TCRP REPORT 131 – TIER 1 – ANALYTICAL DELIVERY DECISION APPROACH RATING SUMMARY, RECOMMENDATION, AND COMMENTS:

Project Name				
Date and Location				
Review Panel Members Name and Project Role				

Project Delivery Selection Summary See Rating Key	Design-Bid-Build	CMGC	Progressive Design-Build
Project Level Issues Rating			
1. Project Size			
2. Cost			
3. Schedule			
4. Risk Management			
5. Risk Allocation			
6. LEED Certification	N/A	N/A	N/A
Agency-Level Issues Rating			
7. Agency Experience			
8. Staffing Required			
9. Staff Capability			
10. Agency Goals and Objectives			
11. Agency Control of Project			
12. Third-Party Agreements			
Public Policy/Regulatory Issues Rating			
13. Competition			
14. DBE Impacts			
15. Labor Unions			
16. Federal/State/Local Laws			
17. FTA/EPA Regulations			
18. Stakeholder/Community Input			

Project Delivery Selection Summary See Rating Key	Design-Bid-Build	CMGC	Progressive Design-Build
Lifecycle Issues Rating			
19. Lifecycle Costs			
20. Maintainability			
21. Sustainable Design Goals			
22. Sustainable Construction Goals			
Other Issues Rating			
23. Construction Claims			
24. Adversarial Relationship			
Other	--	--	--
Other	--	--	--
Other	--	--	--
Total Rating Score			
Project Delivery Method Selection Recommendation	☐ Design-Bid-Build	☐ CMGC	☐ Progressive Design Build

Comments:	

Rating Key	
3	Most appropriate delivery method
2	Appropriate delivery method
1	Least appropriate delivery method
0	Not appropriate delivery method
N/A	Factor not applicable or not relevant to the selection

Note: This This Project Delivery Method assessment and decision approach is based on the Transit Cooperative Research Program (TCRP) Report 131 *A Guidebook for the Evaluation of Project Delivery Methods*, using the Tier 1 – Analytical Delivery Decision Approach, with minor modifications to address the project delivery requirements.

TCRP Report 131 – Tier I – Analytical Delivery Decision Approach

Overview

This document provides a decision approach for evaluating and selecting project delivery methods for transit infrastructure projects. The information below lists the project delivery methods followed by the evaluation worksheets for use by Caltrain staff and Project team members. By using these forms, a brief Project Delivery Decision Report will be generated for the Project. The primary objectives of this evaluation tool are:

- Present a structured approach to assist Caltrain in making informed project delivery method decisions
- Assist Caltrain in determining the optimal choice for the project delivery method
- Identify a project delivery method which can:
    - Reduce Project cost
    - Expedite the Project's completion
    - Identify features to optimize the project delivery method
- Provide documentation of the project delivery method assessment and selection decision

Background

The project delivery method is the process by which a construction project is designed and constructed including project scope definition; organization of designers, constructors, and various consultants; sequencing of design and construction operations; execution of design and construction; closeout; and start-up. Thus, the different project delivery methods are distinguished by the manner in which contracts between Caltrain, designers, and constructors are formed and the technical relationships that evolve between each party inside those contracts. There are several types of project delivery systems available for publicly funded transportation projects. The most common systems are Design-Bid-Build (DBB), Traditional Design-Build (D-B), Construction Manager/General Contractor (CMGC) [also known as Construction Manager at Risk (CMAR)], Progressive Design-Build (PD-B), and Design-Build-Operate-Maintain (DBOM). No single project delivery method is appropriate for every project. Each project must be examined individually to determine how it aligns with the attributes of each available delivery method and the owner goals and objectives. For this project delivery Workshop, only the DBB and CMGC project delivery methods are under consideration, so no additional evaluation of the D-B or PD-B project delivery methods will be conducted.

Note: This Project Delivery Method assessment and decision approach is based on the Transit Cooperative Research Program (TCRP) Report 131 *A Guidebook for the Evaluation of Project Delivery Methods*, using the Tier 1 – Analytical Delivery Decision Approach, with minor modifications to address the delivery requirements.

Project delivery methods considered in this evaluation

Design-Bid-Build (DBB) is the traditional, benchmark project delivery method in which Caltrain 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, Caltrain owns the details of design during construction and as a result, is responsible for the cost of any errors or omissions encountered in construction.

