

# Putty Hill Avenue over I-695 Construction Management at Risk (CMAR) Project



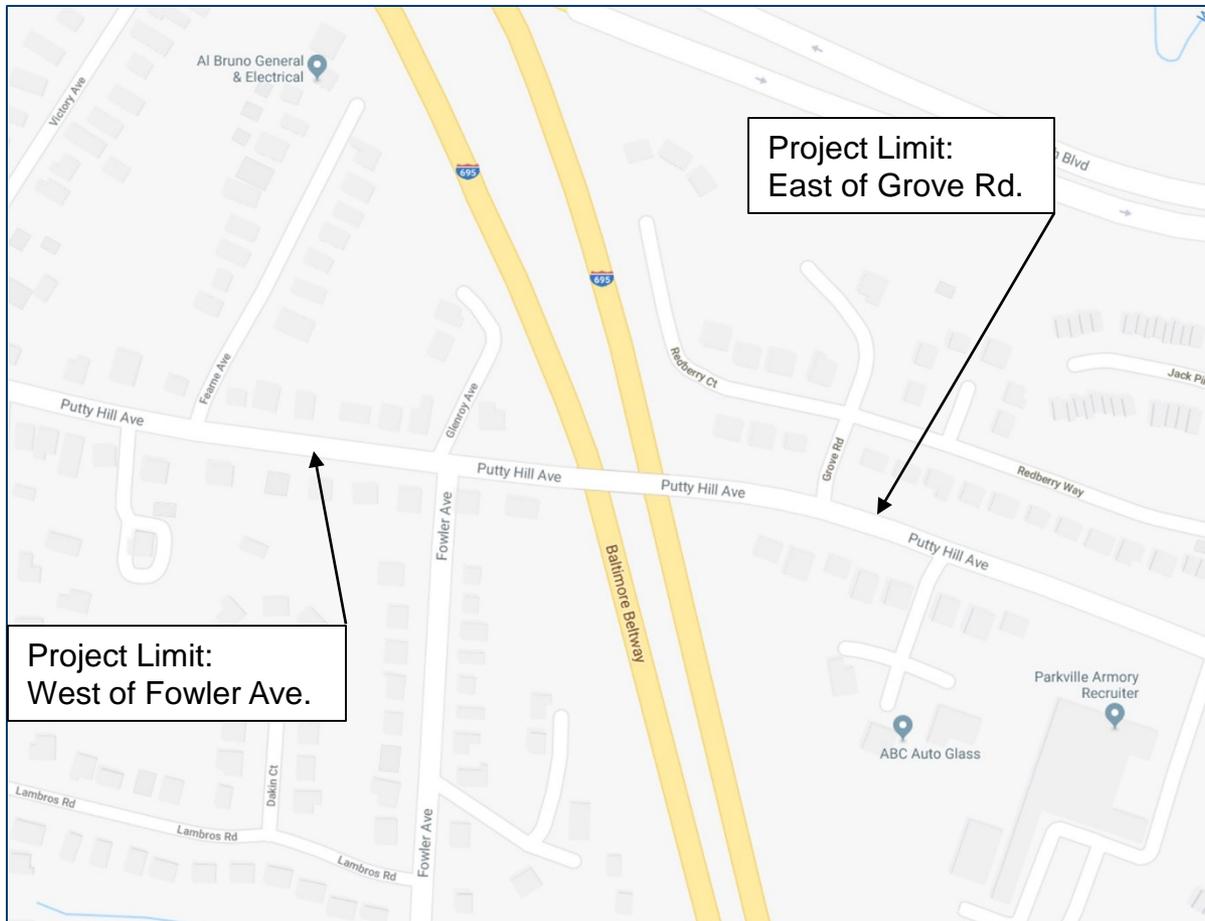
---

INFORMATIONAL MEETING  
January 17, 2018

# Overview

- Putty Hill Avenue Project Overview
- Construction Management at Risk Project Delivery Overview
- Overview of the Procurement Process

# Project Study Area



# Background

- The existing bridge was originally constructed in 1961.
- The bridge deck is currently rated as a 4, making the bridge structurally deficient. The condition of the substructure is fair but worsening.
- A Maintenance of Traffic Alternatives Analysis (MOTAA) was performed to determine the best method for maintaining traffic during construction. The preferred method is to maintain two-way traffic in a single lane with the use of a system of temporary traffic signals to alternate traffic through the work zone at the bridge, while completing the work in two stages.

