

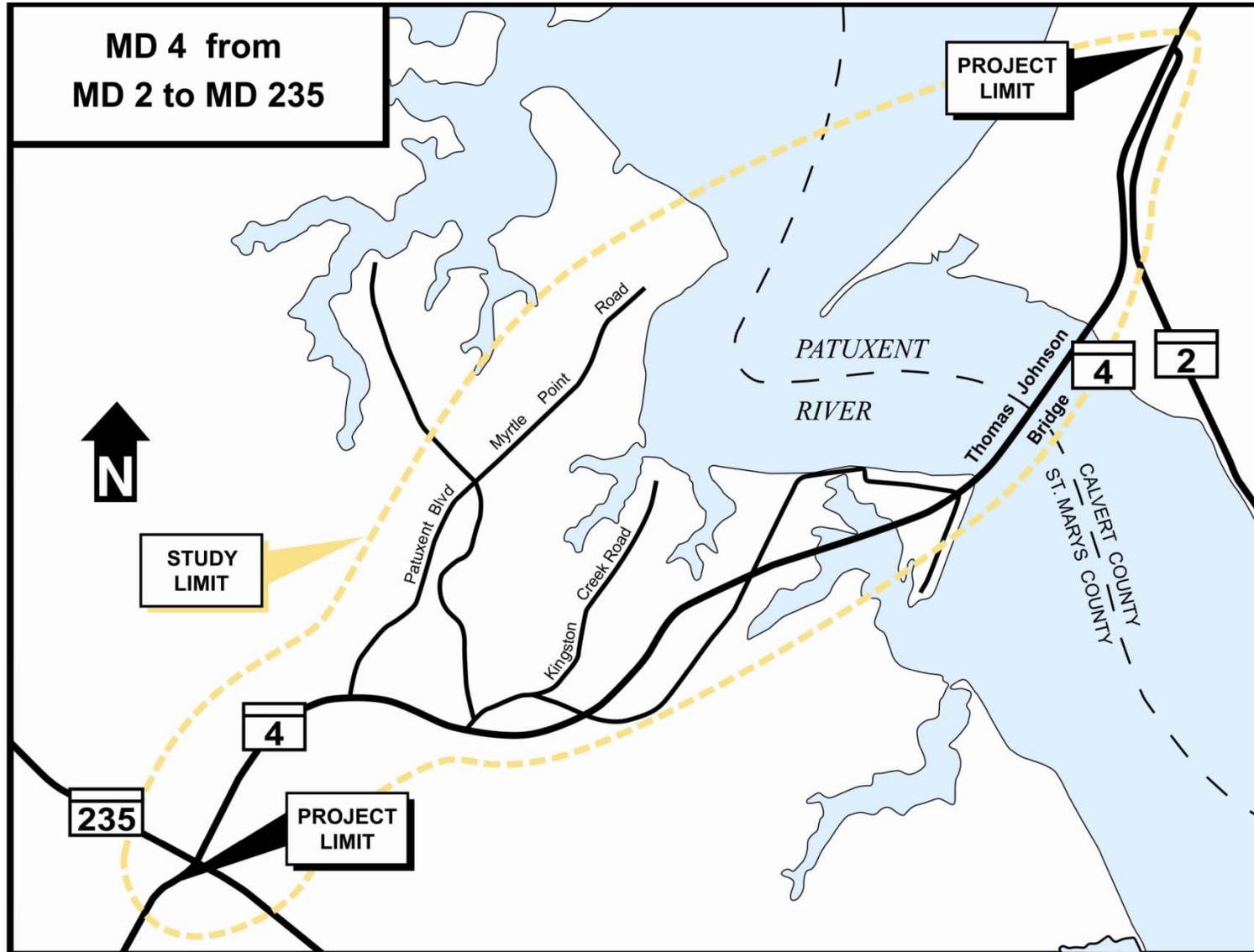


# PURPOSE OF THE MEETING

- To present preliminary alternatives for the MD 4 Corridor
  - No-Build Alternative
  - TSM/TDM Alternative
  - Patuxent River Crossing Alternatives
  - Mainline Alternatives
  - MD 4 / MD 235 Intersection Options
- To get you involved and hear your input!



