vertical aspect encompassing division and headquarters. The PM is responsible for ensuring that the necessary disciplines and perspectives are represented within the team.

(4) ***Measure quality with the goals and expectations in the PMP.*** USACE defines quality projects and services as those that comply with legal obligations, Administration policy, and meet or exceed the goals, objectives, and expectations defined in the PMP. The PDT shall work with customers to determine and provide what is expected, and must strive to deliver products and services that are in the public interest. The PDT shall measure its success against the defined expectations documented in the PMP. The needs and expectations of customers and stakeholders shall be balanced, considering available resources and life-cycle requirements. Expectations of the beneficiaries and/or stakeholders of projects are considered when determining quality objectives. As stewards of the public trust, we must ensure compliance with legal obligations and Administration policy. USACE will not compromise professional standards. Requirements that exceed these minimum standards are negotiated with the customer based on the project's complexity, available resources, and the degree of risk the customer and USACE are willing to assume. Deviations from Corps of Engineers publications are authorized when requirements preclude compliance with this regulation. Such deviations require waiver approval by the applicable HQUSACE proponent. Such deviations require a full understanding of the basis of the requirement, including a determination of the basis for the deviation, and of the inherent risk resulting from the deviation.

(5) ***Manage all work with the PMBP, using corporate automated information systems.*** All work in USACE is considered project-related. Each person contributes to mission success, either directly as a PDT member or indirectly in providing support services to a PDT. The PMBP is used to manage products and services for customers within USACE, as well as projects and programs for external customers. Each person contributes to project success by meeting the requirements of his or her role, regardless of the person's functional area or echelon within the organization. Each person is responsible and accountable to the customer and the PDT for the timeliness and quality of his or her work. All employees affect our ability to succeed, even if they have no direct contact with the customer. USACE corporate automated information systems (AIS)

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provide the information necessary to manage projects and programs. All work is managed with the AIS, and their use facilitates PMBP. Developing, coordinating, and maintaining budgetary data and other information necessary to manage a project is the responsibility of the PDT under the leadership of the project manager (PM).

(6) *Build effective communications into all activities and processes.* USACE utilizes effective communication to interact internally as a team and externally with partners, stakeholders and customers. It is not possible to produce quality projects or maintain quality relationships without this type of communication. Communication is the starting point of the PMBP, and it is essential to foster the cooperation and focused understanding of requirements and expected outcomes, and the continuous improvement to the business processes that are so vital to continued success. Effective communication is critical to the meaningful exchange of ideas, desires, requirements and plans. In order to fully understand the needs and expectations of customers, partners and stakeholders, USACE must practice effective communications techniques, with emphasis on listening. Better listening leads to better understanding and better service. Effective and credible communications is basic to a learning organization, and it must be iterative rather than after the fact. It must be applied from project initiation through project completion.

(7) *Use best practices and seek continuous improvement.* The USACE PMBP philosophy is to do the right things, the right way, for the right reasons, and to constantly strive for improvement. Evaluating project performance produces opportunities to further improve business processes, in terms of execution, productivity, cost effectiveness, streamlined processes, timeliness, quality, and customer service. Each echelon of the organization shall have a quality system that is focused on continual quality improvements. Quality is managed through the Plan-Do-Check-Act cycle, for project execution, program management, and business processes. A detailed description of the Plan-Do-Check-Act cycle is included at Appendix B. USACE employs a "best business practices" system to standardize common procedures, simplify working across organizational boundaries, and take corporate advantage of lessons learned and new best practices.

8. Roles and Responsibilities. HQUSACE, Major Subordinate Commands (MSCs), centers, laboratories, and districts all have direct responsibility for quality and process improvement. All echelons of USACE work together to ensure and enhance the quality of our projects and services. The goal is to create an environment that promotes communication, respect, trust and cooperation. The organization's processes and resources are aligned to support quality objectives. To execute projects successfully, all echelons employ quality systems, including procedures for quality control of in-house products and services and quality assurance of contracted projects.

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a. HQUSACE communicates philosophy and strategic vision through policy to achieve mission success. Policies are flexible to allow subordinate entities to tailor their services to support the Army and the Nation on a project-by-project basis. To help ensure that policies are practical and helpful, HQUSACE employs vertical teaming to address policy issues. HQUSACE continually assesses and improves policies and guidance and periodically reviews implementation of the PMBP to evaluate effectiveness. HQUSACE interprets policies and other USACE guidance and provides clarifications to MSCs, districts, labs and centers when requested. HQUSACE evaluates and facilitates integration of quality systems among MSCs and Centers. In addition, HQUSACE interacts with national customers, other agencies and private industry regarding programmatic issues.

b. MSCs use the PMBP to facilitate effective and efficient project-focused operation, technical competency, business efficiency, and innovation across their geographical region. MSCs look for the root cause of impediments to district excellence, and work to remove encumbrances. MSCs facilitate sharing process improvements, lessons learned, and best business practices among districts and promote consistency across USACE. MSCs work together to ensure that customers who cross MSC boundaries receive seamless service. MSCs provide comments to HQUSACE for necessary improvements and modifications to policy guidance documents. The MSC senior leaders provide integrating assistance to the division commander and lead the regional business center. MSCs perform quality assurance of their subordinate districts' quality process through periodic evaluations using an integrated approach consistent with the PMBP. MSCs perform quality assurance on the information contained in the corporate AIS for projects and programs within their regions.

c. Districts and centers use the PMBP to deliver projects to customers. Each activity will document its quality policies, procedures, and responsibilities in a Quality Management Plan (QMP). The QMP aligns the policies and operational procedures of the entire organization to meet the quality requirements of this regulation. The QMP details the structure and framework of procedures and activities necessary to satisfy the mission, establishes roles and responsibilities, and assigns accountability for quality. All employees shall read the QMP and understand their roles in the quality framework. Quality objectives for individual projects are documented in the project-specific PMP.

d. The Commander is ultimately responsible for all that happens or fails to happen in the organization. To ensure success, Commanders empower their workforces to operate within the framework of PMBP in executing the mission. Commanders ensure that each echelon of the organization is aligned with the corporate strategic vision. The Commander is the leader of the corporate team, which sets the strategic direction for the organization. The Commander appoints the members of the corporate team and ensures that they maintain and communicate the strategic focus.

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e. The corporate team creates the conditions necessary for success through actions and behavior consistent with the PMBP. The corporate team strives to enhance capabilities, improve the organization, and facilitate communications. The corporate team builds and maintains an environment that encourages excellence and continuous improvement. The corporate team's focus is the long-term future of the organization (two or more years out).

f. The DPM has programmatic oversight over all work. The DPM is the Commander's Deputy and is responsible to the Commander for effective program and project management. The DPM is responsible for the vertical and horizontal integration of products to produce the projects and manage the programs in accordance with PMBP. The DPM provides continuity of corporate leadership in developing and assessing mission and work requirements and in developing corporate programs, plans, goals, and objectives. All work is assembled under the DPM's oversight so that priority decisions can be made corporately.

g. Senior leaders work at the operations level of the organization, with a focus on executing the current year's mission and planning for the next year. They work as a team to provide adequate resources and delegate authority commensurate with responsibilities to PMs and PDT members to enable project success. They also provide adequate resources and delegate authority commensurate with responsibilities to supervisors to allow for establishment and maintenance of a quality workforce. Senior leadership ensures that the quality management processes are developed, maintained, and followed. Senior leaders evaluate performance and facilitate improvements through application of these principles. They validate audit findings, communicate them to team members, and direct implementation of corrective actions.

h. Supervisors at all echelons of the organization lead their staffs in implementing the PMBP and in achieving professional excellence and continuous improvement. Supervisors at all echelons of the organization are responsible for the competency of their staff. Supervisors' duties include staffing, training, coaching and mentoring necessary to maintain a quality workforce. They work as a management team to assign work, balance workload and resolve resource conflicts on an ongoing basis. All USACE activities are encouraged to establish a middle management team, to take the load of daily resourcing issues off the corporate team, and fully engage middle management in supporting PDTs. Supervisors actively coach and mentor PDT members and facilitate process improvements through the life cycle of projects. Supervisors maintain a high level of professional expertise, and facilitate access to subject matter experts. Supervisors work with their subordinates to ensure a thorough understanding of USACE policies and procedures.

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i. The PM and the PDT are responsible and accountable for delivering quality results. The PM provides leadership and facilitation to the PDT; a multi-disciplined project team with responsibility for assuring that the project stays focused, first and foremost on the public interest, and on the customer's needs and expectations and that all work is integrated and done in accordance with a PMP and approved business and quality management processes. The team focuses on the quality project delivery, with heavy reliance on partnering and relationship development to achieve better performance. The PM assures customer involvement throughout the process and ensures mutual understanding of the customer's role in project success. The PM's relationship with the customer is pivotal to achieving project success. The PM's active role as consultant is essential to ensure that the customer's quality objectives are clearly articulated and that the customer understands the essential professional standards, laws, and codes, as well as public trust issues, that must be incorporated into the project. PMs employ the expertise of their teams to determine the procedures necessary to achieve the target level of quality. The PM and the PDT work with the customer early in the project scoping process to determine what the customer needs, and to refine those requirements in light of safety, fiscal, schedule, legal, and other constraints. Individual PDT members are responsible and accountable for the quality of their own work, for keeping the commitments for completion of their portion of the project as documented in the PMP, and for fiscal stewardship.

j. Program managers integrate program information and facilitate management. Program managers and PMT members keep higher echelons of the customer's organization updated on all work USACE is performing on their behalf, and assist customers in accessing USACE resources across organizational boundaries. Program managers are responsible for making accurate program projections necessary to support workload analysis at the local, regional and national level.

