

# I-270 Innovative Congestion Management Contract Industry Meeting

January 13, 2016

- **Contract Overview**
- **Progressive Design-Build Overview**
- **Procurement Overview**

# Contract Overview



## Contract Location

- Montgomery County
- Frederick County

## I-270 Contract Limits

- I-495 to I-70



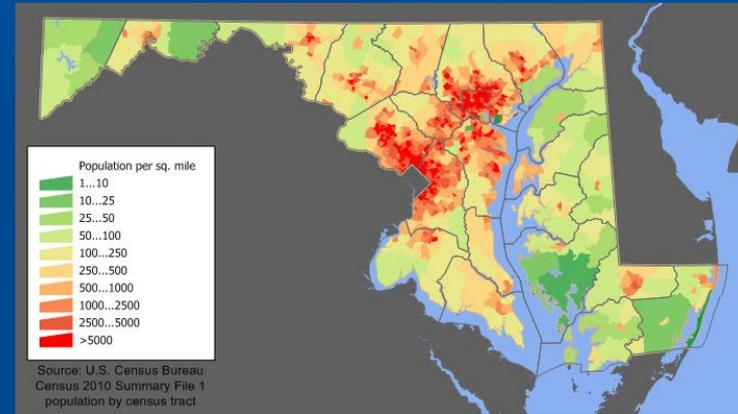
# Background



- The contract location is the I-270 corridor from I-495 (including the I-270 spur) to I-70. The study corridor is one of the most congested in Maryland. Over saturated conditions and extended peak periods greatly impact reliability.
- The I-270 corridor is one of the major growth areas in both Counties. Several studies of the I-270 corridor congestion have taken place with the first beginning in July 1980.



- Study corridor is one of the most traveled in the State with **average daily traffic** of about **240K** in some segments
- One of the **most congested corridors** in MD and the Washington, DC region with **strong directional peaks**
- **Over-saturated conditions**, extended peak periods **greatly impact reliability**
- **Strong economic and housing activity** projected along the corridor



I-270 Segments	2013 Volumes
I-70 to MD 109	90000
MD 109 to MD 118	102000
MD 118 to I-370	170000
I-370 to I-270Y	238000