# PROJECT STUDY AREA MAP





# PROJECT BACKGROUND

- MD 4 is one of Maryland's original state roads.
- The corridor is approximately 3 miles in length and includes the Thomas Johnson Memorial Bridge. It connects St. Mary's and Calvert counties.
- MD 4 provides commuters with access to points north (including Washington, DC) and points south (including the Naval Air Station Patuxent River).



# EXISTING CONDITIONS

- MD 4 is currently a four-lane roadway in Calvert County through the junction with MD 2, where it becomes a two-lane facility and continues across the Thomas Johnson Memorial Bridge and into St. Mary's County to the MD 235 intersection.
- There is a double left turn at the MD 4/MD 235 intersection from southbound MD 4 to southbound MD 235 toward the Naval Air Station Patuxent River.



# PURPOSE SUMMARY

- Improve existing capacity and traffic operations.
- Increase vehicular and pedestrian safety.
- Support existing and planned development in the area.



# TRAFFIC ANALYSIS

Locations	2007 Existing Volume	2030 No-Build Volume*	Percent Growth
	Average Daily Traffic (Vehicles/Day)		
MD 4: South of MD 235	17,000	18,600	9%
MD 4: MD 235 to Patuxent Boulevard	28,300	35,200	24%
MD 4: Patuxent Boulevard to Kingston Creek Road	27,900	33,600	20%
MD 4: Kingston Creek Road to MD 2**	27,000	32,500	20%
MD 235 (North of MD 4)	40,300	52,400	30%
MD 235 (South of MD 4)	55,800	64,600	16%

\* Assumes the construction of FDR Boulevard

\*\* Includes the Thomas Johnson Memorial Bridge



# LEVEL OF SERVICE

Limits	2007 LOS Existing		2030 LOS No-Build		2030 LOS Build	
	AM	PM	AM	PM	AM	PM
MD 4 Mainline (MD 235 to MD 2)	<b>F</b>	<b>F</b>	<b>F</b>	<b>F</b>	<b>B</b>	<b>B</b>
MD 4 / MD 235 Intersection	<b>F</b>	<b>E</b>	<b>F</b>	<b>F</b>	<b>Varies by Option</b>	
MD 4 / Patuxent Boulevard Intersection	<b>F</b>	<b>E</b>	<b>F</b>	<b>F</b>	<b>B</b>	<b>B</b>
MD 4 / Kingston Creek Road Intersection	<b>F</b>	<b>E</b>	<b>F</b>	<b>F</b>	<b>B</b>	<b>B</b>



# MD 4 / MD 235 INTERSECTION TRAFFIC ANALYSIS

		2030 AM LOS	2030 PM LOS
<b>2030 No-Build Option</b>		<b>F</b>	<b>F</b>
<b>Continuous Flow Intersection</b>		C	C
<b>At-Grade Intersection with 1-Directional Flyover</b>		C	E
<b>Partial Cloverleaf Interchange</b>	MD 4 & NB MD 235 Ramp	B	B
	MD 4 & SB MD 235 Ramp	C	E
<b>Single-Point Urban Interchange</b>		D	C



# CRASH SUMMARY

## Crash Data for MD 4 Collected from 2003 – 2006

### MD 4: FDR Boulevard to MD 235

- Crashes involving injuries and/or property damage, and the total crashes were significantly greater than the statewide average for similar roadways.
- Sideswipe angles and fixed-object crashes were significantly greater than the statewide average for similar roadways.

### MD 4: St Mary's County Line to MD 2

- Rear-end crashes were significantly greater than the statewide average for similar roadways.

### MD 4: MD 2 to Patuxent Point Parkway

- Left-turn crashes were significantly greater than the statewide average for similar roadways.



