



Innovative Construction Contracting Guide

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Chapter 1: Introduction



1.1 Introduction



This document contains fundamental information on various innovative construction contracting methods that may be used to enhance the implementation and delivery of MDOT construction projects. Innovative construction contracting methods are typically utilized to address specific project objectives that conventional contracting methods cannot, such as minimizing motorist delay or time to project completion. These methods are broken out into the following sections which are categorized by the three most common objectives:

Acceleration Techniques

This section contains innovative construction contracting methods that may help expedite construction progress and minimize user delays. These methods range from Standard Incentive/Disincentive to Accelerated Construction Techniques, such as Precast Bridge Segments or Early Purchasing of Materials.

Procurement/Payment

This section contains innovative construction contracting methods that describe ways to select a contractor and/or make payments on a contract. The selection options utilize additional factors (other than cost alone) to evaluate and award construction contracts. The factors are typically focused on improving the overall performance and value of construction projects. The methods in this section range from Best Value to Fixed Price Variable Scope. For payments, the department typically reimburses contractors based on unit prices related to work completed, whereas innovative payment options can be based on performance and/or other factors that provide a more flexible contract administration.

Delivery Methods

This section contains innovative construction contracting methods that are primarily focused on accelerating the time to both develop and deliver a construction project. This section includes overviews of the multiple variations of Design-Build and Construction Manager/General Contractor methods.

The region systems manager or program manager should be contacted to obtain their input, particularly to verify that sufficient funding is available, when evaluating the use of any innovative construction contracting method.

In addition to the sections listed above, an “Innovative Construction Contracting Methods Selection Matrix” has been provided (see Table 2.1) as a tool to help identify which innovative methods may be appropriate to achieve specific project objectives or criteria.

Some of the techniques and methods discussed in this guide have limited or no use by MDOT. Developing and/or refining new concepts may require additional time and effort. The time and effort required for this should be considered in the project schedule.

Comments and suggestions to improve this guide are encouraged and can be emailed to the Innovative Contracting Unit Manager or to MDOT-DesignICC@Michigan.gov.

1.2 Definitions

1.2.A: Acceleration Techniques

Standard Incentives

Standard Incentives is a method used to motivate the contractor to complete work or open-to-traffic a portion of the work on or ahead of schedule by providing a bonus for early completion or open-to-traffic. The Contractor is typically assess a fee for late project completion or for lanes not open-to- traffic. The bonus or penalty is based on road user delay costs, but the bonus is limited to a maximum of 5% of the project costs. Progress clauses list any additional liquidated damages in conjunction with the liquidated damages in the Standard Specifications for Construction.

A+B Incentives

A+B Bidding is a cost-plus-time bidding procedure that selects the low bidder based on a monetary combination of the contract bid items (“A” portion) and the time (“B” portion) needed to complete the project or a critical portion of the project. The rate of incentive, as well as and user fees charged to the contractor for the “B” portion is typically based on estimated road user delay costs.

No Excuse Incentives

A No Excuse Incentive can reduce contract time by tying an incentive to the completion of specific construction activities by a set date, which may or may not be the contract completion date. The completion date(s) cannot be changed for any reason and a user fee is not applied if the contractor fails to meet the completion date(s). The amount of incentive is based on estimated road user delay costs.

Accepted for Traffic Incentives (AFT)

The department will pay the contractor a lump sum incentive if the work in the contract is Accepted for Traffic on or before the AFT incentive date(s). The contractor would be assessed a fee if they failed to meet the AFT date(s). The rate of incentive and fee is based on estimated road user delay costs.

Lane Rental

The contractor is charged a fee for occupying lanes or shoulders to complete contract work and can earn an incentive or pay a user fee based on the number of days they occupy the lane or shoulder versus the original Lane Rental lump sum bid. The hourly assessment is charged by the hour and is based on estimated road user delay cost.

Interim Completion Date Incentives

Similar to the Standard Incentive, the contractor is paid an incentive for completing a specified amount of work on or before the interim completion date(s). A fee is applied if the work is not completed by the interim completion date(s). The incentive and fee is typically based on the rate of liquidated damages specified in the MDOT Standard Specifications for Construction.

Prefabricated Bridge Element Systems (PBES)

To help accelerate construction, prefabricated bridges or their elements and systems may be manufactured on-site or off-site, under controlled conditions, and brought to the final bridge location ready to install.

Early Purchasing of Materials

To help expedite construction of a project (especially bridge work), a separate contract is let to procure materials (i.e., structural steel) in advance of the main contract in order to avoid delays associated with material fabrication and delivery.

1.2.B: Procurement/Payment

Best Value

A selection method in which both price and qualitative components are provided by the contractor and the award is based upon an evaluation of a combination of price and qualitative considerations.

Project Specific Qualification

A selection method in which contractors are required to meet Project Specific Qualifications in order to be eligible to bid on a project.

Lump Sum

A payment method where the contractor agrees to provide specified construction for one specific price. The department agrees to pay the price upon completion or acceptance of the work or according to a negotiated payment schedule.

Performance-Based Incentives

A payment method where final payment is based on performance. The payment factors are defined by specific objectives or measurements that the contractor must satisfy to achieve additional compensation or avoid monetary charges. A Performance-Based Incentive usually provides the contractor flexibility to select the means and methods to achieve the performance objectives. The amount of incentive and charges is typically determined through the application of MDOT quality assurance test results and a statistical evaluation, such as the "Percent Within Limits" method for HMA and concrete initiatives.

Alternate Bids

A selection method where the contractor can bid on equivalent designs of competing alternates (i.e., HMA and concrete pavements).

Fixed Price/Variable Scope

A selection method where the contractor proposes to complete items of work within an established budget. The selected contractor is the one who can maximize the amount of work that can be provided within a maximum budget.

Best and Final Offer (BAFO) (Design-Build contracts only)

A Design-Build selection method where proposals are first submitted by the design-builders. Following review with proposers, Best and Final Offers (BAFOs) would be called for by the department. The design-builder would submit their best prices and/or technical responses in reply to the department's request. In effect, this step levels the playing field by allowing finalists an opportunity to provide their BAFO after interviews have been conducted.

1.2.C: Delivery Methods

Design-Build (DB)

Design-Build is a delivery method where both the design and construction of a project are contracted with a single entity known as the design-builder. The design and construction phases usually overlap on a DB contract which can significantly reduce the overall project delivery time.

Design/Build/Finance (DBF)

A DBF is a Design-Build contract where the design-builder is responsible for obtaining financing for the Design-Build costs. The design-builder is reimbursed based on a defined schedule of payments established by the department.

Design/Build/Operate (or Maintain) (DBFOM)

A DBFOM is a Design-Build contract where the contract transfers specific financial, operational, and maintenance responsibilities to the design-builder for a specific period of time.

Construction Manager / General Contractors (CMGC)

In a CMGC project, MDOT has a direct contract with an architectural/engineering (A/E) firm for design work and a separate contract with a contractor for construction and construction management. The construction manager acts as consultant to MDOT in the development and design phases but as the equivalent of the prime contractor during the construction phase. In addition to acting in MDOT's interest during the design phase, the construction manager must manage and control construction costs.

Alternate Technical Concepts (ATC)

ATC's allow contractors to propose alternate solutions on a project that meet or exceed the baseline goals provided by MDOT prior to the award of a project. ATC's can be used on design-bid-build (DBB) or DB projects.

Chapter
2

Chapter 2: Selection Information



2.1 Project Approval Process on MDOT Trunkline Projects

Projects using Innovative contracting methods must be approved before they can be developed, let and constructed. Projects typically requiring approval include:

- Design-Build (Including variations such as Design-Build-Finance)
- Alternate Technical Concepts on Design-Bid-Build Projects
- Construction Manager/General Contractor (CMGC)
- Lump Sum Contracts
- Best Value Selections
- Fixed Price-Variable Scope Contracts
- Projects requiring approval through the FHWA's SEP-14 program

All innovative contracting projects are reviewed by MDOT's Innovative Contracting Committee (ICC). Certain types of projects must also be approved by MDOT's Engineering and Operations Committee (EOC) and possibly the Directors Executive Team. The review process is outlined below:

1. **Project Identification:** Regions identify projects that could benefit from an Innovative contracting method. It is recommended to discuss potential procurement options during the scoping phase of a project.
2. **Project Submission:** Project information is provided by the Region/TSC to the ICC Chair using the form at the following ProjectWise link: [ICC Submission Forms](#). Projects should be identified and submitted during an annual Call for Innovative Contracting Projects. Projects can also be submitted outside of the annual call.
3. **ICC Review:** The ICC Chair will take all submitted projects to the ICC for consideration. If the ICC approved the use of an innovative contracting method, the ICC Chair will place the project on the next available EOC agenda, if applicable. If a project is not approved, the ICC Chair will contact the Region and discuss the factors that caused the rejection. The Region will have an opportunity to discuss the project with the ICC at a future meeting.
4. **EOC Review:** If an EOC review is required, the ICC Chair will place the project on the next EOC agenda for review. The EOC will approve, reject or request additional information before making a final decision.
5. **Directors Executive Team Review:** Certain procurement methods, such as CMGC, require final approval from the Director's Executive Team. Projects will be provided to this team only if EOC approves the project.
6. **Federal Approval:** Some procurement methods, such as ATCs, FPVS, and Best Value selections, require approval from the FHWA through their SEP-14 process or a Work Plan submitted only to the FHWA-Michigan Division. MDOT seeks formal FHWA approval after all reviews at MDOT have been completed.

Projects using traditional incentive/disincentive provisions do not typically require approval from the ICC or EOC.

2.2 Project Approval Process on Local Agency Program Projects

Innovative contracting methods have been used on a very limited basis, if at all, on Local Agency Programs (LAP) projects. MDOT will consider allowing Local Agencies to use various contracting methods on a case by case basis, but reserves the right to limit, or not allow, innovative contracting procurements to be used on LAP projects.

If a Local Agency desires to use an innovative contracting method such as those listed in Section 2.1, the following steps must be followed in order for MDOT review the projects and approve or reject the use of an contracting method.

1. **Project Identification:** Local Agencies identifies a project that could benefit from an Innovative contracting method.
2. **Project Submission:** The Local Agency contacts the MDOT LAP Staff Engineer to discuss the project. The LAP Staff Engineer provides the Local Agency with the form at the following ProjectWise link: [ICC Submission Forms](#). The Local Agency sends the completed form and a staffing plan to the LAP Staff Engineer. The staffing plan must demonstrate how the Local Agency plans to adequately oversee a non-traditional project.
3. **MDOT LAP Review:** The LAP Staff Engineer will review the items provided by the Local Agency. If the LAP Staff Engineer is satisfied that the staffing plan is acceptable, and agrees with that the innovative contracting method being proposed appears to be acceptable, they will recommend the project be considered further by the ICC.
4. **ICC Review:** The ICC Chair will take all submitted projects to the ICC for consideration. If the ICC approved the use of an innovative contracting method, the ICC Chair will place the project on the next available EOC agenda, if applicable. If a project is not approved, the ICC Chair will contact the LAP Staff Engineer and discuss the factors that caused the rejection. The LAP Staff Engineer will have an opportunity to discuss the project with the ICC at future meetings.
5. **EOC Review:** If an EOC review is required, the ICC Chair will place the project on the next EOC agenda for approval. If a project is not approved, the ICC Chair will contact the LAP Staff Engineer and discuss the factors that caused the rejection.
6. **Directors Executive Team Review:** Certain procurement methods, such as CMGC, require final approval from the Director's Executive Team. Projects will be provided to this team after EOC approves the project.
7. **Project Verification Meeting:** If a project is approved through the above listed reviews, a meeting must be held with the Local Agency, the LAP Staff Engineer, and staff from the MDOT Innovative Contracting Unit (ICU). The purpose of this meeting is to discuss the details or the project, the procurement method, the schedule, and to identify any steps required to obtain approval from the FHWA. Staff from the ICU will be assigned to the project to assist with the project's development.
8. **Federal Approval:** Some procurement methods, such as ATCs, FPVS, and Best Value selections, require approval from the FHWA through their SEP-14 process or a Work Plan submitted only to the FHWA-Michigan Division. MDOT seeks formal FHWA approval after all reviews at MDOT have been completed. The Local Agency must assist in developing any Work Plans and Final Reports.

Projects using traditional incentive/disincentive provisions do not typically require approval from the ICC or EOC.

Table 2.1 – Innovative Contracting Recommendations

• = May apply	Acceleration Techniques								Procurement/Payment						Delivery Method					
	Lane Rental	A+B Incentives	Accepted for Traffic Incentives	No Excuse Incentives	Standard Incentives	Accelerated Schedules	Interim Completion Date Incent.	Alternate Const Methods	Best Value	Project Specific Qualification	Lump Sum	Performance-Based Incentives	Alternate Pavement Bids	Fixed Price Variable Scope	Indefinite Delivery/Ind. Quantity	Design-Build	Design-Build-Finance	DBF-Operate Maintain	Alternate Technical Concepts	CMGC
Project Objective																				
Expedite construction	•	•	•	•	•	•	•	•								•	•	•	•	•
Minimize road user delay costs	•	•	•	•	•	•	•	•	•			•				•	•	•	•	•
Promote innovation ⁽⁷⁾								•	•			•	•			•	•	•	•	•
Expedite contract award ⁽⁴⁾																•	•	•		•
Minimize risk of claims/disputes				•												•	•	•		•
Maximize work within set budget ⁽¹⁾												•	•	•				•		•
Enhance quality ⁽⁶⁾								•	•			•				•	•	•		•
Define construction budget early ⁽²⁾																				•
Reduce design & construction time ⁽⁵⁾									•							•	•	•	•	•
Leverage external funding sources ⁽³⁾																	•	•		
Project Criteria																				
Specialized expertise ⁽⁹⁾										•			•						•	•
Emergency project	•	•	•	•	•	•	•	•	•						•	•				
Complex staging							•		•	•		•				•	•	•	•	•
Unique scope of work ⁽⁸⁾										•										•
Critical project completion dates	•	•	•	•	•	•	•	•	•							•	•	•		•
Consistent work at variable locations ⁽¹⁰⁾											•			•						
Need for innovative traffic management								•	•							•	•	•	•	•
Work zone/construction safety issues									•			•				•	•	•		•

Table 2.1 – Innovative Contracting Recommendations (continued)

• = May apply	Acceleration Techniques								Procurement/Payment						Delivery Method					
	Lane Rental	A+B Incentives	Accepted for Traffic Incentives	No Excuse Incentives	Standard Incentives	Accelerated Schedules	Interim Completion Date Incent.	Alternate Const Methods	Best Value	Project Specific Qualification	Lump Sum	Performance-Based Incentives	Alternate Pavement Bids	Fixed Price Variable Scope	Indefinite Delivery/Ind. Quantity	Design-Build	Design-Build-Finance	DBF-Operate Maintain	Alternate Technical Concepts	CMGC
Project Type																				
Roadway Rehabilitation ^(a)	•	•	•	•	•	•	•			•	•	•	•					•	•	
Roadway Reconstruction	•	•	•	•	•	•	•		•	•		•	•	•		•	•	•	•	•
New Roadway/Bridge Construction		•	•	•	•	•	•	•	•			•	•	•		•	•	•	•	•
Road Capital Preventive Maintenance (CPM) ^(b)	•	•	•	•	•	•	•		•		•	•	•	•	•					•
Bridge Rehabilitation ^(c)	•	•	•	•	•	•	•		•	•	•	•	•					•		
Bridge Reconstruction	•	•	•	•	•	•	•	•	•		•	•	•		•	•	•	•	•	•
Bridge Painting	•	•	•	•	•	•	•				•	•	•	•						
Bridge Capital Scheduled Maintenance (CSM) ^(d)	•	•	•	•	•	•	•				•	•	•	•				•		
Traffic Signs					•	•	•				•			•	•					
Traffic Signals					•	•	•		•	•	•			•	•					
Barrier and Guardrail ^(e)	•	•	•	•	•	•	•				•			•	•					
Pavement Markings and Rumble Strips					•	•	•				•	•		•	•					
Landscaping and Enhancement ^(f)					•	•	•			•	•	•	•	•	•					
Miscellaneous ^(g)					•	•	•	•												

NOTES

Project Objectives and Project Criteria

- (1) Goal is to use all budgeted funds and maximize the construction work that can be completed.
- (2) Projects where the budget must be defined early with no options to increase later.
- (3) Projects where funding is flexible but limited.
- (4) The department needs to get the award of the project as soon as possible; usually related to earliest obligation of federal funds.
- (5) Projects where the goal is to get the construction completion date as early as possible.
- (6) Goal is to improve the quality of the construction; usually providing a type of performance specification.
- (7) Projects with complex issues that appeal to contractor innovations.
- (8) Work not usually contracted by MDOT but done often elsewhere (usually no prequalification classification established).
- (9) Work that requires either design or construction expertise that is specialized to the construction being done.
- (10) Projects where the work is standard but usually locations have not been established (i.e., traffic signal installation, signing, pavement marking, etc.)

Project Type

For most project types, the applicability of innovative construction contracting methods will depend on the amount and complexity of work.

- (a) Roadway rehabilitation includes HMA/concrete overlay, rubbilize and resurface, cold mill and resurface, etc.
- (b) Road CPM projects include chip seal, microsurface, crack seal, ultra thin overlay, surface seal, etc.
- (c) Bridge rehabilitation projects include concrete overlay, bridge barrier replacement, expansion joint replacement, etc.
- (d) Bridge CSM projects include epoxy overlay, penetrating healer sealer, concrete surface coating, concrete patches, etc.
- (e) Barrier and guardrail projects include median cable barrier, concrete barrier, and guardrail projects.
- (f) Landscaping and enhancement projects include sidewalks, bike paths, landscape, and other enhancements.
- (g) Miscellaneous projects include rest areas, pump houses, lighting, and ITS.

Chapter 3: Acceleration Techniques



3.1 Acceleration Techniques Introduction

MDOT has considerable experience with the application of innovative construction contracting methods that are targeted at accelerating construction progress. General guidance is provided for the following accelerated contract provisions that have been used by MDOT:

1. Accelerated Schedules
2. Standard Incentives
3. A+B (or cost plus time bidding) Incentive
4. No Excuse Incentive
5. Accepted for Traffic Incentive
6. Lane Rental
7. Interim Completion Date Incentives

MDOT has used some alternate construction methods including early ordering of critical materials, such as pumps for pump houses and cable for lighting projects; and using precast bridge components, such as deck panels, abutments, piers, and footings. MDOT has not used Self Propelled Modular Transports (SPMT) but other state agencies have used them.

On most accelerated projects, particularly those with complex staging, the frequently used special provision for Critical Path Method Network Schedules (CPM Schedules) is included in the contract. The decision to use this special provision is usually made by the TSC delivery engineer. This special provision requires the contractor to provide a CPM schedule in addition to the initial progress schedule. The CPM schedule requires a detailed breakdown of each schedule activity. See the frequently used special provision for CPM schedules for the specific requirements.

Background

Initial guidelines for Incentives named “Guidelines for the Use of Incentive/Disincentive and Special Liquidated Damage Clauses” were approved by the Engineering Operations Committee on August 14, 1990. These were based on the Federal Highway Administration’s (FHWA) Technical Advisory T 5080.10 dated February 8, 1989. In 1990, FHWA Special Experimental Project No. 14 (SEP-14) Innovative Contracting allowed agencies to use cost plus time bidding (A + B), Lane Rental, Design-Build contracting, and warranty clauses. In 2002, SEP-14 was revised from Innovative Contracting to Alternate Contracting. No Excuse Incentives were allowed in 1996. The MDOT Work Zone Safety and Mobility Policy also addresses the use of incentives. The Bureau of Highways Instructional Memorandum 2002-14 Final Project Reviews, Monitoring Construction Engineering and Incentive/Disincentive Projects, addresses revision to projects with incentives. Traffic and Safety Note 907B (7/2008) also provides guidance for determining if an incentive clause is warranted.

3.2 Accelerated Contract Provisions

3.2A: Accelerated Schedules

Description

Accelerated Schedules is a method used to motivate the contractor to speed up the completion of work through the use of an expedited schedule. In accordance with the MDOT Standard Specifications for Construction, on expedited projects the contract completion date is based on a five workday week, whereas a standard project uses a four workday week. The MDOT construction manual contains additional guidance and examples of progress clauses for expedited projects which are typically generated by the TSC delivery engineer or designated representative. The contractor would be subject to liquidated damages per the MDOT Standard Specifications for Construction for failure to meet the contract completion date.

Advantages

- Earlier project completion time
- Earlier open-to-traffic date
- Benefits to motorists/local access
- Reduces road user delay costs
- Better scheduling by contractors for construction activities
- Extension of time option

Disadvantages

- Likelihood of increased bid costs for construction
- Likelihood of increased costs for construction oversight
- Unless additional contract requirements are provided, there are no additional disincentives for failing to meet the contract completion date besides standard liquidated damages

Recommendations for Use

Preferred Candidates:

- Projects with critical completion dates where incentives are not practical
- Projects with significant road user delay costs

Undesirable Candidates:

- Projects with open-to-traffic constraints, such as weekends to accommodate seasonal peak volumes or extended periods for special events, which significantly limit the amount of work hours or days per week
- Projects with third party coordination concerns such as utility relocations

3.2 Accelerated Contract Provisions

3.2B: Standard Incentives

Description

Standard Incentive is a method used to motivate the contractor to complete work on or before a contract completion or open-to-traffic date. If the contractor meets the completion or open-to-traffic date specified in the progress clause, an incentive is paid. Conversely, a fee is charged if the contractor fails to meet the specified date. The dollar amount of incentive (both per day and total amount available) is specified in the progress clause and the schedule of items. The amount of incentive per day should be based on road user delay costs with the total incentive available limited to a maximum of 5% of the estimated construction costs. The fee charged should match the incentive rate which also needs to be based on road user delay costs and needs to be specified in the progress clause. The total incentive amount needs to be included within both the project estimate and programming. Liquidated damages may also apply in addition to any fees.

Advantages

- Earlier project completion or open-to-traffic date
- Minimizes impacts to motorists and/or community
- Reduces road user delay costs
- Better scheduling by contractors for construction activities
- Disincentives for failing to meet contract completion or open-to-traffic date

Disadvantages

- Increased project costs may require additional funding
- Potential for increased bid costs
- Potential for increased costs for construction oversight
- Due to cap on maximum amount, the incentive may be less than road user delay costs
- Incentive amount or disincentive rate may not be enough to motivate the contractor to accelerate construction

Recommendations for Use

Preferred Candidates:

- Projects with critical completion dates
- Projects with significant road user delay costs and/or community or local business impacts

Undesirable Candidates:

- Projects with open-to-traffic constraints, such as weekends to accommodate seasonal peak volumes or extended periods for special events, which significantly limit the amount of work hours or days per week
- Projects with third party coordination concerns, such as utility relocations

3.2 Accelerated Contract Provisions

3.2C: A+B Incentives

Description

A+B, otherwise known as cost plus time bidding, is a method used to motivate the contractor through incentives to minimize the duration of a construction project. A+B uses the combination of bid prices and time to determine the successful bidder. Under the A+B method, each bid submitted consists of two components:

- 1) The "A" component is the traditional bid for the contract items and is the dollar amount for all work to be performed under the contract.
- 2) The "B" component is a "bid" of the total number of calendar days required to complete the project, as estimated by the bidder. (Calendar days are used to avoid any potential for controversy which may arise if work days were used.)

The bid for award consideration is based on a combination of the bid for the contract items and the associated cost of the time according to the following formula:

$$(A) + (B \times \text{Road User Cost} / \text{Day}) = \text{Total Bid}$$

This formula is only used to determine the lowest responsible bidder for award and is not used to determine payment to the contractor.

The A+B provision, which includes requirements that that assesses road user costs as a fee to the contractor, is incorporated into the contract to discourage the contractor from overrunning the time "bid" for the project. Liquidated damages may also apply in addition to the fees. In addition, an incentive provision should be included to reward the contractor if the work is completed earlier than the time bid. Like the Standard Incentives, the amount of incentive is limited to a maximum of 5% of the estimated construction costs. The total incentive amount needs to be included within both the project estimate and programming.

For critical projects that have high road user delay impacts, the A+B method can be an effective technique to significantly reduce these impacts.

Advantages

- Earlier contract completion or open-to-traffic date
- Minimizes impacts to motorists and/or community
- Reduces road user delay costs
- Better scheduling by contractors for construction activities
- Disincentives for failing to meet contract completion or open-to-traffic date

Disadvantages

- Increased project costs may require additional funding
- Potential for increased bid costs
- Potential for increased costs for construction oversight
- No extension of time for the incentive
- No allowance for weather
- Due to cap on the maximum amount, the incentive may be less than road user delay costs

Recommendations for Use

Preferred Candidates:

- Projects with critical completion dates
- Projects with significant road user delay costs and/or community and local business impacts

Undesirable Candidates:

- Projects with open-to-traffic constraints, such as weekends to accommodate seasonal peak volumes or extended periods for special events, which significantly limit the amount of work hours or days per week
- Projects with third party coordination concerns, such as utility relocations

3.2 Accelerated Contract Provisions

3.2D: No Excuses Incentives

Description

No Excuse Incentive is a method used to motivate the contractor to complete work or open-to-traffic a portion of the work on or ahead of schedule by providing a bonus for early completion or open-to-traffic. MDOT will give the contractor a "drop-dead date" for completion of a phase or project. If the work is completed in advance of this date, the contractor will receive a bonus. There are no excuses for any reason, such as weather delays or not making the early completion or open-to-traffic date. On the other hand, there are no disincentives or fees (other than normal liquidated damages) for not meeting the early completion or open-to-traffic date. This technique has applicability to projects that must be open to meet a critical date, such as a major sporting event. This has been used for the Major League Baseball All Star Game, Super Bowl, NCAA Final Four, and North American Auto Show. Like the other incentives provisions, the amount of incentive is limited to a maximum of 5% of the estimated construction costs.

No Excuse Incentives may require approval through the FHWA's SEP-14 process. Contact the FHWA's Area Engineer to verify if a SEP-14 is required.

Contact the Engineer of Specification to obtain the most current Special Provision for No Excuse Incentives.

Advantages

- Earlier contract completion or open-to-traffic date
- Minimize impacts to motorists and/or community
- Reduces road user delay costs
- Improved scheduling by contractors for construction activities

Disadvantages

- Increased project costs may require additional funding
- Potential for increased bid costs
- Potential for increased costs for construction oversight
- Due to cap on the maximum amount, the incentive may be less than road user delay costs
- No increased disincentives for failing to meet contract completion or open-to-traffic date

Recommendations for Use

Preferred Candidates:

- Projects with critical completion dates
- Projects with significant road user delay costs and/or community and local business impacts

Undesirable Candidates:

- Projects with open-to-traffic constraints, such as weekends to accommodate seasonal peak volumes or extended periods for special events, which significantly limit the amount of work hours or days per week
- Projects with third party coordination concerns, such as utility relocations

3.2 Accelerated Contract Provisions

3.2E: Accepted for Traffic Incentives

Description

Accepted for Traffic is a method used to motivate the contractor to open-to-traffic a portion of the work on or ahead of schedule by providing an incentive for open-to-traffic. MDOT has used these incentives (which are similar to No Excuse Incentives) on projects that needed to be open to traffic for festivals and major sporting events. The special provision and progress clause for this innovative construction contracting method allows no extension of time for the critical milestone (Accepted for Traffic) dates. The critical milestones involve opening all lanes to traffic by a specified date or dates. The final critical milestone entails completing all contract work required to open all lanes to traffic by a specified date. A contract completion date must also be specified but is not eligible for an incentive payment. The special provision allows the contractor additional compensation to keep the project on schedule and meet the milestone dates for delays, extra work, and increased quantities if specific conditions are met. The progress clause provides a monetary incentive if the contractor meets the specified Accepted for Traffic dates. A fee is charged if the contractor fails to meet the Accepted for Traffic dates. The incentive and fee for the Accepted for Traffic dates should be based on road user delay costs. The sum of the incentives is limited to a maximum of 5% of the estimated construction costs.

Contact the Engineer of Specification to obtain the most current Special Provision for Accepted for Traffic. Contact the Specifications and Estimates Engineer to assist in finding a recent progress clause. An MDOT SEP-14 report dated October 15, 2007, was prepared for this innovative construction contracting method and the link to its location is provided in Appendix A.

Advantages

- Earlier open-to-traffic dates and contract completion
- Minimizes impacts to motorists and/or community
- Reduces road user delay costs
- Better scheduling by contractors for construction activities

Disadvantages

- Increased project costs may require additional funding
- Potential for increased bid costs
- Potential for increased costs for construction oversight
- Due to cap on the maximum amount, the incentive may be less than road user delay costs

Recommendations for Use

Preferred Candidates:

- Projects with critical open-to-traffic dates
- Projects with significant road user delay costs and/or community and local business impacts

Undesirable Candidates:

- Projects with third party coordination concerns, such as utility relocations

3.2 Accelerated Contract Provisions



3.2F: Lane Rental

Description

The goal of Lane Rental is to encourage a contractor to minimize the amount of time that through lanes are closed, and therefore limit the associated road user delay impacts. Under this concept, a provision for a rental fee assessment is included in the contract. The rental fee is based on estimated cost of delay or inconvenience to the road user during the rental period. The fee is assessed for the time that the contractor occupies or obstructs part of a lane on the mainline, ramp(s), or bridge(s) specified in the special provision for Lane Rental which. Contact the Engineer of Specification to obtain the most current of this Special Provision. The tally of cumulative Lane Rental assessments are then deducted from the original Lane Rental lump sum bid on a bi-weekly basis until the contract work is completed.

The Lane Rental fee rates are stated in the above special provision in dollars per lane per hour or fractions of an hour. The contractor estimates the amount of time for which the rental assessment will apply and must bid a positive lump sum amount for the Lane Rental. Neither MDOT nor the contractor gives an indication as to the anticipated amount of time for which the assessment will apply and the apparent low bidder is determined solely on the lowest cumulative amount bid for the schedule of items in the contract.

The rental fee rates are dependent on the number and type of lanes closed and can vary for different hours of the day. For example, the rush hour periods from 6:30 to 9:00 a.m. and 3:00 to 6:00 p.m. could have a rental fee of \$2,000 per hour for closing one lane while at all other times a lane could be closed at a rental fee of \$500 per hour.

The incentive for Lane Rental is limited to a maximum of 5% of the estimated construction cost. The maximum incentive is determined and listed in the special provision for Lane Rental as "Lane Rental, Incentive". The incentive payment will be determined by taking the contract Lane Rental lump sum bid by the contractor and subtracting the total Lane Rental assessments which cannot exceed the maximum. For example, if a contractor bids \$1 million (lump sum) for Lane Rental and the total of the Lane Rental assessments is \$900,000 based on 900 hours at \$1,000 per hour, then the Lane Rental incentive equals \$100,000 provided it does not exceed the maximum incentive listed in the special provision.

The intent of Lane Rental is to encourage contractors to schedule their work to keep traffic restrictions to a minimum, both in terms of duration and number of lane closures. The Lane Rental concept has merit for use on projects that significantly impact the traveling public with the prime candidates being in major urban areas.

Lane Rentals principles apply to Bridge Rental provisions.

Advantages

- Earlier contract completion or open-to-traffic date
- Minimizes impacts to motorists and/or community, and reduces road user delay costs
- Better scheduling by contractors for construction activities
- Disincentives for exceeding the estimated lane rental amounts

Disadvantages

- Increased project costs may require additional funding
- Potential for increased bid costs
- Potential for increased costs for construction oversight
- Tracking of lane rental charges

Recommendations for Use

Preferred Candidates:

- Projects with critical completion dates
- Projects with significant road user delay costs and/or community and local business impacts

Undesirable Candidates:

- Projects with open-to-traffic constraints, such as weekends to accommodate seasonal peak volumes or extended periods for special events, which significantly limit the amount of work hours or days per week
- Projects with third party coordination concerns, such as utility relocations

3.2 Accelerated Contract Provisions

3.2G: Interim Completion Date Incentives

Description

An Interim Completion Date Incentive is a method used to motivate the contractor to complete or open-to-traffic a portion of the work on or ahead of schedule by providing an incentive. In addition to the contract completion date, MDOT will give the contractor an interim completion or open-to-traffic date(s) for a phase, or phases, of a project. If the work is completed on or before the interim completion date(s), the contractor will receive an incentive. An Interim Completion Date Incentive can be treated as a Standard Incentive or a No Excuse Incentive. See the summaries for Standard Incentives and No Excuse Incentives in this section for information on these two acceleration techniques.

An Interim Completion Date Incentive can be effective on projects with multiple stages or open-to-traffic dates that must be completed in an accelerated manner to ensure the effective progression of work or to accommodate a special event.

Advantages

- Earlier completion or open-to-traffic date for critical phases of a project
- Minimizes impacts to motorists and/or community
- Reduces road user delay costs
- Better scheduling by contractors for construction activities

Disadvantages

- Increased project costs may require additional funding
- Potential for increased bid costs
- Potential for increased costs for construction oversight
- Due to cap on the maximum amount, the incentive may be less than road user delay costs

Recommendations for Use

Preferred Candidates:

- Projects with critical completion dates
- Projects with significant road user delay costs and/or community and local business impacts

Undesirable Candidates:

- Projects with open-to-traffic constraints, such as weekends to accommodate seasonal peak volumes or extended periods for special events, which significantly limit the amount of work hours or days per week
- Projects with third party coordination concerns, such as utility relocations

3.3 Alternate Construction Methods

3.3A: Prefabricated Bridge Element Systems

Description

Prefabricated Bridge Element Systems (PBES) are used to expedite bridge construction. In current construction practices, precast segments include footings, piers, pier caps, abutments, bridge decks, and railings. These segments are generally manufactured off-site and shipped to the project site ready to install.

Advantages

- Reduces project site construction time
- Innovative and improves constructability
- Earlier project completion time
- Reduction in open-to-traffic date
- Benefits to motorists and/or community
- Reduces road user delay costs
- Better scheduling by contractors for construction activities

Disadvantages

- Increased bid costs for construction
- Requires a different or greater degree of scheduling and planning
- Increased costs for fabrication inspection
- May require special means of fabrication, transportation, and assembly to handle precast segments
- Potential for increased camber growth in precast members which are not used within a certain time (this is more prevalent on long precast beams)
- Potential design issues with connection details (i.e., grouted splices, etc.)
- Lack of contractor experience

Recommendations for Use

Preferred Candidates:

- New bridge construction
- Bridge reconstruction

Undesirable Candidates:

- Bridge painting
- Bridge rehabilitation
- Bridge Capital Scheduled Maintenance (CSM)

3.3 Alternate Construction Methods

3.3B: Early Purchasing of Materials

Description

Early Purchasing of Materials is used in order to expedite the delivery of critical materials for a project. These contracts are let prior to larger contracts in order to ensure critical materials are on-site and ready for installation on or before a specified date so the larger contracts can remain on-schedule. This method has been used on pumps for pump houses, electrical cable for street lighting projects, and steel beams for bridge construction projects.

This method requires special provisions be included in both the early purchasing and larger contracts that clearly and logically specify the contractual requirements for each contractor and their obligations for the fabrication, delivery, storage, testing, and acceptance of the materials. Contact the Engineer of Design for assistance in the development of the special provisions for this method.

The early purchasing of materials requires a Public Interest Finding in accordance with section 11 of the MDOT Road Design Manual

Advantages

- Reduces lead time for delivery of the material
- Lower risk for contractor
- Earlier project completion time
- Reduction in open-to-traffic date
- Benefits to motorists and/or community
- Reduces road user delay costs
- Better scheduling by contractors for construction activities

Disadvantages

- Contract is between MDOT and the fabricator
- Greater risk for MDOT
- Extension of time impacts the other contract
- Delivery delays of material impact the other contract
- No provision of expedited delivery

Recommendations for Use

Preferred Candidates:

- Projects with materials that historically have a large lead time which may jeopardize the contractor's ability to keep the project on-schedule or meet critical completion dates. Some of these project include, but are not limited to:
 - Bridge construction involving new steel beams
 - Miscellaneous projects including pump houses and street lighting

Undesirable Candidates:

- Any project with materials that are readily available or with sufficient lead time for materials that historically take a long time to receive

3.3 Alternate Construction Methods

3.3C: Self Propelled Modular Transporters and Bridge Slides

Description

A Self Propelled Modular Transporter (SPMT) is a platform vehicle with a large array of wheels on the bottom. They are used for transporting massive objects, such as bridges, large bridge sections, and other objects that are too big or heavy for trucks. A typical SPMT can have a grid of several dozen computer-controlled wheels, all individually controllable and steerable, in order to evenly distribute weight and steer accurately. Each individual wheel can swivel independently from other wheels allowing the SPMT to turn, move sideways, or even spin in place. Some SPMTs allow each wheel to telescope independently of each other allowing the load to be kept flat and evenly distributed while moving over uneven terrain. As SPMTs often carry the world's heaviest loads on wheeled vehicles, they are very slow vehicles and often move at less than one mile per hour while fully loaded. Some SPMTs are controlled by a worker with a hand held control panel, while other SPMTs have a driver cabin. In addition, multiple SPMTs can be combined to transport massive building-sized objects. (Information taken from Wikipedia.)

SPMTs have been used to expedite bridge superstructure removal and construction. After the existing bridge is removed with the SPMT, the bridge superstructures are constructed near the existing bridge site, transported into position, and placed using the SPMT. The use of SPMTs has been limited to locations with high traffic volumes either on the bridge or on the roadway below the bridge.

Bridge Slides construct new bridges adjacent to an existing structure and slide the new bridge into the final alignment once the existing bridge is removed.

Advantages

- Reduces delays, road user delay costs, and the open-to-traffic date for the crossing roadway
- Leads to innovation
- Earlier project completion time
- Benefits to motorists and/or community
- Better scheduling by contractors for construction activities

Disadvantages

- Lack of MDOT and contractor experience
- Increased costs for construction
- Requires different or greater degree of scheduling and planning
- Requires special means of transportation and assembly
- Constructability issues may be present depending on the existing and proposed footprint and the substructure units.

Recommendations for Use

Preferred Candidates:

- Bridge reconstruction
- Superstructure replacement

Undesirable Candidates:

- New bridge construction
- Bridge rehabilitation
- Bridge Capital Scheduled Maintenance (CSM)

Chapter 4: Procurement and Payment Techniques



4.1 Procurement and Payment Techniques Introduction

This chapter covers two areas of innovative contracting: Procurement (selection) and Payment. The first section covers various methods that can be used to select and award a construction contract. The second section covers innovative payment methods that may be used during the execution of a contract. These methods are commonly used together on the same contract (i.e., an innovative selection method like Best Value and innovative payment method like Lump Sum are part of the same contract). However, all methods can be used exclusive of others.

One-Step versus Two-Step

A two-step process is where qualifications of contractors are solicited early in the contract development process. The qualifications are reviewed and a short list of qualified contractors are named or short-listed. These are the only contractors that can proceed to the second or final selection step. The final selection may be any selection method. A one-step process is where the selection will be at the final step (no short-listing). The final selection still may be any selection method. The following are examples of various ways that selections could be done:

- One-Step: Low bid
- Two-Step: Low bid
- One-Step: Best Value (qualifications and price evaluated at final selection)
- Two-Step: Best Value (one set of qualifications are used for short-listing, and different qualifications and the price are evaluated at final selection)

More details on how the selection methods can be used are provided in the following sections.

NOTE: The department currently prequalifies construction contractors for the majority of our construction contracting. This is a two-step process since most contracts have prequalification requirements (only contractors prequalified can bid on a project). Therefore, prequalification is the first step and the bid is the second step. However, for the purpose of this chapter, if prequalification is required it will be assumed to be completed and not included in the process steps.

4.2 Procurement

The department selects most construction contracts based on the lowest bid price. The methods covered in this section describe selecting a construction contractor based on factors that may or may not include lowest bid price with the primary objective being the best overall value for the project. Innovative approaches to procurement in construction contracting that are covered in this section include:

1. Best Value
2. Project Specific Qualifications
3. Alternate Bids
4. Fixed Price Variable Scope/Build to Budget
5. Best and Final Offer

4.3 Payment

Alternative payment methods are options that may simplify administration of contracts or are focused on improved performance of the project. The innovative payment methods covered in this section include the following:

1. Performance Based Incentive
2. Lump Sum
3. Indefinite Delivery/Indefinite Quantity

4.2 Procurement

4.2A: Best Value

Description

A Best Value procurement method involves selection of a contractor on the basis of price and other key factors to obtain the best overall value for the project. The goal is to balance cost with technical factors to achieve long-term performance and value for the public.

In the department's Best Value method, the selection team develops scoring criteria for the technical portion of the evaluation. The technical evaluation may be a single item, such as an aesthetic treatment of a bridge or the approach to maintaining traffic. It may also contain many items to be evaluated, such as qualification of the contractor's team, resumes, understanding of the project, innovations, and more. If time allows, the evaluation can include interviews with the prospective bidders. Interviews should be well-documented so that scoring associated with it can be justified. When developing the list of items to be evaluated and scored, the selection team should focus on project specific needs that can be objectively defined, evaluated, and scored. However, some subjectivity may be used as long as a consistent approach to scoring is documented by the selection team.

The technical scoring is then combined with the weighted scores for the bids. The bid scores are determined by assigning a score to the lowest bid and then each subsequent bid receives a score calculated on the percent that bid is compared to the low bid.

The selection team must decide how to weigh the bid price versus the qualification scoring. The actual number assigned to each is arbitrary - it is the ratio that is important. For example, if the maximum qualification score is 120 points and the team wants an equal (50/50) ratio with the bid score, then the maximum bid score (given to the low bidder) would be 120. But the two scores could easily be 200 points each or 50 points each and still provide the 50/50 ratio. The Central Selection Review Team (CSRT) must review and approve all scoring criteria. In the past, the CSRT has recommended that the bid score be at least 25 % (or a 25/75 ratio) of the overall score. When establishing the ratio, if the selection team is giving a heavier weight towards the bids due to budget issues (above 80% of the score), they should seriously consider using low bid or a two-step selection method with low bid.

Under Best Value, the department may use either a one-step or two-step procurement process. In a one-step Best Value procurement, all contractors submit technical qualifications and other required criteria prior to or concurrent with their price proposals (bids). If concurrent with each other, the price proposal is submitted in an envelope separate from the technical information. The department reviews and scores the technical qualifications and then opens the bids and scores the bids. At no time does the selection team see the bids prior to scoring the technical proposals.

The two-step Best Value selection process is similar to the one-step process except that there is an initial Request for Qualifications (RFQ) to short-list the contractors who can submit technical qualifications and price proposals. After the short-listing, all contractors are considered equal. When using a two-step selection, the same criteria used to short-list the contractors **cannot** be used in the second step which involves the final technical evaluation and scoring.

Advantages

- Depending on what technical evaluation is used in combination with price, the department could see improvements in project quality and schedule savings
- More opportunity for innovations
- Allows for project schedule, quality, and/or other parameters to be competitively bid
- May achieve higher quality by open competition with contractors that may provide a higher price but more qualifications or technical expertise
- May result in lower life cycle costs

Disadvantages

- MDOT and contractors have limited experience with Best Value and the learning curve for the department and its industry partners can be problematic
- Can be administratively burdensome for both MDOT and contractors
- Takes additional time to process
- Requires additional staff time and a different level of training to evaluate Best Value proposals
- Preparing a Best Value proposal will likely require a high level of effort which may discourage smaller or DBE contractors with limited resources from bidding
- Potential for a higher initial cost – especially for the designers with no stipend available
- Subjectivity of the evaluation process may result in protests
- Items that add value can increase the cost of the project

Recommendations for Use

Preferred Candidates:

- Projects with opportunity for proposing different aesthetic designs
- Projects which are highly complex or unique that would receive measurable benefit from using an alternative form of procurement
- Projects with high public involvement
- Projects where MDOT is not familiar with construction techniques
- Projects that require specialized equipment, knowledge of construction, or exclusive technology
- Projects with several maintaining traffic options and complexities
- Projects where design innovations are optimum

Undesirable Candidates:

- Projects that do not have unique design issues or require specialized expertise
- Projects which are clearly defined with no allowance for design innovations

Implementation Steps

For construction projects (except Design-Build) using federal funds, a SEP-14 is required to use a Best Value approach. See Appendix B for more detailed information on the SEP-14 process. The selection team should work with the CSRT to develop and get approval of the technical scoring to be used in the selection.

Currently, Best Value has been used by the department some Design-Build and Design-Bid-Build projects. It has also been used on many solicitations for service contracts where allowed by federal regulation. MDOT's CSRT has developed guidance for a more consistent approach to Best Value scoring and has many examples that selection teams can use.

