

**SELECTING THE APPROPRIATE PROJECT
DELIVERY OPTION
BOR FACILITIES OFFICERS CONFERENCE
OCTOBER 27, 2011**

**BASED ON THE
STATE OF GEORGIA
CONSTRUCTION
MANUAL**

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INTRODUCTION

- THE PURPOSE OF THIS PRESENTATION IS TO ESTABLISH A FRAMEWORK FOR UNDERSTANDING AND SELECTING THE APPROPRIATE PROJECT DELIVERY OPTION.
- **START BY LOOKING AT THE DEFINITION AND STRUCTURE OF EACH DELIVERY OPTION**
- **LOOK AT THE COMPARISON OF EACH DELIVERY OPTION**
- **LOOK AT THE DELIVERY OPTION SELECTION CRITERIA AND PROCESSES**
- **LOOK AT THE ASSOCIATED DESIGN CONTRACTS**
- **LOOK AT SOME COMMON MISTAKES TO AVOID**
- **CONCLUDE WITH QUESTIONS AND ANSWERS**

DEFINITION AND STRUCTURE

DEFINITION AND STRUCTURE OF EACH DELIVERY OPTION

STATE OF GEORGIA PRIMARY DELIVERY METHODS

- DESIGN-BID-BUILD (DBB)
- CONSTRUCTION MANAGEMENT (CM/GC)
- DESIGN-BUILD (DB)

ASSOCIATED DESIGN CONTRACTS

- DESIGN PROFESSIONAL (DBB)
- DESIGN PROFESSIONAL (CM/GC)

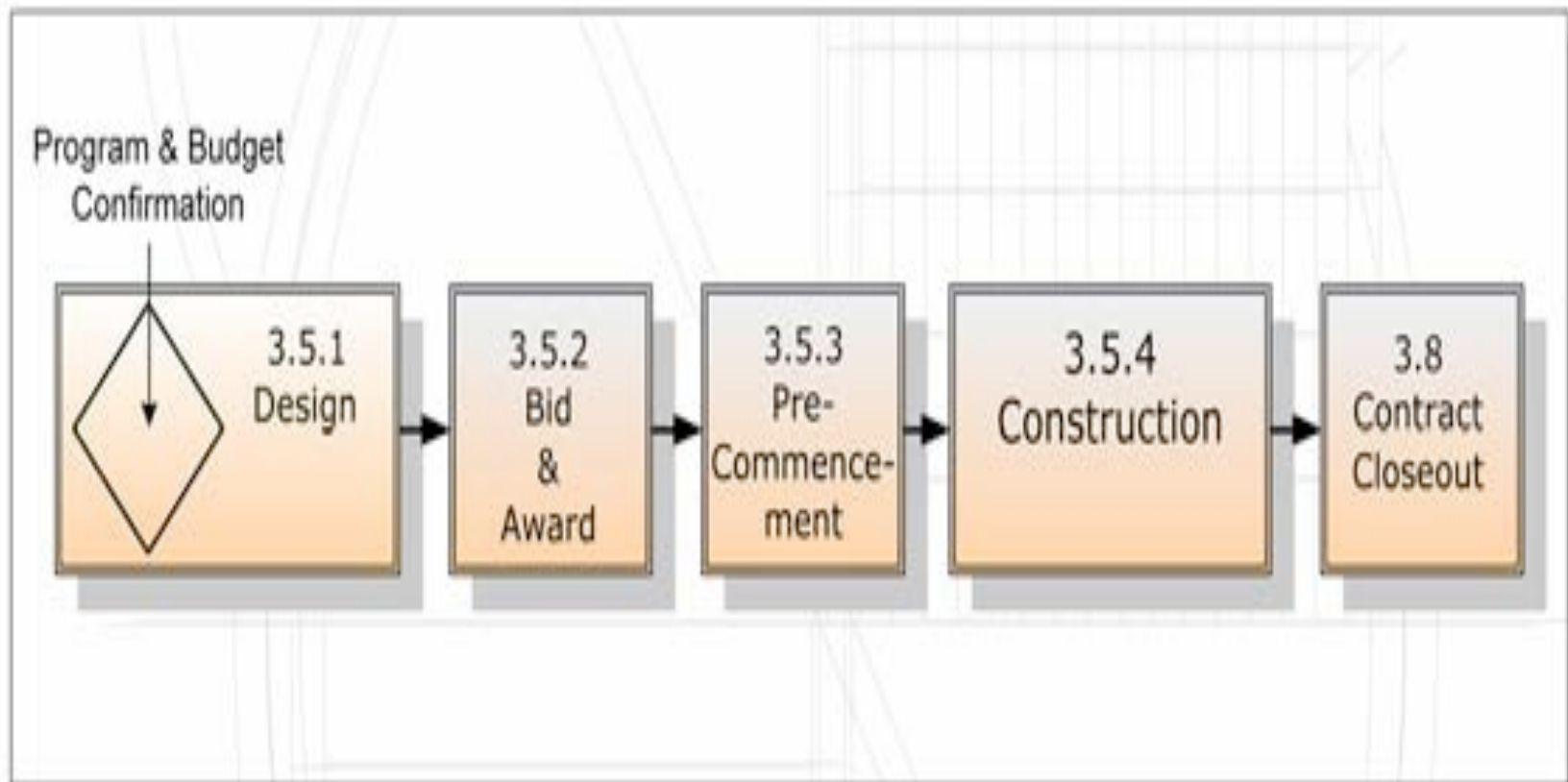
CONSTRUCTION DELIVERY OPTIONS AND CORRESPONDING SELECTION METHOD

Project Delivery Method	Solicitation Method	
	Construction Professional	Design Professional
Design-Bid-Build (DBB)	ITB or BVS	QBS
Construction Management/ General Contractor (CM/GC)	QBS	QBS
Design-Build (D/B)	QBS (one combined Design/ Build contract)	
ITB = Invitation to Bid Competitive Sealed Bids QBS = Qualification Based Selection Non-priced Proposals BVS = Best Value Selection Competitive Sealed Cost Proposal		