Safety Analysis (Crash Report)							
Severity	2003	2004	2005	2006	Total	Study Rate	Statewide Average Rate
<b>MD 4: FDR Boulevard to MD 235</b>							
Fatal	0	0	0	0	0	0.0	1.3
Injury	4	3	1	3	11	182.5*	81.2
Property Damage	2	5	2	4	13	215.0*	107.2
Total Crashes	6	8	3	7	24	397.6*	189.7
<b>MD 4: MD 235 to Patuxent Boulevard</b>							
Fatal	0	0	0	0	0	0.0	1.3
Injury	5	3	2	2	12	40.8	57.3
Property Damage	4	8	6	1	19	64.7	67.8
Total Crashes	9	11	8	3	31	105.4	126.4
<b>MD 4: Patuxent Boulevard to Kingston Creek Road</b>							
Fatal	0	0	0	0	0	0.0	1.4
Injury	0	0	0	0	0	0.0	59.7
Property Damage	0	3	0	1	4	27.1	70.9
Total Crashes	0	3	0	1	4	27.1	131.9
<b>MD 4: Kingston Creek Road to Calvert County Line</b>							
Fatal	0	0	0	0	0	0.0	1.3
Injury	3	4	4	4	15	17.6	56.6
Property Damage	4	10	3	3	20	23.5	66.8
Total Crashes	7	14	7	7	35	41.1	124.6
<b>MD 4: St. Mary's County Line to MD 2</b>							
Fatal	0	0	0	0	0	0.0	1.2
Injury	4	4	5	2	15	53.6	53.7
Property Damage	1	5	1	1	8	28.6	63.0
Total Crashes	5	9	6	3	23	82.1	117.9
<b>MD 4: MD 2 to Patuxent Point Parkway</b>							
Fatal	0	1	0	1	2	6.1*	1.5
Injury	8	4	2	3	17	51.9	64.8
Property Damage	3	4	5	2	14	42.8	77.6
Total Crashes	11	9	7	6	33	100.7	143.8

•Significantly Higher Than Statewide Average



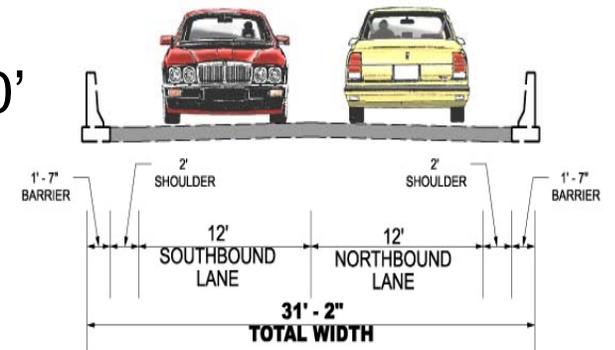
# LAND USE AND ECONOMIC DEVELOPMENT

- The Naval Air Station Patuxent River provides approximately 72% of jobs in St. Mary's County.
- From 1970 to 2000, Calvert County was the fastest-growing county in Maryland.
- MD 4 corridor in St. Mary's County is within Lexington Park Development District.
- Portions of the corridor in Calvert County are within a Town Center District.
- The entire project is located within the Priority Funding Area.



# BRIDGE AND RIVER FACTS

- Built in 1977
- Width: 28' inside and 31'-2" total
- Length: 7,207'
- Vertical navigable clearance at highest point: 140'
- Depth of river at channel: approximately 130'
- The team is evaluating the need for the existing 140' vertical navigable clearance. The build alternatives may potentially lower the vertical clearance of any new bridge.



Existing Thomas Johnson Memorial Bridge  
Typical Section





# THOMAS JOHNSON MEMORIAL BRIDGE SAFETY INSPECTION RESULTS

- Year Built: 1977
- Maintenance Program:
  - 1990 – Selected Pier Caps Strengthened
  - 1997 – Scour Protection Added at Selected Piers
  - 1998 – Selected Pier Foundations Repaired
  - 2000 – Portions of Bridge Painted
  - 2007 – Aluminum Joints Replaced
- Latest Inspection: September, 2007 (Bridge Inspected Every Two Years)
- Latest Underwater Inspection: August, 2005 (Underwater Inspection Every Four Years)
- Condition Rating:
  - Deck – 6
  - SubStructure – 6
  - Superstructure – 6