Construction Manager / General Contractor (CMGC)) is a project delivery method in which Caltrain contracts separately with a Designer and a construction Contractor. Caltrain can perform design or contract with an engineering firm to provide final design. Caltrain selects a construction firm to participate in the pre-construction phase and perform the construction work. The significant characteristic of this delivery method is a contract between Caltrain and a Contractor who will be at risk for the final cost and time of construction. Contractor input into the design development and constructability of complex and innovative projects are the major reasons Caltrain would select the CMGC project delivery method. Unlike DBB, CMGC brings the builder into the design process at a stage where definitive input can have a positive impact on the project features. CMGC is particularly valuable for non-standard or complex designs where Caltrain prefers to remain actively engaged in developing the Project design, technical requirements, and construction phasing while engaging a construction Contractor to provide input during the pre-construction final design phase.

Progressive Design-Build (PDB) combines the benefits of traditional DB and CMGC/CMAR. PDB refines the traditional DB delivery method so Caltrain will select a DB entity based on qualifications. As with the traditional DB

delivery method, the designer and contractor work together under a single contract with Caltrain to optimize the project design to meet schedule and budget objectives. As Pre-construction design development proceeds, the Design-Builder and Caltrain progressively evaluate the project Total Contract Price against the agreed-upon budget and adjust the design accordingly to meet the budget. PDB is particularly valuable for new non-standard types of designs where it is difficult for Caltrain to develop the technical requirements necessary for a traditional DB procurement without construction industry input and Caltrain prefers to remain actively engaged in developing the Project design, technical requirements, and construction phasing while engaging a construction Contractor to provide input during the pre-construction final design phase.

Project Delivery Goals and Objectives

An understanding of the overall Project goal and supporting objectives is essential to selecting an appropriate project delivery method. Therefore, the overall Project goal and supporting objectives should be set prior to using the project delivery selection worksheet. Typically, the Project objectives can be defined in three to five items. Example objectives are provided below for reference. These objectives should remain consistent over the life of the Project.

Project-Specific Goal and Objectives	
•	
Do any of these goals and objectives eliminate any of the potential project delivery methods?	

Project Delivery Goals and Objectives

Conduct a brief discussion to brainstorm other Project-specific Goals and Objectives not included on the previous summary page. We will capture the comments and include them in the Workshop Memorandum and Report.

Project-Specific Goals and Objectives	
•	•
•	•
•	•
•	•
•	•
•	•
•	•
•	•
•	•
•	•
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•	•
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•	•
•	•
•	•
•	•
•	•
•	• .
• .	•
Do any of these goals and objectives eliminate any of the potential project delivery methods?	

Project Risks and Constraints

In addition to overall Project goal and objectives, a detailed discussion of Project risks and constraints is a critical step that helps with evaluation of the selection factors.

Project Risks and Constraints	
Project-specific Risks and Constraints	**General Risk and Constraints Categories**
Do any of these risks and constraints eliminate any of the potential project delivery methods?	

Project Risks and Constraints

Conduct a brief discussion to brainstorm other Project Risks and Constraints not included on the previous summary page. We will capture the comments and include them in the Workshop Memorandum and Report.

Project Risks and Constraints	
Project-specific Risks and Constraints	**General Risk and Constraints Categories**
•	•
•	•
•	•
•	•
•	•
•	•
•	•
•	•
•	•
•	•
•	•
•	•
•	•
Do any of these risks and constraints eliminate any of the potential project delivery methods?	

TCRP Report 131 – Tier 1 – Analytical Delivery Decision Approach

Project-Level Issues

Issue 1: Project Size

Project size reflects the dollar value and physical dimension of the transit corridor

Design-Bid-Build (DBB)	
Advantages	**Disadvantages**
•	•
Rating _____	
Comments: ● ●	
Construction Manager General Contractor (CMGC)	
Advantages	**Disadvantages**
•	•
Rating _____	
Comments: ●	
Progressive Design-Build (PD-B)	
Advantages	**Disadvantages**
•	•
Rating _____	
Comments:	

Issue 2: Cost

This issue includes several aspects of project cost, such as ability to handle budget restrictions, early and precise cost estimation, and consistent control of project costs.

Design-Bid-Build (DBB)	
Advantages	**Disadvantages**
•	•
Rating _____	
Comments: •	
Construction Manager General Contractor (CMGC)	
Advantages	**Disadvantages**
•	•
Rating _____	
Comments: • • .	
Progressive Design-Build (PD-B)	
Advantages	**Disadvantages**
•	•
Rating _____	
Comments: • • • • • • .	

