

Chapter I. INTRODUCTION

A. *Project Administration concepts*

1. Mission Statement

The mission of the Project Design and Construction Administration Staff at El Paso Water Utilities is to implement an improved Project Administration and Management process by defining roles and expectations of personnel involved with Utility engineering and construction projects, optimizing resources, improving communications, and streamlining processes in order to provide the most efficient service to out internal and external customers. This Procedures Manual is a mechanism established to achieve these goals.

2. Description of Project Management

Definition

Project Management is the planning, organizing, controlling, and directing of company resources (money, materials, time, personnel) for the purpose of completing assigned Engineering and Infrastructure Improvement Projects.

Functions

The Project Management Process is an orderly coordinated effort by Utility engineering and functional support staff involved in project specific planning, design, development, and execution of Utility projects, with the goal of completing these projects on schedule, within budget, and of acceptable quality.

Levels of Management

Project **Administration** Management provides for the orderly development, direction, and control of engineering methods, practices, and procedures utilized by project teams relative to established Utility policies and executive directives. Accomplishment of these functions are further enhanced through the support of Contracts, Legal, Finance and Purchasing Staff. Engineering Administrative Personnel and Operations Management participate in the general planning, development, and implementation of the Capital Improvements Program (see Chapter I.B). This process is supported by Executive and Finance Management. The Project Administration process also establishes the requirements, guidelines, and resources of each selected project (planning Level II).

Project **Specific** Management is a process delegated to the project team. This process begins after the project has been authorized by executive management to proceed with the project

development, funds are appropriated through Public Service Board authorization, and the organization of the Project Team, including consultant engineer (or architect), is complete. This level of Project Management involves Utility Project Engineers assigned to the Project Team and becomes applicable beginning in Procedures Task Section 5: Funding and Accounting Process (Chapter II, Section 5). The Project Administration Manager directs all design project management functions and activities of each project team and maintains channels of communication open with other Utility Support Staff relative to each specific project. The Construction Administration Manager undertakes these tasks during the construction period of the project, from bid to closing.