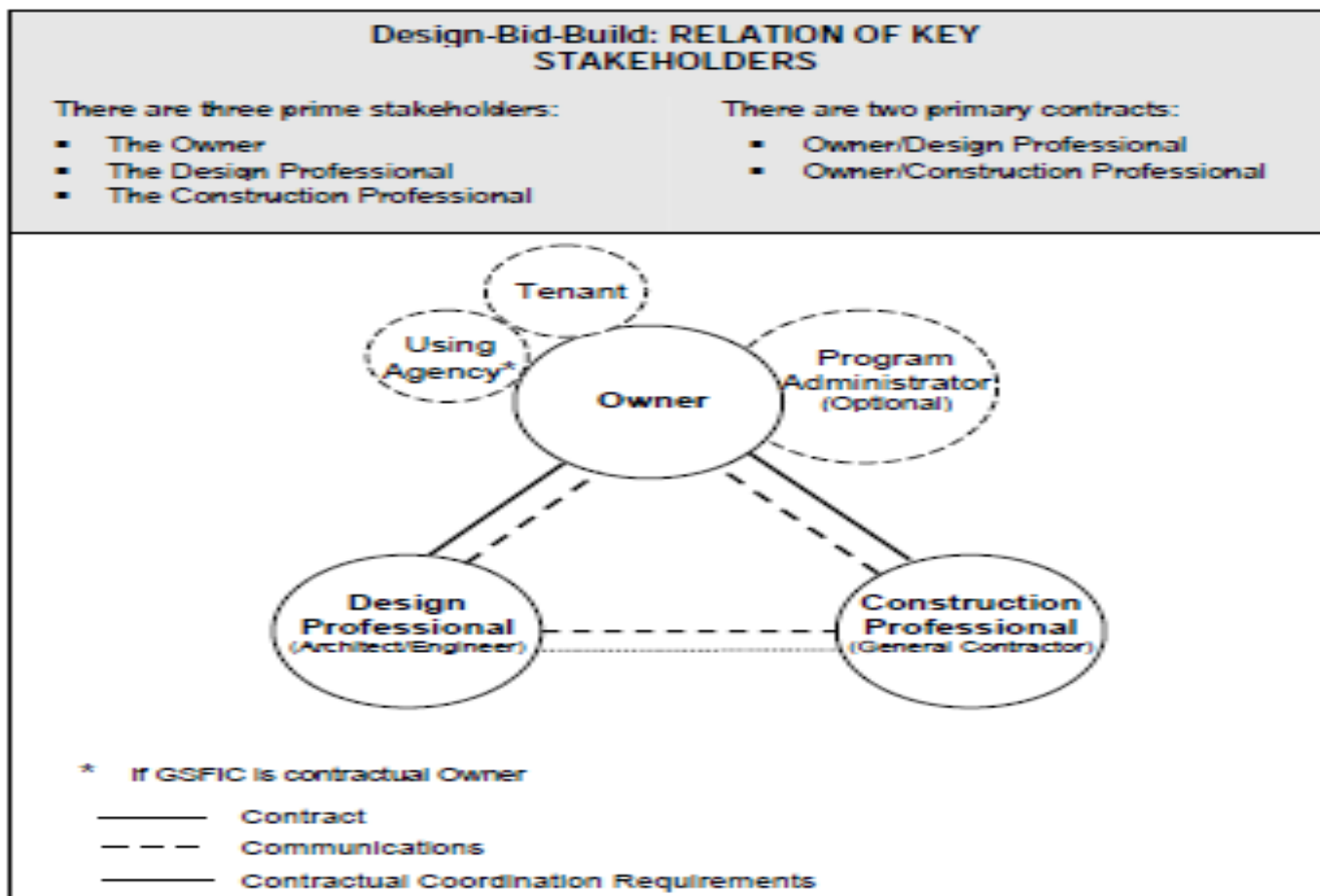
DESIGN-BID-BUILD DELIVERY METHOD DEFINED

- Is the traditional delivery method for construction projects Owner engages a Designer to prepare the design for the complete facility including construction drawings, Specification and contract packages
- Contractor pursues a low-initial cost approach to completing the project

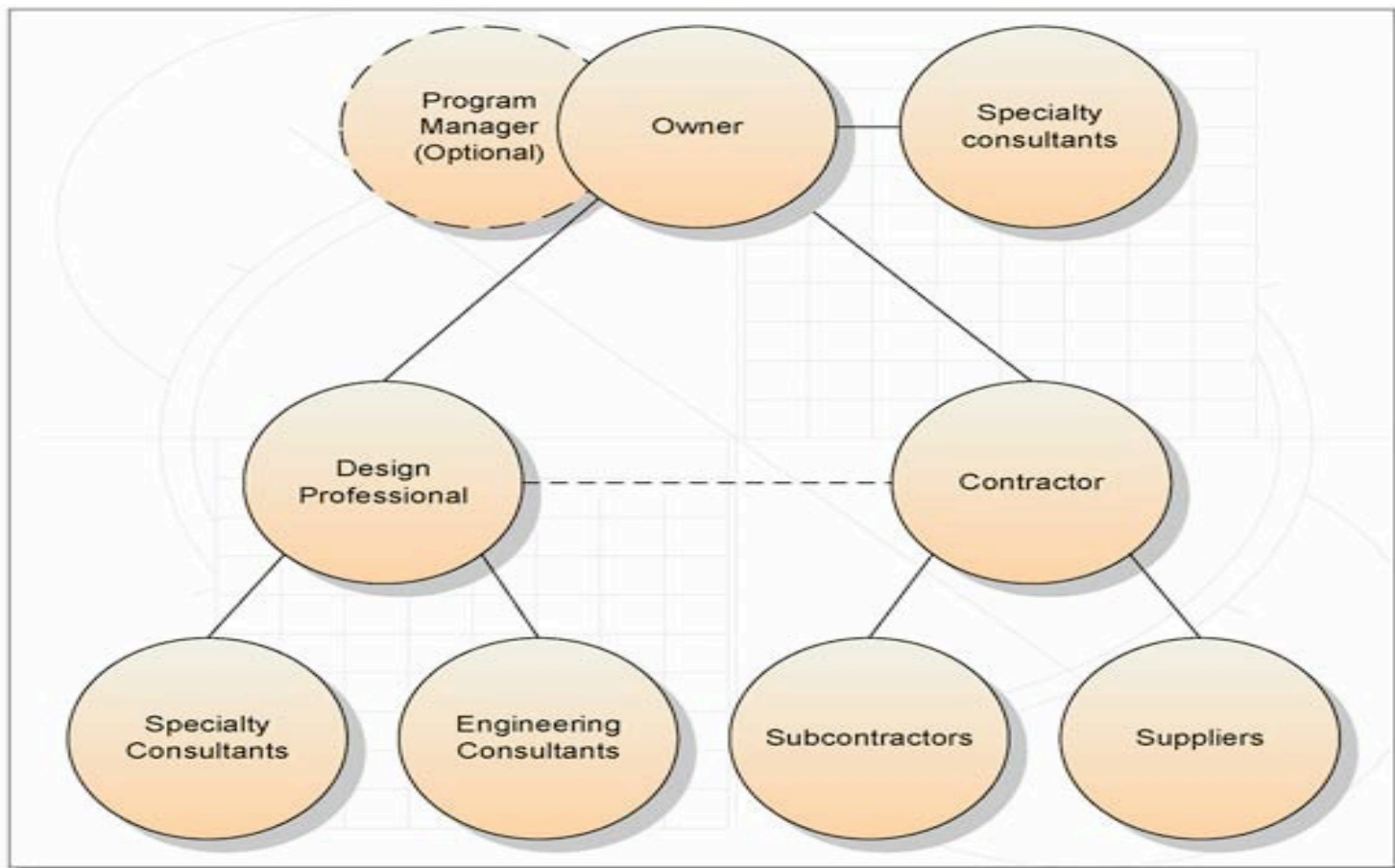
DESIGN-BID-BUILD DELIVERY METHOD DEVELOPMENT