9. Management Control.

a. Management controls, like quality controls, are the responsibility of the leadership at all levels of USACE; from the District Commander, up to the MSC Commander, through to the Headquarters directorates and the Commander. The commanders are responsible for ensuring that all management weaknesses are found and corrected. No upward reporting is required for the corrective action process. If a management weakness requires the awareness of the next higher level of management, it is a material weakness. Material weaknesses discovered are reported through the chain of command. Reports of material weakness must specify corrective actions taken or planned. The highest echelon receiving the report will evaluate the corrective actions, provide assistance, if needed, and track progress.

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b. All echelons are to lead and support efforts to collaborate, measure, manage, and improve the PMBP and projects in accordance with AR 5-1, AR 11-2, and FM 22-100.

Command Management Reviews, performance improvement processes and standards at regional and national levels will be used to review, validate, and sustain the best PMBP for project delivery.

c. Headquarters, in concert with field offices, will develop and promulgate guidance media with context and examples of the precepts, and representations for a better understanding, implementation, and learning culture of the USACE Business Process.

FOR THE COMMANDER:

2 Appendices
APP A - Definitions Chief of Staff
APP B - Plan-Do-Check-Act Cycle


ROBERT CREAR
Colonel, Corps of Engineers
Chief of Staff

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APPENDIX A

DEFINITIONS

Automated Information Systems: A combination of computer hardware and software, telecommunications information technology, personnel, and other resources that collect, record, process, store, communicate, retrieve, and display information.

Corrective Action: Action taken to eliminate the causes of an existing nonconformity, defect, or other undesirable situation in order to prevent recurrence.

Customer: Customer as used in this regulation may be a number of people/organizations to include partners and stakeholders. In general, the customer is any individual or organization for which USACE delivers projects or services to meet specific needs. The intent of the use of the term is not to define a specific group of individuals or organizations, but rather to convey a corporate orientation of public service modeled after private industry's "customer service" model. The true USACE customer is the American public.

Deputy District Engineer for Program and Project Management (DPM): The civilian deputy to the District Commander. DPM as used in this regulation includes Center positions such as Deputy for Programs and Technical Management and Deputy for Programs and Project Management/Project Delivery Team.

Echelons: Levels in the organizational hierarchy—district/lab/center, the MSC and HQs.

Empowerment: Having authority to exercise judgment and take action, with the responsibility for resultant positive or negative consequences.

Functional Organization: Organization structure in which staff are grouped by technical specialty.

Mentoring: Guiding and assisting in development of individual and group skills to enhance performance, by freely giving the benefits of one's knowledge and experience to others.

Matrix Organization: An organizational structure in which individuals share a responsibility within their organization and as responsible members assigned to teams.

Matrix Team: Group of people working across organization boundaries for a common purpose.

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Program: A group of projects or recurring services that may be categorized by funding source, requirements defined in the program management plan, or other common criteria for which resources are allocated and collectively managed.

Program Management: Component of the PMBP undertaken by all USACE echelons to manage programs. It consists of the development, justification, management, defense and execution of programs within available resources, in accordance with applicable laws, policies, and regulations, and includes accountability and performance measurements. Under program management, programs, projects and other commitments are aggregated for oversight and direction by the organization's senior leadership. Program management takes project management to a greater level of interdependence and broadens the corporate perspectives and responsibilities.

Project: Any work intended to produce a specific expected outcome. A project has a defined scope, quality objectives, schedule, and cost. Internal services are discrete projects when they are non-recurring or of special significance.

Project Management: The application of knowledge, skills, tools, and techniques to project activities in order to meet or exceed defined expectations.

Project Management Business Process (PMBP): The fundamental USACE business process used to deliver quality projects. It reflects the USACE corporate commitment to provide "customer service" that is inclusive, seamless, flexible, effective, and efficient. It embodies communication, leadership, systematic and coordinated management, teamwork, partnering, effective balancing of competing demands, and primary accountability for the life cycle of a project.

Project Management Plan (PMP) (PgMP for Programs): A living document used to define expected outcomes and guide project (or program) execution and control. Primary uses of the PMP are to facilitate communication among participants, assign responsibilities, define assumptions, and document decisions. Establishes baseline plans for scope, cost, schedule, safety, and quality objectives against which performance can be measured, and to adjust these plans as actual performance dictates. PMP is developed by the project delivery team (PDT).

Quality: The totality of features and characteristics of a product or service that bear on its ability to meet the stated or implied needs and expectations of the project. Quality expectations need to be negotiated among the PDT members (which includes the customer) and are set in the PMP.

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Quality Assurance (QA): An integrated system of management activities involving planning, implementation, assessment, reporting, and quality improvement to ensure that a process, item, or service is of the type and quality needed to meet project requirements defined in the PMP.

Quality Control (QC): The overall system of technical activities that measures the attributes and performance of a process, item, or service against defined standards to verify that they meet the stated requirements established in the PMP; operational techniques and activities that are used to fulfill requirements for quality.

Quality Management: Processes required to ensure the project will satisfy the needs and objectives for which it was undertaken, consisting of quality planning, quality assurance, quality control, and quality improvement.

Quality Management Plan: A formal document describing in comprehensive detail the necessary QA, QC, and other technical activities that must be implemented to ensure that the results of the work performed satisfy the stated performance criteria.

Quality System: A structured and documented management system describing the policies, objectives, principles, organizational authority, responsibilities, accountability, and implementation plan of an organization for ensuring quality in its work processes, products (items), and services. The quality system provides the framework for planning, implementing, and assessing work performed by the organization and for carrying out required QA and QC.

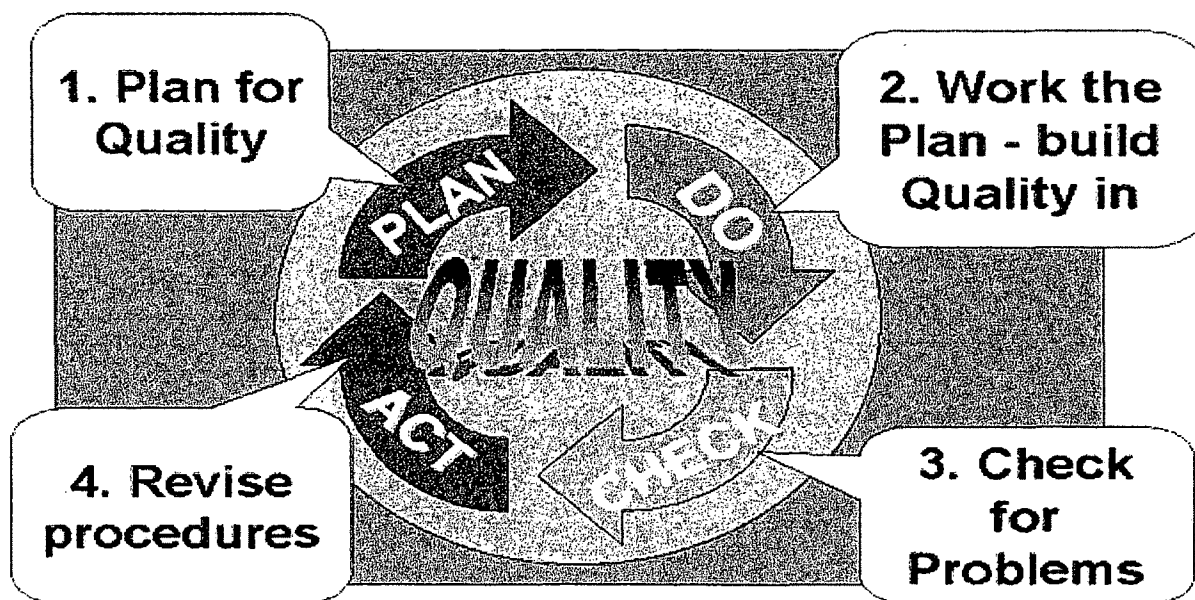
Stakeholders: Individuals and organizations who are involved in or may be affected by the project.

Virtual Team: Team working across geographic or organizational boundaries without physical co-location.

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APPENDIX B

Plan-Do-Check-Act Cycle



1. Plan: We plan for and build quality into our work at each step in the process. We use a systematic planning process to identify the customer's quality goals; develop an effective plan and processes to achieve those goals, and measure our attainment of the quality objectives. We help our customers to express their desired outcomes in objective, quantitative terms. We communicate with our customers to ensure mutual understanding of standards and processes. It is essential that the project team, which includes the customer, understand the costs and benefits of selected quality standards and the processes to be used to achieve mutual objectives. We identify appropriate standards and determine how to achieve them. We consider the risk factors and complexity of each project, and adapt processes to provide the requisite level of quality. We consult, advise, and reach consensus with the customer before we do work. We use value engineering when it serves to increase the quality of our projects. The product of the planning phase is the project management plan (PMP).

2. Do: We then do the work according to approved PMPs and documented procedures. Our procedures are developed and documented with sufficient detail to ensure that actions are performed correctly and completely each time. Project and program execution is a dynamic process. The team must communicate and adapt to changing conditions and modify project plans to ensure project objectives are met. Quality management consists of executing a well conceived and continually updated PMP.

