

ALTERNATIVE PROJECT DELIVERY METHODS **(Approved by FHWA)**

Indefinite Delivery/Indefinite Quantity (ID/IQ)

A project delivery system in which the contractor bids per unit of specific work (e.g. signaling an intersection) with a guaranteed minimum amount of work units over the life of the contract. ID/IQ is also referred to as “task order” or “job order” contracting.

Advantages: Needs can be responded to in a “just-in-time” and “as-needed” manner, work needs and outcomes are not subject to interpretation or negotiations, increase in flexibility to meet staffing resource needs for priority or emergency work, predicted types of work can be “outsourced” thus reducing full time staffing requirements and costs.

Disadvantages: Poorly defined performance outcomes or measures, possible higher unit bid prices, escalation costs for materials, labor and equipment, uncertain usages of the contract, work flow or labor shortage conflicts, potential bonding capacity impacts for the contract term.

Agency-CM

A project delivery system in which an owner contracts with a construction manager to perform pre-construction and construction management services.

Advantages: Opportunity to start construction before the design is complete (fast-tracking).

Disadvantages: If the same consultant is used for both the design and the Agency-CM contracts, then a conflict of interest can occur should a design error or omission issue arise.

Construction Manager@Risk (CM/GC)

A project delivery system in which an owner contracts with a construction manager based on qualifications, experience, fees for management services, and target construction price, to manage and construct a project.

Advantages: Opportunity to establish selection criteria to match objectives of the project, owner retains control of the final design process, early contractor involvement results in a better understanding of the contract, better risk allocation, and lesser claims, establishes Guaranteed Maximum Price (GMP) which provides greater budget certainty, establishes a partnership among the owner, designer, and contractor during the design that is likely to carry through construction, alleviates insufficient owner staffing issues, holds and manages sub-contractors

Disadvantages: Some duplication of administration, less competitive leverage on the general contractor when pricing the construction, Fast-tracking difficult to control.

Design-Build

A project delivery system in which one single entity performs the design and construction of a project.

Advantages: Better risk allocation, clear project goals, reduced delivery time, better project feedback, single source of responsibility, enhances innovations, partnering, early knowledge of project costs, integration of design and construction, GMP identified.

Disadvantages: Requires a culture change, cost estimating difficulties, contractor pay estimates during construction (lump sum), speed of reviewing plans is very fast.

Variations of Design-Build:

Modified Design Build: A delivery system in which the owner completes a substantial portion of the design, and a single entity completes the remaining portion of the design and builds the project under a single contract.

Advantages: Ability to innovate, single source of responsibility, less owner resources required, better project coordination, improved risk management, reduced project delivery time, cost savings.

Disadvantages: Early contractor input cannot be realized, contractor qualification issues and control of the adequacy of the proposed design.

Design Sequencing: A delivery system in which the project is divided into several design packages, and the project is bid for construction before the design packages are 100% complete.

Advantages: Rapid encumbrance of funds, faster project delivery.

Disadvantages: Significant quantity overruns, increased CMO's, more owner and contractor risks.

Design-Build-Operate: A delivery system in which one single entity performs the design and construction of a project, and operates the project for a specified period of time under one single contract.

Advantages: Integrates design, construction and operations under one single contract, operational issues are considered during design, faster project delivery, better life-cycle costs.

Disadvantages: Longer procurement process, costly procurement.

Design-Build-Maintain: A delivery system in which one single entity performs the design and construction of a project, and maintains the project for a specified period of time.

Advantages: Integrates design, construction and maintenance under one single contract, maintenance issues are considered during design, faster project delivery, better life-cycle costs.

Disadvantages: Longer procurement process, costly procurement.

Design-Build-Warranty: A delivery system in which one single entity performs the design and construction of a project, and guarantees certain features of the project under a warranty for a specified period of time under a single contract.

Advantages: Time savings, quality enhancements.

Disadvantages: Warranty Time and Performance, Bond and Warranty, availability of small contractor disadvantaged

Public Private Partnership (PPP):

A project delivery system in which a private entity or developer takes a part in financing a construction project in return for monetary compensation.