DESIGN-BID-BUILD RELATION OF KEY STAKEHOLDERS



DESIGN-BID-BUILD MANAGEMENT TEAM



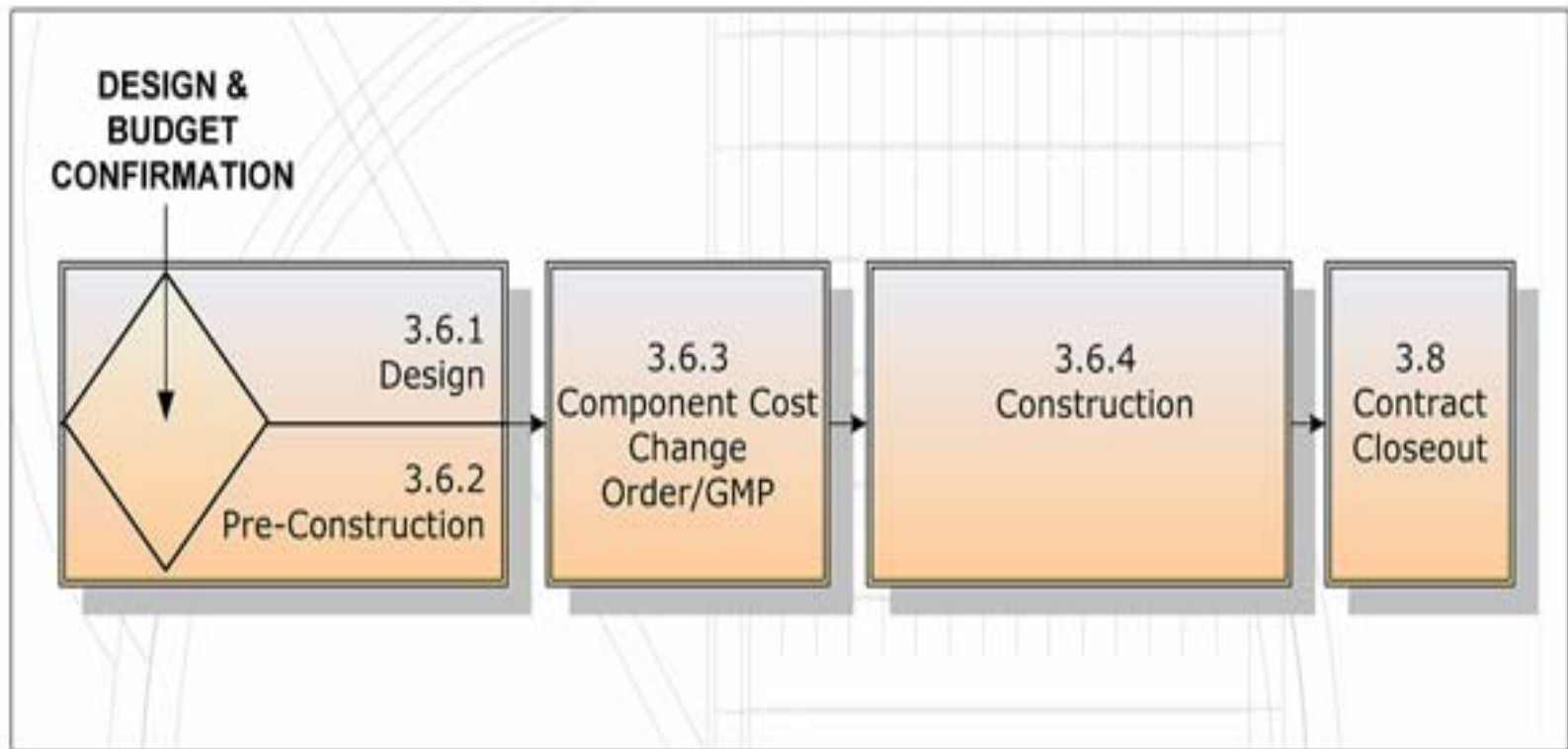
DESIGN-BID-BUILD PROJECT DELIVERY CHARACTERISTICS

- The Design Professional completes a set of Construction Documents based on the Owner's program of requirements. The completed Construction Documents are used for construction bidding. A Construction Professional is selected based on the lowest responsible and responsive bid proposal. The Owner contracts for construction with the successful Construction Professional and the project is built.

CONSTRUCTION MANAGEMENT (CM/GC) DELIVERY METHOD DEFINED

- Owner engages a CM/GC who provide professional management assistance to the Owner prior to construction, and advice on constructability, budget and schedule considerations
- During construction the CM later converts to the equivalent of a General Contractor
- The CM holds the risk of subletting the construction work to trade subcontractors and guaranteeing completion of the project for a fixed, negotiated price following completion of design

CONSTRUCTION MANAGEMENT (DELIVERY METHOD DEVELOPMENT)



