Frontier Energy Services, LLC

Managing Project Transitions

Energy Pipeline Management Summit

August 26 - 28, 2019 New Orleans, Louisiana






Overview

Frontier Energy Services, LLC

Transitions

- Overview
- Discipline Transitions
- Functional Transitions
- Project Phase/Gate Transitions
- Transition Pitfalls
- Wrap Up

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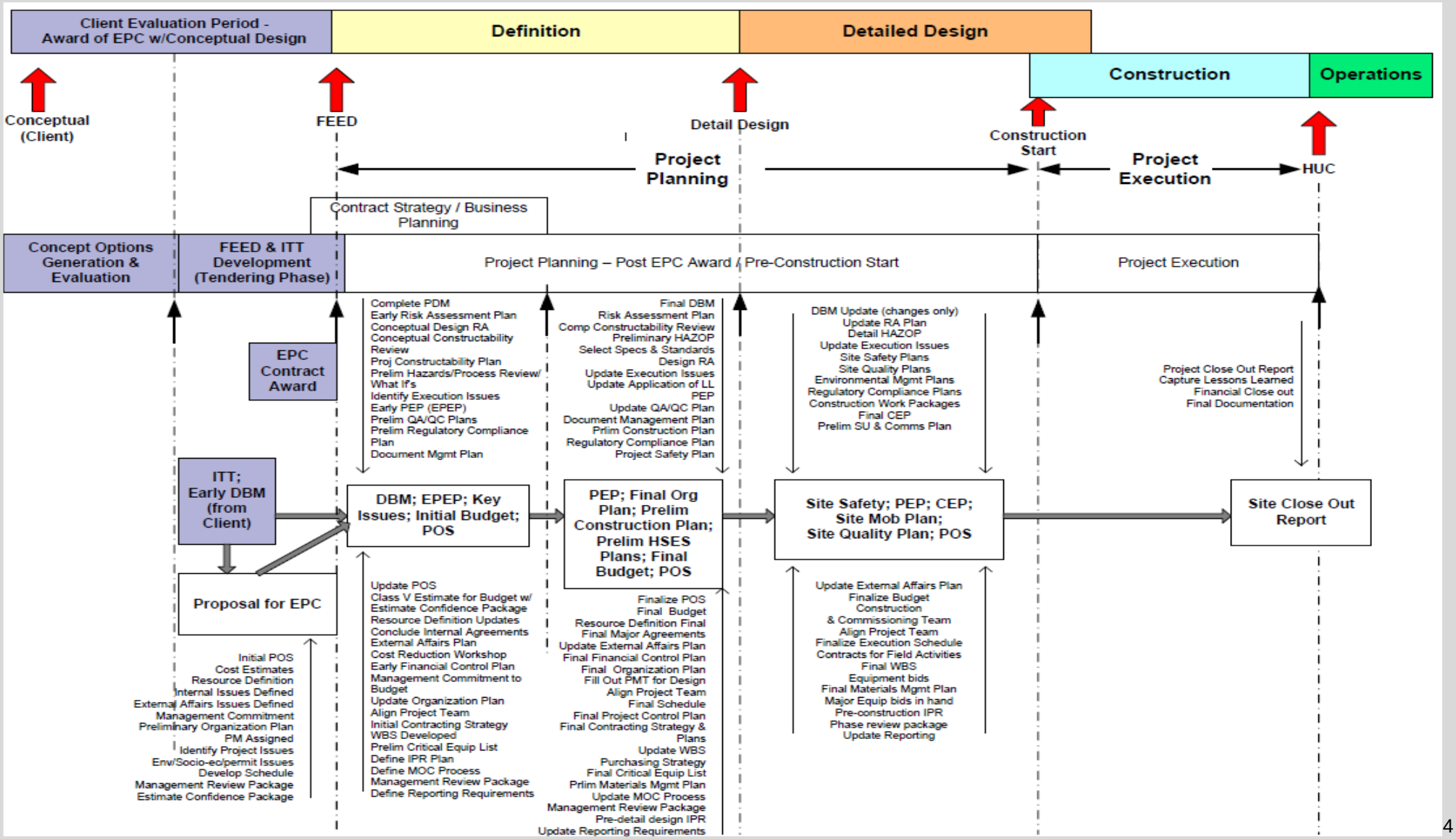
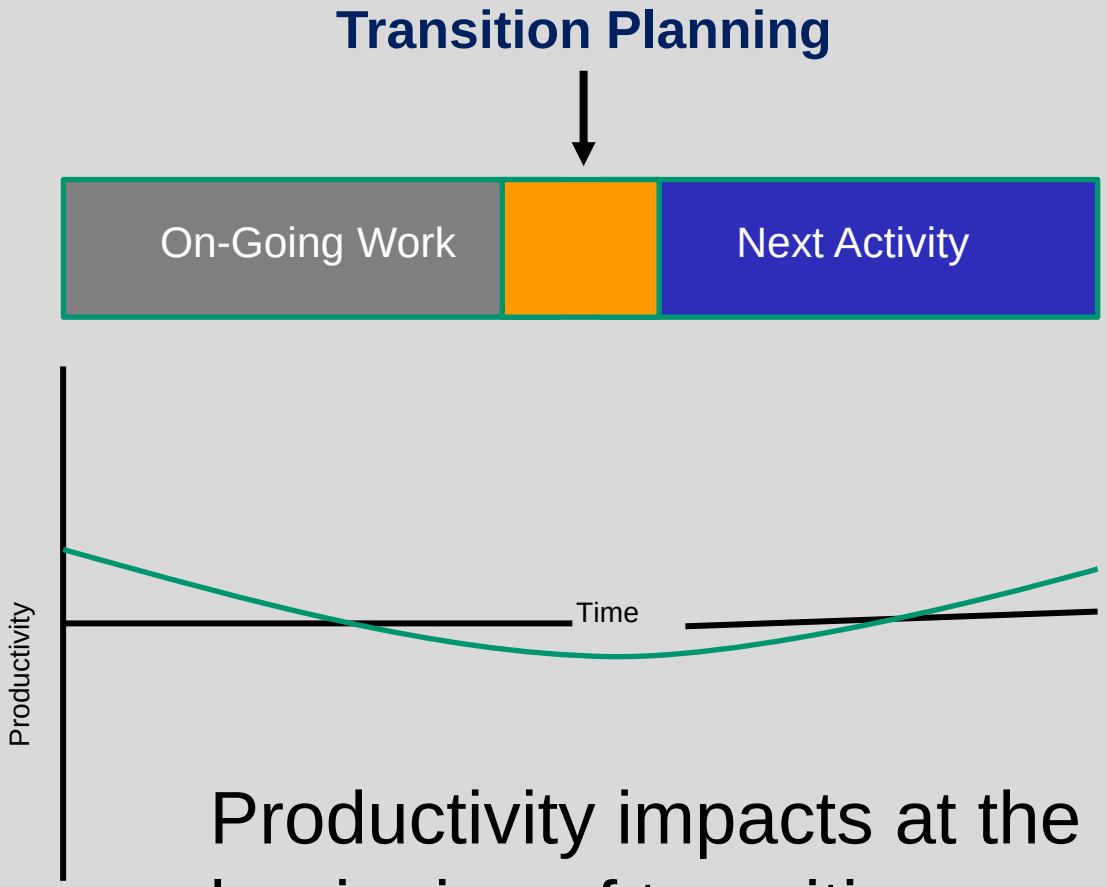
Overview