1. Project submitted by the Region to the Innovative Contracting Committee for approval
2. The Innovative Contracting Committee submits the project to the EOC for approval
3. Best Value Scoring Criteria is developed by the Region and Innovative Contracting Unit
4. Submit Scoring Criteria to the CSRT for Approval
5. Complete SEP-14 Work Plan and Receive Approval from the FHWA
6. Provide Industry Draft Contract Documents for Review and Comment (Recommended)
7. Advertisement

8. Receive and Score Technical Proposal
9. Receive Bids
10. Determine Selected Contractor based on bids and Technical Proposals
11. Project Award
12. Construction activities

4.2 Procurement

4.2B: Project Specific Qualifications

Description

The department prequalifies contractors for work types that are associated with road and bridge construction. The Project Specific Qualification method is used when a contractor needs additional or unique expertise to build and consequently bid the project. This unique expertise may be related to unusual structures, work type, or proprietary elements. This guidance assumes that the evaluation will determine if a contractor has the Project Specific Qualifications to bid. The selection team must establish the minimum qualifications a contractor must have to be able to bid on the project. The contract selection then can follow one of the following procedures:

- 1) One-Step Selection - The contractors supply qualification information either just before or at the same time the bids are provided. The selection team reviews the qualification of all the contractors and determines (based on scoring) which firms are eligible to have their bids open. Eligible bids are opened and any bids from companies not qualified are returned unopened or rejected. The lowest responsible bid is selected. At no time can the selection team see the bids prior to reviewing the qualifications of the contractors.
- 2) Two-Step Selection (short-listing) - Early in the development process, an RFQ is posted. The contractors submit qualification information which is evaluated and scored by the selection team. The short-listed contractors are notified that they are eligible to provide a bid. Except for Design-Build which has specific federal requirements on the number of short-listed contractors, the department may choose to short-list any number of contractors. However, it should not be less than three. The final selection is based on the lowest responsible bid.

If a combination of qualifications and value (cost) is proposed (the low bid may not be selected), the selection is then considered Best Value (See Section 4.2A).

Advantages

- Improved project quality for unique elements
- Better documentation of department needs in description and evaluation of qualifications
- Improved competition from contractors well-qualified to do the work
- Costs that better reflect the unique projects; contractors without the specific qualifications or experience may not understand or bid the project correctly

Disadvantages

- More department resources needed to establish qualifications
- More cost to contractors to submit additional information
- Additional monitoring of projects to assure that key contractor personnel are working on projects
- Longer period between design and award is needed to review and approve qualifications
- Longer time is needed to determine eligible bidders
- Need for experienced staff to set and evaluate specific qualifications

Recommendations for Use

Preferred Candidates:

- Projects that have no existing department prequalifications
- Projects with new or unique elements that have not been previously used by the department
- Projects with unusual requirements
- Projects with aesthetic treatments that need to be evaluated

Undesirable Candidates:

- Expedited award contracts
- Any contract where the contractor's expertise can be provided with standard prequalification

Implementation Steps

The department has used Project Specific Qualification on work, such as Intelligent Transportation Systems (ITS), unique bridge projects, and new traffic barrier installations. If an office feels their project will require Project Specific Qualifications on a DBB project, they should follow the steps listed below.

1. The Project Manager (PM) sends the Directors of the Bureau of Highway Development and Construction Field Services a request to use shortlisting on a project. The request includes a description of the project, the reason shortlisting is desired, and draft short-listing criteria. The request must be approved by both Directors prior to proceeding.
2. The PM drafts a Request for Qualifications (RFQ). Staff from MDOT's technical areas and the Innovative Contracting Unit should be contacted for assistance.
3. The final RFQ is provided to the Contract Service Division (CSD) Administrator, and must be approved prior to proceeding.
4. Prior to posting the final RFQ, the PM may post a Project Information Sheet containing the project scope, location, anticipated schedule, and draft information on the shortlisting process being considered.
5. The approved RFQ is sent to the CSD Selection Analyst and CSD Sub-Contract Analyst for advertisement on the Innovative Contracting website (www.michigan.gov/ic). The PM provides the RFQ, the area of the website for the RFQ, and the title of the file. CSD will place the file on the website. The RFQ should be advertised for at least 4 weeks.
6. The PM identifies a selection team and schedules a review meeting. A CSRT member should be on the selection team. The PM contacts the CSD Selection Analyst to identify the CSRT member.
7. The day the RFQ is posted the PM will notify the contracting industry (MITA, ACEC, or other industry groups that may be interested in the project) through email. The PM also contacts the Construction Contracts Section Manager to have an announcement placed on the MDOT bid letting website.
8. Qualifications are provided to the Project Manager, they provide the information to the selection team. The Selection team reviews the qualifications and determines the shortlisted contractors. CSRT has not reviewed the selection results on past projects.
9. The PM completes a form that will be posted on the Innovative Contracting website to announce the shortlisting results. See the following example notification form.
10. Within 5 days of the selection meeting, the PM coordinates with the CSD Selection Analyst to provide all teams that provided qualifications with their scores and MDOT's detailed comments used to determine the score. Debriefings are allowed after the contract is awarded.

11. When the project is turned in for a letting, the PM informs MDOT's Specifications and Estimates Unit and the Construction Contracts Section Manager that a shortlisting process was used and provides the names of the shortlisted companies. The shortlisted companies must also be added to MDOT form 256.

Example Notification Form



DATE

**Project Description (i.e US-123 at M-456 Reconstruction Project)
MDOT job No: XXXXX**

The following Submitters have been qualified and shortlisted for the US-123 at M-456 Reconstruction Project.

Name, Address, and point of contact of the Shortlisted Companies (Place in alphabetical order)

4.2 Procurement

4.2C: Alternate Pavement Bidding and Alternate Bids

Description

The solicitation of Alternate Pavement Bids allows competition on pavement. Each alternate must provide approximately equal life cycle costs. By allowing the contractor to choose an alternate process, the bid should provide equal or improved performance at a lower life cycle cost. See “Alternate Pavement Bidding (APB) Process” on the Plan Development area of MDOT’s intranet site.

While MDOT has yet to procure a project with alternate considerations other than pavement type, it may be possible to apply this concept to other features of a project. In an Alternate Bid, the department should establish what the choices are for the bidder to provide a price and, for that item, and how the contractor would be selected.

Advantages

- Allows for innovation if the contractor can propose design options
- Allows MDOT to define two different alternatives
- Allows competition between products with different maintenance and service life expectations

Disadvantages

- May increase risks of protests if bid documents do not clearly state instructions regarding the alternates
- May reduce the number of capable bidders if the alternates are outside the average contractor’s capabilities
- Life-cycle costing to determine low bid can be difficult to determine
- Requires development of full plans and specifications for each alternate, increasing MDOT’s engineering costs
- Multiple designs increase the potential for conflicting details, specifications, and quantities which may cause confusion in bid preparation and disputes or claims afterward

Recommendations for Use

Preferred Candidates:

- Bridges (steel vs. concrete beams)
- Pavement replacement projects (hot mix asphalt vs. concrete)
- Work items or projects that have competing designs that do not require a significant design effort
- Projects that are small enough to attract a large pool of bidders, but large enough where the potential cost savings are significant enough to justify the additional costs to develop plans and specifications for multiple design alternates

Undesirable Candidates:

- Projects with no clear cut alternates

Implementation Steps

The department has piloted alternate pavement bidding in the past. This pilot program was approved through FHWA's SEP-14 program. MAP-21 eliminated the need to have future Alternate Pavement Bidding projects approved by the FHWA's SEP-14 program. See "Alternate Pavement Bidding (APB) Process" on the Plan Development area of MDOT's intranet site for additional guidance on the implementations steps.

If federal funding is proposed to be used where Alternate Bids are proposed (other than pavement types), the department must follow the SEP-14 process to get FHWA approval. For state or local funded projects, contact the Engineer of Design.

4.2 Procurement

4.2D: Fixed Price/Variable Scope

Description

Fixed Price/Variable Scope is a method where bidders propose to complete items of work within an established budget. The contractor providing the most scope/work for the established budget is awarded the contract.

As an example – a project was designed with 25 miles of resurfacing but the current engineer's estimate provides that the current budget will cover approximately 20 miles of resurfacing. The project is let with the budget amount as a maximum and the contractors to bid on the number of miles of resurfacing they will provide. The contractor with the lowest price for the most number of miles of resurfacing which is closest to (but under) the budgeted amount is selected. If contractors provide the same amount of work, the contractor with the lowest bid for the amount of work will be selected.

This method can also be used on Design-Build selections where the teams provide bids on work items that include design of the work items.

The selection process for this method can be one-step where prequalified contractors provide the information at the bid letting or two-step where contractors are short-listed before allowed to bid. Additional elements adding a qualification evaluation scoring and bid scoring could be added but may make the selection process more confusing. It is important that the contractors are clear on how to bid the project.

Advantages

- Will not exceed budget
- Possible opportunity to get more work done than originally planned

Disadvantages

- Potential to get less work done than originally planned
- Developing contract language on new projects can at time to the design schedule
- Takes more time to evaluate proposal
- Takes time to determine how to split work for bidding purposes
- Possible challenge for contractor selection if selection criteria is not clearly defined and defensible
- Potential for unused design if design plans provided to the contractor cover more than what can be constructed for the budget

Recommendations for Use

Preferred Candidates:

- Projects that can be split into definable elements for bidding
- ITS devices (number of devices for a set cost)
- Capital Preventive Maintenance work
- Resurfacing projects
- Projects with the desired scope or limits of work with estimates that exceed the budget
- Design-Build projects with possible innovations to allow for “more” scope of work to be completed when bid upon

Undesirable Candidates:

- Projects where work cannot be split out
- Projects where the engineer’s estimate significantly exceeds the budget

Implementation Steps

For Design-Build, this method is already allowed by the Federal Regulations. If an office wants to use this selection process on another federal aid project, a SEP-14 would be required. All other projects must follow the below steps.

1. Project submitted by the Region to the Innovative Contracting Committee for approval
2. The Innovative Contracting Committee submits the project to the EOC for approval
3. Complete SEP-14 Work Plan and Receive Approval from the FHWA
4. Develop contract documents specific to the project
5. Provide Industry draft contract documents for review and comment (Recommended for new procedures)
6. Project advertisement
7. Receive bids
8. Determine selected contractor based on bids and contract requirements
9. Project award
10. Construction activities

4.2 Procurement

4.2E: Best and Final Offer

Description

A Best and Final Offer (BAFO) selection method can only be utilized in a Design-Build selection process. It is a method where prices and deliverables are negotiated based on submittals and interviews. It is usually only utilized on very large projects (exceeding \$100 million) and would involve high level management approval to document that negotiations were fair and well-supported. In the process, the design-builders submit their proposals or offers. The offers are reviewed by the department and then interviews are conducted with the design-builders. When the department is comfortable that further discussions are not required, a BAFO is requested from the design-builders. The design-builder then submits their best prices and/or technical responses in reply to the department's request. In effect, this step levels the playing field by allowing finalists an opportunity to provide their BAFO after interviews have been conducted. The decision to award is based on the score of the BAFOs.

A project chosen to go through this selection would be unique; therefore, the elements used in selection and negotiations would be established just for that contract. It may include items such as coordinating with the public, minimizing impact to road users, environmental issues, aesthetics, and more.

Advantages

- May drive down costs
- May increase understanding of work alternatives and allow for more innovations
- Allows design-builders to re-evaluate their proposals for a more competitive bid and technical approach

Disadvantages

- Difficult to determine how many discussions will be allowed before it is the final offer
- Need lengthy period (3 to 6 months) of negotiation for final offer which delays the award
- Negotiators must have authority for project and budget decisions; therefore, high level resources are needed
- Not common with State DOT's
- Industry reaction may not be positive

Recommendations for Use

Preferred Candidates:

- Projects with well-established budgets
- Projects with opportunities for innovation and varying approaches to complete work

Undesirable Candidates:

- Small projects
- Projects that need to be constructed quickly

Implementation Steps

This method has never been used by the department. In other states, it is only used for large projects (over \$100 million). If the department decides to move forward with a BAFO, full involvement from upper management is expected in selection of the project and negotiations.

4.3 Payment

4.3.A: Performance Based Incentives

Description

A Performance-Based Incentive contract emphasizes aspects of construction to be structured around the purpose of the work to be performed as opposed to the manner in which the work is to be performed. It is designed to ensure that contractors are given the freedom to determine how they will meet the performance objectives and achieve the appropriate performance quality levels. It is also designed to ensure the understanding with the contractor that payment will only be made for work that meets the objectives and levels. Some examples of Performance-Based Incentives include traffic control (amount of delay of motorist), pavement performance (ride and condition), and bridge performance (condition and maintenance). Performance-Based Incentives could also be incorporated into a Design-Build contract.

The department has used Performance Based Incentives for certain materials on construction projects. The three primary work items are hot mix asphalt, concrete, and pavement markings. For more information on these performance incentives, contact Pavement Marking Unit, and/or Construction Field Services and request a copy of the following documents.

1. Quality Initiatives Incentives for Hot Mix Asphalt (3/12/10) by Curtis Bleech
2. Quality Initiatives Incentives for Pavement Markings (04/07/10) by Jill Morena
3. Quality Initiatives Incentives for Portland Cement Concrete (3/23/10) by John F. Staton

For this type of contracting, a straight low bid can be used but there is more benefit to add one of the innovative selection methods provided in this guidance document. For example, including Best Value will provide the department the opportunity to evaluate the contractor's team's approach to achieving the performance the contract requires before the bids are open. Project Specific Qualifications could ensure that only contractors well-qualified to perform the work will be allowed to bid.

Advantages

- Limits the state's financial liability for unworkable solutions
- Shifting risk of providing a quality product to contractors; contractor responsible for corrective action throughout the performance life of the contract
- Eliminate blame when there is a problem with the quality of a specific work item
- Potential reduction in costs
- Improved level of service
- Allows more innovation
- Promotes partnering among contracting team and stakeholders when contractors are included in defining performance goals and objectives

Disadvantages

- Currently there are limited contractors with Performance-Based contracting experience which may reduce competition
- Challenges in estimating construction bids
- Adjustments required to go from method to performance specifications
- May increase product monitoring and inspection costs (unless a warranty is required)
- May have higher bids
- Requires a longer procurement process

- Uncertainty associated with long-term contracting relationships - will the contractor still be in business for the entire performance period?
- Additional long-term contract oversight and associated costs if performance measures are provided over a long time period
- Longer project close-out; time is needed after project completion to ensure performance levels of service are met
- Contractor may be required to finance a portion of the work during the performance period

Recommendations for Use

Preferred Candidates:

- Projects with a known means to achieve a fixed level of service
- Projects where performance can be objectively evaluated based on well-defined qualitative standards or quantitative measures

Undesirable Candidates:

- Projects where current procedures of specification are working well
- Projects where performance of construction can not be objectively measured
- Small projects (less than \$5 million)

Implementation Steps

This procurement type, with a Best Value method added, was used on a “Highways for LIFE” SEP-14 project. If an office feels a project would benefit from this type of procurement method, the department must follow the SEP-14 process for FHWA approval. Additionally, the Engineer of Design should be contacted for assistance since development of the project will require close coordination with several areas within the department and involve input from the contracting industry.

4.3 Payment

4.3.B: Lump Sum

Description

Lump Sum is when the contractor agrees to provide specified construction for one specific price. The department agrees to pay the price upon completion of the work or according to a negotiated payment schedule. This innovative construction contracting method requires the contractor to submit a Lump Sum price to complete a project (or a portion of a project) as opposed to bidding on individual pay items with quantities provided.

A Lump Sum contract is the most basic form of agreement between a contractor and the department. In developing a Lump Sum bid, the department will estimate the cost usually by breaking down the work to be included into typical construction pay items and applying current average unit prices. The contractor will use a similar method when developing their bid but may increase the bid based on the contractor's assessment of risk. It may be determined that a portion of the work should remain as a unit price because the perceived risk to the contractor would push the bids higher. In Design-Build, this is called "shared risk" items. If the actual costs are higher than the contractor's estimate, the contractor's profit will be reduced. If the actual costs are lower, the contractor gets more profit. Either way, the cost to the department is the same. In practice, however, costs that exceed the estimates may lead to disputes over the scope of work or attempts to substitute less expensive materials for those specified.

The primary purpose of Lump Sum projects is to reduce the costs of design and contract administration associated with quantity calculation, verification, and measurement. If the department is designing the project, the contractor will be provided a set of bid documents (plans, specifications, etc.) and will develop a Lump Sum bid for all work specified in the contract drawings as "Lump Sum". In Design-Build, the Lump Sum includes the design and construction of the project.

Advantages

- May lower financial risk to the department
- Staffing needed for construction administrative may be reduced, thus reducing engineering costs*
- Construction cost is defined at bid
- May alleviate some department oversight related to quality and schedule*
- Contractor should/would assign best personnel due to maximum financial motivation to achieve early completion and superior performance
- Contractor selection is easier as compared to other innovative construction contracting methods
- May reduce time required to deliver program or project to advertisement

Disadvantages

- Changes can be difficult and costly
- Additional MDOT resources needed to establish pay schedule for contractor if partial payments are to be made on large Lump Sums
- Higher financial risk to contractor may result in higher bids
- Competition may be reduced if fewer contractors want to bid Lump Sum items
- Since contractor is free to choose lowest cost means, methods, and materials consistent with the specifications, only minimum specifications may be provided
- May need conversion to dollars after letting and prior to award in order to facilitate payments through Field Manager

*For federal aid projects, unless performance specifications and/or warranties are provided and approved by FHWA, certain work items will still need to be inspected and tracked in Field Manager. This is done to assure the work and materials meet specifications and to verify testing requirements are satisfied. Because standard work items are not available (they are replaced with a Lump Sum), an additional shadow contract must be developed in Field Manager which creates some additional work.

Recommendations for Use

Preferred Candidates:

- Projects where work is well-defined
- Stable project conditions - scope unlikely to change; delays unlikely
- Projects with very few bid items and short completion duration
- Projects using Design-Build delivery process
- Pavement marking
- Bridge painting
- Fencing
- Guardrail
- Intersection improvements (with known utilities)
- Landscaping
- Lighting
- Mill/Resurfacing (without complex overbuild requirements)
- Minor road widening
- Sidewalks
- Signing
- Signalization

Undesirable Candidates:

- Urban construction/reconstruction projects
- Complex or unique projects
- Projects with potential utility delays
- Rehabilitation projects of movable bridges
- Projects with sub-soil earthwork or underground utility work
- Concrete pavement rehabilitation projects
- Major bridge rehabilitation/repair projects where there are many unknown quantities

Implementation Steps

As stated above, Lump Sum contracts were used and will be used for all the Design-Build contracts. There are several standard Lump Sum pay items the department currently uses ranging from bridge rehabilitation to maintaining traffic items.

A special provision must be developed for Design-Bid-Build Lump Sum contracts. The special provision must include information on all work included in the lump sum item and the process MDOT and the contractor will follow for making partial payments.

Lump Sum contracting can be used on projects with federal aid without additional approval from FHWA. Coordination with an FHWA area engineer is recommended even if the project does not require FHWA oversight. The contract language for making partial payment must be reviewed by the FHWA.

If a Lump Sum item will have partial payments during construction, it should be converted to “dollars” after the letting and prior to award in order to facilitate payments through Field Manager. Payment amounts must be quantifiable on federal aid projects.

If an office would like to expand the concept to include an entire project or significant amount of work as Lump Sum, they should contact the Engineer of Design for assistance and coordination.

4.3 Payment

4.3.C: Indefinite Delivery/Indefinite Quantity

Description

Indefinite Delivery/Indefinite Quantity (ID/IQ) contracting is a method used when the locations of the work items are unknown but an overall estimate of the contract value is known. Under this method, contractors competitively bid on work items based on unit prices for a specific contract term with the locations to be determined through future work orders. With ID/IQ contracting, there is uncertainty associated with scheduling of work and the total quantity of work associated with a contract. However, an estimate of the total work over the life of the contract is provided in the contract. Once the contract is awarded, the department (usually through the project manager) will issue work orders for specific locations as services are needed.

Advantages

- Saves department resources needed for separate bids and contracts
- Reduces overall procurement time
- Increases opportunity for smaller or disadvantaged businesses
- More flexibility for the department in assigning work
- Allows for quicker response when work is defined
- Potential project savings by combining similar work
- Expedited schedule for use in emergency contracts

Disadvantages

- Prices may vary per region and increase bids
- Difficult to provide accurate quantities - may increase costs
- Each task must be completely defined such that only unknowns are the exact time of need and number of times the task may be needed
- Difficult to determine bidders' capacities/outstanding work when bidding on other contracts
- Higher prices due to possible work flow conflicts or labor shortage when contract is put in place
- Completed contract may have unused pay items or overruns which requires contract modifications
- If contract is large, smaller contractors may not be able to bid
- If there is no guarantee or a minimum of work, potential contractors may not bid
- There may be an opportunity for unbalanced bidding.

Recommendations for Use

The department has used this type of contracting quite successfully for service contracts, such as traffic signal design, fabrication steel inspection, and asbestos inspections. It has also been used for traffic signal installation and pavement marking contracts.

ID/IQ contracting is suitable for projects that have clearly defined work items that are standardized or repetitive. The contracts need to have flexibility in both quantities and delivery scheduling.

Preferred Candidates:

- Pavement marking contracts
- Signing contracts
- Traffic signal contracts
- Maintenance repair contracts
 - Guardrail or attenuator repair and/or replacement
 - Catch basin repair and/or replacement
 - Weed control/mowing
- Building demolition contracts

Undesirable Candidates:

- Projects with complicating issues, such as major utility conflicts, right-of-way acquisitions, wetland concerns, or other unresolved issues
- Major road or bridge rehabilitation or reconstruction projects
- Work involving items with escalating costs

Implementation Steps

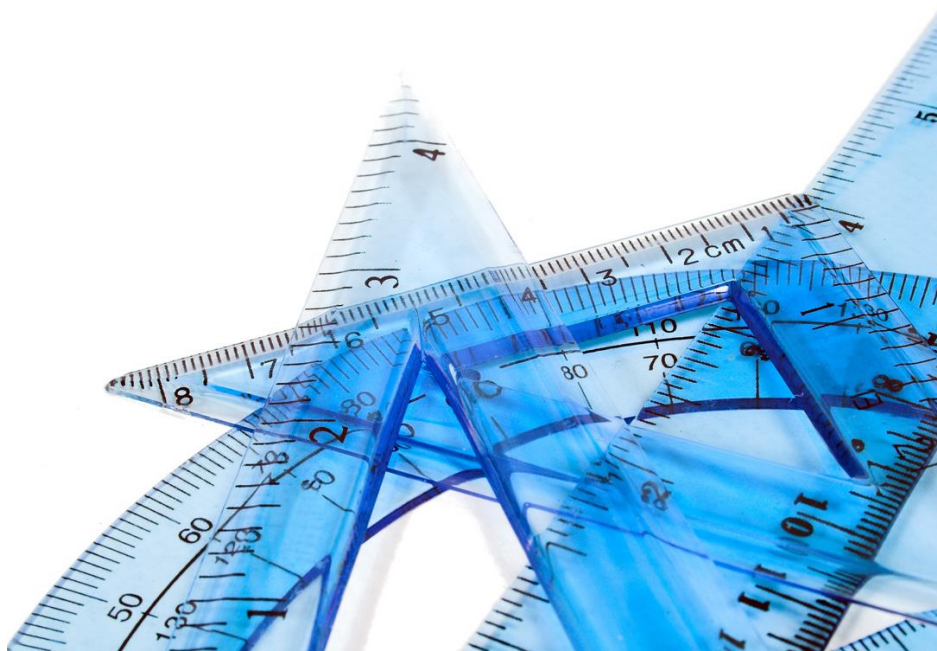
1. Initial project selection
2. Contact the Engineer of Design or Contract Services Division
3. Determine bid items and quantities
4. Advertisement and award
5. Determine work areas and perform design work
6. Issue work orders
7. Construction activities

Chapter

5

Innovative Construction Contracting

Chapter 5: Delivery Methods



5.1 Delivery Methods

5.1A: Design-Build

Description

Design-Build (DB) is a project delivery method that combines two usually separate services into a single contract. With Design-Build procurements, MDOT executes a single contract for both architectural/engineering services and construction. The Design-Build entity may be a single firm, consortium, joint venture, or other organization assembled for a particular project.

Design-Build differs from traditional contracting methods by overlapping design and construction activities which allow construction to begin after only a portion of the design has been completed. Typically Design-Build contracts are awarded after MDOT has completed some preliminary design, the environmental process is complete (or nearly complete), and right-of-way is secured. The level of preliminary design is typically 10% - 30% and depends greatly on the risks associated with the project.

With Design-Build the design-builder assumes responsibility for the majority of the design work and all construction activities together with the risks associated with providing these services for a fixed fee. In current Design-Build contracts, MDOT has retained responsibility for financing, operating, and maintaining the project.

Design-Build projects are typically tailored to large construction projects (greater than \$10 million) but can be utilized on smaller projects. Design-Build projects can utilize different procurement and selection methods in order to best meet the needs of the project. This method involves either a one- step or two-step selection process. In a two-step process, an RFQ is developed and usually three to five teams are selected or "short-listed. In a one-step method, only a Request for Proposal (RFP) is developed. The RFQ and RFP provide detailed information on how the teams will be scored and selected. Common procurement methods with Design-Build are:

- One-Step Best Value
- One-Step Low Bid
- Two-Step with Best Value (short-listing and then a Best Value)
- Two-Step with Low Bid (short-listing and then a Low Bid)

See the Procurement and Payment Techniques section for more details on the use of Best Value, Fixed Price Variable Scope, and Best and Final Offer as well as benefits they may provide.

Any two-step process allows the department to offer the unsuccessful proposers a stipend. The amount of the stipend represents a portion of the cost to prepare a proposal and requires the Director's approval. If the team accepts payment of the stipend, the department owns any and all information provided in their unsuccessful proposal and it may be used on the Design-Build project or other projects. Also, by paying a stipend, the teams may put additional time into their proposals and provide a better bid price than if the stipend were not available. The teams do not have to accept the stipend and then can keep an innovative idea or cost savings as confidential information the department may not use or share.

A Design-Build project often requires extensive work to develop an RFQ and RFP. The department has hired consultants to assist in this effort. For projects being considered for Design-Build, contact the Engineer of Design as soon as possible. The MDOT region/TSC and the Engineer of Design will need to coordinate efforts to define the scope of work and begin the Design-Build method. Part of the discussion must be the desired procurement/selection method. If a two-step selection allowing for the use of stipends is preferred, the Engineer of Design will request approval from the Director.

All federally funded Design-Build programs and projects shall meet The Federal Code of Regulations, Title 23, Part 636 – Design-Build Contracting requirements. Projects not conforming to the above requirements must receive federal approval before utilization of the Design-Build procurement method.

Advantages

- Risk primarily owned by Design-Builder, except for designated “at risk” items
- May shortened completion time by overlapping design and construction
- Much earlier obligation of federal funds
- Stipend payment allows for the department to keep ideas from unsuccessful proposers
- Construction can begin before all design details are final
- Greater innovation in selecting design, materials, and construction methods
- Reduced claims due to design errors
- Accelerated response time and dispute resolution through a team effort
- Single point of contact for quality, cost, and schedule from design through construction
- Ability to use two-step and/or Best Value project award selection criteria which evaluates the qualifications of the Design-Build team
- Reduced or eliminated conflicts arising from a difference in design and actual conditions
- Can use various procurement options that are beneficial to the needs of the project (i.e., short-listing, Low Bid, Best Value Selections, A+B/Lane Rental Provisions, Fixed Price Variable Scope, etc.)

Disadvantages

- High learning curve because Design-Build changes stakeholders' roles
- Owner must shift additional control and responsibility to the design-builder
- Difficult to anticipate staffing needs due to the piece-meal design submittals
- Large time commitment is needed from MDOT PM and other key stakeholders
- Parties are more familiar with traditional methods
- Bidding process more expensive for Design-Build teams
- Coordination is more challenging due to faster pace
- Low Bid projects without a short-listing process tend to yield a project that utilizes minimum standards
- Small dollar Design-Build projects tend to have higher costs
- Heavy reliance on consultants

Recommendations for use

Preferred Candidates:

- Projects that need to be “fast-tracked” or expedited
- Projects that allow for innovation in the design and construction efforts
- Projects with funding deadlines where traditional Design-Bid-Build delivery may not be able to achieve these dates
- Projects where traditional delivery processes cannot meet the project demands
- Emergency projects
- Projects with a clearly defined scope, design basis, and performance requirements
- Projects with low possibility for significant change during all phases of work
- Projects with low risk of unforeseen conditions
- ITS projects involving software development or integration and/or rapidly changing technologies
- Projects with a complete National Environmental Policy Act (NEPA) process
- Projects with limited utility relocation
- Projects that require minimal or no right-of-way acquisition; FHWA approval is needed if all anticipated right-of-way is not acquired at the time of fund obligation
- Projects greater than \$10 million
- Projects that can utilize Best Value procurement or other methods tailored to benefit the specific needs of a project
- New alignments, widenings, reconstruction, and rehabilitation projects with a clear scope of work

Undesirable Candidates:

- Projects with complicating issues, such as utility conflicts, right-of-way acquisition, hazardous materials, wetland and environmental concerns, or other unresolved issues
- Major bridge rehabilitation/repair projects with significant unknowns
- Urban construction/reconstruction with major utilities, major subsoil, right-of-way, or other major unknowns
- Rehabilitation projects of movable bridges
- Significant and/or undefined third party requirements
- Stand-alone sewer pump station projects
- Areas of work without established standards and specifications, or undefinable outcome-based performance standards

Implementation Steps

1. Project submitted by the Region to the Innovative Contracting Committee for approval
2. The Innovative Contracting Committee submits the project to the EOC for approval
3. Initial scope verification and risk analysis
4. Determination of procurement methods
5. RFQ process (two-step only)
6. RFP development and preliminary engineering activities
7. Advertisement and award
8. Design and construction activities

5.1 Delivery Methods

5.1B: Design-Build-Finance

Description

Design-Build-Finance (DBF) augments a typical Design-Build project by transferring the financing of the project to the Design-Build private sector partners. In this approach, projects can be partly or wholly financed by the private sector partner and are compensated by MDOT at a future point as defined in the DBF contract.

Michigan's 2008 DBF projects required the DB team to provide the funding for the projects throughout construction. MDOT began making relatively small payments when the projects reached substantial completion with a balloon payment for the balance of the contract being made more than two years after the completion of the project.

DBF projects can be implemented on projects where DB procurements can be utilized. However, the financial component of a DBF project must be evaluated thoroughly prior to expending significant time and effort on the development of the project. The ability of DB teams to provide funds for the project will vary with the status of the financial market. Depending on the willingness of creditors, DB teams may not be able to secure financing for projects without hindering their ability to seek additional future construction contracts.

The size of a DBF project also affects the ability of a DB team to secure funding. In 2008, the financial community expressed that projects less than \$200 million would not draw the interest in large national and international financial institutions, and projects under \$200 million would need to be financed by local financial institutions or through a DB team self-financing a project. Local financial institutions may not be willing to loan money toward transportation projects and DB teams may not have the ability to self-finance a project. PA 431 also limits the size and duration of MDOT's DBF projects.

If a DBF procurement is desired, MDOT should have extensive early coordination with the financial and contracting industries to verify if the project could be financially viable. Additionally, if federal funds are intended to be used, FHWA must be in agreement to the funding concepts.

Advantages

- See Design-Build section
- Potential cost savings by constructing the project early through the yearly inflation of construction costs
- Reduced maintenance costs and safety benefits due to the road, structure, or facility being constructed in an earlier fiscal year than originally planned
- Job creation and economic stimulus due to a project being constructed in an earlier fiscal year than originally planned
- Provides the ability to build a project needing improvements in an earlier year
- DBF does not impact MDOT's ability to bond
- Depending on the payment structure, a DB team has a vested interest in completing a project quickly if payments are tied to project completion

Disadvantages

- See Design-Build section
- DBF may limit the number of DB teams that can pursue a project
- The financial market is constantly changing; potential DBF projects may be viable today but not in the near future; this unknown factor makes a programmatic approach to utilizing DBF difficult
- Potential cost increases due to the DB team financing the contract for a period of time

- DBF projects may take projects from a future fiscal year into a current year - this can leave a gap in the future program causing an undesired economic impact to designers and contractors

Recommendations for use

Preferred Candidates:

- See Design-Build section
- Emergency projects
- Projects where infrastructure is needed in an expedited manner for a special event, such as the Super Bowl
- Projects that are in immediate need of repair without funding available in the current fiscal year

Undesirable Candidates:

- See Design-Build section
- Projects that are unable to be financed due to size or specific project risks

Implementation Steps

1. Project submitted by the Region to the Innovative Contracting Committee for approval
2. The Innovative Contracting Committee submits the project to the EOC for approval
3. Initial scope verification and risk analysis
4. Industry outreach to assure financial viability
5. Determination of procurement methods
6. RFQ process (two-step only)
7. RFP development and preliminary engineering activities
8. Advertisement and award
9. Design and construction activities

5.1 Delivery Methods

5.1C: Design-Build-Finance-Operate (or Maintain)

Description

Design-Build-Finance-Operate (and/or Maintain) (DBFOM) projects, commonly known as Public-Private-Partnerships (PPPs or P3s) and Public-Private Ventures (PPVs), transfer specific design, construction, financial, operational, and maintenance responsibilities to the private sector partner for a specific period of time. The P3 contractual agreement between MDOT and the private partner clearly defines the limits of the responsibilities between both parties.

Typically P3 projects have revenue generated by the project through road user costs (tolling); however, they do not need be toll facilities. MDOT may choose to fund projects through traditional funding methods or a combination of traditional funding and road user fees.

Based on current Michigan law, most P3 contracts are not allowed.

Transportation related P3 projects are typically mega projects that can only be financed if the owner enters into a long-term agreement with a private partner. P3s have been successfully implemented on both new and improved road and bridge systems.

P3s can be used to improve the transportation system by adding lanes, high-occupancy lanes, high-occupancy toll lanes, and new roadway systems; and to provide additional services on multimodal transportation entities, such as bussing and railroads. P3s have also been used to transfer the operation and maintenance of an existing facility for a period of time in exchange for a lump sum dollar amount. The funds then can be use to improve other areas of the transportation system (i.e., the Chicago Skyway).

Advantages

- Allows for the implementation of large projects that are otherwise cost prohibitive
- Risk allocation and mitigation to the party that can best manage the risk(s)
- Budgetary management
- Potential for accelerated construction
- Potential generation of revenue
- Unsolicited proposals may be submitted allowing the private market to select potentially viable projects

Disadvantages

- Legislative challenges at the State and Federal levels can limit P3 implementation
- Politically sensitive procurement method (out-of-state/country investors, long duration of lease or contract, etc.)
- Potential revenue loss if road user fee revenues exceed expectations
- Appearance that MDOT does not have control of a transportation facility
- Imposing road user fees is typically opposed by the general public at the onset of the project

Recommendations for use

Preferred Candidates:

- Mega projects
- Projects that can or could generate revenue
- Projects with the potential for innovations
- Projects with significant congestion needs

- Multimodal facilities
- High Occupancy Toll (HOT) lane facilities
- International border crossings

Undesirable Candidates:

- Projects that could be stopped by politics
- Projects with uncompleted NEPA process or significant undefinable mitigation requirements from the NEPA process

Implementation Steps

1. Verify MDOT has legislative authority to use a DBFOM method
2. Project submitted by the Region to the Innovative Contracting Committee for approval
3. The Innovative Contracting Committee submits the project to the EOC for approval
4. Initial scope verification and risk analysis
5. Industry outreach to assure financial viability
6. Initial project evaluation (traffic and revenue forecasts support the project's business case)
7. Selection of technical, financial, and legal expertise
8. Determination of procurement methods
9. RFQ process (two-step only)
10. RFP development and preliminary engineering activities
11. Advertisement and award
12. Design and construction activities
13. Administration and oversight of the final contract for the period of the concession

5.1 Delivery Methods

5.1D: Construction Manager / General Contractor

Description

The department, in a Construction Manager General Contractor (CMGC) project, has a direct contract with an architectural/engineering (A/E) firm and a separate contract with a construction company. The construction company is the construction manager (CM) for the project. The A/E firm designs the project, and the A/E firm and the CM are contractually required to work together during the design phase in order to create a project that is potentially less expensive and is quicker and easier to construct.

The CMGC delivery method has some of the same benefits as Design-Build. The CMGC method is based on team building and cooperation between MDOT, the A/E firm, and the CM from the beginning of the project's conceptual design through the final construction and operation or occupancy of the facility. The team approach provides for input from all of the team members throughout the design and the construction phases. The ability of the CM to input constructability reviews, construction phasing, material availability, and cost estimating throughout the design process reduces the probable occurrences of change orders, project construction delays, and increased project costs due to contractor identification of these elements in the design phase instead of the construction phase.

The selection of the A/E firm is the initial step during the early stages of the project. The A/E firm is typically contracted through project completion which includes site investigations, alternative analyses, cost estimates, detailed design, construction bid documents, and department-related construction management services.

The selection of the CM is on a quality based selection similar to that under which design consultants are selected. The department advertises an RFP when the scope and schedule are known, typically prior to the design being 25% complete. The CMGC submits a response to the department's RFP. At a minimum, the response should highlight the CM's personnel to be assigned to the project, previous experience on similar projects, financial resources, a local office to service the project, and the CM's approach to managing and completing the project.

The CM is contracted for the design phase to conduct document review, constructability reviews, cost estimating, and scheduling. When the project plans and specifications are 50% - 100% complete and the desired construction schedule is known, the CM negotiates a final price for the entire project. The final negotiated price is composed of work, overhead, profit, and possibly contingency items needed to complete a project within the desired scope of the department. One drawback to a CMGC procurement is that the price is negotiated; therefore, it can be difficult to verify that the cost of some items of work is reasonable since the work is not procured through competitive bidding. An Independent Cost Estimator (ICE) is used to assist in the negotiation process.

The interaction of the CM with the department and A/E firm during the design phase of the project enables the CM to input cost and construction details that should improve the final price and attain the project goals. The CM is considered "at risk" for delivering the project within the scope, schedule, and the established price.

CMGC procurement has been a common delivery method in the vertical construction industry (buildings) and is being considered as a method of constructing transportation facilities.

Advantages

- Potential time savings by fast-tracking design and construction activities
- Allows for innovation and constructability recommendations in the design phase, yet the department still retains significant control over design
- Since the CM is “at risk” once a Guaranteed Maximum Price (GMP) is established as part of the final price, the CM puts more investment in cost engineering and constructability reviews
- Fixes project cost and completion responsibility
- A project may be phased over a period of time as additional funding becomes available

Disadvantages

- Price is negotiated with a CM and not competitively bid
- The department retains design liability
- CM input may not be included by designer
- GMP approach may lead to a large contingency to cover uncertainties and incomplete design elements
- Use of a Guaranteed Maximum Price (GMP) as part of the final price may lead to disputes over the completeness of the design and what constitutes a change to the contract
- Limited use and experience nationally on transportation infrastructure projects

Recommendations for Use

Nationally, CMGC procurements have been used on a very limited number of transportation projects and minimal information is available on the success of these projects. Until additional information is available, recommendations for use at MDOT will not be provided. If MDOT identifies a candidate for a CMGC transportation project, contact the Engineer of Design to discuss the potential benefits and drawbacks.

Implementation Steps

1. Project submitted by the Region to the Innovative Contracting Committee for approval
2. The Innovative Contracting Committee submits the project to the EOC for approval
3. EOC provides the Director’s Executive Leadership Team for final approval
4. Initial scope verification and risk analysis
5. Develop RFQ for CMGC services
6. Post RFQ
7. Select CMGC
8. Develop plans and specifications
9. Receive and negotiate final price
10. Complete design
11. Project construction

5.1 Delivery Methods

5.1E: Alternate Technical Concepts

Description

Alternate Technical Concepts (ATC) allow contractors to propose changes to a contract prior to bidding that will provide the public with a product that is equal or better to the base design. ATC's have been used extensively on design-build projects and have been used on a very limited basis by state DOT's on design-bid-build projects. MDOT intends on piloting its first design-bid-build project in 2013 that will use ATCs.

Advantages

- Allows for innovation and constructability recommendations to be proposed, reviewed and improved during the projects advertisement
- Potential for cost and time savings.

Disadvantages

- Additional costs for contractors during the advertisement
- Limited use and experience both locally and nationally

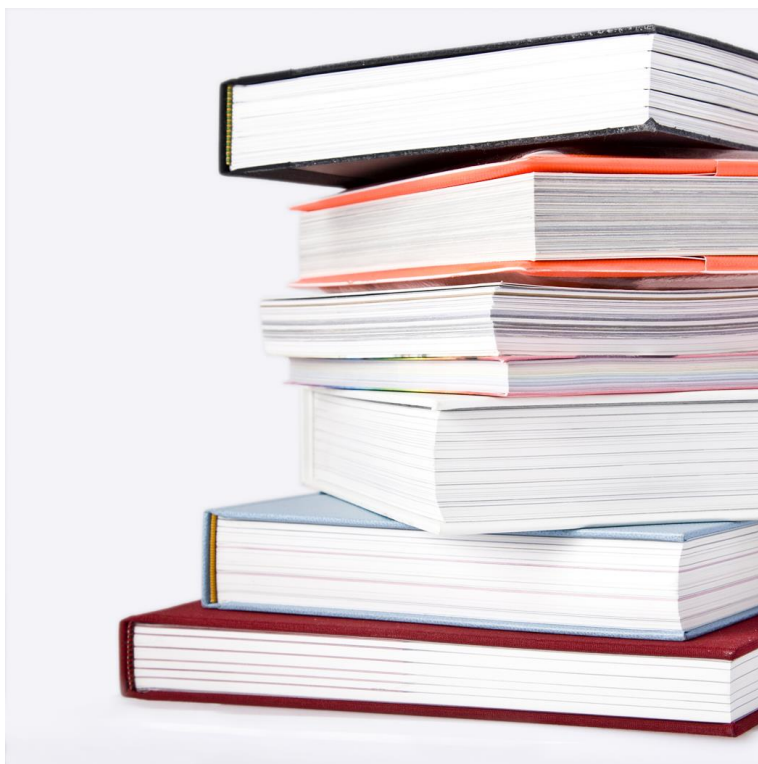
Recommendations for Use

This section will be updated after additional experience is obtained.

Implementation Steps

1. Project submitted by the Region to the Innovative Contracting Committee for approval
2. The Innovative Contracting Committee submits the project to the EOC for approval
3. Initial scope verification and risk analysis
4. FHWA SEP-14 approval process
5. Develop plans with base concepts and ATC process
6. Notify Industry
7. Advertise project
8. Review and approve/reject ATC's
9. Receive Bids and award project
10. Project construction

Chapter 6: Resources



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Appendix B: Special Experimental Project No. 14 (SEP-14) Process

The following information on the SEP-14 process was obtained from the FHWA Construction Contract Administration website at http://www.fhwa.dot.gov/programadmin/contracts/sep_a.cfm:

Since 1990, the FHWA has allowed the State DOTs to evaluate non-traditional contracting techniques under a program titled "Special Experimental Project No. 14 - Innovative Contracting." Originally, the contracting practices approved for evaluation were: cost-plus-time bidding, lane rental, design-build contracting, and warranty clauses. After a period of evaluation, the FHWA decided that all four practices were suitable for use as operational practices (non-experimental). Today, SEP-14 remains as a functional experimental program that may be used to evaluate promising non-traditional contracting techniques. In fact, the term "alternative contracting" may be a better descriptor than "innovative contracting" as some of these techniques are widely used and are no longer considered to be innovative by some contracting agencies. Thus in 2002, the title of SEP-14 was changed from "Innovative Contracting" to "Alternative Contracting."

Background

The genesis for the FHWA's SEP-14 began in 1988, with the establishment of a Transportation Research Board (TRB) task force to evaluate Innovative Contracting Practices. The task force consisted of 23 representatives from state highway agencies, all segments of the industry, and others. Its mission was to:

- Compile and research information on contracting practices used by agencies in the United States and other countries
- Assess how current practices affect quality, progress, and cost
- Suggest measures for improving contracting practices and promoting quality in construction

The task force investigated four major areas:

- Bidding procedures
- Materials control
- Quality considerations
- Insurance and surety issues

Recommendations were made by the task force for each of the four major topic areas. Some of the more significant recommendations included:

- The cost-plus-time bidding concept should be considered for wider implementation
- The potential for use of warranties or guarantees and the design-build contracting concept should be investigated
- Attention should be given to the use of constructability testing during the design of projects
- A nationwide effort should be initiated to transition from method specifications to performance-related specifications and the performance-related specifications should include incentive and disincentive provisions to encourage better quality
- A national clearinghouse should be established for information on new materials/processes and the establishment of a national center, or regional centers, for product evaluation should be investigated
- Value engineering concepts should be investigated to identify ways to promptly approve successful innovative techniques.

