

**Colorado Department of Transportation
Innovative Contracting Advisory Committee**

Project Delivery Selection Approach

This document provides a formal approach for CDOT highway project delivery selection. The document provides generic forms for use by CDOT staff. By using these forms, a brief project delivery selection report can be generated for each individual project. The process is divided into four sections.

- Project Description Checklist
- Project Goals
- Project Delivery Selection Matrix Summary
- Project Delivery Factor Risks and Opportunities

Project Description Checklist

The following items should be considered in the project description as applicable. Other items can be added if they influence the project delivery decision. Relevant documents can be added as appendices.

- Project Name
I-70 Frontage – Colorado River – Dotsero (F-08-F)
- Location
Located on the I-70 Frontage Road where it crosses the Colorado River
- Estimated Budget
\$9,000,000 (including CE & I)
- Estimated Project Delivery Period
Design approximately 15 months
Construction approximately 27 months
- Required Delivery Date (if applicable)
Summer 2012 complete design
- Source(s) of Project Funding
Colorado Faster Funds
- Project Corridor
I-70 Corridor
- Major Features of Work – pavement, bridge, sound barriers, etc.
Bridge Replacement and roadway realignment
- Major Schedule Milestones
Complete design summer 2012
Complete construction September 2014
- Major Project Stakeholders
SHPO, Corps, DOW, BE, Eagle County
- Major Challenges (as applicable)
 - *Right of Way (If realigned to the north), Utilities (If realigned to the north), and/or Environmental Approvals (Historic bridge, 404, SB40)*
 - *During Construction Phase (Working over/in the Colorado River)*
- Main Identified Sources of Risk
Alignment, Environmental, Hydraulics
- Safety Issues
TBD
- Sustainable Design and Construction Requirements
To be developed during preliminary design

Project Goals

An understanding of project goals is essential to appropriate project delivery selection. Typically, the project goals can be defined in three to five items. The list below is a non-prioritized list of project-specific goals for the Dotsero project. These goals should remain consistent over the life of the project.

Non-Prioritized list of Project-Specific Goals

- ❖ Deliver the project by September 2014
- ❖ Complete the project for the best value.
- ❖ Meet or exceed project requirements. Select the best team to provide innovative ideas that meet the project goals.
- ❖ Actively manage the environmental, ROW and utility issues through the development of the project.
- ❖ Successfully deploy, implement and document the CM/GC method on a CDOT transportation project which can ultimately be used as a training tool for future projects.
- ❖ Demonstrate wise use of funds. Facilitate and foster collaboration, communication and partnership with all stakeholders.

Project Delivery Selection Matrix Summary

Determine the factors that should be considered in the project delivery selection, discuss the opportunities and risks related to each factor, and document the discussion on the following pages. The factors in Gray have been eliminated from the discussion for reasons shown below in the notes. Factors 2, 3, 5, 8 and 12 will be discussed and evaluated. In addition, Design/Build was eliminated from the evaluation since it not consistent with a number of the project goals.

PROJECT DELIVERY METHOD OPPORTUNITY/RISK SUMMARY						
	DBB		DB		CM/GC	
Project Factors	Opportunity	Risk	Opportunity	Risk	Opportunity	Risk
1. Project Complexity (1)	N/A	N/A	N/A	N/A	N/A	N/A
2. Opportunity for Innovation	●	●	X	X	●	●
3. Delivery Schedule	●	●	X	X	●	●
4. Level of Design (2)	N/A	N/A	N/A	N/A	N/A	N/A
5. Project Unknowns	●	●			●	●
Agency Factors	Opportunity	Risk	Opportunity	Risk	Opportunity	Risk
6. Staff Experience/Availability (3)	N/A	N/A	N/A	N/A	N/A	N/A
7. Level of Oversight (4)	N/A	N/A	N/A	N/A	N/A	N/A
8. Risk Allocation	●	●	X	X	●	●
Market Factors	Opportunity	Risk	Opportunity	Risk	Opportunity	Risk
9. Competition and Availability (5)	N/A	N/A	N/A	N/A	N/A	N/A
10. Resource Availability (6)	N/A	N/A	N/A	N/A	N/A	N/A
11. Team Experience (7)	N/A	N/A	N/A	N/A	N/A	N/A
Other Factors	Opportunity	Risk	Opportunity	Risk	Opportunity	Risk
12. Third Party Involvement	●	●	X	X	●	●
13. Regulations and Clearances (8)	N/A	N/A	N/A	N/A	N/A	N/A