Phase / Gate 1
Phase / Gate 2
Phase / Gate 3
Phase / Gate 4
Phase / Gate 5
Client Evaluation Period - Award of EPC w/Conceptual Design
Definition
Detailed Design
Construction
Operations
Conceptual (Client)
FEED
Detail Design
Construction Start
HUC
Project Planning
Project Execution
Contract Strategy / Business Planning
Concept Options Generation & Evaluation
FEED & ITT Development (Tendering Phase)
Project Planning – Post EPC Award / Pre-Construction Start
Project Execution
EPC Contract Award
Complete PDM
Early Risk Assessment Plan
Conceptual Design RA
Conceptual Constructability Review
Proj Constructability Plan
Prelim Hazards/Process Review/ What If's
Identify Execution Issues
Early PEP (EPEP)
Prelim QA/QC Plans
Prelim Regulatory Compliance Plan
Document Mgmt Plan
Final DBM
Risk Assessment Plan
Comp Constructability Review
Preliminary HAZOP
Select Specs & Standards
Design RA
Update Execution Issues
Update Application of LL
PEP
Update QA/QC Plan
Document Management Plan
Prlim Construction Plan
Regulatory Compliance Plan
Project Safety Plan
DBM Update (changes only)
Update RA Plan
Detail HAZOP
Update Execution Issues
Site Safety Plans
Site Quality Plans
Environmental Mgmt Plans
Regulatory Compliance Plans
Construction Work Packages
Final CEP
Prelim SU & Comms Plan
Project Close Out Report
Capture Lessons Learned
Financial Close out
Final Documentation
ITT; Early DBM (from Client)
DBM; EPEP; Key Issues; Initial Budget; POS
PEP; Final Org Plan; Prelim Construction Plan; Prelim HSES Plans; Final Budget; POS
Site Safety; PEP; CEP; Site Mob Plan; Site Quality Plan; POS
Site Close Out Report
Proposal for EPC
Initial POS
Cost Estimates
Resource Definition
Internal Issues Defined
External Affairs Issues Defined
Management Commitment
Preliminary Organization Plan
PM Assigned
Identify Project Issues
Env/Socio-ec/permit Issues
Develop Schedule
Management Review Package
Estimate Confidence Package
Update POS
Class V Estimate for Budget w/ Estimate Confidence Package
Resource Definition Updates
Conclude Internal Agreements
External Affairs Plan
Cost Reduction Workshop
Early Financial Control Plan
Management Commitment to Budget
Update Organization Plan
Align Project Team
Initial Contracting Strategy
WBS Developed
Prelim Critical Equip List
Define IPR Plan
Define MOC Process
Management Review Package
Define Reporting Requirements
Finalize POS
Final Budget
Resource Definition Final
Final Major Agreements
Update External Affairs Plan
Final Financial Control Plan
Final Organization Plan
Fill Out PMT for Design
Align Project Team
Final Schedule
Final Project Control Plan
Final Contracting Strategy & Plans
Update WBS
Purchasing Strategy
Final Critical Equip List
Prlim Materials Mgmt Plan
Update MOC Process
Management Review Package
Pre-detail design IPR
Update Reporting Requirements
Update External Affairs Plan
Finalize Budget
Construction & Commissioning Team
Align Project Team
Finalize Execution Schedule
Contracts for Field Activities
Final WBS
Equipment bids
Final Materials Mgmt Plan
Major Equip bids in hand
Pre-construction IPR
Phase review package
Update Reporting