Issue 3: Schedule

This issue includes two aspects of project schedule – the ability to shorten the schedule and the opportunity to control and prevent time growth.

Design-Bid-Build (DBB)	
Advantages	**Disadvantages**
•	•
Rating _____	
Comments: ● ●	
Construction Manager General Contractor (CMGC)	
Advantages	**Disadvantages**
•	•
Rating _____	
Comments: ● ● .	
Progressive Design-Build (PD-B)	
Advantages	**Disadvantages**
•	•
Rating _____	
Comments: ●	

Issue 4: Risk Management

This issue involves methods for coping with project uncertainties that are inherent in each delivery method. For more detailed guidance, please see Tier 3 for risk-based approach to selecting project delivery methods.

Design-Bid-Build (DBB)	
Advantages	**Disadvantages**
•	•
Rating _____	
Comments: •	
Construction Manager General Contractor (CMGC)	
Advantages	**Disadvantages**
•	•
Rating _____	
Comments: • • .	
Progressive Design-Build (PD-B)	
Advantages	**Disadvantages**
•	•
Rating _____	
Comments: •	

Issue 5: Risk Allocation

Each project delivery method has characteristics that affect risk allocation. The overarching goal should be to select the project delivery method that assigns project risks to the parties in the best position to manage them.

Design-Bid-Build (DBB)	
Advantages	**Disadvantages**
•	•
Rating _____	
Comments: • •	
Construction Manager General Contractor (CMGC)	
Advantages	**Disadvantages**
•	•
Rating _____	
Comments: •	
Progressive Design-Build (PD-B)	
Advantages	**Disadvantages**
•	•
Rating _____	
Comments: • •	

Issue 6: LEED Certification

This issue concerns obtaining LEED certification for a project. Each project delivery method needs to be examined to discover its ability to include features that will facilitate obtaining LEED certification in accordance with owner's needs.

Design-Bid-Build (DBB)	
Advantages	**Disadvantages**
•	•
Rating N/A	
Comments: • •	

Construction Manager General Contractor (CMGC)	
Advantages	**Disadvantages**
•	•
Rating N/A	
Comments: • • •	

Progressive Design-Build (PD-B)	
Advantages	**Disadvantages**
•	•
Rating N/A	
Comments: • •	

Agency-Level Issues

Issue 7: Agency Experience

The level of experience of an owner's staff can affect the success of an alternative project delivery method application.

Design-Bid-Build (DBB)	
Advantages	**Disadvantages**
•	•
Rating _____	
Comments: • •	
Construction Manager General Contractor (CMGC)	
Advantages	**Disadvantages**
•	•
Rating _____	
Comments: • • .	
Progressive Design-Build (PD-B)	
Advantages	**Disadvantages**
•	•
Rating _____	
Comments: • •	

Issue 8: Staffing Required

This issue ultimately concerns the amount of owner involvement required by each delivery method. The total number of owner employees is one measure of the extent of owner involvement. Another important measure for the owners is the variation in the number of staff required throughout the project development process.

Design-Bid-Build (DBB)	
Advantages	**Disadvantages**
•	•
Rating _____	
Comments: •	

Construction Manager General Contractor (CMGC)	
Advantages	**Disadvantages**
•	•
Rating _____	
Comments: •	

Progressive Design-Build (PD-B)	
Advantages	**Disadvantages**
•	•
Rating _____	
Comments: • •	

Issue 9: Staff Capability

This issue regards the owner's requirement to furnish a highly capable staff to complete the duties it must undertake in each delivery method.

Design-Bid-Build (DBB)	
Advantages	**Disadvantages**
•	•
Rating _____	
Comments: • •	
Construction Manager General Contractor (CMGC)	
Advantages	**Disadvantages**
•	•
Rating _____	
Comments: • • .	
Progressive Design-Build (PD-B)	
Advantages	**Disadvantages**
•	•
Rating _____	
Comments: • •	

Issue 10: Agency Goals and Objectives

Agency goals define the project success. The extent to which these goals align with the inherent attributes of each project delivery method has a significant bearing on delivery method selection.