# Purpose and Need

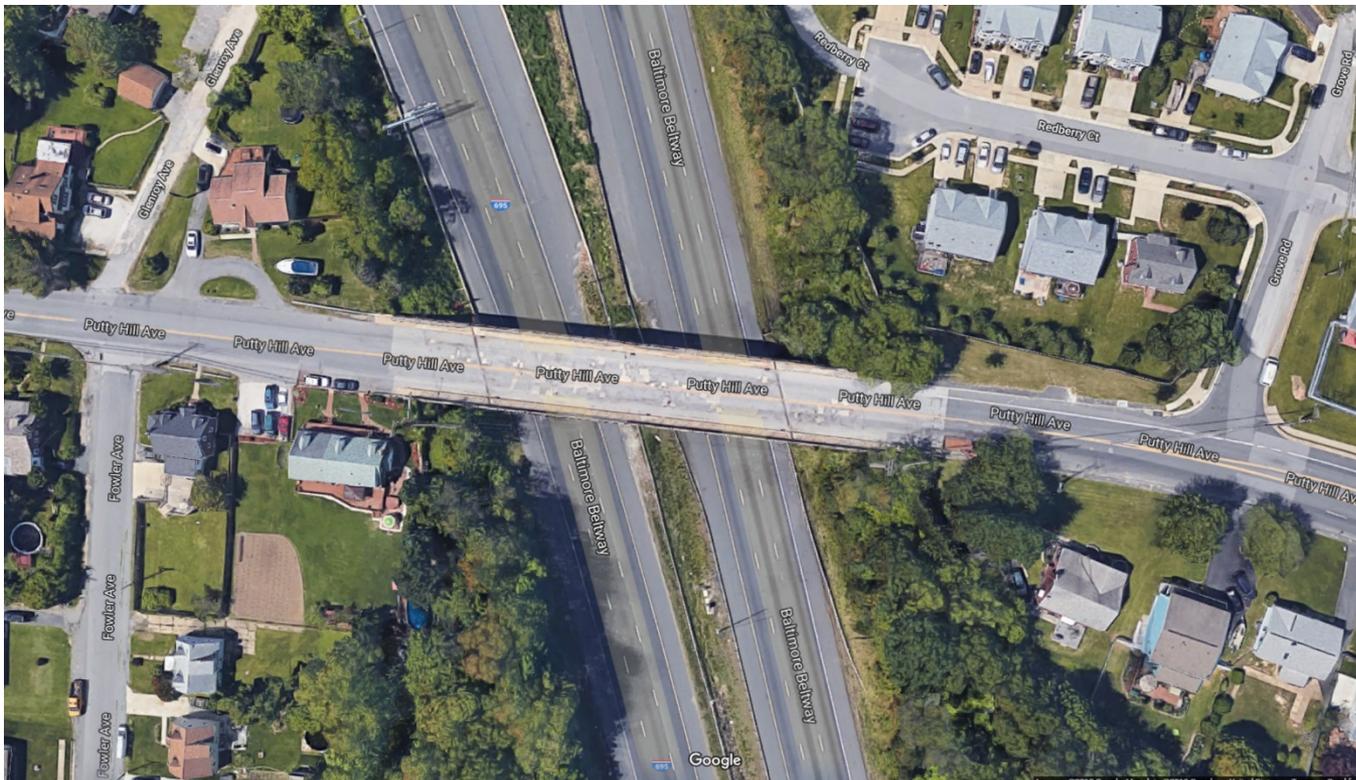
## **PURPOSE**

- Address a structurally deficient bridge

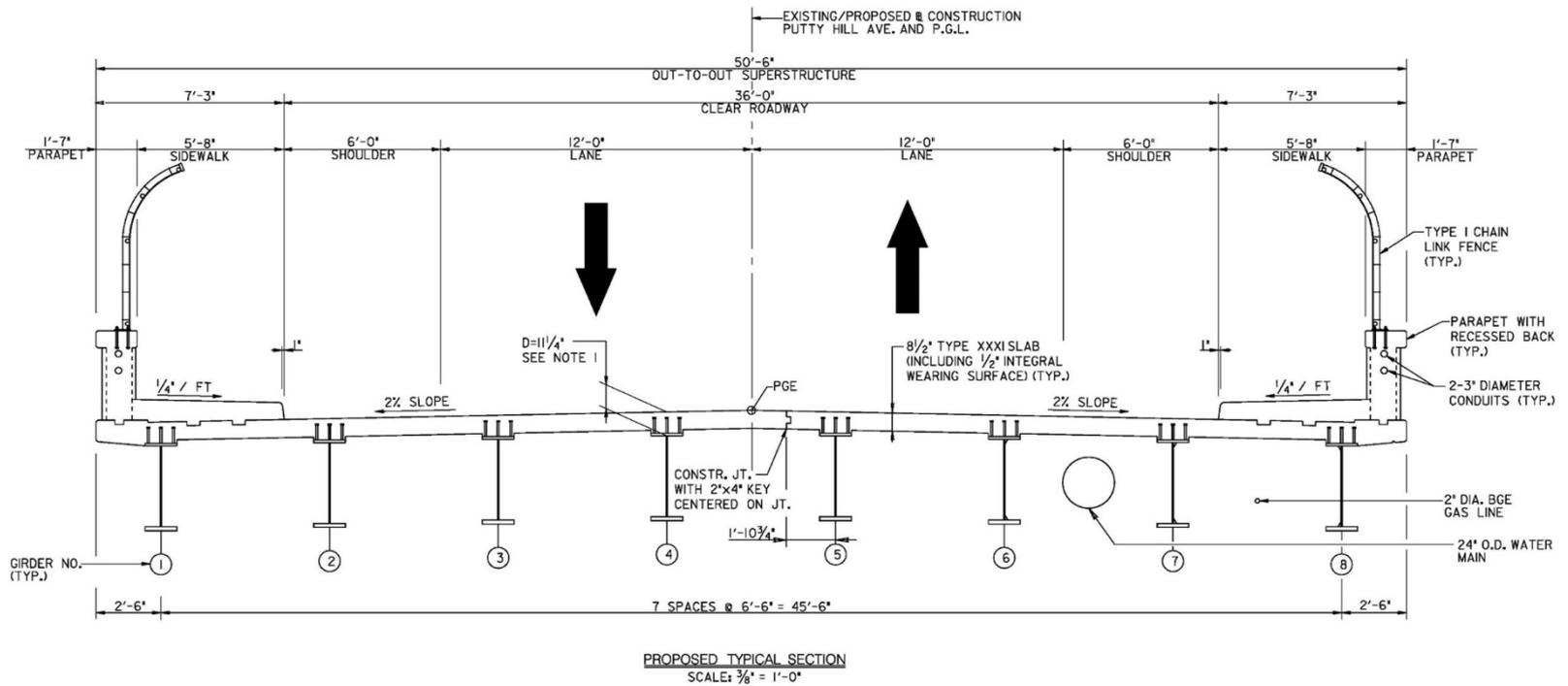
## **NEED**

- To replace the existing bridge in order to eliminate a structurally deficient deck and soon-to-be deficient piers
- To prevent closure of a vital Baltimore County road due to continuing deterioration of the bridge