Overview

Management provides leadership in balancing needs of the on-going work with planning the transition.



Productivity impacts at the beginning of transitions can be mitigated by planning and communication

Overview

Steps Applicable to all Transitions:

- Key Staff Identified & Involved
- Logistics & Resources
- Transfer of Knowledge
- Scheduling Transition
- Identifying Key Issues & Risks

Transition Management Plan

Overview

Transition Management Plan

- Determine activities to mitigate issues & risks
- Structured approach to time the transition
- Manage ramp up (systems ready before needed)
- Address historical problem areas:
  - Cold eyes review (internal or by SME)
- Communicate the plan to those involved

…… Implement the Plan

Discipline Transitions

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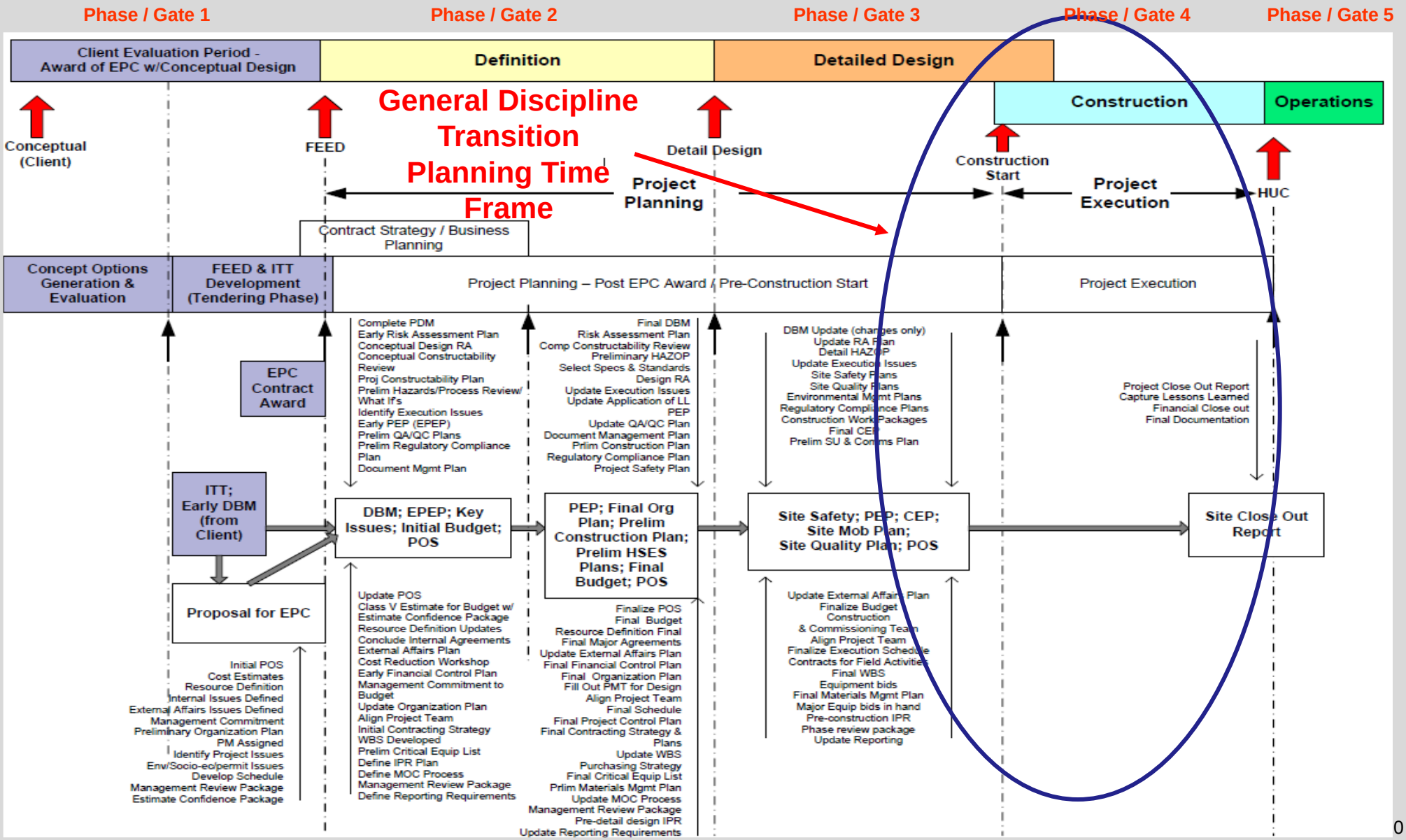
Discipline Transitions

