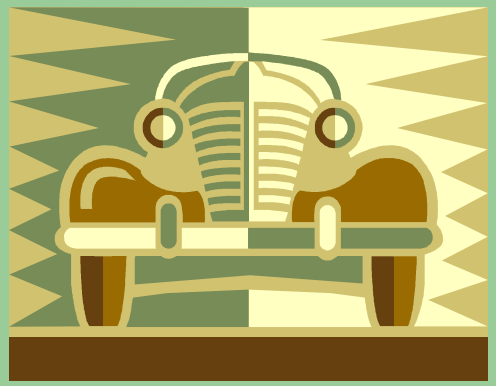
Construction Management at Risk (CMAR)



INFORMATIONAL MEETING

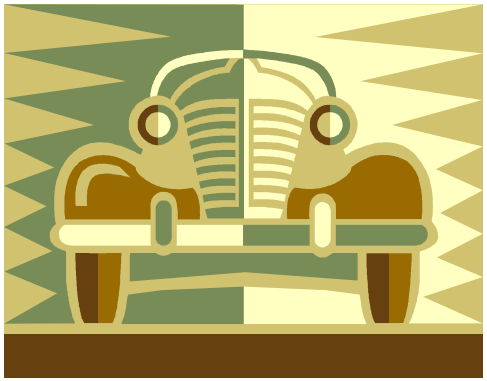
July 18, 2013

What is CMAR?

- Defined in COMAR 21.05.10
- A project delivery system that entails a commitment by a contractor to deliver the project within a guaranteed maximum price (GMP).
- The contractor provides a Project Manager during the design phase of a project to act as a consultant to the owner providing preconstruction services.
- The contractor acts as general contractor during the construction phase to deliver the project at a GMP.

Preconstruction Services

Services provided by a contractor before construction which may include, but are not limited to, constructability analysis, value engineering, scheduling, site assessments, and cost estimating.



Guaranteed Maximum Price (GMP)

Agreed upon dollar amount for the construction services, including the specified scope of work, cost for subcontracting services, the general conditions, contingency, and fees charged by the contractor.

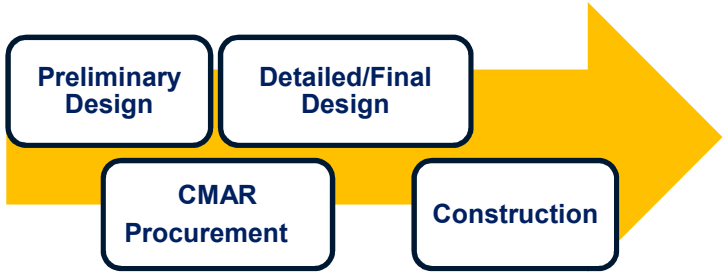
CMAR Project Team

- 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.

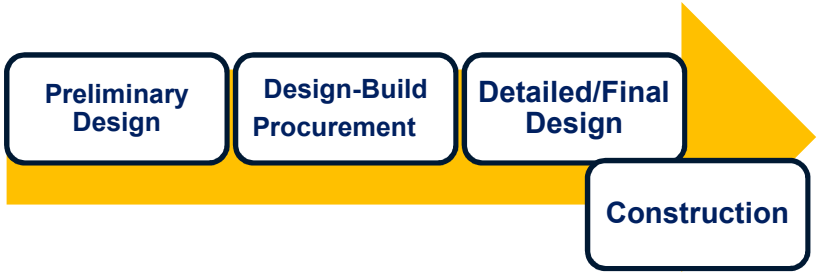
CMAR Shortening Project Delivery

Design-Bid-Build (DBB)