# Current Putty Hill Avenue Project



# Current Putty Hill Avenue Project



# Project Elements:

Construction is anticipated to consist of the following major elements:

- Replacement of the bridge carrying Putty Hill Avenue over I-695
- Maintenance of Traffic
- Pavement construction
- Drainage
- Stormwater management and Erosion and Sediment Control
- Signing and pavement marking
- Landscaping
- Utility relocations

# Project Challenges:

- The Maintenance of Traffic (MOT) plan needs to provide sufficient capacity and safety during construction while minimizing impacts to the traveling public.
- The proposed vertical alignment will be raised significantly from the existing; tie-ins will need to be made while maintaining existing traffic on Putty Hill Avenue and all side streets.
- Several utilities are located within the project limits. These lines will need to be relocated and/or staged during construction.
- Pedestrians and bicyclists along Putty Hill Avenue must be accommodated throughout the life of the project.

# Project Status and Issues:

- Construction funding is pending approval
- Project has reached the 30% design level
- Coordination is ongoing with Environmental Agencies regarding impacts and required mitigation
- Project will require a Programmatic Categorical Exclusion to comply with the National Environmental Policy Act
- Construction is scheduled to start by Summer 2019

# Major Stakeholders

- Baltimore County
- Local residents
- Utility Companies
- Emergency Services

# **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 21<sup>st</sup> Century (MAP-21) – *Construction Manager/General Contractor (CM/GC)*