Key:

- Most appropriate delivery method
- Appropriate delivery method
- Least appropriate delivery method
- X Not Applicable (discontinue evaluation of this method)

- Notes:
1. Project Complexity included in Opportunity for Innovation
 2. The level of design is not applicable since minimal design has been started
 3. CDOT management has committed to staffing appropriately
 4. CDOT management has a committed to provide the necessary oversight
 5. Competition is not an issue in this area for this type of project.
 6. Resources needed for this project are not an issue.
 7. Team Experience is not an issue for this project.
 8. Assumed Regulations and Clearance issues/factors are included in Third Party Involvement

Project Delivery Factor Risks and Opportunities

1) Project Complexity

Project complexity is the level of interaction between people, technical issues and processes.

DESIGN-BID-BUILD	
Opportunities	Risks
<ul style="list-style-type: none"> <input type="checkbox"/> Agency can have more control of complex projects <input type="checkbox"/> Both agency and industry have experience with DBB <input type="checkbox"/> More time for design solutions <input type="checkbox"/> Aids in consistency and maintainability <input type="checkbox"/> Review complete design prior to award <input type="checkbox"/> Selection of design expertise 	<ul style="list-style-type: none"> <input type="checkbox"/> No contractor involvement in design issues (e.g., subsurface, utilities, ROW) <input type="checkbox"/> Increased costs due to pricing of risk <input type="checkbox"/> Little opportunity for innovation/optimization <input type="checkbox"/> Limited flexibility for design and construction solutions <input type="checkbox"/> Limited opportunity for constructability <input type="checkbox"/> Low bid issues

DESIGN-BUILD	
Opportunities	Risks
<ul style="list-style-type: none"> <input type="checkbox"/> Lower level of project design needed <input type="checkbox"/> Opportunity for innovation <input type="checkbox"/> Faster schedule <input type="checkbox"/> Sole point of responsibility <input type="checkbox"/> Can use best-value procurement <input type="checkbox"/> Design can be tied to means and methods <input type="checkbox"/> Constructability and VE inherent in process <input type="checkbox"/> Early team integration <input type="checkbox"/> Collaborative solutions/joint ownership between designer-contractor 	<ul style="list-style-type: none"> <input type="checkbox"/> Do not see final design at award <input type="checkbox"/> Impacts are difficult to measure <input type="checkbox"/> Constraints are difficult to define (e.g. aesthetics) <input type="checkbox"/> Project unknowns have more impact (e.g., undiscovered conditions) <input type="checkbox"/> Complete risk allocation is difficult

CONSTRUCTION MANAGEMENT AT RISK	
Opportunities	Risks
<ul style="list-style-type: none"> <input type="checkbox"/> Lower level of project design needed <input type="checkbox"/> Better definition of project solutions <input type="checkbox"/> Collective risk reductions <input type="checkbox"/> Faster schedule <input type="checkbox"/> Qualifications-based and/or value-based selections <input type="checkbox"/> Phasing is enhanced <input type="checkbox"/> Design can be tied to means and methods <input type="checkbox"/> Constructability and VE inherent in process <input type="checkbox"/> Early team integration <input type="checkbox"/> Collaborative solutions/joint owners <input type="checkbox"/> Can take to market for bidding as contingency 	<ul style="list-style-type: none"> <input type="checkbox"/> Process depends on designer/CMR relationship <input type="checkbox"/> No contractual relationship between designer/CMR <input type="checkbox"/> Need more agency oversight/management <input type="checkbox"/> Lack of experience and expertise <input type="checkbox"/> Preconstruction services fees <input type="checkbox"/> Cost competitiveness <input type="checkbox"/> Regulatory constraints <input type="checkbox"/> Strong agency management is required to manage complex projects

Project Complexity Summary

	DBB		DB		CMR	
	Opportunity	Risk	Opportunity	Risk	Opportunity	Risk
1. Project Complexity	N/A	N/A	N/A	N/A	N/A	N/A

- Key:
- Most appropriate delivery method
 - ◐ Appropriate delivery method
 - Least appropriate delivery method
 - X Not Applicable (discontinue evaluation of this method)

Notes and Comments:

2) Opportunity for Innovation

The opportunity for innovation is the likelihood that the project scope will allow for new designs or processes to achieve the project's purpose and need.