Discipline Transitions:

- Below Ground to Above Ground
- Structural to Piping
- Pulling Cable to Terminations
- Foundations to Equipment Setting
- Hydrotest to Tie-Ins & Bolt-ups
- Completions to Load-out

Discipline Transitions



Discipline Transitions

Example of a Discipline Transition Risk Checklist

Transition Planning	Risk Areas	Timing
Structural		
- Prefabrication	• Dimension control & quality plans	• 30 days prior to fabrication start
	• Welding procedures and qualifications	• 30 days prior to fabrication start
- Erection	• Safety during lifts	• Lifting plans, JSA's & inspections complete 15 days prior to loadout
	• Installation aids	• As near load-out as possible to minimize paint damage

Functional Transitions

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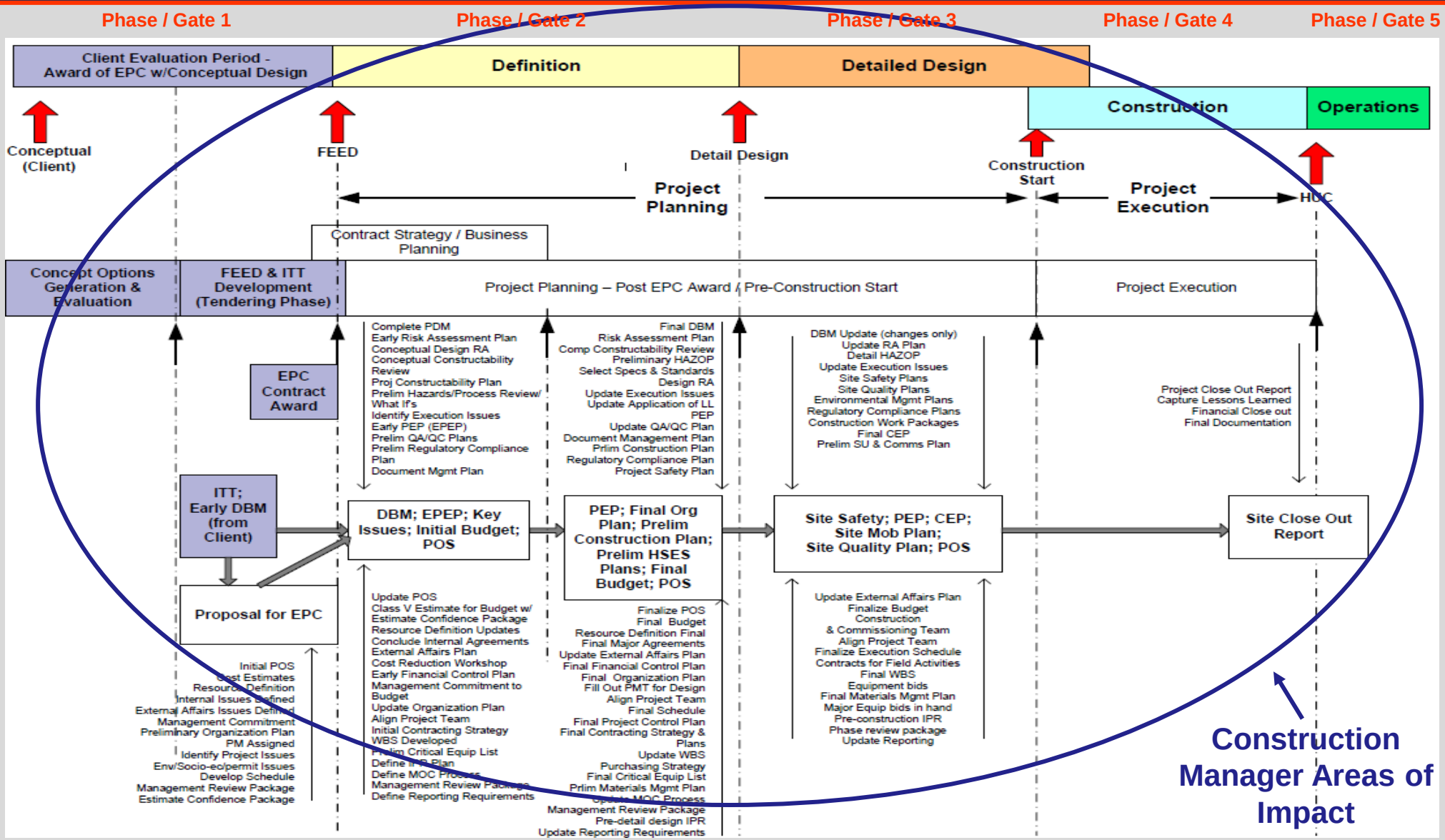
Functional Transitions