Design-Bid-Build (DBB)	
Advantages	**Disadvantages**
•	•
Rating _____	
Comments: • •	
Construction Manager General Contractor (CMGC)	
Advantages	**Disadvantages**
•	•
Rating _____	
Comments: • • • .	
Progressive Design-Build (PD-B)	
Advantages	**Disadvantages**
•	•
Rating _____	
Comments: • •	

Issue 11: Agency Control of Project

The owner's ability to control the details of design and construction varies with each project delivery method. (Note the discussion of cost control and time control is included in other issue descriptions.)

Design-Bid-Build (DBB)	
Advantages	**Disadvantages**
•	•
Rating _____	
Comments: • •	
Construction Manager General Contractor (CMGC)	
Advantages	**Disadvantages**
•	•
Rating _____	
Comments:	
Progressive Design-Build (PD-B)	
Advantages	**Disadvantages**
•	•
Rating _____	
Comments:	

Issue 12: Third-party Agreements

Each delivery method can facilitate agreements with third parties, such as political entities, utilities, railroads, etc. in a different manner. The extent to which designers or constructors can facilitate third-party agreements is the basis for the advantage and disadvantage of each delivery method.

Design-Bid-Build (DBB)	
Advantages	**Disadvantages**
•	•
Rating _____	
Comments: • •	
Construction Manager General Contractor (CMGC)	
Advantages	**Disadvantages**
•	•
Rating _____	
Comments: •	
Progressive Design-Build (PD-B)	
Advantages	**Disadvantages**
•	•
Rating _____	
Comments:	

Public Policy/Regulatory Issues

Issue 13: Competition

Each delivery method may affect the level of competition, and thus the effect of each delivery method on competition must be evaluated. Alternative project delivery methods allow agencies to package projects in sizes that can effectively enhance or reduce competition.

Design-Bid-Build (DBB)	
Advantages	**Disadvantages**
•	•
Rating _____	
Comments: •	
Construction Manager General Contractor (CMGC)	
Advantages	**Disadvantages**
•	•
Rating _____	
Comments: • •	
Progressive Design-Build (PD-B)	
Advantages	**Disadvantages**
•	•
Rating _____	
Comments:	

Issue 14: DBE Impacts

The extent to which the delivery methods can be used to promote participation of disadvantaged businesses forms the advantages and disadvantages of this issue.

Design-Bid-Build (DBB)	
Advantages	**Disadvantages**
•	•
Rating _____	
Comments: • •	
Construction Manager General Contractor (CMGC)	
Advantages	**Disadvantages**
•	•
Rating _____	
Comments:	
Progressive Design-Build (PD-B)	
Advantages	**Disadvantages**
•	•
Rating _____	
Comments: •	

Issue 15: Labor Unions

The choice of delivery method may have an impact on labor usage and hence labor union issues. The issues can be both internal to the transit agency as well as external to its contractors.

Design-Bid-Build (DBB)	
Advantages	**Disadvantages**
•	•
Rating _____	
Comments: •	
Construction Manager General Contractor (CMGC)	
Advantages	**Disadvantages**
•	•
Rating _____	
Comments:	
Progressive Design-Build (PD-B)	
Advantages	**Disadvantages**
•	•
Rating _____	
Comments: •	

Issue 16: Federal/State/Local Laws

Transit agencies may not be able to use some delivery methods due to state or local laws. Some of the states require that transit agencies go through several steps before allowed to use an alternative delivery method. The advantages and disadvantages of each project delivery method for this issue reflect the level of difficulty of using a delivery method from a legal standpoint.

Design-Bid-Build (DBB)	
Advantages	**Disadvantages**
•	•
Rating _____	
Comments: •	
Construction Manager General Contractor (CMGC)	
Advantages	**Disadvantages**
•	•
Rating _____	
Comments: •	
Progressive Design-Build (PD-B)	
Advantages	**Disadvantages**
•	•
Rating _____	
Comments: • •	

Issue 17: FTA/EPA Regulations

The extent to which the various delivery methods can accommodate FTA requirements and EPA regulations given the unique project characteristics constitutes the advantages and disadvantages of this issue.

Design-Bid-Build (DBB)	
Advantages	**Disadvantages**
•	•
Rating _____	
Comments: •	

Construction Manager General Contractor (CMGC)	
Advantages	**Disadvantages**
•	•
Rating _____	
Comments: • •	

Progressive Design-Build (PD-B)	
Advantages	**Disadvantages**
•	•
Rating _____	
Comments: • •	

Issue 18: Stakeholder/Community Input

This issue addresses the opportunity for stakeholder involvement afforded by each delivery method.