DESIGN-BID-BUILD	
Opportunities	Risks
<ul style="list-style-type: none"> <input type="checkbox"/> Project development and design opportunities <input type="checkbox"/> Opportunities for value engineering during design <input type="checkbox"/> Opportunities for industry constructability during design <input type="checkbox"/> Opportunities for value engineering change proposals post bid <input type="checkbox"/> Opportunities to explore alternative structures 	<ul style="list-style-type: none"> <input type="checkbox"/> Opportunities limited to agency/designer <input type="checkbox"/> Innovations can add cost or time <input type="checkbox"/> Additional administration can be necessary for innovations

DESIGN-BUILD	
Opportunities	Risks
<ul style="list-style-type: none"> <input type="checkbox"/> More efficient design <input type="checkbox"/> Expedite schedule <input type="checkbox"/> Collaborate to optimize means and methods <input type="checkbox"/> Take advantage of materials constraints/opportunities <input type="checkbox"/> Accessing new ideas <input type="checkbox"/> Realize competition in design <input type="checkbox"/> Challenges status quo/standard designs and procedures <input type="checkbox"/> Better design efficiency and to meet construction goals <input type="checkbox"/> Opportunity for innovation through draft RFP and ATC processes 	<ul style="list-style-type: none"> <input type="checkbox"/> Availability/quality of information required for proposing teams <input type="checkbox"/> Time and cost to develop contract <input type="checkbox"/> Time limits on procurement time for design-builders and proposers <input type="checkbox"/> Risk of time or cost constraints on designer <input type="checkbox"/> Lack of experience <input type="checkbox"/> Some design solutions might be too innovative or unacceptable <input type="checkbox"/> Quality assurance process are difficult to define in RFP <input type="checkbox"/> Loss of agency control over design preferences

CONSTRUCTION MANAGEMENT AT RISK	
Opportunities	Risks
<ul style="list-style-type: none"> <input type="checkbox"/> More efficient design <input type="checkbox"/> Enhanced constructability <input type="checkbox"/> Collaborate to optimize means and methods <input type="checkbox"/> Take advantage of materials constraints/opportunities <input type="checkbox"/> Cost efficiencies from contractor involvement <input type="checkbox"/> Risk is more transparent and better communicated <input type="checkbox"/> Qualifications based selection is available 	<ul style="list-style-type: none"> <input type="checkbox"/> Accelerated design can limit innovation <input type="checkbox"/> Limited competition in design after designer is selected <input type="checkbox"/> Innovations can add cost or time <input type="checkbox"/> Additional administration can be necessary for innovations <input type="checkbox"/> Scope additions can be difficult to management <input type="checkbox"/> Limited contractor experience <input type="checkbox"/> Designer-contractor-agency disagreements are difficult to manage <input type="checkbox"/> GMP can add challenges

Project Size Summary

	DBB		DB		CMR	
	Opportunity	Risk	Opportunity	Risk	Opportunity	Risk
2. Opportunity for Innovation	●	●	X	X	●	●

- Key:
- Most appropriate delivery method
 - Appropriate delivery method
 - Least appropriate delivery method
 - X Not Applicable (discontinue evaluation of this method)

Notes and Comments:

3) Delivery Schedule

Delivery schedule is the overall project schedule from scoping through design, construction and opening to the public.

DESIGN-BID-BUILD	
Opportunities	Risks
<ul style="list-style-type: none"> <input type="checkbox"/> Schedule is more predictable <input type="checkbox"/> Schedule is more manageable <input type="checkbox"/> Milestones can be easier to define <input type="checkbox"/> Projects can more easily be “shelved” <input type="checkbox"/> Elements of design can be advanced prior to permitting, construction, etc. <input type="checkbox"/> Time to communicate/discuss design with stakeholders 	<ul style="list-style-type: none"> <input type="checkbox"/> Longer and more linear <input type="checkbox"/> Design and construction schedules can be unrealistic (lack industry input) <input type="checkbox"/> Lack of industry input

