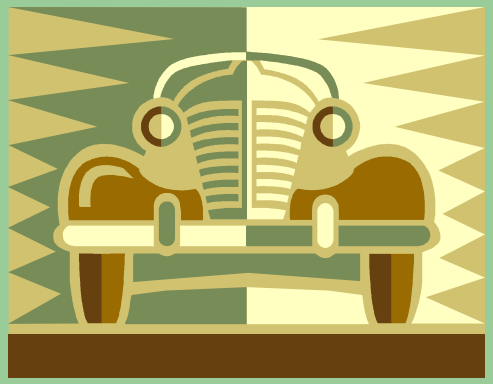
MD 4 (Pennsylvania Avenue) at Suitland Parkway Interchange

Construction Management at Risk (CMAR) Project



INFORMATIONAL MEETING

May 10, 2021

10:00 A.M.

Overview

- MD 4 (Pennsylvania Avenue at Suitland Parkway Interchange Project Overview
- Construction Management at Risk Project Delivery Overview
- Overview of the Procurement Process

Project Study Area

Background

- The MD 4 Corridor is highly congested and the rapid growth in the area continues to increase traffic.
- There are significant delays at many intersections along MD 4 for motorists planning to access or cross, including Westphalia Road, Suitland Parkway, and Dower House Road.
- In 2000, after a study to identify solutions to the increasing congestion was completed, the Federal Highway Administration (FHWA) approved a plan to construct interchanges at each of these intersections.
- Interchanges at Dower House Road and Westphalia Road are not currently funded for design by MDOTSHA.

Purpose and Need

The project is intended to improve safety and provide sufficient roadway capacity to address existing and projected traffic demands throughout the corridor.