CMAR



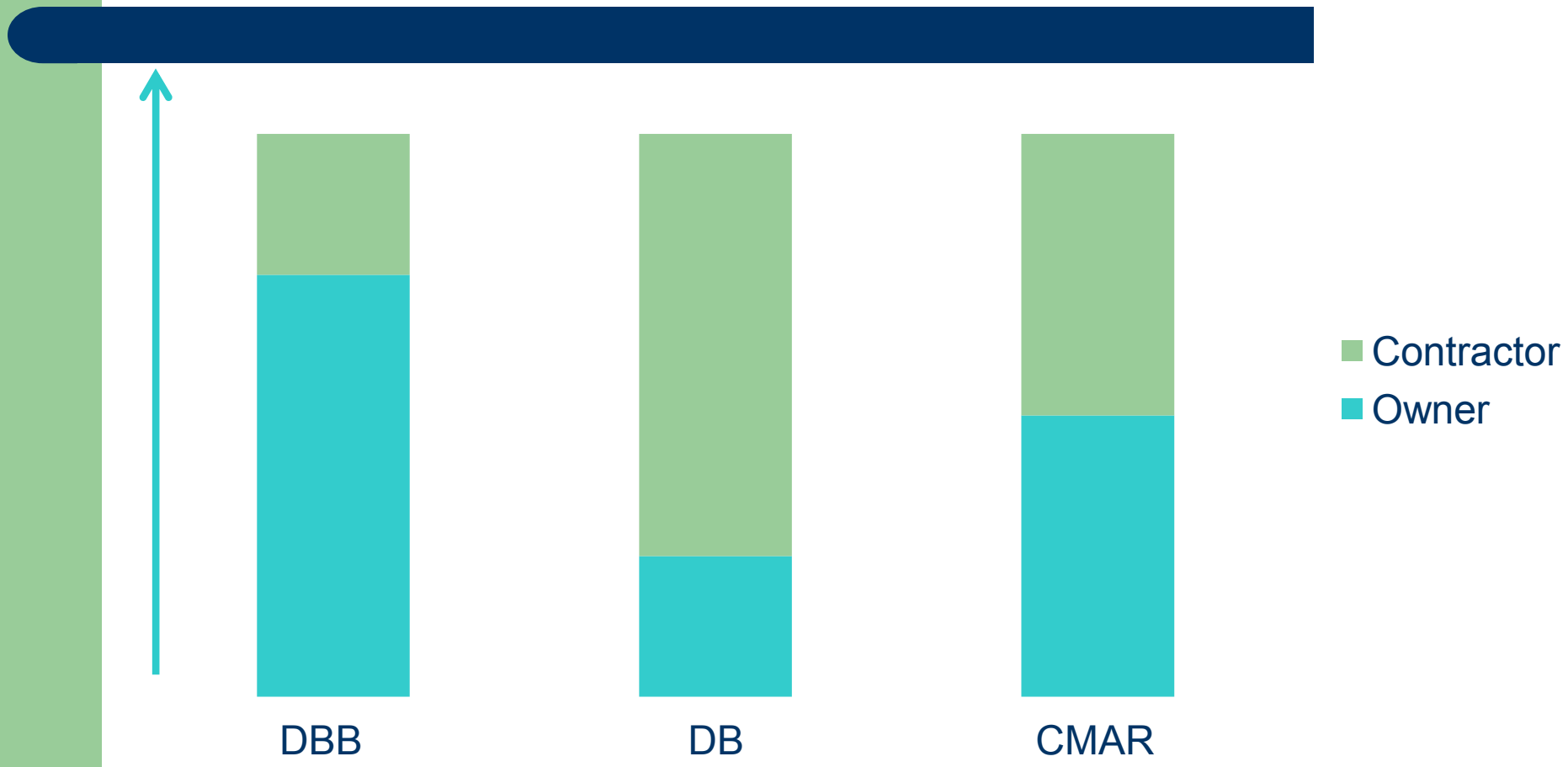
Design-Build (DB)



Reasons for choosing CMAR

- Project Complexity
- High Number of Potential Risks
- Scope Flexibility/Maximizing $'s
- Cost Analysis of Multiple Design Options
- Contractor Input During Design
- 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

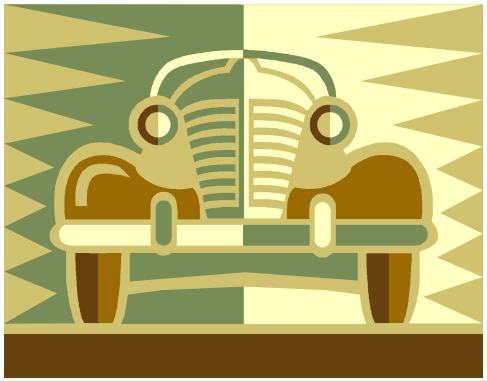
- Opportunity to bring on contractor during the design phase to work as an integrated team with the owner and its consultant/engineer to deliver the most efficient, and cost effective design
- Promotes innovation & collaboration
- Owner maintains decision making authority
- Greater cost certainty through GMP and reduction in change orders
- Still allows phased construction similar to design-build resulting in accelerated completion times. Phases must be **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

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.