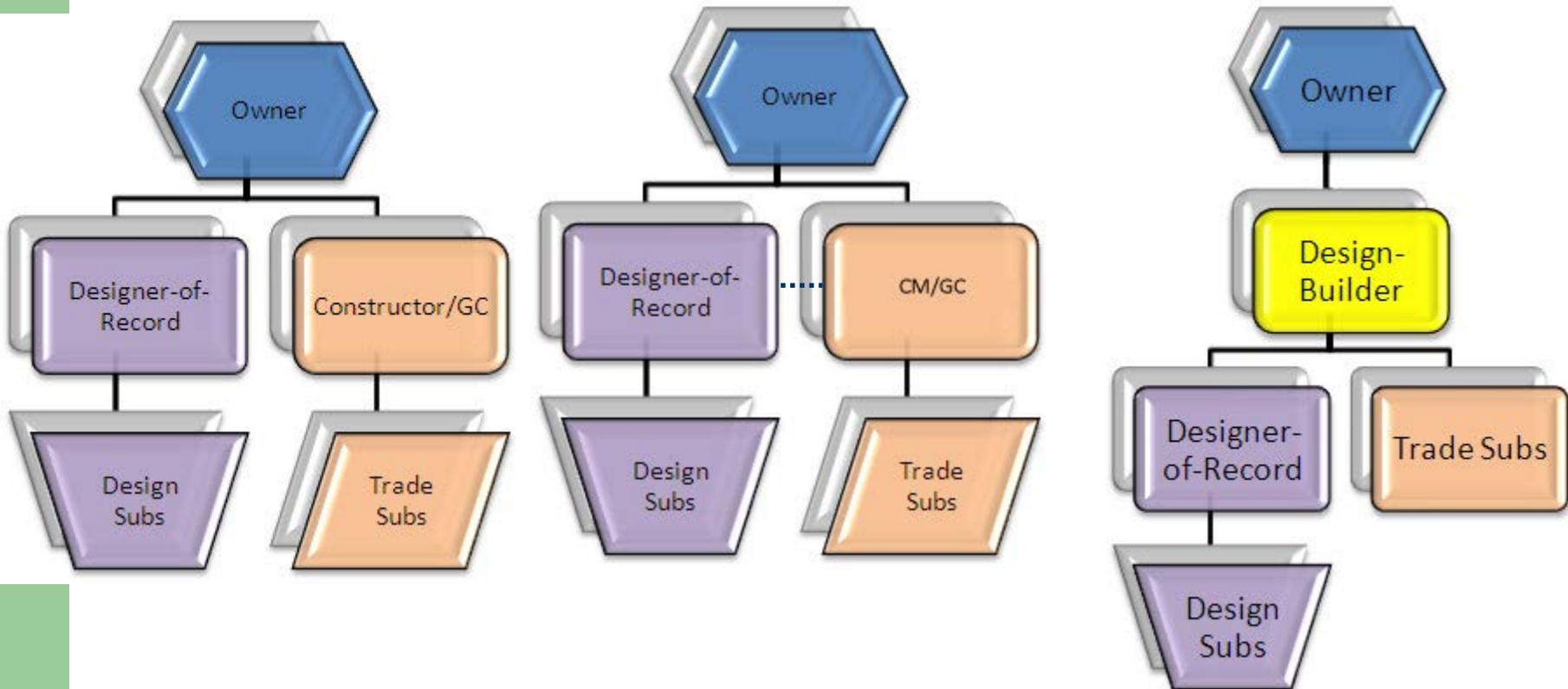


# Project Delivery Methods

Design-Bid-Build

CMAR

Design-Build



# Project Development

Design-Bid-Build  
(DBB)



CMAR



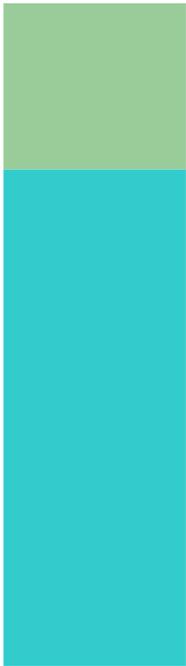
Design-Build  
(DB)



# Reasons for choosing CMAR

- 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

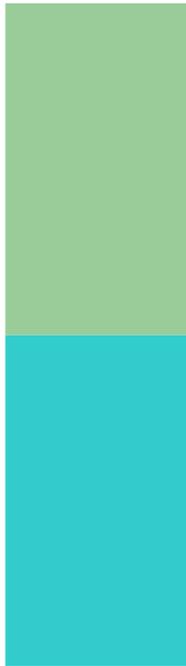
# CMAR – Risk Allocation



DBB



DB



CMAR

- Contractor
- Owner

# 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
  - Quantity Comparison/Agreement
  - Independent Pricing
  - 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
  - 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*

- *Capability of the Proposer*
- *Project Approach*
- *Approach to Cost Estimating*
- *Legal and Financial Information*

# *Technical Proposals*

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

# *Technical Proposals*

- Project Approach
  - Preconstruction Approach
  - Construction Approach
- Approach to Cost Estimating
  - Providing an open and transparent estimating environment
  - Sample Estimate
  - Contracting Plan

# *Technical Proposals*

- Legal and Financial Information (pass/fail)
  - Team Organization
  - Liability
  - Bonding Capability (Cost Group G)
  - Past Contract Terminations

# 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	

# *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 PROCUREMENT SCHEDULE**

Issue RFP	February 27, 2018
Final Date for Proposer's Questions	March 20, 2018
Letter of Interest Due	March 27, 2018
Technical and Price Proposal Submittal to SHA	April 3, 2018
Selection of Successful Proposer	May 2018
Preconstruction Notice to Proceed	June 2018
Target for GMP Submittal	February 2019
Target Construction Notice to Proceed	Summer 2019

# Questions/Feedback?

Information related to this presentation will be available at the following: [www.roads.maryland.gov](http://www.roads.maryland.gov) under Business; Contracts, Bids & Proposals; Construction Management at Risk Projects

Email: [dmorse@sha.state.md.us](mailto:dmorse@sha.state.md.us)

Technical Proposals from previous projects are available at the following: [www.roads.Maryland.gov](http://www.roads.Maryland.gov) under Business; Contracts, Bids & Proposals; Construction Management at Risk Projects