Design-Bid-Build (DBB)	
Advantages	**Disadvantages**
•	•
Rating _____	
Comments: • •	
Construction Manager General Contractor (CMGC)	
Advantages	**Disadvantages**
•	•
Rating _____	
Comments: • •	
Progressive Design-Build (PD-B)	
Advantages	**Disadvantages**
•	•
Rating _____	
Comments: • •	

Lifecycle Issues

Issue 19: Lifecycle Costs

Delivery methods can influence costs in the operation and maintenance phase. The issue concerns the opportunities or challenges that each delivery method provides with regard to lifecycle costs.

Design-Bid-Build (DBB)	
Advantages	**Disadvantages**
•	•
Rating _____	
Comments: •	
Construction Manager General Contractor (CMGC)	
Advantages	**Disadvantages**
•	•
Rating _____	
Comments: •	
Progressive Design-Build (PD-B)	
Advantages	**Disadvantages**
•	•
Rating _____	
Comments: • •	

Issue 20: Maintainability

The issue of maintainability involves the owner's ability to specify quality and ease of maintenance. There are advantages and disadvantages to each delivery method with regard to how maintainability is achieved.

Design-Bid-Build (DBB)	
Advantages	**Disadvantages**
•	•
Rating _____	
Comments:	
•	
Construction Manager General Contractor (CMGC)	
Advantages	**Disadvantages**
•	•
Rating _____	
Comments:	
•	
Progressive Design-Build (PD-B)	
Advantages	**Disadvantages**
•	•
Rating _____	
Comments:	

Issue 21: Sustainable Design Goals

Sustainable design is becoming ever more important in achieving overall sustainability goals for projects. There are advantages and disadvantages to each delivery method in terms of addressing sustainability issues and incorporating sustainable design in a project.

Design-Bid-Build (DBB)	
Advantages	**Disadvantages**
•	•
Rating _____	
Comments: •	

Construction Manager General Contractor (CMGC)	
Advantages	**Disadvantages**
•	•
Rating _____	
Comments: • •	

Progressive Design-Build (PD-B)	
Advantages	**Disadvantages**
•	•
Rating _____	
Comments: •	

Issue 22: Sustainable Construction Goals

In addition to sustainable design, sustainable construction is an important vehicle for achieving overall sustainability goals. There are advantages and disadvantages to each project delivery method with regard to facilitating sustainable construction.

Design-Bid-Build (DBB)	
Advantages	**Disadvantages**
•	•
Rating _____	
Comments: • •	
Construction Manager General Contractor (CMGC)	
Advantages	**Disadvantages**
•	•
Rating _____	
Comments:	
Progressive Design-Build (PD-B)	
Advantages	**Disadvantages**
•	•
Rating _____	
Comments: • •	

Other Issues

Issue 23: Construction Claims

The effect of each delivery method on exposing the agency to potential conflicts and claims is addressed under this issue.

Design-Bid-Build (DBB)	
Advantages	**Disadvantages**
•	•
Rating _____	
Comments: •	
Construction Manager General Contractor (CMGC)	
Advantages	**Disadvantages**
•	•
Rating _____	
Comments: •	
Progressive Design-Build (PD-B)	
Advantages	**Disadvantages**
•	•
Rating _____	
Comments: •	

Issue 24: Adversarial Relationship

There are advantages and disadvantages to each project delivery method with regard to avoiding adversarial relationships on the project team. These advantages and disadvantages will vary depending on the nature of the project and the owner's experience with the delivery methods.

Design-Bid-Build (DBB)	
Advantages	**Disadvantages**
•	•
Rating _____	
Comments: •	
Construction Manager General Contractor (CMGC)	
Advantages	**Disadvantages**
•	•
Rating _____	
Comments: • • .	
Progressive Design-Build (PD-B)	
Advantages	**Disadvantages**
•	•
Rating _____	
Comments: • • •	

Issue 25: Other

Design-Bid-Build (DBB)	
Advantages	**Disadvantages**
•	•
Rating _____	
Comments: •	
Construction Manager General Contractor (CMGC)	
Advantages	**Disadvantages**
•	•
Rating _____	
Comments: •	
Progressive Design-Build (PD-B)	
Advantages	**Disadvantages**
•	•
Rating _____	
Comments: •	