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3. **Check:** We perform sufficient independent technical review, management oversight, and verification to ensure that we meet the quality objectives documented in the PMP. Team members periodically check performance against the plan and verify sufficiency of the plan and actual performance to meet or exceed agreed-on objectives. After action reviews are conducted to facilitate sharing of lessons learned. Findings are shared with the project teams and other personnel to facilitate continuous improvement.

4. **Act:** We take specific corrective actions to remove the systemic cause of any non-conformance, deficiency, or other unwanted effect. We improve quality through systematic analysis and refinement of work processes. The process of continuous quality improvement leads to the refinement of the overall quality system. Quality improvements include appropriate revisions to quality management plans, alteration of procedures, and adjustments to resource allocations.

APPENDIX 10

2002 Senior Leaders Conference, Case Study: Program Project Management (1982-2002)



**US Army Corps
of Engineers**

**2002
Senior Leaders Conference
Case Study: Program Project
Management (1982-2002)**

This document is not meant to convey any policy or directive.
This paper is an internal document provided for the purpose of training.

Group Discussion and USACE Business Process (BP) Imperatives Framework

Questions For Group Discussion

The questions below help ensure the case is understood in the whole context and culture of the Corps. It is helpful to look for *a confluence of causes and events, and a system of factors*. And see these factors in their historical context. Discussion principles will help the group with its task:

Discussion Principles

NOs	YESs
<ul style="list-style-type: none"> • No blaming 	<ul style="list-style-type: none"> • Goal is understanding what worked and what did not work
<ul style="list-style-type: none"> • Don't focus on individuals 	<ul style="list-style-type: none"> • Focus on what the organization did or did not do
<ul style="list-style-type: none"> • Don't argue with others' points 	<ul style="list-style-type: none"> • Build on others' ideas & insights
<ul style="list-style-type: none"> • Don't focus on details 	<ul style="list-style-type: none"> • Focus on the major elements or themes of what happened
<ul style="list-style-type: none"> • Don't push your opinion 	<ul style="list-style-type: none"> • Ask questions that help the group think about what happened
<ul style="list-style-type: none"> • Don't talk about related, but not essential issues 	<ul style="list-style-type: none"> • Stay on the topic of the case

Initial BP Imperatives framed questions:

One Project, One Team, One PM [aka Structure]

- Was the team composed of the right players?
- Did the team members have the defined roles & responsibilities?
- Were the customers integrated well into the team?
- How effectively did the team interact with other teams and organizations?

Plan for success & keep commitments [aka Strategy]

- Was there a PMP or a strategy for success?
- Was it adequate for the challenges that were being faced?
- Was the PMP or strategy clear and adequate [goals, commo, scope, resources] to everyone involved, including customers?

The PDT is responsible for Project Success [aka Stakeholder values]

- Were the customer's expectations clearly defined and met?
- Were the Corps' values [Loyalty, Duty, Respect, Selfless Service, Honor, Integrity, Personal Courage] aligned with all stakeholder values in this action?
- Was PDT empowered and supported by leadership?

Measure quality w/goals & expectations in PMP [aka Shared values]

- Were the Corps' values upheld and realized by this action?
- Did this work indicate that the Corps needs to value something new?
- Was there an assessment by the customer of the completed work? What did it reveal?

Manage all work w/PMBP, using corporate AIS [aka Systems]

- Did the team have the resources or common processes it needed?
- What worked/ did not work with planning, IT, budgeting, HR, RM, and other systems?
- How effective was the way team members collaborated?

Build effective communications into all activities & processes [aka Style of leadership or relationship]

- How effective was the leadership? What worked/did not work?
- Did leaders communicate & educate those who had to be informed [team, partners, stakeholders, customers]?
- Did strategic and operational leadership remove barriers to the team's success?

Use Best Practices and Seek Continuous Improvement [aka Skills]

- Were best practices learned from previous projects examined prior to project design?
- Did the team members have all the technical, thinking, and interpersonal skills and competencies needed to be effective in this action?
- If not, were team members encouraged to develop themselves in the needed areas in the future, and helped to find those learning opportunities?

Final Group Discussion:

The group discusses the case and answers the questions below in a dialogue, a structured conversation. It is helpful to think in the USACE BP Imperative. Answering the USACE BP Imperative questions facilitates a systemic analysis. Then the group can answer the ultimate questions:

- What should the Corps learn from this experience of what worked and did not work?
- What should be done differently in the future?
- Who needs to know these lessons and conclusions?
- Who will enter these lessons in the knowledge management system, or write the case up for further use?
- Who will bring these lessons into the leadership process for future decision-making and planning?

The Case Study

PROGRAM & PROJECT MANAGEMENT 1982 - 2002

Section One

Facts – Only some major facts are listed below for this 20 year history. Discussion and subsequent rewrites of the case can fill it out.

Date	Event	Results
1982	Some Districts start redesigning how to be more customer-focused.	E.g., Seattle working with IBM on a 3-month Business System Process Study.
1987	Bob Paige becomes ASACW	Coming from industry, he wanted to create PM in Corps; enlists CG Hatch
1988	CG Hatch creates Office of Strategic Initiatives (OSI) as HQs strategic planning unit, and makes Bill Robertson OSI head with title Associate Chief of Engineers.	Upsets traditional power relationships within HQs. Directors and stovepipe leaders threatened.
1989	Some districts begin to understand a culture change is required by the challenges of the new business climate.	For example, Seattle starts internal marketing within its own district for transition to PM; thought some oppose this.
June, 1990	St. Michael's Conference #1	Discussed concept of PM and role of Project Manager
Oct. 11, 1990	CG Hatch letter creating PPM as a stovepipe with PM managers and Deputy District Engineers for PM.	Letter indicated questions before the organization, and CG's expectation that leaders would resolve them.
Oct. 31, 1990	Memorandum.	Distributed St. Michaels conference minutes which established roles of PM and TM (technical manager).
March, 1991	ER 5-7-1 issued by CG Hatch; huge document.	Established the control and upward reporting system; few understood the document.
Fall, 1991	Program and Project Management (PPM) Implementation Review, by Engineer Strategic Studies Center (ESSC).	Identified 37 issues that USACE leaders must address to institute PPM.
Summer, 1992	CG Hatch retires, CG Williams begins his tenure.	CG Williams seeks to restore traditional balance of power within HQs.
Summer, 1992	Associate CG Bill Robertson, writes "Learning To Change" about internal organizational issues, and "Changing To Relevance" about ecological and engineering challenges. Presents papers to incoming CG Williams, with pro forma offer to resign.	CG Williams accepts Robertson's offer to resign; eliminates the position of Associate Chief.
1993	OSI absorbed into ESSC, most OSI staff distributed around Corps.	
1994	Seattle writes its Business Plan – a concise statement of PM as its core business approach.	Significant changes for this district, some interest around the Corps.

1994	Easton Conference (referred to as St. Michaels 2).	Started planning over again for PM, realizing that St. Michaels 1 was not effective.
Oct., 1997	CG Ballard embraced PM as USACE Project Delivery Process.	HQs & MSCs allies build constituency & momentum
1998	First PDT Conference at Baltimore.	Learned from Seattle, Huntsville, elsewhere; involved other stovepipes than E&C; idea growing PM is a business process, not a stovepipe.
Feb., 1998	new 26 page ER 5-111 doctrine finalized.	Replaces original PM ER of 500 pages.
1998	IG Report on PM Implementation.	Finding: 1/3 trying to implement, 1/3 oppose it, 1/3 business-as-usual.
Feb, 1999	Fran Nurthen, Karen Northrup assemble team that worked initiatives to reinforce PMBP	Team recognized need for PMs & PDTs to integrate efforts to create new PM culture
1999	Decision to stop funding PROMISE, go for COTS (Commercial Off The Shelf Software)	Bought Oracle COTS, but was unsatisfactory
Oct., 2000	PDT Conference, Seattle	Attempted to clarify roles of first-line supervisors
Oct., 2000	CG Flowers mandates that PMBP will be implemented by Oct., 2002 including use of curriculum in all Districts; training facilitations; BP manual; P2 software	Clear due date to reach
Fall, 2000	CG Flowers appoints Dan Duncan, Program Manager for PMBP	Legitimizes by creating program status; HQ funding; PMP's
Spring, 2001	USACE Vision & Campaign Plan Published. Process Goal with PMBP is centerpiece of Vision	Process Goal "Use PMBP to operate as 1 Corps regionally delivering quality goods and services"
Aug, 2001	ER 5-1-11 finalized	Revised ER 5-111; integrating quality requirements in PMBP; reinforces that PMBP is the Corps' business process
October, 2001	Process Committee provides implementation support to PMBP and Process Goal.	Joe Tyler and Rob Vining head process committee. Charter includes furthering implementation of Process Section of Campaign Plan Objectives
June, 2002	PMBP Curriculum instruction begins throughout Corps.	Karen Northup & Curriculum team issue first set of PMBP curriculum CDs and begin small group discussion sessions
July, 2002	Process Committee provides metrics for Senior Leader Review	See table at end of case study for more information on PMBP metrics.

Section Two: Framework and History

In the chart below some of the highpoints of the 20 year effort are framed in the USACE BP Imperatives. The chart is a text description of what happened, which explains more fully some of what was attempted and some of what resulted.

