PDM Attribute Comparison Spreadsheet

ITEM	DESIGN-BID-BUILD (DBB)	DESIGN-BUILD (DB)	GENERAL CONTRACTOR / CONSTRUCTION MANAGER (GC/CM)
PROCUREMENT			
Requirements	DBB provides for a path to execute public work through a competitive process resulting in award to the lowest cost bidder.	DB project delivery may be used by WSDOT on projects over $2 million if they meet the criteria in RCW. May be used if: 1)construction activities highly specialized, 2) critical to developing construction methodology 3) project provides an opportunity for greater innovation and efficiencies, and 4) use of DB would result in significant reduction to the overall project schedule or critical milestones	GCCM process may be used by WSDOT on projects generally over $10 million with the approval of CPARB. May be used if: 1) complex scheduling or phasing 2) facility is occupied and continue to operate during construction 3) GCCM input in design is critical to project success 4) complex or technical work environment 5) Is there specialized work on a building with historic significance.
RCW	RCW 39.80 & 39.04	RCW 47.20.785	RCW 39.10
Procurement of Contract	Design-Bid-Build is the traditional Project Delivery Method in which WSDOT designs, or retains a designer to furnish complete design services, and then advertises and awards a separate construction contract based on the designer's completed construction documents. In DBB, WSDOT has control over the entire process and is responsible for the details of design during construction and as a result, is responsible for the cost of any errors or omissions encountered in construction. In DBB, selection of the Contractor is based solely on price with award of the contract based on Apparent Low Bid.	Design-Build is a Project Delivery Method in which WSDOT procures both design and construction services in the same contract from a single, legal entity referred to as the Design-Builder. At WSDOT, the method typically uses a two-phase selection process where Design-Builders are shortlisted based on qualifications in the first phase and then selected based on price and approach in the second phase. This Project Delivery Method allows the phases of design and construction to overlap. The Design-Builder becomes involved early in project development, at approximately the 15% to 30% design level, offering opportunities for innovation and improved constructability, and confirming project costs early. The Design-Builder controls the details of design and is typically responsible for the cost of any design errors or omissions encountered in construction. Per RCW 47.20.785, WSDOT can use Design-Build project delivery for projects over $10 Million. For projects between $2 and $10 Million, WSDOT must get approval from the Capital Project Advisory Review Board to use Design-Build project delivery.	General Contractor/Construction Manager is a Project Delivery Method in which WSDOT contracts separately with a Contractor as a Construction Manager and either performs design or contracts with an engineering firm to provide a design. The Construction Manager is selected early in the project development phase (10% to 30% Design) to provide design and constructability input. WSDOT retains control of the design of the project and is typically responsible for design errors and omissions during construction on GCCM projects. As the design nears completion, WSDOT and the Construction Manager work to negotiate a Maximum Allowable Construction Cost (MACC) for the project. Upon successful negotiation of the MACC, the Construction Manager becomes the General Contractor and works at-risk for the final cost and construction schedule. The early Contractor input associated with GCCM delivery is especially suited for projects that are technically complex, require complicated phasing and staging, or require operability of the facility (such as a ferry terminal) during construction. WSDOT must get approval from the Capital Project Advisory Review Board before using GCCM project delivery.
COST			
Pro's	☐ Competitive bidding provides a low cost bid for construction to a fully defined scope of work ☐ Increase certainty about cost estimates for Construction because project fully designed before bidding ☐ Construction costs and/or unit prices are contractually set before construction begins	☐ Contractor input into design should moderate cost ☐ Design-Builder collaboration and ATCs can provide a cost-efficient response to Project Goals ☐ Costs are contractually set early in design process with design-build proposal ☐ Allows a variable scope bid to match a fixed budget ☐ Potential lower average cost growth ☐ Funding can be obligated in a very short timeframe ☐ Potential for fewer cost change orders as the Design-Builder is responsible for design errors and the associated costs	☐ WSDOT/designer/contractor collaboration to reduce project risk can result in lowest project costs ☐ Early contractor involvement can result in cost savings through VE and constructability ☐ Cost will be known earlier when compared to DBB ☐ Integrated design/construction process can provide a cost efficient strategies to Project Goals ☐ Can provide a cost efficient response to the Project Goals
Con's	☐ Cost accuracy is limited until design is completed ☐ Construction costs are not locked in until design is 100% complete ☐ Cost reductions due to contractor innovation and constructability is difficult to obtain ☐ More potential of cost change orders due to WSDOT design responsibility (WSDOT responsible for design errors)	☐ Risks related to design-build, lump sum cost without 100% design complete, can impact final cost due to unknowns at the time of the RFP	☐ Non-competitive negotiated MACC introduces price risk ☐ Difficulty in MACC negotiation introduces some risk that MACC will not be successfully executed requiring aborting the GCCM process ☐ Paying for contractors involvement in the design phase may increase total cost ☐ More potential of cost change orders due to WSDOT design responsibility (WSDOT responsible for design errors)

