Appendix 3: Project Management Substation Guidelines (General Process Flow Template)

Checkpoint Methodology

The schedule is issued prior to the "go" decision. It covers the duration of the project. It is designed as a tool for the project manager to communicate with the external world.w

PMM-1 Project Initiation Responsibility Matrix

Legend

- ○ General Management Responsibilities
- ● Specialized Responsibility
- △ May be consulted
- ▲ Must be consulted
- ☐ Must be notified
- ■ Must Approve

PMM-2 Project Planning Responsibility Matrix

Legend

- ○ General Management Responsibilities
- ● Specialized Responsibility
- △ May be consulted
- ▲ Must be consulted
- ☐ Must be notified
- ■ Must Approve

PMM-3 Project Execution Responsibility Matrix

Legend
○   General Management Responsibilities
●   Specialized Responsibility
△   May be consulted
▲   Must be consulted
☐   Must be notified
▣   Must Approve

PMM-4 Project Controlling Responsibility Matrix

Legend
○   General Management Responsibilities
●   Specialized Responsibility
△   May be consulted
▲   Must be consulted
☐   Must be notified
▣   Must Approve

PMM-5 Project Closing Responsibility Matrix

Legend
○   General Management Responsibilities
●   Specialized Responsibility
△   May be consulted
▲   Must be consulted
☐   Must be notified
▣   Must Approve

INITIATION

Background Information

Project managers not only must rely heavily upon the traditional on-time, on-budget, and on-quality performance measures, but also with the added *on-strategy* dimension central to managing project success and to alleviate leadership challenges. A quadruple constraint is created with the insertion of the *on-strategy* dimension. The main thrust of this point is illustrated in Figure 1.

Figure 1. Project dimensions
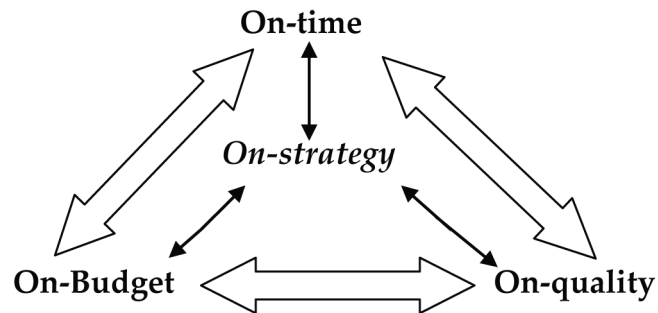
Many leadership tasks relate to developing a vision of the project outcome that is practical, yet capable of mobilizing and motivating team members to accomplish the project's goals and objectives. The leadership vision engages stakeholders who are not actively involved in the project; it also inspires them to maintain their support over the project's timeline. The solution-building negotiation approach to defining the scope of a project, and then clearly communicating this to the project team and other stakeholders defines a strategy for realizing the vision, and translating the strategies into operational plans and results. The core problem is the insufficiency of instability of strategy to properly develop and express project vision connected through measurement to tangible business outcomes. Organizations should link planned outcomes to their corporate strategy using a measurement framework, referred to as *performance management*, and is common within corporations.

Details

The process is designed to facilitate the formal authorization to start a new project. It is often performed external to the project's scope of control by the organization, which may blur the project boundaries for the initial project inputs. Clear descriptions of the project objectives are developed, including the reasons why a specific project is the best alternative solution to satisfy the current requirements (Figure 2).

Essential Initiation Items

General Project Charter **Initial**_____ **Date**_____
Project Document (design, estimates) **Initial**_____ **Date**_____
Preliminary Scope Statement **Initial**_____ **Date**_____
Preliminary Work Breakdown Structure **Initial**_____ **Date**_____

Critical Factors in the Project Initiation Phase

- Clear Project Vision
- Clear Goals and Objectives
- Formal Budget
- Executive/Sponsor Involvement