USACE BP Imperatives	Action / Initiative	Results
Plan for success & keep commitments [aka Strategy]	1990 – PM concept discussed by 19 HQs leaders, who began by creating new structure	Drive to execute at the top; though ‘us and them’ attitude
One Project, One Team, One PM [aka Structure]	1990 – PM stovepipe, PM / TM roles created	Resistance from functional stovepipes
Manage all work w/PMBP, using corporate AIS [aka Systems]	1991 – reporting system established	The reporting system did not create change toward PM since it was not aligned with other systems
Measure quality w/goals & expectations in PMP [aka Shared values]	1990 – ‘teamwork’ and ‘collaboration’ stated as values; 2001 – ‘quality’ in ER 5-1-11; 2002 – ‘environment’ in Environmental Operating Principles	Confusion results b/c existing systems do not always support stated values
The PDT is responsible for project success [aka Stakeholder values]	1980s on – customers more active about their needs 1989 on – federal agencies more competitive for work 2000 on – media more investigative, pursuing Corps	USACE was required to change and adapt as customers increasingly have choices; networked media can more quickly and easily track events
Build effective communications into all activities & processes [aka style of leadership or relationship]	1998 – team assembles early PM curriculum initiatives; PTD definition	Turf, authoritarian style valuing control, titles, reporting lines, etc. persists
Use Best Practices and Seek Continuous Improvement [aka Skills]	1998 – PM curriculum created Oct., 2002 – full roll-out	PMBP skill set for PMs, TMs, Resource Managers not fully identified and effectively taught yet

The story of what happened 1982 - 2002

Context From the 1970s on the Japanese influence in the American economy forced new awareness of customers, not telling them what they could have (e.g. AT&T only offered black phones), or determining quality for them (e.g. Detroit's planned obsolescence of cars). In addition, the economy was experiencing major change due to new technology which connected people more easily to information. It was beginning to be easier to get information from the network than through management's chain of command. The pace of business and change was accelerating greatly. In 1980 a small percentage of the Corps' work (perhaps 5%) was design-build, but this trend has beginning to accelerate (in 2002 it is now perhaps 50% for MILCON). This trend increases the pressure to contract out work that was traditionally done by internal functional experts. By the late 1980s with the decline of communism, and then the end of the Cold War, the changing role of the military and the decline of the defense budget impacted the Corps. Agencies began to compete more with each other for work. These changes led to efforts to reorganize the Corps in the early 1990s.

Corps Response In the early 1980s Districts were beginning to get feedback from customers that the Corps was arrogant, defined for them what they needed, even though the quality was not always so great, and the cost was high. Customers were beginning to look around for alternatives. The Corps' stable market and secure customers were experiencing tectonic shifts. Some Districts, feeling the tremors, started to look at how they could do business with their customers in a better way.

For example, Seattle engaged IBM in 1982 to look at their automated systems, how the District made decisions, and the role of customers. IBM trained a Seattle cross-functional team from the bottom up in their methodology and over the next 3 months the group did a Business Systems Process Study. This early study laid out how the district had to change its process to do business better with its customers. Seattle saw it as a whole change in their culture from functional stovepipes working in a linear process to a cross-functional concurrent form of engineering. Louisville and Fort Worth were making similar efforts in the early 1980s. Even though these early adopters did not call it project management, that was what it was in form and spirit and intent.

Bob Paige, who was CEO of Rust Engineering, became ASACW in the first Bush administration around 1987. Rust and many other firms used project management as their basic business process and he wanted to have the Corps adopt it. He enlisted CG Hatch who liked the idea. Hatch created the Office of Strategic Initiatives (OSI) as the HQs strategic planning unit, attached directly to his executive suite. He made Bill Robertson, who was at the time Associate Counsel, OSI head with the new title of Associate Chief of Engineers. Many were not pleased with this new role, feeling that this threatened the existing power relationships in HQs. ASACW Paige pushed hard to make the Corps more customer-focused and cross-functional team oriented, to make PM happen. CG Hatch had Bill Robertson and OSI take major responsibility for developing PM as an initiative. Was it an initiative or a culture change?

In June, 1990 OSI organized a senior leaders conference of 19 top HQ leaders at St. Michael's, MD (this was before the SLC became a large annual convocation). PM was only one among many topics, and it came up at 7pm before dinner. At the time CG Hatch, nor any of the participants thought of PM as a business process. No one saw it as

a major cultural transformation, except perhaps a few. It was thought of as a new stovepipe running down through the bureaucracy. There was little discussion of the full implications of the PM concept. What little discussion there was focused on roles and responsibilities (structure).

The St. Michaels attendees resolved that PM's did not have to be engineers but that Technical Managers would be engineers and collaborate with them. The conference did not make recommendations about any other S than structure. There were no presentations about benchmarks, best practices, or attempts to learn from others. It has been said by some that this meeting had a Not Invented Here attitude that was inherently arrogant. This was a select group and notably absent was anyone from HR or any MSC. While 'teamwork' and 'collaboration' were stated as important new values, the selective nature of the meeting and the avoidance of the culture of the organization contributed to the inevitable confusion and disbelief when others learned about this meeting.

CG Hatch's Oct. 11, 1990 letter created PPM as a stovepipe with PM managers and Deputy District Engineers for PM. The letter stated "we found a number of questions remained unanswered. There was a need to better define roles and responsibilities...at Division and District levels, and at Headquarters level....I urge you to take appropriate measures to assure that, within your organization, roles and responsibilities are consistent with the enclosed minutes from the [St. Michaels leadership meeting]. I expect, within a short period of time, to have the management relationships...fully operational....It is essential that there be complete understanding and commitment to Programs and Project Management."

In March, 1991 ER 5-7-1 was issued by CG Hatch to establish the control and upward reporting system. But this massive volume of 500 pages most people found too large and complex to read and digest. The ER writers had hoped that by including a great deal of input from around USACE they could create buy-in, but all the input was not coherent or integrated. As a result few read it or understood it. In addition it had another serious shortcoming: creating one system cannot change a whole culture. For example, AIS, performance, reward, selection, etc. all worked against the PM reporting process created by ER 5-7-1.

Then in the Fall, 1991 the Engineer Strategic Studies Center (ESSC) did a Program and Project Management (PPM) Implementation Review, which was a massive study with many recommendations. It included a gap survey of 666 people from across districts and levels USACE. The survey indicated their perceptions of the largest gaps to creating PPM.

What effect did this massive review have? What did it say? It stated (p. 29) "formal organization and process [for PM] has been around 2-3 years. Needless to say, this period has been extremely tumultuous....ESSC findings....indicate serious problems...such as defining the future vision for Project Management...developing automatic data processing systems to meet the needs of the individual PM at the District. Clearly, the most important finding is the field's perception that the HQ does not trust them and HQ USACE is trying to micro-manage them. No system can work under this stigma...The entire Corps is pulling for the USACE senior leadership to put aside their stovepipe biases and address these [37] critical issues as a united team." This study went on (p. 41) in its Summary...."ESSC does not recommend that the Corps'

senior leadership resolve all the issues at once. Just the opposite. Using ESSC's work as a guide, the Corps leadership should: validate the issues and their importance, refine the proper sequencing of work to be done, determine which teams will work on each issue, and establish due dates." This is the normal operational procedure to organize work. What resulted?

The study listed 37 critical issues that had to be addressed to establish PM in the Corps, and proposed the use of the early version of the McKinsey 7 S model to "approach issue resolution". This model confused the soft Ss with culture. It left strategy, structure, and systems outside of culture. The study, and subsequent leadership thinking did not use the 7 Ss to systematically change USACE culture. Did anything result from the intent to have the senior leadership work on the 37 critical issues?

In the Summer of 1992 CG Hatch retired, and LTG Williams took over. That summer Bill Robertson wrote two position papers, which some people at the time thought were farsighted. The first "Learning To Change", which described the Corps culture as "stovepipe apartheid", was a picture of bureaucracy. Stovepipe apartheid was described as a congenital affliction which fosters corporate-wide mental blocks that effectively prevent systematic learning and adaptation to change. It was said to thrive in hierarchies, feed on upward reporting and narrow thinking, and smother cooperative teamwork with internal competition and turfism. The second paper, "Changing To Relevance" described the growing importance of ecological and engineering challenges facing the nation that the Corps should be preparing to address. These papers were submitted to CG Williams, along with an offer to resign, so that he could decide whether to continue with Bill's strategic role. In August, 1992 CG Williams accepted Bill's resignation, and the CG also eliminated the role of Associate Chief of Engineers. Eventually, CG Williams also absorbed OSI into ESSC and distributed the OSI staff around the Corps.

Bill's papers had called for a transformation of USACE to a fully cross-functional Program and Project Management team concept, eliminating stovepipes, and implementing TQM throughout. This sudden jolt of reality and prescription for change was rejected by the organization and its leadership. Nonetheless, the Corps continued to move toward PM, driven by the realities of its market and stakeholders.

In 1994, for example, Seattle District wrote its new Business Plan – a concise approach to PM as its core approach. It marketed this with an effective slide presentation, a concise pamphlet, and extensive discussions about this as a culture change. It began to make sense to many Corps employees and it began to be practiced in this district, as in some other districts.

Also in 1994 the SLC took up PM as a major focus. This Easton Conference (referred to as St. Michaels 2) realized that the approach of St. Michaels 1 was not effective. They started over. First, they got all senior leadership involved, including heads of CW / MP. LTG Williams was newly the CG and he decided to make it happen. He asked about skills, rewards, etc. He got HR, and others, involved in an 18 point plan. What became of these efforts?