The task force's findings are documented in Transportation Research Circular Number 386, entitled, "Innovative Contracting Practices," dated December 1991. The task force chairman, Dwight Bower, subsequently requested that FHWA establish a project to provide a means to evaluate some of the task force's more project specific recommendations and SEP-14 was initiated.

Objective

The objective of SEP-14 is to evaluate "project specific" innovative contracting practices undertaken by state highway agencies that have the potential to reduce the life cycle cost of projects, while at the same time maintain product quality. Federal statutes and regulations do set forth specific federal aid program requirements; however, some degree of administrative flexibility does exist. The intent of SEP-14 is to operate within this administrative flexibility to evaluate promising non-traditional contracting practices on selected Federal-aid projects.

When is FHWA SEP-14 Approval Necessary?

FHWA headquarters' SEP-14 approval is necessary for any non-traditional construction contracting technique which deviates from the competitive bidding provisions in 23 USC 112. Any contract which utilizes a method of award other than the lowest responsive bid (or force account as defined in 23 CFR 635B) should be evaluated under SEP-14. These non-traditional contracting techniques may include best value, life cycle cost bidding, qualifications based bidding, and other methods where cost and other factors are considered in the award process.

How do I request FHWA's approval under SEP-14?

State DOTs or local public agencies may submit a SEP-14 work plan through the local FHWA division office. The division office reviews the request and, if appropriate, forwards it to FHWA headquarters (HIPA-30) for review and approval. Electronic copies of work plans and SEP-14 requests for approval are encouraged. This effort should be coordinated through MDOT's Innovative Contracting Unit.

Appendix C: Guidelines for the Procurement of Design-Build Contracts



Guidelines for the Procurement
Of
Design-Build Contracts

Initial Publication: August 6, 2014
Updated: March 5, 2015

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Chapter 1: Introduction

This guide describes the Michigan Department of Transportation's (MDOT) process for preparing contract documents and procurement methods supporting design-build (DB) delivery. It serves as a guide to MDOT project managers and other individuals interested in the MDOT DB process. The information included in this guide is intended to cover the development and delivery processes; however individual projects may have needs or steps that are not yet identified in this guide. Comments and suggestions on improvements to this guide are welcome and can be emailed to the Innovative Contracting Unit Manager or to MDOT-DesignICC@Michigan.gov.

Overview of Contract Document Development

For the purposes of this guide, the DB contractor/designer team will be referred to as the "Design-Builder". This is done to reinforce the expectation that the contractors, their subcontractors and design firms must function as a cohesive team in order for a project to be successful.

The contract document development phase of a DB project includes preparing the Request for Qualifications (RFQ) and/or Request for Proposal (RFP) documents, and also includes DB planning activities that should commence immediately after the project is designated for DB delivery. In MDOT's standard approach, The RFQ and RFP are developed concurrently with planning and environmental activities necessary to mitigate project specific risk. If the project is designated for DB delivery prior to environmental documentation and preliminary design, these DB planning activities should take place in conjunction with the environmental documentation and preliminary design.

The contract document development phase of a DB project is focused on preparing the RFP documents, which include the following:

Instructions to Proposers (ITP): Instructions and forms for preparing the proposal

Book 1: Contract Terms and Conditions

Book 2: Project Requirements

Book 3: Applicable Standards

Reference Information Documents (RID): Documents provided by MDOT for information only and not to be relied upon by the Design-Builder

Portions of the RFP later become the contract documents, as discussed later in this guide. With MDOT's approach to developing DB contract documents, much of the content can be used for multiple projects with only minor updates and modifications. For example, Book 1 includes programmatic requirements that apply to virtually all DB projects. Book 3 includes applicable standards for DB projects. These documents remain generally unchanged for DB projects, unless updates are required to capture new MDOT standards or Federal Highway Administration

(FHWA) guidelines. Because some proposed changes to the DB template text may require FHWA approval, the project managers should track and submit changes before implementing template text changes that would affect other DB projects.

Chapter 2: Project Selection, Approval and Project Management

Projects using non-traditional methods such as DB require additional approvals before they can be developed, let and constructed. Before a project can move forward using a DB procurement, approvals from MDOT's Innovative Contracting Committee (ICC) and Engineering Operations Committee (EOC) must be received.

Identification of Innovative Contracting Projects

In September of each year, the ICC will solicit a call for innovative construction projects. Responses to this call for projects will be due in October in order for recommendations to be sent to the EOC in November or December. Candidate projects should be submitted to the ICC 3 to 5 years prior to the planned letting date. However, projects requiring urgent attention may be submitted to the ICC for consideration less than 3 years before letting, and they will be reviewed on a case by case basis.

During the preliminary scoping of a project, the information provided in the Innovative Construction Contracting guide should be used by Region and TSC staff to determine if non-traditional methods could be advantageous. Staff from the Innovative Contracting Unit (ICU) can also be contacted and used as a resource. If non-traditional methods could benefit a project, project information should be submitted to the ICC for review. Project information is provided by the Region/TSC to the ICU Manager using the form at the following ProjectWise link: [ICC Submission Forms](#).

The ICC will review information provided by the Regions and may request additional information or ask the Region/TSC staff to discuss the project at an ICC meeting before making a final recommendation to the EOC. If the ICC concurs with the Region's request, the ICC Chair will submit the project to the EOC for consideration. If the ICC does not concur with the project request, the Chair will notify the Region/TSC. The Region/TSC will have the opportunity to further discuss the request at a subsequent ICC meeting.

Engineering Operations Committee Review

The EOC must review all projects recommended for approval by the ICC. The ICC Chair will work with the Region/TSC to develop the required EOC agenda documents to present the project recommendation to the EOC. Depending on the project complexity, the Region/TSC may be asked to attend the EOC meeting. The ICC Chair will notify the Regions/TSC of the EOC's final decision.

Once the review and approval process with the ICC and the EOC has been completed, the ICC and the EOC will have limited involvement with the project. However, the project's key staff can expect requests for presentations, project updates and/or reports for various meetings and/or conferences.

Project Management

Staff from the Region/TSC or ICU will be the Project Managers (PM) on DB projects. The location of the PM will be determined on a case by case basis. A Deputy Project Manager (DPM) from the ICU or the Region/TSC should also be assigned to work with the PM. The PM and DPM will have significant interaction during the life of the project and will work together to divide up work and responsibilities. Additional staff resources from the Region, Field Services, and other specialty areas within MDOT will interact with the management team as they would on traditional projects. As the project progresses the management team may change to reflect the needs of the project. The initial PM and DPM should remain involved during all phases of a project, with additional responsibilities being placed on other staff as the project advances. For example, the TSC construction staff will have a more significant role as the projects gets close to, and moves into construction phases.

ICU, Region and TSC staff, as well as other specialty areas within MDOT will still have a significant role in each project, and their level of involvement will depend on the type of innovative procurement being used. It is critical that the PM and DPM establish their roles and the roles of other MDOT staff at the beginning of each project, and continue to coordinate with each other during the project's life.

Additional Project Staff

The memo in Appendix 2A outlines how DB projects will be developed and staffed during the project. Ideally, team members should have both technical expertise and familiarity with DB delivery. If the latter is not available, training may be required. While the differences between traditional and DB delivery are often subtle, certain differences – such as preparing performance-based requirements rather than prescriptive specifications – are critical in preparing DB documents. Overly descriptive requirements can limit innovation and, in some cases, bring additional risk to MDOT if designs are prescribed to the contractor

The exact makeup of the team will vary, but at a minimum should include staff from the development and delivery areas and technical staff with expertise in certain areas, such as structures, roadways, hydraulics, environmental and geotechnical work. The makeup and size of the team will vary depending on the size and complexity of the project. On some projects, one individual may serve several roles. An FHWA representative may also be required when federal funding is involved. Legal counsel may be required at certain stages of the project. Team members can be provided either in-house or through consultants.

Team continuity is important during the various phases of the project. Ideally, the project managers and team staff should remain intact from DB planning stages through RFP development, contractor selection, Design Assistance During Construction (DADC) and Construction Engineering and Inspection (CEI) to help ensure that project goals are achieved. An experienced, well-connected team can provide valuable project knowledge that expedites decision making and helps interpret the background and intent of key requirements.

ProjectWise Work Flow

Once a project is approved to move forward as a DB project, the PM must contact Heather VerHage so the project can be identified in ProjectWise as a DB project.

Appendix 2A: Project Management Memo



OFFICE MEMORANDUM

DATE: March 10, 2010

TO: Region Engineers
John Friend
Mark VanPortFleet
Associate Region Engineers – Delivery
Associate Region Engineers – Development

FROM: Greg Johnson
Chief Operations Officer

SUBJECT: Design Project Management on Design-Build Projects

MDOT delivered two Design-Build-Finance (DBF) pilot projects in 2008 with the intention of assessing the benefits, effectiveness, and potential improvements of the Design-Build (DB) process by performing a thorough evaluation after the completion of the projects. Prior to the completion of the DBF projects, MDOT continued to utilize DB procurements on additional projects to meet program needs. The additional DB projects are considered to be an extension of the initial pilot.

A key aspect of piloting any new program is to explore ways to improve. The recent DB projects have been successful, and many lessons have been learned. Through this process it has become apparent that more clarification must be provided for design reviews. This memo outlines the roles and responsibilities for those involved in this process.

Design-Builder

The contractor who is awarded the DB contract, including their subcontracted design firm, is considered to be the Design-Builder. This designer is the Engineer of Record for the project, responsible for developing plans and constructing the project in accordance with the Request for Proposal (RFP), and must assure all state and federal standards are met.

MDOT DB Project Manager

The Development Project Manager (PM) will establish a core team of individuals to review and respond to items submitted by the Design-Builder. This team will consist of the Delivery Project

Manager, select MDOT technical experts, and On-Demand Consultant (ODC) staff. To ensure efficiency, this team must be a relatively small group of individuals (5 to 6) that are familiar with the RFP requirements. All design related team actions and responses will be channeled through the PM. The PM has the responsibility to determine which design submittals require review by other technical experts within MDOT.

The RFP is the contractual document between MDOT and the Design-Builder. The PM is responsible for ensuring that the RFP is complete and accurate, and that it properly reflects the scope of the project. The PM will coordinate the development of the RFP with MDOT's technical experts. These experts are invited to review and provide input to assure the RFP will meet current MDOT standards and practices.

During the design review process, the MDOT PM is expected to act independently in order to move the DB project forward within tight time frames provided in the RFP. The PM should have the authority to make decisions on behalf of and with support from the Department with minimal direction. A DB project often requires a significant time commitment from the PM. If the PM spends time resolving conflicting responses or responses from personnel who are not familiar with the RFP or contract, the time demand increases even more.

MDOT Technical Experts

The primary responsibility of MDOT's technical experts is to ensure the requirements in the RFP are clear and correct for the desired scope of work. The PM must coordinate with Region, TSC, C&T, and Lansing Central Office experts during the development process to ensure the RFP language addresses all project requirements and standards.

After award, the PM may seek input from MDOT's technical experts for complex items to ensure design submittals meet contract requirements. Comments from technical experts must be specific to the RFP and must not include personal preferences. Critical items not addressed in the RFP requirements could result in extra payment to the Design-Builder. It is important that technical experts work directly with the PM and never directly contact the Design-Builder. The PM must be aware of the recommendation impacts and will be responsible to address any associated cost increases.

As demand on MDOT staff increases, it is important for the PM to utilize the technical experts' time only when needed. Technical experts should not be sent items that can be handled by the core team. Some areas of MDOT that normally review all designs might not always be provided this opportunity.

On-Demand Consultants

The ODC is hired to take a lead role in the development of the RFP, and to review all design submittals. The ODC is expected to have the technical expertise in all areas that a project will encounter, unless MDOT specifically plans to provide that expertise. They are required to report

directly to the PM and, unless given the approval to do otherwise, take direction only from the PM. The PM must define the work and level of effort MDOT expects from the ODC in the consultant scope of services, which is reflected in the hours negotiated in the ODC's price proposal.

Central Office

The primary responsibility of the Lansing Central Office staff is to provide guidance to all PMs through every phase of a DB project. They will review candidate projects, procure the ODC services, and provide quality assurance role during the development of the RFP. When requested by the PM, they will assist in the design review process. The Central Office will also be responsible for compiling lessons learned and recommending procedural improvements.

Plan and Specification Review Requirements

A traditional MDOT Design-Bid-Build (DBB) contract contains very detailed information to ensure all bidders have sufficient information to bid on and construct a project. This level of information is provided to minimize MDOT's risk for potential claims. On DB projects, the risk of claims due to plan errors and omissions is shifted almost entirely to the Design-Builder. Therefore, the contractual language in the RFP must clearly define the Design-Builder's requirements to provide a constructible design, while including adequate information for MDOT to inspect the work and ensure compliance with all standards.

Each Design-Builder will require different levels of information on a plan set in order to properly build a quality project. MDOT must identify the minimum information required for Release for Construction (RFC) documents to ensure the project can be built in conformance with the project scope and needs. DB projects are intended to be fast paced and will require a design review approach that is different from traditional DBB. Requesting additional, unnecessary information from the Design-Builder must be avoided in order to expedite the project completion.

Items that provide minimal benefit, such as line weight on plans, should not be a requirement a Design-Builder needs to fulfill in order to start construction. The review of RFC's must be focused on significant items such as geometrics, environmental, mobility, public safety, right-of-way, and drainage during the acceptance process. As-Constructed Final Plans (ACFP) are still required on all DB projects, and can include more detail than what is needed for RFC documents. These requirements will need to be clearly identified in each RFP.

This approach to design reviews on DB projects is necessary to ensure efficiency. MDOT will continually review all aspects of the DB procedures, and remains committed to delivering quality projects. Please contact the Engineer of Design, Brad Wieferich, at 517-373-0030, if you have any questions or concerns.

Chapter 3: Federal Highway Administration Involvement

Federal DB projects are authorized under 23CFR 636. On federally funded projects that are determined by the FHWA to be a Project of Division Interest (PoDI), the FHWA will have a key role and must be actively involved throughout the project's development and delivery processes. The PM must contact the FHWA at the beginning of a DB project's development to determine if the project will be selected as a FHWA PoDI, and subsequently establish project time lines, expectations, and the roles and responsibilities of all parties.

See Appendix 3A for the FHWA's typical roles and responsibilities on DB projects

Appendix 3A: Federal Oversight Roles on DB Projects (Updated July 10, 2014)

Development Activities

1. Project Selection
2. General Oversight
3. Procurement Method
(IE, Low Bid, 2-Step, Best Value)
4. Risk Assessment Meetings
5. Scope Verification Meetings
6. DB Training Meetings
7. Request for Qualifications
8. Short-Listing Process
9. Request for Proposal
Development
10. Final Package Review Meeting
11. Advertising RFP
12. Addenda
13. Alternate Technical Concepts
14. Project Award

FHWA Involvement

- None
- Typically DB Projects are selected as PoDI. The PM must contact the FHWA Area Engineer to determine the PoDI status
- None
- Invited to meetings (PoDI Only)
- Invited to meetings (PoDI Only)
- Invite to Training
- Concurrence on final RFQ (PoDI Only)
- None
- Invited to all meetings, and is actively involved during the RFPs development (PoDI Only)
- Invited to meeting (PoDI Only)
- Approval required via signature on the Certification & Acceptance Form (PoDI Only)
- Approval required prior to addenda submission to Specifications & Estimates (PoDI Only)
- Concurrence required (PoDI Only)
- Invite to all ATC meetings (PoDI Only)
- Approval required (PoDI Only)

Post Award Activities

1. Schedule of Values
2. Bridge Type, Size
& Location Study
3. Road Base Plans
4. Project Meetings
5. Released for Construction
Documents
6. Contract Modifications
7. Final Acceptance

FHWA Involvement

- Concurrence required (PoDI Only)
- Approval required (PoDI Only)
- Provided base plans for review and comment (PoDI Only)
- Invited to meetings (PoDI Only)
- Provided all RFC documents for review and address comments prior to acceptance (PoDI Only)
- Approval required (PoDI Only)
- Traditional procedures followed and FHWA signs MDOT form 1120. FHWA completes their Final Engineering and Acceptance for FHWA Oversight Projects form and submits it to MDOT Finance. (PoDI Only)

NOTE: FHWA coordination for other processes (design exceptions, environmental reviews and approvals, financing, etc.) typically follow the same guidance as with regular federal aid contracts.

Chapter 4: General Engineering Consultant (GEC)

MDOT uses a General Engineering Consultant on all DB projects. A single GEC is used to promote consistency within the DB program. The current GEC contract began on February 20, 2013 and will expire on February 20, 2016 unless an extension is executed.

The GEC Master Contract is very broad and encompasses all phases and types of DB projects including traditional DB projects, design-build-financing projects, and Public-Private Partnerships (P3) that use a DB procurement. The scope for the Master Contract is located at the following ProjectWise link: [2013-0140_Contract.pdf](#).

Each DB project will have a separate Work Order written to define the responsibilities of the GEC and the funding source. A Work Order checklist is provided in Appendix 4A to assist in getting the GEC assigned to a project. The Master Contract has been approved by the State Administrative Board, and individual Work Orders are not sent to the State Transportation Commission or the State Administrative Board for additional approvals.

Work Orders are funded by phases. Typically there is a Work Order established for the design phase, and a separate Work Order established for Design Assistance During Construction (DADC).

The design phase typically costs between 2% and 4% of the construction costs. The actual cost is based on the level of effort required by the GEC to develop the RFQ and RFP, as well as the project risks. Example spreadsheets for determining the design phase costs are in ProjectWise at the following link: [GEC Work Orders](#).

DADC costs are determined as the RFP is developed. The final cost of the DADC work order is determined by the anticipated level of effort to review various submittals provided by the Design-Builder. The assumptions for this should be documented so the Work Order can be adjusted, if necessary, during the construction phase.

Construction Engineering

Consultant Construction Engineering (CE) is obtained outside of the GEC contract unless an exception is granted. CE contracts are advertised through traditional selection procedures.

Appendix 4A: On-Demand GEC Work Order Checklist

Contract 2013-0140 Requisition No 1077 Work Order # X

Control Section: _____

Job Number: _____

Project Description: _____

Project Manager: _____, Office Location _____

Co-Project Manager: _____, Office Location _____

- _____ Project Manager (PM) and Co-Project Manager (Co-PM) Establish Review Team (PM, Co-PM plus other stakeholders)
- _____ PM and Co-PM write Scope based on Template for GEC Work Orders.
- _____ PM sends draft Work Order to Review Team for Review.
 - Request comments by a specific date.
- _____ PM and Co-PM review comments received and rectifies any comments that will not be incorporated into the final Work Order.
- _____ Revise Work Order and send final draft to the Review Team for final review
 - Request comments by a specific date
 - Draft can be provided to GEC
- _____ PM emails the following items to CSD Administrator (Dee Parker) and cc's the Innovative Contracting Unit Manager and the CSD Contract Administrator responsible for the PM's area.
 - The body of the email must include Contract 2013-0140, Requisition # 1077, and the Work Order Number, and a request to the CSD Administrator to review and approve the draft Work Order.
 - Final Draft Work Order (Word Format)
 - Recommendation for DBE Participation and areas that DBE's may work on.
 - MDOT Form 5100A
 - Derivation of Cost Estimate
- _____ Revise Work Order if needed, and send final Work Order to GEC
- _____ Hold Scope Verification /Initial Risk Assessment Meeting
- _____ Negotiate Price with GEC
- _____ PM sends the following to the Innovative Contracting Unit (ICU) Manager (Chris Youngs)
 - Final Work Order
 - GEC Work Plan
 - MDOT Form 5108 and GEC Price Proposal: 5101 Series Forms (5101, A-1, A-2, B, C, D, E)
 - MDOT Forms 5100A, 5102, 5105, and possibly 5100J (By MDOT)
 - MDOT Form 5100D, 5102 (By GEC)
- _____ ICU Section Manger provides the above documentation the Contract Analyst for the PM's area.
- _____ CSD contacts ICU Section Manger to sign MDOT Form 5186.
- _____ CSD develops the contract, processes and executes the Work Order contract

Comments:

Chapter 5: Preliminary Project Information and Risk Assessment Meeting

Once the DB project is approved to move forward, the PM and the DPM should meet with key stakeholders (Typically MDOT staff from the Region/TSC and key specialty areas, the FHWA and the GEC) to discuss the project, its goals, schedule, funding constraints, and to identify the initial major risks. In addition to project specific risks, common risks on most projects include right of way (ROW) concerns, environmental items, geotechnical items, utility conflicts, third party items, and railroads. Other project risks will be present on each project.

Project Schedule

A schedule for the development of the project should be created by the PM and DPM early in the project in order to ensure key dates are met. MDOT's specialty areas should be contacted by the PM to assist in developing an achievable development and delivery schedule. For some activities, PPMS can be used to assist in managing the schedule; however a schedule should be developed outside the PPMS network since PPMS activities do not always accurately reflect the work on DB projects. PPMS tasks that are not applicable to a DB project should be deleted from the project's PPMS network. Some key dates to identify are in Appendix 5A.

Project Funding

A project's funding should be discussed early in the project to ensure obligation can occur while meeting the project schedule needs. Preliminary estimates can be generated during the projects development to ensure the project has adequate funding identified. The project can be obligated if the project is in the STIP, the CA form completed, and the RFP is ready to advertise.

Determining the Procurement Method

An advantage of DB projects is that MDOT can match the procurement method with the needs of the project. This is accomplished through the options within the procurement process. Some procurement options include a one-step procurement (no shortlisting), two-step procurements (shortlisting), use of Lane/Bridge Rentals, and Best Value procurements. The possible procurement methods should be discussed at the risk assessment meeting in order to determine the proper steps required on a project.

Two-step procurements are a recommended best practice and aid in getting the most qualified teams pursuing a project based on the needs and risks of a project.

The use of Best-Value requires approval from the EOC, and is not often approved for use at MDOT. On best value DB projects, the project managers should conduct an evaluation criteria workshop to:

- Fully develop the procurement method that will be used
- Establish clear, concise technical proposal submittal requirements
- Determine the process that will be used to evaluate and score technical proposals
- Determine the process that will be used to identify the successful proposer

Risk Assessment and Allocation

Risk assessment is a process to determine risks to the project success or goals and the significance of those risks. Proper risk assessment can reduce the overall project cost, and should be done in conjunction with establishment of project goals. *Risk allocation* assigns risk to the owner or the Design-Builder —whichever party is best able to manage specific risks.

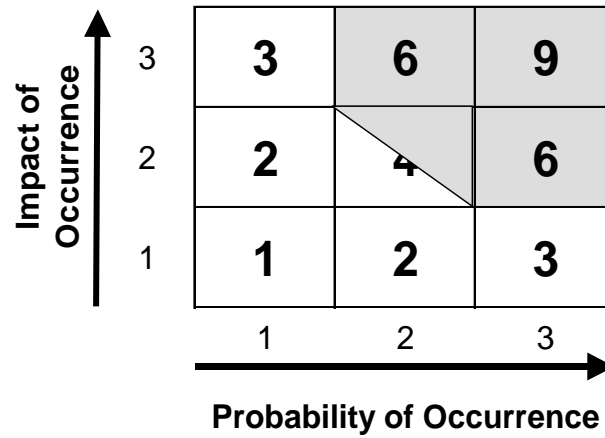
A risk assessment/risk allocation workshop should be held early in the DB planning phase with key members from the MDOT team, specialty areas within MDOT, FHWA, and MDOT's GEC to identify risks to project goals and determine if a mitigation plan is needed to adequately address identified risks. The workshop should address all risks to project goals, the level of mitigation effort necessary to minimize the risk, and ultimately assignment of the risks. The workshop is not intended to solve complex risk-related issues, but rather focus on assessing and allocating the risks. Risks might include technical issues such as soils or structures, environmental issues such as permitting, or political issues such as public impacts, municipal consent, or interagency government approvals. Additional project team risk assessment/risk allocation workshops should be scheduled if needed throughout the project development process to incorporate newly identified risk items and re-evaluate previously identified risks. Once the risks have been allocated, the RFP documents can be tailored to include any applicable requirements of the Design-Builder.

General Risk Assessment Process Steps

1. Obtain example Risk Assessment/Risk Allocation forms from the following ProjectWise link: [Risk Assessment Matrix](#)
2. Develop a project specific risk assessment/risk allocation that includes the major areas of work and potential project risks.
3. Meet with Key project Stakeholders to discuss the project and the risks.
4. Consider where problems might occur in each work area and list the areas of risk and rate the probability of each risk occurring (i.e., 1=Low, 2=Medium, 3=High).
5. Rate the consequences to the project goals such as scope, schedule, and cost (i.e., 1=Low, 2=Medium, 3=High).
6. Multiply the probability rating by the consequence rating to arrive at a weighted value.
7. Rank the weighted values and separate those risks where mitigation is warranted.
8. Develop options to reduce risks and consequences. Possible options might include: do nothing (accept risk); transfer risks to Design-Builder; perform additional engineering/analysis; establish contingencies; be more or less prescriptive (as appropriate) to limit risk; or revise scope and/or requirements.

Once project risks are identified they are categorized by their potential impact and the probability their occurrence. Initial mitigation plans are identified for further action based on the outcome of

the risk assessment. Depending on the risk item, MDOT may choose to own the contractual responsibility for the risk or pass it on to the Design-Builder.



Appendix 5A: Initial Schedule

The following dates are for common activities encountered during a DB project. This list does not include all activities that must be considered, and can change on each project.

Activity: DATE

1. Design Phase Funding: _____
2. GEC Development Contract: _____
3. Determine ROW Needs: _____
4. Est Date to Clear ROW: _____
5. Determine Environmental Needs: _____
6. Est. Date to Clear Environmental: _____
7. Expected Dates for any Tree Cutting (NLE Bat) : _____
8. Establish Project Website: _____
9. Post Project Information Page: _____
10. Design Build Training: _____
11. Request Stipends if applicable: _____
12. Complete Draft RFQ: _____
13. RFQ Advertising Date: _____
14. SOQ Due Date: _____
15. CSRT Review of RFQ: _____
16. Determine RFP Development Schedule with tech Area involvement: _____
17. Determine DB Work Zone Mobility Review team: _____
18. Time Needed for Design: : _____ to _____
19. Time Needed for Construction: _____ to _____
20. SAB Date: _____
21. STC Date: _____
22. Develop GEC DADC Contract
23. RFP Package Review Meeting
24. RFP Turn In Date: _____
25. RFP Advertisement Date: _____
26. Proposal Due Date: _____
27. Tech Proposal Review: _____

Chapter 6: Project Websites

The PM must establish a project website on the Innovative Contracting website (www.michigan.gov/ic) so RFQ's, questions and answers to the RFQ, and project information can be posted. The project website should be updated to provide relevant information as it becomes available.

To establish the project website the PM must contact CSD's Sub-Contract Analyst. The PM will need to provide specific information on what the title of the project website should be (See www.michigan.gov/ic for examples). Setting up the website can take 2-3 days to complete.

CSD's Sub-Contract Analyst will also post items to the website such as project information and RFQ's. The PM should provide the analyst clear instructions for the title of the items being posted. Items typically take 1 to 2 days to get posted.

After a project is awarded the GEC will develop a project specific website that will be used by MDOT, the GEC and the Design-Builder to provide submittals, comments, submit requests for information, and various other activities. The GEC will provide information and training on the project specific website.

Chapter 7: State Administrative Board and State Transportation Commission

DB projects let through MDOT's traditional e-Proposal website will be placed on the State Administrative Board (SAB) and State Transportation Commission (STC) by MDOT Contract Service Division (CSD) Construction Contracts Section (CCS) for pre-approval.

If a DB project will not be let through e-Proposal the PM must contact the CCS Manager at least 6 weeks before the obligation date to ensure the project is placed on the desired STC and SAB agendas. An example SAB write up is provided in Appendix 7A.

Appendix 7A: Example SAB Write-Up

LETTING OF (Insert Month, Date, Year)

PROPOSAL

PROJECT (Insert Control Section)-(Insert Controlling Job No.)

LOCAL AGRMT. (Provide if known)

START DATE – (Insert Date)

COMPLETION DATE – (Insert Date)

PREQUALIFICATION LEVEL (Insert Estimated Construction Cost)

Contract for the design and construction of (Insert project description, geographic limits and route), in (City), (County) using a DB contracting method.

XXX% DBE participation required

Chapter 8: General Environmental/ NEPA and ROW Process

National Environmental Policy Act

DB projects, like all other Department projects, require environmental analysis and preparation of environmental documents to comply with the National Environmental Policy Act (NEPA). It is important to remember to limit the amount of design work performed to coincide with the level of design required to support the environmental documentation.

At the beginning of a project's development, the PM should discuss the project's needs and associated timelines with MDOT's Environmental staff to ensure they have adequate information to clear the project within the desired time frames. Environmental staff may have additional needs to clear a project based on the project's scope of work.

Environmental clearance should be obtained prior to requesting obligation for the construction phase (A Phase). If environmental clearance is not expected to be obtained before obligation, the FHWA must be contacted and to request an exception. MDOT's procedures are established based on completing the NEPA process prior to obligation. If it is not expected to have NEPA work completed, the DB template documents must be revised in order to develop contract language and requirements acceptable to MDOT and the FHWA.

Commitments and mitigations made in the environmental process need to be completed as part of the DB projects, and must be included in the applicable sections of the RFP.

Right of Way

Prior to requesting obligation, Right of Way, including easements or acquisitions, must be addressed in the RFP and documentation must be placed in the supporting Documents folder in ProjectWise.

If there are no anticipated ROW needs, the Certification and Acceptance form must indicate that there are no anticipated ROW needs. .

If ROW is needed and it has been obtained prior to requesting obligation, a ROW certification is placed into ProjectWise

If ROW is anticipated to be needed and it has not been obtained prior to requesting obligation, the PM must write a Public Interest Finding that describes the ROW that is anticipated to be needed, the reason it cannot be obtained prior to requesting obligation, why the project is in the public's interest to move forward with the project prior to obligation, and the time frames incorporated into the RFP that allow for adequate time for the ROW to be identified in the design and for its acquisition. The Public Interest Finding is provided to MDOT's Central Office Real Estate staff and they will develop a memo requesting that the FHWA allow the project to move forward without having all of the anticipated ROW. Examples of past Public Interest Findings

and memorandums can be found in ProjectWise at the following link: [DB ROW](#) . The PM should allow approximately one week for Real Estate staff to develop the memo, and an additional 2 weeks for the FHWA to review and respond to the request. This process must be followed for PoDI and non-PoDI projects with federal funding.

Chapter 9: Disadvantaged Business Enterprises

If the DBE participation has not been determined and entered in MPINS by traditional methods when the project's development phase begins, the participation is determined according to the document in Appendix 9A.

It is desirable to have the DBE participation determined prior to issuing the RFQ.

Appendix 9A: DBE Process Memo



OFFICE MEMORANDUM

DATE: May 16, 2014

TO: Dr. Patricia Collins, Administrator
Office of Business Development (OBD)

FROM: Bradley C. Wiefelich
Engineer of Design

SUBJECT: Disadvantaged Business Enterprises (DBE) Participation Goals on Design-Build and Construction Manager/General Contractor Projects

The Department continues to use innovative contracting methods such as Design-Build (DB) and Construction Manager/General Contractor (CMGC) to expedite the delivery of our construction program. These projects do not follow the work flow of our normal design-bid-build projects, and often have very expedited schedules. This memo is to update the procedures used to establish DBE participation goals on DB and CMGC projects supersedes the memo dated March 8, 2010.

Following is our recommended procedure:

1. When a DB or CMGC project is identified and a preliminary estimate is available, the Project Manager will provide Nick Sundberg, OBD's current Departmental Analyst with a memo requesting a DBE goal. A template memo is attached.
2. OBD's Departmental Analyst will present the project's information to the DBE Contract Selection Team. The Project Manager and OBD's Departmental Analyst will work together to ensure the DBE Selection Team has adequate information to establish a goal.
3. The DBE Contract Selection Team will review the information provided and establish the appropriate DBE goal, and provide this to the Project Manager.
4. The OBD Departmental Analyst enters the goal into MPINS, and includes a comment indicating the project is a DB or CMGC project and the goal is not to be changed.

If a project's scope significantly changes after the goal is established, the Project Manager will request a re-evaluation of the goal by providing OBD's Departmental Analyst an updated memo.

We look forward to working with your team to administer this alternate process. Please let me or Chris Youngs, the Innovative Contracting Unit Manager, know if you have any comments or concerns.

Engineer of Design

Attachment

cc: M. Van Port Fleet
C. Youngs
J. Mullins
L. Thompson
N. Sundberg

DATE: (Insert Date)

TO: Nick Sundberg
Office of Business Development (OBD)

FROM: (Insert Name)
Project Manager or Innovative Contracting Unit (ICU) Contact

SUBJECT: Request to Establish a DBE Goal
Project Name
Control Section – Job Number

The above referenced project is using (insert “Design-Build” or “Construction Manager/General Contractor”) procurement and requires a DBE goal to be established. Please provide a DBE goal based on the following information by (insert applicable month, day, year). Please contact me at (insert 000-000-0000) if you have any questions.

Project Location: (provide route, limits, county and city)

Project Description: (provide the long description typically used in Trns*port)

Advertisement Date: (provide anticipated date of advertisement for DB projects, or delete for CMGC projects)

Letting Date: (provide the letting date for DB projects, or target date to begin price negotiations for CMGC projects)

Construction Schedule: (provide the anticipated timeframe of award, project completion, and a description of the expedited schedule, if applicable)

Total Project Cost: (provide estimated construction cost)

Items of Work: (provide the major items of work and areas of work typically completed by DBE contractors and the estimated cost of each. A preliminary estimate can be attached if it is available)

Specialty Items: (provide information on any specialty or warranty items that may impact subcontracting on this project, and/or any unusual circumstances on this project that would affect the DBE goal attainment)

cc: ICU Contact or Project Manager
C. Youngs, ICU Manager
L. Thompson, MDOT-OBD

Chapter 10: Determining Prequalification Categories

The Design-Builders team of designers and contractors must be pre-qualified to perform the work. The RFQ and RFP must include the applicable prequalification categories.

The RFQ should include the prime contractor's construction prequalification category(ies) and the major design-prequalification categories expected on a project.

To determine the prime contractor's prequalification the PM must contact the CCS Manager and provide the estimated project cost and the scope of work. The construction pre-qualification is used in the RFQ and RFP, and should not change between the two documents. To determine the design prequalification's for the RFQ, the PM should identify the most significant areas of design and the applicable pre-qualification categories. SOQ's will be scored based on the strength of these areas so minor areas of the project should not be included in RFQ process.

The RFP should identify all anticipated design-prequalification requirements.

Chapter 11: Stipends

Background

A stipend is a stated amount paid to unsuccessful Proposers in consideration for developing and submitting an acceptable technical and price proposal. Any two-step/shortlisting process allows MDOT to offer the unsuccessful proposers a stipend. The payment of stipends is a recommended best practice by organizations including AASHTO and the Design-Build Institute of America (DBIA).

Most states that have a DB program offer stipends on some of their DB projects, and at least one state is required to provide stipends by state statute. The stipend, while typically covering only a third to half of the Proposer's costs to develop a bid, will usually significantly enhance the efforts the teams are willing to put into the bid response.

Approval of Stipends

The use of stipends must be approved by MDOT's Director. The PM will provide the ICU Manager the recommended stipend amount and procurement information including project scope, schedule and selection methodology, and the ICU Manager will contact the Director and request the use of a stipend. The approved stipend amount must be included in the RFQ.

Funding of Stipend

The amount of the stipend represents a portion of the cost to prepare a proposal. 23 CFR 636.113 allows for stipends to be eligible for Federal participation, and that stipend should cover a third to a half of the cost to develop a technical and price proposal for a DB project. MDOT's general guidelines for the amount of the stipend are in Appendix 11A. These guidelines can be modified on a case by case basis depending on the characteristics and complexities of a project.

Stipends are not paid to unsuccessful proposers until the contract is awarded. Even though stipends are paid after the award of the DB contract, stipends should be funded through the projects "C" or "D" phase. However, the A phase has also been used on past projects. These expenditures should be included when setting up the project's budget. See Appendix 11B for an example of how stipends are paid.

While a stipend may increase MDOT's direct costs of procurement, it is believed that this expenditure is more than offset by the potential benefits of increased competition, increased proposal quality and the potential for savings or other improvements in our program through use of the unsuccessful proposers' ideas. Therefore, MDOT recommends the use of stipends on design/build contracts where it is determined that the cost of the stipend will provide an overall improvement to the final project.

Intellectual Property

If the team accepts payment of the stipend, MDOT owns any and all information provided in their unsuccessful proposal and it may be used on the DB project or other projects.

The teams do not have to accept the stipend and then can keep any innovative idea or cost savings as confidential information that MDOT may not use or share.

Stipend Agreements

A draft stipend agreement is provided in the Instructions to Proposers (ITP) to provide information to proposers. The official stipend agreement is provided to the proposers during the advertisement of the RFP. The PM and/or DPM must contact and provide information to MDOT's Contract Service Division (CSD) to have the official stipends developed and delivered to the proposers. It is recommended that CSD be contacted as soon as the RFP is advertised to begin the development process. If a project will be advertised for a short period of time, CSD should be contacted prior to the project's advertisement.

The stipend agreements are typically provided to proposers at least two weeks prior to the letting date.

The PM and/or DPM request the development of a stipend agreement by following the steps listed below.

1. PM determines if the shortlisted prime contractors are currently in MDOT's system, including the Contract & Payment Express system to receive stipend payments and have authorized contract signers on file. CSD's Payment Analyst can be contacted to verify if a prime contractor is in MDOT's System. The CCS Manager can be contact to verify the names of authorized signers. If the contractors are not in MDOT's systems, the PM works with CSD Selections Analyst to send them various forms so they will be able to execute a contract and/or stipend agreement.
2. The MDOT PM sends the project's CA, with a "cc" to the Selection Analyst, an email with the following information when the project is turned in for a letting. If the project advertisement period is shorter than 7 weeks, this info will need to be supplied earlier.
 - a. The subject line of the email would be "Request for Stipend Agreement – (Short project name, JN XXXXX).
 - b. Full names of all shortlisted companies.
 - c. Name, mailing address, and email address of the project manager from the shortlisted company.
 - d. A completed 5105 form for each shortlisted company. See an example in ProjectWise at the following link ([5105 - DB Stipend Example.pdf](#)).
 - e. Copy of the final RFQ.

- f. Final 5100E approved by CSRT. The 5100E form is provided by the CSD Selections Analyst. (The CSD Selections Analyst creates each folder, one per vendor, and gives to the CA).
 - g. A date that the stipends need to be sent to the shortlisted companies. Typically stipends agreements are sent 2-3 weeks prior to the letting date.
 - h. The email from the Director approving the stipend.
3. The CA creates the stipend agreement via macro.
 4. The CA will send the stipend agreement electronically to each shortlisted company, with a cover letter to include the requirements of when the agreement is to be returned to MDOT, and that the agreement must be signed by an employee authorized to execute contracts.
 5. The stipend agreement is returned to MDOT, via email, with the Proposer's technical proposal, in accordance with the directions in the Instructions to Proposer.

Once the construction contract is awarded, the PM and/or DPM performs the following steps to process payment of stipend agreements.

1. The PM/DPM will verify that the signer is authorized to sign an agreement/contract with MDOT, and that the digital signature provided is valid/authentic. If the stipend agreement was not signed correctly by the vendor, the PM will contact the vendor to rectify the issue.
2. The PM/DPM provides an electronic copy of the stipend agreement and a completed payment request memo (See Appendix 11B) to the project's CA. The PM/DPM indicates the digital signatures have been verified and states if the stipend agreement should be processed, or if it should be cancelled. The successful proposer's stipend agreement should be cancelled.
3. If the stipend agreement was signed correctly, the CA will electronically send it to the CSD Administrator for their award signature.
4. After the stipend agreement is signed by the CSD Administrator, the CA will email the awarded stipend agreement and payment request memo to the Proposer, cc'ing the MDOT PM and DPM, the Office of Commission Audit, the CTRAK Administrator, and CSD Payment Analyst. The CA also uploads awarded agreement and payment request memo into CTRAK. The CSD Payment Analyst will prepare the direct voucher payment for approval. CSD will be preparing all direct vouchers for stipend payments.
5. The CSD Payment Analyst will upload a copy of the direct voucher into the agreement file in CTRAK.

Appendix 11A: Process Letter for Determining Stipends Amounts



STATE OF MICHIGAN
DEPARTMENT OF TRANSPORTATION
LANSING

JENNIFER M. GRANHOLM
GOVERNOR

KIRK T. STEUDLE
DIRECTOR

June 22, 2009
Mr. David Calabrese
Field Operations Group Leader
Federal Highway Administration
315 W. Allegan Street, Room 201
Lansing, Michigan 48933

Dear Mr. Calabrese:

Process for Determining Stipends on Design-Build Projects

The Michigan Department of Transportation (MDOT) may offer a stipend to design-build teams that submit a responsive proposal on a design-build project. This letter outlines MDOT’s proposed process to determine the dollar amount of a stipend.

Stipends are eligible for federal participation per 23 CFR, Section 636. MDOT anticipates the use of a stipend on two-phase selection procedures, where a Request for Qualifications (RFQ) is followed by a Request for Proposal (RFP). Design-build teams will be eligible to receive a stipend if they are short listed from the RFQ phase and submit a responsive proposal at the RFP phase. MDOT may elect to use a two-phase selection process and not offer a stipend, if the work to develop a responsive proposal is considered to be minimal.

MDOT will determine early in the project’s development if a stipend is to be offered. If a stipend is proposed to be offered, we will seek approval from MDOT Director Kirk Steudle. As indicated in 23 CFR, Section 636.113(2), a stipend is usually one-third to one-half of the estimated cost for a design-build team to develop a responsive proposal. MDOT is proposing to use the table below as a guideline to determine the dollar amount of a stipend offered to a responsive team.

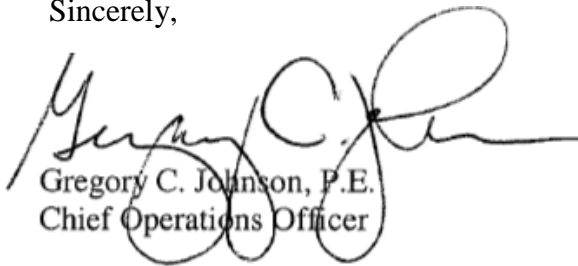
Estimated Value	Contract	Complex Rehab.	Urban and	New construction Projects	Range of Compensation	of
<\$5M		0.0050*Estimate		0.0040*Estimate	\$15K - \$25K	
\$5M - \$20M		0.0030*Estimate		0.0025*Estimate	\$15K - \$60K	
\$20M - \$50M		0.0020*Estimate		0.0018*Estimate	\$36K - \$100K	
\$50M - \$100M		0.0015*Estimate		0.0012*Estimate	\$60K - \$150K	
>\$100M		0.0012*Estimate		0.0010*Estimate	\$100K +	

Mr. David Calabrese
Page 2
June 22, 2009

We do not anticipate the use of stipends on a design-build project that utilizes a single phase selection process. MDOT will contact FHWA on a case by case basis if we are considering the use of a stipend on a single phase selection process.

MDOT is seeking your concurrence in the process outlined above. If you have questions, please contact Brad Wieferich, Engineer of Design, at 517-373-0030 or at wieferichb@michigan.gov.

Sincerely,



Gregory C. Johnson, P.E.
Chief Operations Officer

BOH-DEV/D/CY/dr

cc: Kirk Steudle, MDOT
Mark Van Port Fleet, MDOT
Brad Wieferich, MDOT
Kathy Hulley, MDOT
Chris Youngs, MDOT
Wayne Roe, MDOT
Carolyn Nelson, FHWA

Appendix 11B: Example Stipend Payment Memo



OFFICE MEMORANDUM

DATE: DATE

TO: Cheryl Hill
CSD Payment Analyst

FROM: PM or DPM Contact Name
Title, TSC, Region, or Division

SUBJECT: Payment of Stipends to Unsuccessful Proposer
Stipend Contract No. **XXXXXX**

This memo is to request a stipend payment for the following Design-Build Project:

(Short Project Title)
Control Section:
Job No. with Phase:
Fiscal Year:
Index No.: (from the Region PM)
PCA No.: (Associated with the Job No. Phase)
Agency Object Code: 3209

The following firm proposed on the above project and was unsuccessful:
ABC Construction Co.