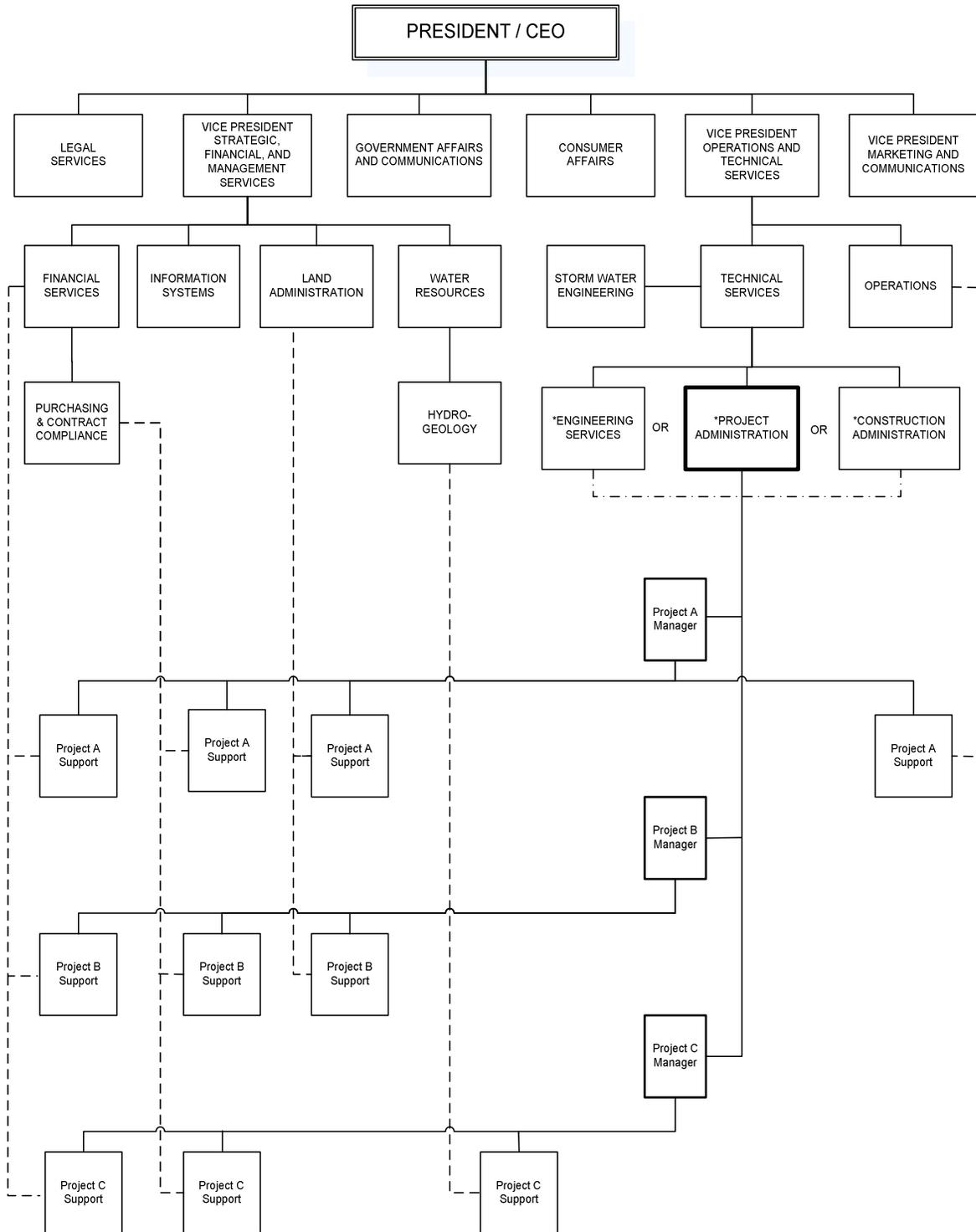
3. Structure and Organization

The success of the Project Administration and Management Process relies on the cooperative efforts of Utility project engineering staff with other internal “functional” disciplines or divisions, working towards a common project goal. Figure 1A illustrates the operational structure of the Utility’s multi-project environment relative to its functional organization. It is a MATRIX organization involving the interaction of the traditional vertical line office workflow, with the horizontal project manager approach where each discipline would ideally report to the project manager. In this matrix approach, however, each functional area of expertise retains full authority and functional responsibility over its staff, while the project manager has limited authority over each functional office, but is still responsible for integration of project efforts across the Utility’s organization. The Project Engineer Manager (PEM), under the guidance and direction of the Project Administration Manager (PAM) or Construction Administration Manager (CAM), has total project responsibility and accountability, is the focal point for his assigned project activities, and is central to this interactive effort.

The Project Administration and Construction Administration offices are integral part of the Utility’s Engineering Department under the Technical Services Division. These are two of five functional Utility sections providing such services under the direction of the Chief Technical Officer (CTO) who reports to the Vice President of Operations and Technical Services (VP) (see Figure 1A). Two key players in the Project Management effort are the Purchasing Agent and Contracts Administrator, who work very closely with project management staff in providing expertise in contract negotiation matters, data reporting, procedural advice, bid document review, construction change order and payment processing, and construction activities support. Other important project support is provided by the Engineering Services Manager and his staff, Water Resources, Land Administration, Legal, Operations, and Public Affairs.

An example organizational chart for a typical “Parallel Project Management” process is shown in Figure 1B. In parallel project management, Utility sections other than the primary Project Management staff must assume the same responsibilities as described for the Project Administration Manager (PAM), Construction Administration Manager (CAM), and the Project Engineer Manager (PEM) in the procedures section of this manual.