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Level of Design			
Pro's	☐ 100% design by WSDOT or WSDOT selected consultants ☐ WSDOT has complete control over the design (can be beneficial when there is one specific solution for a project) ☐ Project scope can be developed/changed during the design without change orders☐ The scope of the project is well defined through complete plans and contract documents ☐ Well-known process to the industry	☐ Design advanced by the WSDOT to level necessary to precisely define the contract requirements and properly allocate risk ☐ Does not require much design to be completed before awarding project to the Design-Builder (between ~ 10% - 30% complete) ☐ Contractor involvement in early design, which improves constructability and innovation ☐ Plans do not have to be as detailed because the Design-Builder is bought into the project early in the process and will accept design responsibility	☐ Can utilize a lower level of design prior to selecting a contractor then collaboratively advance design with WSDOT, designer and contractor ☐ Contractor involvement in early design improves constructability ☐ WSDOT controls design ☐ Design can be used for DBB if the price is not successfully negotiated ☐ Design can be responsive to risk minimization
Con's	☐ WSDOT design errors can result in a higher number of change orders, claims, etc. ☐ Minimizes competitive innovation opportunities ☐ Can reduce the level of constructability since the contractor has no input into the project until after the design is complete	☐ Must have very clear definitions and requirements in the RFP because it is the basis for the contract ☐ If design is too far advanced it will limit the advantages of design-build ☐ Potential for lacking or missing scope definition if RFP not carefully developed ☐ Over utilizing performance specifications to enhance innovation can risk quality through reduced technical requirements ☐ Less WSDOT control over the design ☐ Can reduce WSDOT design consistency statewide.	☐ Teaming and communicating concerning design can cause disputes ☐ Three party process can slow progression of design ☐ If design is too far advanced it will limit the advantages of GCCM or could require design backtracking
SCHEDULE			
Pro's	☐ Schedule can be more predictable and more manageable with a complete design ☐ Milestones can be easier to define with a complete design ☐ Projects can more easily be “shelved” with a complete design ☐ Shortest procurement period (Bid period is typically shorter than the RFQ/RFP processes) ☐ Elements of design can be advanced prior to permitting, construction, etc. ☐ Time to communicate/discuss design with stakeholders	☐ Potential to accelerate schedule through parallel design-build process ☐ Shifting schedule risk to DB team ☐ Obligates construction funds more quickly ☐ Industry input into design and schedule ☐ Fewer chances for disputes between WSDOT and Design-Builders ☐ More efficient procurement of long-lead items ☐ Ability to start construction before entire design, ROW, etc. is complete (i.e., phased design) ☐ Allows innovation in resource loading and scheduling by DB team ☐ Schedule delays due to design error the responsibility of the Design-Builder	☐ Ability to start construction before entire design, ROW, etc. is complete (i.e., phased design) ☐ More efficient procurement of long-lead items ☐ Early identification and resolution of design and construction issues (e.g., utility, ROW, and earthwork) ☐ Can provide a shorter procurement schedule than DB ☐ Team involvement for schedule optimization ☐ Continuous constructability review and VE ☐ Maintenance of Traffic improves with contractor inputs ☐ Contractor input for phasing, constructability and traffic control may reduce overall schedule
Con's	☐ Requires time to perform a linear design-bid-construction process ☐ Design and construction schedules can be unrealistic due to lack industry input ☐ WSDOT is responsible for design errors which can lead to change orders and schedule delays ☐ Low bid selection may lead to potential delays and other adverse outcomes.	☐ Request for proposal development and procurement can be intensive ☐ Undefined events or conditions found after procurement, but during design can impact schedule and cost ☐ Time required to define technical requirements and expectations through RFP development can be intensive ☐ Time required to gain acceptance of quality program ☐ Requires WSDOT and stakeholder commitments to an expeditious review of design	☐ Potential for not reaching MACC and substantially delaying schedule ☐ MACC negotiation can delay the schedule ☐ Designer-contractor-WSDOT disagreements can add delays ☐ Strong WSDOT management is required to control schedule ☐ WSDOT is responsible for design errors which can lead to change orders and schedule delays