On **DATE**, the Request for Qualifications was posted that states “MDOT will pay a **\$XX,XXX** stipend to each unsuccessful Proposer submitting a responsive proposal. A stipend will not be paid to the successful Proposer”. This was repeated in the Request for Proposals. A copy of the Stipend Agreement for each company is attached.

The above firm submitted a responsive proposal but was not the successful Proposers. The project was awarded on **XX/XX/XXXX** and the stipend can now be paid.

Please process the stipend payment to the above firm. If you have any questions or need additional information, please contact me at **(XXX) XXX-XXXX**.

Name of Project Manager
Mark VanPortfleet Dee Parker
Chris Youngs ICU Contact or PM

Attachment (Attach signed stipend agreement)

Chapter 12: Request for Qualifications (RFQ)

The Request for Qualifications (RFQ) is the document issued by MDOT in Phase I of a two-phased selection process. It typically describes the project in enough detail to let potential teams determine if they wish to pursue the project and submit a Statement of Qualifications (SOQ). Potential DB teams submit SOQ's which are reviewed and scored to determine a shortlist. Three to five firms can be shortlisted; however, three teams is the recommended number.

The RFQ's selection criteria, and their corresponding point values, should correspond to the goals, needs and unique aspects of a project. The selection criteria should be objective as possible and general selection criteria should be avoided. The design and construction prequalifications listed in the RFQ should only be for the major items of work. The RFQ should be advertised for a minimum of 4 weeks, and a longer period should be considered if the project is large and/or complex. Mandatory pre-submittal meetings can be held, but should only occur if there are unique aspects that cannot be conveyed in writing. Template RFQs are available in ProjectWise at the following link: [RFQ Template Information](#).

RFQ Addenda

If the RFQ requires modification during the advertisement it must be modified by addenda. The revisions should be made to the RFQ by using the "track changes" function in MS Word. The revised RFQ is placed on the project website and should identify the additions and or deletions by using highlighting, redlining, or other means to identify the modifications.

The FHWA must concur on any RFQ addenda if the project is identified as a PoDI.

Evaluating the SOQ

MDOT will initially review the SOQs for responsiveness to the requirements of the RFQ. The information in the SOQ will then be measured against the evaluation criteria stated in the RFQ. A Submitter's SOQ is based on the RFQ requirements. A non-responsive or partially non-responsive SOQ missing required information may result in a "fail".

MDOT evaluates all responsive SOQs and measures each Submitter's response against the project goals and evaluation criteria set forth in the RFQ, resulting in a numerical score for each SOQ.

The MDOT selection team should include the PM, DPM, Delivery Engineer and a member of the Central Selection Review Team (CSRT).

The selection results are posted on the project website. The PM provides the CSD's Selection Analyst a completed results form (see template RFQ for example). The CSD selection Analyst will provide detailed comments to each to coordinate the posting of the selection results and providing the detailed comments to each Submitter.

Required RFQ Forms

There are several MDOT forms required as part of proposal submission. These forms are not included in the proposal maximum page count of the Design-Builder's SOQ, and should be attached to RFQ. The typical forms included with a SOQ are listed below:

1300EZ (Provided by the DB Team)

Conflict of Interest Statement, Page 2 (Provided by DB Team)

RFQ Inquiries and Questions

Inquiries to the RFQ are received by the PM via email. The questions and MDOT's responses are publicly posted on the project website.

Appendix 12A: Design-Build RFQ Checklist

Control Section: _____
Job Number: _____
Project Description: _____
Project Manager: _____, Office Location _____
Co-Project Manager: _____, Office Location _____
RFQ Review Team: (Scoring Members of the Team and CSRT Member)

Task Complete & Date Completed

- _____ PM and Co-PM establish selection team (Typ. 5-6 people)
(PM, DPM, CSRT Member, Construction & Design Engineers)
- _____ Draft RFQ base on the projects scope, goal and needs and the ProjectWise Template
- _____ PM contacts CSD's Sub-Contract Analyst to develop the website.
 - Provide Specific title for the project and include type of project in parenthesis (i.e., I-75 at University Drive (DB))
- _____ Place project overview on website then notify Industry that project information is available.
(Anticipated Scope, Schedule, Location, Unique items, etc.)
- _____ Send draft RFQ to Review Team and FHWA Area Engineer for review (if PoDI).
 - Include CSRT Committee review if the standard RFQ template format is deviated
 - Request comments by a specific date
- _____ PM and Co-PM review comments received and rectifies any comments that will not be incorporated into the final RFQ.
- _____ Revise RFQ and send final draft to the Review Team for final review
 - Request comments by a specific date
- _____ Receive concurrence from the FHWA to advertise the RFQ (if PoDI)
- _____ Provide the final RFQ (pdf format) to ICU Manager for final review.
- _____ ICU Section Manager emails PM and DPM approval to advertise RFQ
- _____ ICU Project Manager emails MDOT-CSD-Selections and cc's the CSD's Selection Analyst and CSD's Sub-Contract Analyst the following:
 - RFQ with proper title
 - Instructions on where the file should be located and the desired name for the link
 - Email from ICU Section Manager approving the posting
 - NOTE: 5100 A and 5100B forms are not required to be submitted with the DB RFQ
- _____ CSD posts the RFQ on the Innovative Contracting website.
- _____ PM notifies MITA and ACEC that an SOQ is posted, and contacts MDOT CCS Manager and CCS Bid Letting Analyst to have an announcement placed on the MDOT Bid Letting Site.
- _____ PM places final RFQ (PDF and Word File) and other supporting docs in ProjectWise

- _____ PM schedules Selection Meeting near the time the RFQ is advertised.
- _____ PM receives SOQ's
- _____ Conduct a selection meeting
- Note: Detailed comments on SOQs are expected to be provided
- _____ Provide selection results, the SOQs, and the below MDOT forms to CSRT for approval through CSD Selection Analyst
 - 1300EZ (Completed by Submitter)
 - 5100C or equivalent (Completed by PM)
 - Conflict of Interest Statement (Completed by Design Builder)
 - 5100E (Completed by PM)

- _____ After CSRT approves the shortlisting, the PM Coordinates with CSD Selection Analyst to post selection results to the project website using the example form in the RFQ, and to provide detailed comments to each Submitter.
- _____ PM and DPM receive CSRT approved 5100E from CSD selection Analyst.
- _____ PM provides the names of the shortlisted firms to CCS Manager

Other comments:

Chapter 13: Request for Proposals (RFP)

The RFP contains the contract requirements for design activities, construction activities, and the selection of the Design-Builder. This chapter is intended to describe the different components of the RFP and items that should be considered during their development.

RFP Writing Guidelines

A summary of writing guidelines is included below, followed by a description of the various RFP documents. RFP documents need to be prepared in a consistent manner using clear, enforceable language. A few highlights are:

- **Approve/Accept:** On MDOT DB contracts, *Accept* means MDOT agrees that a certain matter or item submitted for acceptance appears to meet the Contract requirements. *Approve* specifically refers to a formal determination that the matter or item submitted for approval is satisfactory for the project or condition under consideration. Approvals generally require MDOT to take on more responsibility and impose hold points into the schedule. When the terms Approve and Accept are capitalized in the contract documents, they refer specifically to actions taken by MDOT. When they are lower case, they refer to actions taken by other parties.
- **Design-Builder:** Refers to the DB contractor team.
- **Should/Shall:** The word “shall” is the preferred word when writing requirements of the Design-Builder. The term “should” is less enforceable and should be avoided.
- **Standards:** Authors should rely on existing standards and avoid repeating information already contained in referenced standards. The RFP documents should primarily contain additions, modifications, or clarifications to the referenced standards. Authors should also strive to avoid repeating information contained elsewhere in the RFP.

Additionally, when writing RFP requirements, authors should strive to meet the following criteria:

- Correct – The requirement is technically accurate.
- Feasible – The requirement is achievable and reasonable.
- Complete – The requirement expresses a whole idea or statement.
- Clear – The requirement is written in understandable terms and is unambiguous in identifying “who shall do what.”
- Consistent – The requirement is not in conflict with other requirements.
- Verifiable (auditable) – The requirement can objectively be confirmed to have been met.
- Traceable – The impact of changing the requirement is easily known.
- Required – The requirement is determined necessary.
- Design-Independent – The requirement does not impose a specific solution on the design.

Template Documents

Template RFP documents are available in ProjectWise; however, the GEC stores the most current template documents and should be contacted to obtain them. The template documents

are expected to be used to develop new DB projects; however, modifications are expected on each project in order to meet the needs and goals of each project. While there is text which is considered “template” or “programmatic” which should be applicable to most projects it is still highly recommended that each author on each project review all text for anything that could cause a conflict or confusion on the specific project. The PM should also provide updates and/or comments to the template documents so they can be improved for future projects.

Instructions to Proposers (ITP)

The ITP provides instructions on how to prepare the proposal and contains specific forms that must be included as part of the proposal. The ITP format used in the MDOT DB program reflects the requirements of Michigan State law regarding the selection of Design-Builders for DB projects. It includes a brief description of the project, specifies procurement method (i.e., low bid, best value) along with information on the procurement schedule, procurement process, required proposal content and format, clarification process, Alternative Technical Concept (ATC) process, proposal evaluation process, and escrowed proposal documents. It also includes Disadvantaged Business Enterprise and Equal Employment Opportunity (DBE/EEO) submittal requirements, and other forms to be completed by the proposers, including the pricing form and forms related to the proposer’s organization. A typical listing of ITP forms is shown below. The ITP forms are included as part of each team’s proposal and the successful proposer’s forms become part of the DB contract.

Typical Instructions to Proposers (ITP) Forms

Form	Description
1	Information about Major Participants and Identified Subcontractors for Prequalification Review
2	Conflict of Interest Disclosure Statement
3	Schedule of Values
4	Proposal Price
5	Sample Stipend Agreement*

*Used only on projects with Stipends.

ITP Contract Document Development Work Steps

1. Early in the process, conduct goal setting/risk analysis workshops along with contracting workshops to determine the procurement method (low bid, best value, fixed price/variable scope, etc.) and procurement schedule that will be used on the project.
2. Define service prequalification requirements in the technical proposal requirements section for all procurement methods.
3. If applicable, modify Form 4 – Price Proposal on alternate pavement bid projects to allow the Design-Builder to designate the proposed pavement type.

4. Prepare Form 4 - Proposal Price to include the DB lump-sum project, shared risk items identified in Book 1 – Section 12, and in some cases mobility incentives such as lane rentals. On alternate pavement bid projects, specify an Equivalent Uniform Annual Cost (EUAC) formula in Form 4 – Proposal Price. If incentives are used on the project, contact the CFS Construction Operations Engineer and provide them information on the incentives.

5. Coordinate requirements and constraints for the ITP with other sections. For example:
 - a. Book 1, Section 4 (Time within which Project shall be Completed; Scheduling)
 - b. Book 1, Section 11 (Payment)
 - c. Book 1, Section 12 (Shared Risk Item Work and Price Adjustments)
 - d. Book 1, Section 22.1 (Escrowed Proposal Documents)
 - e. Book 1, Exhibits (EEO and DBE Requirements)
 - f. Book 2, Section 1 (General)
 - g. Book 2, Section 2 (Project Management)

Book 1

Book 1 contains the contract terms and conditions, including provisions regarding payment, changes, value engineering, warranties, and indemnities. It also includes a series of exhibits, such as a listing of defined terms and acronyms, requirements for equal employment opportunity (EEO), disadvantaged business enterprises (DBE), wage rates, and other items. Although much of the content of Book 1 may not change from project to project, the project managers should coordinate any revisions with the MDOT Innovative Contracting Unit to ensure that its contents remain in compliance with applicable laws and MDOT policies. Project-specific modifications may be necessary to accommodate changes in risk allocation (i.e., shared risk items) or to modify the contract to better reflect the complexity or details of the project. Proposed changes to Book 1 should be reviewed and coordinated with the MDOT Innovative Contracting Unit and possibly with the Office of the Attorney General. Individual sections of the Book 1 template and the minimum recommended actions to be taken on each project are shown below.

Book 1 Sections

Contract Section	Common Project Manager Action	Project-Specific Action
Recitals	Modify	Update to reflect project details.
Section 1—Contract Components; Interpretation of Contract Documents	Review	Ensure that any changes to other sections do not affect this section.
Section 2—Obligations of Contractor	Review	Update General Obligations to include appropriate management plans.
Section 3—Information Supplied to Contractor; Responsibility for Design; Disclaimer	Review	Typically no changes to this section.
Section 4—Time within which	Review and	Update Notice to Proceed requirements, if necessary.

Contract Section	Common Project Manager Action	Project-Specific Action
Project shall be Completed; Scheduling	Update	Provide substantial/final acceptance deadlines, including intermediate completion dates, if applicable.
Section 5—Control of Work	Review	Typically no changes to this section.
Section 6—Access to Site; Utility Relocations; Environmental Mitigation	Review	Risk allocation changes for right-of-way, utilities, and environmental compliance may affect this chapter. Typically no changes to this section.
Section 7—EEO; Subcontracts; Labor	Review and Update	Review DBE Section and update if there any changes to DBE policy or provisions. Typically no changes to this section.
Section 8—Surety Bonds	Review and Update	Review warranty, performance and lien bonding requirements.
Section 9—Insurance	Review and Update	Review insurance requirements against current MDOT approach for design-build. Insurance recommendations will be provided by MDOT.
Section 10—Risk of Loss	Review	Typically no changes to this section.
Section 11—Payment	Review	Provisions of this section may be affected by project payment requirements such as payment schedules or financing.
Section 12—Shared Risk Item Work and Price Adjustments	Review and Update	Risk allocation changes could have a significant effect on the structure, content and details of Chapter 12.
Section 13—Changes in the Work	Review Update	Section 13 contains the conditions and situations for contract change orders. Review use of VECP and Other Changes and the associated cost savings allocation.
Section 14—Suspension of Work	Review	Typically no changes to this section.
Section 15—Termination of Contract	Review	Typically no changes to this section.
Section 16—Default	Review	Typically no changes to this section.
Section 17—Damages	Review and Update	Provide liquidated damage amounts that are backed up by actual damage calculations for all deadlines. Incorporate intermediate deadlines, if any.
Section 18—Indemnification	Review	Typically no changes to this section.
Section 19—Partnering, Claims for Adjustment and Disputes	Review and Update	Specify whether a partnering session will be required.
Section 20—Acceptance of Project	Review and Update	Incorporate intermediate completion deadlines into acceptance, if applicable.
Section 21—Warranty and Maintenance	Review and Update	MDOT’s approach to warranties and maintenance bonds should be reviewed for the specific needs of each project.
Section 22—Documents and Records	Review	Typically no changes to this section.
Section 23— Not Used	N/A	
Exhibit 1-A – Acronyms and Definitions	Review and Update	Review all definitions to ensure they are accurate for the project.
Exhibit 1-B – Notice to Bidders	Review and Update	Review the list of applicable notice to bidders to ensure they are accurate for the project. A copy of each NTB shall be included in the exhibit.
Exhibit 1-C – EEO Special Provisions	Review	Review against current MDOT policy.
Exhibits 1-D – DBE Special	Review and	Review and update DBE goal for the specific needs of each

Contract Section	Common Project Manager Action	Project-Specific Action
Provisions for Design-Build Projects	Update	project.
Exhibit 1-E – Additional State and Federal Requirements	Review Update	Review against current MDOT policy and update with the assistance of the MDOT Contracts group. MDOT Contracts group will incorporate these items prior to
Exhibit 1-F – Modifications to the MDOT Standard Specifications for Construction	Review	Review against contract and understand how Division 1 of the Standards Specifications for Construction is modified.

Book 2

Book 2 contains project-specific requirements and any project-specific changes to the standard requirements contained in Book 3. Book 2 will be modified for each project due to a project’s specific requirements. Book 2 also contains programmatic requirements that apply to all DB projects which typically are not modified for each project unless updates are needed.

Book 2 is subdivided into sections by disciplines and a description of each section is included in this chapter.

To provide a consistent structure of requirements within each section, the following subheadings are recommended at a minimum:

- General: A brief description of the work included in that section.
- Administrative Requirements: Standards, meetings, software, and other administrative requirements applicable to the section.
- Design Requirements: Requirements related to the design of a particular discipline.
- Construction Requirements: Requirements related to the construction of a particular discipline.
- Deliverables: Present deliverables in a table format that provides the deliverable name, review for Acceptance or Approval, Number of copies to be submitted (hardcopy and/or electronic), format of deliverable if electronic, submittal schedule and reference to the section with the deliverable content requirements.

Further subdivision of these subheadings is conducted as warranted for each particular section.

Book 2 Exhibits

Exhibits at the end of Book 2 sections are contractual and essentially all information in the exhibits is guaranteed correct by MDOT by including it in the contract. The information provided in exhibits shall be reviewed closely to ensure only the necessary information is being conveyed. For example, a ROW file that is being included to show the Design-Builder the ROW limits should only show the ROW limits. If this exhibit was added with utilities shown and the Design-Builder uses this to locate utilities and ultimately damages a utility, MDOT could be responsible to some level for including the information in the contract.

The exhibit naming conventions is as follows:

Book 1 exhibits – Exhibit 1- {Letter}

Book 2 exhibits – Exhibit 2- {Section Number}- {Letter}

Special Provisions/Standards

Special provisions and standards should be listed in the administrative sub-section of the discipline specific section of Book 2 and be referenced in the body of the text. These provision and standards should then be listed in Book 3 and provided to the Design-Builder via Book 3 if they are not industry standards or available on the internet. By including the provision and standards in Book 3 in this way the standards are subject to the overarching introduction requirements that modify the provisions and standards to work best for a DB project. For example, adding a special provision with measurement and payment requirements as an exhibit to a Book 2 section makes the measurements and payment requirements contractual. This creates a conflict with the lump sum nature of paying for DB contracts. By listing this special provision in the Book 2 section and including it in Book 3 as noted above, the overarching introduction language in Book 3 would essentially delete the measurement and payment language from the contract without having to physically re-write the special provision to remove the measurement and payment language.

Brief Description of Book 2 Sections

Section 1 (General)

This section provides a summary description of the project, including the general project limits, the main project components, and other construction projects that may occur in the vicinity of the project.

The template text of this section outlines the relationship between Book 2 and 3 and also outlines requirements for the Design-Builder to coordinate the work with other Design-Builders and projects in the area at the time the DB project will be underway.

Project-specific text in this section relates to the description of the project, general items of work, and a list of projects that will be occurring in the vicinity and during the same timeframe as the DB project.

Section 1: Contract Document Development Work Steps

1. Define the project beginning and ending points, as well as the scope of the project and the elements of the project with their specific limits to complete project description information.
2. Determine the coordination requirements for construction projects administered by MDOT and other counties, cities, or townships, identifying the general scope of the

work and the timing of these project. Based on this information, complete the list of projects that may require coordination with the DB project.

3. Coordinate requirements and constraints regarding scope of work noted in this and other sections of the RFP.

Section 2 (Project Management)

This section is typically divided into six subsections dealing with the following project management topics: introduction, scope management, cost, schedule, quality, and human resources.

Introduction is the first text in this section which describes the project website and requires the Design-Builder to submit all deliverables to the website. This section provides additional information specific to using the website and was elevated to its current location in the document so it is enforceable for any deliverable.

Section 2 Contract Document Development Work Steps

1. Include work in the GEC's scope to develop a website that will be used to by MDOT, its consultants, and the Design-Builder to track submittals and deliverables.

Scope management includes requirements for preparing, revising, and submitting information that details the work included in the project. This section includes requirements for the meetings the Design-Builder has to hold and document to define the scope of work. This needs to be coordinated with MDOT expectations early on in the project in an effort to reduce conflicts in scope later on in the project when it might not be as easy to change scope. These meetings help define discipline-specific requirements of the project prior to final design and plan completion.

Section 2: Scope Management Contract Document Development Work Steps

1. Review meeting requirements, making sure any specific meetings MDOT wants held regarding scope clarification are included in the requirements.
2. Coordinate requirements and constraints of this sub-section with all other Book 2 sections for meetings that should be held.

Cost and progress management includes requirements for invoicing and progress reports. Based on the requirements of this section, the Design-Builder typically submits bi-weekly or monthly invoices and progress reports that are used to determine progress payments based on the percentage of work complete for each schedule activity. This payment process differs from the traditional design-bid-build payment approach, as quantities and unit pricing are not used to determine the value of the work completed. In some cases, provisional quantities are warranted for DB contracts to establish rates for certain items with unknown scope and likely to require negotiation.

This section must clearly outline the process for determining payment. MDOT must be able to quantify any payment based on actual work completed, and the Design-Builder must be informed what they need to provide to justify their payment request.

Section 2: Cost and Progress Management Contract Document Development Work Steps

1. Coordinate requirements and constraints of this sub-section with the ITP for the Schedule of Values and Book 2, Section 2.3 (Schedule Management) for invoice and percent complete verbiage.
2. MDOT's ICU staff will assist the project office in reviewing the payment plan, and will make periodic audits of payments in order to meet commitments made to the FHWA

Schedule management includes requirements for preparing, revising, and submitting schedule information. The Design-Builder develops an initial critical path method (CPM) schedule for each schedule activity. Any approved changes to the CPM schedule are documented in an Updated CPM Schedule prepared by the Design-Builder monthly. If work is lagging, the Design-Builder may have to prepare a recovery schedule. Schedule narrative reports can be required of the Design-Builder for all schedule updates.

Section 2: Schedule Management Contract Document Development Work Steps

1. Review schedule requirements and determine if any changes are required for the specific project.
2. Coordinate requirements and constraints of this sub-section with Book 2, Section 2.2 (Cost and Progress Management) for invoice and percent complete verbiage.

Quality management includes requirements for quality planning, quality control (QC), quality assurance (QA), and quality improvement. *Quality planning* focuses on setting quality objectives, establishing responsibilities, and specifying operational processes and resources to fulfill the objectives. *Quality control* refers to the examining, witnessing, inspecting, checking, and testing of in-process work to control the Design-Builder's processes and to determine conformity with project requirements. *Quality assurance* refers to a program of planned policies, procedures, detailed responsibilities, and systematic actions necessary to provide confidence that the quality management and results meet the contract requirements. *Quality improvement* refers to ongoing evaluation to increase the ability to fulfill requirements and improve owner satisfaction.

On MDOT DB projects, the Design-Builder must develop an approved, project-specific, quality management system for the design of the project. The Design-Builder is responsible for quality management activities on MDOT DB projects for design aspects of the project, as well as how nonconforming work is addressed and changes to Released for Construction (RFC) plans are completed and communicated. The quality management section includes requirements for the Design-Builder's design quality manual, as well as requirements for design outputs such as

preliminary bridge plans, released-for-construction plans, and as-built plans. MDOT is responsible for typical quality assurance activities through construction engineering and inspection as would be provided on design-bid-build projects

This section also includes the standards used to determine plan quality. Information on over-the-shoulder (OTS) meetings and reviews, as well as in progress plan submittals is also included. MDOT's approach to OTS reviews has varied on different projects, ranging from requiring OTS submittals monthly with fewer OTS meetings to only a few in-progress submittals with monthly OTS meetings. The Innovative Contracting Unit should be consulted to discuss previous project experience, lessons learned and industry response to the varying OTS requirements.

This section of the RFP also outlines plan requirements, review times and many other items that at this time are project specific and should be evaluated for each project.

Section 2: Quality Management Contract Document Development Work Steps:

1. Review the list of standards and determine if any modifications are required.
2. Determine the design deliverables (plans) required for the project. Refrain from using "percents" in this section as they are subjective. The FHWA will review the Base Plans and Bridge Study Plans for approval, and an RFC plan submittal is required along with the Value Engineering Recommendations Report, Shop and working drawings, Product Data and As-Built Plans. In general, fewer submittals are more appropriate for DB delivery, and the number and type of submittals should not exceed what would be required in a typical design-bid-build project.
3. Depending on plan deliverable requirements, review the requirements for the submittals for any modification or add the submittal requirements for new submittals. Depending on the project schedule, RFC plans could be submitted as overall packages or individual plan sets. For example, a bridge RFC could be a full bridge plan set that contains foundations, substructure and superstructure elements. Alternatively, individual RFC plans can be submitted for each element if the project schedule does not allow time for the Design-Builder to assemble the full package before construction begins. If project-specific aspects warrant plan packages submitted in a certain fashion, this should be made a requirement in this sub-section.
4. Determine if OTS submittals or meetings will be required and tailor requirements accordingly.
5. Determine if In-Progress submittals will be required and tailor requirements accordingly.
6. Determine the MDOT review time duration and tailor requirements accordingly.

7. Update the deliverables table accordingly for new or modified submittals requirements.
8. Coordinate requirements and constraints of this sub section with all other Book 2 sections as the other sections should not have plan deliverables, review times or duplicate information that may conflict with this sub-section. This sub-section has the default requirements for submittals.

Human resource management includes requirements and or expectations for the Design-Builder's key personnel, as well as requirements for co-location facilities, field trailers and equipment. Co-location or on site field trailer facilities include the project office to be shared by the Design-Builder and MDOT, as well as desks, telephones, computer equipment, internet access and other items to be provided by the Design-Builder. Because human resource requirements can vary from project to project, they have typically been modified for each project.

Section 2: Human Resources Contract Document Development Work Steps:

1. Determine the Key Personnel required on the project and list in this section.
2. Determine the field trailer or co housing requirements. Typically co-housing is not cost effective unless the project is large (approximately \$150 Million +/-).
3. Add any additional human resource requirements.
4. Coordinate requirements and constraints of this sub section with the ITP for staff requirements.

Section 3 (Public Information)

This section describes the Design-Builder's responsibility for dissemination of public information. On most projects the Design-Builder is required to support MDOT with information in order for MDOT to effectively communicate to the public. How the Design-Builder will support MDOT is identified in this section. However, if MDOT would like to turn over this communication to the Design-Builder, this section would include the Design-Builder's means of communicating with the public and other stakeholders as well as communicating information related to construction activities, maintenance of traffic, emergencies and other incidents, utility shut-offs, community events, and other items. Reference is made to the Public Information Plan (PIP) in Section 3; the requirements for the PIP (which is part of the Traffic Management Plan) are in Section 18, Maintenance of Traffic. The Design-Builder must submit specific public information pieces as needed during the course of the project.

Section 3: Contract Document Development Work Steps

The following general steps should be taken by the MDOT PM and/or consultant prior to RFP release:

1. Coordinate with MDOT Region and Central Office personnel regarding specific public involvement requirements for the project. Include those requirements in Section 3.
2. Determine requirements for special media outreach/involvement, as appropriate.
3. Modify the requirements for Public Information Dissemination Pieces as appropriate for each project. Update the required deliverables.
4. Coordinate requirements and constraints for maintaining traffic with other sections. For example: Book 2, Section 18 (Maintenance of Traffic) – Public Information Plan, Special Event Dates, Commercial Vehicle Access, Emergency Access.

Section 4 (Environmental Compliance)

This section includes requirements for floodplains, contaminated properties, regulated materials, groundwater, noise, air quality, water quality and quantity, water bodies, wetlands, and compliance to NEPA commitments. It should identify any known contaminated properties and/or hazardous material sites, such as properties with contaminated soil or groundwater, buildings with hazardous materials, bridges with lead-based paint and asbestos, and other project-specific requirements.

Book 2, Section 4 should also identify the status of any permits and who is responsible for obtaining each permit. MDOT's approach for DB projects is to obtain as many required permits as possible for a project prior to release of the RFP, and include copies of those permits in the RFP. This includes the Environmental Study for Project Classification, MDOT form 1775. Permits that MDOT did not obtain are typically the responsibility of the Design-Builder. These permits should be identified in Book 2 with information such as the time typically needed to obtain the permit, the associated permit costs, and the coordination between MDOT and the Design-Builder on each permit. Book 2, Section 4 also requires the Design-Builder to submit the soil erosion and sedimentation control information to MDOT in order for MDOT to obtain the Notice of Coverage for the National Pollution Discharge Elimination System (NPDES) for storm water discharges from construction activity permits prior to each phase of construction.

Book 2, Section 4 should include project-specific wetland mitigation requirements related to environmental permitting requirements. Book 2, Section 4 may also include additional project-specific standards that the Design-Builder must follow. Examples of this may include local design requirements, watershed management plans, and other environmental documents. The Environmental Compliance section may require close coordination with Book 2, Section 12 (Drainage).

Section 4: Contract Document Development Work Steps

The following general steps should be taken by the MDOT PM and/or consultant prior to RFP release:

1. PPMS Task 2810 (Project Area Contamination Survey (PACS)) should be requested and completed and if depending on the PACS; PPMS Task 2820 (Conduct Preliminary Site Investigation (PSI) for Contamination) should be performed as well.
2. Set up a meeting with the Region Environmental Specialist, Lansing Environmental and Hydraulics to review wetland locations and types in order to determine wetland impacts, culvert replacements and extensions, and the project's needs at stream crossings based on drainage areas.
3. Based on Section 11 (Roadway and Grading) and 12 (Drainage) requirements; proceed to develop the necessary Environmental Permit Application per PPMS Task 3720 and 3730. Place a copy of the Environmental Permit Application into the RID and a copy of the Issued Environmental Permit into an Exhibit in Book 2, Section 4.
4. Initiate and Coordinate environmental clearance with the Environmental Project Coordination Section. Categorical Exclusion Environmental Clearance will be developed into an Exhibit and placed in Book 2, Section 4.
5. Coordinate requirements and constraints for environmental compliance with other sections. For example:
 - Book 1, Section 12 (Shared Risk Item Work and Price Adjustments) – contaminated materials that will be shared risk
 - Book 1, Section 13 (Changes in the Work) - associated with any contaminated properties and materials
 - Book 2, Section 11 (Roadway and Grading) – review grading limits within wetland areas
 - Book 2, Section 12 (Drainage) – culvert and storm sewer replacement within wetlands and regulated streams
 - Book 2, Section 18 (MOT) – any detours will need MDOT environmental approval

Section 5 (Third-Party Agreements)

On DB projects, numerous issues involving third parties can arise before, during, and after construction. Third parties can include cities, townships, counties, individuals, watershed districts, or other governmental and non-governmental agencies. Subject to the results of the risk analysis, MDOT should have early coordination with third parties, and if necessary obtain as many agreements as possible with third parties prior to issuance of the RFP. The contract documents typically require the Design-Builder to obtain all remaining applicable permits and approvals. By completing these agreements, MDOT can avoid issues such as changes in local government requirements, application of conflicting environmental standards, and changes to the local government's permitting and approval processes. MDOT should only incorporate into the RFP the agreement-related requirements that address issues that impact the Design-Builder.

Railroad agreements are similar to other third-party agreements, but include some unique characteristics, such as the long lead time typically required to finalize railroad agreements. For this reason, discussions with railroads should be initiated as early as possible in the project, and agreements with railroads should be in place prior to issuance of the RFP. The DB contract should recognize potential impacts to schedule and cost due to the unpredictability of railroad participation. Key railroad requirements, including the railroad's involvement, authority, and review times, should be identified in the RFP. Depending on the project, a subsection may be required in Book 2 dedicated to railroads. If this is the case, agreement information or requirements could also be placed in that section.

Third party agreements should clearly identify authority and responsibilities of the parties involved. The agreements should include what each party will do, the schedule for completion, responsibility for costs, and possibly a process for dispute resolution.

MDOT's approach to date has been to address requirements of third-party agreements in the applicable section of Book 2. The actual agreements can be included as exhibits to this section. The time required to obtain third-party agreements can significantly affect the project schedule, and must be considered.

Section 5: Contract Document Development Work Steps

1. Review project and determine the affected local agencies, permitting agencies, adjacent construction projects and other parties that would be considered Third Parties.
2. Meet with the Third Parties and determine any project requirements that may be needed and include the requirements in the RFP.
3. List requirements in this section or attach the agreements and require the Design-Builder to work within or meet the requirements of the agreement(s) shown in the exhibit.

Section 6 (Utilities)

This section applies to all existing and proposed municipal and private utilities. This section excludes storm water facilities, traffic signals, and intelligent transportation systems (ITS).

This section includes requirements related to utilities—both underground and aboveground—excluding storm water facilities, traffic signals, and ITS. Book 2, Section 6 includes the Design-Builder requirements for utility work, including such areas as allocation of responsibility, procedures and agreements, utilities adjacent to structures, in-place/out-of-service utilities, and other design and construction requirements. It also includes reports that the Design-Builder must complete and submit to MDOT for utility tracking, permit applications, and other items. Book 2, Section 6 includes project-specific utility requirements, and exhibits provided by MDOT.

Depending on the extent of utilities located within the project corridor, the preparation of utility agreements and/or coordination clauses can be one of the more time-consuming processes of a DB project. Consequently, MDOT should contact utility owners during the early stages of the project to plan activities and arrange meetings. MDOT typically conducts an initial Request for Utility Information and will prepare a Summary of Potential Utility Conflicts that will impact the project. The Request for Utility Information will be included in the RID and contain all information known to MDOT at the time of issuance of the RFP, including drawings of utilities expected to have conflicts, proposed relocation areas, and utilities not expected to have conflicts.

Section 6: Contract Document Development Work Steps

The following general steps should be taken by the MDOT PM and/or consultant prior to RFP release:

1. Follow PPMS Task 3610 (Compile Utility Information), work with the Transportation Service Center (TSC) Utility and Drainage Engineer. Compare the Utility List with the Miss Dig system in order to determine if any utilities are missing. Insert all utility forms and plans into the RID.
2. Once utility plans have been gathered develop base plans to be inserted in the RID.
3. Follow PPMS Task 3660 (Resolve Utility Issues) - Set up a meeting with the Private Utility Companies and Public Municipals in order to discuss the design build process, schedule and incorporation of any specific details in the development of the Utility Coordination Clause and Status Report and included in Book 2, Section 6 as an exhibit.
4. Compile the preliminary utility information and include it in the RID.
5. Based on the utility gathering efforts and meeting(s) provide a Summary of Potential Utility Conflicts as an exhibit.
6. Coordinate requirements and constraints for environmental compliance with other sections. For example:
 - Book 1, Section 13 (Changes in the Work) - associated with any contaminated properties and materials
 - Book 2, Section 11 (Roadway and Grading)– review proposed pavement thickness and earthwork for potential utility impacts
 - Book 2, Section 12 (Drainage) – review culvert and storm sewer replacement and extensions for potential utility impacts
 - Book 2, Section 13 (Structures) – review proposed bridge work for potential utility impacts

Section 7 (Right-of-Way)

On traditional design-bid-build projects, right-of-way is typically acquired prior to advertising for construction. On DB projects, budget and schedule constraints, along with unresolved final design issues, can affect the owner's ability to identify and acquire right-of-way prior to release of the RFP. Consequently, several options are available. MDOT can retain responsibility for acquiring right-of-way, delegate complete responsibility for right-of-way acquisition to the Design-Builder, or share responsibilities with the Design-Builder. This section sets forth the optional approaches for obtaining right-of-way, including permanent right-of-way, temporary right-of-way, and/or construction permits. It may also include exhibits/files to be used by the Design-Builder.

MDOT's and the FHWA-Michigan Division's approach to date has been for MDOT to retain responsibility for acquiring right-of-way prior to advertising the project. This approach is to be followed unless approval is received from the FHWA and MDOT leadership. MDOT provides the Design-Builder with a right-of-way work map (if the existing right-of-way has been surveyed) as an exhibit in Book 2. Since right-of-way acquisition is often a lengthy process, it is also critical to initiate the right-of-way process as soon as possible in the project and monitor progress closely. Should the Design-Builder's design require additional right-of-way not acquired by MDOT, the Design-Builder will be required to develop Preliminary and Final Right-of-Way plans, subject to MDOT approval. MDOT will be responsible for providing Marked Final Right-of-Way plans if they acquired the ROW.

If MDOT delegates responsibility for right-of-way acquisition to the Design-Builder, MDOT will retain the authority of review and approval of all steps of the acquisition process. The Design-Builder will be required to develop Preliminary and Final Right-of-Way plans. Legal work related to condemnation will be conducted by MDOT. This process will need to be developed if it is used as MDOT has not delegated this responsibility to date. When this approach is used by other state DOT's, it is common to have the ROW cost paid by the DOT at little to no risk by the Design-Builder, and the Design-Builder takes on the risk for time and schedule impacts.

A sharing of responsibility for right-of-way acquisition is generally the least desirable option, as inconsistencies and unpredictable costs may occur due to different approaches used by private Design-Builders versus those of MDOT. However, if MDOT does not have adequate time or resources to complete right-of-way acquisition, MDOT may consider this option, and develop contract language for this option.

Section 7: Contract Document Development Work Steps

The following general steps should be taken by the MDOT PM and/or consultant prior to RFP release:

1. Provide surveyed right-of-way as an exhibit (right-of-way work map), or include the existing right-of-way maps in the RID.

2. Perform preliminary engineering for the project to determine what right-of-way may be required. Identify construction permits, as needed. Coordinate any ROW impacts with MDOT Real Estate and FHWA as soon as possible to prevent delays in project delivery and to confirm ROW acquisition plan acceptable to all parties.
3. Perform pre-acquisition activities as needed.
4. Coordinate requirements and constraints for right-of-way with other sections. For example:
 - Book 1, Section 6 (Access to Site; Utility Relocations; Environmental Mitigation) – Design-Builder access to site.
 - Book 2, Section 2 (Project Management) – submittal of right-of-way plans (if needed) with other plan submittals.
 - Book 2, Section 9 (Land Surveying) – survey information, specifically where the right-of-way survey (if performed) will be provided in the documents.
 - Book 2, Section 11 (Roadway and Grading) – geometric requirements of roadway design.

Section 8 (Geotechnical)

Because numerous disciplines rely on geotechnical information, the Geotechnical section includes requirements that cross several functional areas, including grading, roadways, and structures. Specifically, this section addresses such wide-ranging topics as geotechnical investigations, construction vibration, structure foundations, pavements, and various other design and construction issues.

Because of the wide variation of geotechnical conditions from project to project, MDOT should establish a geotechnical approach before beginning preparation of the RFP. The approach should address preliminary subsurface investigations, pavement design, and the level of detail to be provided to the Design-Builder in the RFP. Prior to any borings being performed, an investigation plan should be developed under the direction of the MDOT Central Office Geotechnical Engineering staff and Region Materials staff.

The following summarizes MDOT's approach to geotechnical investigations and design on past DB projects.

1. Prior to conducting any borings, develop an investigation plan by coordinating the work with the CFS Geotechnical engineering staff and Region Materials Office staff. The geotechnical work is intended to mitigate risk, and the Design-Builder has the option of taking additional borings to support their design. The procurement process chosen (e.g., best value vs. low bid) may also impact the amount of information MDOT will want to provide to the Design-Builder. MDOT's general approach has been to provide Proposers

with the geotechnical information in Book 2 that would be gathered by MDOT on a design-bid-build project.

2. Typically MDOT's GEC conducts a geotechnical investigation in accordance with the investigation plan, to adequately define the soils encountered along the alignment, but not necessarily within the entire right-of-way. MDOT staff can perform this work if desired.
3. Final soil boring logs and a boring location maps are provided as exhibits in this section. MDOT may provide additional information relating to the soil investigation, such as geological data, groundwater data reports, logs of previously completed nearby borings from past projects, memoranda, and fence diagrams, in the RID.
4. MDOT typically does not provide interpretive geotechnical reports. Required geotechnical reports will be prepared and submitted by the Design-Builder.
5. After the contract is awarded, the selected Design-Builder can perform supplemental geotechnical investigations and interpretive analysis to support the final design.
6. The Design-Builder provides foundation recommendation reports during their design work and prior to the beginning of construction of any structure as part of the DB release for construction process.

Because certain boring locations will depend on the Design-Builder's final design, it is not possible to anticipate all required locations prior to award. Although neither party has control over unknown soils conditions, because the Design-Builder controls the design, it has some flexibility to adapt to any unexpected conditions and minimize total project costs.

While the recommended geotechnical approach is expected to apply to most highway DB projects, it should be reviewed for each project for possible project-specific customization.

The template text of this section outlines the requirements for the Design-Builder that does their own subsurface investigation to support their design. The Design-Builder is not required to obtain additional soil borings if the information supplied to them in the exhibits is adequate to complete the design of the project. Also included in this section is standard language for items such as vibration monitoring or underdrain.

Section 8: Contract Document Development Work Steps

1. Review project-specific boring requirements for elements not covered previously in this section.

2. Determine the approach to geotechnical exploration that will be used on the project, gather geotechnical information, and include it as an exhibit to this section. Only include the point location such as the boring log and location of the boring in the contract. Do not include interpretive or editorial information that the Design-Builder could use to form an incorrect conclusion.
3. Determine if shared risk items are required, define the shared risk item, and coordinate these with the development of the ITP and RFP.
4. Identify any geotechnical items of work the Design-Builder will be responsible for without additional compensation. The limits for this work should be supported by data, and limited to the areas the work is anticipated to occur.
5. Coordinate requirements and constraints for geotechnical work with other sections. For example:
 - Book 1, Section 12 (Shared Risk Item Work and Price Adjustments) – Coordinate any geotechnical shared risk items.
 - Book 2, Section 11 (Roadways and Grading) – Coordinate permanent pavement sections with geometric requirements.
 - Book 2, Section 18 (Maintenance of Traffic) – Coordinate temporary pavement sections required.
 - Book 3 (Applicable Standards) – Coordinate names of standards and update all links.

Section 9 (Land Surveying)

This section includes requirements for control surveys, topographic surveys, bridge surveys, utility surveys, soils surveys, design and construction surveys, as-built surveys, hydraulics surveys, right-of-way, and all other land surveying services.

MDOT will typically provide survey control and preliminary base mapping for the project. If schedule allows, a design level survey should be provided and made contractual in Book 2. The level of mapping should be adequate to support completion of the environmental document (if required), support preliminary engineering activities necessary to mitigation risk, and define the scope of the project. Mapping developed by a Professional Land Surveyor licensed in the State of Michigan that meets MDOT surveying standards can be included as an exhibit. Survey information with accuracy that does not meet MDOT surveying standards or the accuracy is unknown should be provided in the RID. The Design-Builder is required to verify and confirm the location, accuracy, and datum of all mapping information provided by MDOT in the RID. If the mapping includes discrepancies or lacks certain data, the Design-Builder will supplement the survey with their own survey, or perform the surveys necessary in order to construct the project. If the Design-Builder needs to perform any surveys, standard MDOT surveying procedures are to be followed (for example, a complete portfolio would need to be provided).

This section identifies general requirements as well as project-specific requirements, such as the horizontal and vertical control datums to be used on the project, as well as any special requirements for the as-built base map to be provided by the Design-Builder.

Section 9: Contract Document Development Work Steps

The following general steps should be taken by the MDOT PM and/or consultant prior to RFP release:

1. Discuss scope of work for land surveying at the scope verification meeting.
2. Perform upfront surveys required to support project goals and mitigate project risk through preliminary engineering activities. Include all surveys for the project meeting MDOT surveying standards in the contract documents. Additional survey of unknown accuracy shall be included in the RID.
3. Coordinate requirements and constraints for land surveying with other sections. For example:
 - Book 2, Section 4 (Environmental Compliance) – environmental features (i.e. wetlands, county drains, etc.).
 - Book 2, Section 6 (Utilities) – utility features.
 - Book 2, Section 7 (Right-of-Way) – right-of-way features.
 - Book 2, Section 8 (Geotechnical) – soil borings.
 - Book 2, Section 11 (Roadways and Grading) – design features.
 - Book 2, Section 12 (Drainage) – drainage features.
 - Book 2, Section 13 (Structures) – bridge features.

Section 10 (No Longer Used)

Section 11 (Roadways and Grading)

This section primarily includes requirements related to roadway geometrics, operations, and pavement designs. It includes design standards and design exceptions; it does not include pavement design requirements, which are located in Section 8 (Geotechnical). The Roadways section identifies general requirements, as well as project-specific requirements and roadway design criteria such as the functional class of the roadway (e.g., rural freeway, arterial, local roadway, etc.), type of roadway (e.g., divided vs. undivided, rural vs. urban, etc.), design vehicle, projected traffic volumes, design speed, etc. Any non-standard requirements are incorporated via “Special Features” after each section of roadway is discussed in the document.

It is recommended that design exceptions are analyzed early to mitigate the potential for claims related to scope and cost growth post award. It is recommended to develop a design exceptions assessment report once applicable design criteria have been reviewed and approved by both MDOT and FHWA to identify existing geometric elements requiring improvements to meet applicable standards. Where the elimination of design exceptions is cost prohibitive,

substantially changes the scope of the project, or adversely impacts the project schedule due to environmental or right-of-way impacts these specific design exception should be clearly identified in the assessment report as project elements where design exception requests will be made. Based on the number of design exception request anticipated, the work associated with this effort can be quite involved since approval is needed from both MDOT and FHWA on any design exceptions requests to allow a variance from applicable standards. Generally, the approved design exception requests (MDOT form FC26) are included as exhibits in this section of the contract documents.