CM/GC-RELATION OF KEY STAKEHOLDERS

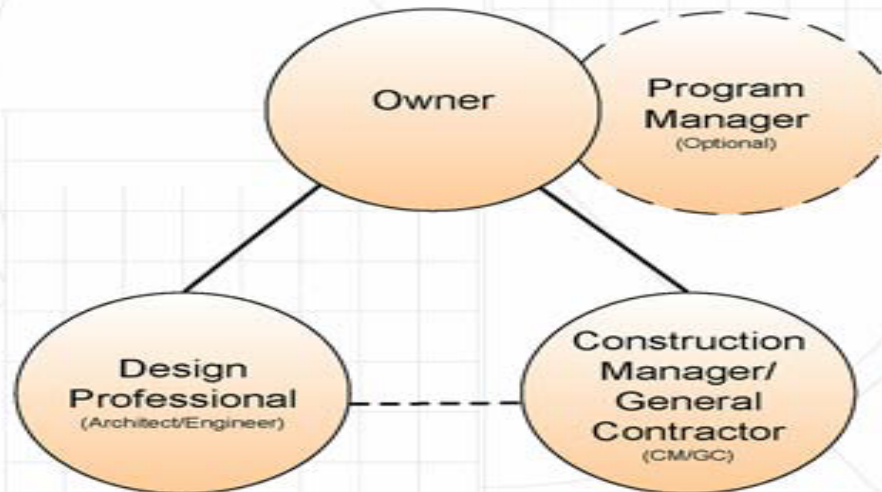
CONSTRUCTION MANAGEMENT (CM): RELATION OF KEY STAKEHOLDERS

There are three prime stakeholders:

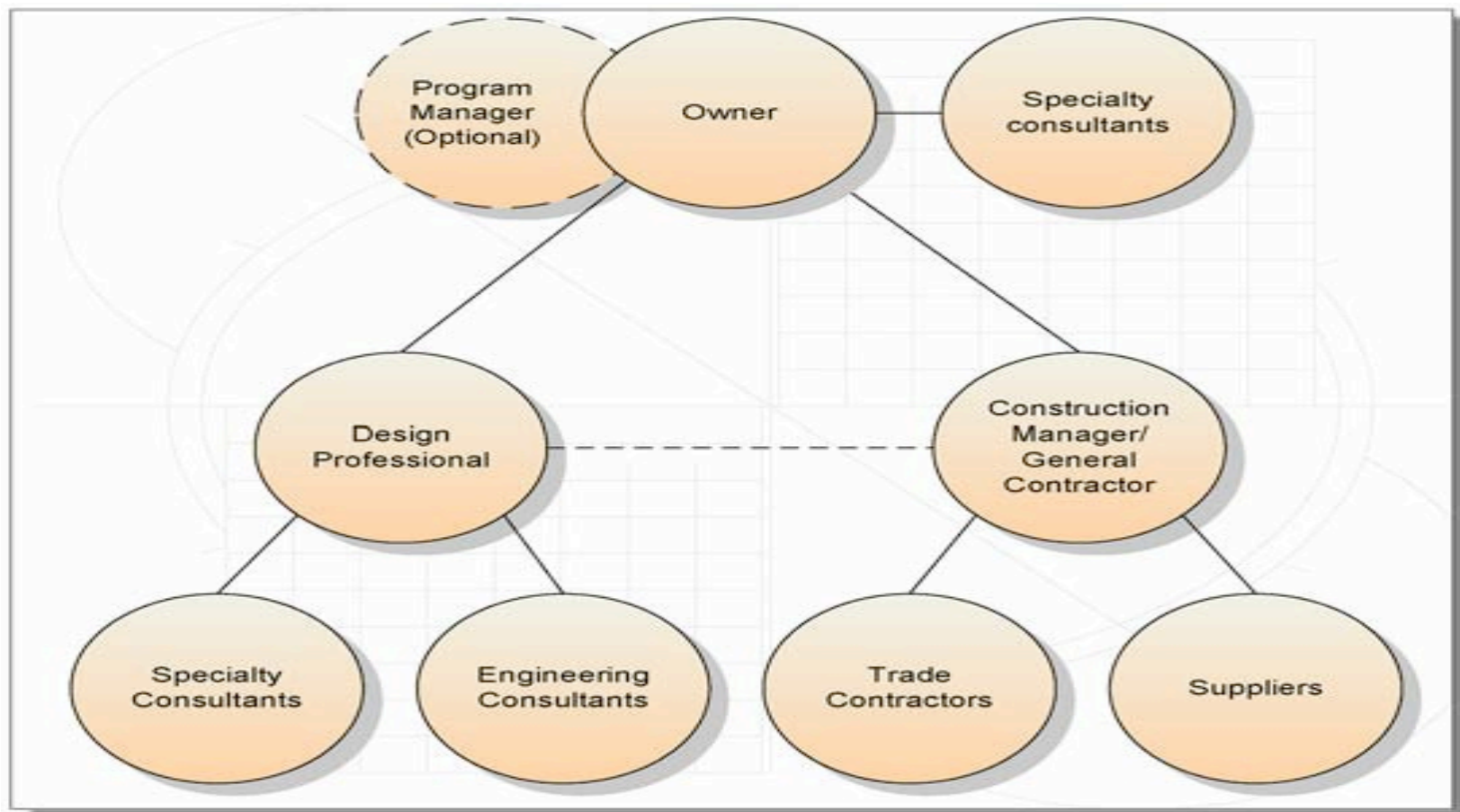
- The Owner
- The Design Professional (Architect/ Engineer)
- The Construction Manager/ General Contractor (CM/GC)

There are two primary contracts:

- Owner/Design Professional
- Owner/Construction Manager/ General Contractor (CM/GC)