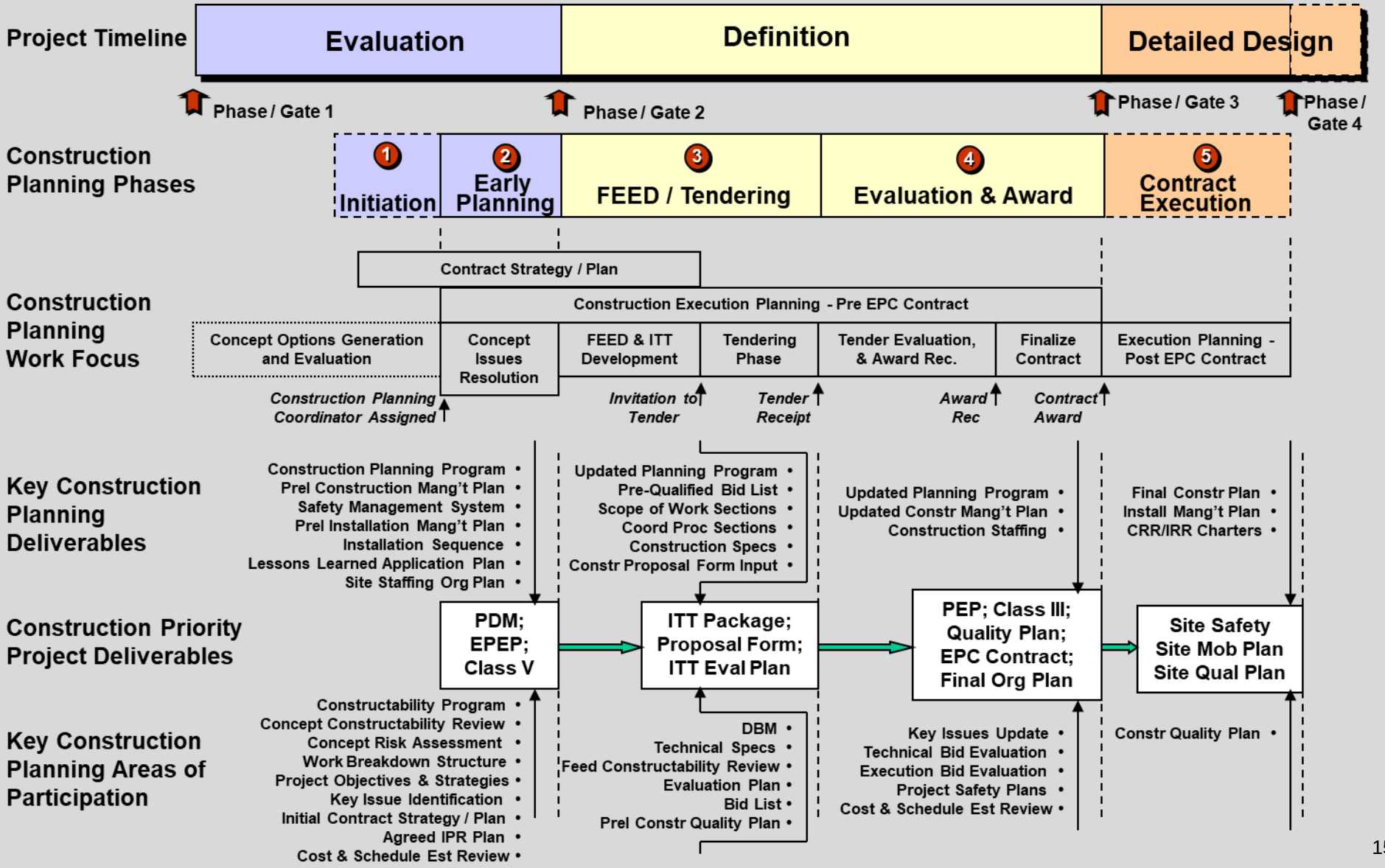
Concept through Operations:

- Quality
- Health & Safety
- Environmental
- **Construction – Input & Constructability**
- **Operations - Input & Operability**