Most projects will have a prescribed permanent pavement design, and possibly a design for temporary pavements. Some projects have not prescribed a temporary pavement design. The following summarizes MDOT's approach for pavement design:

1. Due to State law, MDOT prescribes the pavement design (asphalt or concrete) to be used on the mainline and mainline shoulders for all DB projects in accordance with the most current MDOT pavement selection and pavement design standards. The pavement type selection is based on an economic analysis in which the option with the lowest life-cycle cost is selected.
2. Local streets and roads are designed to carry projected traffic loads for 20 years minimum, and also comply with local municipality/road authority requirements.
3. Temporary pavements can be the responsibility of the Design-Builder.

Section 11: Contract Document Development Work Steps

The following general steps should be taken by the MDOT PM and/or consultant prior to RFP release:

1. Set up a scope verification meeting
2. Analyze design exceptions. Create an assessment report for MDOT and FHWA review based on as-built plans. Once design survey has been received (if being provided for the project), update the assessment report based on the survey since as-built plans don't necessarily reflect the existing conditions. Meet with affected parties to discuss mitigation measures. Develop design exception request forms for potential inclusion as exhibits in the contract documents.
3. Perform preliminary engineering for the project; provide calculations, notes, design decisions, electronic files, etc. in order for the Design-Builder to get a basic understanding of the project. The data produced from the preliminary engineering work will be included in the RID.

4. Generate a proposed construction file showing limits of what is to be constructed (based on information discussed at the scope verification meeting).
5. Generate a detailed cost estimate (based on information discussed at the scope verification meeting).
6. Coordinate requirements and constraints for roadways with other sections. For example:
 - Book 2, Section 6 (Utilities) – clearance over/under noted utilities within the project limits.
 - Book 2, Section 7 (Right-of-Way) – general concerns over constructing the project within the right-of-way allowed.
 - Book 2, Section 12 (Drainage) – general grading and drainage concerns, specifically adequate cover over pipes.
 - Book 2, Section 13 (Structures) – vertical clearance (if any bridges are located within the project limits).
 - Book 2, Section 16 (Signing, Pavement Marking, Signalization, and Lighting) – general references to work located within this section, if any.
 - Book 2, Section 20 (Non-Motorized Facilities) – general references to work located within this section, if any.

Section 12 (Drainage)

This section includes requirements related to culverts, bridge hydraulics, roadway ditches, retention/detention facilities, closed storm drain systems, and other drainage facilities. The drainage section identifies general requirements as well as project-specific requirements, such as computer software to be used for drainage design, additional design criteria from environmental documents or local requirements that are not otherwise addressed in standards.

In addition to producing released-for-construction plans and as-built plans, the Design-Builder is required to develop various reports identified in the RFP that include their analysis and a record set of all drainage computations. The Design-Builder is also required to prepare hydraulics design recommendations as part of the preliminary bridge design. Pre-construction and post-construction video records may be provided by the Design-Builder to verify proper construction of drainage facilities if required in the RFP.

Section 12: Contract Document Development Work Steps

The following general steps should be taken by the MDOT PM and/or consultant prior to RFP release:

1. Discuss scope of work for drainage at the scope verification meeting with the Region/TSC, and with the Hydraulics engineer. Determine the hydraulic needs of the project, work MDOT will provide, and the requirements for the design-builder which may include work such as completing drainage studies, hydraulic analysis and hydraulic surveys.

2. If needed, perform preliminary engineering for the project; provide calculations, notes, design decisions, electronic files, etc. in order for the Design-Builder to get a basic understanding of the project's drainage requirements. The data produced from the preliminary engineering work will be included in the RID.
3. Set up separate drainage/environmental coordination meeting with MDOT personnel to further discuss scope of work. Scope definition may require culvert video inspection services to determine proposed drainage work (i.e. rehabilitation, replacement, no work).
4. Investigate history of flooding history and flooding complaints.
5. Conduct field visits to identify areas of proposed ditch cleanout and include findings in the RID.
6. Coordinate with the county drain office(s) and the MDOT Drainage Coordinator on all projects involving county drains
7. Determine the party responsible for establishing the drainage areas of all stream crossings within the project limits and the contract requirements for the Design-Builder.
8. Coordinate requirements and constraints for drainage with other sections. For example:
 - Book 2, Section 4 (Environmental Compliance) – environmental/drainage permits.
 - Book 2, Section 7 (Right-of-Way) – right-of-way features.
 - Book 2, Section 11 (Roadways and Grading) – design features.
 - Book 2, Section 13 (Structures) – bridge features.

Section 13 (Structures)

Book 2, Section 13 provides requirements for the Design-Builder to design and construct temporary and permanent components for the rehabilitation, replacement, and/or new construction of bridges, retaining walls, noise walls (sound walls), bridge barriers/railings, box culverts, , and precast concrete arches.

Additional sections and special provisions may be warranted on projects with specialty bridge types, as listed below. These sections require close coordination with Section 13 (Structures):

- Cable Stayed Bridges
- Extrados Bridges
- Segmental Concrete Box Girder Bridges
- Navigable River Crossings
- High Capacity Foundations
- Mass Concrete Structures

This section identifies project-specific requirements for personnel/pre-qualifications, design methods, design parameters, load rating requirements, bridge types, geometric parameters, material specifications and construction requirements. These special requirements are modifications to the applicable standards, guide, manual and special provisions (listed in the *Administrative Requirements* of Book 2, Section 13). Duplication should be avoided to eliminate Contract conflict.

Section 13: Contract Document Development Work Steps

1. Review bridge scoping reports (if available), bridge inspection reports, as-built plans and field review the site.
2. Prepare project-specific requirements in the contract documents.
3. Determine the special provisions needed to set the requirements for the desired structure type including material type, controls, warranties, etc. List special provisions in the standards section.
4. Prepare exhibits to define cross-sectional widths, lateral clearances, and other necessary geometric parameters.
5. Determine if shared risk items are required and define the shared risk item.
6. Determine if design exceptions are required and prepare documents for MDOT and FHWA approval.
7. Coordinate requirements and constraints with other sections. For example:
 - Book 1, Section 8 (Geotechnical) – Coordinate structure foundation investigation requirements for the specified structure type/s.
 - Book 2, Section 11 (Roadways and Grading) – Coordinate geometric requirements and pavement section requirements for bridge approaches.
 - Book 2, Section 18 (Maintenance of Traffic) – Coordinate specific requirements for maintenance of traffic over temporary, existing and/or proposed structures.
 - Book 2, Section 15 (Aesthetics) – Coordinate types and limits of aesthetic requirements.
 - Book 2, Section 12 (Drainage) – Coordinate scope of culvert work.
 - In addition to preparing released for construction and as-built drawings, the Design-Builder is required to submit preliminary bridge plans to MDOT for acceptance and before released-for-construction documents will be accepted. Coordinate this requirement with Section 2 (Project Management).
 - Book 1, Section 12 (Shared Risk Item Work and Price Adjustments) – Coordinate any structural shared risk items.

- Book 3 (Applicable Standards) – Coordinate the names of standards and update all links.

Section 14 (Landscaping)

MDOT has considered two approaches to vegetation on DB projects: 1) delegating all vegetation responsibility to the Design-Builder; and 2) omitting landscaping establishment from the DB contract and handling it in a separate contract. If the Design-Builder is responsible for all vegetation, the requirements typically include tree inventory (replacement and establishment), preservation and protection of existing vegetation, noxious weed control, timber utilization, erosion control, soils management, turf establishment, and plant establishment. If the Design-Builder is not required to perform plant establishment, the work shall not preclude successful turf and plant establishment in the future.

The Landscaping section identifies general requirements as well as project-specific requirements, such as seed mixtures, vegetation types, etc. The Design-Builder is required to submit several drawings prior to starting any construction, depicting vegetation preservation, noxious weed control, turf establishment, and native grass and tree plantings. The landscape plans require MDOT approval. An approved list of roadside trees and shrubs for planting within the MDOT ROW should be included as an exhibit.

The Design-Builder may also provide a maintenance bond for turf establishment and tree replacement/establishment. In some cases, the Design-Builder provides a Maintenance Bond to cover the cost of the turf establishment and all plantings. The amount of the bond depends on the amount of area of turf establishment and tree replacements. The Maintenance Bond requirements must be included in the contract.

Section 14: Contract Document Development Work Steps

The following general steps should be taken by the MDOT PM and/or consultant prior to RFP release:

1. Discuss scope of work for landscaping at the scope verification meeting.
2. Perform project site visit, recording field notes as needed.
3. Coordinate requirements and constraints for landscaping with other sections. For example:
 - Book 2, Section 4 (Environmental Compliance) – soil erosion measures.
 - Book 2, Section 11 (Roadways and Grading) – geometric requirements, specifically related to clear zone and sight issues.
 - Book 2, Section 15 (Aesthetics) – visual quality.

Section 15 (Aesthetics)

Book 2, Section 15 provides requirements to Design-Builder to include the type of aesthetic treatment and architectural details, context-sensitive design, and other visual-related areas for bridges, retaining walls, noise barriers, MSE walls and other structures. The aesthetic components may include concrete texturing, reveals, inset pattern panels, bridge piers with angled ends and custom shaped columns, concrete surface coating, structural steel paintings, decorative bridge railings and pedestrian fencing.

Section 15: Contract Document Development Work Steps

The following general work steps should be taken by the MDOT PM and/or consultant prior to RFP release:

1. Review scope of the structure work and identify feasible aesthetic components to be included in the project.
2. Coordinate with MDOT's roadside development area to prepare requirements for the Design-Builder to develop a visual quality management plan (if desired), conduct a visual impact assessment, and produce a visual impact assessment summary and a visual quality manual. Modify or delete these requirements if MDOT has already prepared project-specific visual quality documents (Aesthetic Design Guide) or a corridor aesthetic approach.
3. Include exhibits defining the visual quality of specific features.
4. Determine the special provisions and/or contract language needed to set the requirements for the desired aesthetic component including material type, controls, limits, details, warranties, test samples for MDOT approval etc. List special provisions in the standards section.
5. Coordinate requirements and constraints with other areas of the contract such as Section 13 (Structures) and Section 12 (Drainage).

Section 16 (Signing, Pavement Marking, Signalization, and Lighting)

Encompassing several areas related to traffic engineering, this section includes four primary areas: signing, pavement marking, signalization, and lighting. It primarily covers permanent installations; temporary facilities are covered elsewhere, such as in Section 18 (Maintenance of Traffic). This section identifies general requirements as well as project-specific requirements, such as special equipment and materials, signal locations, lighting types and levels, etc.

Signing: the Design-Builder is required to submit a permanent signing concept plan showing the existing and proposed signing for the project. MDOT acceptance is needed for the concept plan before the Design-Builder can proceed with plan sheets. The Design-Builder is also required to submit shop drawings for any overhead sign structures prior to fabrication.

Pavement markings: the Design-Builder is required to submit a permanent pavement marking concept plan showing the proposed pavement markings and existing pavement markings (where to remain) for the project. MDOT acceptance is needed for the concept plan before the Design-Builder can proceed with plan sheets.

Signalization: since signals, signing, and pavement markings closely relate to each other, the permanent signing or pavement marking concept plans could be utilized to show signal locations (proposed and existing to remain) for the project.

Lighting: the Design-Builder is required to perform a lighting analysis for any proposed lighting on the project and present the data to MDOT for acceptance before proceeding with plan sheets. Where existing lighting is to remain on the project, the Design-Builder is required to protect and preserve the lighting during construction activities.

Any special features required for the project and associated with signing, pavement marking, signalization, or lighting need to be included in this section, for example, permanent traffic recorders, weigh-in-motion devices, etc.

Section 16: Contract Document Development Work Steps

The following general steps should be taken by the MDOT PM and/or consultant prior to RFP release:

1. Discuss scope of work for signing, pavement marking, signalization, and lighting at the scope verification meeting.
2. Coordinate with the signal maintenance and OFS Signal Unit to determine contract requirements. .
3. Coordinate requirements and constraints for signing, pavement marking, signalization, and lighting with other sections. For example:
 - Book 2, Section 8 (Geotechnical) – geotechnical data associated with any foundation design.
 - Book 2, Section 11 (Roadways and Grading) – removal and construction limits.
 - Book 2, Section 13 (Structures) – signs/structures attached to bridges within the project limits.
 - Book 2, Section 17 (ITS) – communication tasks between ITS devices and signals.

Section 17 (Intelligent Transportation Systems)

Because standards for ITS are less prevalent than for other functional areas, the RFP requirements for ITS tend to be more detailed and prescriptive than for other areas. This section could identify requirements for materials and equipment, installation, testing, and other items. A series of ITS testing and checklist forms may be included as exhibits. The Design-Builder can be required to submit an ITS conceptual plan, fiber-optic system test plan, and training

documentation to MDOT for approval. This section should identify specific scope items such as locations for cameras, dynamic message signs, ramp meters, special material and installation requirements, equipment delivery and operational deadlines, and work to be performed by MDOT.

Section 17: Contract Document Development Work Steps

1. Complete PPMS Task 2570 (ITS Concept of Operations)
2. Complete PPMS Task 3365 (Pre-Conceptual ITS Design and Meeting)
3. Complete PPMS Task 3585 (Final ITS Concept Design and Meeting)
4. Complete PPMS Task 3615 (Compile ITS Utility Information)
5. Complete PPMS Task 3595 (Conduct ITS Structure Foundation Investigation) only to gather general site information for the contract to bid the project. The reason to not gather all geotechnical information is the Design-Builder may move items in the final design of the project. Since drilled shafts require a boring at the location of the foundation, MDOT borings may not be used in final design. By having the Design-Builder complete this work, they are better able to definitely identify the exact final location of the items since they are completing final design.
6. Complete PPMS Task 3680 (Preliminary ITS Communication Analysis) to the point MDOT knows what communications are required or constraints to the communications. If MDOT deems any communication type is allowable for the project per the standards then they could be silent in the document but if MDOT has a preference after this initial analysis, these preferences shall be included as requirements in this section.
7. Review project scope of work with MDOT's Lansing Technical ITS Expert and the MDOT Central Design Build Team to determine exactly what is needed to be included in this section.
8. Develop contract requirements and/or special provisions to define the project scope.

Section 18 (Maintenance of Traffic)

Maintenance of traffic (MOT) provides for the safe and efficient movement of people, goods, and services through and around the project while minimizing negative impacts to residents, commuters, and businesses. Book 2, Section 18 provides requirements for the Design-Builder to include in its Traffic Management Plan (TMP).

In general, MDOT should provide the goals for maintaining traffic, and not prescribe how it will be accomplished. Areas with minimal guidance, such as temporary ramp tapers and temporary ramp design speed can have more prescriptive requirements in this section.

The Design-Builder uses the TMP to develop detailed MOT plans showing specific traffic control measures such as switching procedures, phasing details, and an incident management plan.

Book 2, Section 18 also identifies general requirements for temporary pavement markings, signalization, lighting, and access. Section 18 contains specific requirements for the TMP and MOT plans such as allowable road and lane closures, specific access issues, incident management issues, and other design and construction parameters.

Preparation of Book 2, Section 18 requirements often requires significant coordination with city and county representatives to develop parameters for maintenance of traffic including allowable access restrictions, detour routes, allowable closures, and duration of restrictions and closures. Coordination efforts for maintenance of traffic should begin early in the RFP preparation process.

Section 18: Contract Document Development Work Steps

The following general steps should be taken by the MDOT PM and/or consultant prior to RFP release:

1. PPMS Task 3390 (Develop the Maintaining Traffic Concepts) should be completed. However, rather than recommending actual concepts, Work Step 6 should be modified to recommend requirements and constraints for maintaining feasible traffic concepts. Based upon the requirements and constraints, develop feasible options for inclusion in the contract or RID. When possible, provide the Design-Builder with the concerns and general constraints they will need to address during design and construction instead of prescribing hours they can and cannot work.
2. After sufficient feasible option development has occurred, hold a Mobility Workshop with appropriate Department staff to determine validity of the maintaining traffic requirements, constraints and feasible options. Engage the affected local agencies, including cities, counties, local departments of public works, emergency responders, and school districts. Discussion topics should include incident management and emergency access.
3. Complete CO3 analysis based on developed feasible options for inclusion in the Pavement Life-cycle Cost Analysis (LCCA) and RID.

4. Consider completing a “preliminary” TMP allowing for implementation of feasible options based on the requirements and constraints in Book 2, Section 18. The Design-Builder will complete the TMP based on the chosen maintaining traffic concept.
5. Perform a constructability review on the feasible options to identify potential issues with the requirements and constraints in Book 2, Section 18.
6. Develop a CPM for one or more of the feasible options to validate schedule requirements and constraints in Book 2, Section 18.
7. Develop a cost estimate for one or more of the feasible options to validate schedule requirements and constraints in Book 2, Section 18.
8. Determine the team that will review MOT concepts per the Work Zone Mobility and Safety Policy. Request approval from the Region Engineer and Chief Operations Officer to deviate from the traditional teams identified in the policy. .

If the project is expected to be considered significant, assemble a team to review maintaining traffic items. Due to the time constraints of a DB project, a Statewide Peer Review team is impractical. Therefore a DB Peer Review Team (DBPRT) would be assembled to complete the duties typically done by the Statewide Peer Review Team. The members could be from the Region the project is from, and be educated on the project and the DB contract’s requirements. The DBPRT could be made up of the following positions:

- Region Engineer, or their designated representative such as the Associate Development Engineer or Associate Operations Engineer (Chairperson)
- TSC Manager
- Traffic Incident Management Engineer and/or Work Zone Delivery Engineer, or their designated representative
- MDOT Project Manager (TSC/Region or Innovative Contracting Unit staff)
- MDOT Deputy Project Manager (TSC/Region or Innovative Contracting Unit staff)
- MDOT Construction Engineer
- Region or TSC Operation Engineer
- Region or TSC Traffic and Safety Engineer/Technician

Additional assistance would be provided by MDOT’s GEC, or others as determined by the DBPRT. The DBPRT would review all information provided by the Design-Builder related to the MOT and approve or reject applicable submittals.

9. Coordinate requirements and constraints for maintaining traffic with other sections. For example:
 - Book 1, Section 4 (Time within which Project shall be Completed; Scheduling) – Milestone dates such as Substantial Completion and Final Acceptance

- Book 1, Section 17 (Damages) – Disincentives & liquidated damages
- Book 1, Section 20 (Acceptance of Project) – requirements for Substantial Completion, Final Acceptance and Opening of Sections of Project to Traffic related to maintaining traffic.
- Book 2, Section 8 (Geotechnical) – temporary pavement design
- Book 2, Section 19 (Project Maintenance) – specific requirements for maintenance when traffic is maintained on existing pavement.
- Book 2 Section 12 (Drainage) – Coordination may be required for maintaining traffic work that impact drainage facilities along roadways, widened structures, and part-width construction.

10. Coordinate the development of this section with MDOT’s Operations Field Services area.

Section 19 (Maintenance During Construction)

The Design-Builder is responsible for maintenance of the entire project site, except for certain activities specified to be performed by MDOT or other agencies. This includes temporary facilities, existing facilities that are to be later replaced or reconstructed as part of the contract, existing facilities that are to remain, haul routes for project materials, and project detours, except for planned detours defined in Book 2, Section 18. The Design-Builder is required to submit to MDOT a maintenance management plan within 30 days of notice to proceed for acceptance and a monthly maintenance report detailing all maintenance activities performed.

Maintenance risks for areas beyond the Design-Builder’s control should not be transferred to the Design-Builder. For example, damaged runs of completed guardrail or cable barrier should not be the responsibility of the Design-Builder.

Section 19: Contract Document Development Work Steps

1. Determine the physical limits of maintenance that are expected to be the Design-Builder’s responsibility. Clearly define the limits, timeframes and responsibilities of the Design-Builder’s liability and control project costs.
2. For multi-year projects or projects with unique maintenance requirements, consult design and maintenance staff to determine necessary maintenance related repairs and requirements, and include them in this section.

Section 20 (Non-Motorized Facilities)

This section includes requirements related to bicycle and pedestrian facilities, such as trails and sidewalks. The Non-Motorized Facilities section identifies general requirements as well as project-specific requirements, such as trail locations, geometric criteria, requirements for facilities on or under bridges, lighting and other amenities, etc.

For a predominantly roadway project, this section would be used to mainly describe sidewalk work located within the project limits. It would be a relatively short section (in terms of page length) since sidewalk can rely on the standards.

For a bicycle path or a trail a number of miles in length, this section would expand to include geometric data and additional path/trail information.

Section 20: Contract Document Development Work Steps

The following general steps should be taken by the MDOT PM and/or consultant prior to RFP release:

1. Discuss scope of work for non-motorized facilities at the scope verification meeting.
2. Perform preliminary engineering for the project if needed. The data produced from the preliminary engineering work will be included in the RID.
3. Coordinate requirements and constraints for non-motorized facilities with other sections. For example:
 - Book 2, Section 7 (Right-of-Way) – general concerns over constructing the project within the right-of-way allowed.
 - Book 2, Section 8 (Geotechnical) – proposed sidewalk pavement structure (widths and depths).
 - Book 2, Section 10 (Grading) – sidewalk removal and construction limits.
 - Book 2, Section 11 (Roadways) – removal and construction limits.
 - Book 2, Section 12 (Drainage) – pedestrian facilities under structures, or when there are impacts to drainage facilities
 - Book 2, Section 13 (Structures) – sidewalk/bicycle path on bridges (if any are located within the project limits).
 - Book 2, Section 16 (Signing, Pavement Marking, Signalization, and Lighting) – general references to work located within this section, specifically any lighting associated with bicycle paths.

Book 3

Book 3 includes the standards to be followed by the Design-Builder for design and construction of the project. This book is divided into two sections:

- Section 1: Introduction
- Section 2: List of Standards

The various sections of Book 2 list the applicable standards for each functional area, as well as the hierarchy of the references for that section. Regardless of whether or not a standard is listed in a particular Book 2 section, the Design-Builder is still responsible for complying with all standards of Book 3. The standards listed in Book 2 are only listed to establish precedence in case of conflicts.

Book 3, Section 1: Introduction

This section provides valuable information that informs the Design-Builder they need to meet the requirements of the standards listed in this book to complete the design and construction of the project. It is the Design-Builder's responsibility to ensure that the most current version at the time of the Proposal Due Date is used for each of the references listed, unless noted otherwise or directed by MDOT. This section also provides general guidance to the Design-Builder on how to interpret the standards listed. For example, the Michigan Standard Specifications for Construction includes many statements that assign responsibility to the "Engineer" and gives them certain abilities to approve or provide information to the Design-Builder. With the DB delivery method the Engineer is defined as the Design-Builder's principal engineer, so the standard needs to be interpreted differently. Therefore, the Book 3 Introduction modifies the standard as follows: "When a standard refers to "Engineer" relating to design responsibilities, such references shall mean the Design-Builder's Engineer, unless otherwise specified. It shall be in MDOT's sole discretion to determine when the context refers to design responsibilities." The introduction of Book 3 contains other similar requirements that enable the standards to be enforceable and function appropriately for DB projects.

Book 3, Section 1: Contract Document Development Work Steps

1. Review the introduction for any modifications. For the most part this is a template section used on several past projects, but changes may be required to stay current or address lessons learned on other projects. The MDOT Project Managers should verify any changes with the Innovative Contracting Unit to make sure the change is warranted.

Book 3, Section 2: List of Standards

This section lists all standards applicable to the project, including MDOT standards and those of other agencies.

Book 3 does not include copies of all standards. Rather, availability of standards is categorized as follows:

- IS: Industry standard. The Design-Builder is responsible for acquiring these standards.
- W: Standard available for download on a Web site. The Design-Builder is responsibility for acquiring these standards.
- E: These documents are provided to the Design-Builder in electronic format.

Unless otherwise noted, the applicable version of each standard is the most current version in effect at the time of the proposal due date. For this reason, the date of the standard should typically not be shown unless MDOT wants to specify a certain edition, even if an updated standard is published before the proposal due date.

As MDOT updates standards, the updated standards should be incorporated into the DB program and into any projects that are in the RFP stage. Updates should be compared against how the

outdated version was handled for DB projects and determine if the RFP requires updating. Ideally, this updating process should be conducted on an ongoing basis throughout the RFP development process. At a minimum, the standards should be reviewed and updated just prior to the proposal due date to incorporate these standards into the contract documents. The project managers should work closely with the Innovative Contracting Unit manager to review and implement new and revised standards.

Book 3 Section 2: Contract Document Development Work Steps

1. As Book 2 sections are completed, the authors should be updating the standards in their section. This is an ongoing process as documents are reviewed and updated.
2. Once the Book 2 sections are completed, all the standards listed in Book 2 should be cross-referenced with the standards listed in Book 3. The names of the standards should match exactly.
3. Once Book 3 is updated for all standards listed in Book 2, the key data (e.g., organization that creates and maintains the standard, the standard name, edition, and web site link) for each standard listed in Book 3 should be compared against a known or trusted source. For example, all FHWA standards should be compared against the FHWA publications website. Using a website different than that of the entity maintaining the standards should be approached with caution.
4. If modifications are needed after checking a standard against its source, these modifications should be completed in both Book 3 and Book 2.

Reference Information Documents (RID)

The Reference Information Documents (RID) include information for the Design-Builder that is not considered contractual. It can include preliminary design information, studies and reports, as-built drawings, technical memoranda not incorporated into Book 3, sample documents, and other information collected. Even though most of the information is project-specific, the RID can be divided into several sections applicable to most projects, as follows:

- Aerial Photography
- As-Built Information
- Culvert Information
- Environmental Documentation
- Existing ROW Maps
- Miscellaneous Information
- Pavement Design Information
- Preliminary Design Information
- Project Specific Road or Bridge Information
- Scoping Information
- Traffic Information

- Utility Information

As noted previously, the RID is provided for information only and is described in greater detail in a chapter of this guide. The RID is not a contractual document and is not to be relied upon by the Design-Builder. The RID should be organized so that the information can be readily identified and used. This involves proper listing in the RID Index, a brief description in the index for each document and its file type, and proper electronic organization that matches the folders in the RID Index because this actual information will be provided to the Design-Builder in electronic format via compact disk or a file transfer site.

The Reference Information Documents (RID) contain information that could be useful to a Design-Builder, but has not been substantiated by MDOT so it is considered non-contractual. Common items are as-built plans, preliminary project information (scoping documents, meeting minutes, general concepts) and preliminary designs. While the RID is non-contractual, the goal of the RID is to provide information that is as accurate as possible.

RID information must be provided in a consistent format with all RID information being available to all potential DB teams. RID information can be provided on CD's or through the E-Proposal website, or a combination of the two. Guidance on these options is provided below.

An FTP site may also be used however there may be issues with the security of the RID information. Depending on the owner of the FTP site, data can be modified or deleted without prior notice, so the use of an FTP site should be limited to cases where the data being provided is secure.

GENERAL GUIDELINES FOR CD'S:

Page size -Documents should be saved as 8.5 x 11 or 11 x 17 when creating an Adobe PDF (If the page size is not exact when saved to a CD, you will not be able to print the documents)

File name - most contain at maximum 8 characters with the first three (3) being RID*****

GENERAL GUIDELINES FOR E-PROPOSAL: The E-Proposal plan set **order** should follow the Table of Contents template for Design Build Projects. To reduce download speeds, large RID documents should be split into multiple parts. Several considerations should be taken into account when splitting the RID; Exact paper size, size of the file, and file name:

Total number of sheets – Projects having more than 300 RID sheets must be split in equal (but logical) sets.

File sizes 70 mb or less – Using scanned documents and images will create a larger file size resulting in fewer sheets per set, i.e. As-Built for reference.

RID Size	File Size of Each Part	File Name
8.5 x 11 Sheet	300 pages total or 70 mb or less	RID-REF.PDF
11 x 17 Sheet	300 pages total or 70 mb or less	RID-PLAN.PDF

If the entire RID-Ref or RID-plan contains more than 300+ pages total, divide the parts according to the Table of Contents or at a logical breaking point, naming each part as follows:

RID Size	File Size of Each Part	File Name (Sequential Numbering as needed)
8.5 x 11 Sheet	300 pages total or 70 mb or less	RID-REF1.PDF, RID-REF2.PDF
11 x 17 Sheet	300 pages total or 70 mb or less	RID-PLAN1.PDF, RID-PLAN2.PDF

REFERENCE SHEETS:

At the end of each RID set part, add a page in the Adobe file that states there are X parts to follow.

In the succeeding parts add in a page **at the front of each RID set** that states this is Part X of X total parts.

RID Contract Document Development Work Steps

1. As project information such as scoping documents, as-built plans, and permits are collected and preliminary design is completed, the RID Index can be developed.
2. The Rid Index at the time of advertisement should exactly match the electronic folder system and the order in which the files are shown on the electronic media.

Design-Builder's Proposal

The selected proposer's proposal will be included in the contract documents and is sometimes referred to as Book 4. In case of a conflict with the other books, it is generally the lowest in precedence of the contract documents, although the Design-Builder's proposal can take precedence over Books 2 and 3 if it exceeds the requirements of those books.

Request for Proposal (RFP) Development and Maintenance

A document control system is critical for maintaining quality and organization of RFP documents. The following is a description of a system used during development of MDOT's initial RFPs.

During document development, each unique section of a particular document should be saved in a separate file. This enables multiple authors to prepare individual sections of the RFP. In Book 2, sections are primarily delineated by discipline (e.g., Survey, Geotechnical, Drainage, Roadways, Structures, etc.). Other books such as the ITP are typically prepared primarily by one author and can be contained in one file. All documents should follow a standard naming convention, such as the following:

ProjectName-Book#-Section#-SectionTitle-Rev#.DOC

For example, the initial version (Rev A) of the drainage section for Book 2 on the XYZ project would be named as follows:

XYZ-Book2-Section12-Drainage-RevA.DOC

After review by the document controller and other designated reviewers, and incorporation of revisions by the author the document should be ready for publication for the next submittal. Once a submittal is made the documents should be archived and the document revision incremented and all tracked changes accepted so it is ready for further modification, if needed. The use of tracked changes and accepting them at milestone submittals is valuable and allows authors and quality personnel the ability to track through revisions.

Review and Authorization Process

Thorough review of the RFP documents prior to issuance is critical to maximizing quality. This should include a series of internal reviews by project team members, and may also include an industry review by prospective Design-Builders. Reviews should assess technical and editorial criteria, as well as consistency with project goals.

Internal Review

The internal review should include an overall review by the project managers and other interested parties, plus reviews by a technical writer for style consistency and legal counsel for legal issues. An interdisciplinary technical review of individual sections of Book 2 is also helpful to identify potential gaps, overlaps, areas where additional coordination is needed, and other issues. For example, the person responsible for the structures section might have input on the geotechnical and drainage section, so should be given a review opportunity. Each section of the RFP should be reviewed by someone other than the author.

Industry Review

An industry review of the RFP can be conducted to receive input from engineers and construction professionals outside MDOT's project team. If a draft RFP is developed it must be clearly marked as a draft. As a courtesy, the RID can include any changes from the published RFP from the draft RFP.

Addenda and Clarifications

Regardless of how thorough the RFP is when issued to proposers, updates will likely be required after this date and before proposals are due. These changes might include new or updated project information; modified requirements based on staff input, responses to questions from proposers, and a variety of other information, and are made through an addendum.

An addendum is a change to the RFP documents. It can supplement, delete, or modify information in the original document. MDOT's approach has been to either reissue revised sections of the RFP in their entirety or pages of a section, regardless of the extent of the change, to facilitate distribution and updating by proposers. For example, if a project-specific bridge requirement changed, the entire or pages of Section 13 of Book 2 would be reissued electronically. Both a redlined version of the document showing the change and an updated version (without changes shown) would be issued. Addenda are issued electronically (via the MDOT e-proposal site with larger RID or exhibits files issued through e-proposal or on compact disk) as needed prior to the proposal due date. Draft addenda are submitted to FHWA for review and approval before issuing to proposers. The redlined version of addenda is placed in the RID as only the non-redlined version is contractual.

A clarification is issued through MDOT's Notice to Bidder Inquiry process to clarify the requirements of the RFP. A clarification may be generated either by a proposer or by MDOT. It does not become part of the RFP documents, although some information from a clarification may also be issued in an addendum. Project managers should consult with the Innovative Contracting Unit during the clarification process to maintain consistency with clarifications issued on other projects. Responses to questions are posted on the e-Proposal bid letting website.

Conformed Documents

After a Design-Builder is selected, the contract documents typically are conformed. This involves compiling the latest version of each document (including the latest addenda) into the books that become the contract documents. The conformed document is not the actual contract but is developed in PDF format so MDOT, DADC staff, CEI staff and the Design-Builder can more efficiently find information. The actual contract is what is posted on the e-proposal site.

Chapter 14: Certification and Acceptance

A Certification and Acceptance form (CA form) is required for DB projects. A CA form for DB projects can be found at the following ProjectWise link: [Certification and Acceptance Form for DB Projects](#)

The CA form is based on the traditional CA form used for DBB projects. The primary difference is that the DB form reflects that the design is not completed. Instead it provides different areas within MDOT the opportunity to confirm that the requirements in the RFP reflect the needs of that specialty area. The PM can sign off on the different areas of the CA form certifying that MDOT's specialty areas have been actively engaged in the RFP's development

Chapter 15: RFP Package Review Meeting

The purpose of the RFP Package Review meeting is to track comments and responses on the draft RFP. The draft RFP for the RFP Package Review should be approximately 80% complete. The process is similar to the Plan Review/OEC process for Design-Bid-Build (DBB) Projects.

Prior to the RFP Package Review, the PM, DPM, and GEC will work with MDOT specialty areas and technical experts to develop the RFP. It is not unusual to go through numerous versions of specific sections. The draft developed for RFP Package Review is saved in ProjectWise is considered the latest version of this work.

ProjectWise will have the following two folders set up for DB Package Review:

- **Folder 3 Package Review** – this will hold the RFP package only
- Subfolder under Folder 3: **Comments** – this will hold the minutes of the RFP Package meeting, comments from reviewers and responses from the ODC or PM.

The DB RFP Package Review process is as follows:

Step 1: The MDOT PM schedules the DB RFP Package Review meeting. This is done early (before the RFP Package is ready) to assure all participants area available to attend. The meeting is typically attended by staff from the TSC, Region, ICU, MDOT technical experts and the GEC. For projects with federal oversight, the FHWA area engineer is invited.

Step 2: When the draft DB RFP is ready, it is placed in the project's **Folder 3-Package Review** folder in ProjectWise. If there are any supporting documents at this time, they are placed in the **Supporting Documents** folder under **Folder 6** of the project.

Step 3: The PM notifies reviewers/attendees that information is available for review and comment. The FHWA should be provided with the information for the meeting through ProjectWise, a CD or ftp site.

Step 4: During the review process, reviewers should put comments into the **Comments** folder. Based on the DB RFP Package Review, a reviewer may decide they do not need to review the final RFP. If this is the case, the reviewer should note that in the Review Comments folder.

Step 5: The meeting will he held and minutes taken. Action items should be noted in the minutes and must be followed up on. The PM or GEC should prepare a report that combines minutes from meeting with comments placed in the **Comment** folder. The report is saved in the same folder and all reviewers are notified.

Step 6: Prepare the final RFP based on comments and submit final draft through **E-Proposal Design-Build Project workflow**.

Step 7: Complete the DB CA Form, including FHWA signatures, and place it in the Supporting Documents ProjectWise folder.

Chapter 16: Project Turn In (E-Proposal) Process

DB projects have a unique E-proposal workflow. Information on advertising requirements and process are found in ProjectWise at the following link:

<pwname://MDOTProjectWise/Documents/Reference Documents/E-Proposal/Design Build Projects>

Naming Conventions

The following naming conventions are used when the placing the RFP's PDF files into ProjectWise:

Job No_ITP.pdf

Job No_Book1.pdf

Job No_Book 2.pdf

Job No_Book3.pdf

Job No_RID.pdf

All pages in the RFP must be 8 ½ by 11.

The PM must make sure the RFP is properly bookmarked.

Supporting Documents

As with Design/Bid/Build contracts, the *Supporting Document* folder contains all the supporting information required by the DB program team. This is information that is turned in with the RFP but doesn't get inserted into the proposal. The PM must add the project attributes to each file in ProjectWise.

The Project Submission form (MDOT Form # 0269) turned in must include information indicating the project is a DB project, and also include the names of the short-listed firms, if shortlisting was used, in the comment area at the bottom of the form.

Do not compile the supporting documents together. The following table contains common items that should be placed in the supporting documents folder. The list is not exclusive and supporting documents can include additional documents in support of unique features of the project.

Prior to project turn in, the PM must verify the prices are locked for all shared risk items, and that any Lane Rental pay items are in their own section, and this section is the last section in Preconstruction/WebTransport. Lane Rental incentive items do not go into this section.

Required Supporting Documents	Naming Convention in Supporting Folder
Draft Form CA0265_Pilot_DB - Certification Acceptance for Design Build	JobNo – Form No-Certification Acceptance
Form 256 – Advertising Data Sheet	JobNo – 256 - Advertising
ROW Certification (if available) or ROW Memo in Lieu of ROW Certification	JobNo – ROW Certification
Detailed Estimate – this is a spreadsheet with estimated cost to be used to determine Construction Prequalification	JobNo – DBDetailedEstimate
Design Build Checklist	JobNo- DBChecklist
Preconstruction “Proposal Price Schedule”/Cost Summary by Proposal Report	JobNo – Cost Summary
Form 0269 - Project Submission Form	JobNo – Project Submission Form

Project Turn in by the Project Manager:

The PM places the ITP, Book 1, 2, 3, and RID files into ProjectWise. The status of these files will be “Design-Build – Pending”. The PM will highlight the files, select Change State, and then select “Next”.

The status of the files will now be “complete”. Once all files are complete, the PM highlights all files, selects Change State, then selects Next. An Email will be sent by ProjectWise to the ICU Manager for them to complete the next steps in ProjectWise. At this point the security changes and the PM will have Read-Only access.

The following items are the different states the ProjectWise files will be shown as after they are submitted at turn in.

Design-Build – Estimator Prequalification

Determines prequalification for projects.

Once all files are complete, highlight all files, select Change State, select Next.

Email notification sent to CCS Bid Letting Analyst, and MDOT-EProposal.

Security changes to DB-PM’s, DB-Adm., Estimators – Read Only. Finance – Read, Write.

Design-Build – Finance PQ Pending

Creates advertisement and assigns project to letting based on data received.

Once all files are complete, highlight all files, select Change State, select Next.

Email notification is sent to CCS Bid Letting Technician, and MDOT-EProposal.

Design-Build Supporting – Review Pending

Once all files are complete, highlight all files, select Change State, select Next. Security changes to DB-PM's – Read Only, DB-Adm – Read, Write.

Design-Build Supporting – Final

Once all files are complete, highlight all files, select Change State, select Next. Security changes to Everyone – Read Only.

Innovative Contracting Unit Review of the final RFP

The following steps are performed by the ICU Manager performing the final review after the PM places the final documents into ProjectWise. A checklist for the ICU Manager can be found at the following link: [DB ICU Manager QA Checklist.xlsx](#).

1. ProjectWise State

The ProjectWise state of the RFP must be at “Design Build-Initiate Project Advertisement” before the ICU Manager’s review. The ProjectWise state of the supporting documents must be at “Review Pending”. The ICU Manager will be notified by email from ProjectWise that the documents are at the proper state.

2. .Quads Program:

Email information to the S&E Plan Review Technician to notify them a DB project is turned in and they can begin entering in project information into Quads. Request that an Advertisement Sheet is generated and placed into the Supporting Documents folder in ProjectWise. An example can be found in ProjectWise at the following link: [EXAMPLE QUADS EMAIL.docx](#).

3. Pre-Qualification Classification & Letting Date

If the pre-qualification limits are not identified in the RFQ, the PM and DPM will do the following:

- a. Take or send the “detailed estimate” from “Supporting Documents” to the MDOT CCS Manager. The CCS Manager will provide the pre-qualification classifications
- b. Write/type prequalification information onto “Detailed Estimate” sheet in ProjectWise.
- c. IC staff will confirm the letting date with the PM.

If the pre-qualification limits are identified in the RFQ, the PM and DPM will do the following:

- a. Write/type prequalification information onto “Detailed Estimate” sheet in ProjectWise.
- b. IC staff will confirm the letting date with the PM.

4. Review Supporting Documents

- a. Review Certification Acceptance (CA) Form
 - i. The CA Form must be signed by FHWA unless the project is not an oversight project

- ii. All sections should be addressed and signed by the MDOT technical area or the PM.
- iii. Save copy to ProjectWise.
- b. Review remaining Supporting Documents - all required documents must be included and complete
- c. Change PW State of the Supporting Documents
 - i. Highlight all files in Supporting Documents folder
 - ii. Right Click: Change State – Next (Documents ready for advertisement, and the final state is “Design-Build Supporting Final”)

5. Review Trns*port, MFOS and MPINS

- a. Check that pay items are properly entered
- b. Check the Shared Risk items have locked prices.
- c. Check that any Lane Rental Items are in the last section in Preconstruction/WebTransport.
- d. Check that Advertisement (info in Trns*port) indicates this is Design Build and if other than Low Bid, information on the letting and selection process is provided.
- e. Check MFOS to ensure that the JN is initiated and that Environmental Clearance, STIP, TIP information is up to date.
- f. Verify that the MAP Project Information System (MPINS) has the proper letting month.

6. Package Review Quality Assurance Check

- a. Check Package Review folder
- b. Verify that the comments and minutes from the final package review meeting have been placed in proper folder
- c. Verify that comments been address from the final package review meeting.

7. Review the RFP

For Book 1 and ITP complete steps “a” through “c” and step “f”
For Book 2, 3 and RID complete steps “a” through “f”

- a. **Check and/or change what is shown first when file is opened -**
 - i. File (toolbar), Document Properties, Initial View
 - ii. Show: Bookmark Panel & Page (pull down), then hit O.K.
- b. **Check Bookmark Tabs** – make sure all go to right sections
- c. **Check Content of the Documents**
 - i. Review all documents for correct content
 - ii. Make sure all pages are 8 ½ by 11 (scanned documents are usually not right).
 - iii. Assure the Special Provision for Insurance is complete
 - iv. Assure the Special Provision for Warranties has needed information.

- d. Delete Table of Content instruction Page (this is a place holder)**
 - i. In either Page tab or Document tab, choose Page 1
 - ii. Delete Page, then Save

- e. Change ProjectWise State of Letting Plans and Proposal**
 - i. Highlight everything in folder
 - ii. Right Click: Change State
 - iii. Next (Specs and Estimates will be notified the project is Ready)

8. Next Steps

- a. S&E obligates the project, then changes the state to send the project to MDOT's CCS.
- b. If the DBE goal is 6% or greater, the ICU manager emails the CCS Bid Letting Analyst the DBE information so they can modify the system. The system is modified so DBE information is not required to be provided at the time of bid.
- c. ICU Manager emails the CFS Construction Operations Engineer if there are incentives on the project. Include the letting date, job number and incentive information.
- d. ICU Manager verifies with the PM and DPM if Stipend Agreements have been requested.
- e. CCS creates and assigns the project to a letting based on advertising data.
- f. The CCS Inserts additional letting and wage rate information, including state and federal requirements at time of letting.
- g. CCS adds federal project numbers.
- h. CCS deletes applicable cover pages
- i. The Construction Contracts Unit sets the files to FINAL STATUS.

NTB Inquiry

DB team's questions on the RFP are submitted through the E-proposal website. MDOT's responses are made through the typical methods used in ProjectWise. The response should be on the inquiry form but additional PDF documents can be inserted behind the form.

Appendix 16A: ProjectWise Bid Sheet

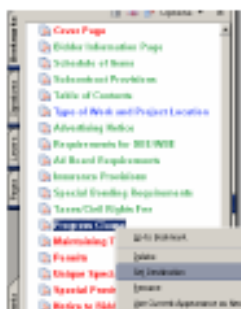
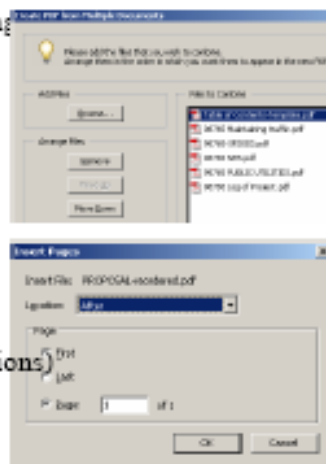
DO NOT DELETE THIS PAGE – FINANCE WILL DELETE BEFORE PUBLISHING.