CM/GC MANAGEMENT TEAM



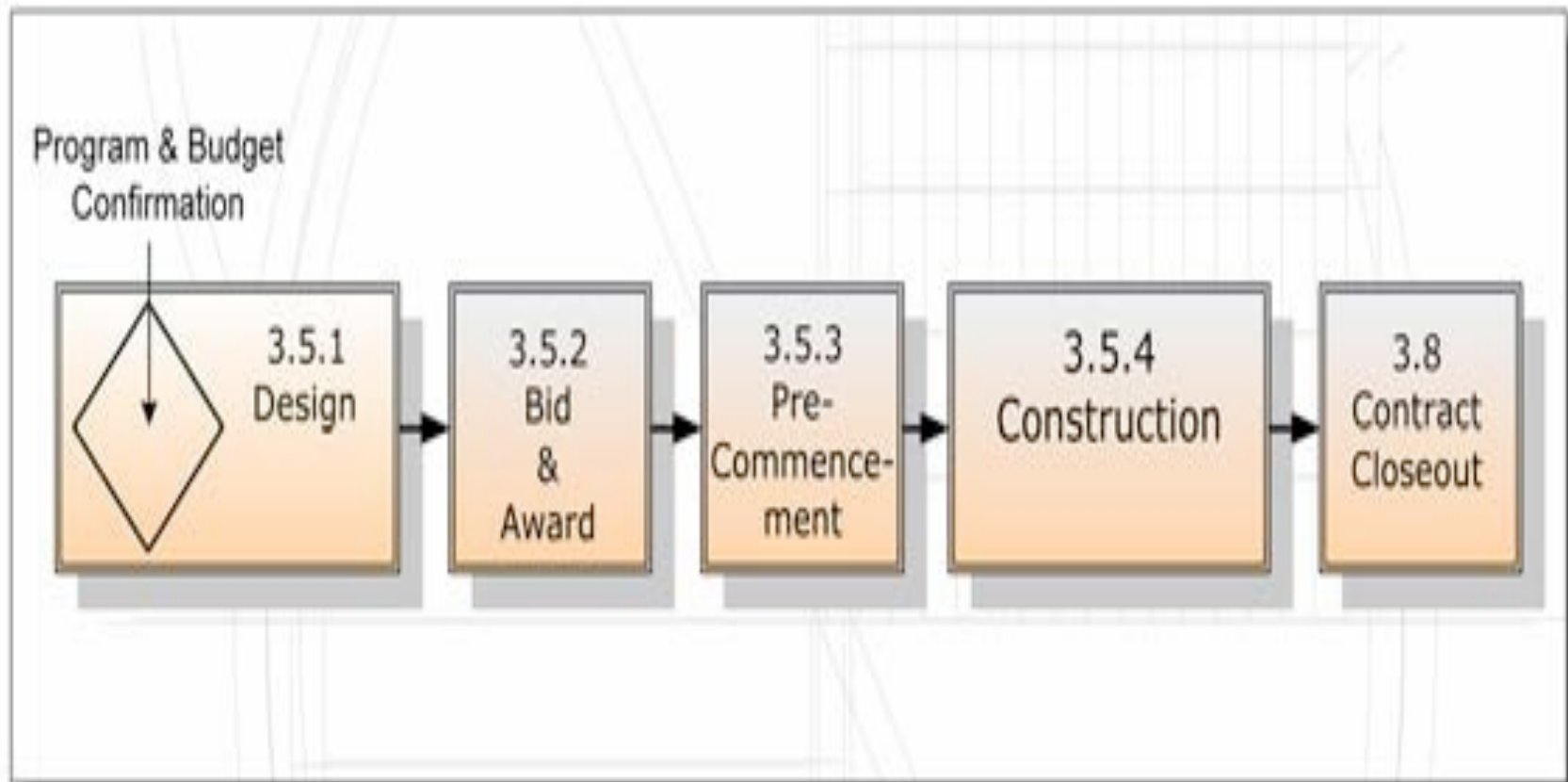
CONSTRUCTION MANAGEMENT PROJECT DELIVERY CHARACTERISTICS

The Design Professional initiates the design based upon the Owner's program of requirements. During Design, the CM/GC is selected and placed under contract for preconstruction services to consult with the Design Team on project cost, project schedule, constructability, and quality control reviews. The Owner also contracts with the CM/GC who then contracts with various trade contractors for construction of the project.

DESIGN-BUILD DELIVERY METHOD DEFINED

- A contracting format is an arrangement for the distribution of construction risk – most frequently cost or performance risk— between the parties to a contract
- Performance risk shifts are accomplished by the writing of end-product or performance contracts. When applied to a complete project these are typically known as Design-Build Contracts

DESIGN-BUILD DELIVERY METHOD DEVELOPMENT



DESIGN-BUILD DELIVERY SYSTEM DEFINED

- Gaining in popularity because it allows the Owner to utilize a single contract to acquire the services of both Designer and Contractor to construct a facility
- Often an association between a general contractor and a designer, although the Construction Professional usually leads the team

DESIGN BUILD DELIVERY SYSTEM DEFINED

- Design-Builder is responsible for all coordination between design and construction

DESIGN –BUILD RELATION OF KEY STAKEHOLDERS

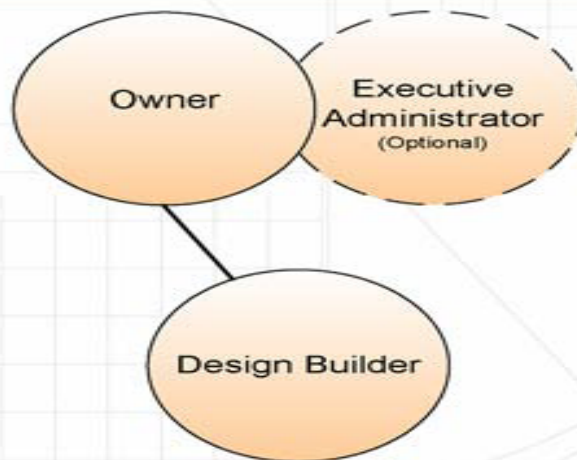
DESIGN-BUILD: RELATION OF KEY STAKEHOLDERS

There are three prime stakeholders:

- The Owner
- The Executive Administrator
- The Design Builder

There is only one primary contract:

- Owner/Design Builder



DESIGN-BUILD PROJECT DELIVERY

- The Owner determines directly, or through consultants, the project's program of requirements and criteria that sufficiently describe the project. This program of requirements and criteria are delivered to the Design-Build firm to serve as the basis of the design for the project until the GMP Component Change Order is accepted. The GMP and the accompanying Construction Documents become the project definition when the GMP is accepted. The Design-Builder is responsible for adequacy, accuracy, and completeness of design and subsequent delivery of the entire project.