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*
- *Risk and Innovation Management*
- *Legal and Financial Information*

Technical Proposals

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

Technical Proposals

- Project Approach
  - Project Goals
  - Project Approach
- Risk and Innovation Management
  - Risk Elimination
  - Major Risks
  - Risk Management and Innovation
- Legal and Financial Information (pass/fail)
  - Bonding Capability

Price Proposals

Evaluation Factors

- *Construction Cost for specific identified items*
- *Preconstruction Fee (Lump Sum price)*

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
- Importance of Technical Proposal vs. Price Proposal. Still Under Consideration by SHA.

CMAR Award – What Happens Next?

- Owner, Designer, and Contractor Collaborate.
- *Design progressed through Various Milestones (30%, 65%, 90%)*
- *Contractor Provides Input through Each Phase.*

CMAR Award – What Happens Next?

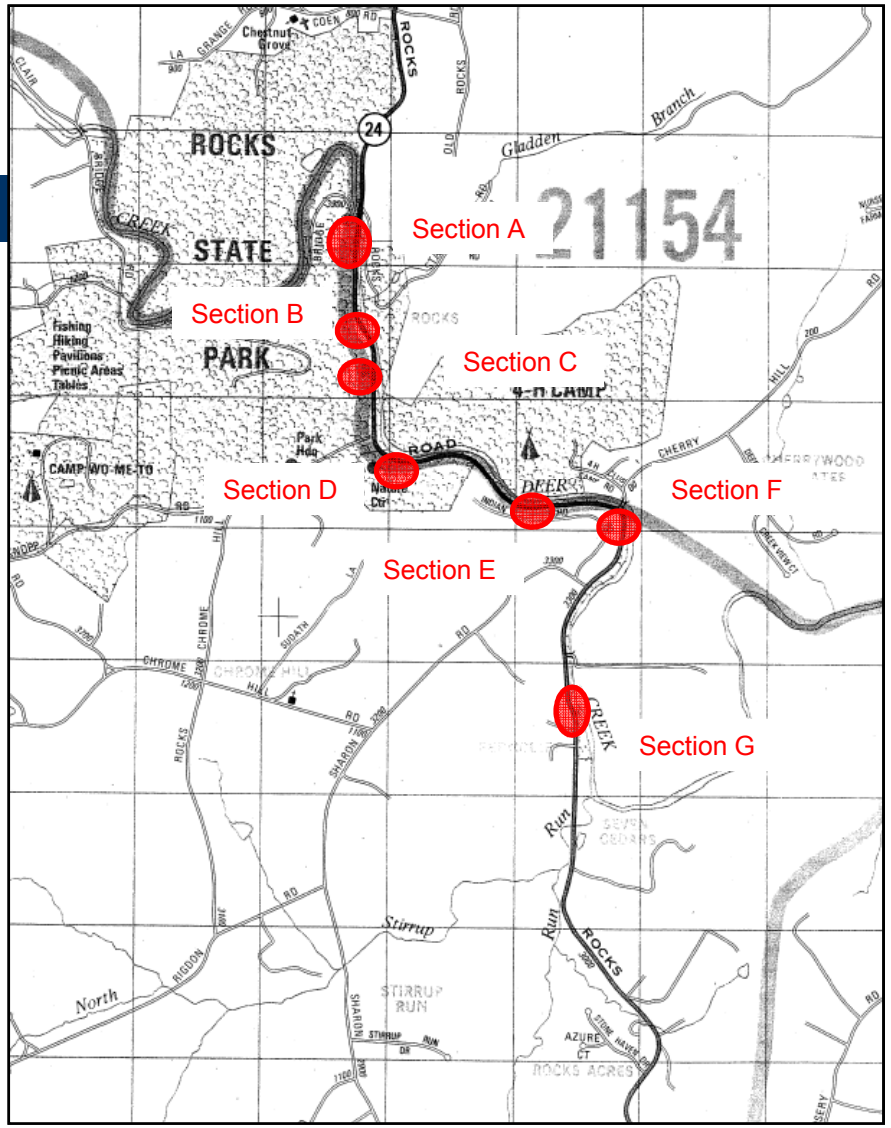
- *Multiple Phases – Must be **Severable***
- *Construction Contract – Follows standard procedures*
  - *DBE – Set for each Construction Phase*
  - *2008 Standard Specifications and current SP/SPIs.*
- *Blind Bid Openings occur along the way to validate cost*
- *If Contractor is within 10% of the ICE and/or EE, then Construction Phase may be awarded.*
- *IF GMP cannot be reached and project is bid through DBB, **the CMAR Contractor will not be permitted to submit a bid.***

Questions/Feedback?