DESIGN-BUILD	
Opportunities	Risks
<ul style="list-style-type: none"> <input type="checkbox"/> Potential to accelerate schedule <input type="checkbox"/> Shifting schedule risk to DB team <input type="checkbox"/> Encumbers construction funds more quickly <input type="checkbox"/> Industry input into schedule <input type="checkbox"/> Fewer chances for disputes between agency and design-builders (e.g., E&O) <input type="checkbox"/> More efficient procurement of long-lead items <input type="checkbox"/> Ability to start construction before entire design, ROW, etc. is complete (i.e., phased design) 	<ul style="list-style-type: none"> <input type="checkbox"/> Request for proposal development and procurement can be lengthy <input type="checkbox"/> Undefined events or conditions found after procurement, but during design can impact schedule and cost <input type="checkbox"/> Time required to define requirements and expectations can be lengthy <input type="checkbox"/> Time required to gain acceptance of quality program <input type="checkbox"/> Time required for stakeholder review of design

CONSTRUCTION MANAGEMENT AT RISK	
Opportunities	Risks
<ul style="list-style-type: none"> <input type="checkbox"/> Ability to start construction before entire design, ROW, etc. is complete (i.e., phased design) <input type="checkbox"/> More efficient procurement of long-lead items <input type="checkbox"/> Early identification and resolution of design and construction issues <input type="checkbox"/> Shortens procurement schedule <input type="checkbox"/> Team involvement for schedule optimization <input type="checkbox"/> Continuous constructability review and VE 	<ul style="list-style-type: none"> <input type="checkbox"/> Potential for not reaching GMP and delaying schedule <input type="checkbox"/> Schedule-driven goals may drive up cost <input type="checkbox"/> Designer-contractor-agency disagreements can add delays <input type="checkbox"/> Risks associated with phased design and construction <input type="checkbox"/> Strong agency management is required to control schedule

Delivery Schedule Summary

	DBB		DB		CMR	
	Opportunity	Risk	Opportunity	Risk	Opportunity	Risk
3. Delivery Schedule	●	●	X	X	●	●

Key: ● Most appropriate delivery method
 ● Appropriate delivery method
 ○ Least appropriate delivery method
 X Not Applicable (discontinue evaluation of this method)

Notes and Comments:

4) Level of Design

Level of design is the percentage of design completion at the time of the project delivery selection analysis.

DESIGN-BID-BUILD	
Opportunities	Risks
<input type="checkbox"/> Agency has complete control over the design (can be beneficial when there is one specific solution for a project)	<input type="checkbox"/> Contract is tied directly to the completed design, which can result in a higher number of change orders, claims, etc.
<input type="checkbox"/> Project/scope can be developed through design	<input type="checkbox"/> Minimizes innovation opportunities
<input type="checkbox"/> The scope of the project is well defined when the contractor is bidding the project	<input type="checkbox"/> Can reduce the level of constructability since the contractor is not brought into the project until after the design is complete
<input type="checkbox"/> QA and QC processes for design are well understood	

DESIGN-BUILD	
Opportunities	Risks
<input type="checkbox"/> Does not require much design to be completed before awarding project to the Design/builder (between ~\ 20% - 30% complete)	<input type="checkbox"/> Potential for lacking or missing scope definition
<input type="checkbox"/> Early identification of resource (material, equipment, contracting, etc.) issues	<input type="checkbox"/> Over utilizing performance specifications to enhance innovation
<input type="checkbox"/> Contractor involvement in early design, which improves constructability	<input type="checkbox"/> Must have very clear definitions and requirements in the RFP because it is the basis for the contract
<input type="checkbox"/> Plans do not have to be as detailed because the contractor is brought into the project from the beginning	<input type="checkbox"/> Less agency direct agency control over the design
	<input type="checkbox"/> Can create disjointed project designs across agency as a whole

CONSTRUCTION MANAGEMENT AT RISK	
Opportunities	Risks
<input type="checkbox"/> Contractor involvement in early design, which improves constructability.	<input type="checkbox"/> Teaming and communicating concerning design can cause disputes
<input type="checkbox"/> Lower level of design required for contracting for pre-construction services	<input type="checkbox"/> Design can be slowed if designer does not agree with construction manager input
<input type="checkbox"/> Sharing more design risks with contractor	<input type="checkbox"/> Design must allow for early agreement on GMP
<input type="checkbox"/> Early identification of resource (i.e., material, equipment, contracting, etc.) issues	

Level of Design Summary

	DBB		DB		CMR	
	Opportunity	Risk	Opportunity	Risk	Opportunity	Risk
4. Level of Design	N/A	N/A	N/A	N/A	N/A	N/A

- Key:
- Most appropriate delivery method
 - Appropriate delivery method
 - Least appropriate delivery method
 - X Not Applicable (discontinue evaluation of this method)

Notes and Comments:

5) Project Unknowns

Project unknowns are the unanticipated events or conditions that occur during the design and construction of a project.