Progress was slow. In Oct., 1997 CG Ballard embraced PM as the USACE Project Delivery Process and made a number of moves to move PM forward. For example, he gave Steve Browning the assignment to be a PM advocate and develop a coalition of leaders to make PM happen. This contributed to momentum and built a constituency of

advocates, but it was still not becoming the Corps basic way of thinking about and doing projects. During this period people were increasingly becoming aware that the effort to date was focused on structure, creating a stovepipe, roles and responsibilities but that PM was actually a *way of doing business*. It was a business process practiced for years in the private sector, the way employees and the organization relates to and works with customers, and each other. This conceptual shift was important. Corps people started to think about this as the way they should work and relate, not just in terms of the power issues of structure.

The 1998 Baltimore PDT Conference marked another watershed in the movement to PM because people really began to see it as a business process. This high-energy conference had people from throughout the organization, at multiple levels, looking at best PM practices from Seattle, Huntington, and from outside the Corps. For example, people could see Seattle's results: client feedback and quality were positive, they were getting design awards and people were visiting them to learn. This conference on project delivery *teams* involved other stovepipes than E&C, such as HR, RE, RM, and built a constituency of support among them. The idea was growing and dispersing throughout the organization that PM is a business process, a culture of how to work, not just a stovepipe.

In the Summer of 1998 a team took the original PM regulation, of about 500 pages, and reduced it, ultimately replacing it with a new 26 page ER 5-111. Fred Caver and Steve Browning marketed this ER throughout the Corps.

In 1999 Fran Nurthen, HR, and Karen Northrup, NWS, assembled a team to work on what up to that time were numerous, disconnected initiatives intended to reinforce PMBP through education and skills training. There was a great deal of activity and creative work that went into these efforts, and the PMBP curriculum was eventually one result. Although, from the standpoint of training and educating the workforce the results were slow in coming. The team did identify the PM behaviors, the style of leaders and team members, and new learning methods, such as team discussions, that were needed in the new PMBP culture. There was a need found to have team members talk through what these concepts meant. It became clearer that the PMs and the PDTs had this responsibility to be *culture-creators*, not just producers of work products, they had to be active in educating, training, and integrating the workforce as it worked.

In October, 2000 the Seattle PDT conference with CG Flowers clarified the role of first-line supervisors. CG Flowers mandated that PMBP will be implemented by October, 2002 including use of the PMBP curriculum in all Districts; that facilitations will be trained; the BP manual will be used; and P2 software would be implemented. Also in the Fall, 2000 CG Flowers appointed Dan Duncan, Program Manager for PMBP, giving it program status, HQ's funding, and mandating PMP's for all projects.

In the spring of 2001, the USACE Vision and Campaign Plan were published. Soon thereafter, in August of 2001, ER 5-1-11 was finalized. This revised ER 5-1-11, integrated quality requirements in PMBP, and reinforced PMBP as the Corps' business process. In October, 2001, a series of USACE strategic committees were formed. The Process Committee was chartered with the purpose of providing implementation support to the Corps Vision Goal.

APPENDIX 11

CECS Memorandum from COL Prettyman-Beck (Chief of Staff), dated 12 January 2007.
Memo encloses ER 5-1-11, dated 01 November 2006, Subject: Management, USACE
Business Process



DEPARTMENT OF THE ARMY
U.S. ARMY CORPS OF ENGINEERS
441 G STREET NW
WASHINGTON, D.C. 20314-1000

CECS

12 JAN 2007

MEMORANDUM FOR COMMANDERS, MAJOR SUBORDINATE COMMANDS,
DISTRICTS, CENTERS AND LABS

SUBJECT: Revision of ER 5-1-11, U.S. Army Corps of Engineers (USACE) Business Process

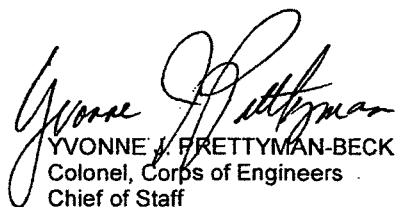
1. ER 5-7-1, Project Management, issued on 30 September 1992, introduced USACE to the concept and rules of project management. ER 5-1-11, Program and Project Management, originally issued on 27 February 1998, applied those project management principles to programs as well, and mandated that all work performed by USACE would follow the Project Management Business Process (PMBP), without exception. The regulation also dictated that all work be "managed using the PM automation information systems (AIS) and PMBP."
2. This led to the unwritten but nonetheless powerful corporate oral tradition that "all work is a project" and that all work must be loaded into our PM AIS. The USACE Business Process imperatives were introduced in the 17 August 2001 revision. We have operated under ER 5-1-11 for almost nine years now, and have learned that the efficiencies of the PMBP are not realized in all types of work. We also discovered the limitations of attempting to manage all work within the PM AIS.
3. In order to align ourselves with industry standards, and in response to the recognition that all work is NOT a project, this revision of ER 5-1-11 clearly defines the concept of "project," as well as the work that we undertake that is NOT a project. It also dictates the process for managing non-project work as well as our corporate data. The new ER requires consistent, timely and accurate use of corporate AIS. All USACE programs, to include project and non-project work, will be captured in P2, however the level of detail will be dependent upon the specific program and category of work.
4. Appendix C of this revision is a graphical representation of the organization of ER 5-1-11, as well as its relationship to other doctrine and processes. Many of the PMBP imperatives are smart business and effective for any type of work; these imperatives have been moved under the USACE business doctrine, which are the overarching philosophy and operation principles that apply to the whole U.S. Army Corps of Engineers. Three additional imperatives relate only to the management of projects (as defined by this regulation) and are then retained under the Project Delivery Process – the PMBP. While the process of managing projects is well-defined, we now have the doctrine in place to develop more detailed processes to manage our non-project work as well as our corporate data.

CECS

SUBJECT: Revision of ER 5-1-11, U.S. Army Corps of Engineers (USACE) Business Process

5. Point of contact for this revision is Mary Gauker, Deputy, Program and Project Management Community of Practice (CECW-CB), 202-761-1811 or Mary.C.Gauker@hq02.usace.army.mil.

FOR THE COMMANDER:



YVONNE J. FRETTEYMAN-BECK
Colonel, Corps of Engineers
Chief of Staff

CECW-CB

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

ER 5-1-11

Regulation
No. ER 5-1-11

1 November 2006

Management
USACE BUSINESS PROCESS

1. Purpose. This regulation establishes policy and doctrine to accomplish all work performed by the U.S. Army Corps of Engineers (USACE).
2. Applicability. This regulation applies to all USACE activities, all USACE employees, and all functions.
3. Distribution. Approved for public release, distribution is unlimited.
4. References.
 - a. AR 5-1, Total Army Quality Management
 - b. AR 11-2, Management Control
 - c. FM 22-100, Army Leadership
 - d. ER 25-1-8, The Community of Practice (CoP) in the U.S. Army Corps of Engineers (USACE), dtd 23 January 2006
 - e. *A Guide to the Project Management Body of Knowledge (PMBOK® Guide) – Third Edition*, Project Management Institute, Inc., 2004
5. Definitions. Appendix A provides definitions to ensure a common understanding of key and essential terms.
6. USACE Business Doctrine.
 - a. **Mission-Focused Execution**. USACE shall make resource decisions based on what is best for the mission, the Nation, and the public while considering the impacts to all customers. Leaders facilitate smart use of resources, technical competency, and innovation across the organization with a focus on mission execution. As public servants, all USACE employees have taken an oath to support and defend the interests of the United States and its citizens. Accordingly, all USACE employees must make decisions based on the best interests of the Nation, the Army, and the public. Recognition of this preeminent responsibility is critical to properly balancing the many interests that USACE faces in executing its missions.

This regulation supersedes ER 5-1-11, Program and Project Management, 17 August 2001

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b. **Teamwork.** USACE operates as a team serving the Army and the Nation. USACE seeks to meet the Nation's needs as efficiently and effectively as possible. To achieve this, people with the right skills and tools must work on the right job. All organizations must act in unison across boundaries to draw on combined strengths and leverage the resources of the public and private sectors to meet national needs. By sharing knowledge, Communities of Practice (CoPs) in USACE build, maintain, and provide expertise and capability to accomplish the USACE mission.

c. **Customer Focus.** The execution of all USACE work, project delivery, and program execution across organizational boundaries must appear seamless to customers. This "one door to the Corps" concept means that any USACE activity that receives a customer request for support must ensure that customer receives the best USACE can provide, putting aside self interests. When a customer develops a trusting relationship with a particular individual or district, the customer may wish to go through that entity for all their Corps support, even if outside that entity's area of responsibility; that entity must ensure they leverage the best and most cost effective assets from across USACE.

d. **Operating Principles.** Five universal operating principles govern all work performed by USACE. It is the responsibility of senior leaders to ensure these imperatives are followed across USACE for all work.

USACE Business Process Imperatives

1. *Plan for success and keep commitments*
2. *Measure quality with the goals and expectations of the customer in mind*
3. *Build effective communications into all activities and processes*
4. *Use best practices and seek continual improvement*
5. *Use corporate automated information systems consistently and accurately*

(1) **Plan for success and keep commitments.** All work shall be managed with a written plan. Planning enables us to fully understand our customers' requirements, as well as build trust with customers and coworkers by clarifying expectations, keeping commitments, and ensuring all products and services are delivered as promised. Each person contributes to success by meeting the requirements of his or her role, regardless of functional area or echelon within the organization. People may contribute to mission success individually, as part of a team, or indirectly as a provider of support services.