Advantages: Expedited completion compared to conventional project delivery methods, project cost savings, improved quality and system performance from the use of innovative materials and management techniques, substitution of private resources and personnel for public resources, access to new sources of private capital, improves cost effectiveness, shares resources, shares/allocates risks, mutual rewards.

Disadvantages: Major cultural shift, contract negotiations, performance enforcement, political acceptability, long term contract that depends on economic uncertainties.

ALTERNATIVE PROCUREMENT METHODS **(Approved by FHWA)**

Lump Sum Bidding:

A procurement method that requires the contractor to develop the estimated quantities as part of preparing the bid estimate. The contractor then submits a lump sum price for completing the entire contract work.

Advantages: Reduced time required to deliver a project to Advertisement, reduced construction administrative staffing, reduced engineering costs.

Disadvantages: Increased risk that bid results may exceed the budget, reduced bidder competition, increased likelihood of disputes and claims, costs may exceed expected expenditures, additional administrative efforts are needed to ensure compliance with documentation requirements.

Cost-Plus-Time Bidding (A+B):

A procurement method that allows both time and cost to be considered in the low bid determination.

Advantages: Less time, with less disruption and at less cost, high incentive and level of accountability for the contractor to complete work quickly, ability to innovate, reduced engineering costs, increased accountability.

Disadvantages: Higher production and innovation needed to meet or exceed expectations, adequate available staffing resources needed.

Multi-Parameter Bidding (A+B+C+...):

An extension of the A+B procurement method in which price, construction time, and an additional parameter "C", such as smoothness, a warranty, or I/D's is used to evaluate the total bid value.

Advantages: Less time, with less disruption and at less cost, high incentive and level of accountability for the contractor to complete work quickly, ability to innovate, reduced engineering costs, increased accountability.

Disadvantages: Higher production and innovation needed to meet or exceed expectations, adequate available staffing resources needed.

Alternate Design:

A procurement method in which two or more designs are presented for the same project in the bid documents. Typically, the default bid is specified by the owner. Bidders are usually required to submit a price on both designs, even though only one of the designs will be used in the construction of the project.

Advantages: Ability to innovate, bidding competition increased, bid savings likely.

Disadvantages: Redundancy, more advertisement time may be required.

Alternate Bid Schedule:

A procurement method in which two or more bid items for the same work item are presented in the bid documents. Bidders are typically required to submit prices for both bid items, even though only one of the bid items will be used to complete the work item.

Advantages: Reduced initial cost or life-cycle costs, upfront value engineering, increased competition, cost savings, reduced owner's engineering costs to prepare and reproduce advertisement plans.

Disadvantages: Increased cost in preparation, increased potential plan errors, higher potential for disputes, longer advertisement period.

Additive Alternatives:

A procurement method in which bid items are classified as base bid items and additive alternate bid items. Bidders are typically required to submit prices for all bid items. However, the owner may select which alternate bid items will be included in the contract work after the bids are viewed. All bases bid items are guaranteed to be part of the contract work. In Colorado, Additive Alternatives is referred to as Multiple Bid Schedule.

Advantages: More competition, owner maximizes scope for a given budget, reduced design engineering costs, reduced CMO's.

Disadvantages: Possibility for re-advertisement increased if bids are not within allowable budget, increased engineering costs and delays in delivering the work, longer advertisement period.

Best Value:

A procurement method in which price and other technical or qualification-based factors are used to determine the successful bidder.

Advantages: Fair competition, performance-based accountability, positive impact on cost, quality, schedule, more flexibility, reduced claims and protests.

Disadvantages: Small business participation may be limited, increased possibility of protest by non-selected firms, subjectivity.

Qualification-Based Selection:

A procurement method that focuses on qualifications, experience and past performance as a basis for selection.

Advantages: Raises standards of bidders, improves quality and performance, promotes innovation.

Disadvantages: May Increase owner's costs, limited small business participation, increased possibility of protests, subjectivity.

ALTERNATIVE CONTRACT MANAGEMENT METHODS **(Approved by FHWA)**

Time-Based Methods:

Incentives/Disincentives: Provisions that compensate the Contractor a daily amount for completing identified critical work ahead of the specified I/D completion date and assess a deduction for each day that the Contractor fails to complete the identified critical work by the I/D completion date.