5/20/2009 -Design Build Request for Proposal (RFP) Template - ITP and BOOK1

E-Proposal How To: Use Table of Contents Template for Bookmarking BOOK1.PDF

(NOTE: This file is both the instructions and the template – Obtain a copy from ProjectWise under Reference Documents, E-Proposal - Design Build.)

1. If you are just creating your RFP ITP and Book1 by combining documents, include this template as the first document in your list and then arrange the documents in the Table of contents Order shown in Bookmark at left) Skip to step 3 below to save and set bookmark destinations, otherwise continue.
2. If you have already created your BOOK1.PDF, follow the step a-d below to add this template. (If in ProjectWise, BOOK1 PDF must be copied out first.)
 - a. In Adobe Acrobat, open Table of Contents-Template-DBRFP-ITPBOOK1.pdf. (It is these instructions)
 - b. Click on Document, Pages, Insert and select your BOOK1.PDF
 - c. Location: After and Page: 1 of xxx
 - d. Click on OK.
3. SAVE AS BOOK1.PDF.
4. On left side, click on Bookmark Tab to display default bookmarks. (View, Navigation Tabs, Bookmarks if they don't display by default)
5. Scroll through your document and locate the page (or first page of multiples) that corresponds to the bookmark,
6. Highlight the corresponding bookmark in the list, single right click and select Set Destination.
7. Locate the next page, repeating step 8 above until all pages that you contribute are bookmarked.



Project Manager/Design Unit/Consultant sets those in Red

Finance sets those in Green

8. Reposition your SS/SP/NTB or other automatically created bookmarks to appropriate location by highlighting and dragging until you see the insert sub-bookmark symbol. (If exists, delete bookmark for Checklist)
9. Leave all chapters even if it does not apply to this project for your area of contribution. (Please don't delete the ones placed by Finance as they will insert the pages later and set the appropriate destinations for them.)
10. Save Often to make sure you don't lose any.
11. **DO NOT DELETE THIS INSTRUCTION PAGE** – Finance will delete before publishing.
12. If not already named this, SAVE AS – BOOK1.PDF



Chapter 17: RFP Addenda

Addenda are processed by traditional means. However, a “redlined” version of the addenda must also be placed in the RID. The following disclaimer is placed on the redlined version:

Disclaimer: The Redline version of Addenda posted for this project is being provided by the Michigan Department of Transportation (hereinafter referred to as MDOT) as a courtesy service to contractors. In preparation of this publication, MDOT has endeavored to offer current, correct and clearly expressed information. The information is not a part of the contract documents for the project and has no contractual standing. The information provided will NOT be accepted as documentation as a basis to file a claim or as evidential use in the claims process.

Chapter 18: Alternate Technical Concepts (ATC)

An ATC is a proposal submitted prior to a letting by a potential Design-Builder to provide an alternative approach to a project. An ATC must provide equal or greater quality and/or value to the Department. Its intent is to allow for innovations and creativity and provide a mechanism for a potential Design-Builder to propose concepts that are not specified or allowed in a DB contract.

It is important to note that ATC's are considered confidential and MDOT has a responsibility to provide the information only to the staff reviewing the ATC, and repeatedly inform this staff that the information is confidential. Only ATC's that a successful Design-Builder included in their proposal is no longer confidential (unless a stipend is paid).

Most contract language/requirements can be considered as an ATC's, including alternate specifications, materials and Maintenance of Traffic concepts. Some items, such as pavement type determined by MDOT's Life Cycle Costs Analysis procedures, cannot be considered as an ATC. The RFP should specifically identify any item that cannot be considered for an ATC.

MDOT has the opportunity to review the ATC's during the advertisement of the project. ATC's are supposed to be at a conceptual level and the MDOT reviewers should not expect final design level information to be provided. The acceptance or denial of an ATC by MDOT can include areas that MDOT will want to have addressed after the award of a project as the design progresses. If accepted, the Design-Builder has the option to include the ATC in their bid package.

Each proposer may submit ATCs to MDOT for review prior to the designated ATC submittal deadline. The number of ATCs has been limited in the ITP based on the size of the project and length of the advertising period. Prior to the proposal due date, MDOT will review each ATC and will respond to the proposer with one of the following determinations:

- The ATC is approved.
- The ATC is not approved.
- The ATC is not approved in its present form, but may be approved upon satisfaction, in MDOT's sole judgment, of certain identified conditions that shall be met or certain clarifications or modifications that shall be made.
- The submittal does not qualify as an ATC, but may be included in the proposal (i.e., the concept complies with the baseline RFP requirements).
- The submittal does not qualify as an ATC and may not be included in the proposal.
- The ATC identifies an error in the proposal and Addenda will be issued to correct the error. The PM should talk with the Design-Builder if this response is applicable in order to explain why an addendum is needed.

MDOT may conduct one-on-one meetings, typically limited to two meetings, with proposers to discuss ATCs. The proposer may incorporate one or more MDOT-approved or conditionally approved ATCs in its proposal and the proposal price must reflect any incorporated ATCs. The PM may request supplemental information from a Design-Builder at any time. Depending on the amount of supplemental information requested, the PM may require the Design-Builder to revise the ATC. Revised ATCs should be identified with a letter after the number (for example, ATC 1a).

Technical ATCs are typically reviewed by technical staff involved in the RFP preparation or other technical specialists as needed. All reviewers must complete non-disclosure and COI forms prior to reviewing any ATCs. The review of ATCs needs to be kept to a small group of key individuals for confidentiality reasons. The PM will only distribute ATCs to these key individuals.

Overview of ATC Process Steps

1. The Design-Builder submits their ATC in accordance with the “Instruction to Proposers” (ITP) of the RFP. The ITP includes what is to be sent to the PM and the required deadlines.
2. The MDOT PM receives the ATC and selects a team of MDOT and GEC staff that will review that individual ATC. The team should include technical personal with expertise relevant to the proposed ATC concept. The technical personal can be chosen from Lansing staff, Region and/or TSC staff. However, the number of reviewers should be kept small (4 to 6 people). It must be stressed each time to all review team members that ATC’s are private and confidential. It is critical to maintain the trust of the Design-Builder when reviewing an ATC. The PM should make every attempt to respond to the ATC within one week
3. The MDOT PM distributes the ATC to the review team. Subject to the Freedom of Information Act, the MDOT review team will use its best efforts to keep all discussions with anyone, including co-workers regarding the ATC’s confidential. The ATC should not be saved on any common server.
4. The MDOT review team should perform an initial review and determine if additional information is needed. If needed, the MDOT PM should request the information from the Design-Builder and distribute it to the MDOT review team. MDOT or the Design-Builder may request private meetings to discuss proposed ATC’s. The MDOT PM will schedule the meeting. MDOT withholds the right to request additional meetings concerning the ATC until a decision is made.

6. ATC decision: The MDOT review team, based on the information provided and discussions with the MDOT review team, will respond to the ATC by letter. Example responses based on previous projects are in ProjectWise at the following link: [Example ATC Letters.pdf](#).
7. The ATC becomes contractual, and no longer confidential, if it is included in the Technical Proposal for the successful Design-Builder. If a stipend is offered and accepted, all ATC's submitted in the Technical proposals, whether the Design-Builder is the successful bidder or not, are the property of MDOT and no longer confidential.

Chapter 19: Meetings During Project Advertising

Mandatory Pre-bid Meetings

Mandatory pre-bid meetings can be used on DB project if there are unique components of the project. Pre-bids should not be used if there are not valid reasons.

One on One Meetings

One on one meetings are held with short-listed teams. These meetings provide MDOT and Design-Builders the opportunity to discuss the project and the Design-Builders approach in a confidential setting. If MDOT has items to discuss with all teams, such as upcoming addendums, the information is typically provided in writing to each team to ensure a consistent message. Design-Builders ask MDOT questions that affect their anticipated design and construction operations, and these discussions are confidential.

If a Design-Builder's questions identify an error in the RFP, an addendum should be issued. The PM must contact the Design-Builder to discuss the addenda so it does not appear to be a breach in the confidentiality of the meetings.

Chapter 20: Submitting Price and Technical Proposals

DB teams will typically submit their price proposal through MDOT's traditional electronic bidding process. The bid is also referred to as a price proposal.

If a paper bid is required, the RFP must include information on when, where and who a price proposal will be submitted to. Paper bidding should be avoided if possible. As-Submitted prices can be posted immediately if the project is bid as a Low-Bid project.

Most electronically submitted bids will include lump sum items. MDOT Contracts will convert most, if not all of the lump sum items into dollar items so accurate payments can be made.

A technical proposal is submitted on each project. Technical proposals are relatively straight forward on low-bid projects, and can be very complex on Best-Value projects. On Best Value projects, the As-Submitted bids should not be posted until the scoring is completed. The members of the scoring team should not have access to the prices in order to ensure the scoring is not biased by the bids. Once the selection team completes the scoring, the selection is sent to CSRT for approval. The PM must consider the time for the selection team to review and score the technical proposals as well as the time it will take for CSRT to review it. The ITP must reflect this time frame so Proposers are aware of when the scores and bid prices are announced.

The timeframes in the ITP should account for the period of time needed to review, score and receive approval of the Technical Proposals. This process can take 3 to 4 weeks (or longer) depending on the size/length and complexity of the Technical Proposal and the CSRT schedule.

Chapter 21: Evaluating Technical Proposals

The intent of the Design-Builders technical proposal is to clearly identify and document they have met the requirements in the ITP. Submitters will provide MDOT with a technical proposal in addition to their price proposal. The PM will coordinate the review and, if needed, scoring of the technical proposal.

Prior to receipt of technical proposals, the project manager prepares a proposal evaluation plan that details the process and criteria to be used during technical proposal evaluations. A sample proposal evaluation checklist for common pass/fail items is included in Appendix 21A. A separate scoring sheet must be developed for Best Value projects.

Selection Team

A Selection Team must be assembled by the PM. On Best Value projects the team should include staff from the Region/TSC, ICU, CSRT, as well as other technical experts that may add value to the review. On Low-Bid project, the selection team typically includes only the key person from the Region/TSC and ICU. The team will review each technical proposal in order to validate its responsive to the requirements set forth in the ITP. A technical proposal is considered non-responsive if it does not contain all the required information and level of detail, or is non-compliant with the design and/or construction criteria defined in the ITP. A technical proposal shall not be deemed to be non-responsive solely on the basis of minor irregularities in the proposal that do not directly affect the ability to fairly evaluate the merits of the proposal. In the event that major errors occur, major irregularities or major omissions in the lowest bid proposal are uncovered, MDOT shall retain the right to disqualify the lowest bid Design-Builder and award the project to the next lowest, responsive and responsible bidder.

Technical Proposal Evaluations

After the proposals have been received, a selection team evaluates the proposals. Procedures for evaluating proposals should be documented. A condensed summary of typical evaluation procedures is as follows:

1. Proposals are received by MDOT.
2. The PM and DPM determines whether each proposer properly incorporated any approved ATCs into its technical proposal.
3. The PM and DPM reviews the technical proposals for responsiveness to the pass/fail criteria in the RFP.
4. On Best Value projects, the PM then provides the selection team with the submitted proposals and the results from steps 1 and 2 above. The PM will also provide the scoring

sheet for each Proposer. A selection meeting is held to score the proposals. It is important for the selection team to adhere to the procedures and processes in the ITP.

It is recommended that the selection team is determined prior to finalizing the ITP so they are familiar with the selection criteria and what is expected from the team.

5. On Best Value projects, the selection team reviews the technical proposals and determines the score for each proposal. The selection team must provide detailed comments to justify scores based on the ITP's criteria and the information provided in the Proposal. The PM should expect to be-brief all teams that submitted a proposal and be able to justify the scores.
6. On Best Value projects, the PM provides the required information to CSRT for final review and approval. Once the scores are approved the PM contacts MDOT's Construction Contracts area to have the final results posted. CSD Selection Analyst will provide detailed scores to each proposer within 5 days of the results being posted.
7. MDOT selects the Design-Builder based on the lowest adjusted score for a best-value selection or the lowest responsive price for a low-bid selection.

Low-Bid Projects

Unless all proposals are rejected or MDOT otherwise elects not to award the contract, the contract will be awarded to the responsive and responsible proposer with the lowest responsive price.

On Low-Bid projects, the Technical Proposal will typically include the following items:

1. Verification of the firms performing the design pre-qualification categories.
2. Verification of the firms performing the construction pre-qualification categories.
3. Approved ATC's included in the bid. Any ATC discrepancies should be clarified with the proposer.
4. The ATC approval letter from the PM
5. MDOT Form 1300 EZ

Best Value Projects

On Best Value projects the evaluation will score the best value elements identified in the ITP. The PM and review team should try to be as qualitative as possible and avoid subjective scoring and scoring criteria.

On Best Value projects, the Technical Proposal will typically include the following items:

1. Verification of the firms performing the design pre-qualification categories.
2. Verification of the firms performing the construction pre-qualification categories.

3. Approved ATC's included in the bid. Any ATC discrepancies should be clarified with the proposer.
4. The ATC approval letter from the PM
5. MDOT Form 1300 EZ
6. A proposal responding to the criteria provided in the ITP.

Once the scoring is completed the PM will provide the following to CSD's Selection Analyst for review at CSRT.

1. MDOT Form 5100E
2. A copy of the Technical Proposal from all teams
3. A copy of the ITP's selection criteria.

Records Retention

The project manager must ensure that records retention for all procurement related items meets the MDOT's Records Retention Schedule.

Appendix 21A: Technical Proposal Checklist (Updated 5/16/2013)

Date: _____
Vendor name: _____
Job Number: _____
Control Section: _____
Region: _____
Project Description: _____
MDOT Project Manager: _____

Does Proposal meet each of the following criteria?

Yes No

- Submittal was delivered by (time) on (date)
- Technical Proposal format in accordance with ITP

Service Prequalification Requirements (Update and complete the following as per the project's ITP)

- Roadway Rehabilitation and Rural Freeways
- Short and Medium Span Bridges
- Geotechnical Engineering Services
- Hydraulics
- Municipal Utilities
- Landscape Architecture
- Right-of-Way Surveys
- Road Design Surveys
- Structure Surveys
- Hydraulic Surveys
- Construction Staking
- Maintaining Traffic Plans and Provision
- Pavement Marking Plans
- Permanent Freeway Traffic Signing Plans
- Permanent Non-Freeway Traffic Signing Plans
- Traffic Signal Design
- Traffic Capacity Analysis and Geometric Studies
- Complex Traffic Signal Operations

Technical Proposal Forms (complete the following as stated in ITP Sec. 4)

- Conflict of Interest Disclosure Statement

ATC Documentation (Fill in the following with each ATC information)

1. _____
2. _____
3. _____
4. _____
5. _____

*IF No to any of the above write the action taken: _____

Chapter 22: Project Award

After a low bid or best value selection has been made, the contract can be awarded. Award of the contract requires receipt and MDOT verification of various documents to support areas such as DBE, bonding, insurance, progress schedule, warranties, reviewing the price proposal for responsiveness and conforming the final contract documents, and possibly FHWA concurrence on the selection.

The award will follow traditional award procedures. The Progress Schedule must be submitted by the Design-Builder to the Construction Engineer prior to award per BOHIM 2014-01. The preconstruction meeting is held after to award per normal procedures.

Unless otherwise stated in the RFP, the award constitutes the Notice to Proceed to the Design-Builder.

The PM can assemble a conformed set of the RFP that includes any changes from addenda, and includes any approved ATC's that were included in the Technical Proposal. The PM should also make a PDF copy of all FUSP's, supplemental specifications, and notice to bidders the day of the letting.

Chapter 23: Design Assistance During Construction

MDOT's GEC provides Design Assistance During Construction (DADC) to review all design submittals from the Design Builder. The PM must develop the scope for this work during the project development to ensure the GEC is under contract prior to award. Temple scopes are located in ProjectWise.

The DADC scope should be tailored to each specific project's needs. The GEC's proposal should include an estimate of the number of submittal that are included so an adjustment to the contract can be justified if needed. An example is provided in Appendix 23A.

The GEC is expected to provide MDOT with a thorough review of all submittals, and make recommendations to the PM on each submittal. The PM and the core team of MDOT staff are also expected to review the submittals. MDOT's technical experts can be requested to review submittals if they are unique or complex.

Appendix 23 A: Estimate of Design Build Submittals

Project Contractor Submittals (this needs to be developed and estimated by PM and GEC)	Review Period (Days)	Book	Section	No. of Reviews
CPM Updates	10	2	2.3.5	2*
Bridge Study Plans	10	2	2.4.5	1
Roadway Base Plans	10	2	2.4.5	1
Roadway Preliminary Plans	10	2	2.4.5	1
Released for Construction Documents	10	2	2.4.5	14
Shop and Working Drawings	10	2	2.4.5	10*
As-Built Documents	10	2	2.4.5	1*
Product Data	10	2	2.4.5.7	2*
Design Quality Manual	10	2	2.4.4.4	1
Review meetings (includes mtg minutes)				21
Contractor invitation to reviews	0	2	2.4.4.3	7
Over-the-Shoulder Reviews	0	2	2.4.5.8	25*
Public Information Plan	10	2	3.8	1
Public information dissemination pieces	10	2	3.8	3*
Utility Tracking Report	10	2	6.4.2	6*
Subsurface Investigation Plan	10	2	8.5.1	1
Foundation Boring Field Logs	10	2	8.5.2	1
Foundation Boring Final Logs	10	2	8.5.3	1
Lab Testing Data	10	2	8.5.4	1
Foundation Analysis and Design Report	10	2	8.5.5	1
Roadway Boring Final Logs	10	2	8.5.6	1
Materials Design Recommendation	10	2	8.5.7	1
Survey Reports	10	2	9.5.2	2
Disposal Site Plan	10	2	10.5.2	1
Design exception requests	10	2	11.3.1.6	1
Coordination with Other Agencies and Disciplines	10	2	12.2.4	12
Architectural Design Guide	10	2	15.5.1	1
Texturing Concrete Form Liner Shops	10	2	Ex 2.15-A	1
Landscaping Plan	10	2	14.5.1	1
Permanent Signing Concept Plan	20	2	16.5.1	1
Permanent Pavement Marking Concept Plan	20	2	16.5.2	1
Video inspection of culverts	10	2	12.4	2
Project Drainage Overview Map	10	2	12.5	2
Culvert Rehabilitation and Replacement Report	10	2	12.5.2	1

Drainage Design Report	10	2	2.5.2	1
Traffic Management Plan	7	2	18.5	2
Maintenance Management Plan	10	2	19.5	1
Pedestrian Facilities Plan	10	2	20.5	1
Environmental Permits	Varies	2	4.2.2	6
Resubmittals (assume 20% of deliverables)	10			26*
Total				166*

Chapter 24: Escrow Proposal Documents

Escrowed proposal documents (EPD), which are documents containing information used by proposers in preparation of their price proposals, are submitted by the proposers to MDOT within a specified time (typically five days) following award. The EPDs are reviewed by the Design-Builder, the PM, DPM, and possibly the Delivery Engineer. If acceptable, the documents are then stored in a secure location until access is necessary. The documents will then be returned to the Design-Builder following final acceptance of the Project.

EPD must be provided in a sealable container, and the Design-Builder keeps the key, while MDOT stores the EPD in a secure locked area. EPD are kept in case of claims that require an explanation of how work was bid, or possibly to negotiate an extra. It is not common for EPD to be reviewed for extra's or claims, and negotiations should take place with the Design-Builder prior to opening the EPD.

EPD are confidential documents from the Design-Builder. Reviewers of the EPD should sign confidentiality agreements, and not discuss any details in the EPD with anyone.

Appendix 24A: Confidentiality Agreement Example

**(INSERT SHORT PROJECT DESCRIPTION) DESIGN-BUILD PROJECT TEAM
CONFIDENTIALITY AND NON-DISCLOSURE AGREEMENT**

I, _____, as a member of the MDOT contract oversight team for the (INSERT SHORT PROJECT DESCRIPTION) Project (“the Project”), hereby agree that, except as otherwise provided by law:

I will maintain the confidentiality of the information in the Escrowed Proposal Documents. I will not make copies of any Escrowed Proposal Document.

I will not divulge any confidential information regarding the Escrow Proposal Documents to any representative of any construction firms, consultants, the media, any member of the public, or any person who is not a member of the MDOT contract oversight team for the Project. Internal confidential information exchange shall be conducted only as necessary to conduct the business of the Project. I will promptly report any attempts to access such information by construction firms, consultants, the media, or any other person or company not involved in the Project to MDOT Project Manager.

By: _____

Date: _____

Title: _____

Appendix 24B: Escrow Proposal Review Form

Bring Proposal price, folders, sticky notes, notepads, calculators, pens.

Date Verified	General Requirements
	<p>EPD and container received by MDOT within five calendar days of award Container is clearly marked “Bid Documentation”; also has Entered on the face is Contractor’s name, date of submittal and MDOT Job number Is documentation complete? Verify all items are included. Other general items:</p>

If item cannot be verified, document how it will be resolved: _____

Date Verified	MDOT Review of EPD for accuracy
	EPD Information on total cost of items/costs matches the Proposal Price
	The information is adequate to enable a complete understanding and interpretation of how Contractor arrived at the Proposal Price
	Work is separated into sub items to provide a complete and detailed estimate of all costs.
	Sub item: Information on direct labor, repair labor, equipment, expendable materials, permanent Materials, overhead , profit
	Sub item: _____ Information on direct labor, repair labor, equipment, expendable materials, permanent Materials, overhead , profit
	Sub item: _____ Information on direct labor, repair labor, equipment, expendable materials, permanent Materials, overhead , profit
	Sub item: _____

	Information on direct labor, repair labor, equipment, expendable materials, permanent Materials, overhead , profit
	Sub item: _____ Information on direct labor, repair labor, equipment, expendable materials, permanent Materials, overhead , profit
	Sub item: _____ Information on direct labor, repair labor, equipment, expendable materials, permanent Materials, overhead , profit
	Crews, equipment, quantities and rates of production; Plant and equipment and indirect costs
	Contractor's allocation of plant and equipment, indirect costs, contingencies, mark-up and other items to each direct cost item shall be clearly identified.
	Costs of the Performance and Lien Bond and the insurance premiums for each coverage
	Include all assumptions, quantity takeoffs, rates of production, Contractor internal equipment rental rates and progress calculations
	Quotes from Subcontractors (including Suppliers),
	Memoranda, narratives and all other information used by Contractor to arrive at the Proposal Price
	Contingency/Profit not included in sub items

Date Verified	Actions after completion of review
	Immediately placed the EPD in the container in the presence of Contractor's representative, and sealed the container
	MDOT to place in safe/vault
	Other action needed (more documentation to be provided)

Chapter 25: Post Award Contract Administration

The RFP has been developed to ensure compliance with State and Federal requirements, and contains the requirements the design-builder must follow. MDOT must ensure that the contract is administered per the RFP requirements. The PM can deviate from the RFP requirements; however, deviations should be documented by minutes, letters to the file, or Contract Modifications/Change Orders.

Preconstruction Meeting

A preconstruction meeting is held according to traditional procedures. Additional topics are covered at this meeting related to the design work, and any unique items within the RFP. Example agendas from past preconstruction meetings can be found in ProjectWise at the following link: [DB Precon Meeting](#).

Payments to the Design-Builder

It is critical to make timely and correct payments on DB contracts. The RFP contains the requirements that must be followed to make payments during construction. MDOT has committed to the FHWA that the basis of payment will be reviewed by the project office, ICU staff, and the FHWA prior to acceptance of the basis of payment. MDOT ICU staff are also required to periodically review the method and basis for payment to the Design-Builder, and provide a report to the FHWA on the findings from these reviews.

Construction Engineering

Construction Engineering (CE) is required on DB projects at a similar level to traditional DBB projects. Work must be inspected, material certifications received and normal field testing conducted by CE&I staff.

The live Field Manager file will typically have a few pay items. Contract Modifications are processed in the live Field Manager file. Field builder is used to enter pay items provided by the design builder and to enter IDR's. Initially entering pay items in Field Builder can be time consuming and should be accounted from when staffing a DB project. See BOHIM 10-07

CE staff should avoid directing a contractor's activities when field changes to accepted plans occur. The DB should verify changes with the designer or record, the CE staff should document any changes on IDRs or Non-Conforming Reports. If a contractor does not stop working when changes occur they are working at risk.

Design Submittals

After award, the Design-Builder will provide MDOT with various design submittals. The submittals will most likely be in small packages instead of one complete design. For example, the superstructure of a bridge may be in design while the substructure is being constructed. The format of the submittals may be different than typical MDOT submittals. This is acceptable provided the design contains the information required in the RFP.

Chapter 26: Training

Project Offices will receive training on DB projects during the RFP's development. The PM will coordinate with ICU staff to develop the training program. The training is intended to provide the managing TSC/Region information on what to expect throughout the different phases of the project. The PM and DPM will determine what staff should attend. At minimum, the PM, DPM, ICU Manager, Construction Engineer, Consultant Construction Engineer (if applicable), lead construction technician, MDOT staff from past DB projects, GEC staff, and FHWA staff should attend. The topics will cover the development of the RFP, award process, the design submittal process, construction engineering requirements, and payment process, as well as any other topic the local office desires to discuss.

Appendix D: Guidelines for CMGC Contracts



Guidelines for the Procurement
Of
Construction Manager/General Contractor
Contracts

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Chapter 1: Overview of Construction Manager/General Contractor

The steps outlined in this guide are intended to assist staff from the Michigan Department of Transportation (MDOT) proceed with Construction Manager General Contractor (CMGC) projects based on the limited number of CMGC projects procured to date. As additional CMGC projects are awarded, this guide will be updated to reflect changes in MDOT's processes as well as lessons learned and best practices from MDOT's and other owner's CMGC experiences.

Comments and suggestions on improvements to this document are welcome and can be emailed to the Innovative Contracting Unit Manager or to MDOT-DesignICC@Michigan.gov.

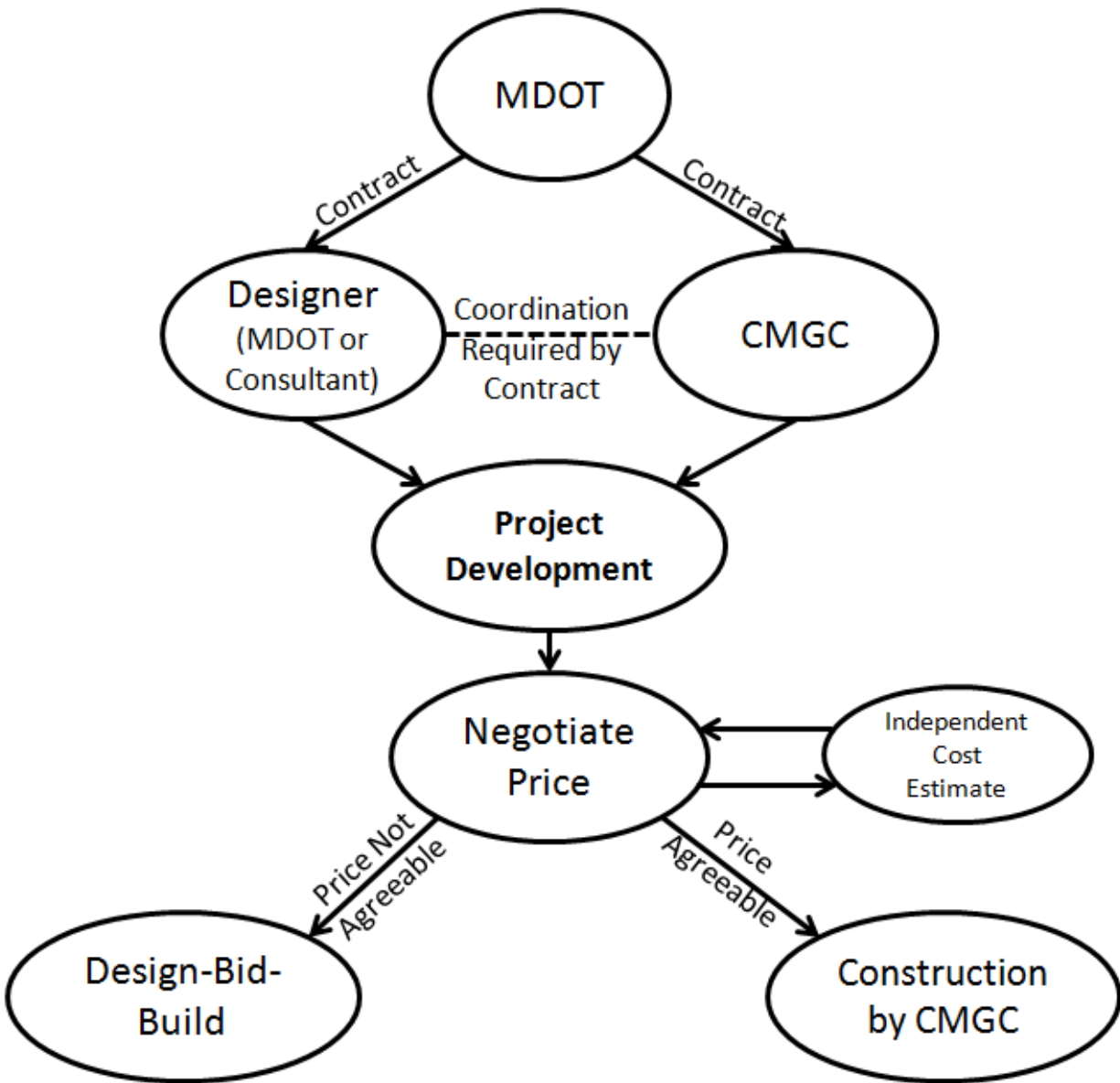
General Overview of CMGC Projects

In CMGC projects, MDOT, as the owner, directs and coordinates the design, whether it is in-house design or a design consultant under contract with MDOT, and also has a direct contract with a construction contractor during the preconstruction and construction phase of the project. The construction company is the construction manager/general contractor (CMGC) for the project. MDOT and/or the design consultant is responsible for developing the design and reviewing the feasibility of any suggestions made as a result of reviews and meetings during the CMGC project. Contractor input during the preconstruction phase can include the use of specific materials or equipment, or means and methods that can be detailed in the plans and specifications. The designers and CMGC are contractually required to work together during the design phase in order to create a higher quality final product at a fair price.

The CMGC method is based on team building and cooperation between MDOT, the design consultant (if applicable), and the CMGC from the beginning of the project's conceptual design through the final construction and operation or occupancy of the facility. The team approach provides for input from all of the team members throughout the design and the construction phases. The ability of the CMGC to input constructability reviews, construction phasing, material availability, and cost estimating throughout the design process reduces the probability of change orders, project construction delays, and increased project costs due to the contractor's identification of these elements in the design phase instead of the construction phase.

The selection of the CMGC is based on qualifications similar to the process used for design consultants. The Department advertises a Request for Qualifications (RFQ) when the scope and schedule are known, typically prior to the design being $\pm 20\%$ complete. Once selected, the CMGC is contracted for the design phase to conduct document review, constructability reviews, cost estimating, scheduling, etc. When the project plans and specifications are 70% - 100% complete and the desired construction schedule is known, MDOT and the CMGC negotiate a final price for the construction phase of the project.

The interaction of the CMGC with the Department and design consultant during the project's design enables the CMGC to input cost and construction details that should reduce the price and enhance the quality of the project while attaining the project's goals.



Chapter 2: Project Selection, Approval and Project Management

Projects using non-traditional methods such as CMGC require additional approvals before they can be developed, let and constructed. CMGC projects must be approved by MDOT's Innovative Contracting Committee (ICC), Engineering Operations Committee (EOC), and the Director. A project submission form, found at the following ProjectWise link [ICC Submission Forms](#)), must be submitted to the Innovative Contracting Unit Manager to start the approval process.

Identification of Innovative Contracting Projects

In September of each year, the ICC will solicit a call for innovative construction projects. Responses to this call for projects will be due in October in order for recommendations to be sent to the EOC in November or December. Candidate projects should be submitted to the ICC 3 to 5 years prior to the planned letting date. However, projects requiring urgent attention may be submitted to the ICC for consideration less than 3 years before letting, and they will be reviewed on a case by case basis.

During the preliminary scoping of a project, the information provided in the Innovative Construction Contracting guide should be used by Region and TSC staff to determine if non-traditional methods could be advantageous. Staff from the Innovative Contracting Unit (ICU) can also be contacted and used as a resource. If non-traditional methods could benefit a project, project information should be submitted to the ICC for review.

The ICC will review information provided by the Regions and may request additional information or ask the Region/TSC staff to discuss the project at an ICC meeting before making a final recommendation. If the ICC concurs with the Region's request, the ICC Chair will notify the Region/TSC and submit the project to the EOC for consideration. If the ICC does not concur with the project request, the Chair will notify the Region/TSC. The Region/TSC will have the opportunity to further discuss the request at a subsequent ICC meeting.

Engineering Operations Committee Review

The EOC must review all projects recommended for approval by the ICC. The ICC Chair will work with the Region/TSC to develop the required EOC agenda documents, and the Engineer of Design, representing the ICC, will present the project recommendation to the EOC. Depending on the project complexity, the Region/TSC may be asked to attend the EOC meeting. If the EOC approves the use of CMGC, the EOC will provide the project information to the Director's Leadership team for final approval. The ICC Chair will notify the Regions/TSC of the final decision.

Project Management

Staff from the Region/TSC or the ICU will be the Project Managers (PM). A Deputy Project Manager (DPM) from the ICU or Region/TSC should also be assigned to the project to work with the PM. The PM and DPM will have significant interaction during the life of the project and will work together to divide up work and responsibilities. Additional staff resources from the Region, Bureau of Field Services (BFS), and other specialty areas within MDOT will interact with the management team as they would on traditional projects. As the project progresses the management team may change to reflect the needs of the project. The initial PM and DPM should remain involved during all phases of a project, with additional responsibilities being placed on other staff as the project advances. For example, the TSC construction staff will have a more significant role as the projects gets close to, and moves into construction phases.

Depending on factors such as workload and staffing levels, the role of PM may be filled by Region or TSC staff with ICU staff taking the DPM role. This decision will be made on a case by case basis.

Region and TSC staff, as well as other specialty areas within MDOT will still have a significant role in each project, and their level of involvement will depend on the type of innovative procurement being used. It is critical that the PM and DPM establish their roles and the roles of other MDOT staff at the beginning of each project, and continue to coordinate with each other during the project's life.

ProjectWise

Once a project is approved to move forward as a CMGC project, the PM must email MDOT-ProjectWise@michigan.gov so the project can be identified in ProjectWise as a CMGC project.

Chapter 3: Preliminary Project Information and Risk Assessment Meeting

Once the CMGC project is approved to move forward as a non-traditional project, the PM and the DPM should meet with key stakeholders, including staff that will perform construction engineering and inspection, to discuss the project, its goals, and identify the initial major risks. In addition to project specific risks, common risks on most projects include right of way concerns, environmental items, geotechnical items, utility conflicts, third party items, and railroads. Other project risks will be present on each project.

Once project risks are identified they are categorized by their potential impact and the probability of their occurrence. Initial mitigation plans are identified for further action based on the outcome of the risk assessment. Depending on the risk item, MDOT may choose to own the contractual responsibility for the risk or pass it on to the contractor and have it included in the Guaranteed Maximum Price portion of the construction services cost proposal. The risks are also used to identify criteria used to short-list or select contractors. The criteria used to select the CMGC in the Request for Qualifications (RFQ) should reflect unique circumstances, goals and risks of the project.

The intent of the preliminary meeting is to identify the key elements that need to be accomplished during the development phase including staff roles and responsibilities, and timelines to complete the project. Innovative Contracting methods may not have defined process steps, and additional time should be considered to ensure a project is delivered in the desired time frame.

Chapter 4: Selection of the Designer on CMGC Projects

The Designer of Record (DOR) on CMGC projects can be MDOT or consultant staff. Traditional selection procedures for consultants are used; however, the DOR (MDOT or a consultant) must consider the iterative design process that may be involved in a CMGC project when determining the schedule for the project's development. A consultant's scope of work must reflect that they will be required to collaborate and coordinate with a CMGC team during the design, and an iterative design process should be expected. A consultant's scope of work must reflect additional tasks and time to address the need for additional meetings and the review of design alternatives required as part of a CMGC project. The scope must also include the option of design assistance during the construction phase of the project. The design assistance phase may also require additional time and resources as compared to a traditional project due to the continued collaboration with the contractor during construction.

During the development phase, the CMGC is expected to provide reviews on items including, but not limited to, constructability, staging, pricing, quantity checks, and alternate materials. The DOR is expected to review suggestions by the CMGC and MDOT and determine if they can be incorporated into the final design. This will most likely require a meeting with MDOT staff to determine what is ultimately incorporated into the final plans. The DOR is responsible for insuring comments and suggestions from MDOT or the CMGC team meet applicable design standards if they are to be incorporated into the final design.

To ensure the timeliness of the design phase, a clear schedule outlining expectations and key milestone dates should be discussed and agreed to by all parties.

Design Assistance During Construction

The PM should expect active involvement from the designer during construction. If a consultant is used the PM should include Design Assistance During Construction (DADC) in the original scope of services and have the consultant under contract for this work at the appropriate time. The scope for the DADC must include requirements for rapid review on issues that arise during construction. DADC on CMGC projects are typically "as-needed" service contracts.

Chapter 5: Federal Highway Administration Involvement

The FHWA should be actively engaged in CMGC projects. The list of activities below defines various activities and the FHWA's typical involvement in each activity. The FHWA's involvement may vary from project to project depending if it is a Project of Divisional Interest (PoDI). MPINS/JobNET should indicate if a project is a PoDI. If a CMGC project was recently added, MPINS/JobNET may not have this information and additional verification with the FHWA should occur. The PM should contact the FHWA Area Engineer at the beginning of the project to review expectations and levels of FHWA involvement.

<u>Activity</u>	<u>FHWA Involvement</u>
1. Project Selection	None
2. Design Oversight	Involve FHWA in Design activities (Only if PoDI)
3. Drafting RFQ	Review Draft (Only if PoDI)
4. Final RFQ	Concurrence prior to advertising (Only if PoDI)
5. RFQ Addenda	Concurrence prior to posting revisions (Only if PoDI)
6. Selection/Scoring of SOQ's	None
7. Scope Verification Meeting	Invited to attend the meeting (Only if PoDI)
8. Preliminary Cost Estimates	Provided the available information for comment (Only if PoDI)
9. Design Meetings	Invited to attend the meetings (Only if PoDI)
10. Price Negotiations Meetings	Invited to attend the meetings (Only if PoDI)
11. Final Price Negotiations	Provided all estimating information (MDOT, ICE, CMGC) and approval of final negotiated price (Only if PoDI)
12. Schedule of Values	Approval of Schedule (Only if PoDI)
13. Final CSCP and C.A Form	Approve final CSCP and C.A. Form (Only if PoDI)
14. Design-Bid-Build PSE (If required)	Approval final Plans, Specifications and Estimate (PSE) (Only if PoDI)
15. Construction Oversight	Involve FHWA in construction activities per normal PoDI activities. (only if PoDI)

The FHWA no longer requires formal reporting on CMGC projects, project staff should track best practices and areas for improvement to improve this guide and future CMGC projects.

Chapter 6: Request for Qualifications Process

A Request for Qualifications (RFQ) is used to select the contractor on CMGC projects. Ideally, the CMGC is brought into the design phase before plans are $\pm 20\%$ complete. The RFQ contains project information including the scope for preconstruction and construction activities, what information is available (preliminary plans, scoping documents, etc.), selection criteria, and information on what is required to submit a Statement of Qualifications (SOQ). Expectations of the CMGC during all phases should be included in the RFQ, and potentially be reflected in the scoring criteria. For example, if the CMGC is expected to attend public outreach meetings during the design or have experience with LEED certification, the scoring criteria could include the teams experience in this activity.

In addition to the scoring criteria for the SOQ's, the RFQ can contain a requirement for interviewing teams. A template RFQ can be found in ProjectWise at the following link :[Template Documents](#). Typically, a team's understanding of the project and the qualifications of the team's staff are scored. Other scoring criteria will vary from project to project depending on the risks of the project and the qualifications and experience desired in a team. Selection criteria are numerically scored and typically amount to a total of 100 points. Selection criteria and associated point values can be changed depending on the needs of the project. The Central Selection Review Team (CSRT) must review and approve the selection criteria prior to posting the RFQ only if significant changes from the template document are proposed by the PM.

The RFQ must clearly indicate if there will be an interview as part of the selection process, and who will be invited to interview. The scoring criteria for the interviews must be defined in the RFQ. The PM should establish the interview panel prior to posting and develop a list of potential interview questions prior to reviewing SOQs. Additional questions can be developed after the scoring of the SOQs. Interview questions can include general questions that are asked of all teams interviewed as well as questions specific to an individual SOQ.

A CSRT review of the RFQ is only required when the template RFQ is significantly modified. If a CSRT review is required, the PM must send the RFQ to MDOT-CSD-Selections@michigan.gov prior to advertising the RFQ. CSRT will respond with comments or approval to advertise the RFQ.

The preconstruction phase typically does not have a Disadvantaged Business Enterprise (DBE) goal. The PM should contact the ICU Manager if they believe the preconstruction phase should include a DBE goal. The construction phase of the project will typically have a DBE goal. See Chapter 10 for information for setting DBE goals on CMGC projects.

If the work does not appear to fit into MDOT's existing pre-qualification categories the PM should contact MDOT's Construction Contract Section (CCS) Manager area to discuss the issue. The RFQ should include information on how to become pre-qualified in Michigan. Information and forms on how to become construction prequalified are located at: http://www.michigan.gov/mdot/0,4616,7-151-9625_21539_21545---,00.html.

The construction industry should be notified of pending RFQ's so they can contact their members. The industry can include Michigan's contractors, such as MITA, or other Michigan based or national groups depending on the needs of the project. Once the RFQ is posted, the industry should be contacted again so they can notify their members that the RFQ is posted. Notifications should be via email with a PDF file attached that conveys information on the project. A notification should also be posted on the MDOT bid letting by contacting the MDOT CCS Manager.

Published RFQ's can also be found at www.michigan.gov/ic.

Project Website

The PM must establish a project website on the Innovative Contracting website (www.michigan.gov/ic) so RFQ's, questions and answers to the RFQ, and project information can be posted. The project website should be updated to provide relevant information as it becomes available.

To establish the project website the PM must contact CSD's Sub-Contract Analyst. The PM will need to provide specific information on what the title of the project website should be. (See www.michigan.gov/ic for examples). Setting up the website can take 2-3 days to complete. CSD's Sub-Contract Analyst will post items to the website such as project information and RFQ's. The PM should provide the analyst clear instructions for the title of the items being posted. Items typically take 1 to 2 days to get posted.

Advertising the RFQ

The checklist in Exhibit 6B outlines the steps required to advertise the RFQ. The PM must develop a cost estimate for the preconstruction services. The PM's estimate of cost should include the assumptions made for the estimate including the number of hours estimated for the CMGC's staff for specific items of work, overhead and hourly rates and fixed fee. The allowable overhead rate on CMGC projects is limited to the CMGC's audited overhead rate. If an audited overhead rate is not available the CMGC must use a maximum of 35% which includes their overhead and reasonable profit as allowed by Section 109.05(D) of the 2012 Standard Specifications for Construction. The 35% overhead rate is multiplied by the CMGC's hourly rates plus fringe benefits.

The RFQ should be advertised for at least 4 weeks. A longer period should be considered when time allows, and for more complex projects or when specialty contractors are anticipated to be on the CMGC team. The RFQ can include requirements for mandatory or non-mandatory pre-submittal meetings. Preliminary discussions with MITA may help in deciding if these meetings should be held.

The RFQ must include the percentage of work that the CMGC will be required to self-perform. MDOT's standard is 40% and the FHWA minimum is 30%. Several of MDOT's CMGC projects have allowed the self-performance requirement to be between 30% and 40%.

The RFQ's do not preclude contractors from teaming with design consultants. The CMGC's design consultants are not expected to be the engineer of record on the design, and are typically used in an advisory capacity by the CMGC.

RFQ Addenda

Addenda and questions and answers to the RFQ are posted on the project's website. The addenda should highlight sections of the RFQ that have been modified. Addenda are placed on the project website by contacting CSD's Sub-Contract Analyst. If the project is a PoDI, the FHWA must concur on any addenda prior to posting unless otherwise waived by the FHWA on a project by project basis.

Statements of Qualifications (SOQ)

The CMGC's will provide a SOQ in response to the RFQ. SOQ's will be received per the instructions in the RFQ. The PM will organize a selection meeting that includes the PM, DPM, CSRT member, and others as determined by the PM. The PM should verify that all of the information required in the RFQ is included and coordinate/clarify if items are missing prior to distribution to the scoring team. The PM will develop the scoring sheets used during the selection. If interviews are used the PM will establish the interviews and interview scoring meeting.