DESIGN-BID-BUILD	
Opportunities	Risks
<ul style="list-style-type: none"> <input type="checkbox"/> Unknown conditions are handled based on three linear phases: design, bid, build <input type="checkbox"/> Price known before construction is awarded <input type="checkbox"/> Project can be shelved if there are financial issues or delays 	<ul style="list-style-type: none"> <input type="checkbox"/> Risks associated with project complexity (the inability of designer to be all-knowing about construction) <input type="checkbox"/> Prescriptive specifications cannot foresee all conditions <input type="checkbox"/> Additional costs from contractor for unknown conditions.

DESIGN-BUILD	
Opportunities	Risks
<ul style="list-style-type: none"> <input type="checkbox"/> Performance specifications can allow for alternative risk allocations <input type="checkbox"/> Price known before construction is awarded <input type="checkbox"/> Designers and contractors can work toward innovative solutions to, or avoidance of, unknowns <input type="checkbox"/> Less management required by agency to solve unknown conditions – sole source to pull on 	<ul style="list-style-type: none"> <input type="checkbox"/> Need a detailed project scope, description etc., for the RFP to get accurate/comprehensive responses to the RFP <input type="checkbox"/> Financial risks due to unknown total project cost

CONSTRUCTION MANAGEMENT AT RISK	
Opportunities	Risks
<ul style="list-style-type: none"> <input type="checkbox"/> Contractor can have a better understanding of the unknown conditions as design progresses <input type="checkbox"/> Constructability unknowns are part of the design process <input type="checkbox"/> Constructors share information with the designer and owner <input type="checkbox"/> More flexibility and innovation available to deal with unknowns early in design process 	<ul style="list-style-type: none"> <input type="checkbox"/> Teaming relationship and communication <input type="checkbox"/> Disagreement among Designer-Contractor-Owner <input type="checkbox"/> Discovery of unknown conditions can drive up GMP, which can be compounded in phased construction

Project Unknowns Summary

	DBB		DB		CMR	
	Opportunity	Risk	Opportunity	Risk	Opportunity	Risk
5. Project Unknowns	●	●	X	X	●	●

Key: ● Most appropriate delivery method
 ● Appropriate delivery method
 ○ Least appropriate delivery method
 X Not Applicable (discontinue evaluation of this method)

Notes and Comments:

6) Staff Experience/Availability

Staff experience and availability as it relates to the project delivery methods in question.

DESIGN-BID-BUILD	
Opportunities	Risks
<input type="checkbox"/> Agency and consultants have high level of experience with the traditional system <input type="checkbox"/> Designers can be more interchangeable between projects	<input type="checkbox"/> Can require a high level of agency staffing <input type="checkbox"/> Staff's responsibilities are spread out about the project <input type="checkbox"/> Can require staff to have full breadth of technical expertise

DESIGN-BUILD	
Opportunities	Risks
<input type="checkbox"/> Less agency staff required due to the sole source nature of DB <input type="checkbox"/> Opportunity to grow agency staff by learning a new process	<input type="checkbox"/> Limitation of availability of staff with skills, knowledge and personality to manage DB projects <input type="checkbox"/> Existing staff may need additional training to address their changing roles <input type="checkbox"/> Need to "mass" agency resources at critical points in process (i.e., RFP development, design reviews, etc.)

CONSTRUCTION MANAGEMENT AT RISK	
Opportunities	Risks
<input type="checkbox"/> Agency can improve efficiencies by having more project managers on staff rather than specialized experts <input type="checkbox"/> Smaller number of staff	<input type="checkbox"/> Limitation of availability of staff with skills, knowledge and personality to manage DB projects <input type="checkbox"/> Existing staff may need additional training to address their changing roles <input type="checkbox"/> Agency must learn how to negotiate GMP projects

Staff Experience/Availability Summary

	DBB		DB		CMR	
	Opportunity	Risk	Opportunity	Risk	Opportunity	Risk
6. Staff Experience/Availability	N/A	N/A	N/A	N/A	N/A	N/A

Key: ● Most appropriate delivery method
 ● Appropriate delivery method
 ○ Least appropriate delivery method
 X Not Applicable (discontinue evaluation of this method)

Notes and Comments:

7) Level of Oversight

Level of oversight involves the amount of agency staff required to monitor the design or construction.