COMPARISON

COMPARISON OF EACH DELIVERY OPTION

COMPARISON – DB versus DBB

- Similarities

- Pre-construction phase
- Completion phase

- Differences

- Design Professional works for DB
- All work competitively bid and performed by Trade Contractors and Suppliers
- Design-Builder is paid cost plus a fee
- Executive Administrator responsible for Owner's Quality Control (Optional)
- Special conditions required for DB to self perform work

COMPARISON – DB versus CM/GC

- Similarities

- Pre-construction phase
- Construction administration after GMP
- Completion Phase

- Differences

- Single contract vs. multiple contracts

COMPARISON – DBB versus CM/GC

- Similarities

- Pre-construction phase
- Construction administration after GMP/Competitive Bid
- Completion Phase

- Differences

- All work competitively bid and performed by Trade Contractors and Suppliers
- Lump sum fee versus cost plus a fee
- Special conditions required for CM/GC to self perform work

DELIVERY OPTION SELECTION CRITERIA



DELIVERY OPTION SELECTION CRITERIA AND PROCESSES

INTRODUCTION

- HAVING ESTABLISHED THE DELIVERY METHOD VOCABULARY THE NEXT STEP IS TO DETERMINE WHICH OF THE OPTIONS IS MOST APPROPRIATE FOR A PARTICULAR PROJECT.
- A REVIEW OF PERTINENT LAWS, RULES REGULATIONS AND POLICIES EARLY IN THE LIFE OF A PROJECT IS ALSO STRONGLY RECOMMENDED IN ORDER TO ALLOW TIME TO OBTAIN APPROVAL FOR USE OF AN ALTERNATIVE PROJECT DELIVERY METHOD.
- YOUR TRUSTED COUNCIL/ADVISORS SHOULD BE ABLE TO ADMIT THEIR PREJUDICES BASED ON THEIR EXPERIENCE AND SET THEM ASIDE TO HELP YOU EVALUATE WHICH DELIVERY OPTION IS IN THE BEST INTEREST OF YOUR PARTICULAR PROJECT. THEY SHOULD BE ABLE TO ANSWER THE QUESTION, WHY ARE YOU RECOMMENDING THIS PARTICULAR DELIVERY OPTION.

ESTABLISHING DETERMINING FACTORS

NEED FACTORS		SUCCESS FACTORS		
Schedule/ Necessity to Overlap Phases	Ability to Define the Project Scope/Potential for Changes	Owner's Internal Resources & Philosophy	Desire for a Single Contract or Separate Contracts	Regulatory/ Legal or Funding Constraints
Tight Project Milestones or Deadlines	Scope Definition	Ability or desire to Define and Verify Program & Design Content/Quality	Ability or desire to Take Responsibility for Managing the Design	Regulatory and Statutory Requirements
Amount of Overlap of Design & Construction Phases	Potential for Changes During Construction	Experience with the Particular Delivery Method & Forms of Contract	Ability or Desire to Eliminate Responsibility for Disputes Between Designer and Builder	State Budget and Funding Cycles
	Need/Desire for the Contractor's Input During Design	Ability to Participate in Multiple Trade Contract/Supplier Evaluations		
	Flexibility to Make Design Changes After Construction Cost Commitments	Desired Contractual Relationship and Ability to Recoup Savings		

These are certainly not all that need to be considered but addressing these Primary Factors will guide the selection of the most appropriate delivery option. Additionally, addressing these early in the project cycle will increase the chances for a successful project

FACTORS THAT AFFECT CHOICE OF DELIVERY OPTION

- IMPACTS THE PROJECT TEAM COMPOSITION
- IMPACTS THE PROJECT BUDGET
- IMPACTS THE PROJECT SCHEDULE
- IMPACTS THE PROJECT MANAGEMENT PLAN
- IMPACTS THE PROJECT RISK ASSIGNMENT

- AS A RESULT OF THESE AND OTHER POTENTIAL IMPACTS IT IS CRITICAL THAT THE APPROPRIATE PROJECT DELIVERY OPTION IS CHOSEN

WHICH IS THE BEST OPTION

- WHILE NO ONE PROJECT DELIVERY METHOD IS PERFECT FOR ALL APPLICATIONS, ONE OPTION MAY BE BETTER SUITED THAN ANOTHER BASED ON UNIQUE REQUIREMENTS FOR AN AGENCY'S PARTICULAR PROJECT.
- THE REQUIREMENTS FOR EACH PROJECT SHOULD BE EVALUATED TO DETERMINE WHICH OF THE VARIOUS PROJECT DELIVERY OPTIONS WOULD MOST LIKELY PRODUCE THE BEST OUTCOME FOR THE STATE.

ADDRESSING THE FACTORS THAT AFFECT CHOICE OF DELIVERY OPTION

- **SCHEDULE NECESSITY TO OVERLAP PHASES**
 - Primary factor: is tight project milestones/deadlines.
 - The critical question: is whether there is an overlap of design and construction phases necessary to meet schedule requirements.
 - The ramifications: if the project requires a schedule that can only be maintained by overlapping of the design and construction phases, then **one of the alternative delivery options** should be chosen
- **ABILITY TO DEFINE THE PROJECT SCOPE/POTENTIAL FOR CHANGES**
 - Primary factor: Is *Scope Definition*.
 - The critical question: Is the scope of work difficult to define.
 - The ramifications: if it would be difficult to produce a set of drawings and specifications that will fully describe the work in question, then **one of the qualifications based selection options** should be considered

ADDRESSING THE FACTORS THAT AFFECT CHOICE OF DELIVERY OPTION

- **OWNERS INTERNAL RESOURCES AND PHILOSOPHY**

- Primary factor: is the ability/desire to define/verify program/design content/quality.
- The critical question: is will the Owner utilize outside resources (Executive Administrator) to verify quality.
- The ramifications: if in house resources are not available, **extra caution should be taken when using Design Build**. If Design-Build is desired and in-house resources are not available, outside resources (Executive Administrator) should be engaged to assist in verifying that the quality desired by the Owner is incorporated.

- **DESIRE FOR A SINGLE CONTRACT OR SEPARATE CONTRACTS**

- Primary factor: is the ability to eliminate responsibility for disputes between designer and builder.
- The critical question: does the Owner desire to hold a single entity responsible for coordination collaboration and productivity for the entire project.
- The ramifications: because of the integrated nature of the **Design-Build Method**, it allows the Owner to hold a single entity responsible for the project and keep disputes in-house with the **Design Builder**.