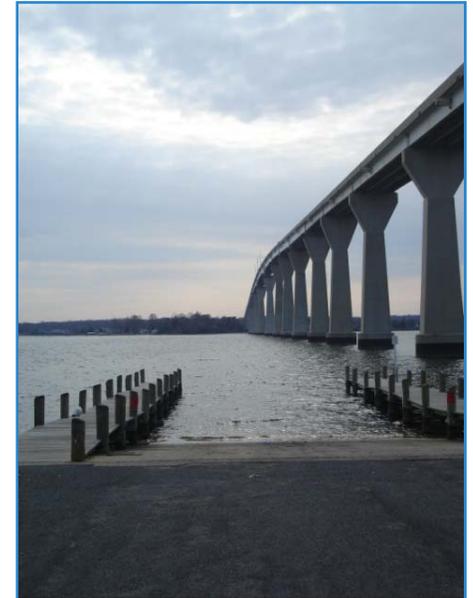
A rating of “6” indicates the element is in satisfactory condition
- Bridge Sufficiency Rating (BSR): 67.9
 

A BSR of 50 or below is generally necessary to be eligible for federal bridge replacement funding



## BOAT RAMP

- Public boat ramp is located near the Thomas Johnson Memorial Bridge on the Calvert County shore.
- Boat launch will remain open with all alternatives.
- Minor access modifications may be necessary.



## CALVERT COUNTY VISITORS CENTER

- Build alternatives may require minor modifications to access and parking area of Visitor Center.





# COMMUNITY CONSIDERATIONS

The strategy of working with community partners to make a transportation improvement that is sensitive to community values and that enhances a community is known as Context Sensitive Solutions (CSS). The goal of CSS is to develop highway projects that address safety, mobility, and the preservation of scenic, aesthetic, historic, and environmental resources. CSS considers the total context in which a transportation improvement project will exist. Design considerations for the MD 4 project include:

- Pedestrian and Bicycle Facilities
- Maintain Public Boat Ramp
- Bridge Aesthetics
- Resource Preservation
- Provide a Median for a Safe Roadway

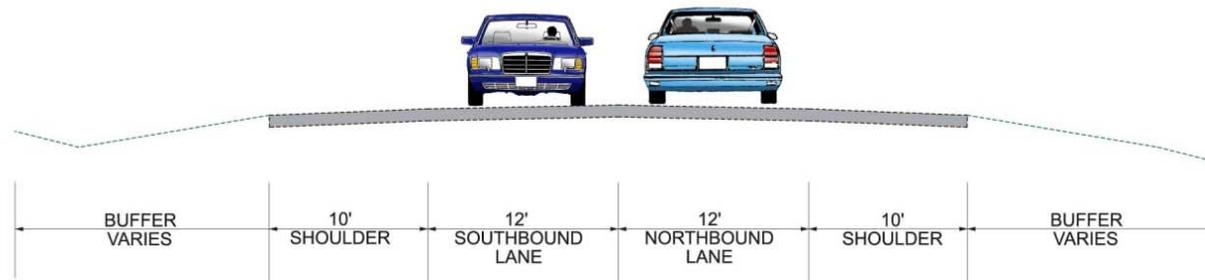


# ALTERNATIVES UNDER CONSIDERATION

- Alternative 1 – No-Build
- Alternative 2 – TSM/TDM
- Alternative 3 – 2-Lane Parallel Span
- Alternative 4 – 4-Lane Parallel Span
- Alternative 5 – 4-Lane Myrtle Point Crossing



# ALTERNATIVE 1: NO-BUILD



## EXISTING MAINLINE

- No major improvements proposed.
- Minor, short-term improvements would occur as part of routine maintenance and safety operations.
- Serves as a baseline for comparison with the build alternatives.



# ALTERNATIVE 2: TSM/TDM

**(Transportation System Management / Travel Demand Management)**

**TSM:** Low-cost improvements consisting of minor construction and operational enhancements including traffic signal improvements, intersection improvements, and minor roadway widening.