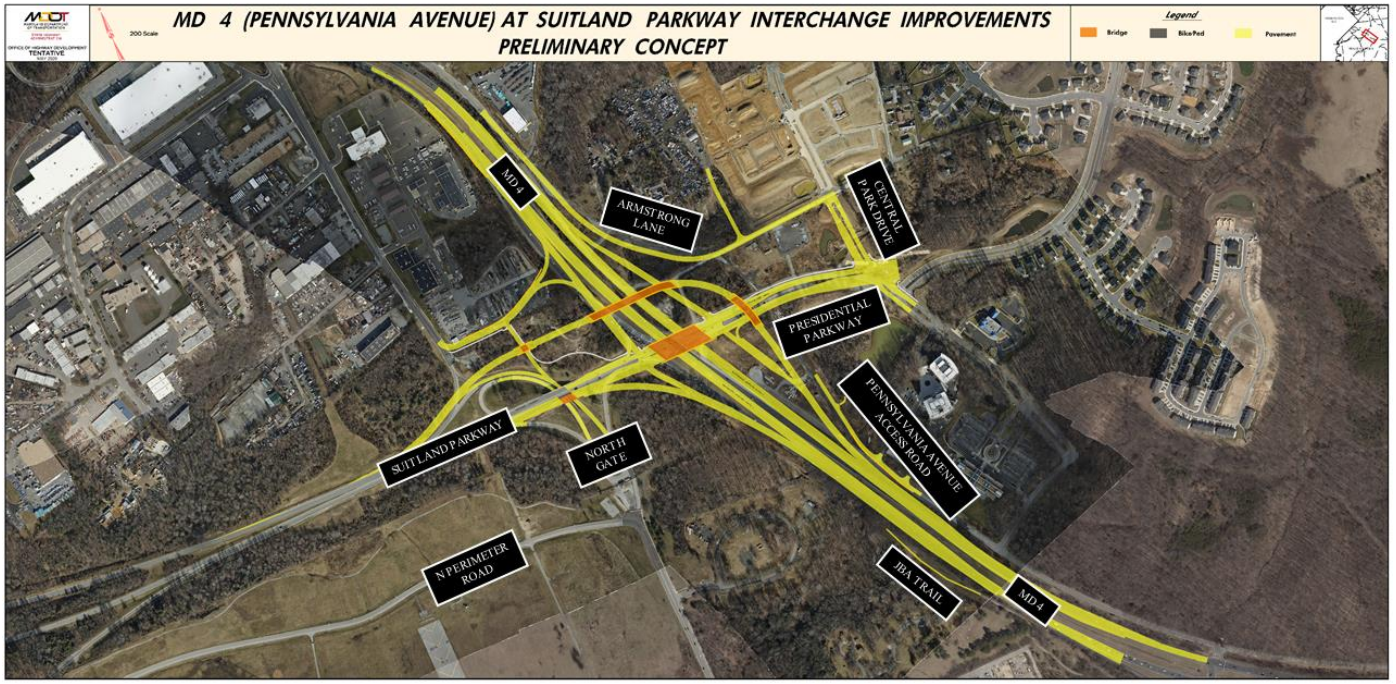
What We Did…

- Planning study was completed in 2000 and a two lane-roundabout interchange was chosen as the preferred alternative
- However, after further study, this alternative was deemed inadequate and other interchange designs such as a SPUI and Diamond interchange with a flyover were considered
- The diamond interchange with a flyover from northbound MD 4 to westbound Suitland Parkway was chosen as the preferred alternative in 2008
- Later in 2016, the design was revised to remove the flyover and keep it as a diamond interchange

Change Since 2016

- Project originally advertised in December 2016.
- In August 2020, MDOT SHA terminated the contract for convenience due to constructability problems, utility issues, rising costs, and sequencing.
- After reviewing the 2045 design year traffic volumes, a two-lane flyover from northbound MD 4 to westbound Suitland Parkway will be re-included in the project.

Selected Alternative



MD 4 (Pennsylvania Avenue) at Suitland Parkway Interchange Project

- The current interchange configuration being designed is a diamond interchange with a two-lane free flow flyover ramp and will be located at the existing signalized intersection.

- MD 4 will be widened to a two-lane section with room in the median for a future additional lane. Improvements to Suitland Pkwy will be limited to deceleration and acceleration lanes.

MD 4 (Pennsylvania Avenue) at Suitland Parkway Interchange Project

- The portion of Presidential Pkwy (opposite Suitland Pkwy) that is to the east of MD 4 will be modified and reconstructed to accommodate the change in profile and the acceleration and deceleration lanes from the interchange ramps.

- Presidential Parkway will be realigned to be tangent with Suitland Pkwy and an at-grade intersection will be designed to connect Suitland Pkwy Extended with Presidential Pkwy on the Prince George's Master Plan alignment

Project Elements:

Construction is anticipated to consist of the following major elements:

- Traffic control plans
- Closed section roadways and storm drain features
- Open section roadways
- Stormwater management ponds
- Signalized intersections
- Temporary roadway construction
- Three bridges on Flyover
- One bridge over MD 4
- Widen one existing bridge on Suitland Parkway
- Retaining wall construction
- Landscaping
- Lighting

Project Challenges:

- Sequence of Work
  - Develop a sequence of construction to maximize productivity. This includes a flexible Erosion and Sediment Control (E&SC) plan.
- Maintenance of Traffic (MOT)
  - Provide safe and efficient maintenance of traffic and minimize impacts to the traveling public.
  - Maintain access to developments.
  - Maintain the temporary closure at Joint Base Andrews (JBA) North Gate.
  - Have a flexible MOT Plan in case of heightening restrictions at JBA.
  - Ensure signage in the plans is updated and accounts for all access points and developments.
- Utilities
  - Ensure no impacts or minimize impacts to the relocated utilities to maximum extend practical.
  - Utility coordination with Washington Suburban Sanitary Commission (WSSC) to address completion of the relocated waterline.

Project Challenges:

- Right-of-way
  - Minimize acquisitions to the extent practical.
- Environmental
  - National Environmental Policy Act (NEPA) is approved.
  - The National Park Service owns Suitland Parkway, which is on the National Register of Historic Places.
- Permits Status
  - No significant changes to permitting; however, a comprehensive review and revision of the E&SC plans are needed to address sequencing and constructability issues.
  - Coordination with Maryland Department of Environment (MDE) for a new MDE Authorization Letter and Corps of Engineer (COE) permit.