Figure 2. Project initiation process
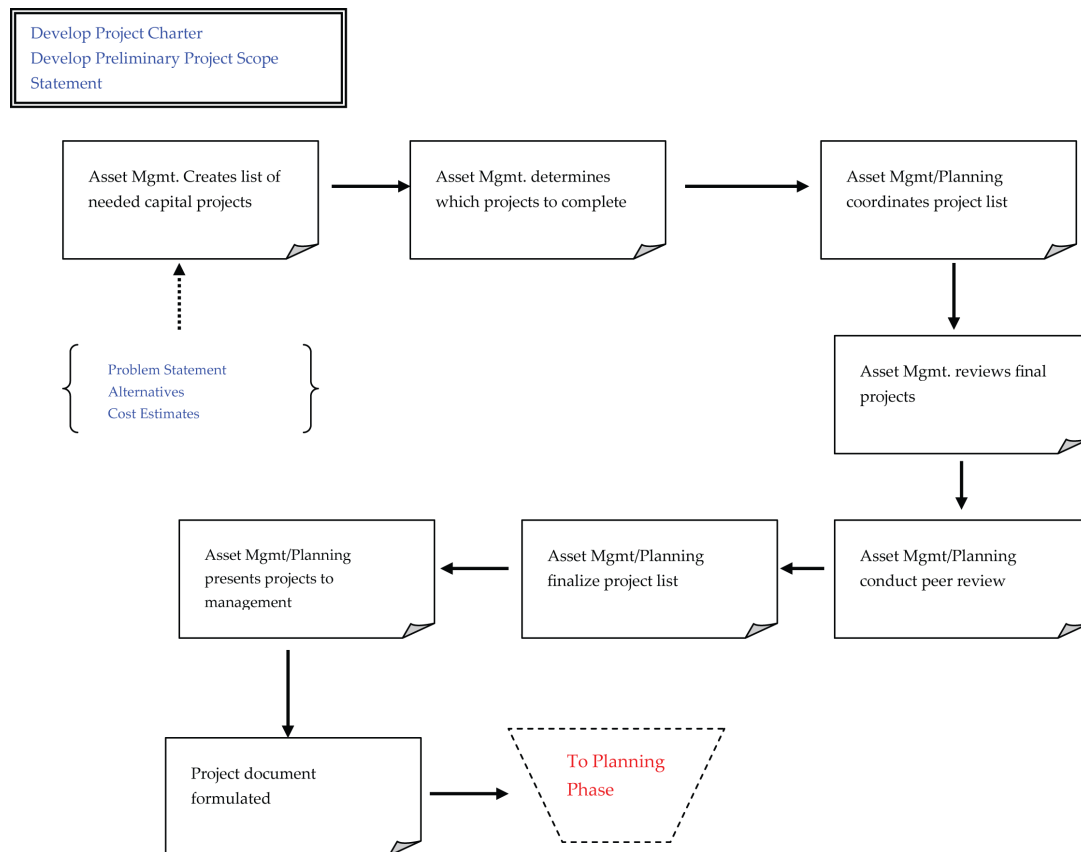
PLANNING

Background Information

The most important responsibilities of a project manager are *planning, integrating, and executing plans.* Project planning is described as a predetermined course of action within a forecasted environment. The project requirements set the milestones on the schedule. The planning must be systematic and flexible enough to handle unique activities. The course of action must be disciplined through reviews and controls. Moreover, the process must be capable of accepting multifunctional inputs in order to achieve the desired results. The nine (9) major components of planning are:

- **Objective:** A goal, target, or quota to be achieved over time.
- **Program:** Strategy followed/major actions taken in order to achieve objectives.
- **Schedule:** A plan showing activities/accomplishments started/completed.
- **Budget:** Planned expenditures required to achieve or exceed objectives.
- **Forecast:** A projection of what will happen by a certain time.
- **Organization:** Positions/duties/responsibilities to achieve objectives.

- **Policy:** Guide for decision-making/individual actions.
- **Procedure:** A detailed method for carrying out a policy.
- **Standard:** A level of performance defined as adequate or acceptable.

Details

The process is designed to gather information from several sources with each having varying levels of completeness and confidence. This process identifies, define, and mature the project scope, cost, and the project activities that occur within the project. As new project information is discovered, additional dependencies, requirements, risks, opportunities, assumptions, and constraints will be identified (Figure 3).