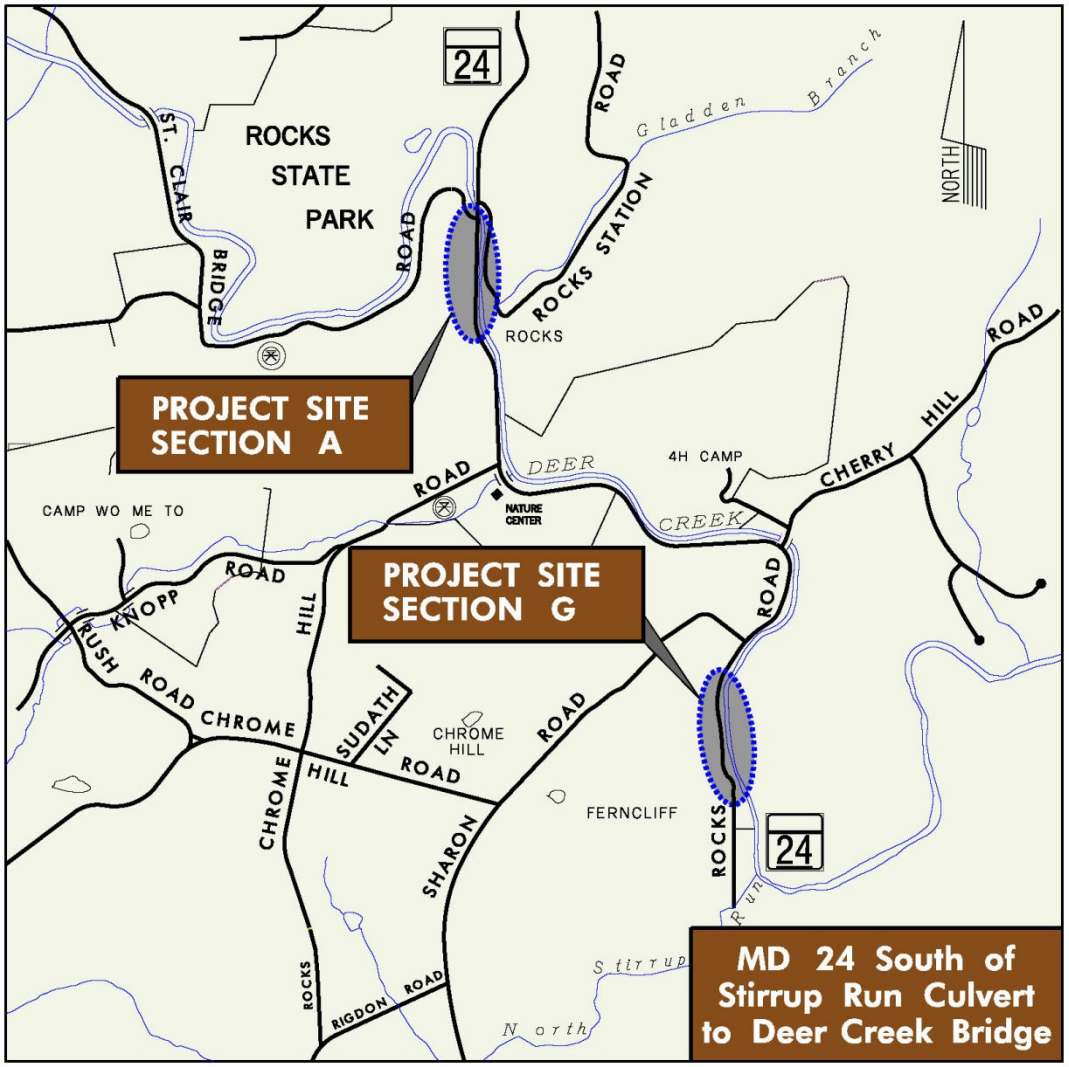
MD 24 Slope Remediation Projects

What We Did…

- Study in 2003 along MD 24 from the Stirrup Run Culvert to Deer Creek Bridge.
- It identified 7 distinct sections in the study area of varying severity of slope failure.