(2) **Measure quality with the goals and expectations of the customer in mind.** Quality is the degree to which a set of inherent characteristics fulfills requirements. USACE strives to meet or exceed the goals, objectives, and expectations of the customer, while complying with legal obligations and administration policy. All employees contribute to our ability to succeed. Each person is responsible and accountable for the timeliness and quality of his or her work. Quality is managed through the Plan-Do-Check-Act cycle, which is described at Appendix B.

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(3) Build effective communications into all activities and processes. USACE utilizes effective communication to interact internally as a team and externally with partners, stakeholders, and customers. Communication is essential to foster: cooperation; focused understanding of requirements and expected outcomes; and the continual improvement to the business processes that are so vital to continued success. Effective communication is critical to the meaningful exchange of ideas, desires, requirements and plans. USACE will make relevant information fully and readily available consistent with law and national security interests.

(4) Use best practices and seek continual improvement. USACE strives to do the right things, the right way, for the right reasons, and to constantly improve. Evaluating performance during and after completion of work can produce opportunities to further improve business processes, in terms of execution, productivity, cost effectiveness, streamlined processes, timeliness, quality, and customer service. As a learning organization, USACE uses CoPs to standardize common procedures and facilitate sharing of knowledge and best practices. CoPs simplify working across boundaries and incorporating lessons learned. Before beginning any new project, activity, or service, each individual shall check for applicable lessons learned and best practices in USACE lessons learned databases.

(5) Use corporate automated information systems consistently and accurately. Consistent, timely, and accurate use of corporate automated information systems (AIS) is necessary to ensure data validity, integrity, and accessibility. Access to meaningful and accurate information is paramount to managing our programs, projects, and meeting customer commitments; data stored within our corporate AIS help execute enterprise level business processes and provide decision support. All data must be managed in such a fashion to achieve interoperability as well as regional and corporate visibility of essential information that can be seamlessly shared across USACE, its customers, stakeholders, and partners. Each and every individual is responsible for data quality in the corporate AIS. For example, different team members may be responsible for the integrity and validity of data in Corps of Engineers Financial Management System (CEFMS,) Resident Management System (RMS,) Real Estate Management Information System (REMIS,) Facilities and Equipment Maintenance System (FEMS,) Procurement Desktop 2 (PD2,) Design Review and Checking System (DrChecksSM), Project Management Information System 2 (P2), and other AIS.

e. All work accomplished by USACE is considered part of a program. A program is a collection of related projects, services, routine administrative and recurring operational processes, or some mixture of these. Programs are executed to provide projects, products, and services for both internal and external customers. Programs can be organized by customer (internal or external), appropriation, similarity of scope, or by other unifying characteristics. Programs shall be managed in accordance with the overarching principles of the USACE business process.

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7. Project Delivery Process. A project is *a temporary endeavor undertaken to create a unique product, service, or result*.¹ The Project Management Business Process (PMBP) is the fundamental method used to deliver quality projects at all echelons of USACE.

a. Central Tenet of PMBP. The heart of the PMBP is results-focused teamwork. We draw on the diverse resources of USACE worldwide to assemble strong multi-disciplinary teams, unconstrained by geography or organizational boundaries, to best meet the customers' needs, and the national/public interests. This regulation empowers Project Delivery Teams (PDTs) with the authority and responsibility for delivering quality products and services.

b. PMBP Imperatives. In addition to the five USACE business process principles, there are three imperatives that govern the successful completion of projects.

PMBP Imperatives
1. <i>One project, one team, one Project Manager (PM)</i>
2. <i>Manage all projects with a Project Management Plan (PMP)</i>
3. <i>The Project Delivery Team (PDT) is responsible for project success</i>

(1) *One project, one team, one Project Manager (PM).* Each project is assigned to one PDT, with a single PM for management and leadership during the life cycle of the project. Senior leaders select the PM based on the individual's abilities to best lead the specific project without regard to assigned organizational element. Generally, the PM will reside in the geographic area of responsibility, but can be elsewhere as needed to meet project requirements. The PDT shall consist of everyone necessary for successful development and execution of all phases of the project. The customer is an integral part of the PDT. The PM is responsible for ensuring that the necessary disciplines and perspectives are represented within the PDT. The PDT may be drawn from more than one USACE district or activity and may include specialists, consultants/contractors, stakeholders, or representatives from other federal and state agencies. Team members shall be chosen for their skills and abilities to successfully execute a quality project, regardless of their assigned functional or geographic locations within USACE. Virtual and matrix teams shall be used to align USACE efforts and focus on quality project delivery. The team will expand to include all necessary expertise on a specific issue and may include a vertical aspect encompassing the MSC and headquarters.

¹ Project Management Institute, *A Guide to the Project Management Body of Knowledge (PMBOK® Guide) – Third Edition*, Project Management Institute, Inc., 2004. Copyright and all rights reserved. Material from this publication has been reproduced with the permission of PMI.

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(2) *Manage all projects with a Project Management Plan (PMP).* To meet mission objectives, each project is managed under a project management plan (PMP). A PMP is a roadmap for quality project delivery. The PM and the PDT work with the customer early in the project scoping process to determine what the customer needs and to refine those requirements in light of safety, fiscal, schedule, legal, and other constraints. The PDT shall measure its success against the expectations documented in the PMP, which is an agreement between USACE and the customer that defines project objectives and project-specific quality control procedures appropriate to the size, complexity, acquisition strategy, project delivery, and nature of each product. It should be signed by all PDT members, including the customer, to document their commitment to project success. To be an effective management and communication tool, the plan must be a living document that is updated as conditions change. The PM will inform customers when their requests will cause significant scope, schedule, or cost impacts, and will coordinate any changes to the project with the customer and PDT, updating the PMP as appropriate.

All work is managed using the PMP and all PDT members share this responsibility. The PM and PDT will develop and maintain the PMP at a level of detail commensurate with the scope of the project. PMPs should be concise and succinct, but address all processes and areas necessary to ensure effective project execution. Minimum requirements for project management plans are found in the PMBP Manual. Management of similar projects of limited scope using a Program Management Plan (PgMP) rather than an individual PMP for each is acceptable. However, when a project under a program is of such scope that it is no longer manageable under the PgMP, it shall be managed with a separate PMP.

(3) *The Project Delivery Team (PDT) is responsible for project success.* The PDT is empowered and supported by senior organizational leaders to make project decisions within the bounds of the approved PMP. Led by the Project Manager, they are empowered to act in unison across organizational boundaries focusing on consistent service to customers. Senior leaders are responsible to ensure the team has the resources, tools, skills, and experience needed to deliver a quality project. Though projects may include many distinct, separate phases, they must be approached from an integrated, life-cycle perspective focused on meeting the project's goals, objectives, and expectations.

The PDT shall work with customers to determine and provide what is expected and must strive to deliver products and services that are in the public interest. The needs and expectations of customers and stakeholders shall be balanced, while considering available resources and life-cycle requirements. Expectations of the beneficiaries and/or stakeholders of projects are considered when determining quality objectives. USACE will not compromise professional standards. Requirements that exceed mandatory standards are negotiated with the customer based on the project's complexity, available resources, and the degree of risk the customer and USACE are willing to assume.

8. Process for Other Work.

a. Recognizing that all work is not a project, several key USACE functions are organized around ongoing, recurring, and cyclical work rather than discrete projects. Other non-project work can include some operations and maintenance (O&M) activities at completed works, regulatory permitting, flood plain management, general and administrative support, and real

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estate actions. However, some of this work (eg. major maintenance, some regulatory work, and real estate) is a project and should be managed in accordance with the Project Delivery Process.

(1) For example, in the Real Estate function, a major land acquisition, land disposal, and BRAC-related acquisitions are projects, whereas outgrants, renewal of recruiting leases, and management of leases are not.

(2) Fielding a new system is a project in the Corporate Information world, but records management, maintaining the library, and operating and sustaining a system are other work.

(3) Research and Development (R&D) Projects include basic research (e.g., development of new and advanced inorganic cements that bond to reinforcing materials), applied research (e.g., development of protective measures, decision aids and concepts for base camp protection against terrorist and conventional contingency environments) and demonstration R&D military studies and applied civil works R&D studies (e.g., development of concrete armor unit technology for coastal structures, Core Loc). Additional project examples include civil (e.g., development of the Regional Internet Bank Information Tracking System for EPA to assist in day-to-day mitigation banking business) and military (e.g., developed and produced for the Army Environmental Center as an alternative to lead bullets for use on small arms training ranges) reimbursable studies for other federal agencies and state and local governments. Examples of non-project work include items such as Corps of Engineers Enterprise Infrastructure Services, (which provides for the 24 hours a day, 365 days per year primary information technology infrastructure for USACE,) the day-to-day maintenance and administrative oversight of the R&D grounds and facilities, and routine/redundant laboratory testing/analysis.

(4) Most business lines within USACE Operations undertake both project and non-project work:

(a) Creation of Level 1 inventories and development of an original master plan are projects for the Environmental Stewardship and Environmental Restoration business lines, while periodic updating and maintaining those plans are "other work."