Figure 3. Project planning process
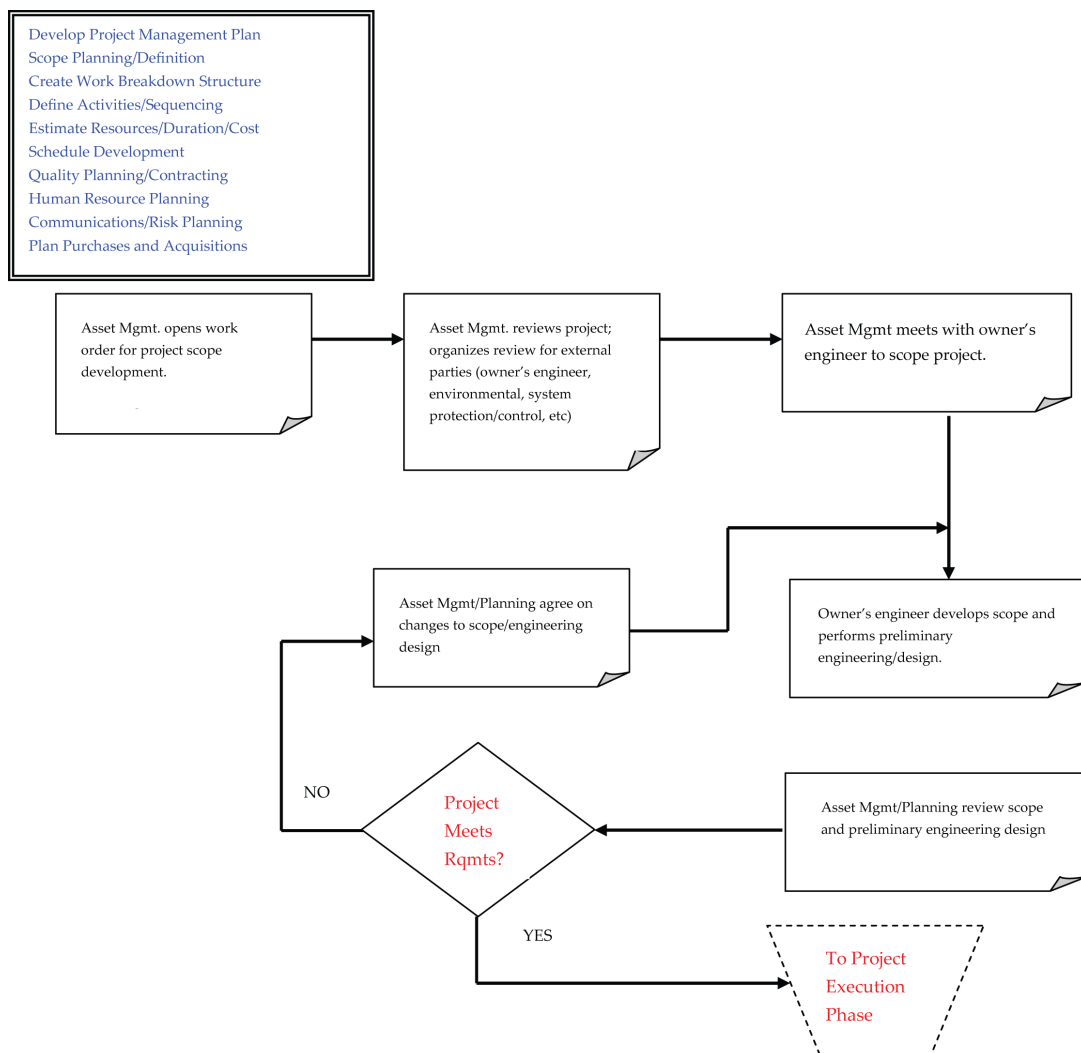
Essential Planning Items

Scope Documents **Initial**_____ **Date**_____
Approved Work Orders **Initial**_____ **Date**_____
Approved Purchase Orders **Initial**_____ **Date**_____
Work Breakdown Structure **Initial**_____ **Date**_____
Engineering Design Package **Initial**_____ **Date**_____
Project Schedule **Initial**_____ **Date**_____
Project Management Plan **Initial**_____ **Date**_____
Cost/Resource Estimates **Initial**_____ **Date**_____

Critical Factors in the Project Planning Phase

- Clearly communicating project status
- Detailed Project Plan
- Detailed Work Breakdown Structure
- Detailed Staffing Plan
- Adequate Resources
- Appropriate Project Team Structure

EXECUTION

Background Information

The execution phase is a key aspect of the project progress philosophy. The project manager must assemble the required resources and management plans soon after the "go" decision is made. By demanding that project team members link their own actions and decisions with the overall intended strategy of the project (an extension of the corporate strategy) can assist with *on-strategy* project execution. It extends a virtual leadership presence, which injects itself into every critical project event and decision. The associated administrative tasks involved in this phase (work orders, bid documents, status reporting, etc.) are extremely important in project management. Many of the key characteristics of the project (scope, cost, resources, procurement, quality, risk, communication) are identified and highlighted during this phase.

Details

The process is designed to coordinate people and resources as well as integrating and performing the activities of the project in accordance with the prescribed objectives/scope documentation (Figure 4).