## HOV Hours of Operations:

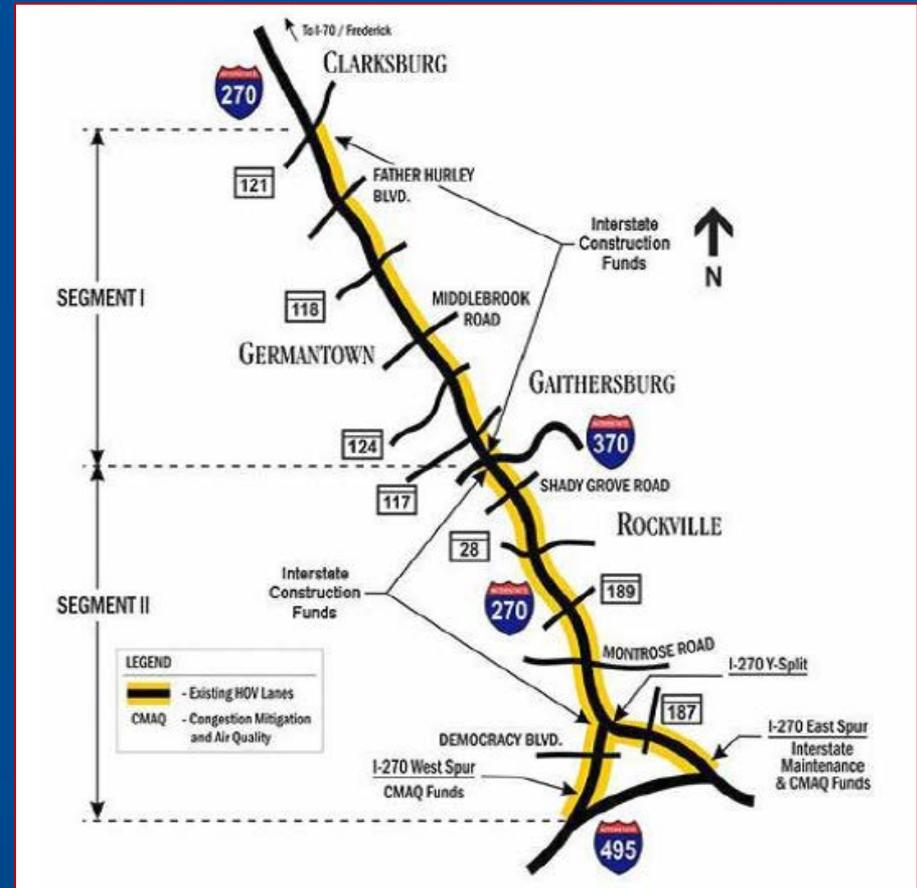
### Southbound

I-370 to I-495 (Capital Beltway)  
6:00 am to 9:00 am

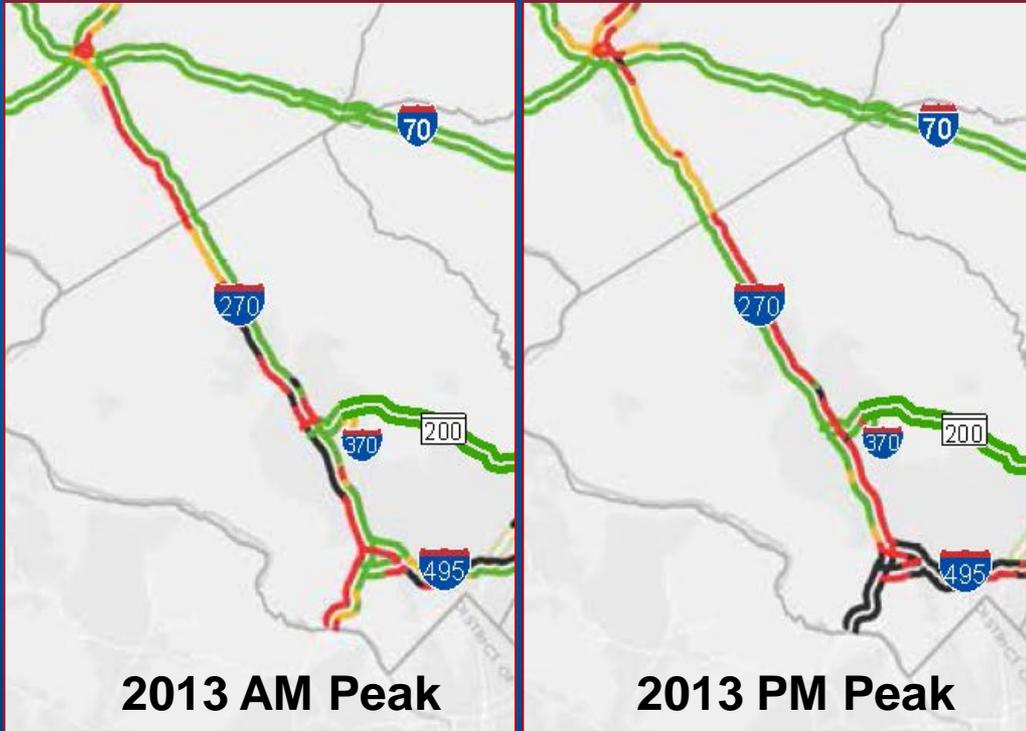
### Northbound

I-495 to MD 121 (Clarksburg Road)  
3:30 pm to 6:30 pm

*HOV implementation utilized FHWA-CMAQ funds*



# I-270 Corridor Facts

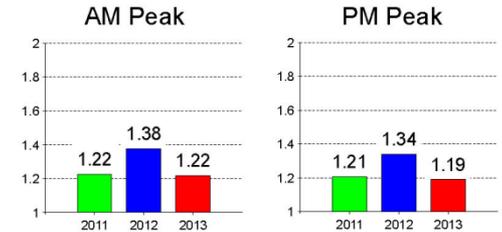


2013 AM Peak

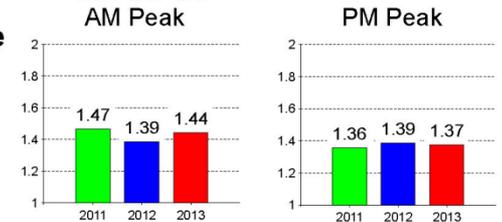
2013 PM Peak

## Trends<sup>a</sup>

**Travel Time Index<sup>b</sup>**  
*measure of average delay*



**Planning Time Index<sup>c</sup>**  
*measure of worst-case delay*



**Strong directional peaks, slow speeds and extended queues**

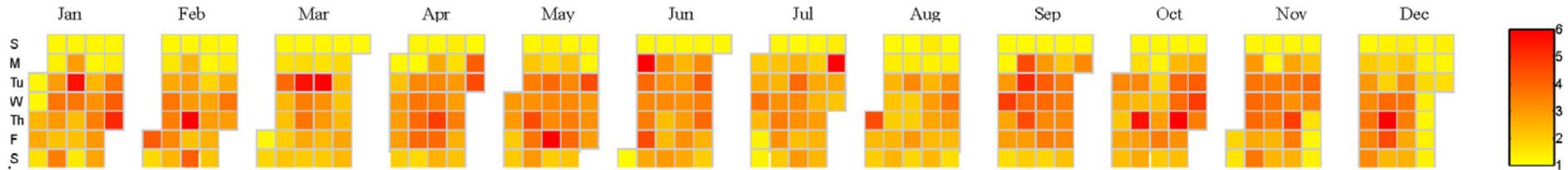
2013 AM Peak Hour: **7 locations** in top 30 most congested freeway segments  
 2013 PM Peak Hour: **6 locations** in top 30 most congested freeway segments

# I-270 Corridor Facts



Reliability of the corridor is a huge challenge all round the year

## Daily Variability<sup>e</sup>



## Top Bottlenecks<sup>f</sup>

2013 Rank	LOCATION	Direction	Number of Occurrences				Average Duration (minute)	Average Length (mile)	Impact Factor	2012 Rank	Change
			Q1	Q2	Q3	Q4					
6	I-270 Spur S @ I-270	Southbound	182	251	210	241	101	7.4	5.9	3	↑ 3
9	I-270 N @ MD-80/Exit 26	Northbound	64	90	127	76	101	9.8	3.0	2	↑ 7
10	I-270 Local N @ I-270/Washington National Pike	Northbound	162	156	128	159	126	4.3	2.5	10	↑ 10
14	I-270 N @ I-70/US-40	Northbound	85	106	81	128	83	8.1	2.3	7	↑ 7
15	I-270 S @ MD-109/Exit 22	Southbound	126	178	156	118	84	4.6	2.1	15	→ 0
25	I-270 N @ Middlebrook Rd/Exit 13	Northbound	98	91		83	104	6.0	1.4	11	↑ 14
46	I-270 N @ I-270	Northbound	138	155	151	120	120	1.6	1.0		↑ 46
67	I-270 N @ MD-85/Exit 31	Northbound	26	32	21	29	85	10.2	0.8	32	↑ 35