Project Status

- Project has reached the 50% design level
- Construction is scheduled to start by Spring 2023

Major Stakeholders

- Prince George's County
- Joint Base Andrews
- National Park Services
- Developers
  - Wood Property
  - Westphalia
  - Smith Farm Home
- Utility Companies
  - Washington Suburban Sanitary Commission

Construction Management at Risk (CMAR) Project Delivery

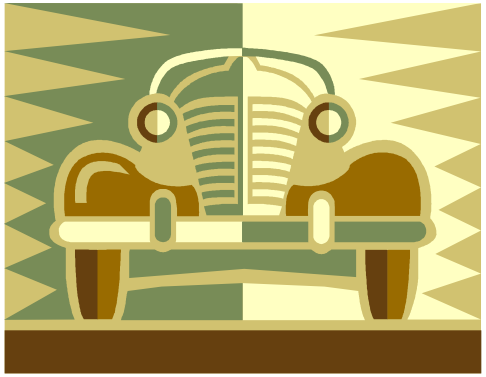
What is CMAR?

A project delivery method where SHA utilizes a two-phase construction contract with a General Contractor to:

1) Provide Preconstruction Services which may include, but are not limited to, constructability analysis, value analysis, scheduling, site assessments, and cost estimating;
2) Construct the project based on final design plans (or design packages) at an agreed Guaranteed Maximum Price (GMP)

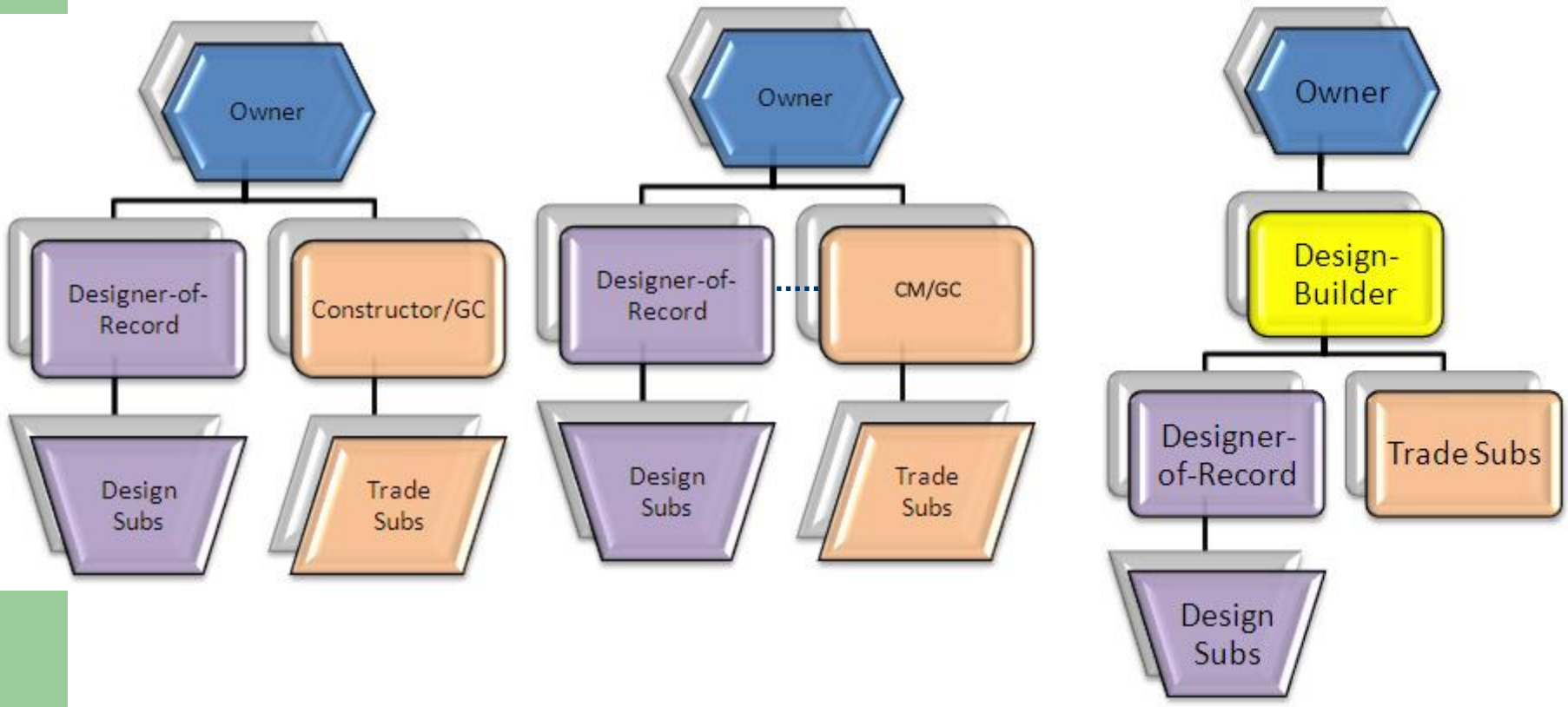
Authority

- State – Code of Maryland Regulations (COMAR) 21.05.10
- Federal – Moving Ahead for Progress in the 21st Century (MAP-21) – *Construction Manager/General Contractor (CM/GC)*