Essential Execution Items

Bid Package **Initial**_____ **Date**_____
Contractor Evaluation **Initial**_____ **Date**_____
Work Authorization **Initial**_____ **Date**_____
Project Team **Initial**_____ **Date**_____

Figure 4. Project execution process

Direct/Manage Project Execution
Perform Quality Assurance
Develop Project Team
Request/Select Contractors
Information Distribution

Asset Mgmt. review approved contractors that meet specifications

Asset Mgmt. sends bid package to "short-listed" contractors

Asset Mgmt / Contractor bid meetings

Owner's Engineer provides input

Contractor submit bids

NO

Management Approves?

Asset Mgmt recommends contractor for award

Asset Mgmt/Owner's Engineer Rank bids

YES

Asset Mgmt awards Contract

Asset Mgmt holds "kick-off" meeting with project team

Asset Mgmt opens work orders/issues POs/ develop schedules

To Project Controlling Phase

Project Schedule **Initial**_____ **Date**_____

Critical Factors in the Project Execution Phase

- Good Project Methodology
- Status Reporting
- Appropriate Project Team Structure

CONTROLLING

Background Information

Many project managers are not fully schooled – either in formal academic settings or through on-the-job project experience – to necessarily note the subtle but important difference between perceived power and actual power. Learning to distinguish between *influence* and *control* to achieve results often means the

difference between temporarily controlling an outcome by forced compliance versus creating a lasting change in people's behavior. Some project managers, however, may not see the two techniques as very different. Consequently, project managers eventually conclude that they really cannot be everywhere at once to vet every decision to ensure that the team appropriately conducts itself in performing its roles and realizing the importance of the project. As a result, most managers revert to some kind of *exception-based or situational leadership* method to address ongoing challenges as recommended by established theory. While somewhat effective, this tactic does not completely address the issue. Project managers therefore are taxed to employ a variety of techniques to achieve the desired outcome to include a practical balance between traditional proactive risk management and reactive project troubleshooting.

The proactive risk management approach minimizes the occurrences of anticipated problems to the extent that it is practical to do so. Project troubleshooting minimizes the impact of all unexpected disruptions, both large and small. The project manager's goal should not focus on avoiding risk; the project manager should strive to manage risk to prevent risk from disrupting the project. The aim is not simply risk mitigation and risk avoidance; the manager's goal is the total management of risk – proactively and reactively.

Details

The process is designed for project management procedures associated with initiating, planning, execution, and closing. Corrective or preventive actions are taken to control the project performance. Monitoring includes collecting, measuring, and disseminating performance information and assessing measurements/trends to effect process improvements (Figure 5).

Essential Monitoring & Control Items

Documented Corrective Actions **Initial**_____ **Date**_____
Documented Preventive Actions **Initial**_____ **Date**_____
Schedule/Cost Forecasts **Initial**_____ **Date**_____
Documented Quality Inspections **Initial**_____ **Date**_____
Documented Change Requests **Initial**_____ **Date**_____

Critical Factors in the Project Controlling Phase

- Project Tracking & Control
- Status Reporting
- Good Risk Management Practices
- Contingency Funds
- Clearly Communicating Project Status

PROJECT CLOSE-OUT

Background Information

The orderly closure of a project is an essential function in project management. Projects are considered completed or *closed-out* after the sponsor receives and approves all reports as required by the terms and