Figure 1A: Matrix Project Organization

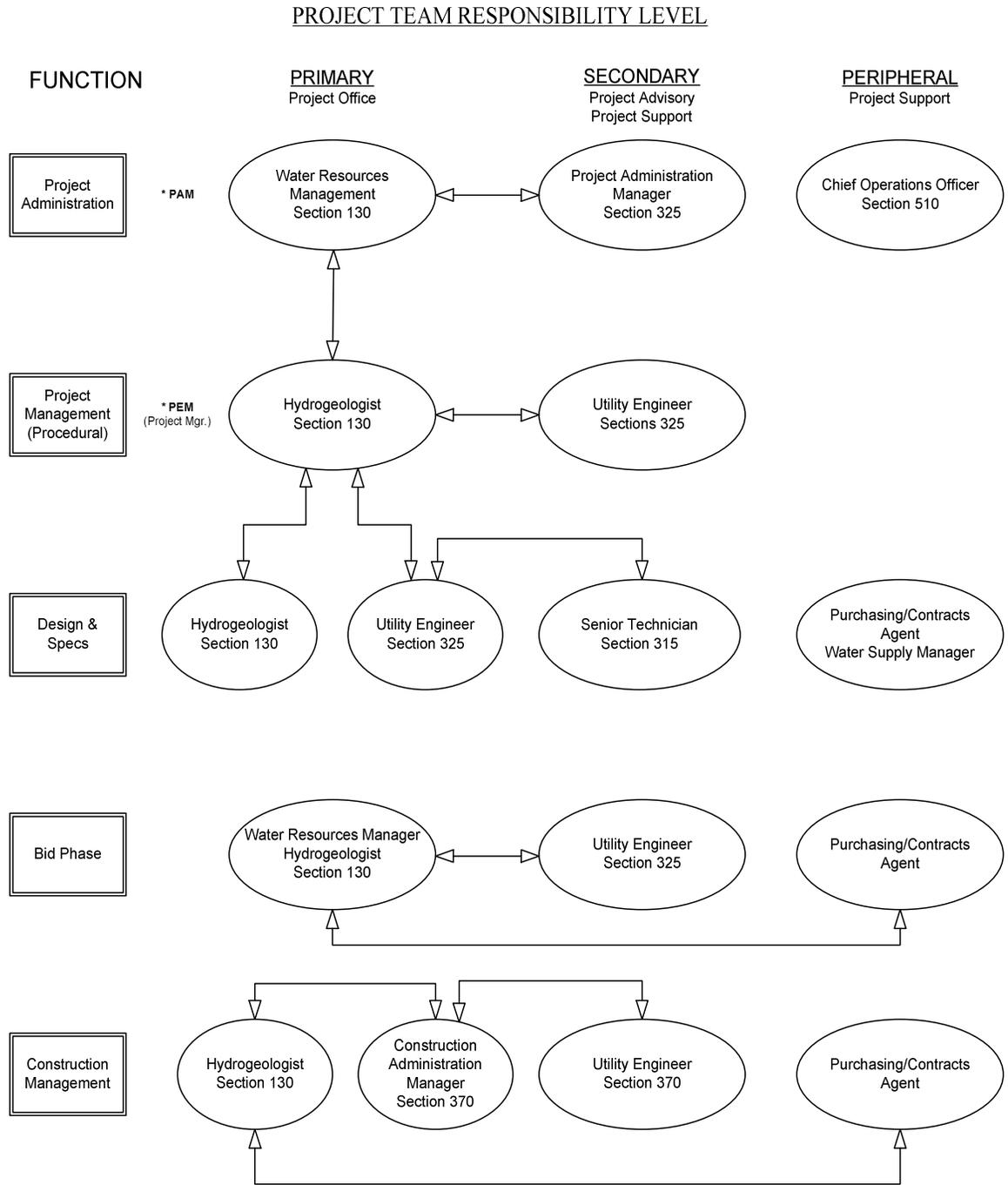


* For Parallel Project Management, substitute the job title assigned project management responsibility and authority

Support by the above other sections not shown for simplicity

Figure 1B: EPWU Parallel Project Management Organization

Example: Sample Well Project.



* PAM (Project Administration Mgr) and PEM (Project Engineer Mgr) with roles and responsibilities designated in the Utility's "Procedures Manual for Administering and Managing Engineering and Construction Projects".

Parallel Project Management (PPM) applies to those projects assigned to Utility Divisions, outside of Engineering Project Administration section, which include Operations, Water Resources Management, and other Engineering Staffed Sections. Under this PPM concept, the Division Manager or his assignee fulfills the role of the Project Administration Manager.

Figure 1B EPWU Parallel Management.vsd

B. Process Overview

1. Project Life Cycle

Projects typically are “born” when a sponsoring division within the Utility organization identifies what may be either an external or internal customer need and accepts the challenge to accomplish the goal through project efforts. The Utility’s “Project Life Cycle” goes through various phases involving planning, development, execution, and closeout.