(b) In the Recreation arena, a major park upgrade is a project; operating a visitor center and operation/administration of a recreation area are non-project work.

(c) Examples of projects in the Navigation and Flood Coastal Reduction Business Lines are rehabilitation of a lock, restoration of a beach, and large, multi-year or event-driven dredging. Examples of non-project work in this area include dam safety inspections, lock dewatering, lock and dam operation and maintenance, and annual or routine recurring dredging occurring under a single contract.

(d) Reconnaissance studies and feasibility studies and creation of a watershed plan are projects in Planning, whereas on-going watershed planning and flood plain management are both non-project work.

(e) Regulatory projects include individual/standard permit actions and Environmental Impact Studies (EIS), and wetland delineation. Permit enforcement and handling administrative appeals are examples of non-project work.

(f) Within the Emergency Management/Readiness function, Disaster Recovery and Response would be considered a program; however, within that program are individual recovery (long-term restoration of the environment for people) projects such as Debris Removal,

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Temporary Housing, and Temporary Roofing. Examples of "other work" are the response (i.e. immediate 30 days or less life-saving) missions of Procuring and Providing Ice and Water, Providing Emergency Power, and Urban Search and Rescue.

b. *Like projects, however, this ongoing work is still planned, executed, and controlled.*² In order to support achievement of quality objectives, all activities considered to be other work will be performed in full accordance with the USACE business doctrine described in paragraph 6. Elements of the PMBP as described in paragraph 7 may be used at the discretion of the executing entity. For example instance, multi-disciplinary teams are used throughout USACE to execute non-project work such as normal operations of a recreation area or dam safety inspections.

c. All work will be managed in accordance with a control document (e.g. Program Management Plan (PgMP) or other programmatically specified document) for the purpose of allocating funds and resources, and establishing program goals, objectives, acquisition strategy, and priorities on an annual basis. A PgMP is a necessity when mission success requires synergy and integration between individual projects or activities in a program. When an individual project under a program is of such scope that it is no longer manageable under the PgMP, it shall be managed with a separate PMP.

9. Roles and Responsibilities. HQUSACE, Major Subordinate Commands (MSCs), centers, laboratories, and districts all have direct responsibility for quality and process improvement. All echelons of USACE work together to ensure and enhance the quality of our projects and services. The goal is to create an environment that promotes communication, respect, trust, and cooperation. USACE is a corporate entity operating through Regional Business Centers (RBCs).

a. HQUSACE communicates philosophy and strategic vision through policy allowing subordinates to tailor services on a case-by-case basis. HQUSACE and MSCs employ vertical teaming such as Regional Integration Teams and District Support Teams to address work coordination and policy issues. HQUSACE interacts with national customers, other agencies, and private industry regarding programmatic issues.

b. MSCs manage the RBCs facilitating results-focused operations and utilizing appropriate technical resources and innovative practices. MSCs remove encumbrances to regional excellence. MSCs ensure that customers whose work crosses RBC boundaries receive seamless service and are responsible for vertical and horizontal coordination and integration. MSCs perform quality assurance of the RBC quality processes through periodic evaluations using an integrated approach consistent with the USACE business process.

c. Commanders are ultimately responsible for all that happens or fails to happen in their organizations. Commanders empower their workforces to operate within the framework of the USACE business process in executing the mission. The Commander is the leader of the corporate team, which sets the strategic direction for the organization. Within ERDC, these responsibilities are vested in the Directors.

² Ibid

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d. The Deputy for Program and Project Management (DPM) has programmatic oversight over all work in a District. The DPM is responsible for the vertical and horizontal integration of products to produce the projects and manage programs in accordance with the USACE business process. The DPM provides continuity of corporate leadership in developing and assessing mission and work requirements and in developing corporate programs, plans, goals, and objectives.

e. Senior leaders, working as a corporate team, create the conditions necessary for success through actions and behavior consistent with the USACE business process. The corporate team promotes the long-term success of the organization through strategic planning. District senior leaders within the RBC evaluate workload projections, staffing, technical expertise, and market conditions to ensure that we will be able to support our customers in the future.

f. Middle managers work together at the operational level of the organization, with a focus on executing the current year's mission and planning for the next year. They provide adequate resources and delegate authority commensurate with responsibilities to subordinates to facilitate success and maintain a quality workforce. By working as a team, middle managers can help ensure selection of optimal execution strategies and maintain technical expertise across the RBC.

g. Supervisors at all levels of the organization lead their staffs to implement the USACE business process to successfully execute the mission. They maintain a high level of professional expertise within their organizations and are responsible for the quality of the processes employed to execute all work. They work as a management team to assign work, balance workload and resolve resource conflicts on an ongoing basis.

h. Program managers (PgMs) are responsible for management of unique customer requirements for a set of related projects, services, or activities. They integrate program information and are responsible for making accurate program projections necessary to support workload analysis at the local, regional, and national level. Program managers will often be the Point of Contact (POC) for interaction with the customer on their assigned program. Program managers include Operations Project Managers responsible for the overall O&M of one or more multi-purpose water resource development sites, leading teams that execute the projects or recurring work activities at these sites.

j. The Project Manager (PM) manages scope, schedule, quality, and budget while leading a project delivery team to successful project execution. This individual is the primary interface with the customer and is also the U.S. Army Corps of Engineers' primary internal advocate for the specific project. PMs manage all project resources, information, and commitments, and integrate and focus the efforts of the PDT. The PM's active role as consultant is essential to ensure that the customer's quality objectives are clearly articulated and that the customer understands the essential professional standards, laws, and codes, as well as public trust issues that must be incorporated into the project. In performing these functions, the PMs must operate consistent with their responsibilities as a public servant (federal official). PMs provide PDT leadership and facilitation with responsibility for assuring that the project stays focused on the public interest and on the customer's needs and expectations.

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k. The PDT is responsible and accountable for delivering a quality project to the customer and for ensuring effective, coordinated actions to deliver the completed project according to the PMP. Team members are responsible and accountable to the PDT for the timeliness and quality of their own work, and for keeping commitments for completion of their portion of the project as documented in the PMP, as well as coordination with and keeping all other team members informed. Each PDT member represents their functional organization and must be empowered to make commitments and decisions on that organization's behalf; likewise, each PDT member is expected to communicate back to their functional element all relevant decisions, commitments and expectations.

10. Management Control

a. Leaders at all levels make resource decisions based upon what is best for the mission, while considering impacts to all customers. Management controls, such as quality controls, are the responsibility of the leadership at all levels of USACE, from the District Commander and the MSC Commander, through to the Chief of Engineers. The commanders are responsible for assessing the absence or ineffectiveness of management controls. Whether the weakness is serious enough to be considered material and reported to the next level of command is a management judgment that must be made based on the criteria and other factors outlined in AR 11-2. Reports of material weakness must specify corrective actions taken or planned. The highest echelon receiving the report will evaluate the corrective actions, provide assistance, if needed, and track progress.


b. All echelons are to lead and support efforts to collaborate, measure, manage, and improve the business process in accordance with AR 5-1, AR 11-2, and FM 22-100. Command Management Reviews, performance improvement processes, and standards at regional and national levels will be used to review, validate, and sustain the best business practices.

c. Headquarters, in concert with field offices, will develop and promulgate guidance media with context and examples of the precepts, and representations for a better understanding, implementation, and learning culture of the USACE Business Process.

FOR THE COMMANDER:

3 Appendices

APP A - Definitions
APP B - Plan-Do-Check-Act Cycle
APP C - USACE Doctrinal/Process Hierarchy


YVONNE J. PRETTYMAN-BECK
Colonel, Corps of Engineers
Chief of Staff

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APPENDIX A

DEFINITIONS

Automated Information Systems: A combination of computer hardware and software, telecommunications information technology, personnel, and other resources that collect, record, process, store, communicate, retrieve, and display information.

Community of Practice: A group of people who regularly interact to collectively learn, solve problems, build skills and competencies, and develop best practices around a shared concern, goal, mission, set of problems, or work practice. More information on the various communities of practice in USACE is available from their respective websites.

Customer: Customer as used in this regulation may be a number of people/organizations. In general, the customer is any individual or organization for which USACE delivers projects, or services to meet specific needs. Customers may be either external or internal to USACE.

Deputy for Programs and Project Management (DPM): The civilian deputy to the District Commander. DPM as used in this regulation includes Center positions such as Deputy for Programs and Technical Management and Deputy for Programs and Project Management/Project Delivery Team.

District Support Teams: Cross-functional teams at MSCs that facilitate resolution of issues and champion district causes.

Empowerment: Authority to exercise judgment and take action, with concomitant responsibility for resultant positive or negative consequences.

Functional Organization: Organization structure in which staff are grouped by technical specialty.

Matrix Team: Group of people working across organization boundaries for a common purpose.

Operations:

- a.) The ongoing execution of activities that produces the same product or provides a continuous or repetitive service. The objective of ongoing operations is to sustain something (business, facility).
- b.) Within USACE, the organization that operates and maintains facilities and services that provide river and harbor navigation, flood damage reduction, water supply, hydroelectric power, recreation, environmental and fish and wildlife sustainment, restoration and protection. Its Regulatory mission protects the Nation's waterways and wetlands; and it undertakes disaster relief and recovery work through its Emergency Management/Readiness function.

Process: A series of actions, tasks, or procedures with a common objective to achieve an end or result.