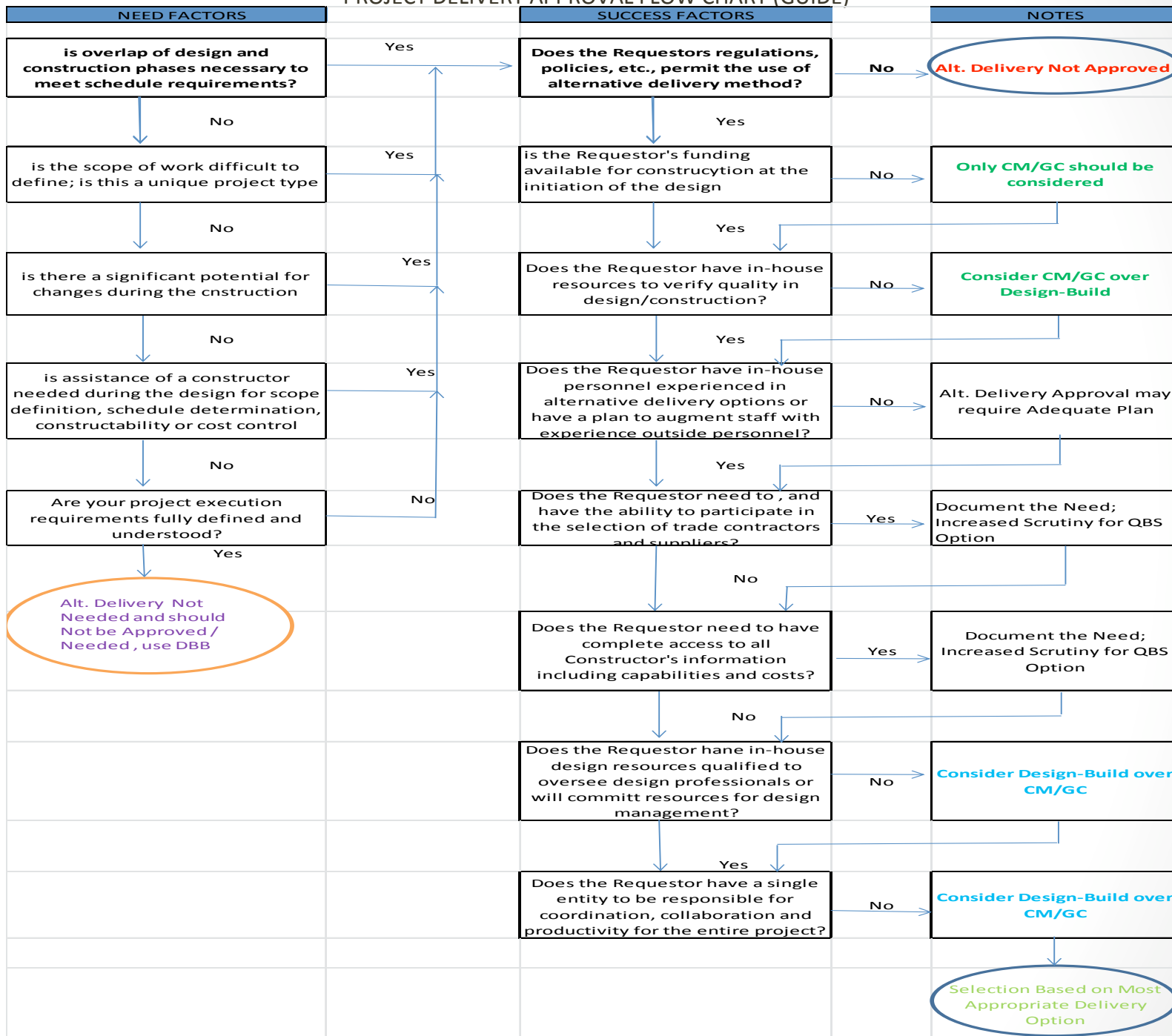
ADDRESSING THE FACTORS THAT AFFECT CHOICE OF DELIVERY OPTION

- **REGULATORY LEGAL AND/OR FUNDING CONSTRAINTS**

- Primary factor: is the Regulatory and Statutory Requirements.
- The critical question: is do laws, rules regulations, etc., permit the use of an alternative project delivery method.
- The ramifications: are that the decision on what delivery option is most appropriate must be made early so that sufficient time is available for any justification that needs to be prepared to gain approval for an alternative delivery option if that option is most appropriate

- Primary factor: State Budget and Funding Cycles
- The critical question: Is funding available for construction and initiation of design
- The ramifications: while any of the options will work with complete project funding any phasing of funding can have a major impact on the decision of which option to select. For example, without complete project funding, **Design Build** is not feasible.

PROJECT DELIVERY APPROVAL FLOW CHART (GUIDE)



DESIGN PROFESSIONAL CONTRACT FOR DESIGN BID BUILD (DBB)

- Include legal terms and conditions that identify scope of work, roles, and responsibilities
- Specifically contains the Project's Stated Cost Limitation (SCL)
- Contains fees, hourly rates, total number of calendar days to complete Construction Documents

DESIGN PROFESSIONAL CONTRACT FOR DESIGN-BID-BUILD (DBB)

- Specifies total number of calendar days required to complete a Preliminary Design and Construction Schedule
- Specifies the total number of site visits included in fee
- Specifies multipliers for design and construction administration of change orders

DESIGN PHASE SERVICES

- Include all normal and customary professional services of the Design Professional and its Design team including the responsibility of a “**Building Official**”
- Design team consists of architectural, civil, structural, mechanical, plumbing, fire protection and other specialty consultants
- Confirm project scope is compatible with SCL

DBB - START-UP, BID, AWARD CONSTRUCTION AND CLOSEOUT

- CONDUCT PREBID CONFERENCE
- ISSUE ADDENDA TO ANSWER QUESTIONS
- MODIFY SUPPLEMENTARY CONDITIONS
- SELECTION OF CONTRACTOR THROUGH COMPETITIVE BID
- PERFORMS BASIC OFFICE/FIELD SERVICES
- MONITOR CONTRACTOR PERFORMANCE
- EVALUATE WORK, ISSUE NOTICE OF NONCOMPLIANT WORK
- CERTIFY PAYMENT, VALIDATE CHANGE ORDERS
- CONDUCT MATERIAL COMPLETION INSPECTION AND ISSUE FINAL PUNCH LIST
- ISSUE CERTIFICATE OF MATERIAL COMPLETION
- PROVIDE DELIVERABLES

DESIGN PROFESSIONAL CONTRACT FOR CM/GC - PRECONSTRUCTION

- **CONCEPT DESIGN STUDIES:**
 - SITE PLAN, BUILDING PLAN, SECTIONS, ELEVATIONS AND NARRATIVES
 - INITIAL AND UPDATED STATEMENT OF PROBABLE CONSTRUCTION COST
- **SCHEMATIC DESIGN DOCUMENTS:**
 - DRAWINGS AND OUTLINE SPECIFICATIONS
 - MAJOR FF&E DRAWN TO SCALE
 - UPDATED DESIGN AND CONSTRUCTION SCHEDULE
 - STATEMENT OF PROBABLE CONSTRUCTION COST AND PLAN TO ADDRESS DIFFERENCES WITH THE SCL
 - RED-LINE COPY OF SITE PLAN INDICATING CONSTRUCTION STAGING AND TRAFFIC ROUTING