70	I-270 N @ MD-109/Exit 22	Northbound	288	263	213	190	41	3.0	0.8	62	↑ 8
77	I-270 S @ MD-121	Southbound	23	20	17	26	111	9.6	0.7	56	↑ 21

# Contract Description

- The SHA is developing a contract to solicit a Design-Builder to reduce congestion and improve reliability along the I-270 corridor. The SHA has not developed any preferred solutions, but is looking for the engineering and construction industries to provide implementable and innovative solutions to increase vehicle throughput, reduce delay and increase reliability along I-270 within the contract's budget.
- The contract will have a fixed-price. It will include all work for the contract including design, right-of-way acquisition, utility relocations, construction services, and construction management services.
- As part of the scope of work, the design and construction of a new interchange at I-270 and Watkins Mill Road will be required.



**Mobility** – Maximize vehicle throughput, minimize travel times, and provide more predictable commuter trip

**Safety** – Safer corridor

**Operability/Maintainability** – Minimizes SHA O&M

**Well Managed Contract**

**Watkins Mill Road Interchange** – Finalize design and construct an interchange at Watkins Mill Rd that is practical, cost efficient, and considers future expansion while being compatible with Innovative Congestion Management improvements



- The inside travel lane of I-270 functions as a High Occupancy Vehicle (HOV) lane from 6:00 am to 9:00 am in the southbound directions from I-370 to IS 495 and from 3:30 pm to 6:30 pm in the northbound direction from I-495 to MD 121. HOV usage on I-270 will be required to be maintained for any future project. Any relocation of the HOV lane will require an equivalency study and approval by FHWA.
- NEPA / Noise Abatement
- Permitting

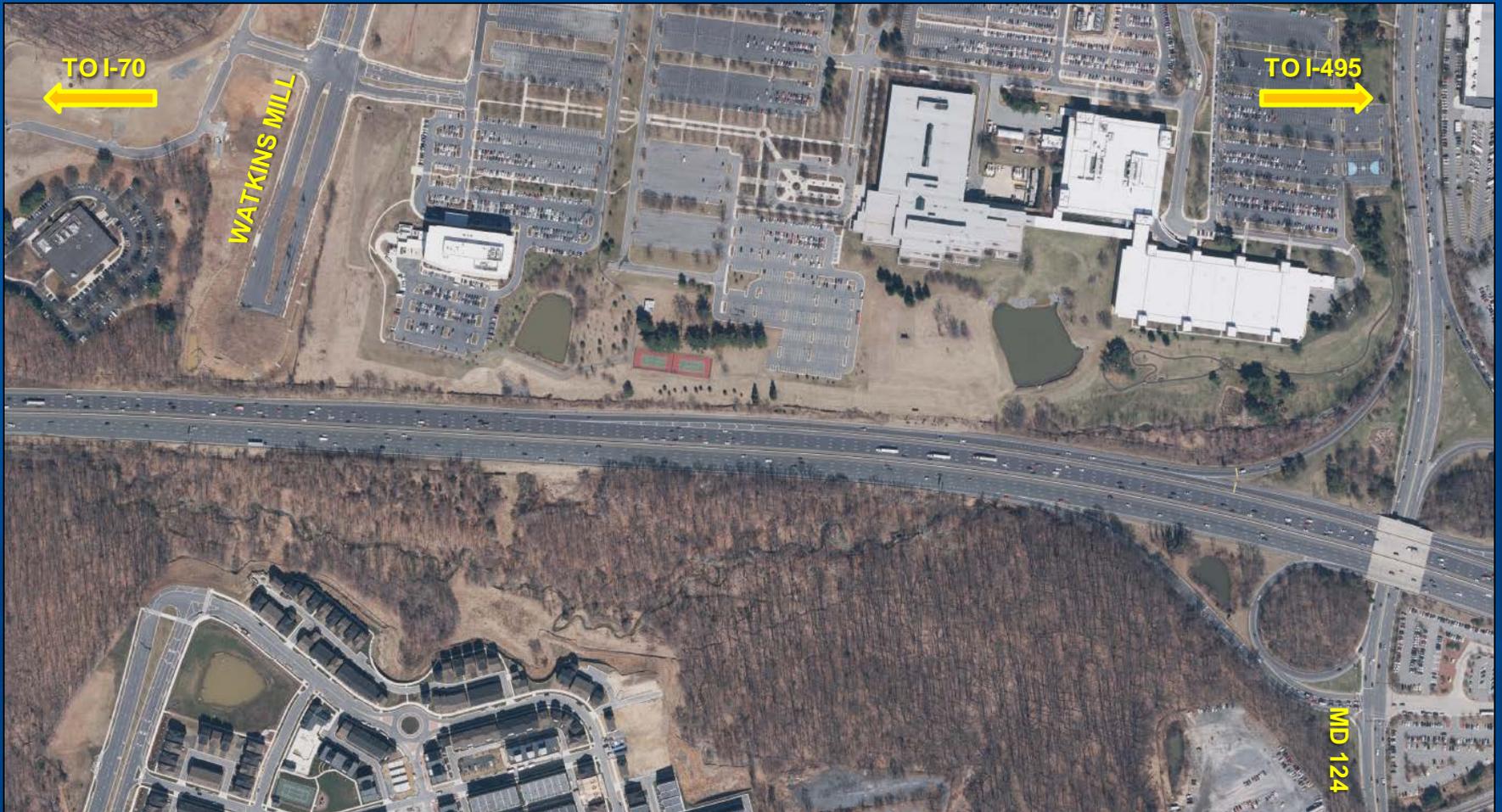


- Photogrammetry and Surveys
- Geotechnical Investigations
  - Ground Penetrating Radar (GPR)
  - Borings
- Utilities Designations
- Right of Way mosaic
- Traffic
  - VISSIM model of existing conditions and 2040 no-build
  - 3 year crash data
- Noise
  - Ambient noise measurements
  - Existing noise models
- Structures Inventory
- Watkins Mill: Complete for current design

# Watkins Mill Interchange



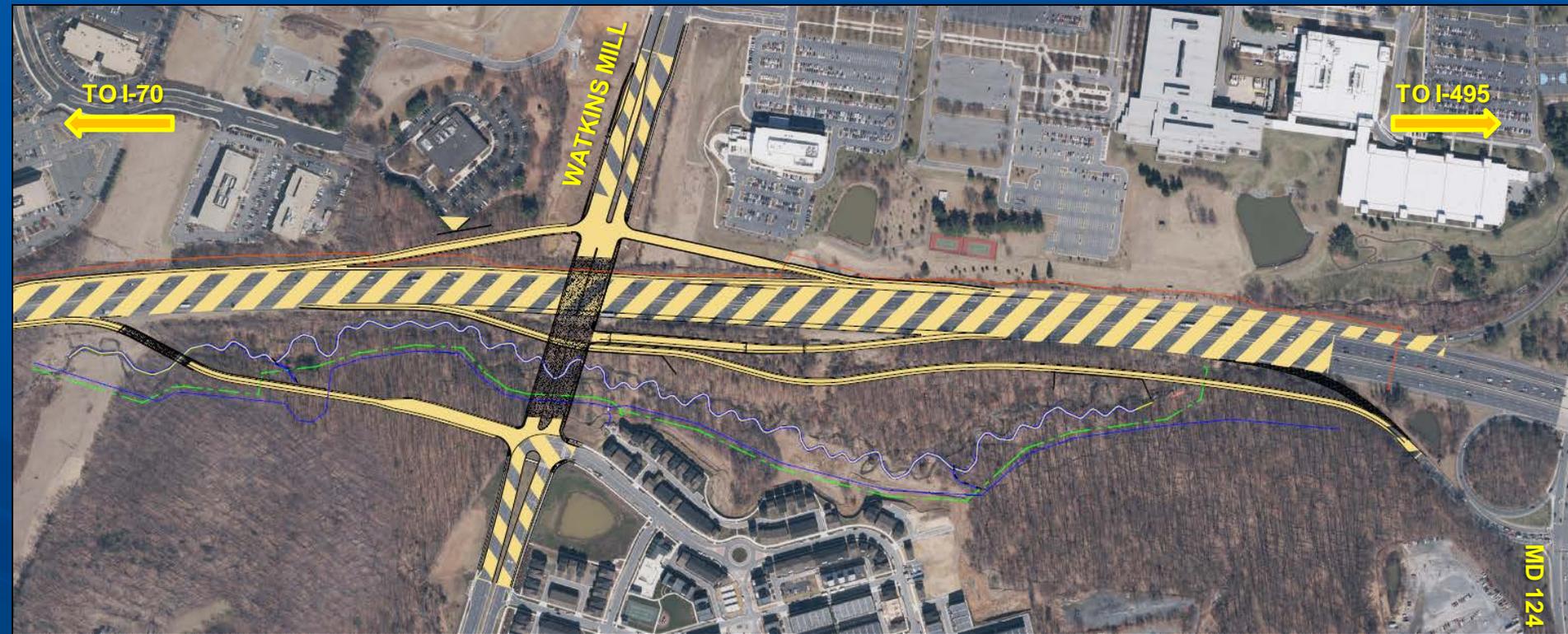
## EXISTING CONDITIONS



# Watkins Mill Interchange



CURRENT DESIGN

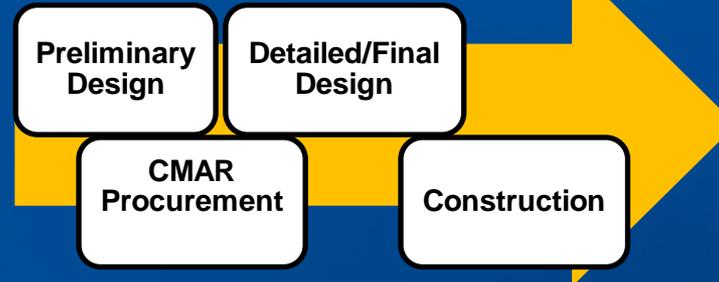


# Progressive Design-Build Overview

# Alternative Delivery Options



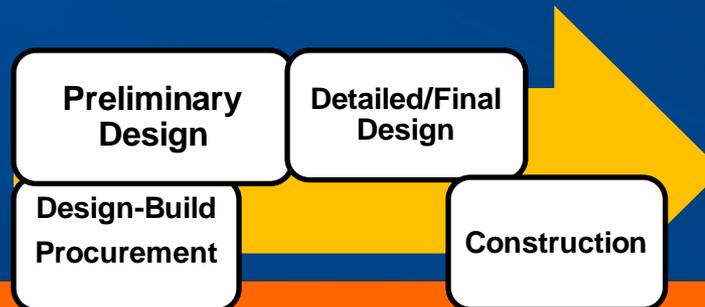
Construction Management  
at Risk (CMAR)



Design-Build



Progressive Design-Build



- **Two-Phase, Fixed-Price Contract**
  - **Design/Preconstruction Services**
  - **Construction**
- **Design-Builder is selected primarily on qualifications and proposed solutions and on reasonableness of price elements**
- **Design-Builder becomes part of project team to develop design solutions/concept**
- **Once design is advanced to significant level, a Guaranteed Maximum Price (GMP) would be developed and agreed upon for a project**

- **Multiple GMPs are expected for standalone construction projects that meet three main criteria:**
  - 1) connect logical termini and be of sufficient length**
  - 2) have independent utility**
  - 3) not restrict consideration of alternatives for other reasonably foreseeable transportation improvements.**



The Contract Budget Is Fixed  
At And Shall Not Be  
Exceeded.

## The Contract Budget is an aggregate of:

- Design-Builder's Design And Preconstruction Services Fee
- Design-Builder's Construction Management Fee
- Construction Services Costs

## Construction Services Costs include any:

- Utility Relocation costs (whether performed by Design-Builder or others)
- Right-of-way Acquisition costs (Acquisition to be performed by SHA)
- Guaranteed Maximum Price

- 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 acceptance of project cost.

- Develop Cost Model for Project
  - Opinion of Probable Construction Cost (OPCC)
  - Guaranteed Maximum Price (GMP)
- Elements of Cost Model
  - Construction Management Fee (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

- 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 and Permits and Approvals Obtained
- Follow typical procedures
  - DBE goals established for construction project
  - Standard Specifications and project specific SP/SPIs
- GMP - Contractor and ICE will independently price project

# Procurement Overview

- Competitive Sealed Proposals (COMAR 21.05.03)
- Most Advantageous to the State – Best Value Selection
- Two –Step Procurement Process
  - Step 1 - Request for Qualifications
  - Step 2 - Request for Proposals

# Step 1- Request for Qualifications



- Objective of the Request for Qualifications (RFQ) is to establish a Reduced Candidate List (RCL) of the Most Highly Qualified Proposers.

- Statement of Qualifications (SOQ) Evaluations Factors
  - Lead Design Firm Experience, Qualifications, and Past Performance
  - Lead Construction Firm Experience, Qualifications, and Past Performance
  - Contract Understanding and Design-Build Approach

- Lead Design Firm Experience, Qualifications, and Past Performance
  - Demonstrate past experience and how that experience is relevant to achieving the goals of this contract
  - Key Staff (at a minimum)
    - Design Manager
    - Traffic Engineer
    - Highway Engineer
  - Project Past Performance
    - Description of 3 relevant projects that demonstrate ability to be successful on this project. Must have been Prime Engineer.



- Lead Construction Firm Experience, Qualifications, and Past Performance
  - Demonstrate past experience and how that experience is relevant to achieving goals of this contract
  - Key Staff (at a minimum)
    - Design-Build Manager
    - Construction Manager
    - Cost Estimator
  - Project Past Performance
    - Description of 3 relevant projects that demonstrate ability to be successful on this project. Must have been Prime or JV Contractor.



- Contract Understanding and Design-Build Approach
  - Understanding of the contract scope, goals, and risks
  - Proposer's approach to Progressive Design-Build and building a professional, collaborative, and integrated team
  - Organizational chart

- Evaluations
  - Separate Evaluation Teams for a specific factor or factors
  - Evaluation Committee recommends RCL
  - Selection Committee approves RCL
  - Adjectival Rating Process – Exceptional, Good, Acceptable, Unacceptable (+ or –) may be assigned using technical judgment and discretion in considering the strengths, weakness, and deficiencies of each proposal
  - Relative Importance of factors – Critical, Significant, Important

# Step 2- Request for Proposals



- Objective of the Request for Proposals (RFP) is to determine the Most Advantageous to the State (Best Value).
  - One on One Meetings
  - Proposed Technical Concepts (PTCs)
  - Technical Proposal
  - Price Proposal

# Step 2- Request for Proposals



- One on One Meetings
  - **CONFIDENTIAL**
  - Proposers may
    - Ask Questions related to the RFP (Proprietary or Clarifications)
    - Identify Concerns/Conflicts in RFP
    - Discuss solutions to address contract goals
    - Present Conceptual Proposed Technical Concepts
  - Agenda is set by Proposer +/- 1 week prior

## Proposed Technical Concepts (PTC)

- **Are CONFIDENTIAL**
- The Administration will review each PTC submitted to assess the implementation potential of the technical aspects of the concept and its compatibility with the contract goals and requirements. The Administration will not approve PTC's but will return comments on the PTC on its implementation potential and its compatibility with the contract goals.

## Proposed Technical Concepts (PTC)

- **Description**
- **Location**
- **Analysis of how it advances the contract goals**
- **Potential Impacts**
- **Other projects**
- **Administration Risk**
- **Design-Builder Risk**
- **Cost/Schedule Benefits**
- **Miscellaneous**

## Technical Proposal – Design-Builder solutions to address and advance goals

- Mobility
- Safety
- Operability/Maintainability
- Well Managed Contract
- Watkins Mill Road Interchange
- Legal/Financial (Pass/Fail)

## Price Proposal – Fixed Price To Be Determined

- Design and Preconstruction Fee (All costs for Design-Builder to design projects to level to provide GMP)
- Construction Management Fee (Project Principal, Home Office, Safety, and Quality Control Support Staff, and Profit)
- Construction Services Fee (Fixed Price minus sum of Design and Preconstruction Fee and Construction Management Fee)
- Price Proposal will be evaluated for reasonableness. Any proposal that is unbalanced will be considered unreasonable and will not be considered for the Competitive Range

- Evaluations
  - Separate Evaluation Teams for a specific technical factor or factors
  - Separate Evaluation for Price Proposal
  - Evaluation Committee recommends Most Advantageous
  - Selection Committee approves Most Advantageous
  - Adjectival Rating Process – Exceptional, Good, Acceptable, Unacceptable (+ or –) may be assigned using technical judgment and discretion in considering the strengths, weakness, and deficiencies of each proposal
  - Relative Importance of factors – Critical, Significant, Important
  - Relative Importance of Technical and Price Proposal – Technical is substantially more important than price

- Evaluations
  - Discussions and Best and Final Offers may be utilized at Administration's discretion to facilitate the determination of the Most Advantageous
  - If held, will be with all Proposers in the Competitive Range
- Stipends – To Be Determined (0.2-0.3% contract value)
  - Unsuccessful Proposers in Competitive Range
  - PTC which Administration wishes to utilize



<b>Draft Request for Qualifications /Request for Proposals (RFQ/RFP)</b>	<b>March 2016</b>
<b>Final RFQ/RFQ</b>	<b>June 7, 2016</b>
<b>Submit Statement of Qualifications (SOQ)</b>	<b>July 25, 2016</b>
<b>Notify Reduced Candidate List (RCL)</b>	<b>Mid-August, 2016</b>
<b>Technical Proposal</b>	<b>December 2016</b>
<b>Price Proposal</b>	<b>January 2017</b>
<b>Selection</b>	<b>January 2017</b>

**Information related to this presentation will be available at the following:**  
[www.roads.maryland.gov](http://www.roads.maryland.gov) under Business Center, Contracts, Bids & Proposals, Competitive Sealed Proposals, MO0695172.

**Email:** [MO069IS270@sha.state.md.us](mailto:MO069IS270@sha.state.md.us)

**Statement of Qualifications and Technical Proposals from previous projects are available at the following:** [www.roads.maryland.gov](http://www.roads.maryland.gov) under Business Center, Contracts, Bids & Proposals, Competitive Sealed Proposals, PG7585184, WO6365170, and PG7005170.

# QUESTIONS?