Project Delivery Methods

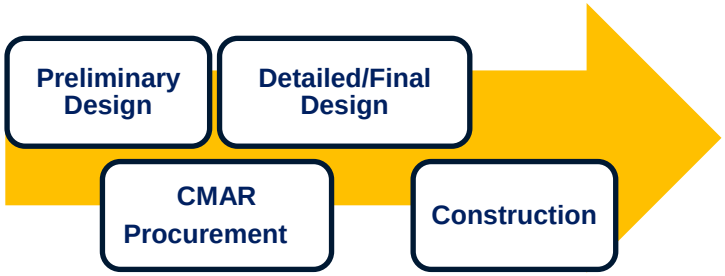
Design-Bid-Build **CMAR** **Design-Build**



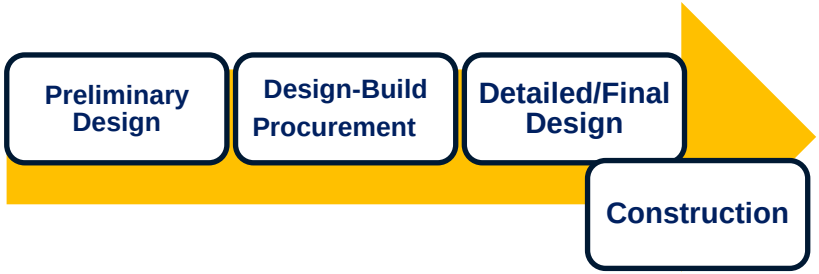
Project Development

Design-Bid-Build (DBB)

CMAR



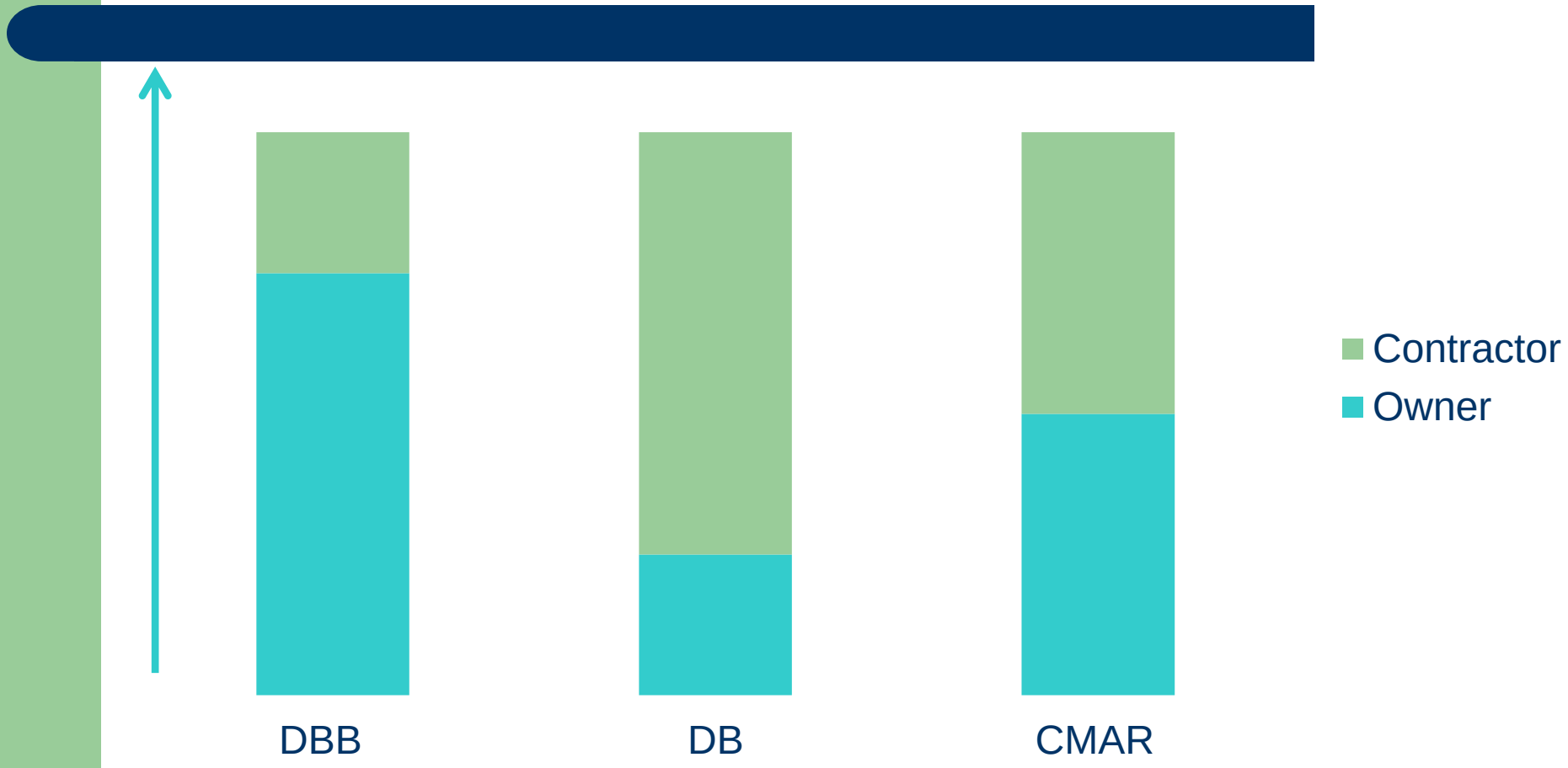
Design-Build (DB)