DESIGN-BID-BUILD	
Opportunities	Risks
<input type="checkbox"/> Oversight roles are well understood <input type="checkbox"/> Contract documents are typically completed in a single package before construction begins <input type="checkbox"/> Multiple checking points through three linear phases: design-bid-build	<input type="checkbox"/> Requires a high-level of oversight <input type="checkbox"/> Potential for delays and cost overruns <input type="checkbox"/> Increased likelihood for claims

DESIGN-BUILD	
Opportunities	Risks
<input type="checkbox"/> A single entity connection during project life <input type="checkbox"/> Continuous execution of design and build <input type="checkbox"/> Getting input from construction to enhance constructability and innovation <input type="checkbox"/> Overall project planning and scheduling is established by one entity	<input type="checkbox"/> Can require high level of design oversight <input type="checkbox"/> Can require high level of quality assurance oversight <input type="checkbox"/> Limitation on staff with DB oversight experience

CONSTRUCTION MANAGEMENT AT RISK	
Opportunities	Risks
<input type="checkbox"/> Preconstruction services are provided by the construction manager <input type="checkbox"/> Getting input from construction to enhance constructability and innovation	<input type="checkbox"/> Agency must have experienced staff to oversee the CMR <input type="checkbox"/> Higher level of cost oversight required

Level of Oversight Summary

	DBB		DB		CMR	
	Opportunity	Risk	Opportunity	Risk	Opportunity	Risk
7. Level of Oversight	N/A	N/A	N/A	N/A	N/A	N/A

- Key:
- Most appropriate delivery method
 - Appropriate delivery method
 - Least appropriate delivery method
 - X Not Applicable (discontinue evaluation of this method)

Notes and Comments:

8) Risk Allocation

Risk allocation is the assignment of unknown events or conditions to the party that can best manage them.

DESIGN-BID-BUILD	
Opportunities	Risks
<input type="checkbox"/> Risk allocation is most widely understood/used <input type="checkbox"/> Agency-government risk allocation is easier with complete design <input type="checkbox"/> More complete information for risk assessment <input type="checkbox"/> Opportunity to avoid or mitigate risk through design	<input type="checkbox"/> Potential for misplaced risk through prescriptive specifications <input type="checkbox"/> Innovative risk allocation is difficult <input type="checkbox"/> Change order risk can be greater <input type="checkbox"/> Relationship is inherently adversarial <input type="checkbox"/> Low-bid related risks <input type="checkbox"/> Limited industry input in contract risk allocation

DESIGN-BUILD	
Opportunities	Risks
<input type="checkbox"/> Risk-reward structure can be better defined <input type="checkbox"/> Innovative opportunities to allocate risks to different parties (e.g., schedule, means and methods, phasing) <input type="checkbox"/> Single point of responsibility (i.e., two parties) <input type="checkbox"/> Opportunity for industry review of risk allocation (draft RFP, ATC processes) <input type="checkbox"/> Avoid low-bid risk in procurement	<input type="checkbox"/> Limited time to resolve risks <input type="checkbox"/> Additional risks allocated to designers for timely delivery <input type="checkbox"/> Additional risks allocated to designers for errors and omissions <input type="checkbox"/> Poorly defined risks are expensive

CONSTRUCTION MANAGEMENT AT RISK	
Opportunities	Risks
<input type="checkbox"/> Additional opportunities to mitigate and/or allocate risks to appropriate party (i.e., collaborative discussions of risk) <input type="checkbox"/> Innovative opportunities to allocate risks to different parties (e.g., schedule, means and methods, phasing) <input type="checkbox"/> Opportunities to manage costs risks through CM/GC involvement <input type="checkbox"/> Avoid low-bid risk in procurement	<input type="checkbox"/> If GMP cannot be reached, additional low-bid risks appear <input type="checkbox"/> Limited to risk capabilities of CM/GC <input type="checkbox"/> Designer-contractor-agency disagreements can add delays <input type="checkbox"/> Strong agency management is required to negotiate/optimize risks

Risk Allocation Summary

	DBB		DB		CMR	
	Opportunity	Risk	Opportunity	Risk	Opportunity	Risk
8. Risk Allocation	●	●	X	X	●	●

Key: ● Most appropriate delivery method
 ● Appropriate delivery method
 ○ Least appropriate delivery method
 X Not Applicable (discontinue evaluation of this method)

Notes and Comments:

9) Competition and Availability

Competition and availability refers to the amount of competition in the market place and their capacity for the project.