2. Planning Level One

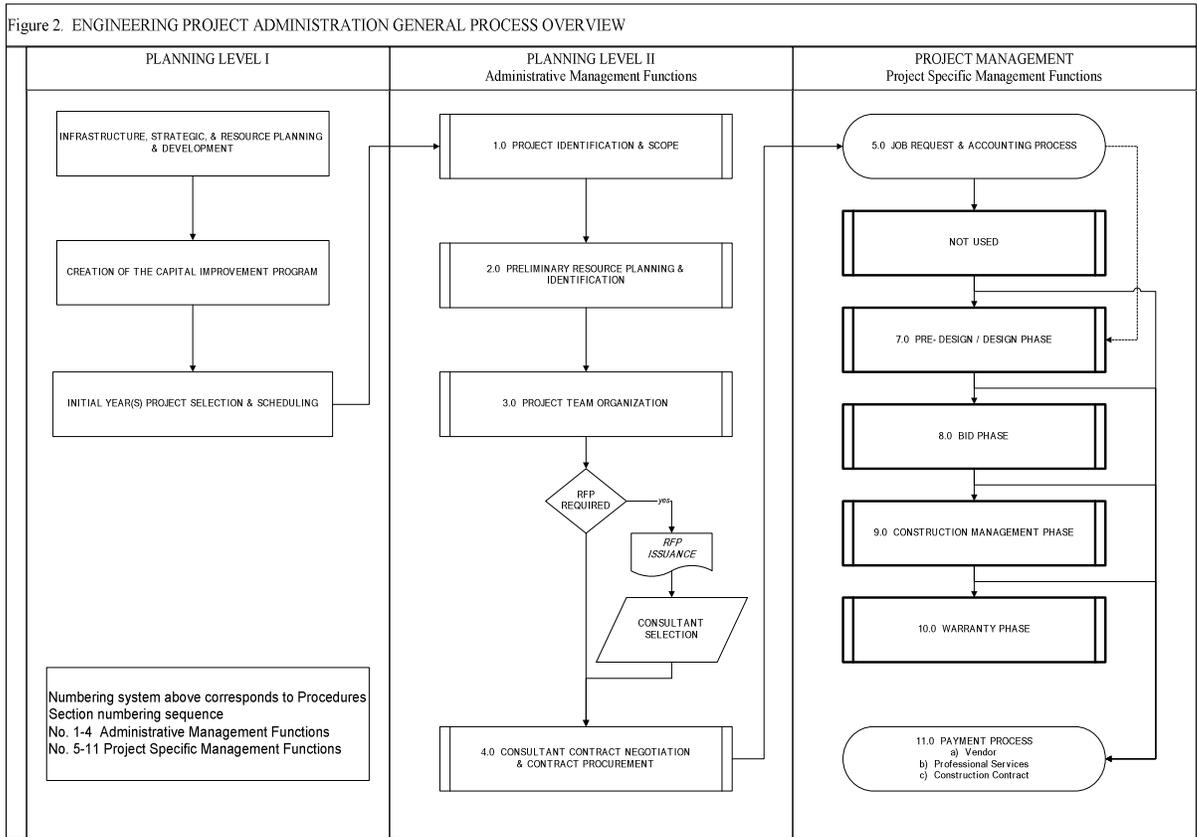
The project cycle begins with three general processes that are the elements of conceptual *Planning Level I* efforts (Figure 2). The first process, **Infrastructure, Strategic, and Resource Planning and Development**, involves the interaction of utility executive and administrative personnel from engineering, operations, strategic development, and finance divisions. Input and feedback on specific needs are identified by service levels related to system problems, system needs, regulations and government mandates, growth and land development needs, and providing better customer service. An example of the Utility’s weighting system used for *Capital Requirements Planning* can be found in Appendix B.

In **Creation of the Capital Improvement Program**, projects are then identified and categorized into a Capital Improvement Program (CIP) numbering system, prioritized, phased by action year, and budget costs assigned. A specific budget requesting Public Service Board new or additional project funding for the upcoming fiscal year, which begins March 1, is included in this CIP. Presentation of the CIP along with the overall Utility operational budget is made to the Public Service Board, which provides feedback for revision, and subsequently approves a final version of the Budget that includes the CIP.

The final step in this planning level involves Executive Management directives to Engineering for **Initial Year Project Selection and Scheduling**. Key projects are identified that will require further planning, development, and action covered by the next Planning Level II process.

3. Planning Level Two

In the *Planning Level 2* processes, the Project Administration office identifies the specific **project scope**, maps out and ties down the **preliminary resource** requirements (funds, personnel, schedules, and milestones), establishes the **Project Team** by designating internal project management support, and, through an **RFP Process** involving a Selection Committee, acquires a consulting engineer/architect to join the project team. A **contract** is then **negotiated** with the selected consultant involving specific Task Orders for Design, Bidding, and Construction Management of the project. The Project Administration Manager may utilize his assigned project engineer to assist him in the above administrative functions.



4. Project Management

The final aspect of this process overview involves Project Management of the actual project. This involves project team interaction that begins with the generation of an internal **Job Request and Accounting Process** to encumber funds for Engineering Services such as **Preliminary and Final Design, Bidding, Construction Management**, follow-up **Warranty**, and all related activities involving the actual construction. A payment Process is included in this workflow that involves Purchase Order issuance, Invoice and Receiving Ticket processing, and Payment Authorization.

The specific Project Management and Administration procedures described in Chapter II are numbered by sections that coincide with the flowchart shown in Figure 2, beginning at the Planning Level II process and continuing into the Project Management processes described above.