Location of Projects



MD 24 – Section A and Section G

- Purpose and Need –

  Improve road safety along MD 24 and address roadside safety concerns associated with the eroding supporting slopes.

- Project Objectives –
  - ✓ Avoiding or minimizing Creek impacts
  - ✓ Protecting historic, cultural and endangered species
  - ✓ Limit disturbance and/or enhancement of rock features

MD 24 – Section A and Section G

Stabilization Options

- Various slope stabilization methods –
  - ✓ Rock riprap slope
  - ✓ Gabions
  - ✓ Imbricated stone wall
  - ✓ Concrete/modular block wall
  - ✓ High performance turf matting system
  - ✓ Log cribbing/root wad revetment
  - ✓ Floodplain adjustments
- Selected Alternative – Section A

  Maintain the existing roadway alignments, construct two imbricated stone walls, improve the roadside drainage system wherever feasible.

Design Progress:

Construction is anticipated consist of the following major elements:

- Two imbricated stone walls
- Vegetated benches at the toe of the walls
- Roadway reconstruction at locations of wall construction
- Landscaping
- Brown traffic barrier
- Re-graded existing parking lot
- Improved the roadside drainage facilities wherever feasible
- Relocate utility poles on northbound MD 24

Design Progress:

- Preliminary engineering is approximate 70% complete
- Coordinating with utility owner for utility relocation design
- Soil borings completed in June, 2012
- Supplementary phase I-II archeology survey completed early 2013

Design Challenges:

- Dewatering and diverting flow from the Creek for construction area
- Temporary stream diversion general requirements:
  - should have sufficient capacity to convey 2-year flows
- Typical Temporary diversion methods:
  - - Fabric-based diversion
  - - Sandbag and stone diversion
  - - Flow barriers such as coffer dam, interlock dam, sheet piling, and etc.

Design Challenges:

Temporary Diversion System Design/ Selection Criteria:

- Shortest construction duration
- Height of flow barrier system
- Stability
- Erosion and sediment control during Construction

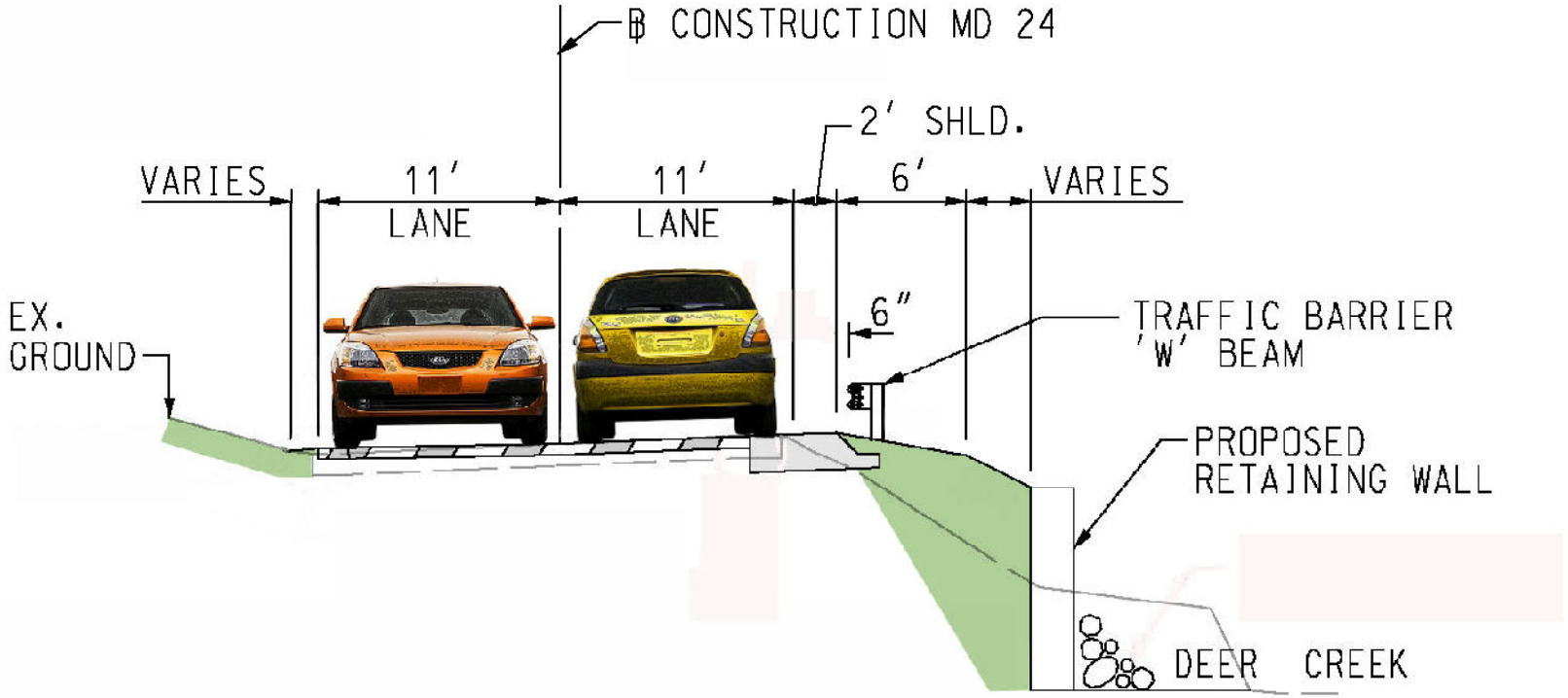
The height of the temporary diversion barriers