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Program: *A collection of related projects, services, routine administrative and recurring operational processes, or some mixture of these, which are managed in a coordinated way to obtain benefits and control not available from managing them individually.*³ Programs may be categorized by funding source, customer, similarity of scope, or other common criteria for which resources are allocated and collectively managed.

Program Management: *The centralized, coordinated management of programs within available resources, in accordance with applicable laws, policies, and regulations, to achieve strategic benefits and objectives.*⁴ Under program management, programs, projects and non-project activities are aggregated for oversight and direction by the organization's senior leadership.

Program Management Plan (PgMP): A formal, approved, living document used to define program requirements and expectations, including accountability and performance measurements, and guide program execution and control.

Project: *A temporary endeavor undertaken to create a unique product, service, or result.*⁵ Internal services are discrete projects when they are unique and non-recurring.

Project Delivery Team (PDT): The team, led by a project manager, composed of everyone necessary for successful development and execution of all phases of the project. The PDT may be drawn from more than one USACE district or activity and may include specialists, consultants/contractors, stakeholders, or representatives from other federal and state agencies. Team members are chosen for their skills and abilities to successfully execute a quality project, regardless of their assigned functional or geographic locations within USACE. The team will expand to include all necessary expertise on a specific issue and may include a vertical aspect encompassing the MSC and headquarters.

Project Management: *The application of knowledge, skills, tools, and techniques to project activities in order to meet project requirements.*⁶

Project Manager (PM): Assigned to achieve the project objectives, the person who manages scope, schedule, quality and budget while leading a project delivery team (PDT.) Project managers may be assigned to any organizational or geographic element.

Project Management Business Process (PMBP): A fundamental subset of the USACE business process used to deliver quality projects. It reflects the USACE corporate commitment to provide "customer service" that is inclusive, seamless, flexible, effective, and efficient. It embodies communication, leadership, systematic and coordinated management, teamwork, partnering, effective balancing of competing demands, and primary accountability for the life cycle of a project. For more information please visit the USACE PMBP portal at <https://pmbp.usace.army.mil/>

³ Ibid

⁴ Ibid

⁵ Ibid

⁶ Ibid

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Project Management Plan (PMP): A formal, approved, living document used to define requirements and expected outcomes and guide project execution and control. Primary uses of the PMP are to facilitate communication among participants, assign responsibilities, define assumptions, and document decisions to establish baseline plans for scope, cost, schedule and quality objectives against which performance can be measured, and to adjust these plans as actuals dictate. PMP is developed by the project delivery team (PDT).

Quality: The degree to which a set of inherent characteristics fulfills requirements.

Quality Assurance (QA): That part of quality management focused on providing confidence that quality requirements of a project, product, service, or process will be fulfilled. QA includes those processes employed to ensure that QC activities are being accomplished in accordance with planned activities and that those QC activities are effective in producing a product that meets the desired end quality.

Quality Control (QC): That part of quality management focused on fulfilling quality requirements of a project, product, service, or process. It includes those processes used to ensure performance meets agreed upon customer requirements that are consistent with law, regulations, policies, sound technical criteria, schedules, and budget.

Regional Business Center: An MSC and its districts acting together as a regional business entity. This vertical and lateral integration of organizational capabilities, resource sharing, technical expertise, project management, and project delivery broadens and enhances the range of services and quality within the region.

Regional Integration Team: Cross-functional teams at HQUSACE that facilitate resolution of issues and champion RBC causes.

Stakeholders: Individuals and organizations who are involved in or may be affected by the project.

Vertical Team: Team that is composed of personnel from different command levels in the organization.

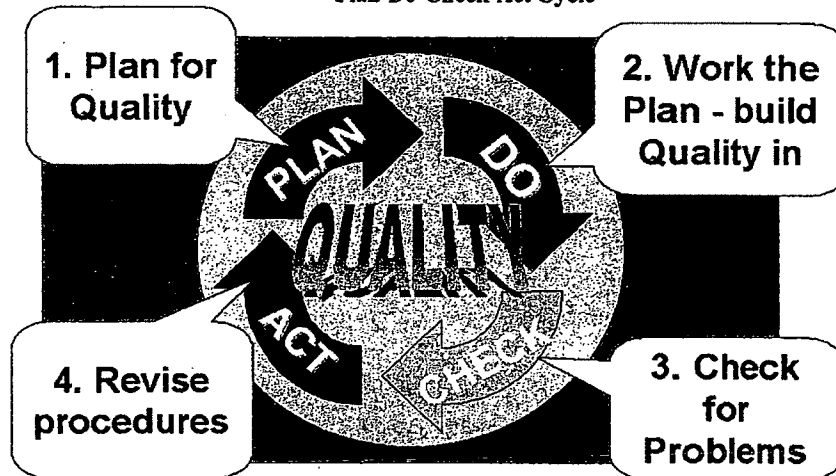
Virtual Team: Team working across geographic or organizational boundaries without physical co-location.

Work: Sustained physical or mental effort or activity directed toward the production or accomplishment of something. Work of a business can generally be categorized as either projects or operations, although there may be some overlap.

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APPENDIX B

Plan-Do-Check-Act Cycle



1. Plan: We assign the right people with the right skills and tools to work on the right project. We plan for and build quality into our work at each step in the process. We use a systematic planning process to identify the customer's quality goals; develop an effective plan and processes to achieve those goals, and measure our attainment of the quality objectives. We help our customers to express their desired outcomes in objective, quantitative terms. We communicate with our customers to ensure mutual understanding of standards and processes. It is essential that the project team, which includes the customer, understand the costs and benefits of selected quality standards and the processes to be used to achieve mutual objectives. We identify appropriate standards and determine how to achieve them, consulting lessons learned on previous projects as appropriate. We consider the risk factors and complexity of each project, and adapt processes to provide the requisite level of quality. We consult, advise, and reach consensus with the customer before we do work. We use value engineering when it serves to increase the quality of our projects. The product of the planning phase is the project management plan (PMP).

2. Do: We then do the work according to approved PMPs and documented procedures. Our procedures are developed and documented with sufficient detail to ensure that actions are performed correctly and completely each time. Project and program execution is a dynamic process. The team must communicate and adapt to changing conditions and modify project plans to ensure project objectives are met. Quality management consists of executing a well-conceived and continually updated PMP.

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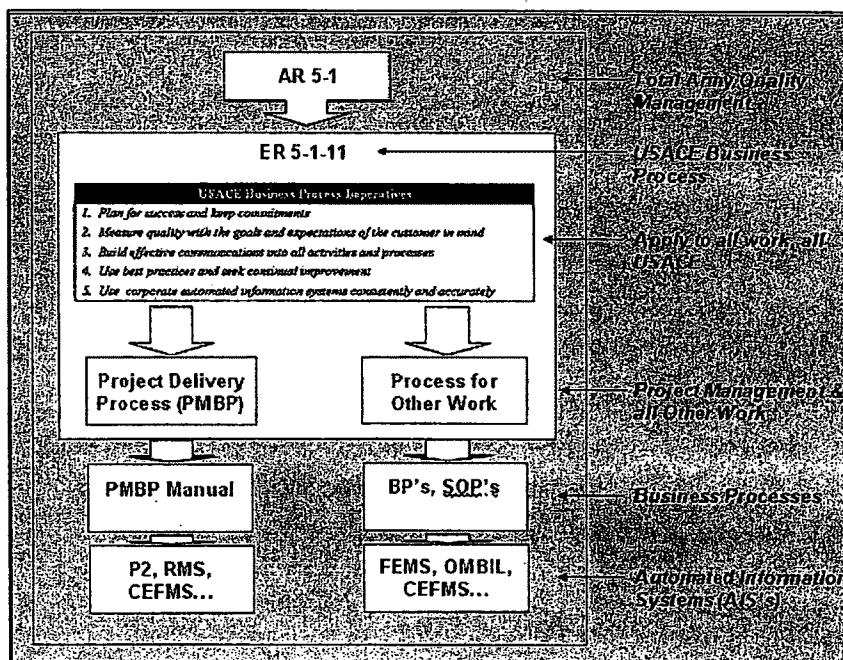
3. **Check:** We perform sufficient independent technical review, management oversight, and verification to ensure that we meet the quality objectives documented in the PMP. Team members periodically check performance against the plan and verify sufficiency of the plan and actual performance to meet or exceed agreed-on objectives. After action reviews are conducted to facilitate sharing of lessons learned. Findings are shared with the project teams and other personnel to facilitate continuous improvement.

4. **Act:** We take specific corrective actions to remove the systemic cause of any non-conformance, deficiency, or other unwanted effect. We improve quality through systematic analysis and refinement of work processes. The process of continuous quality improvement leads to the refinement of the overall quality system. Quality improvements include appropriate revisions to quality management plans, alteration of procedures, and adjustments to resource allocations.

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APPENDIX C

USACE Doctrinal/Process Hierarchy



The above is a graphical representation of the organization of ER 5-1-11 as well as its relationship to other doctrine, business processes and AIS's.

The USACE Business Process Imperatives are applicable across the organization, just as we apply the Army values within USACE. These universally applicable principles include, for example: planning for success, measuring goals based on customer expectations, emphasizing effective communications, seeking best practices and maintaining accurate corporate data.

The Project Management Business Process, PMBP, focuses on the management of projects, while other processes focus on the management of other work. Although both types of work share important characteristics applying the most appropriate processes and tools to different types of work will bring greater efficiencies and effectiveness to each.

VITA

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