DESIGN-BID-BUILD	
Opportunities	Risks
<input type="checkbox"/> Promotes high level of competition in the marketplace <input type="checkbox"/> Opens construction to all reasonably qualified bidders <input type="checkbox"/> Transparency and fairness <input type="checkbox"/> Reduced chance of corruption and collusion	<input type="checkbox"/> Risks associated with selecting the low bid (the best contractor is not necessary selected) <input type="checkbox"/> No constructor input into the process

DESIGN-BUILD	
Opportunities	Risks
<input type="checkbox"/> Allows for qualifications in contractor procurement <input type="checkbox"/> Selection is typically based on both price and qualifications <input type="checkbox"/> Two-phase process can promote teaming, design and price competition	<input type="checkbox"/> Need for DB qualifications can limit competition <input type="checkbox"/> Lack of competition with past experience with the project delivery method

CONSTRUCTION MANAGEMENT AT RISK	
Opportunities	Risks
<input type="checkbox"/> Allows for qualifications in contractor procurement	<input type="checkbox"/> Currently there is not a large pool of contractors with experience in CMR, which will reduce the competition and availability <input type="checkbox"/> Working with only one contractor to develop GMP can limit price competition

Competition and Availability Summary

	DBB		DB		CMR	
	Opportunity	Risk	Opportunity	Risk	Opportunity	Risk
9. Competition and Availability	N/A	N/A	N/A	N/A	N/A	N/A

Key:

- Most appropriate delivery method
- Appropriate delivery method
- Least appropriate delivery method
- X Not Applicable (discontinue evaluation of this method)

Notes and Comments:

10) Resource Availability

Resources are considered to be project-specific materials, equipment, personnel and expertise required to complete the project.

DESIGN-BID-BUILD	
Opportunities	Risks
<input type="checkbox"/> Agency control of specifications and design of specific resources <input type="checkbox"/> More time to work out specifics of the resources during design	<input type="checkbox"/> Lack of third party expert input during the design process <input type="checkbox"/> Lack of integration of contractors and specialty contractors <input type="checkbox"/> Does not promote the use of specialized equipment and material

DESIGN-BUILD	
Opportunities	Risks
<input type="checkbox"/> DB can develop design to their team's unique resources and capabilities	<input type="checkbox"/> Agency has less control over the specifics of the selected resources <input type="checkbox"/> Agency needs a strong project manager to manage the project

CONSTRUCTION MANAGEMENT AT RISK	
Opportunities	Risks
<input type="checkbox"/> DB can develop design to their team's unique resources and capabilities	<input type="checkbox"/> Some risk if a GMP cannot be agreed upon <input type="checkbox"/> Agency needs a strong project manager to manage the project

Resource Availability Summary

	DBB		DB		CMR	
	Opportunity	Risk	Opportunity	Risk	Opportunity	Risk
10. Resource Availability	N/A	N/A	N/A	N/A	N/A	N/A

- Key:
- Most appropriate delivery method
 - Appropriate delivery method
 - Least appropriate delivery method
 - X Not Applicable (discontinue evaluation of this method)

Notes and Comments:

11) Team Experience

Market experience is that which includes contractor and designer experience with the project delivery method.

DESIGN-BID-BUILD	
Opportunities	Risks
<input type="checkbox"/> All agency and consultant personnel are familiar with DBB process <input type="checkbox"/> Contractors are familiar with DBB process	<input type="checkbox"/> Traditionally low bid is the procurement method and does not always select the contractor with the most appropriate experience. <input type="checkbox"/> Innovative design can be limited to what experience of agency staff

DESIGN-BUILD	
Opportunities	Risks
<input type="checkbox"/> Enhance innovation and constructability <input type="checkbox"/> Cohesiveness of the design and the construction team throughout the project <input type="checkbox"/> Increased opportunity for innovation possibilities due to the diverse project team	<input type="checkbox"/> The gap between owner experiences and team experience <input type="checkbox"/> Reliant on the design build team that was awarded the project