Once the selection team completes the selection process and a CMGC is selected the PM will submit the following information to MDOT-CSD-Selections@Michigan.gov for final approval at CSRT:

- 1) Signed Scoring Sheets
- 2) Signed Form 5100E
- 3) The Final RFQ

Once CSRT has approved the selection, the contractors can be notified of the selection results by the PM. The PM should notify each contractor that submitted an SOQ. CSD will email the Submitters with the selection team's detailed comments within 5 days after the CSRT meeting.

CSD will also post the general results for the individual project's results on the MDOT Innovative Contracting website. Prior to posting the results, the PM should coordinate with CSD's Selection Analyst to ensure the correct scoring criteria and points are being posted since the criteria may be non-standard.

Once the CMGC is selected a kick-off meeting should be held with the CMGC to verify the scope and answer any questions the CMGC may have on the project. After the kick-off meeting is held the CMGC is to provide a preconstruction cost proposal.

Preconstruction Costs

A checklist for the processing of preconstruction cost proposals is in Exhibit 6A.

The preconstruction cost proposal should include the CMGC's estimate of hours and any assumptions made to develop the estimate for the Construction Manager portion of the CMGC as it relates to the development of the design. The CMGC's preconstruction cost proposal must include hourly rates and fringe benefits for the CMGC's staff and subcontractors, overhead rates, fixed fee (only if audited overhead rates are available), MDOT forms 5101, 5101A-1 (if applicable), and 5108. The PM has the right to negotiate the estimate of hours and level of effort required for the CMGC's preconstruction work.

The PM provides the accepted preconstruction cost proposal to CSD along with form 5105. If an agreement on the preconstruction cost proposal cannot be reached, the PM will notify the CMGC and CSD and begin negotiations with the next highest scoring CMGC team.

The preconstruction cost proposal will be reviewed by MDOT's Office of Commission Audit. The CMGC and all subcontractors will be required to provide supporting documents and methodology used to establish their price. The documentation required will vary depending on payment type (lump sum, actual cost + fixed fee, etc.). The preconstruction cost will include an overhead rate. Audited overhead rates can be used, or a general rate of 35% can be used based on the industry standard established by subsection 109.05 of the 2012 Standard Specifications for Construction. Obtaining audited overhead rates, and having the audited rates reviewed and approved by the Office of Commission Audit, can take a significant amount of time which may delay the award of the contract.

Once the preconstruction cost proposal is approved, CSD will create a contract that will also be reviewed by AG and OCA. Once the contract is approved, the CSD will provide it to the CMGC for their signature. If the preconstruction contract exceeds \$499,000 the contract will need to be approved at the State Transportation Commission (STC) and State Administrative Board (SAB)

meetings. The PM should consider the additional time for these approvals if the estimate contract amount is close to \$500,000.

Exhibit 6A: CMGC Pre-Construction Cost Proposal Checklist

(Updated July 29, 2014)

Control Section: _____
Job Number: _____
Project Description: _____
Project Manager: _____, Office Location _____
Deputy Project Manager: _____, Office Location _____
RFQ Review Team: (Scoring Members of the Team and CSRT Member)

Task Complete & Date Completed

- _____ Review and Score SOQs
- _____ Submit recommendations to CSRT for Approval
- a. Provide CSD's Contract Selection Analyst the following:
 - i. Selection committee's scores and written comments
 - ii. RFQ and any addenda
 - iii. Form 5100E Completed by PM
 - iv. SOQ from the Submitters (Can be by email or PW link)
- _____ Receive CSRT Approval
- a. Notify Proposers with the Selection results
 - i. PM should email each proposer and inform them if they were or were not selected. The email should indicate that they will receive their detailed score and comments within 5 days, and the general results will be posted on the innovative contracting website
 - ii The PM will work with CSD's Selection Analyst and CSD's Sub-Contract Analyst to have the project specific results posted on the innovative contracting website
 - iii. CSD's Selection Analyst emails each team their SOQ scores and comments
- _____ Hold Scope Verification Meeting with selected CMGC
- a. Establish expectations to base the price proposal on (number of meetings, cost estimates, plan reviews, etc.), and discuss the required format of the price proposal submission
 - b. Establish initial communication protocols
 - c. Provide the CMGC the forms they will need to submit the preconstruction price proposal
 - d. Discuss available information and restrictions based on items such as NEPA, MDOT needs and stakeholder involvement
- _____ Receive Price Proposal from CMGC (**without an Audited Overhead Rate**)
- a. The Price Proposal should include the following:

- i. Names of the staff providing services
 - ii. Hourly wages of the staff providing services
 - iii. Fringe benefit costs (IE vacation leave, sick leave, holiday leave, FICA, healthcare costs, pension costs, etc.) of the staff providing services
 - iv. Overhead rate of 35%, based on section 109.05 of the Standard Specifications, is applied to the hourly wages and fringe benefit costs
 - v. Subcontractor costs which include items i-iv for the subcontractor
 - vi. Travel costs
 - vii. Certification from the CMGC's Chief Financial Officer certifying that the information provided is correct
- b. The PM can negotiate the cost with the CMGC. If a price cannot be agreed on the PM will notify the CMGC that MDOT will not select that company and will begin negotiations with the second highest scoring proposer

_____ Receive Price Proposal from CMGC (**with an Audited Overhead Rate**)

- a. The Price Proposal should include the following:
 - i. Names of the staff providing services
 - ii. Hourly wages of the staff providing services
 - iii. Overhead rate based on an audit of the company by an independent CPA. The following link (see page 4 of 90) has information on what is needed to establish an audited overhead rate (http://www.michigan.gov/documents/mdot/MDOT_Consultant_Prequalification_Application_Instructions_194419_7.pdf)
 - iv. Subcontractor costs which include items i-iv for the subcontractor
 - v. Travel costs
- b. The PM can negotiate the cost with the CMGC. If a price cannot be agreed on the PM will notify the CMGC that MDOT will not select that company and will begin negotiations with the second highest scoring proposer.

_____ PM Submits the final negotiated Price Proposal to CSD

- a. The following forms are to be submitted with the Price Proposal
 - i. RFQ with any Addenda
 - ii. 5102 (Documentation of changes to the MDOT Scope of Services), completed by PM and signed by PM and CMGC
 - iii. 5105 (PM Contract Request), completed and signed by PM
 - iv. 5101 (Priced Proposal Cover Sheet), completed and signed by CMGC
 - v. 5101A-1 (Summary of Total Project Costs by Job Number), completed by CMGC
 - vi. 5108 (Certification of Overhead Rate), completed by CMGC, if applicable
 - vii. PM Estimate of Hours and Cost for preconstruction phase

Exhibit 6B: RFQ Advertisement Checklist

(Updated July 29, 2014)

Control Section: _____ Job Number: _____
Project Description: _____
Project Manager: _____, Office Location _____
Co-Project Manager: _____, Office Location _____
RFQ Review Team: (Scoring Members of the Team and CSRT Member)

Task Complete & Date Completed

- _____ PM and Co-PM establish selection team (Typ. 4-6 people)
(PM, Co-PM, Member, Construction & Design Engineers, Management)
- _____ Project Manager (PM) and Co-Project Manager (Co-PM) Establish Review Team
(Selection Team plus other stakeholders identified by PM and Co-PM)
- _____ Draft RFQ
- _____ Notify Industry of Project (Scope, Schedule, Location, Unique items, etc.)
- _____ Send Draft to Review Team and FHWA Area Engineer for review
 - Include CSRT Committee review if the standard RFQ template format is deviated
 - Request comments by a specific date
- _____ PM and Co-PM review comments received and rectifies any comments that will not be incorporated into the final RFQ
- _____ Revise RFQ and send final draft to the Review Team for final review
 - Request comments by a specific date
- _____ Receive concurrence from the FHWA to advertise the RFQ
- _____ Contact CSD's Sub-Contract Analyst to develop the website
 - Provide Specific title for the project and include type of project in parenthesis (IE: Zilwaukee Bridge Bearing Replacement Project (CMGC))
- _____ Provide MDOT Forms 5100A, 5100B, final RFQ (pdf format), and cost estimate to ICU Manager for Final Review
- _____ ICU Manager emails PM and Co-PM approval to advertise
- _____ ICU Project Manager emails MDOT-CSD-Selections and cc's the CSD's Selection Analyst, CSD's Sub-Contract Analyst, and CSD's Non-Standard Agreement Writer (Lynne Chesbro) the following:
 - MDOT Form 5100A
 - Cost Estimate
 - RFQ with proper title
 - Instructions on where the file should be located and the desired name for the link
 - Email from ICU Manager approving the posting
- _____ CSD posts the RFQ on the Innovative Contracting website
- _____ PM notifies MITA and ACEC that an SOQ is posted, and contacts CCS Manager to have an announcement placed on the MDOT Bid Letting Site
- _____ Place final RFQ (PDF and Word File) and other supporting docs in ProjectWise

Comments:

Chapter 7: Preconstruction Phase Work

The CMGC's work in the preconstruction phase should be clearly identified in the RFQ and at the scope verification meeting held with the CMGC. Typically the CMGC is expected to provide cost estimating, constructability, maintaining traffic, schedule and staging reviews. They can also assist in utility relocation planning, development of permit applications, public outreach, procuring long lead time items, engage subcontractors to review the specialty and/or unique work on the project, and other services agreed to in the preconstruction contract. The CMGC should also verify they can meet the self-performance requirements identified in the RFQ.

The CMGC's and MDOT's staff that will be active during construction should be actively involved in the preconstruction phase work. They should review the plans and specifications as they are developed, and discuss how payment will be made prior to awarding the construction phase of the project.

Communication is a key component to the preconstruction phase. The intent of the CMGC process to have active engagement between the designers and contractors, and steps need to be taken to ensure the goals of the project are being met through this interaction. The PM/DPM and the CMGC should develop a communication plan at the beginning of this phase to ensure goals and expectations are known by all parties, and that people are moving through the correct channels, and the right people are getting project information. The communications plan should be an item required in the RFQ. Review meetings should be scheduled to discuss the project and any proposed changes. The PM and CMGC should discuss any potential concepts prior to the meeting to help ensure the right people attend to discuss the concepts. Depending on the scope of the project, key subcontractors should be part of the preconstruction phase and included as an active participant during the project's design.

Most projects will have the typical insurance requirements per the Standard Specifications for Construction. However, there may be additional insurance requirements for the project that must be discussed during the preconstruction phase. The CMGC should be informed early in the process what they will need to provide insurance for and the insurance limits. Examples would be insurance for railroads and builder risk.

Permits

Any required permits should be identified and obtained during the preconstruction phase. If Permits cannot be obtained they must be identified in the C.A. Form and a plan must be in place to obtain the permits without affecting the construction schedule.

Schedule Considerations

The time required for interim and final estimates must be considered in the preconstruction schedule. Previous CMGC's have indicated that preliminary estimates take approximately 2-3 weeks to complete and the final estimate takes 2-4 weeks to develop, plus an additional 2-4 weeks for negotiations after the final estimate is received. However, price negotiations have taken up to 6 weeks to complete. The preconstruction schedule should also consider the time that would be required if negotiations do not result in awarding the project to the CMGC and it has to move forward as a traditional design-bid-build (DBB) project. The construction CPM should be developed by the CMGC, with MDOT's input, during the preconstruction phase. The contract progress schedule should reflect the CPM.

Cost Sharing Agreements must be identified during the preconstruction phase and executed prior to the award of the contract.

Advance Procurement of Materials

If it is necessary to procure materials prior to awarding the construction phase of the project, the PM and CMGC should work to establish the details as early as possible. A separate Job Number should be established and used for this component of the project. The materials must be able to be used if the final construction is performed by the CMGC or through a DBB process. If materials are acquired in advance, MDOT must retain ownership of the materials so they can be used by any contractor if the CMGC is not awarded the construction work. The requirements in the Road Design Manual (Section 11.10) for advance procurement of materials must be followed. Materials procured in advance of the project are not treated like stockpiled material. The price for the advance materials includes the fabrication and shipping of the materials to a secure location agreed upon by MDOT, and the materials are paid in full upon delivery.

Shop Drawings

It may be beneficial to have shop drawing submittals and reviews as part of the preconstruction phase work. If this is desired, the work should be authorized with the preconstruction phase work.

Cost Sharing Agreements

Cost sharing agreements are needed for items including, but not limited to, Act 51 funding, and inclusion of items requested by a local agency such as sidewalk or landscaping that are not part of a project's scope. If a project will require an agreement with an entity like a local agency or railroad, the entity should be coordinated with early in the development phase so they understand the CMGC process and how costs can be established, and the timeframes involved.

Cost sharing agreements are required to be executed prior to the award of a contract, and the time needed to have the agreements developed and executed must be included in the project schedule.

Appendix 7A: Initial Schedule

The following dates are for common activities encountered during a CMGC project. This list does not include all activities that must be considered, and can change on each project.

Activity: DATE

1. Design Phase Funding: _____
2. Determine ROW Needs: _____
3. Est. Date to Clear ROW: _____
4. Determine Environmental Needs: _____
5. Est. Date to Clear Environmental: _____
6. Expected Dates for any Tree Cutting (NLE Bat) : _____
7. Establish Project Website: _____
8. Post Project Information Page: _____
9. Complete Draft RFQ: _____
10. RFQ Advertising Date: _____
11. SOQ Due Date: _____
12. CSRT Review of RFQ: _____
13. Time Needed for Design: _____ to _____
14. Date for Advanced Procurement of Materials (If applicable): _____
15. Date for Preliminary Cost Estimate: _____
16. Time Needed for Final Price Negotiations: _____ to _____
NOTE: Final price negotiations have taken up to two months
17. Time Needed for Construction: _____ to _____
18. Letting date if Price Negotiations are not Successful : _____
19. SAB Date: _____
20. STC Date: _____

Chapter 8: Environmental Process

The process for receiving environmental clearance on CMGC projects follows a process similar to the traditional methods. The PM should discuss the project's needs and associated timelines with Environmental staff to ensure they have adequate information to clear the project. They may have additional needs to clear a project based on plans that are not 100% completed. Environmental clearance must be obtained prior to requesting obligation for the construction phase (A Phase).

If a project is not expected to be a categorical exclusion the PM should contact MDOT's Environmental staff to discuss the project and develop a timeline for the work. The RFQ must indicate if the CMGC will have tasks in Early Preliminary Engineering or Preliminary Engineering phases. The RFQ should accurately describe where the project is in the NEPA process, and how the CMGC's work may be phased based on the NEPA Process (IE, Phase 1: Preconstruction phase with Early Preliminary Engineering work needed to complete NEPA process, Phase 2: Preconstruction phase with Preliminary Engineering work, Phase 3: Construction), and that each phase would be authorized separately and cannot overlap.

Commitments and mitigations made in the environmental process need to be completed on CMGC projects. Changes in the project during the development phase that contradict the final environmental document may require the document to be amended before construction can be authorized.

Chapter 9: Right of Way Process

The process for receiving Right of Way certification on CMGC projects follows a process similar to the traditional methods. The PM should discuss the project's needs and associated timelines with Real Estate staff to ensure they have adequate information and time to certify the project. They may have additional needs to certify the project based on plans that are not 100% completed.

Right of Way certification must be obtained prior to requesting obligation for the construction phase (A Phase), unless an exception to this is allowed by the FHWA.

Chapter 10: Determination of Disadvantaged Business Enterprise (DBE) Goals

Typically there will not be a DBE requirement for the preconstruction phase of a CMGC project.

The process to determine the required DBE goal for the construction phase is outlined in Appendix 10A. A memo to the MDOT Office of Business Development is created when the plans, specifications and estimate are at a state where the work types and amount of work in each work type are reasonably accurate. The memo can be found at the following ProjectWise link: [CMGC DBE Request Memo.docx](#). This process typically takes 2 weeks, but can be accelerated on a case by case basis if requested. The project will be reviewed by a committee, and a goal will be established based on the opportunities for DBE contractors. If the project does not have opportunities for DBE work, the DBE goal can be established at 0% by the committee.

The CMGC should identify their DBE subcontractors prior to the award of the contract.

If it is not possible to identify the contractors that will be used to satisfy the DBE goals, a Good Faith Effort (GFE) plan must be provided and approved by MDOT prior to award. GFE's can be difficult to get approved and should be avoided whenever possible.

Appendix 10A: DBE Process Memo



OFFICE MEMORANDUM

DATE: April 22, 2014
TO: Dr. Patricia Collins
Administrator of the Office of Business Development (OBD)
FROM: Bradley C. Wieferich
Engineer of Design
SUBJECT: Disadvantaged Business Enterprises (DBE) Participation Goals on Design-Build and Construction Manager/General Contractor Projects

The Department continues to use innovative contracting methods such as Design-Build (DB) and Construction Manager/General Contractor (CMGC) to expedite the delivery of our construction program. These projects do not follow the work flow of our normal design-bid-build projects, and often have very expedited schedules. This memo is to update the procedures used to establish DBE participation goals on DB and CMGC projects and is intended to supersede the memo dated March 8, 2010.

The following is our recommended procedures:

When a DB or CMGC project is identified and a preliminary estimate is available, the Project Manager will provide OBD's Departmental Analyst (Nick Sundberg) a memo requesting a DBE goal. A template of this memo can be found below. OBD's Departmental Analyst will present the project's information to the DBE Contract Selection Team. The Project Manager and OBD's Departmental Analyst will work together to ensure the DBE Selection Team has adequate information to establish a goal. The DBE Contract Selection Team will review the information provided and establish the appropriate DBE goal. The DBE Contract Selection Team will provide the Project Manager with the DBE goal, and will also enter the goal into MPINS. A comment will also be entered into MPINS indicating the project is a DB or CMGC project and the goal is not to be changed.

If a project's scope significantly changes after the goal is established, the Project Manager will request a re-evaluation of the goal by providing OBD's Departmental Analyst an updated memo.

We look forward to working with your team to administer this alternate process. Please let me know if you have any comments or concerns.

Engineer of Design

cc: M. Van Port Fleet, J. Mullins, N. Sundberg
C. Youngs, L. Thompson



OFFICE MEMORANDUM

DATE: Month Day, Year
TO: Nick Sundberg
Office of Business Development

FROM: Name
Project Manager or ICU Contact

SUBJECT: Request to Establish a DBE Goal
Project Name
Control Section – Job Number

The above referenced project is using a (Insert “Design-Build” or “Construction Manager/General Contractor”) procurement and requires a DBE goal to be established. Please provide a DBE goal based on the following information by (Insert applicable Month day, Year). Please contact me at (XXX)-XXX-XXX if you have any questions.

Project Location: (Provide route, limits, county and city)

Project Description: (Provide the long description typically used in Transport)

Advertisement Date: (Provide anticipated date of advertisement for DB projects, or delete for CMGC projects)

Letting Date: (Provide the letting date for DB projects, or target date to begin price negotiations for CMGC projects)

Construction Schedule: (Provide the anticipated timeframe of award, project completion, and a description of the expedited schedule, if applicable)

Total Project Cost: (Provide estimated construction cost)

Items of Work: (Provide the major items of work and areas of work typically completed by DBE contractors and the estimated cost of each. A preliminary estimate can be attached if it is available)

Specialty Items: (Provide information on any specialty or warranty items that may impact subcontracting on this project, and/ or any unusual circumstances on this project that would affect the DBE goal attainment)

cc: Innovative Contracting Unit Contact or Project Manager
Chris Youngs, ICU Manager
Lisa Thompson, MDOT OBD

Chapter 11: Plan & Specification Development

Special Provisions

The intent of MDOT's special provision review process is to ensure that all bidders understand the intent of a special provision and that it cannot be interpreted differently between contractors. Since the CMGC is directly involved in the development phase of a project and the PM and CMGC have had an opportunity to discuss and clarify the contract language, the special provisions used on a CMGC project are recommended to follow the traditional approval process.

While developing special provisions, the PM is responsible to ensure the document is developed according to the requirements in the MDOT Road Design Manual. If a special provision will be used on future DBB projects or if there is adequate time, it is highly recommended that the PM follow the traditional special provision review and approval process. If unique special provisions are not formally approved at the time of award, the formal review process should continue until it is completed. Special provisions approved after award can be added to the contract by a Contract Modification. If special provisions are not anticipated to be formally approved prior to award, the PM should contact MDOT's Specification Engineer to discuss the project schedule and expectations for the special provision's review.

After the project is awarded the Construction Service Cost Proposal (CSCP) plan set is required to be finalized and added to the contract through a Contract Modification. The final plan set includes the final stamped and signed plans, unique and frequently used special provisions, notice to bidders as well as any other contract documents. Unless significant unknown changes occur during this process the CSCP should not be affected.

The title page and any other specialty sheets of the final plan set should be signed per normal procedures.

CMGC Provision for Clarifications and Limitations

The CMGC Provision for Clarifications and Limitations clearly identifies what items of work are included in the GMP, and what is paid for based on the actual quantity built based on a negotiated unit price. Example provisions can be found in ProjectWise at the following link: [Provision for Clarifications and Limitations](#). On July 10, 2014, MDOT's EOC approved a review and approval process for the CMGC Provision for Clarifications and Limitations. This contract document does not get reviewed and approved through the traditional special provision review process. The PM places their information in the source code and emails the final version to the ICU Manager for final review and approval. The DPM and ICU Manager will review the document and provide comments or approval. The DPM and ICU Manager will place their initials in the approval code area, and add the date of approval.

Review Meetings

An OEC meeting is typically held when the design is 100% complete and ready to be turned in for letting. Since the CMGC process allows for the contract to be awarded prior to 100% completion a formal OEC meeting is not required. However, the PM should have a project review meeting prior to the final price negotiations that would be similar in intent to an OEC to review the CSCP package. The FHWA and CMGC should be invited to the review meeting.

If negotiations do not lead to an accepted price with the CMGC, the project will be let through MDOT's traditional design-bid-build process. If this is the case, an OEC meeting must be held before turning the project in for a letting.

Construction Services Cost Proposal

The Construction Services Cost Proposal (CSCP) is based on the plans and specifications developed to a point where the scope is clear and the details of the project are adequate to negotiate a fair and reasonable price from the CMGC. At this point the plans and specifications are considered to be the CSCP bidding package and are approximately 70% to 90% complete. The CSCP package may need further refinement before they are considered final, and the final plans and specifications can be completed after the award of the construction phase. The PM should determine the schedule with the designer and CMGC in order to determine when the final plans and specifications will be completed after the award of the project. The designer should be able to provide a firm and expedited schedule to complete the design.

The CSCP bidding package includes the project plans, frequently used special provisions, supplemental specifications, Notice to Bidders, unique special provisions, the transport file with identified individual pay items, and the CMGC provision. The CMGC provision is not expected to be finalized until the end of the final price negotiations. The transport file will be used to assist with the development of the Engineer's Estimate. The final contract transport file will generally have broad categories for the GMP, adjustable items and possibly contingency items, and the CMGC provision will define what pay items are in each contract pay item, and the special provisions that are applicable to each item.

The CSCP bidding package is submitted into ProjectWise prior to the beginning of final negotiations so contract provisions such as insurance requirements, wage rates and federal and/or State provisions can be added to the proposal. Once added, the CSCP bidding package is provided to the CMGC and is the basis for the negotiations of the CSCP. As price negotiations proceed, modifications can be made to the CSCP bidding package. Items of the CSCP bidding package modified as a result of the negotiations must be re-entered into ProjectWise.

Chapter 12: Price Negotiations

The price for a CMGC project is determined through negotiations with the Contractor. The process outlined below is intended to be a guideline for MDOT staff to follow and modifications to this process can be possible depending on the timing and unique circumstances of each individual project.

Independent Cost Estimator

An Independent Cost Estimator (ICE) must be hired by MDOT to provide independent estimates. An ICE can be a consultant, contractor, or person that is experienced in the type of work being performed and has the ability to generate accurate estimates. The ICE's estimate should be developed by considering costs associated with the staging, maintaining traffic, time, materials, labor, equipment, local market conditions and other factors unique to the CMGC project, and should not utilize average unit price information. ICE's can attend some project meetings to gain additional information on the project; however they should have minimal involvement in the meetings and base their estimate on the available plans, specifications and site conditions. The ICE can only attend the price negotiation meetings if requested by MDOT and the CMGC.

ICE's can provide comments on the Engineer's Estimate as well as specific portions of the estimate from the CMGC. The ICE should not be provided items from the CMGC's estimate that the CMGC would consider private to their companies bidding procedures.

It is common for the ICE contract to follow MDOT's procedures for contracts under \$50,000, and for the ICE to be selected at or near the same time as the CMGC. An example scope for the ICE can be found in ProjectWise at the following link: [Template Documents](#).

An ICE can have Contractors assist with estimating. However, this creates a conflict of interest if the ICE or their subcontractors are allowed to bid on the project if a final price cannot be negotiated with the CMGC. Therefore, the ICE and any Contractors assisting with the independent estimate must be identified and informed that they will not be allowed to bid on the project if a price cannot be reached with the CMGC.

Engineer's Estimate

The PM will generate an Engineer's Estimate based on traditional procedures. Average unit prices can be used when appropriate. Engineering judgment and bid history from similar projects in an area should also be considered. Contingency costs may be included in preliminary cost estimates for items that do not have an adequate level of design for accurate estimating.

CMGC Estimate

The CMGC will generate estimates at milestone dates identified by MDOT. The CMGC's estimate can be based on standard MDOT pay items, or by other methods that can be logically followed. MDOT's expectations from the CMGC for their estimates must be discussed prior to the CMGC submitting an estimate. The CMGC must be willing to provide documentation to support any of the costs in their estimate, and MDOT can request to review any of this documentation including quotes from subcontractors, assumed production rates, profit, overhead, material costs and labor costs. It may be beneficial to have a review meeting with the CMGC to discuss the expectations of the CMGC's estimate, the format of the estimate, and required timeframes. The estimates and supporting documentation from the CMGC should be treated as confidential information.

Preliminary Estimates

Preliminary estimate should be generated by MDOT, the CMGC and ICE at various milestones during the design phase in order to identify discrepancies in projected project costs and have adequate time to mitigate the differences between the Engineer's Estimate, the CMGC's estimate, and the ICE estimate. Ideally, the preliminary estimates should be generated when the design is at approximately 30% and 60% completion. The first preliminary estimate is used to compare cost savings in the process between the initial estimate and the final agreed upon price.

The CMGC may not be able to price some items of work in the early stages of the design. Pricing can still be obtained for the remaining items of work, or for key items that may have significant cost. Receiving and discussing a preliminary estimate, even if some items cannot be priced, can help ensure that the project budget is met, assist in final price negotiations and identify items of work that are missing from the design and estimate.

MDOT should designate the dates that estimates are due from the CMGC and the ICE. MDOT will receive and review the CMGC's and ICE's preliminary estimates. MDOT staff should review the estimates and have discussions when items of work have a significant cost discrepancy between any of the estimates. MDOT staff should not provide the CMGC with the complete Engineer's or ICE's Preliminary Estimates.

Discussions should occur between MDOT and the CMGC, as well as MDOT and the ICE during the review of preliminary estimates to determine what items of work should and should not be included in the Guaranteed Maximum Price (GMP), or should be paid by other means such as adjustable or contingency items. Items paid outside of the GMP are items that cannot be adequately quantified and the design cannot mitigate the item's risk.

Final Price Proposal

The goal of a CMGC project is to obtain the highest quality project at a fair price. As the design nears completion, the CMGC will prepare a CSCP. The CSCP includes a GMP items proposal plus possible contingency items and adjustable items (i.e., items that are paid based on an agreed upon unit price and actual quantities). The GMP includes all identified areas of work that are to be completed by the CMGC without a change in price. The quantity of the work items included in the GMP may increase or decrease as the project is built, however, there should not be a change in price to the GMP unless there is a scope change that significantly changes the work. The PM and CMGC should have significant discussions on what constitutes a scope change prior to final acceptance of the price. Contingency items and adjustable items can be paid on an agreed upon price outside of the GMP item. These items should be used to mitigate significant risks or to compensate the Contractor for items that cannot be accurately quantified during the design phase. In many cases, a significant portion of the work can be paid under the GMP item; however it is acceptable to utilize adjustable items when it is appropriate. The method of payment, and an initial payment plan should be developed for the GMP item during the price negotiation process. The CMGC, the PM, the ICU Staff Engineer and the construction engineer must be involved in these discussions to ensure consistency in the payment approach, and that the approach meets FHWA criteria.

Adjustable items are typically used when it is difficult to determine an accurate quantity of an item during design, or when an item possesses a large risk to MDOT or the CMGC if it is included in a GMP. Based on suggestions and experience from past CMGC projects, adjustable items can include:

- Subgrade Undercutting
- Restoration Items
- Traffic Control Items
- Temporary HMA
- Soil Erosion and Sedimentation Control Items
- Miscellaneous items used as directed by the Engineer during construction (i.e. miscellaneous items found on the Note Sheet in the plans and items associated with the miscellaneous items)
- Foundation Piling
- Hazardous or Non-Hazardous Contaminated Material
- Incentives
- Earthwork Items, including subbase if it is possible it may remain in place

MDOT will request the CSCP from the CMGC after providing the CMGC the CSCP bidding package. The CSCP must be compared to the ICE's estimate and the MDOT Engineer's Estimate. The PM should attempt to reconcile significant differences between the ICE's Estimate and the Engineer's Estimate in order to establish a reasonable price range.

The negotiation meetings with the CMGC are conducted with a limited number of key staff from MDOT. Unless otherwise agreed to by MDOT and the CMGC, the ICE will not attend the negotiation meetings. Unless otherwise approved by the ICU Manager, the MDOT staff attending the negotiation meetings are limited to the PM, DPM, the Construction Engineer and the FHWA Area Engineer (if PoDI).

Other staff from MDOT can assist the PM and DPM to prepare for negotiations and to evaluate comments made during the negotiations. The Engineer of Construction Operations and Engineer of Bridge Field Services should be consulted for assistance. It is recommended to involve the Engineer of Bridge Field Services for projects with bridge work.

The team negotiating with the CMGC is to keep the ICE and CMGC's estimate confidential.

The CMGC's, Engineer's and ICE's estimates can be modified after the initial submittal of the CSCP due to negotiations. Changes to the Engineer's Estimate or the ICE's Estimate should document why a change was made.

If the CMGC estimate is within 10% of the maximum range established by the ICE's estimate and the Engineer's Estimate, it can be accepted. MDOT may still look to negotiate with the CMGC to resolve discrepancies between the estimates if the CSCP is within 10%. If the CMGC's estimate is greater than 10% of the range of the ICE or the Engineer's Estimate, the cost discrepancy must be resolved prior to awarding the construction contract. The Engineer must bring the CSCP to be within 10%. The ICE can be used to assist in resolving price discrepancies between any of the estimates.

It is recommended that the FHWA is notified at the beginning of the final price negotiations and be given the opportunity to review information at any stage of negotiations. Before accepting a final CSCP, the FHWA must be provided information supporting the final price. The FHWA will provide a written/emailed acceptance of the final price before the CMGC can be notified that the CSCP is accepted by MDOT.

Subject to a successful negotiation, MDOT can proceed with the process to award the construction portion of the project to the CMGC.

It is also recommended to develop the schedule of values prior to award during the negotiation process. The CMGC and MDOT construction staff should be actively involved in developing the schedule of values. On PoDI projects, the FHWA must also concur on the schedule of values, and it is recommended to gain their approval prior to award also.

Termination of the CMGC Contract due to Unsuccessful Price Negotiations

In the event that an acceptable CSCP cannot be reached, the project would be let using a traditional design-bid-build procurement. However, there are steps that need to be taken for this to occur. The following list are the general steps for terminating a CMGC after the completion of an unsuccessful price negotiation. It should be noted that a project may require additional steps and this must be discussed with the ICU Manager prior to implementing a termination process.

Termination of the CMGC Contract:

1. Notification to the FHWA: If MDOT desires to terminate a CMGC, the PM will work with ICU staff to develop a letter to the FHWA. The letter should outline the steps taken on the project to date, the reason for the termination, and a request for concurrence on the proposed approach to termination. The FHWA will respond to this request.
2. The PM works with CSD Administrator to develop a termination letter. If the CMGC contract is terminated due to unsuccessful price negotiations, the contract is terminated for convenience, not for cause.
3. Request a final invoice from the CMGC
4. Pay the CMGC after receiving final invoice and any required deliverables.
5. Determine key dates for letting the project including the project turn in and letting dates
6. Complete the project according to traditional methods including a final OEC meeting.
RID Items: Identify the items that would be placed into the RID for the design-bid-build project. This would include any meeting minutes, reports, or other applicable information that the CMGC would have had access to during the preconstruction phase that other bidders would find valuable during the bidding process. The MDOT, ICE and CMGC's price estimate should not be placed in the RID.
7. Contact MDOT-ProjectWise@michigan.gov to remove "CMGC" from the project's folder in ProjectWise.

Chapter 13: State Transportation Commission and State Administrative Board

State Transportation Commission (STC) and State Administrative Board (SAB) approval is required for CMGC projects. The PM can start the process to place the construction phase of the project on the STC and SAB agenda's when they have a reliable Engineer's Estimate or when the final CSCP is negotiated. CMGC projects can receive pre-approval from the STC and SAB based on the Engineer's Estimate. If time is a controlling issue the PM should start the process based on the Engineer's Estimate.

To place the projects on the STC and SAB agenda's the PM should review the STC, Transportation and Natural Resources Board (T&NR) and SAB schedules. The PM should email MDOT's CCS Manager and copy the CCS Administrative Assistant and the CCS Bid Letting Technician with the project details and request to be placed on the desired meeting agendas. MDOT's CCS will work with the PM to develop the required write-ups and place the project on the STC and SAB agenda's. The write-ups for the STC and SAB must include a statement indicating the project is a Construction Manager/General Contractor project.

If the project is approved by the STC and SAB based on the Engineer's Estimate and the final CSCP exceeds 10% of this amount, the project must be placed on the STC and SAB agenda's again to approve the final negotiated dollar amount.

Appendix 13A: Example SAB Write-Up

LETTING OF (Insert Month, Date, Year)

PROPOSAL

PROJECT (Insert Control Section)-(Insert Controlling Job No.)

LOCAL AGRMT. (Provide if known)

START DATE – (Insert Date)

COMPLETION DATE – (Insert Date)

PREQUALIFICATION LEVEL (Insert Estimated Construction Cost)

Contract for the construction of (Insert project description, geographic limits and route), in (City), (County) using a Construction Manager/General Contractor contracting method.

(INCLUDE ONE OF THE FOLLOWING STATEMENTS)

The project cost of \$XXXXXX is based on the final price negotiated with the CMGC.

OR

The project cost of \$XXXXXX is based on the Engineer's Estimate

XXX% DBE participation required

Chapter 14: Certification/Acceptance (CA) Form

The PM must complete a CA Form prior to the obligation of funds. The CMGC process modifies the typical process used on DBB projects. If sections of the CA form are modified due to the CMGC process, the PM must describe why the section is not applicable or what has occurred to ensure quality in the design. For example, there may not be an Omissions and Errors Check (OEC) meeting, and the OEC section of the CA form must have information written in it to describe the review process for that CMGC project.

The CMGC Provision for Clarifications and Limitations must be provided to FHWA with the CA Form.

Chapter 15: Transport Files

The CMGC project will have 2 Transport files developed. The first file is the “shadow file”, and is a typical Transport file established like a normal project’s Transport file (including pay items, category splits, etc.). This file however, will not be the final contract file, or live contract. The live contract will be developed after the prices have been successfully negotiated. The live contract on previous CMGC project has used 3 pay items; 1) a GMP pay item, 2) an Adjustable pay item, and 3) a Contingency item when appropriate. The live file will contain any categories, just as a normal project would. However, obtaining the category splits and costs associated with each will need to be calculated by hand and filled in manually using the shadow files sorting features.

The GMP item is not expected to change during construction, while the Adjustable and Contingency pay items will deviate from the awarded price based on actual quantities constructed and the agreed upon unit prices. The GMP, Adjustable and Contingency items in the live file should have a Dollar pay unit so accurate payments can be made during construction. The live contract should not have the individual pay items included. Construction staff have indicated this would create a duplicate effort while tracking these items in the live and shadow file during construction.

The shadow file will have all anticipated pay items and quantities on the project. The Transport shadow file can be used as a starting point to create the shadow file developed after award using Field Builder, by exporting the files at the project level. A shadow file will be needed in FieldManager so quantities, tests and material certifications can be tracked in the field. See BOHIM 2010-07 for additional details on how shadow files are used on DB projects. The shadow file is also provided to MDOT’s Specifications and Estimates Unit in order to receive average unit price data, however the PM should discuss the estimating process with MDOT’s Specifications and Estimates unit so negotiated prices are not replaced in the Transport file during negotiations, and that the final price may not be based on the prices in Transport. At this point in time, Field Builder is unable to import the second Transport file, and the Shadow file must be developed by the Office Technician after award.

The long description in the Transport files must include language to indicate the project is a CMGC project and not a normal let project.

When the project is turned in for award, the live Transport file should have the values of the final negotiated price. Information on the Engineer’s Estimate must be provided to CCS. See the chapter on Awarding the Construction Phase for additional details.

Chapter 16: Obligation of Funds

Obligation of Early Preliminary Engineering Phase (Blank Phase)

The Early Preliminary Engineering Phase (EPE) is obligated according to traditional methods. If the CMGC will perform work in this phase their costs need to be considered when requesting funding. The CMGC's work in this phase must be specific to EPE work, and they should not perform any work that would be considered to be part of the Preliminary Engineering (PE) phase.

Obligation of the Preliminary Engineering Phase (C and/or D Phase)

The PE phase is obligated according to traditional methods. The CMGC's preconstruction work is paid for out of this phase.

Obligation of the Right of Way Phase (B Phase)

The ROW phase is obligated according to traditional methods.

Obligation of the Construction Phase (A Phase)

One of the following 2 processes can be used to obligate federal funds for the Construction Phase. The Specifications and Estimate Engineer should be contacted prior to requesting obligation to ensure they are aware of the CMGC project and the process that will be followed.

Process #1

The obligation process starts once the PM has a CSCP plan set and an Engineer's Estimate that they have confidence in. The obligation amount will be based on the Engineer's Estimate. Other items needed prior to requesting obligation include:

1. CSCP plan set
2. A completed Certification Acceptance Form
3. STIP/TIP Clearance
4. Environmental Clearance
5. ROW Certification
6. Draft Utility Coordination Notice to Bidder

Final price negotiations continue while funds are obligated. MDOT can adjust the obligation amount once after the final CSCP negotiations are completed.

Process #2

The obligation process starts once the PM has completed the negotiations for the CSCP. The obligation amount will be based on the negotiated final price. Process #2 is the preferred option for obligating funds. Other items needed prior to requesting obligation include:

1. CSCP plan set

2. A completed Certification Acceptance Form
3. STIP/TIP Clearance
4. Environmental Clearance
5. ROW Certification
6. Draft Utility Coordination Notice to Bidder

Advanced Acquisition of Materials

A separate Job Number should be used if materials are being acquired prior to requesting obligation for the remaining construction work. The FHWA must approve early acquisition of materials, and a Public Interest Finding must be completed according to chapter 11.08 of the Road Design Manual. It is recommended to discuss this possibility with the CMGC and FHWA early in the EPE and/or PE phase so the design can concentrate on the appropriate sections of the plans to identify the material and its design, and to get the necessary approvals. The Engineer, ICE, and FHWA must review and approve the cost of this work prior to authorizing the CMGC to procure the materials. MDOT's CSD must also be notified so they can prepare a contract for this work. Depending on the size of this work, the STC and SAB may need to approve the contract and the time required for these activities must be considered.

Use of Incentives

Incentives can be used on CMGC projects. Incentives should be included in the scope negotiated with the CMGC during the CSCP price negotiations. If incentives are used, the PM must inform the CFS Construction Operations Engineer so it can be included in an annual report provided to the State legislature. Any incentive should be included in the adjustable pay items.

Chapter 17: Awarding the Construction Phase

After the project has been approved at the STC and SAB meetings, funding has been obligated, and a CSCP has been agreed on, the project can begin the award process. The PM will work with MDOT's CCS to provide the CMGC with the contract to sign and return with their bonding and insurance information. The CMGC must also provide the Construction Engineer with a Progress Schedule prior to award. The PM will arrange a preconstruction meeting with the CMGC. Typical items discussed and provided (Safety Officer, quality control/assurance plans, etc.) at a preconstruction meeting must be provided at a CMGC preconstruction meeting. Once the CMGC returns the required items the project will be awarded and the project will move forward with construction activities.

CCS requests concurrence from the FHWA to award the project. To complete this, the PM and/or DPM emails the CCS Bid Letting Analyst and provides a spreadsheet that is the basis for the negotiated price and includes both the MDOT estimate and the ICE estimate. The body of the email must include the value the PM/DPM wants to use as the Engineer's Estimate. The Engineer's Estimate listed in the email is typically the MDOT or ICE estimate with the greatest value. CCS will complete the form and provide the information to the FHWA for concurrence.

The PM must contact the CCS Manager to have the final plans and proposal placed on the E-Proposal website under a fictional letting date of January 2 of the year it is awarded in. CMGC projects will have a "70X" item number. The CCS Manager will establish a letting in Preconstruction (WebTransport) under (Calendar Year) CMGC (i.e. 15CMGC).

Chapter 18: Value Engineering and Value Engineering Change Proposals

Value Engineering Study

Value Engineering Studies (VE) are required on projects meeting MDOT's or the FHWA's thresholds. If a project is expected to require a VE, the PM should contact the VE Coordinator as soon as possible during the development phase to schedule a VE meeting. It is advantageous to have the CMGC under contract so they can participate in the VE study.

Value Engineering Change Proposals

The Special Provision for Value Engineering Change Proposals (VECP) should not be included in the proposal of a CMGC contract. A CMGC is expected to discuss any items that would bring value to the project during the design phase and is selected, in part, on their ability to add value. Allowing a VECP during construction, where the Contractor receives 50% of any cost savings, creates the appearance of a conflict of interest.

Creative and innovative thinking should not be discouraged once a project is under construction, and modification to the design can occur post-award. If MDOT determines a change to the plans or specifications is warranted the changes should be negotiated with the CMGC and added to the contract through a contract modification. In the negotiations for a post-award change, MDOT should receive the majority of the savings from the CMGC's proposed change.

Chapter 19: Construction Activities

Construction Engineering

Once the construction phase has been awarded, the construction progresses according to the schedule and design developed during the PE phase. The project is inspected in accordance with traditional construction oversight procedures.

Payments to the CMGC

The live FieldManager file is used to process payments and contract modifications. The shadow file is used for day-to-day activities such as posting IDR's and tracking material usage on a project similar to how a traditional project proceeds with FieldManager. The shadow file will be set up in the same way as the shadow files on Design-Build projects.

The Adjustable pay item is paid based on the actual quantities of the standard pay items and unit prices identified in the CMGC Provision for Clarifications and Limitations that are constructed in the field.

Payment for the Contingency pay item varies from project to project based on discussions during the CSCP negotiations and contingency work encountered during construction. The Construction Engineer should be careful adding items to the Contingency pay item to make sure the work is not included in the GMP pay item.

Payment for the GMP must be made in accordance with the CMGC Provision for Clarifications and Limitations. The payment schedule for the GMP pay item uses a schedule of values broken into clearly definable limited units of work that have short durations that are approximately 2 weeks or less. Payment should be based on documentable and auditable work completed to ensure that overpayment does not occur. Past projects developed the schedule of values after award; however, it is recommended to develop the schedule of values during the price negotiations process. An example Schedule of Values from a previous CMGC project can be found at the following ProjectWise link: [Schedule of Values](#).

As-Built Plans

As-Built plans should be tracked and submitted according to traditional procedures. During the PE phase, the PM and CMGC must determine the roles each will have for developing as-built plans during construction.

Exhibit A: Questions & Answers

1. Can engineering consultants be on the CMGC's team?
 - a. Engineering consultants can be included on the CMGC's team. The Engineer of Record is MDOT or MDOT's design consultant, so an additional consultant may or may not add value. The CMGC's consultant must comply with MDOT's conflict of interest policies.

2. Can the CMGC be involved in Community outreach?
 - a. Yes. This can be included in their scope of work for preconstruction & construction services.

3. Are the CMGC's evaluated at the conclusion of the preconstruction and construction phases?
 - a. As of 12/14/12, MDOT has not completed an evaluation of the CMGC at the end of the preconstruction phase, but future projects should include this.