Reasons for choosing CMAR

- Shorten Project Delivery
- Project Complexity
- Contractor Input During Design
- High Number of Potential Risks/Risk Allocation
- **Scope Flexibility/Maximizing Dollars**
- Cost Analysis of Multiple Design Options
- Informed Owner Decision Making

CMAR – Risk Allocation



CMAR Expectations

- Meet Project Goals
- Fair Market Price
  - At or Below Proposed Price
- Improved Schedule
- Fewer Change Orders

CMAR Benefits

- Opportunity to bring on contractor during the design phase to work as an integrated team with the owner and its consultant/engineer to deliver the most efficient, and cost effective design
- Promotes innovation & collaboration
- Owner maintains decision making authority
- Greater cost certainty through GMP and reduction in change orders
- Still allows phased construction similar to design-build resulting in accelerated completion times. Phases must be stand alone and **severable**.
- Risk identification & management during design phase and controlled by the team
- Owner gets up front benefit of value engineering
- CMAR design documents are biddable packages, not necessarily full set of biddable contract documents

CMAR Potential Risks

- Transparency – Technical Qualifications and Approach are Main Elements for Selection
- Cost Validation – “Negotiated” vs. Bid
- Culture – New Process for All (SHA, Consultants, Contractor, Regulatory Agencies, Etc.)
- Risk – Limited Historical Usage for Heavy Highway Construction

CMAR Project Team

- Owner (SHA)
- Engineer under separate Contract with owner to provide all design services for the project.
- Two Phase Contract with General Contractor (GC)
    - GC selected through Best Value process
    - Phase 1 – Preconstruction Services - GC considered part of the design team providing constructability, cost, schedule and risk management input.
    - Phase 2 – GC and Owner agree on GMP to construct the project based upon final design plans (or design packages). If GMP cannot be agreed upon, then advertise as design-bid-build.

Independent Cost Estimator

- Independent party hired by SHA to prepare a series of detailed estimates.
- Estimates are performed independently from Contractor and SHA's Designer.
- Estimates are utilized as a basis of comparison for review of Contractor's GMPs and award of Construction Contract.