Advantages: Project milestones identified, schedule expedited, bid conditions favor efficient and effective contractors, reduced unit bid prices.

Disadvantages: Fewer potential bidders, higher bid costs, possible budget overruns, costly owner caused delays.

Lane Rental: Provisions that assess the Contractor daily or hourly rental fees for each lane, shoulder, or combination of lanes and shoulders taken out-of-service during construction. Lane Rental fees are intended to minimize the time of road user impact.

Advantages: Effective and efficient lane usage ensured, improved public relations, reduced project costs.

Disadvantages: Owner's authority to control lane closures minimized.

No Excuse Incentive: A bonus provided to the Contractor for completing a phase of work, or the entire project, by a specified date, regardless of any problems or unforeseen conditions that may arise.

Advantages: Project milestones identified, efficient and effective contractors favored by bid conditions, unit bid prices reduced.

Disadvantages: potential few bidders, high bid costs, potential budget overruns, increased engineering costs, un-necessary user impacts.

Active Management Payment Mechanism (AMPM): An alternative payment mechanism in which the Contractor may receive incentives based on the measured traffic performance through the work zone in comparison to the theoretical capacity of the roadway.

Advantages: Lane availability maximized, performance-based incentives.

Disadvantages: Extra time spent to measure contractor performance, public concerns.

Liquidated Incentives (Specific to CDOT): Incentive Payments to the Contractor for each calendar or working day the entire project (including punch list work) is completed ahead of the prescribed schedule or completion date.

Advantages: Project milestones identified, effective and efficient contractors favored, unit bid prices reduced.

Disadvantages: fewer bidders, high bid costs, potential budget overruns, increased potential for claims and disputes, increased engineering costs, unnecessary user impacts.

Quality/Performance-Based Methods:

Contractor Quality Assurance (Management) Specifications: Specifications that require Contractor quality control and Agency quality acceptance activities throughout the production and placement of a product. Final acceptance is typically based on statistical sampling of the measured quality level for key attributes.

Advantages: Contractor “owns” the quality, positive and negative price adjustments reflect quality of work received.

Disadvantages: Requires major owner cultural shift, owner loss of control, possible overlap in testing and inspections.

Performance-Related Specifications: Specifications that use quantified quality characteristics and life cycle cost relationships that are correlated to product performance.

Advantages: performance-related price adjustment factors, improved quality.

Disadvantages: Difficulties in developing reasonable performance-prediction models and maintenance-cost models.

Long-term Warranties (Material/Workmanship or Performance): A guarantee of the integrity of a product and of the contractor’s responsibility for the replacement or repair of deficiencies.

Advantages: Costs for preventative maintenance activities reduced, level of inspection reduced, improved quality in materials, workmanship and performance, increased quality, lower life-cycle costs.

Disadvantages: Difficulty in enforcing the warranties, submitted bid costs may exceed the project budget, bid bonding issues, higher inspection costs during warranty period.

Miscellaneous Methods:

Phase Funding Contracts: Projects or Programs advertised and awarded in advance of full funding for construction. The contract language states that work shall not begin until

authorized in the Notice to Proceed, and as specified in specific Task Orders reflective of the funds available.

Advantages: Allows the owner to advertise projects in advance of funding and budgeting actions, efficiently and effectively respond to prioritized needs.

Disadvantages: No funding guarantees, potentially fewer bidders, potentially higher bid costs, uncertainties may lead to construction delays, staffing requirements.

Value Engineering Contracts: A formal analysis of a project whereby unnecessary costs are eliminated. It is the systematic application of recognized techniques by a multi-disciplined team to identify innovative designs and cost reduction opportunities.

Advantages: Improves quality, reduces design and construction costs, fosters innovation, ensures efficient investments.

Disadvantages: More review is required, may entail adverse environmental impacts, potential negative service life impacts.

Emergency Contracts: Contracts utilized to respond and resolve an emergency situation defined as any situation that creates an immediate threat to public health, welfare, safety, the functioning of state government, or preservation or protection of property.

Advantages: Reduces advertisement and award time, accelerated response time helps beginning immediate repairs and creating a safe condition.

Disadvantages: Potential fewer responsive bidders, potential higher bid costs, deficient project funding, potential CMO's.