4. Can I advertise for a CMGC before there is NEPA clearance?
 - a. Yes, but the RFQ should accurately describe where the NEPA process is, and how the CMGC's work may be phased based on the NEPA Process (IE, phase 1: NEPA, Phase 2: Pre-construction phase, Phase 3: Construction), and that each phase would be authorized separately and cannot overlap.

5. Can we require a project to be LEED certified?
 - a. Yes. If a project is desired to have LEED certification it should be identified early in the process and stated as a project goal and possibly a selection criteria.

6. Can the CMGC be responsible for all or portions of the design?
 - a. MDOT has yet to explore this option on a project.

7. Can 3D modeling be used or required on CMGC projects?
 - a. Yes. Expectations for 3D models should be included in the RFQ if it is desired at that time.

8. Do you have an example of what can be sent to Submitters after the SOQ scoring and selection is completed?
 - a. Yes. See the RFQ template for an example.

9. What is expected from the Designer that is different from traditional Design-Bid-Build projects?

- a. There should be additional iterations and possible re-working of designs due to the interactions and suggestions of the CMGC. Additional meetings, hours and design costs can be expected due to the integrated design phase. Additional time should also be included for the costs estimate and final price negotiation process.
10. How are different categories (Categorical Exclusion, Environmental Assessment, and Environmental Impact Statement) of Environmental Classification affected by the CMGC process?
- a. If a project is not expected to be a categorical exclusion the PM should contact MDOT's Environmental staff to discuss the project and develop a timeline for the work. The RFQ must indicate if the CMGC will have tasks in EPE or PE phases.
11. Is it realistic to always have the project environmentally classified by 30% plan completion?
- a. No.
12. Can Contractor Staking be performed by the CMGC?
- a. Yes. If it is desired it should be included in the list of items during CSCP negotiations.
13. Is the GMP a Lump Sum Item?
- a. To process accurate payments, the GMP must be established in the prime contract as a dollar pay item.
14. Can Adjustable Work items be listed out in primary contract?
- a. Yes, but this creates duplication with the Shadow Contract, and the preferred method is to establish a dollar line item in the prime contract and have the details in the shadow contract. MDOT staff on past projects indicated it was easier to use the shadow contract to track items and materials and only make payment from the 2 or 3 pay items in the live contract file.
15. Can the Transport File be converted into the Shadow FieldManager File?
- a. At this point in time, the formats of the Transport files do not allow them to be directly imported into FieldManager.
16. Can the CMGC start construction before the plans are 100% complete if the price negotiations have been successfully completed?
- a. Yes, after the price has been negotiated and the construction contract awarded construction activities can begin. However, work should not begin on portions of the project where additional engineering is required to define the final

construction work, or on areas that may be changed during the completion of the design.

17. Does the “C” phase end when the “A” phase is awarded?
 - a. No. Unlike traditional projects, the “A” and “C” phase can (but is not required to) overlap when the design is being finalized after the construction project is awarded to the CMGC. Once the design is finalized, any design assistance during construction should be charged to the “A” phase.

18. Can the GMP be adjusted during construction?
 - a. The intent of the GMP is that the price of the GMP is not exceeded. However, if there is an error or omission in the design that the CMGC could not have expected it may be considered a compensable extra. Conversely, if the quantity of an item in the GMP is reduced, it does not mean there is an automatic credit. The risk involved in the GMP assumes that quantities of various items will increase and/or decrease without a change in the GMP.

19. What happens if an Adjustable Item goes above the plan quantity?
 - a. A contract modification is processed to increase plan quantity to measured quantities for each item.

20. What happens if Contingency Items are not used, does the CMGC get paid for them anyway?
 - a. No, these items will be zeroed out from the contract through a contract modification at the end of the project to ensure all pay items in Field Manager balance.

21. Is there a dispute resolution process on a CMGC project?
 - a. The normal claims process applies to a CMGC project. MDOT can include provisions for a unique dispute resolution process if it could add value.

Appendix E: Guidelines for Fixed Price-Variable Scope Contracts



Guidelines for

Fixed Price-Variable Scope

Projects

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Chapter 1: Overview of Fixed Price-Variable Scope Projects

Fixed Price-Variable Scope (FPVS) projects are intended to maximize the amount of work constructed within a pre-established budget. This method is most effective for projects where need far outweighs available funding. This guide describes the procedures and contract documents to be used on Michigan Department of Transportation (MDOT) trunkline FPVS projects. As an aide to the project manager and designer, a checklist will be provided with steps for the planning and approval of the project. The design section of the checklist contains items that are typical comments made during the Innovative Contracting Unit (ICU) and Specifications and Estimates reviews.

This guide and checklist will be continually updated as MDOT gains additional experience with FPVS. Comments and suggestions for improvement are encouraged, and may be provided to the ICU FPVS Coordinator.

FPVS Project Types

Type 1 projects receive bids by the units of work that can be completed for a stated fixed price. The selected contractor is the bidder that proposes the most units of work for the given fixed price. Type 1 has been used for HMA crack seal, chip seal, and fog seal projects, bid by the lane mile.

Type 2 projects receive bids by the units of work that can be completed for a maximum price. Contractors will bid units of work, and may also bid a price for that work which is below the maximum price. The selected contractor is first determined by the bidder that proposes the most units of work, for their stated maximum price. If two or more contractors propose the same amount of work, then the successful bidder is determined by which of those contractors proposed the lowest maximum price. Type 2 is used on a per site or priority basis, when partial completion of a site or priority is not acceptable such as bridges or ITS.

Type 3 projects receive bids through a traditional low bid process. The contractor provides unit prices for pay items provided in the schedule of items. The selected contractor is determined by the lowest submitted bid. The project is awarded at the low bid price.

The schedule of items is made up of the normal pay items and quantities estimated by the Engineer that are required to complete a base amount of work, called Priority 1. Additional desired work that is not included in the schedule of Items is considered Priority 2. Priority 2 is included in the design plans and contains pay items and quantities that are for information only.

If the project comes in under the programmed amount, a contract modification is made to extend limits into Priority 2 so the final construction costs are approximately equal to the available funding. This is also known as a managed approach. If the project comes in over the engineer's estimate and is justified, at a minimum Priority 1 must be completed even if bids come in over the programmed fixed price amount. Type 3 has been used on concrete pavement repairs, HMA cold milling and overlay, and HMA crush and shape work.

Chapter 2: Project Selection, Approval and Project Management

Project Approval

All FPVS projects require approval from the Innovative Contracting Committee (ICC). Engineering Operations Committee (EOC) approval is required for certain FPVS projects*. Approval can take 1-3 months to secure.

Potential FPVS projects should be identified and scoped by the Region at the same time as the annual Call-For-Projects process. Potential projects will be submitted using the appropriate Innovative Contracting form to the ICU FPVS Coordinator. Contact the ICU for the IC application that shall be submitted to the ICU FPVS Coordinator for transmittal to the Innovative Contracting Committee. Although the primary time for submitting candidate projects is after scoping for the annual Call-For-Projects process, projects can be submitted at any time of the year and if special circumstances require consideration outside of the standard process.

The following process is required for Innovative Contracting project approval:

1. The PM submits the project IC application to the ICU FPVS Coordinator
2. The ICU Manager presents the project to the ICC
3. If the ICC approves, the ICU Manager presents the project to the EOC*
**EOC approval is not required for CPM/Safety Type 1, Type 2 or Type 3 projects*
4. If the EOC approves, the PM will be notified, and a member of the ICU staff will be assigned to assist during the development stage.

Federal Approval

MDOT has programmatic approval for use of FPVS through the FHWA's Special Experimental Program #14 (SEP-14) program on CPM projects. The programmatic SEP-14 work plans grant the FHWA Michigan Division the discretion to include non CPM projects in the programmatic approvals. The FHWA Michigan Division allows projects to use FPVS procurements under the approved programmatic SEP-14 work plans when previously used and established contract documents and methods are being utilized. If new FPVS contract documents or methods are proposed, the ICU FPVS Coordinator must contact FHWA to determine if a separate SEP-14 work plan, or other type of approval, is appropriate. The programmatic SEP-14 request is maintained by the ICU FPVS Coordinator and ICU Manager. All approved SEP-14 projects can be found by going to: <http://www.fhwa.dot.gov/programadmin/contracts/sep14list.cfm>, each project is sorted by State.

Projects requiring an individual SEP-14 work plan are coordinated through the MDOT ICU for submission to the FHWA.

SEP-14 projects are typically approved quickly; however, an approval time of 8 weeks should be considered when developing the design schedule. The PM must work with the ICU FPVS Coordinator to have the project's initial SEP-14 work plan approved and to complete the required reporting.

A final report is required for all SEP-14 projects. Programmatic CPM projects and others approved through the approved programmatic SEP-14s are reported annually in March of each year. These reports are completed and submitted by the ICU FPVS Coordinator. All other FPVS project reports must be prepared and completed by the PM within six months of the project's construction completion. For the programmatic SEP-14 approvals, the PM must send an e-mail to the ICU FPVS Coordinator with the engineer's estimate of quantity they expect to complete (expect to complete all work through Priority X) for the fixed cost. This final engineer's estimate should be sent prior to turn-in.

The SEP-14 final report typically includes the following for each project:

- Job Number, Letting Date, Item #
- Project scope
- Project cost
- Unique contract documents - including special provisions, etc.
- Engineer's Estimate of work based on the available budget
- Contract limits (list Priorities or length or work completed for contract price)
- Feedback from industry
- Number of bidders
- Benefits
- Drawbacks and concerns
- Cost savings or increases
- Time and administration considerations

The SEP-14 work plan and approval letter from the FHWA may have additional reporting requirements.

Development Considerations

The PM and ICU staff should discuss the development of the project early in the development phase to ensure that all contracting items are addressed. Common questions to consider are:

1. What procurement method will be used (Type 1, 2 or 3)?
2. What are the priorities of work and is work similar in scope throughout the entire project limits?
3. What specifications are available and what new specifications are required?
4. What Notice to Bidders are required for the project?
5. How will material testing be accomplished?
6. Will Field Manager be impacted?
7. What are the roles and responsibilities during development?
8. What industry outreach is needed?
 - a. Will a pre-bid meeting be required?
 - b. Should a notice be sent to the MITA or other entities?
9. What coordination with the FHWA is required?

10. Will there be any special letting requirements?
 - a. Note: All FPVS projects will have a special letting date on the Wednesday following the normal MDOT Friday letting.
11. Are there any special NEPA considerations?
 - a. Permits required? Will need them for the entire design (Priorities/Sections)
 - b. How is the project classified (all priorities or entire sections cleared)?
12. What impacts to Construction Engineering will result from the FPVS project? The Construction Engineer and/or key construction should be active in the development of the project so they are familiar with the contract and how to administer it.
 - a. How will payments be made to the contractor and sub-contractors? Will a different Measurement and Payment section be needed?
 - b. Should a quantity spreadsheet be developed early to help track quantities more easily and estimate the final construction limits?
 - c. Does the project require a different progress clause to accommodate the schedule?
 - d. What is the expected CE Budget based on the expected amount of work? Should the CE Budget be adjusted accordingly after the known limits are determined?

ProjectWise Folder Request

The ProjectWise folder request is similar as a standard DBB except for the naming of the root folder. The folder should be named as JN (FPVS #) where the # represents Type 1, 2 or 3 to be used. For example: 129761 (FPVS 1)

Project Coordination

The PM and ICU FPVS Coordinator should discuss the project schedule, scope and unique contract requirements early in the development process. This should occur for every project even if the project approach has been previously used. The ICU FPVS coordinator must contact the FHWA when a FPVS project will use a new FPVS procurement method or new contract documents to determine if a separate SEP-14 work plan is required.

Coordination Clause

If necessary, the PM should include a Coordination Clause that identifies the required coordination for the entire project limits and priorities.

Letting Date

All FPVS projects must be let on a special FPVS Wednesday letting following the normal monthly MDOT Friday letting. The PM must coordinate with the ICU FPVS Coordinator to establish the letting date from the MDOT Construction Contracts Section (CCS). This should be done during project development prior to the final project turn-in so appropriate forms and information can accurately reflect the letting date. Bids are received and the project is awarded at the as-bid units of work given for the fixed price, at a minimum the required priorities must be included in the bids.

Pre-Bid Meetings

Pre-bid meetings may be held when a procurement method or project type is relatively new. The PM must coordinate with the ICU contact to determine if a pre-bid meeting should be held.

If a pre-bid meeting is deemed necessary, a longer advertisement period will be needed (~6 weeks) and the pre-bid meeting should be scheduled at least 10 days after advertisement and 15 days prior to the letting date. Also, the special provision for pre-bid meeting should be included in the proposal documents.

MDOT's CCS must be given a copy of the sign-in sheet immediately following mandatory pre-bid meetings.

Pre-Bid Meeting Considerations

The agenda at the pre-bid meeting should include the following items:

1. Project overview
2. Project schedule
3. Description of the FPVS bidding methodology
4. Provide examples that will determine a valid bid and examples of bids that will be non-responsive or modified.

Chapter 3: Permits & Environmental Process

Environmental Classification

The **entire project limits and all priorities must be environmentally classified and certified** before turning in the project for advertising. Permits required for the entire project limits must be obtained prior to obligating funds.

If portions of the project are not able to be completed with the original project, the remaining non-constructed portion of the project will need to be completed **within 3 years of the original construction**. If all of the work is not completed in the original project, then a new project will need to be programmed to complete the work. Since the entire project limits were already environmentally cleared, an environmental restudy may be needed and the original certification will be updated and linked to the new project. Projects that are programmed for Capital Preventative Maintenance work are exempt from the 3-year completion requirement. Other individual projects may be exempt from the 3-year completion requirement and will be evaluated on a case by case basis. The ICU FPVS Coordinator will contact the FHWA to seek approval for each project.

Chapter 4: Planning and STIP Process

Planning Considerations

When programming FPVS projects in JobNet, the entire project limits (**all priorities**) must be included in the JobNet location description, STIP Comment box, and programmed in assets with milepoints. All priorities must be included not just the portion that is expected to be completed with the available funding levels. If there are different work types within the priority segments, these too must be included in the work description. The PM must update JobNet to reflect the limits that are expected to be completed after the bids are received and limits adjusted to the fixed price. If the limits change, JobNet must be updated after Construction is complete to reflect the as-built limits. The special letting date should be identified as the Wednesday following the normal MDOT monthly Friday letting.

On federally funded projects, there must be a plan to complete the unconstructed portion of the project that is bid. The plan for uncompleted work should be addressed in the IC application, the SEP-14 or work plan for the project, and included in the S/TIP comments. The FHWA views FPVS projects as a single project with multiple phases. Phase 1 of the project is the portion completed based on the contractor's bid, and Phase 2 is the remainder of the advertised project that was included in the bidding package, but not completed as part of Phase 1 work. The advertised project is Phase 1 plus Phase 2, and the limits of each are unknown until after the project is bid and the limits adjusted through a contract modification after the award. **The current direction from FHWA is to complete Phase 2 work within 3 years on non-CPM type projects. Other individual projects may be exempt from the 3-year completion requirement and will be evaluated on a case by case basis. The ICU FPVS Coordinator will contact the FHWA to seek approval for each project.** Once this is determined the work plan should reflect the agreed upon commitment to complete the project. The STIP will need to include the project and identify the limits. The STIP will also need to be amended to reflect the construction limits after they are established through the contract modification. Different JobNet examples are shown in Appendix A.

If a non-CPM project is included in a General Program Account (GPA) in the STIP, MDOT must still coordinate with the FHWA to determine if the project will be exempt from the 3-year completion requirement. If a CPM project is included in a GPA in the STIP, MDOT does not need to identify the year in which the entire project will be constructed. The Project Manager should coordinate with the Region Planner to make sure the GPA includes funds associated with the FPVS project and it should be noted the project is a FPVS in the associated project list within the GPA.

If the 3-year completion requirement is applicable to a project, then all Phase 2 work must be completed within the committed time frame. If the 3-year commitment is not met, then the FHWA may rescind all federal funding from the entire project and require reimbursement.

Chapter 5: Plan and Specification Development - Type 1

Title Sheet

The title sheet contract description should state that the contract is for **up to XX.YY** lane miles of (specify work type). The description should also state that this project will utilize an innovative contracting method using FPVS bidding.

Project Plans and/or Project Log

The project plans and/or log must include all biddable work for the entire project. The priorities must be clearly identified, with the lane miles listed for each priority segment (see past projects for examples). The beginning and ending points for the segments should be logical and field reviewed to ensure appropriate length is included. The descriptions and/or typical cross sections should clearly convey the lane widths and required work. Miscellaneous details should be added as needed to better define work limits at ramps, intersections and within turn lane areas. It should be noted the Special Provision for Hot Mix Asphalt Crack Treatment and Overband Crack Fill on Fixed Price Variable Scope Projects identifies traffic lanes as defined in the Road Asset Inventory.

Engineers Estimate of Work & Establishing a Rejection Limit

The PM must establish the estimated amount of work that can be competed for the available budget. It is recommended that approximately 25% more work than the engineers estimate should be included in the project . This should be discussed with the ICU FPVS Coordinator during scope verification phase.

The PM also needs to establish the minimum amount of work that would be accepted by MDOT. On traditional projects, the bid is considered for rejection if it is greater than 10% over the engineer's cost estimate. On FPVS, the budget is fixed and the rejection limit is generally 10% less work than the engineer believes can be completed for the available budget.

The PM must place the estimate of work in the Supporting Documents folder in ProjectWise and also send an e-mail to the ICU FPVS Coordinator with their estimate of work. This information is required to complete the SEP-14 final report.

AASHTOWare Preconstruction File

The AASHTOWare Preconstruction file must include each Priority Segment in Category 3 / Section 2. Mobilization must be a fixed cost bid item included under Category 1 / Section 1. The project description must include language that states the "Up to XX.YY" amount and that the project is a FPVS project.

AASHTOWare Preconstruction Long Description Sample:

Up to 176.28 Inmi of preventive maintenance, hot mix asphalt crack treatment and overband crack fill on various state trunkline and freeways in the cities of Big Rapids, Fremont, Newaygo, Scottville and White Cloud, villages of Baldwin, Barryton, Custer and Marion, within Kent, Lake, Osceola,

Mason, Mecosta, Montcalm, and Newaygo Counties. This project will be constructed using an innovative contracting method, Fixed Price Variable Scope. This project includes a 2 year pavement performance warranty.

Pay Item Description in AASHTOWare Preconstruction – Type 1:

Required pay items included in the engineer's estimate are fixed and must be bid, must be written as shown in the unique Special Provision. For example:

- 5027004 - _Priority 09, HMA Crack Treatment, Lane, Warranty

Additional pay items that are optional to bid, must be included in the engineer's estimate and must also include the units (i.e., lane miles) in the description. For example:

- 5027004 - _Priority 10, HMA Crack Treatment, Lane, Warranty, **19.92 Inmi**

Cost Summary By Proposal

Report v1

Proposal ID: 43022-204278

Project(s): 204278A

Federal Project Number:

Work Type: PMAI

Description: Up to 176.28 lnmi of hot mix asphalt crack treatment and overband crack filling on various state trunkline and freeways in the cities of Big Rapids, Fremont, Newaygo, Scottville, and White Cloud, villages of Baldwin, Barryton, Custer, and Marion, Kent, Lake, Osceola, Mason, Mecosta, Montcalm, and Newaygo Counties. This project will be constructed with an innovative contracting method, Fixed Price Variable Scope. This project includes a 2 year pavement performance warranty.

Project Information

Project ID	Control Section	Federal Item Number	Route	Location
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Section Information

Section ID	Section Description	Section Total	Alternate Set ID	Alternate Member ID
0001	Mobilization	\$45,000.00		

Item Prices

Line Num	Alt Set	Alt Mmbr	Item ID - Description	Quantity	Units	Unit Price	Extended Amount	SP, SS or Plan Note Req.
0010			1500001 - Mobilization, Max \$45,000.00	1.000	LSUM	\$45,000.00	\$45,000.00	
Section 0001 Total:							\$45,000.00	

Section Information

Section ID	Section Description	Section Total	Alternate Set ID	Alternate Member ID
0002	Road Work	\$0.00		

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ANSI HOWARD PROJECT™ VERSION 4.1 REVISION 003

Cost Summary By Proposal

Report v1

Item Prices

Line Num	Alt Set	Alt Mmbr	Item ID - Description	Quantity	Units	Unit Price	Extended Amount	SP, SS or Plan Note Req.
0020			5027004 - _Priority 01, HMA Crack Treatment, Lane, Warranty	15.160	Lnmi	\$0.00	\$0.00	USP
0030			5027004 - _Priority 02, HMA Crack Treatment, Ramp, Warranty	2.130	Lnmi	\$0.00	\$0.00	USP
0040			5027004 - _Priority 03, HMA Crack Treatment, Lane, Warranty	24.640	Lnmi	\$0.00	\$0.00	USP
0050			5027004 - _Priority 04, HMA Crack Treatment, Ramp, Warranty	2.160	Lnmi	\$0.00	\$0.00	USP
0060			5027004 - _Priority 05, HMA Crack Treatment, Lane, Warranty	18.360	Lnmi	\$0.00	\$0.00	USP
0070			5027004 - _Priority 06, HMA Crack Treatment, Ramp, Warranty	2.710	Lnmi	\$0.00	\$0.00	USP
0080			5027004 - _Priority 07, Overband Crack Fill, Lane	21.540	Lnmi	\$0.00	\$0.00	USP
0090			5027004 - _Priority 08, HMA Crack Treatment, Lane, Warranty	9.480	Lnmi	\$0.00	\$0.00	USP
0100			5027004 - _Priority 09, HMA Crack Treatment, Lane, Warranty	6.290	Lnmi	\$0.00	\$0.00	USP
0110			5027004 - _Priority 10, HMA Crack Treatment, Lane, Warranty, 19.92 lnmi	19.920	Lnmi	\$0.00	\$0.00	USP
0120			5027004 - _Priority 11, HMA Crack Treatment, Lane, Warranty, 7.66 lnmi	7.660	Lnmi	\$0.00	\$0.00	USP
0130			5027004 - _Priority 12, HMA Crack Treatment, Lane, Warranty, 15.26 lnmi	15.260	Lnmi	\$0.00	\$0.00	USP
0140			5027004 - _Priority 13, HMA Crack Treatment, Lane, Warranty, 11.93 lnmi	11.930	Lnmi	\$0.00	\$0.00	USP
0150			5027004 - _Priority 14, HMA Crack Treatment, Lane, Warranty, 8.86 lnmi	8.860	Lnmi	\$0.00	\$0.00	USP

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Progress Clause

The Progress Clause must allow for adequate time to complete all work. Depending on the type of progress clause, completion date, milestones, calendar days, etc... a special provision may be needed for extensions of time. If the progress clause is written with a calendar day completion, a template special provision can be found on the MDOT Previously Approved Special Provision website. Additional conversation should be held with the Construction Engineer to discuss the durations needed for the different priorities of work.

Special Provisions

The PM must use the latest special provision versions found on the MDOT Previously Approved Special Provision website under the Innovative Contracting tab. This is also a starting point for new special provisions that may be required for new types of FPVS projects, or variations of previous FPVS projects. New SP's should be identified and discussed early with the ICU FPVS Coordinator. Any new SP's will be required to follow the formal SP approval process, may require additional approvals from the FHWA, and the necessary time for approvals will need to be included in the schedule.

Chapter 6: Plan and Specification Development - Type 2

Project Log

The project log and Title Sheet should include the entire project and list the work in each priority segment.

Engineers Estimate of Work & Establishing a Rejection Limit

The PM must establish the estimated amount of work that can be competed for the available budget. It is recommended that approximately 20-30% more work than the engineers estimate should be included in the project. The beginning and ending points for the segments should be logical and field reviewed to ensure appropriate length and pay items are included.

The PM also needs to establish the minimum amount of work that would be accepted by MDOT. On traditional projects, the bid is considered for rejection if it is greater than 10% over the engineer's cost estimate. On FPVS, the budget is fixed and the rejection limit is generally around 10% less work than the engineer believes can be completed for the available budget.

The PM must place the estimate of work in the Supporting Documents folder in ProjectWise and also send an e-mail to the ICU FPVS Coordinator with their estimate of work. This information is required to complete the SEP-14 final report.

The Schedule of Items typically includes bid quantities for the minimum acceptable amount of work (rejection point), and the bidder can only bid if they can at least do the minimum amount of work.

AASHTOWare Preconstruction File

The AASHTOWare Preconstruction file must be set up as described in the Special Provision for Preparation, Delivery, and Consideration of Bids on Fixed Price Variable Scope Projects. Multiple sections are required which represents alternatives and Bidders are to bid on one section in the proposal. Type 2 will require a unique SP to be submitted for review and approval for each FPVS project. Refer to the template Special Provision for Preparation Delivery and Consideration of Bid on Fixed Price Variable Scope Projects under the Innovative Contracting tab on the MDOT Previously Approved Special Provision website

AASHTOWare Preconstruction Long Description Sample:

Up to 23 sites of ITS and ESS devices along US-31, I-96, and I-196 including installation of fiber optic net-work and wireless communications along US-31 from East Sternberg Road to Laketon Avenue, communication up-grades at 3 existing ITS sites on US-31 in Grand Haven, and the installation of wireless backhaul communications between Muskegon and Grand Rapids in the cities of Grand Haven, Ferrysburg, Hudsonville, Grand Rapids, Muskegon, and Norton Shores, Kent, Muskegon, and Ottawa Counties. This project will be constructed using an innovative contracting method, Fixed Price Variable Scope. Please see the Special Provision for Preparation, Delivery, and Consideration of Bids on Fixed Price Variable Scope Projects.

Progress Clause

The Progress Clause must allow for adequate time to complete all work. Depending on the type of progress clause, completion date, milestones, calendar days, etc... a special provision may be needed for extensions of time. If the progress clause is written with a calendar day completion, a template special provision can be found on the MDOT Previously Approved Special Provision website. Additional conversation should be held with the Construction Engineer to discuss the durations needed for the different priorities of work.

Special Provisions

The PM must use the latest special provision versions found on the MDOT Previously Approved Special Provision website under the Innovative Contracting tab. This is also a starting point for new special provisions that may be required for new types of FPVS projects, or variations of previous FPVS projects. New SP's should be identified and discussed early with the ICU FPVS Coordinator. Any new SP's will be required to follow the formal SP approval process, may require additional approvals from the FHWA, and the necessary time for approvals will need to be included in the schedule.

Chapter 7: Plan and Specification Development - Type 3

Project Log or Plan Sheets

The plan sheets or project log and cover sheet should include the entire project. The work in the limits defined as Priority 1 is estimated to be the amount available to construct the project. The work should be uniform so unit prices can be adjusted. If there are Priority 2 pay items that do not exist in Priority 1, then a price will need to be negotiated with the contractor prior to adding the work. The beginning and ending points for the segments should be logical and field reviewed to ensure appropriate length and pay items are included.

Engineers Estimate of Work & Establishing a Rejection Limit

Type 3 projects are developed similarly to traditional projects except the bid items in AASHTOWare Preconstruction reflect the items that are estimated to use the available funding. The PM should include enough work to complete approximately 90% of the Construction budget, which would then be deemed Priority #1. This can be adjusted depending on the scope of work. For example, if the project limits are from Point A to Point C, and the estimated costs of this work is \$2,000,000, and the available funds is \$1,000,000, the bid items would be established to go to Point B that is between Point A and Point C, which would expend the 90% of the \$1,000,000.

Type 3 FPVS follow the same process as traditional projects, the bid is considered for rejection if it is greater than 10% over the engineer's cost estimate. At a minimum, only Priority 1 may be completed even if bids come in over the programmed fixed price amount, unless funds are available from a different source to extend the limits by contract modification.

During construction, the project is managed through a Contract Modification, to construct the amount of work that can be built for approximately \$1,000,000. Work may be increased from point B depending on the bids. It should be noted that the Designer will be expected to assist Construction staff in determining the final limits based upon the bid prices established for the items. See Appendix B for an example of this method.

AASHTOWare Preconstruction File

The AASHTOWare Preconstruction file must include all the applicable pay items in Priority 1. The project description should include language that states the project is a FPVS project.

AASHTOWare Preconstruction Long Description Sample:

6.023 mi of hot mix asphalt profile cold milling and single-course resurfacing with wedging, centerline corrugations and permanent pavement markings on M-20 from Loomis Road easterly to Geneva Road, Midland County. This project will be constructed with an innovative contracting method, fixed price-variable scope, to extend the project limits to include a maximum of 1.699 miles to the west, to a location east of Leaton Road. The project includes a 3 year materials and workmanship pavement warranty.

Progress Clause

Review the items of work and overall schedule during design. The Progress Clause must allow for adequate time to complete all work in Priority 1 and may need to be written to accommodate the Fixed Price Variable Scope (FPVS) contracting method. Projects should consider the end date when scheduling the project so time can be added if the project limits are extended. There is a Special Provision available on the MDOT Previously Approved Special Provisions website under the Innovative Contracting tab that accommodates extensions of time on calendar date Type 3 projects. Contact the ICU FPVS Coordinator to discuss further and to evaluate options if the project is extended or decreased.

Special Provisions

The PM must use the latest special provisions found on the MDOT Previously Approved Special Provision website, under the Innovative Contracting tab. This is also a starting point for new special provisions that may be required for new types of FPVS projects, or variations of previous FPVS projects. New SP's should be identified and discussed early with the ICU FPVS Coordinator. Any new SP's will be required to follow the formal SP approval process, may require additional approvals from the FHWA, and the necessary time for approvals will need to be included in the schedule.

Notice to Bidders (NTB)

The ICU FPVS Coordinator will provide the template Notice to Bidders to the PM.

Bid Acceptance Actions

1. Must accept bids at the "as-bid" price.
2. If the low bid is greater than the construction budget, follow standard procedures.
3. Can reject all bids if 10% over Engineers Estimate.
4. **A bid review must be performed to make sure the bid is not unbalanced.**
5. Must discuss options if project limits are extended.
6. Review the bids to determine the new project limits that can be completed for the Fixed Price.
7. Create a contract modification after award to increase the contract amount to the Fixed Price.
The PM should prepare a quantity spreadsheet for the contract modification.

Chapter 8: Other Considerations

Advertising Considerations

FPVS projects have typically been advertised for a minimum of 4 weeks for Capital Preventive Maintenance type projects. Any functional enhancement projects should consider a longer advertisement period.

Chapter 9: Construction Activities

Type 1 Projects

The FPVS bidding method introduces some minor complexity with regard to payment. The payment mechanism is set up by priority and is fairly straight forward for lane mile pay items. However, as multiple pay items are included in one unit a schedule for payment is typically included in the Special Provision. This should be reviewed before the project is let and also discussed at the pre-construction meeting since it could have prompt payment issues depending on work operations.

The Construction Engineering (CE) Budget should be estimated based on the expected amount of work to be completed. If additional work is added and it significantly increases the schedule, it is recommended a request be made to the Region or Finance to increase the CE Budget to accommodate for the added length.

If additional funding becomes available to increase the stated fixed price after award in order to complete the remaining project limits in the original construction season, then the construction contract modification requirements per section 103 of the Standard Specifications for Construction for both Tier I - TSC and Tier II - Region approvals must be followed up to a maximum 10% increase to the stated fixed price. The stated project limits listed in the STIP would remain unchanged with the fixed project termini end point and the entire project limits completed in the original construction season.

Type 2 Projects

The FPVS bidding method introduces some minor complexity with regard to payment. The payment mechanism is set up by priority and is fairly straight forward. However, as multiple pay items are included in one priority a schedule for payment is typically included in the Special Provision. This should be reviewed before the project is let and also discussed at the pre-construction meeting since it could have prompt payment issues depending on work operations.

Type 3 Projects

Construction staff will be expected to work closely with the designers after letting to help establish the final construction limits. Once these are determined a Contract Modification will be necessary to revise the work limits to meet the project budget or fixed price.

The Construction Engineering (CE) Budget should be estimated assuming the work will be extended to the estimated/programmed Construction Amount. A request should be made to the Region or Finance Area to not adjust the CE (up or down) once the contract modification is processed.

Chapter 10: Frequently Ask Questions and Items to Consider During Design

(Q) For a Type 3 Project, does the Contract Modification to increase the limits, pay items and associated cost require the typical approvals?

(A) Yes, the normal contract modification process will need to be followed.

(Q) Are there any potential claim issues with major items of work as described in Section 103.2B of the Standard Specifications for Construction?

(A) A Special Provision should be added into Type 3 projects, which modifies subsection 103.02B of the Standard Specifications for Construction. It should be noted however, this SP was developed for the purposes of extending or reducing the overall project limits and associated pay items. Removing specific items of work should be avoided and any changes to specific items should be discussed with the Contractor.

Appendix A – JobNet Examples

Example 1: In this example Point A to B is expected to be constructed in 2021, and Point B to E is expected to be completed in 2022. The STIP shows the entire project limits in both years to indicate this is part of one project constructed over 2 years using 2 different job numbers. The FHWA expects the entire project (A to E) to be completed with the 2021 and 2022 project. The 2022 project must complete the project from Point A to E or have a comment that explains how the project will be completed within 3 years (FPVS, traditional design bid build, or to be completed by direct forces). These are high level samples and does not cover every case. The ICU FPVS Coordinator will provide a detailed example if requested showing how a project should look in JobNet.

Table 1: Programmed Job Phase 1 has not been let.

FY	County	Resp. Agency	Project Name	Limits	Length	Phase	Fed Cost	Local Cost	MDOT Job No.	Local ID	STIP Comments
2021	Oscoda	OCRC	Miller Rd	A to E	4.4	Con	\$419,000	\$48,000	333333	111111	Fixed Price-Variable Scope (add limits of phase 1 and 2)
2022	Oscoda	OCRC	Miller Rd	A to E	4.4	Con	\$419,000	\$48,000	444444	222222	Fixed Price-Variable Scope (add limits of phase 1 and 2)

After the project is let JobNet needs to be modified to reflect as-let and as-built limits after the limits of the 2021 project are known. The 2022 project must complete the project from Point A to E. If limits change more than ½ mile this will trigger a S/TIP Amendment (please allow enough time in your schedule for approvals).

Table 2: Modified assuming the project went to C Street in 2021 Job. (Please note a 25% change in limits will trigger a STIP amendment. Please be sure you allow enough time in your design schedule for the amendment.)

FY	County	Resp. Agency	Project Name	Limits	Length	Phase	Fed Cost	Local Cost	MDOT Job No.	Local ID	STIP Comments
2021	Oscoda	OCRC	Miller Rd	A to C	3.0	Con	\$419,000	\$48,000	333333	111111	Fixed Price-Variable Scope (add revised limits of phase 1 and 2)
2022	Oscoda	OCRC	Miller Rd	C to E	1.4	Con	\$419,000	\$48,000	444444	222222	Fixed Price-Variable Scope (add revised limits of phase 1 and 2)

Example 2: There may be circumstances where the original project is from Point A to E, and the remainder of the project would be added to a larger project in 2022 that extends to F Street. In this case the JobNet could be shown as follows.

Table 3: Modified assuming the project went to D Street in 2021, and the 2022 project is extended to point F.

FY	County	Resp. Agency	Project Name	Limits	Length	Phase	Fed Cost	Local Cost	MDOT Job No.	Local ID	STIP Comments
2021	Oscoda	OCRC	Miller Rd	A to D	3.0	Con	\$419,000	\$48,000	33333	111111	Fixed Price-Variable Scope Project limits of Phase 1 were A to D
2022	Oscoda	OCRC	Miller Rd	D to F	2.4	Con	\$419,000	\$48,000	44444	222222	Fixed Price-Variable Scope Project limits of Phase 1 were A to D Project limits of Phase 2 are...D to F

Appendix B – Type 3 (Managed Approach) Example

Example Assumptions

Entire Project = On A Ave. from A Street (POB) to E Street (POE)

(See example on the following page)

Available Funding = \$1,000,000

Priority 1 = A Street to C Street: This is the geographical limits that 90% of the \$1,000,000 is expected to build.

Priority 2 = C Street to E Street: This segment of the project is included in the design with informational pay items and quantities that are not in the Schedule of Items bid.

Schedule of Items:

The schedule of items is made up of the normal pay items and quantities estimated by the Engineer that are required to complete Priority 1. The major pay items for this type of project include: Mobilization, HMA Base Crushing and Shaping, HMA paving items, and traffic control items. Minor items for work such as pavement markings and adjustments to manholes would also be included in the Schedule of Items

Bidding Process:

Bids are received through traditional bidding processes where MDOT advertises the project and the contractor provides unit prices for the pay items provided in the Schedule of items. The selected contractor would be the one that submits the low bid based on the pay items and quantities in the Schedule of Items. The project is awarded at the low bid price.

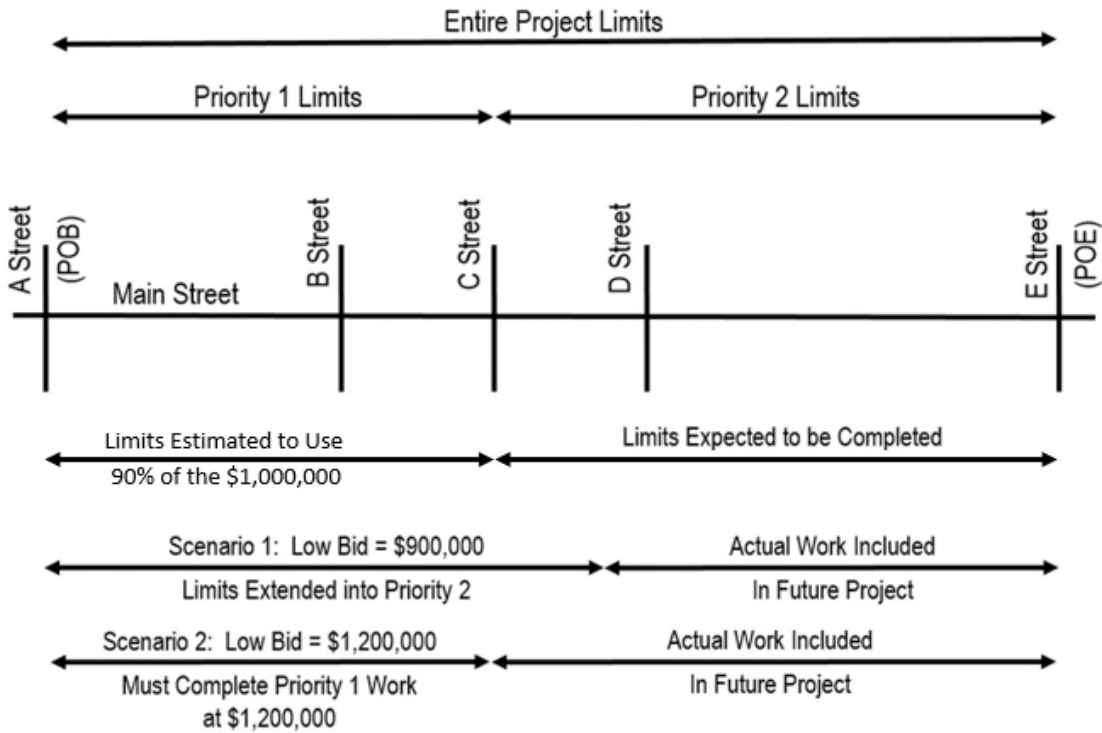
Managed Approach to FPVS Projects.

Scenario 1: If the low bid is \$900,000, the project would be managed during construction so the entire \$1,000,000 is used. This would result in the project being extended past the Priority 1 limits into Priority 2. The work into Priority 2 is done by a contract modification after award using the unit prices bid by the low bidder.

Scenario 2: If the low bid is \$1,100,000, the project would not need a contract mod and only Priority 1 limits may be completed unless funds are available from a different source.

The uncompleted portion of the project would be included in a future project for either scenario.

Managed Approach Example



Appendix F: DRAFT Guidelines for Design-Bid-Build ATC Contracts

Draft guidelines are currently being developed. The draft guidelines can be reviewed at the following ProjectWise link: [ATC Manuals and Guides](#)

Appendix G: Acronyms and Staff Titles



ACRONYMS

Acronym	Definition
AASHTO	American Association of State Highway Transportation Officials
ACEC	American Council of Engineering Companies
ATC	Alternate Technical Concepts
ATC/DBB	Alternate Technical Concepts on Design-Bid-Build projects
BFS	Bureau of Field Services
BOHIM	Bureau of Highway Informational Memorandum
BV	Best Value
CA	Certification and Acceptance form
CATC	Conceptual Alternate Technical Concept
CCS	Construction Contracts Section
CD	Compact Disk
CE	Construction Engineering
CEI	Construction Engineering and inspection
CFR	Code of Federal Regulations
CMGC	Construction Manager / General Contractor
CPA	Certified Public Accountant
CPM	Critical Path Method
CSCP	Construction Service Cost Proposal
CSD	MDOT Contract Service Division
CSD CA	Contract Analyst in CSD
CSRT	Central Selection Review Team
DADC	Design Assistance During Construction
DB	Design-Build
DB CA	Design-Build Certification and Acceptance form
DBB	Design-Bid-Build
DBE	Disadvantaged Business Enterprise
DBF	Design-Build-Finance
DBFOM	Design-Build-Finance-Operate-Maintain
DBIA	Design-Build Institute of America
DOR	Designer of Record
DPM	Deputy Project Manager
DQM	Design Quality Manual
EEO	Equal Employment Opportunity
EOC	Engineering and Operations Committee

Acronym	Definition
EPD	Escrowed Proposal Documents
EPE	Early Preliminary Engineering
EUAC	Equivalent Uniform Annual Cost
FHWA	Federal Highway Administration
FPVS	Fixed Price Variable Scope
GEC	General Engineering Consultant, also known as the On-Demand General Engineering Consultant
GFE	Good Faith Effort
GMP	Guaranteed Maximum Price
GPA	General Program Account
ICC	Innovative Contracting Committee
ICE	Independent Cost Estimator
ICU	Innovative Contracting Unit
IDIQ	Indefinite Delivery - Indefinite Quantity
ITP	Instructions to Proposers
ITS	Intelligent Transportation Systems
JOC	Job Order Contracting
LCCA	Life Cycle Cost Analysis
LEED	Leadership in Energy and Environmental Design
LOI	Letter of Interest
MAP-21	Moving Ahead for Progress in the 21st Century
MDOT	Michigan Department of Transportation
MITA	Michigan Infrastructure and Transportation Associates
MPINS	MAP Project Information System
NEPA	National Environmental Policy Act
NLE	Northern Long Eared Bat
OBD	Office of Business Development
ODC	On Demand Consultant
OEC	Omissions and Errors Check
P3	Public-Private Partnership
PDF	Adobe Acrobat file format
PE	Preliminary Engineering
PM	Project Manager
PoDI	Projects of Division Interest
PPMS	Program/Project Management System

Acronym	Definition
PPP	Public-Private Partnership
PSE	Plans, Specifications and Estimate
PW	ProjectWise
RFC	Released for Construction
RFLOI	Request for Letters of interest
RFP	Request for Proposals
RFQ	Request for Qualifications
RID	Reference Information Documents
ROW	Right of Way
SAB	State Administrative Board
SEP-14	Special Experimental projects Number 14
SOQ	Statement of Qualifications
STC	State Transportation Commission
T&NR	Transportation and Natural Resources Board
TMP	Transportation Management Plan
TSC	Transportation Service Center
VE	Value Engineering
VECP	Value Engineering Change Proposal

MDOT Staff Titles

Position Title	Employee Name
CCS Administrative Assistant	Susan Long
CCS Bid Letting Analyst	Heather Stinson
CCS Bid Letting Technician	Kalene Curtis
CCS Bid Letting Technician	Raquel Salinas (Contact For DB Turn-In Process)
CCS Manager	Jill Mullins
CFS Construction Operations Engineer	Jason Gutting
Contract Analyst	Varies by Region
CSD Administrator	Dee Parker
CSD Non-Standard Agreement Writer	Lynne Chesbro
CSD Payment Analyst	Cheryl Hill
CSD Selection Analyst	Amy Meldrum
CSD Sub-Contract Analyst	Sherri Hawkins
CTRAK Administrator	Kim Tran
Director	Kirk Steudle
Engineer of Bridge CFS	Matt Chynoweth
Engineer of Construction	Jason Gutting
Engineer of Design	Brad Wieferich
ICC Chair	Chris Youngs
ICC Members	Chris Youngs, Brad Wieferich, Jason Gutting, Dee Parker, Jack Hofweber, Paige Williams, Roger Safford, Sheila Upton, Jeff Forster (FHWA)
ICU Manager	Chris Youngs
MDOT Drainage Coordinator	Coreen Strzalka
Specifications and Estimate Engineer	Mark Shulick
Specifications Engineer	David Pawelec
Traffic Incident Management Engineer	Angie Kremer