- 2-year storm, stream flow depth can be 12-13 feet;
- 1-year storm, stream flow depth is approximate 10 feet;
- Base flow, flow depth is around 30 inch typically.

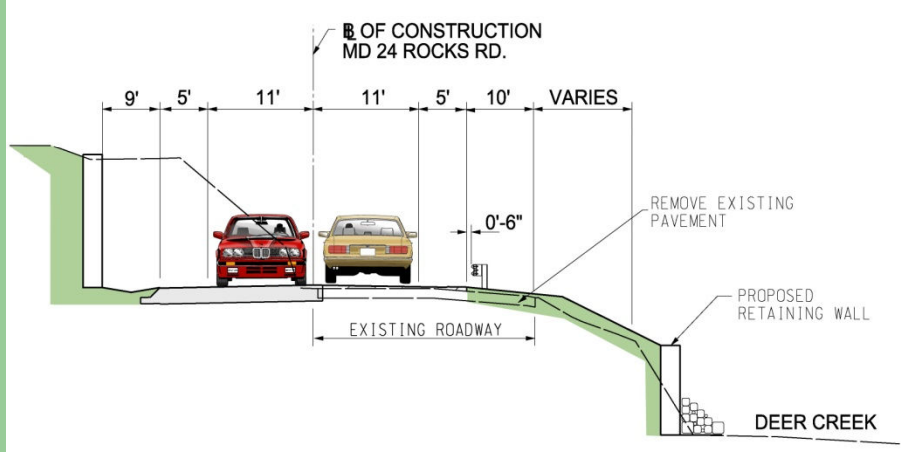
Alternates Under Consideration- Section G

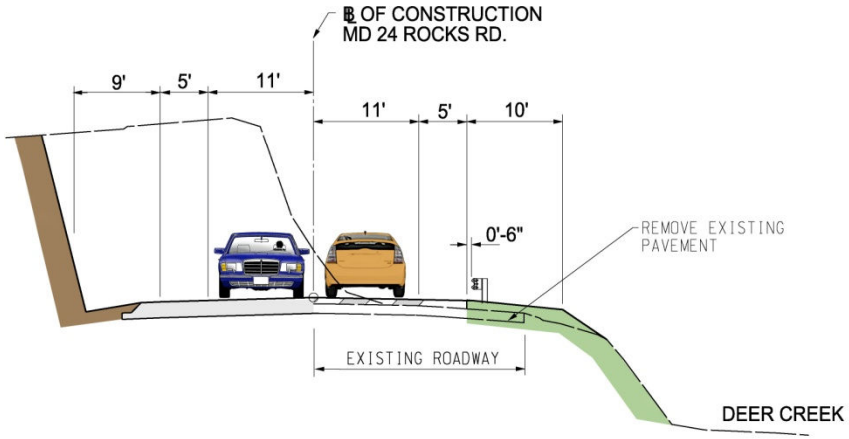
- Hold Approximate Existing Road Alignment
- Shift Roadway Alignment +/-10 ft.
- Shift Roadway Alignment +/-20 ft.
    - With Retaining Walls, West Side
    - Without Retaining Walls, West Side