Cost Model Development

- Develop Cost Model for Project
  - Opinion of Probable Construction Cost (OPCC)
  - Guaranteed Maximum Price (GMP)
- Elements of Cost Model
  - CMAR Management Fee Percentage (from Price Proposal)
  - Items
    - Equipment Types and Rates
    - Material Sources
    - Labor
  - Subcontractor Items of Work
  - Risk Sharing Pool (Assignment and Agreement of Risks)
  - Schedule Agreement

Cost Model Development

- OPCC
  - To be submitted at various Design Completion milestones
  - Blind Estimate Comparison
  - Report of Items Outside of Tolerance (>10%)
  - Reconciliation Meeting to discuss differences in bidding assumptions

Once Design is Complete

- Contract documents have been developed collaboratively by team
- Follow typical procedures
  - DBE goals established for construction
  - 2020 Standard Specifications and current SP/SPIs
- GMP - Contractor and ICE will independently price project

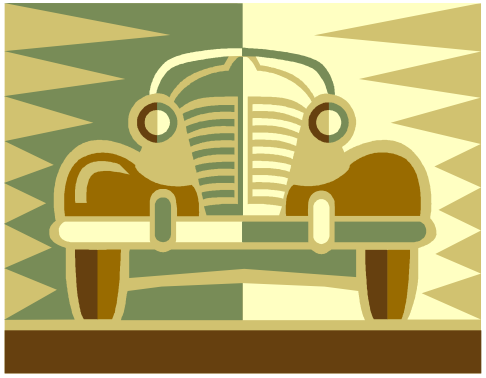
Once GMP is Submitted

- Contractor and ICE prices
- Price Reconciliation Meetings as needed
- Up to 3 GMP Submittals allowed
  - Accept GMP and Award Contract
  - Terminate Contract and Bid Project as DBB

Procurement Process

Competitive Sealed Proposals

CM at Risk contracts will be procured using the "Competitive Sealed Proposals" procurement method as defined in the COMAR 21.05.03.



Competitive Sealed Proposals

One Step Procurement Process

Request For Proposals (RFP)

- *Technical Proposal*
- *Price Proposal*

Note: Proposers are responsible for all costs associated with responding to the RFP. All information included in responses to RFP shall be become property of SHA.

Technical Proposals

Evaluation Factors

- *Project Management Team/Capability of Proposer*
- *Project Approach*
- *Financial Information*

Technical Proposals

- Project Management Team/Capability of Proposer
  - Composition of the Project Management Team
  - Key Staff
    - Project Manager – must be employee of the Prime or JV Contractor
    - Construction Manager
    - Cost Estimator
  - Past Project Performance

Technical Proposals

- Project Approach
  - Preconstruction Approach
  - Construction Approach
  - Risk Management
- Financial Information (pass/fail)
  - Bonding Capability (Cost Group L)
    - Current Funding - +/-$115 M
    - Potential additional contribution from Prince George's County - +/-$40 M

Price Proposals

Evaluation Factors

- *Preconstruction Fee (Lump Sum price)*
- *CMAR Management Fee Percentage*

Included in Percentage	Not Included in Percentage
Project Principal	Project Manager, Construction Manager
Home Office Support Staff	All On Site CM Staff
Safety Staff	On Site Administrative Staff
Quality Control (QC) Support Staff	Direct costs related to Safety, QC
Cost Estimator during construction	Other project direct costs such as materials, equipment, and labor
Profit	

Price Proposals

Evaluated Price

- *A = Preconstruction Fee*
- *B = $100 M x CMAR Management Fee Percentage*

Total = A + B + $100 M

Ex. – A = $0.750 M & B = 10.51%

Evaluated Price = $0.750 M + $10.510 M + $100 M

Evaluated Price = $111.260 M

Evaluations of Technical and Price Proposals

- Technical and Price Proposals are evaluated separately
- Best Value Process – most advantageous to the State considering technical evaluation factors and price.
- Adjectival Rating process
- Evaluation Factors and Subfactors weighting – Critical, Significant, Important
- Importance of Technical Proposal is significantly more important than Price Proposal

Request For Proposals (RFP)

PROPOSED PROCURMENT SCHEDULE

Issue RFP	May 24, 2021
Final Date for Proposer's Questions	June 14, 2021
Letter of Interest Due	June 21, 2021
Technical and Price Proposal Submittal to SHA	June 28, 2021
Selection of Successful Proposer	August 2021
Preconstruction Notice to Proceed	September 2021
Construction Notice to Proceed	Spring 2023

Questions/Feedback?

Information related to this presentation will be available at the following: www.roads.maryland.gov under Business Center, Contracts, Bids & Proposals, Alternative Project Delivery, Construction Management at Risk Projects, PG6185470

Email: PG6185470-MD4@mdot.Maryland.gov