DESIGN PROFESSIONAL CONTRACT FOR CM/GC - PRECONSTRUCTION

- DESIGN DEVELOPMENT DOCUMENTS:
 - DRAWINGS AND OUTLINE SPECIFICATIONS TO FIX AND ILLUSTRATE THE SIZE AND CHARACTER OF ENTIRE PROJECT
 - INITIAL CODE COMPLIANCE REVIEW (PRELIMINARY FIRE MARSHALL REVIEW)
 - STATEMENT OF PROBABLE CONSTRUCTION COST
 - UPDATED DESIGN AND CONSTRUCTION SCHEDULE
 - REVIEW CCO/GMP

DESIGN PROFESSIONAL CONTRACT FOR CM/GC

- DURING CONSTRUCTION PHASE PERFORM SIMILAR SERVICES TO THOSE UNDER DBB
- DURING MATERIAL COMPLETION PHASE, PERFORM SIMILAR SERVICES TO THOSE UNDER DBB
- DURING FINAL COMPLETION PHASE, PERFORM SIMILAR SERVICES TO THOSE UNDER DBB

DESIGN PROFESSIONAL CONTRACT FOR DESIGN-BUILD

- DESIGN PHASE:
 - ALL NORMAL AND CUSTOMARY PROFESSIONAL SERVICES OF THE DESIGN PROFESSIONAL AND ITS CONSULTANTS REQUIRED IN CONNECTION WITH:
 - SCHEMATIC DESIGN
 - DESIGN DEVELOPMENT
 - CONSTRUCTION DOCUMENTS

DESIGN PROFESSIONAL CONTRACT FOR DESIGN-BUILD

- CONSTRUCTION PHASE:
 - RESPOND TO RFIs
 - SHOP DRAWINGS REVIEW
 - EVALUATION OF THE WORK
 - ENSURE THAT DESIGN MEETS CODE
 - INFORM OWNER/SHARE NOTICE OF UNACCEPTABLE WORK

AVOID COMMON MISTAKES -DBB

- ENSURE ADEQUATE NUMBER OF SITE VISITS ARE INCLUDED IN DP CONTRACT
- ENSURE THAT ROOF AND WALL BOND COST INCLUDE ALL ASSOCIATED COMPONENTS
- ENSURE UNIT PRICE FOR FILL AND BMP ARE INCLUDED IN SUPPLEMENTAL GENERAL CONDITIONS
- ENSURE THAT CERTIFICATION REQUIREMENTS FOR SUBCONTRACTORS ARE VERIFIED
- ENSURE THAT SUBCONTRACTORS ARE BONDED DEPENDING ON THE VALUE OF THEIR CONTRACT
- ENSURE THAT DELIVERY ITEMS ARE INCLUDED IN PROGRESS SCHEDULE/SUBMITTAL
- ENSURE THAT ALLOWABLE WEATHER DAYS ARE SPECIFIED/DEFINED
- ENSURE THAT RETAINAGE IS NOT CONVERTED TO 5% AFTER ONE HALF OF CONTRACT SUM IS COMPLETED

AVOID COMMON MISTAKES – CM/GC

- ENSURE THAT CONSTRUCTION CONTINGENCY IS NOT SPENT WITHOUT PRIOR APPROVAL BY THE PM AND TRACKING SYSTEM IS FOLLOWED
- ENSURE THAT CCO AND GMP CHANGE ORDERS ARE ACCEPTED/REJECTED WITHIN THE TIME PERIOD SPECIFIED BY CONTRACT
- ENSURE THAT CONSTRUCTION DOCUMENT CHANGE ORDER IS SUBMITTED AND APPROVED
- ENSURE THAT PRECONSTRUCTION PHASE CANNOT EXTEND BEYOND THE EXECUTION OF THE GMP CHANGE ORDER
- ENSURE THAT RETAINAGE IS NOT CONVERTED TO 5% AFTER ONE HALF OF CONTRACT SUM IS COMPLETED

AVOID COMMON MISTAKES - DB

- ENSURE THAT YOU HAVE AN EXECUTED CONTRACT SIGNED BY THE DESIGN BUILDER, AND OTHER REQUIRED/AUTHORIZED PARTIES.
- ENSURE/VERIFY THAT BONDING AND INSURANCE ARE PROVIDED IN ACCORDANCE WITH CONTRACT
- ENSURE THAT DESIGN BUILDER DESIGNATE MANAGEMENT LEADER (PM)
- NEGOTIATE AND ESTABLISH ALL FEES UP-FRONT.
- ENSURE THAT NOTICE OF COMMENCEMENT IS POSTED IN ACCORDANCE WITH GEORGIA LAW AND STAMPED-RECORDED COPY PROVIDED

AVOID COMMON MISTAKES - DB

- CLARIFY FALSE STARTS WITH RESPECT TO COMMISSIONING, SPECIAL INSPECTIONS, ETC.
- SPECIFY INCLEMENT WEATHER DELAY REQUIREMENT BASED ON AVERAGE WEATHER CONDITION IN AREA
- ENSURE THAT CCO AND GMP CHANGE ORDERS ARE ACCEPTED/REJECTED WITHIN THE TIME PERIOD SPECIFIED BY CONTRACT

AVOID COMMON MISTAKES AT MATERIAL COMPLETION

- The work must be complete and ready for immediate occupancy with the exception of minor items (punch list) and permitted incomplete work.
- Minor items must be completed in 30 days and not interfere with occupancy of project.
- Design Professional must inspect and certify the facility for completeness and occupancy.

AVOID COMMON MISTAKES AT MATERIAL COMPLETION

- Inspections and certifications by regulatory agencies must be obtained.
- Using Agency must have been trained on operations of the building's systems and executed documents for acceptance of the project.

CONCLUSION

- THE ENVIRONMENT IN WHICH A PROJECT IS INITIATED MAY NECESSITATE AN **OWNER** TO TAKE SPECIFIC, INTENTIONAL STEPS TOWARDS SETTING ITS COURSE IN ORDER TO ACHIEVE A SUCCESSFUL PROJECT. THOSE STEPS INCLUDE ASSESSING THE **PROJECT DELIVERY OPTION** MOST LIKELY TO RESULT IN A PROJECT THAT MEETS BUDGET, SCOPE, SCHEDULE AND QUALITY CONSTRAINTS.

QUESTIONS