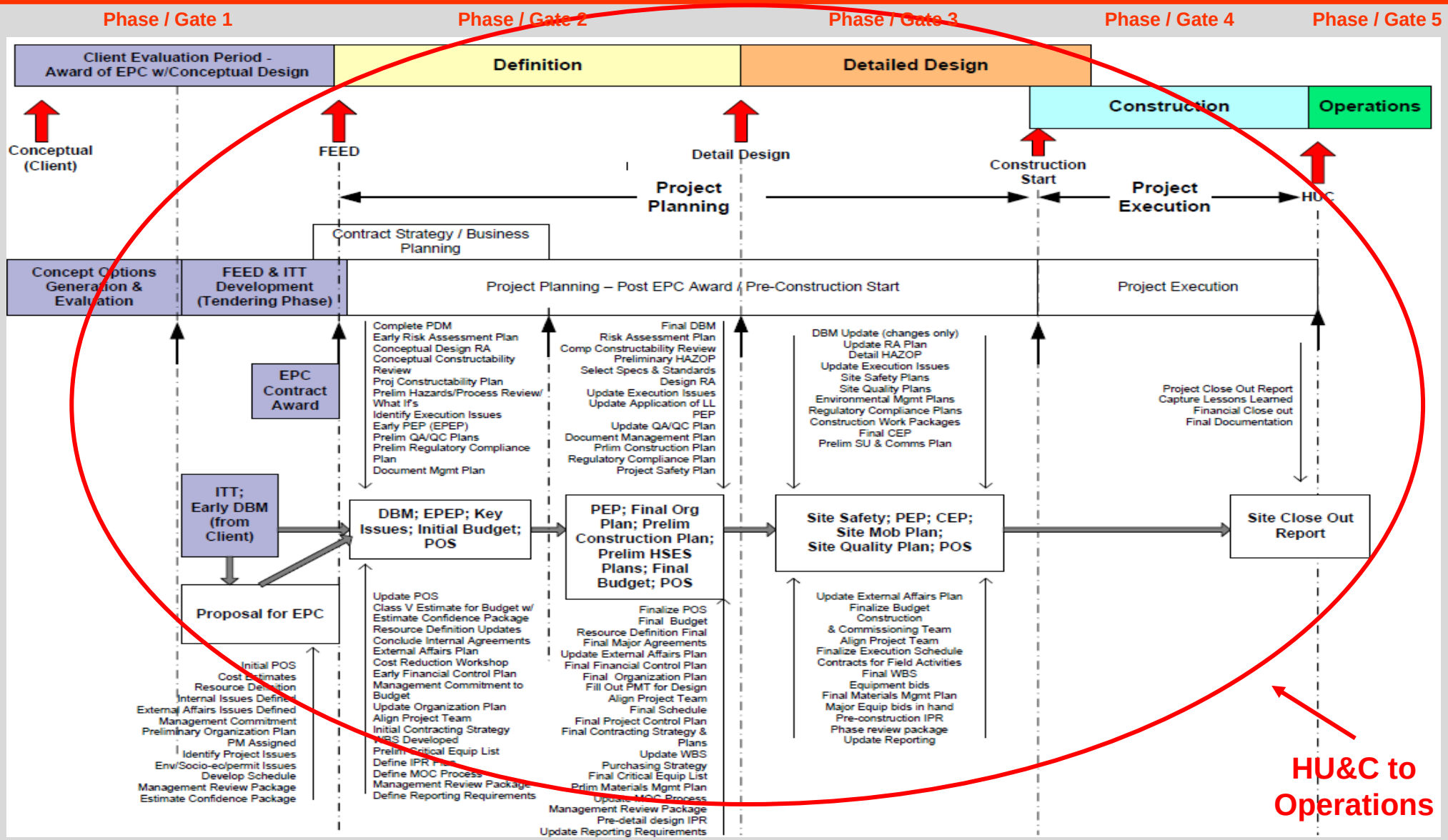
Functional Transitions



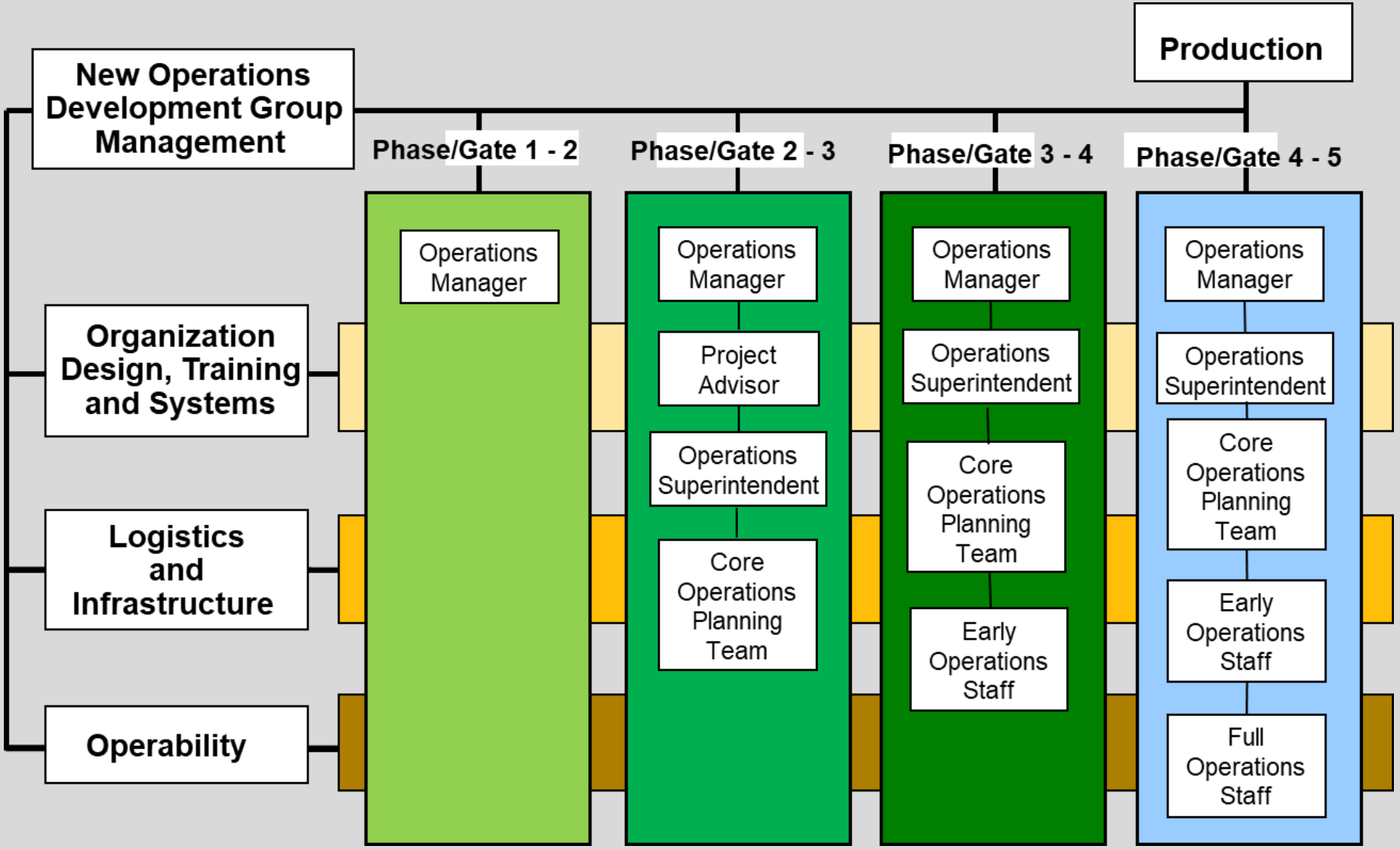
Construction - Input & Constructability



Operations - Input & Operability