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Project Complexity and Innovation			
Pro's	☐ WSDOT can have more control of design of complex projects ☐ WSDOT and consultant expertise can select innovation independently of contractor abilities ☐ Opportunities for value engineering studies during design, more time for design solutions ☐ Aids in consistency and maintainability ☐ Full control in selection of design expertise ☐ Complex design can be resolved and competitively bid	☐ Designer and contractor collaborate to optimize means and methods and enhance innovation ☐ Opportunity for innovation through draft RFP, best value and ATC processes ☐ Can use best-value procurement to select Design-Builder with best qualifications ☐ Constructability and VE inherent in process ☐ Early team integration ☐ Sole point of responsibility for design and construction	☐ Highly innovative process through three party collaboration ☐ Allows for WSDOT control of a designer/contractor process for developing innovative solutions ☐ Allows for an independent selection of the best qualified designer and best qualified contractor ☐ VE inherent in process and enhanced constructability ☐ Risk of innovation can be better defined and minimized and allocated ☐ Can take to market for bidding as contingency if MACC negotiations fail
Con's	☐ Innovations can add cost or time and restrain contractor's benefits ☐ No contractor input to optimize costs ☐ Limited flexibility for integrated design and construction solutions (limited to constructability) ☐ Difficult to assess construction time and cost due to innovation	☐ Requires desired solutions to complex designs to be well defined through technical requirements (difficult to do) ☐ Qualitative designs are difficult to define (example. aesthetics) ☐ Risk of time or cost constraints on designer inhibiting innovation ☐ Some design solutions might be too innovative or unacceptable ☐ Quality assurance for innovative processes are difficult to define in RFP	☐ Process depends on designer/CM relationship ☐ No contractual relationship between designer/CM ☐ Innovations can add cost or time ☐ Scope additions can be difficult to manage ☐ Preconstruction services fees for contractor involvement ☐ Cost competitiveness – single source negotiated MACC
Staff Experience and Availability			
Pro's	☐ WSDOT, contractors and consultants have high level of experience with the traditional system ☐ Designers can be more interchangeable between projects ☐ Smaller number of technical staff required through use of consultant designer	☐ Less WSDOT staff required due to the sole source nature of DB ☐ Opportunity to grow WSDOT staff by learning a new process	☐ WSDOT can improve efficiencies by utilizing more project managers on staff rather than specialized experts ☐ Smaller number of technical staff required through use of consultant designer
Con's	☐ Can require a high level of WSDOT staffing of technical resources ☐ Staff's responsibilities are spread out over a longer design period ☐ Can require staff to have full breadth of technical expertise	☐ Limitation of availability of staff with skills, knowledge and personality to manage DB projects ☐ Existing staff may need additional training to address their changing roles ☐ Need to "mass" WSDOT management and technical resources at critical points in process (i.e., RFP development, design reviews, etc.)	☐ Strong committed WSDOT project management is important to success ☐ Limitation of availability of staff with skills, knowledge and personality to manage GCCM projects ☐ Existing staff may need additional training to address their changing roles ☐ WSDOT must learn how to negotiate MACC projects

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Level of Oversight and Control			
Pro's	☐ Full WSDOT control over a linear design and construction process ☐ Oversight roles are well understood ☐ Contract documents are typically completed in a single package before construction begins ☐ Multiple checking points through three linear phases: design-bid-build ☐ Maximum control over design	☐ A single entity responsible for project design and construction ☐ Allows overlap between design and construction ☐ Getting input from construction to enhance constructability and innovation ☐ Overall project planning and scheduling is established by one entity	☐ Preconstruction services are provided by the construction manager ☐ Getting input from construction to enhance constructability and innovation ☐ Provides WSDOT control over an integrated design/construction process
Con's	☐ Requires a high-level of oversight ☐ Increased likelihood of claims due to WSDOT design responsibility ☐ Limited control over an integrated design/construction process	☐ Can require high level of design oversight ☐ Can require high level of quality assurance oversight ☐ Limitation on staff with DB oversight experience ☐ Less WSDOT control over design ☐ Control over design relies on proper development of technical requirements	☐ WSDOT must have experienced staff to oversee the GCCM ☐ Higher level of cost oversight required
Competition and Contractor Experience			
Pro's	☐ Promotes high level of competition in the marketplace ☐ Opens construction to all reasonably qualified bidders ☐ Transparency and fairness ☐ Reduced chance of corruption and collusion ☐ Contractors are familiar with DBB process	☐ Allows for a balance of qualifications and cost in Design-Builder procurement ☐ Two-phase process can promote strong teaming to obtain “Best Value” ☐ Increased opportunity for innovation possibilities due to the diverse project team	☐ Allows for qualifications based contractor procurement ☐ WSDOT has control over an independent selection of best qualified contractor ☐ Contractor is part of the project team early on, creating a project “team” ☐ Increased opportunity for innovation due to the diversity of the project team
Con's	☐Risks associated with selecting the low bid (the best contractor is not necessary selected) ☐No contractor input into the process ☐Limited ability to select contractor based on qualifications	☐ Need for DB qualifications can limit competition ☐ May be lack of competition with past experience with the Project Delivery Method and WSDOT (although this is not the current experience on NWR projects) ☐ Issues with the DB team selected for the project can impact communications and collaboration ☐ The gap between WSDOT experience and contractor experience with Project Delivery Method can create conflict	☐ Currently there is not a large pool of contractors with experience in GCCM, which will reduce the competition and availability ☐ Working with only one contractor to develop MACC can limit price competition ☐ Requires a strong project manager from the WSDOT ☐ A common point of failure is Teamwork and communication between WSDOT, the designer and the Contractor, which is critical to project success

Appendix A Worksheets and Forms