



## Project Management (Construction Projects) Part 2

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## Project Management Plan Outline Project Overview

- Background (Authorization / PRD)
- Stakeholders
- Scope / Budget Schedule
- Delivery Strategy

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## Project Management Plan Outline Organization and Staffing

- Position within Owner Organization
- Project Organization
- Key Personnel Job Functions

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## Project Management Plan Outline Project Management and Controls

- Scope Control and Configuration Management
- Budget and Cost Control
- Schedule Control
- Project Accounting
- Records Management

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## Project Management Plan Outline Planning / Conceptual Design Phase Management

- Planning Studies
- Site Investigations
- Permitting
- Environmental Clearance

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## Project Management Plan Outline Final Design Phase Management

- Design Management
- Design Standards
- Design Reviews
- Value Engineering
- Constructability Review

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### Project Management Plan Outline Construction Phase Management

- Construction Management
- Field Inspection
- Third Party Construction
- Change Management
- Construction Safety
- Design Support

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### Project Management Plan Outline Closeout Phase Management

- Test and Start-up
- Operator Training
- Contract Closeout
- Administrative Closeout

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### Project Management Plan Outline Quality Management

- Design QA/QC
- Construction QA/QC
- Final Acceptance and Approval

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### Project Management Plan Outline Risk Management

- Risk Identification and Analysis
- Risk Monitoring and Response

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### Project Management Plan Outline Procurement and Contract Management

- Procurement Plan
- Contract Administration
  - Professional Services
  - Construction
  - Equipment Supply/Install
- Third Party Agreements

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### Project Management Plan Outline Communication

- Project Team
- Community
- Media
- Government

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## Supporting Management Plans

- These plans are added depending on the project size and complexity
- The supporting plans are:
  - Quality Management Plan
  - Risk Management Plan
  - Contract Management Plan
  - Environment Management Plan

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## Supporting Management Plans Quality Management Plan

- ⊙ Describes project procedures for Quality Assurance (QA), Quality Control (QC) and Continuous Process Improvement (CPI)
- ⊙ QA is the planned process the project follows
- ⊙ QC is the monitoring of project results to ensure that these meet the standards
- ⊙ CPI is repetitive process analysis over the project life cycle
- ⊙ Each consultant and contractor must have QA Plans

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## Supporting Management Plans Risk Management Plans

- Following to be addressed:
  - Roles and responsibilities of project staff
  - Identification of project risks
  - Categorization of risks in terms of:
    - probability of occurrence and
    - impact on project cost,
    - schedule,
    - scope, and/or
    - quality

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## Supporting Management Plans Risk Management Plans

- Risk handling through:
  - Assumption – Accepting the consequences of risk
  - Avoidance – Changing the project deliverable design or work method that caused the risk
  - Control – Developing measures to reduce the risk's probability of occurrence
    - Continually reevaluating the risks
    - Having in place contingency plans that lessens the impact of risks
  - Transfer – Sharing or transferring the consequences of risks with others. Ex. Through insurance or warranty

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## Contract Management Planning Contract Procurement Planning

- Procurement is done by the Client/Owner's procurement department as per their laid down policies and procedures
- The PM to see that the procurement department's activities meet the project requirement
- The contract management plan lays down how these are to be achieved.
- The plan incorporates:
  - Types of contract to be used. Choice depends upon nature of service/product purchased

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## Contract Management Planning Contract Procurement Planning

- Who estimates the expected contract price
- Who develops the scope of work for the contract
- Integration of procurement lead time in project schedule
- Incorporating contractual delivery date
- Establishing evaluation criteria
- Definition of procurement procedure

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## Contract Administration Planning

- A contract is an agreement between two parties that is legally enforceable
- Addresses how contracts are to be administered
- The legal implications of their actions in respect to project contract must be understood
- Contract administration should ensure that the contractor meets its contractual obligations
- The Client/Owner's legal rights are to be protected

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## Contract Administration Planning

- The PMP and the CAP identify
  - the roles and procedures to be followed by the project staff for managing the project versus the contract administration
- The following needs to be addressed:
  - Person (s) authorized to direct the contractor
  - How contractor's work is to be monitored
  - Process of changing contractor's work and modification of contract

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## Contract Administration Planning

- Inspection and audits of contractor's work
- Review, approval and payment of contractor's request for payment
- Financial audits conducted on contractor payment
- How contract documents, correspondence and other records are managed

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## Design Phase Management

- In this phase, project requirements are converted to the final design through various intermediate stages
- A bid document is prepared for a contractor to bid on
- The PM should be able to commit sufficient time and must have through understanding of the project scope

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## Design Phase Role of Project Manager

- Review and approve design concepts, preliminary engineering and final design
- Provide and coordinate design review comments
- Participate in VE and Risk Assessment sessions
- Manage the design consultant's efforts
- Monitor design costs and schedule
- Oversee QA
- Approve baseline capital cost and schedule
- Approve construction bid package

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## Design Phase Role of Design Consultants

- Establish design criteria and assess and address project risks
- Prepare conceptual design and preliminary engineering
- Estimate capital cost and construction schedule
- Prepare final design drawings and specifications and coordinate design submissions and reviews
- Develop and apply internal QA/QC criteria for the review of deliverables
- Produce final design drawings and specifications for the construction bid package

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## Design Criteria

- The design team will develop the design criteria based on scope of work
- Engineering analysis will establish a range of acceptable criteria or standards
- The PM will review the service characteristics and site constraints to ensure that project requirements are met
- The PM should seek inputs from all stakeholders and finalize the design criteria
- Once approved, it should not normally change to avoid serious implications on schedule and cost

## Design Criteria Document Outline

- An outline of the design criteria document is as under:
  - Site Work
    - General Description
    - Utility Services requirement and availability
    - Landscaping
    - Site Utilities
  - Discipline-wise Design Criteria
    - Civil/Site/Utilities
    - Site Lighting

## Design Criteria Document Outline

- Architectural
- HVAC
- Plumbing
- Fire Protection
- Fluid Dispensing
- Waste
- AC Power
- Interior Lighting
- Communication and Special Systems

## Conceptual Design

- These are graphic plans based on functional requirements and safety
- Determines “look and feel” of the project when it is completed
- Output of the conceptual design is a set of:
  - Architectural plans
  - Elevations
  - Landscaping plan,
  - Site boundary
  - Topographic survey

Thank you