Operations - Input & Operability



Project Phase/Gate Transitions

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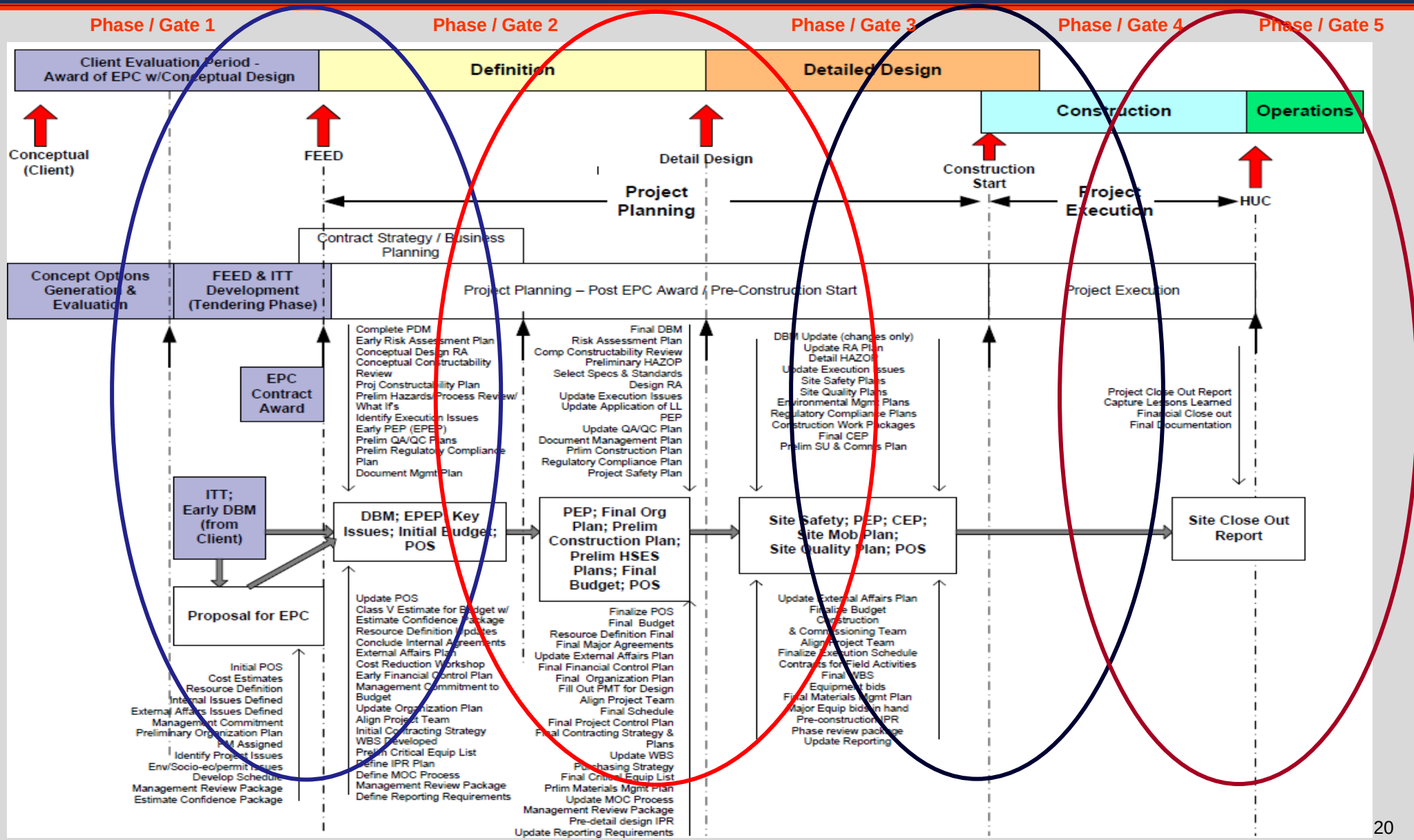
Project Phase/Gate Transitions