CONSTRUCTION MANAGEMENT AT RISK	
Opportunities	Risks
<input type="checkbox"/> Agency selects the entire project team (consultants, designers, and contractors) <input type="checkbox"/> Contractor is part of the project team early on, creating a project "team" <input type="checkbox"/> Agency still has control over the project team <input type="checkbox"/> Increased opportunity for innovation due to the diversity of the project team	<input type="checkbox"/> Teamwork and communication among the project team <input type="checkbox"/> Requires a strong project manager from the agency <input type="checkbox"/> Staff capability in overseeing CMR work and noticing errors

Team Experience Summary

	DBB		DB		CMR	
	Opportunity	Risk	Opportunity	Risk	Opportunity	Risk
11. Team Experience	N/A	N/A	N/A	N/A	N/A	N/A

Key: ● Most appropriate delivery method
 ● Appropriate delivery method
 ○ Least appropriate delivery method
 X Not Applicable (discontinue evaluation of this method)

Notes and Comments:

12) Third Party Involvement

Third party involvement is the required timeliness, amount and impact of the stakeholder involvement in a project that is outside the control of the project team.

DESIGN-BID-BUILD	
Opportunities	Risks
<input type="checkbox"/> Owner has more time to get required agreements before construction <input type="checkbox"/> Contractor has complete set of drawings to bid on before becoming contractually bound to a price <input type="checkbox"/> Third party design expertise can be brought in during design	<input type="checkbox"/> Potential for schedule delays due to stakeholder inputs <input type="checkbox"/> A contractually bound contractor is not involved in the project until completion of design <input type="checkbox"/> Increased likelihood for claims <input type="checkbox"/> Increased likelihood for higher change orders

DESIGN-BUILD	
Opportunities	Risks
<input type="checkbox"/> Third parties involvement can be managed by design-builder <input type="checkbox"/> Increased project constructability due to the contractor involvement during the design process	<input type="checkbox"/> Risks associated with agreements when design is not completed <input type="checkbox"/> Must have well defined project requirements, scope and quality levels early in project

CONSTRUCTION MANAGEMENT AT RISK	
Opportunities	Risks
<input type="checkbox"/> Contractor has a complete understanding of the project when finalizing the construction price <input type="checkbox"/> An integrated project team, from design through construction <input type="checkbox"/> Agency still has considerable involvement with third parties	<input type="checkbox"/> Three party contract can be difficult to manage with the involvement of third parties <input type="checkbox"/> Agency needs a strong project manager for success

Third Party Involvement Summary

	DBB		DB		CMR	
	Opportunity	Risk	Opportunity	Risk	Opportunity	Risk
12. Third Party Involvement	●	●	X	X	●	●

- Key:
- Most appropriate delivery method
 - Appropriate delivery method
 - Least appropriate delivery method
 - X Not Applicable (discontinue evaluation of this method)

Notes and Comments:

13) Regulations and Clearances

Regulations and clearances involved with items such as right-of-way, environmental compliance, permitting, etc.

DESIGN-BID-BUILD	
Opportunities	Risks
<input type="checkbox"/> There is time to work out approvals, ROW issues, etc. <input type="checkbox"/> Can begin designed in house while regulatory issues are being resolved <input type="checkbox"/> Project can be shelved while resolving regulatory issues	<input type="checkbox"/> Risks associated with inadequate provision of long-term needs <input type="checkbox"/> Risks due to no consideration of life-cycle value

DESIGN-BUILD	
Opportunities	Risks
<input type="checkbox"/> Constructor can be involved in gaining regulations and clearances	<input type="checkbox"/> Legal challenges can cause delays and change orders <input type="checkbox"/> Most regulatory issues have to be complete before starting design

CONSTRUCTION MANAGEMENT AT RISK	
Opportunities	Risks
<input type="checkbox"/> Constructor can be involved in gaining regulations and clearances	<input type="checkbox"/> Legal challenges can cause delays and difficulty in negotiating GMP

Regulations and Clearances Summary

	DBB		DB		CMR	
	Opportunity	Risk	Opportunity	Risk	Opportunity	Risk
13. Regulations and Clearances	N/A	N/A	N/A	N/A	N/A	N/A

Key: ● Most appropriate delivery method
 ● Appropriate delivery method
 ○ Least appropriate delivery method
 X Not Applicable (discontinue evaluation of this method)

Notes and Comments: