

Welcome

MD 4 Thomas Johnson Bridge
Project Planning Study

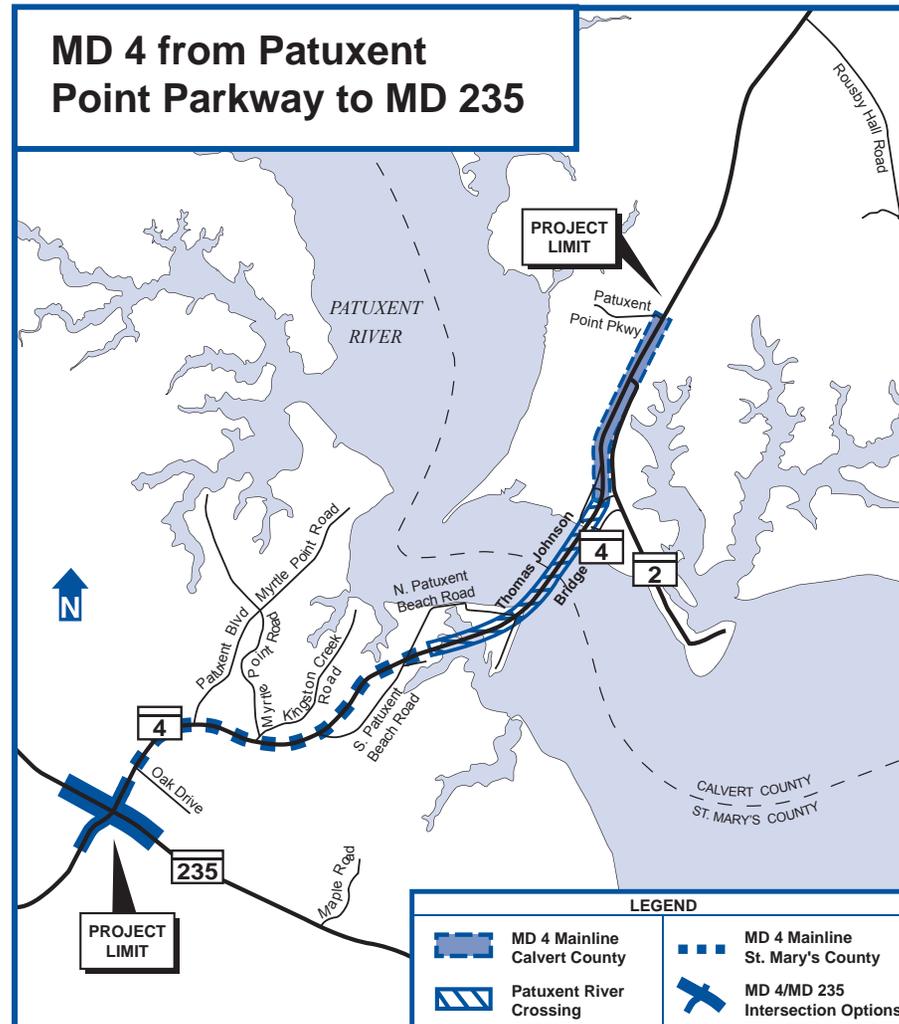
Informational Workshop
April 22, 2015



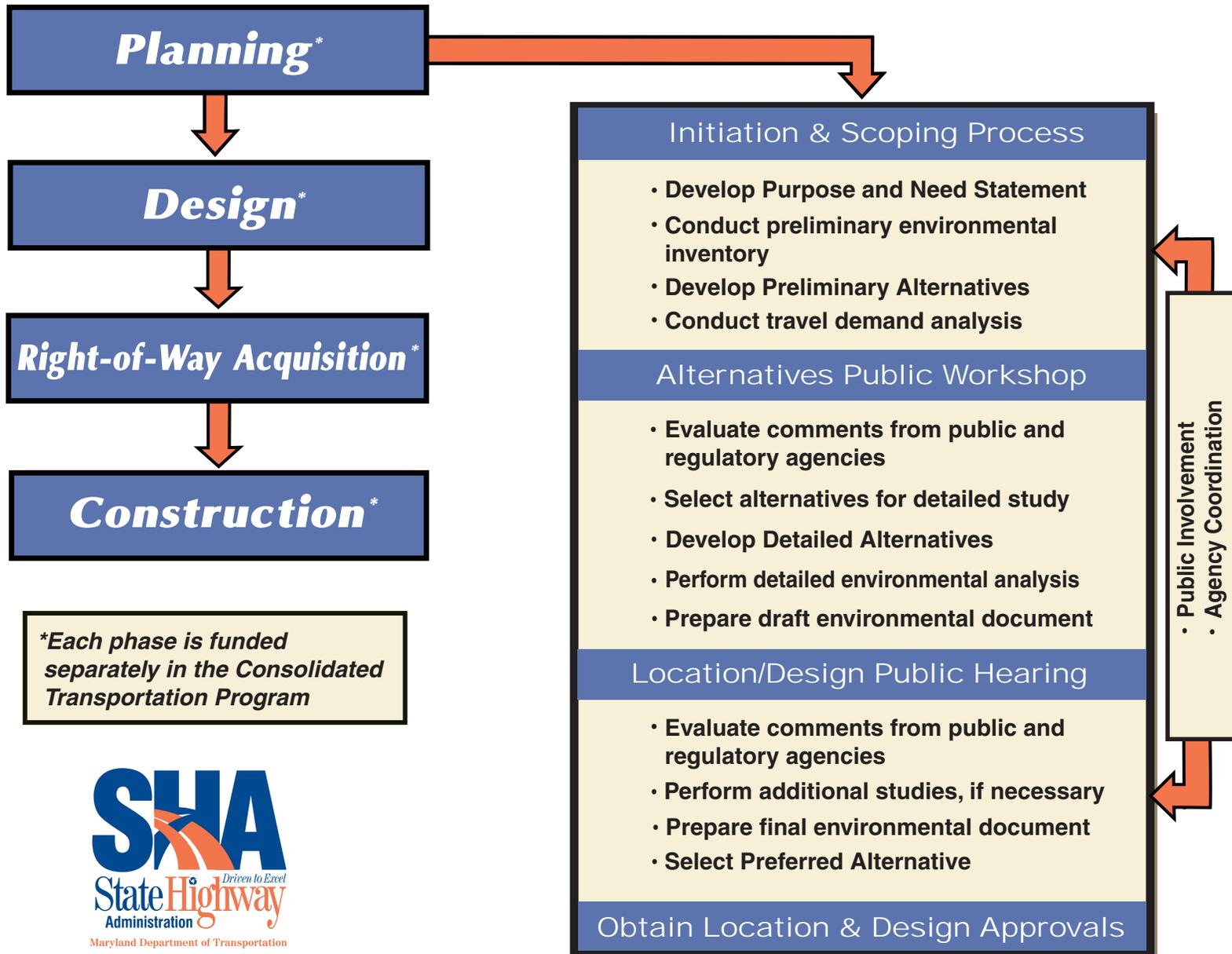
PURPOSE OF THE WORKSHOP

- **Review project background**
- **Present SHA's Preferred Alternative**
- **Identify design changes since 2010 Public Hearings**
- **Answer project-related questions**

PROJECT LOCATION



PROJECT DEVELOPMENT PROCESS



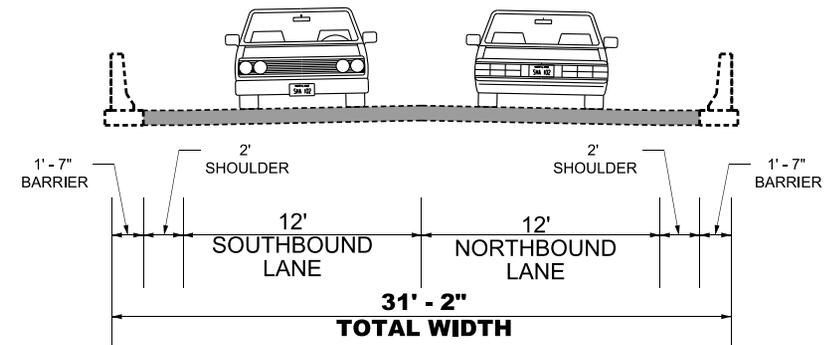
PUBLIC INVOLVEMENT

- **The planning process started in 2006**
- **Open houses held in Calvert and St. Mary's counties in 2007**
- **Workshops and public hearings followed in 2008 and 2010**

Meeting Dates		
	Calvert County	St. Mary's County
Informational Open House	Oct. 2, 2007	Oct. 9, 2007
Alternatives Public Workshop	June 16, 2008	June 17, 2008
Location/Design Public Hearing	Sept. 28, 2010	Sept. 29, 2010

BRIDGE AND RIVER FACTS

- Thomas Johnson Bridge built in 1977
- Length: 7,207 feet
- Roadway width: 28 feet
- Vertical clearance over Patuxent River channel: 140 feet
- Approximate depth of river at channel: 130 feet



Existing Thomas Johnson Bridge
Typical Section

PURPOSE OF THE PROJECT

- **Improve existing capacity and traffic operations**
- **Increase vehicular, bicycle, and pedestrian safety**
- **Support existing and planned development**

NEED FOR THE PROJECT

- **Existing and projected traffic volumes generated by rapid growth will result in future congestion**
- **Bridge presently carries one lane in each direction and becomes a major bottleneck when crashes occur or maintenance is scheduled near or on the bridge**
- **Bridge has no shoulders or pedestrian/ bicycle facilities**

AVERAGE DAILY TRAFFIC

Average Daily Traffic			
Limits	Existing	2030 No-Build	2030 Build
	Average Daily Traffic (Vehicles/Day)		
MD 235 north of MD 4	40,500	52,400	62,000
MD 235 south of MD 4	55,800	64,600	71,700
MD 4 south of MD 235	17,000	18,600	19,300
MD 4 - MD 235 to Patuxent Boulevard	28,300	35,200	41,500
MD 4 - Patuxent Boulevard to Kingston Creek Road	27,900	33,600	40,000
MD 4 - Kingston Creek Road to MD 2*	27,000	32,500	39,000
MD 4 - MD 2 to Patuxent Point Parkway	24,500	29,500	34,500

* Limits include the Thomas Johnson Bridge.

LEVEL OF SERVICE

MD 4			
Limits	Existing AM/PM	2030 No-Build AM/PM	2030 Build AM/PM
MD 4 – MD 235 to Kingston Creek Road	F/F	F/F	C/C
MD 4/Patuxent Boulevard intersection	F/E	F/F	D/C
MD 4/Kingston Creek Road intersection	F/E	F/F	D/C
MD 4 – Kingston Creek Road to MD 2*	F/F	F/F	C/C
MD 4 – MD 2 to Patuxent Point Parkway	B/B	B/C	C/C
MD 4/MD 235 Intersection	F/E	F/F	C/D

** Limits include the Thomas Johnson Bridge.*



What is Level of Service (LOS)?

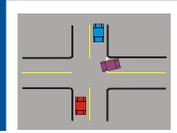


Level of Service is a quantitative measure of traffic operational conditions. Ranges of operation are defined for each type of roadway section (signalized intersections, freeways, ramp junctions and weaving sections) and are related to the amount of traffic demand at a given time as compared to the capacity of that type of roadway section.

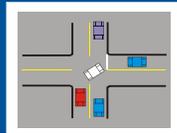
Six levels of service are defined for each type of roadway section and are given letter designations from A to F, with A representing good operating conditions and F representing unsatisfactory operating conditions.

Intersection

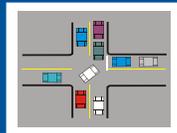
- Highly stable, free-flow condition with little or no congestion
- Delay: <10 seconds/vehicle



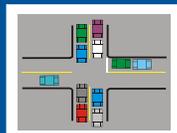
- Stable, free-flow condition with little congestion
- Delay: 10 to 20 seconds/vehicle



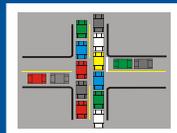
- Free-flow condition with moderate congestion
- Delay: 20 to 35 seconds/vehicle



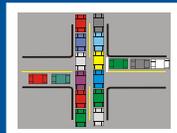
- Approaching unstable condition with increasing congestion
- Delay: 35 to 55 seconds/vehicle



- Unstable, congested condition
- Delay: 55 to 80 seconds/vehicle



- Stop and go
- Delay: >80 seconds/vehicle



Roadway

LOS A



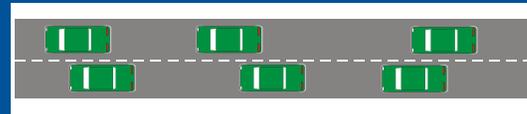
- Free flowing
- Uninterrupted vehicle

LOS B



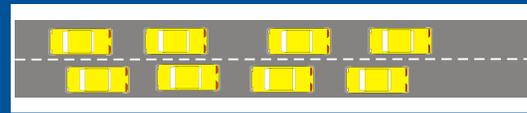
- Stable flow
- Other vehicles are more noticeable

LOS C



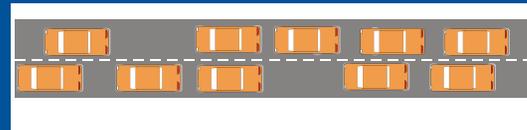
- Stable flow
- Vehicle operations affected by other vehicles

LOS D



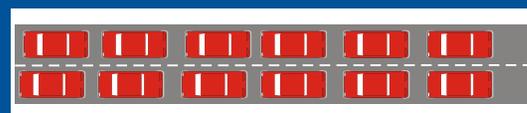
- High density free flow
- Operation of vehicle is affected by other vehicles

LOS E



- High density traffic flow, nearing capacity
- Operating conditions are extremely poor

LOS F



- Forced or breakdown flow
- Amount of traffic exceeds capacity

SHA'S PREFERRED ALTERNATIVE SELECTION PROCESS

- **The Alternatives Retained for Detailed Study, including the “No-Build” Alternative, underwent detailed engineering and environmental analysis**
- **Study results were presented to the public for comment at Public Hearings held in September 2010**
- **SHA's Preferred Alternative is the one that best addresses the project's purpose and need**

SHA'S PREFERRED ALTERNATIVE

The project has been divided into four segments

Segment	Preferred Alternative
MD 4/MD 235 Intersection (St. Mary's County)	Option D: Single-Point Urban Interchange
MD 4 Mainline Improvements (St. Mary's County)	Four-Lane Roadway with Open Median and Separate Bicycle/Pedestrian Path
Thomas Johnson Bridge (St. Mary's and Calvert Counties)	Alternative 4: Four-Lane Parallel Span
MD 4 Mainline Improvements (Calvert County)	Four-Lane Roadway with Open Median <ul style="list-style-type: none"> ● Median-Widening Option ● Right-Turn Option B

SHA'S PREFERRED ALTERNATIVE

MD 4/MD 235 Intersection Option D: Single-Point Urban Interchange

REASON SELECTED

- Would provide better traffic operation at intersection than other options

CHANGES MADE SINCE 2010 PUBLIC HEARINGS

- MD 4 would remain at grade instead of being depressed under MD 235
- MD 235 would be elevated above MD 4
- Additional service roads would allow access to properties along MD 235

SHA'S PREFERRED ALTERNATIVE

MD 4/MD 235 Intersection Improvements

Project Visualization

Aerial View



MD 4 Looking Southeast



MD 4 Looking North



"The artist's renderings are for illustrative purposes only. The design depicted in the renderings may change during the final design phase."

OPTIONS DROPPED FROM CONSIDERATION

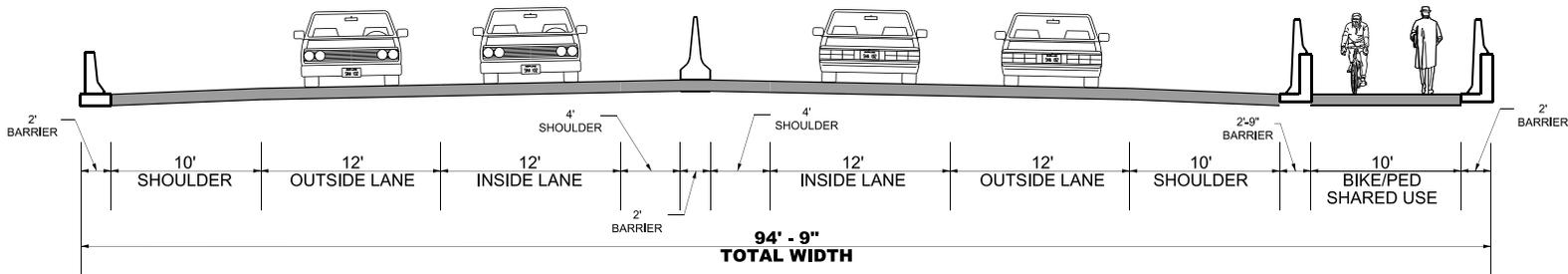
MD 4/MD 235 Intersection

Option	Reason Dropped
<p>Option A: Continuous-Flow Intersection</p>	<ul style="list-style-type: none"> ● Would impact access to Oak Drive and Our Father’s House Church more than other options ● Lacked public and County support
<p>Option B: At-Grade Intersection with One-Directional Flyover</p>	<ul style="list-style-type: none"> ● Would not provide desired traffic capacity ● Would restrict potential for future improvements to the MD 235 corridor

SHA'S PREFERRED ALTERNATIVE

Thomas Johnson Bridge

Alternative 4: Four-Lane Parallel Span



- Existing structure would be removed
- New structure would be 7,310 feet long
 - Currently evaluating height range of 80-140 feet
 - Minimum bridge height of 105 feet would accommodate all known sailboats in the area

REASONS SELECTED

- New four-lane bridge would best meet current design standards
- Existing bridge cannot be widened

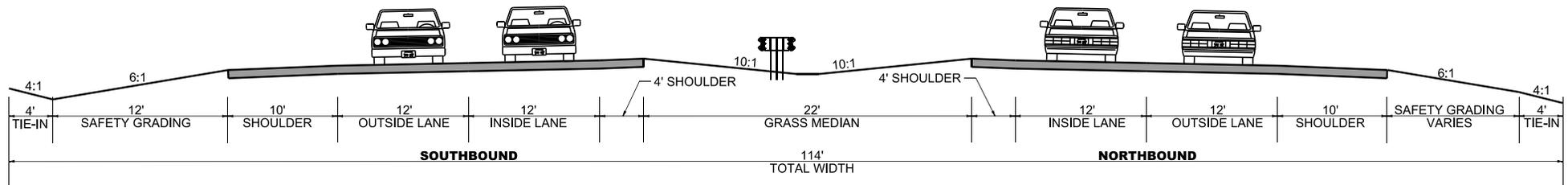
ALTERNATIVES DROPPED FROM CONSIDERATION

Thomas Johnson Bridge

Alternative	Reasons Dropped
<p>Alternative 1: No-Build</p>	<ul style="list-style-type: none"> ● Would not meet the project's purpose and need
<p>Alternative 2: Transportation Systems Management (TSM)</p>	<ul style="list-style-type: none"> ● Would not provide desired traffic capacity
<p>Alternative 3: Two-Lane Parallel Span (Built parallel to existing two lane bridge)</p>	<ul style="list-style-type: none"> ● Existing bridge lacks adequate shoulders to accommodate emergency/maintenance vehicles ● High projected cost to rehabilitate existing bridge ● Expensive to maintain existing bridge

SHA'S PREFERRED ALTERNATIVE

Calvert County MD 4 Mainline Improvements Four-Lane Roadway with Open Median Median-Widening Option and Right-Turn Option B



REASON SELECTED

- Would provide more direct access to Solomons Island Road than other options

CHANGES MADE SINCE 2010 PUBLIC HEARINGS

- Southbound MD 4 ramp shifted to the north to provide longer acceleration lane

OPTIONS DROPPED FROM CONSIDERATION

Calvert County MD 4 Mainline Improvements

Option	Reason Dropped
Ramp Options	
Right-Turn Option A	<ul style="list-style-type: none"> ● Lacked public support
Left-Turn Option	<ul style="list-style-type: none"> ● Would make access to Solomons Island from northbound MD 4 more circuitous
Access Options	
No-Change Option	<ul style="list-style-type: none"> ● Would not meet the project's purpose and need
Access-Control Option	<ul style="list-style-type: none"> ● Lacked public support

National Environmental Policy Act (NEPA)

Requires an assessment of a project's impacts on the natural, cultural, and human environment. An analysis of reasonable alternatives must be prepared, including minimization and mitigation for unavoidable impacts. The results of the analysis must be included in the decision-making process and made available to the public.

Natural Environment

- Geology/Groundwater Resources ▪ Soils ▪ Surface Water
- Floodplains ▪ Wetlands ▪ Aquatic Life ▪ Wildlife

Section 404 of the Clean Water Act, Nontidal Wetlands Protection Act

Regulates dredge and fill of Waters of the United States. Guidelines published by the Environmental Protection Agency for evaluating alternatives require that the Corps of Engineers evaluate the proposed project for environmental impacts (including historic and rare/threatened/endangered species impacts) and select the least environmentally damaging, practicable alternative.

Endangered Species Act

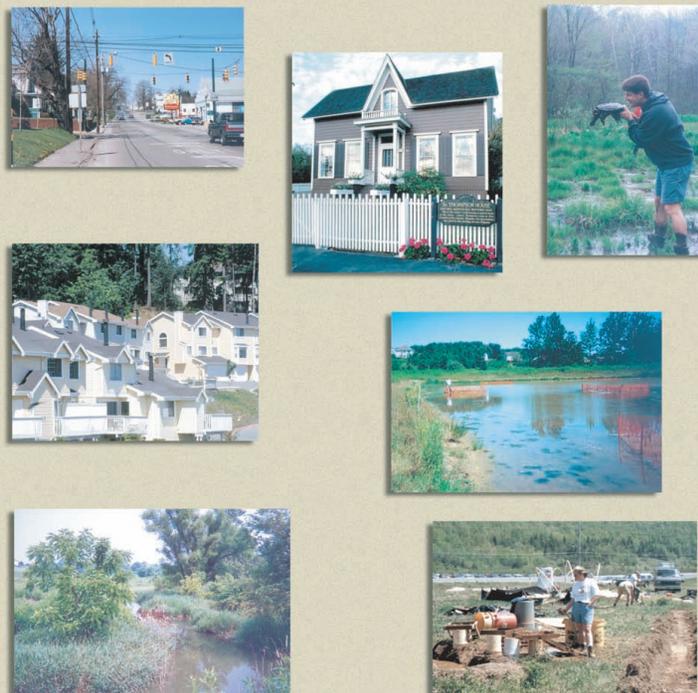
Ensures that actions are not taken to jeopardize the continued existence of endangered or threatened species or result in the destruction or adverse modification of the critical habitat of such species.

Cultural Environment

- Historic Structures ▪ Archaeological Sites

Section 106 of the National Historic Preservation Act

Requires that agencies take into account the effects of a project on properties that are included in or eligible for the National Register of Historic Places.



Socio-Economic Environment

- Demographics ▪ Community Facilities
- Economic Setting and Land Use ▪ Noise ▪ Air

Section 4(f) of the US Department of Transportation Act

Requires that special effort be made to preserve publicly owned public parks and recreation areas, wildlife/waterfowl refuges and historic sites. No project which requires land from these resources may be approved unless 1) there is no feasible and prudent alternative to the use of the land and 2) the action includes all possible planning to minimize harm to the property resulting from such use.

Clean Air Act and Clean Air Act Amendments

A microscale air quality analysis must be performed to determine if there are violations of the State or National Ambient Air Quality Standards for carbon monoxide. Also, a conformity analysis must be completed by the Metropolitan Planning Organization to make sure the Transportation Improvement Plan conforms to the State Implementation Plan.

Farmland Protection Policy Act

Requires that federal programs minimize conversion of farmland to non-agricultural uses (does not apply to farmland that is zoned or committed (planned) for urban development).

Executive Order 12898 (Environmental Justice)

Requires that agencies identify and address disproportionately high and adverse human health or environmental effects on minority or low-income populations.

ENVIRONMENTAL IMPACTS

Resource Category	Alternative 4: 4-Lane Parallel Span	Mainline Calvert County	Mainline St. Mary's County	Option D: Revised Single Point Urban Interchange	SHA Preferred Alternative (Total)
Residential Relocations (number)	3	0	0	0	3
Business Displacements (number)	0	0	0	4	4
Properties Impacted (number)	29	1	19	79	128
ROW Impacts (acres)	11.8	0.1	13.7	30.4	56
Historic Sites (number)	0	0	0	0	0
Stream Impacts (linear feet)	2489	446	1452	735	5122
Stream Impacts (acres)	11.12	0.11	0.31	0.12	11.66
Wetlands (acres)	0.11	0.02	1.26	0.70	2.09
Forest (acres)	4.5	0.06	27.7	18.3	50.56
Floodplain (acres)	0.13	0	0	0	0.13
Forest Interior Dwelling Species (acres)	0	0	3.85	3.89	7.74
Critical Area Impacted (acres)	19.8	2.2	11.3	0	33.3 (2.56 within 100' buffer)
Significant Trees Impacted (number)	0	0	2	5	7

AS VEHICLE OPERATORS ON MARYLAND ROADS BICYCLISTS HAVE RIGHTS AND RESPONSIBILITIES

It's the law:
Section 21-1202 Annotated Code of Maryland

"Vehicle" means any device in, on, or by which any individual or property is or might be transported or towed on a highway.

Annotated Code of Maryland

It's MDOT Policy:
Twenty-Year Bicycle and Pedestrian Access Master Plan

As part of roadway construction projects, SHA provides on-road features like these:



wide outside lane for bicycle compatibility



minimum four-foot-wide shoulder



bicycle lane/pocket bike lane markings



Bicycle Route & Share the Road signage

And off-road features like:



shared-use path (hiker/biker trail)



Bicycles provide a valuable transportation option for many people and will help Maryland meet our state's long-term transportation needs.

BICYCLE FAQ

Why are bicyclists allowed on the road?

Bicyclists are vehicle drivers, too. By law, “vehicle” means “any device in, on, or by which any individual or property is or might be transported or towed on a highway.” (Section 11-176, Annotated Code of Maryland) Every person operating a bicycle in a public area has all the rights granted to and is subject to all the duties required of the driver of a vehicle. (Section 21-1202, Annotated Code of Maryland)

Why are bicyclists allowed to ride next to cars that are going fast?

Bicyclists are prohibited on roadways with a posted maximum speed greater than 50 mph unless a continuous paved shoulder or bicycle lane is provided. In addition, a person may not ride a bicycle on an expressway or on any controlled-access highway with signs stating that bicycles are prohibited.

There’s a hiker/biker trail right next to the road. Shouldn’t bicyclists be riding there?:

Maryland law requires SHA to include bicycle accommodations in roadway construction projects whenever appropriate and feasible. That’s because not everyone who rides a bicycle does so for the same purpose. Hiker/biker trails are shared-use paths suitable for joggers, pedestrians, dog-walkers, children, babies in strollers, inexperienced or recreational cyclists, and others who enjoy exercising and spending time outdoors. Individuals who use a bicycle as their primary means of transportation may find that on-road bicycle accommodations better suit their needs. By removing themselves from the “mix” of hiker/biker trail-users, on-road bicyclists can reach their destinations more efficiently and lessen the risk that trail-users will find themselves in the path of bicyclists focused on getting from Point A to Point B as quickly as possible.

Shouldn’t bicyclists ride on sidewalks?

The law allows bicyclists to ride on sidewalks only in Montgomery County. Not permitting bicycles on sidewalks minimizes conflicts between bicyclists and pedestrians.

Isn’t it a law that bicyclists have to wear a helmet?

In Maryland, everyone under age 16 is required to wear a helmet when riding a bicycle on public property. Some local jurisdictions have requirements for helmet use that are tougher than State law. Wearing a helmet is a good safety measure for everyone who rides a bike: 85 percent of head and brain injuries resulting from bicycle crashes could be prevented if riders wore bicycle safety helmets.

Every day as I drive downtown I see bicyclists and motorists behaving in rude and dangerous ways. Whatever happened to common courtesy?

Motorists and bicyclists who share the road—especially in heavily traveled urban and suburban areas—need to look out for one another. Motorists should leave at least three feet between their vehicles and any bicycles they pass, and bicyclists should leave at least three feet between themselves and parked cars. By law, bicycles are vehicles: motorists should treat them as such, and bicyclists should obey all traffic laws, including those that govern left- and right-turns, lights and stop signs, right-of-way, and proper lane position.

I bike—where can I get more information on bicycling in Maryland?

Additional information is available on SHA’s website at www.marylandroads.com, click on Bicycling under EXPLORE MD, or by telephone at 1-888-204-4828.

Handout materials are also available at the bicycling station during today’s meeting.

NEXT STEPS

- **Receive Agency Approval of
SHA's Preferred Alternative *JUNE 2015***

- **Receive Location and Design Approvals
and Complete Project Planning *SUMMER 2015***

PROJECT FUNDING

- **Design funding is programmed for Thomas Johnson Bridge**
- **Additional funds will be needed to complete design, right-of-way acquisition, and construction for full project**
- **Proposed improvements would receive funding for design, right-of-way acquisition and construction as project funds become available**
- **Estimated total project cost \$650-\$670 million in present day dollars**

RELATED PROJECTS

- **MD 4 Northbound Acceleration Lane**
 - Acceleration lane under construction on MD 4 northbound between MD 235 and Patuxent Boulevard
 - Completion expected Fall 2015

- **Woodland Acres Community Access Road**
 - SHA District 5 is investigating potential alignments of a connector road between the community and MD 235



STAY CONNECTED

For more information and updates on the MD 4 Thomas Johnson Bridge Project Planning Study, please visit www.roads.maryland.gov and click on Projects and Studies, SHA Projects Page, St. Mary's County, and MD 4 Solomons Island Road - Upgrade between MD 2 and MD 235 or use the QR Code



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