Typical Section: Section G- Hold Approximate Existing Road Alignment

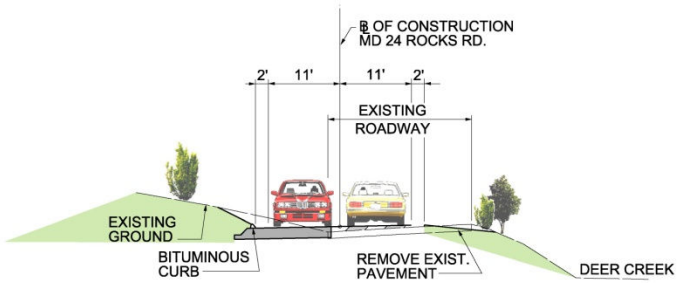


Typical Section: Section G – 10 ft. Shift

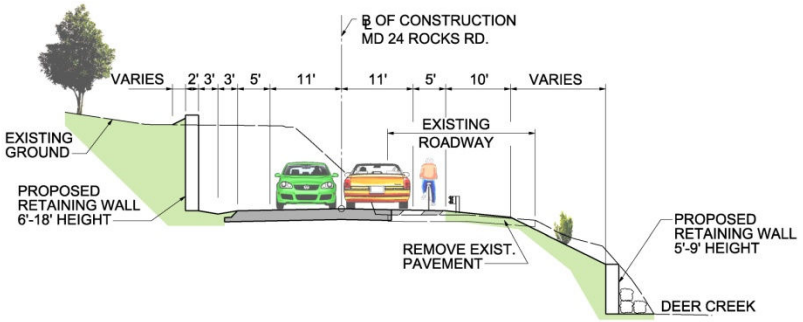




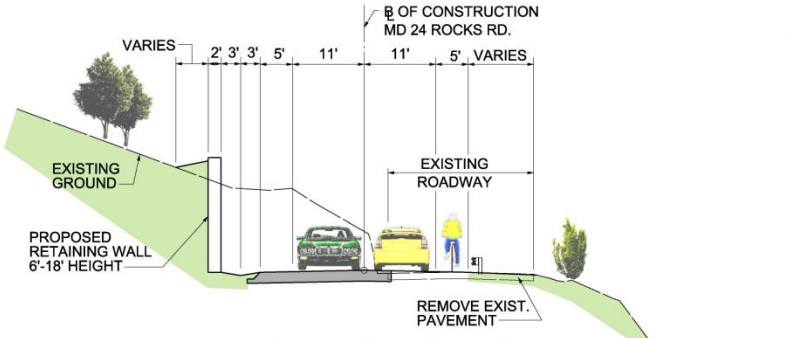
Typical Sections: Section G-
20 ft. Shift with Retaining wall