Project Phase Transitions:

1. Concept to Feasibility
2. Feasibility/FEED to Engineering
3. Engineering to Construction
4. Construction/HU&C to Operations
5. Operations

Project Phase/Gate Transitions



Phase / Gate Approach

Structured Phase / Gate Approach:

- Objectives are Defined for each Phase / Gate
  - Deliverables are Defined for each Phase / Gate
- Go / No-Go Decisions Made
  - If Go, Move to the Next Phase / Gate
  - If No-Go, Additional Definition or Information is Needed

Phase / Gate Approach

Phase / Gate 1 Primary Objective:

- Frame the opportunity
- Develop an Evaluation/Appraisal Plan
- Perform an economic assessment of alternatives reflecting the range of uncertainties and risks to establish the value proposition
- Develop an Execution Plan (scope, staffing, budget, and schedule) for Phase 2
- Decision to move into Phase / Gate 2

Phase / Gate Approach

Phase / Gate 2 Primary Objective:

- Develop and evaluate a range of alternatives based on the endorsed project Frame
- Select the alternative that generates the highest value for the business (not always lowest cost)
- Develop Plan for Phase 3
- Decision to move into Phase / Gate 3

Phase / Gate Approach

Phase / Gate 3 Primary Objective:

- Define project (scope, execution plans, drilling, production, commercial agreements, etc.)
- Develop CAPEX, OPEX, schedule, & production estimates
- Identify and quantify the full range of risks
- Economic analyses – Develop AFE
- Plan for Phase 4
- Final Investment Decision (FID) for project – Issue AFE - Move to Phase / Gate 4

Phase / Gate Approach

Phase / Gate 4 Primary Objective:

- Safely execute and deliver the project as described in the AFE and other FID commitments.
- Move to Phase / Gate 5

Phase / Gate Approach

Phase / Gate 5 Primary Objective:

- Successfully start up and transition the completed project to Operations.

Transition Pitfalls

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Transition Pitfalls - Discipline

Pitfall	Potential Cause	Potential Results
• Progress / Pace of work not sustainable	• Work started without sufficient design maturity • Insufficient detail in plans • Work site operating at or near capacity • Failure to identify and disseminate lessons learned prior to transition	• Contractor claims • Repetition of past mistakes; repetition of the "learning curve" • Re-work or budget over runs • Schedule busts

Transition Pitfalls - Common

Pitfall	Potential Cause	Potential Results
• Timing of the transition can be disruptive - often conflicting priorities cause poorly timed transitions (too early or too late)	• Insufficient planning prior to transition • Lack of communication to affected work groups. • Lack of readiness by the effected work groups (i.e. work processes between work groups not established)	• Poor construction productivities • Schedule slippage • Errors and omissions • Budget over runs

Transition Pitfalls - Common

Pitfall	Potential Cause	Potential Results
• Conflicting priorities between teams responsible for various phases (i.e. engineering and construction; construction and operations)	• Interfaces and interface parties not well defined • Inadequate communication • Insufficient planning prior to transition • Failure to team build	• Disagreements over responsibilities for shared costs • Disagreement over temporary use of permanent facility • Failure to monitor operation and maintain permanent facility during temporary use • Budget & schedule impacts

Transition Wrap Up

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Transition Wrap Up

Management of Transitions is Often Overlooked (*Fighting Today's "Fire"*).....

Which Will Result in Exposure to Significant Disruptions From Poor Timing (Transitions Too Early or Late) – Schedule and/or Budget Impacts

While One Activity is Underway, Plan the Transition to the Next.

Transition Wrap Up

Prepare a Transition Plan:

- Identify Activities to Mitigate Impacts of Transitions
- Structured Approach to Time the Transition
- Get Organizations & Systems Ready Before Needed

Last Slide……!!!!

Questions

and

Answers