Figure 5. Project controlling process
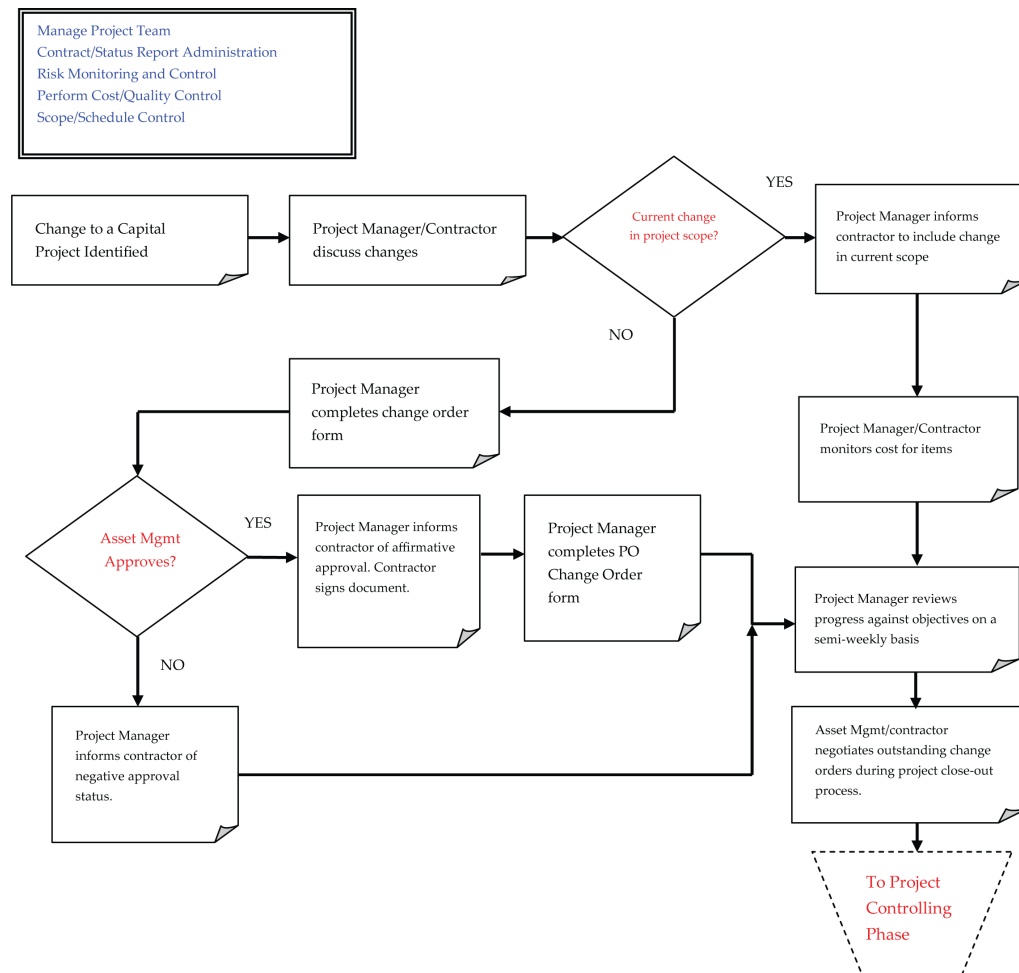
conditions of the award, and notifies the responsible parties of its acceptance and closure of the project. It is the sole responsibility of the project manager to be aware of when reports are due and to submit them by the required due dates. Reports required at the close of a project are generally due within 90 days of the project end date to include:

- A final technical report to include the following:
  - Project manager's name, Project Title, Performance period
  - Significant results of the project
  - Examples of progress
  - Discussion of objectives and deliverables
- A final financial report to include the following:
  - Final Invoices
  - Cash flow close-out
- Resource Performance Evaluation(s) to include the following:
  - Technical difficulties and solutions
  - Activity verification
  - Feedback reports

- Equipment/Document specification updates and associated reports
- Capture Lessons-Learned
- Administrative closure

Additionally, the project manager ensures that the accounting and planning departments are provided with accurate equipment data, costs, and plant-in-service dates.

Details

The process is designed to finalize all activities across all of the process groups to formally close the project (Figure 6).

Essential Closure Items

Close Project **Initial**_____ **Date**_____
Close Contracts **Initial**_____ **Date**_____
Equipment Updates **Initial**_____ **Date**_____
Drawing/Modeling Updates **Initial**_____ **Date**_____
Final Reports **Initial**_____ **Date**_____
Historical Documentation **Initial**_____ **Date**_____

Critical Factors and Questions in the Project Closing Phase

- What was done right?
- What was done wrong?
- What future recommendations can be made?
- How, when, and to whom should the information be disseminated?
- Were the schedules realistic?
- Was the level of detail correct?
- Was it easy to evaluate performance from the schedule?
- Was tracking easily accomplished?

Figure 6. Project closure process

Formal Acceptance Documents
Project Files
Project Closure Documents
Historical Information

Drawings (as-built) sent to owner's engineer

Review, Revise, Approves

Drawings to design build firm

Review, Revise, Approves

Drawings to Lab for review, revise, approve

Issues final drawings (as-built) to: Planning, Operations, Control Center, Lab

Drawings to Document Manager for filing

Responsibility Codes: CL1~6

Construction Complete

System Control Energizes equipment

Notification of completed work and energized equipment to project manager

Project Manager closes file.

Accounting unitization process

- Audits work orders
- Transfers CWIP to plant-in-service via accounting

- Lists Assets
- Associated Lump Sum
- Maintenance Cost

New equipment/facilities recorded in Equipment Management System

New assets tracked against monthly maintenance costs.

Contractor sends final invoice

Project manager/contractor develop final negotiations of change orders/costs

Accounts payable

Accounting reviews all project documentation (Close work orders/POs, tax information, AIA documentation)

Accounting unitization process