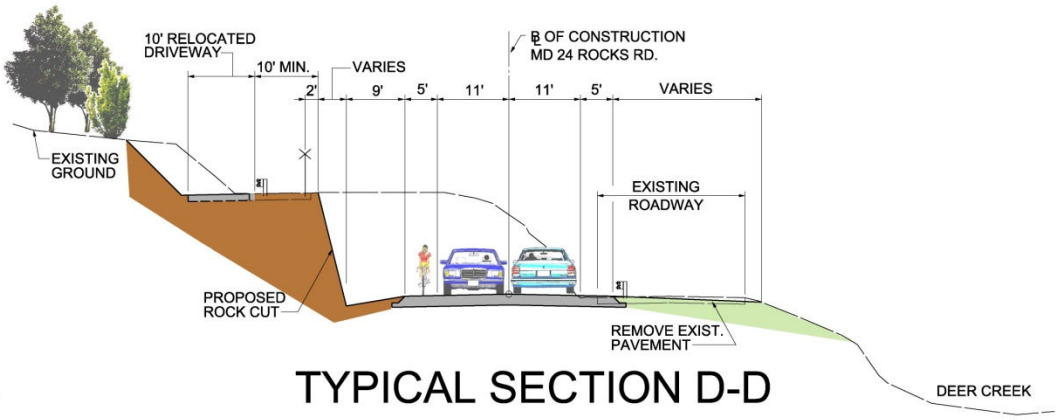
TYPICAL SECTION A-A



TYPICAL SECTION C-C

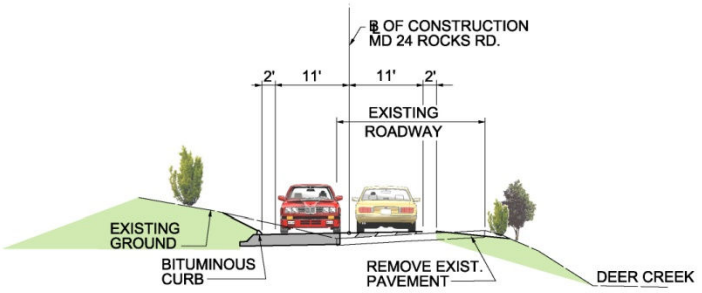


TYPICAL SECTION B-B

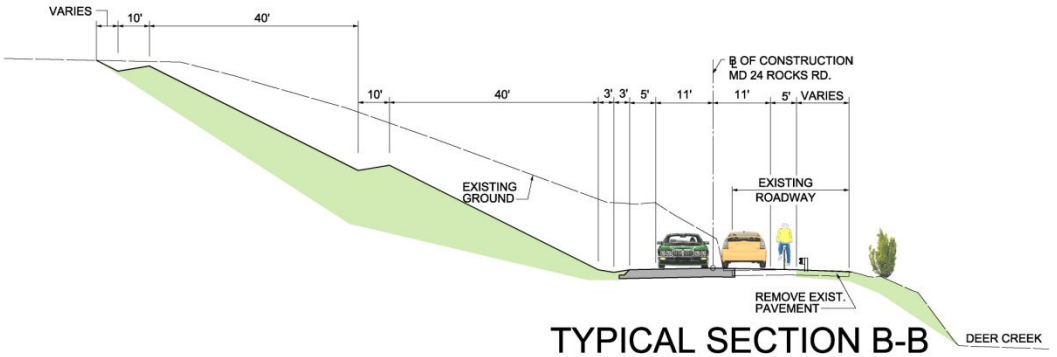


TYPICAL SECTION D-D

Typical Sections Section G-
20 ft. Shift without Retaining wall



TYPICAL SECTION A-A



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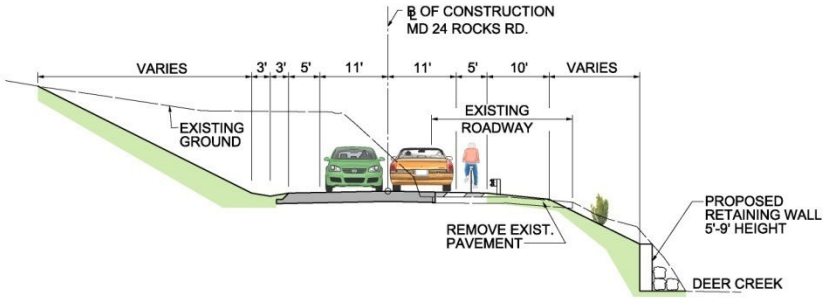
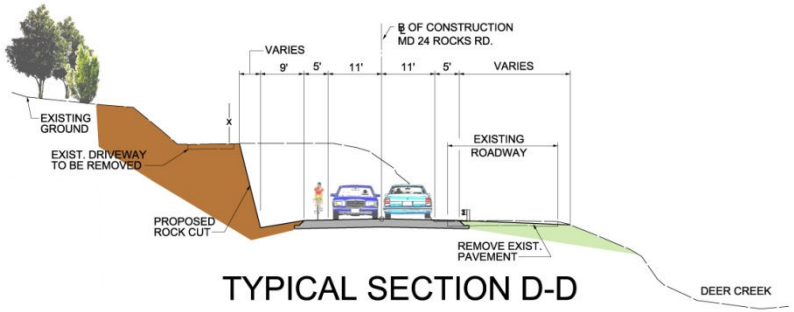


TYPICAL SECTION C-C



TYPICAL SECTION D-D

Step 2 – Request For Proposals (RFP)

PROPOSED PROCURMENT SCHEDULE

Issue RFP	August 20, 2013
Pre-Proposal Meeting	September 3, 2013
Final Date for Proposer's Questions	September 17, 2013
Letter of Interest Due	September 25, 2013
Sealed Proposal Submittal to SHA	October 2, 2013
Selection of Successful Proposer	November 2013
Construction MD 24 Section A	Summer 2014
Construction MD 24 Section G	TBD

Note: Section A is funded for construction; however, Section G does not currently have construction funding allocated.

Information related to this presentation will be available at the following: www.roads.maryland.gov under Business Center, Contracts, Bids & Proposals, Competitive sealed Proposals, HA3345170

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