**TDM:** Strategies include telecommuting, staggering work hours, carpooling, and improvements to transit service.



# ALTERNATIVE 2: TSM/TDM

(Transportation System Management / Travel Demand Management)

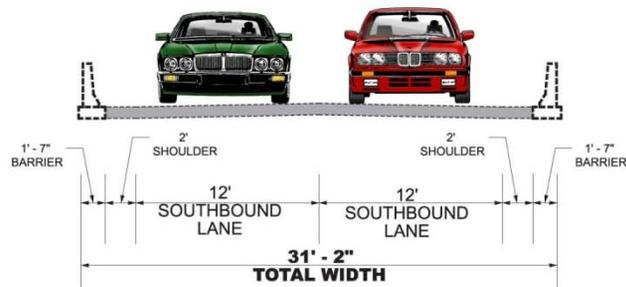
## Potential strategies may include:

- Removing the off-ramp from northbound MD 4 to Solomons Island.
- Closing the northernmost entrance to South Patuxent Beach Road.
- Providing “Modified Tee” intersections along MD 4.
- Converting the existing shoulder to a travel lane along northbound MD 4 from MD 235 to the Thomas Johnson Memorial Bridge.
- Improving MD 4 / MD 235 intersection.
- Adding access controls.

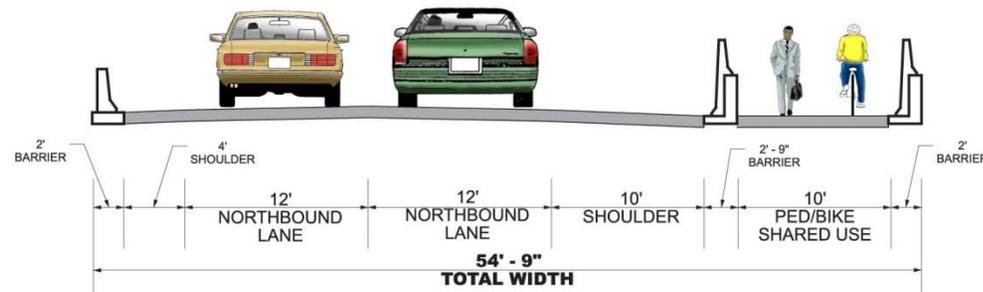


# ALTERNATIVE 3: 2-LANE PARALLEL SPAN

- Existing Structure: Converted to a one-way, southbound two-lane bridge
- Parallel Structure: One-way, northbound, two-lane bridge with a 10-foot outside shoulder and a four-foot inside shoulder
- Pedestrian/Bicycle Facility: 10-foot shared-use path on proposed span
- Bridge Crossing: 7,280' Long



**EXISTING STRUCTURE**

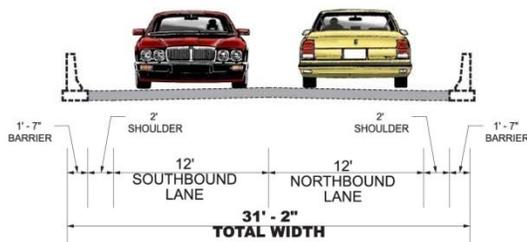


**PARALLEL SPAN**

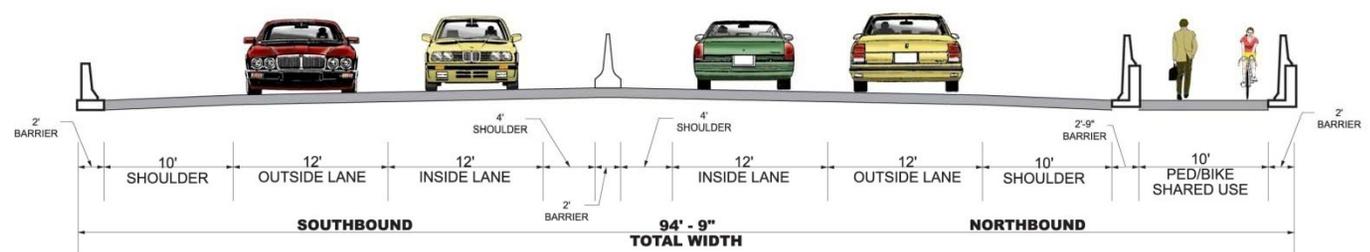


# ALTERNATIVE 4 – 4-LANE PARALLEL SPAN

- Existing Structure: To be removed
- Parallel Structure: Two lanes in each direction separated by a concrete barrier with four-foot inside shoulders and 10-foot outside shoulders
- Pedestrian/Bicycle Facility: 10-foot shared-use path
- Bridge Crossing: 7,310' Long



**EXISTING STRUCTURE  
TO BE REMOVED**

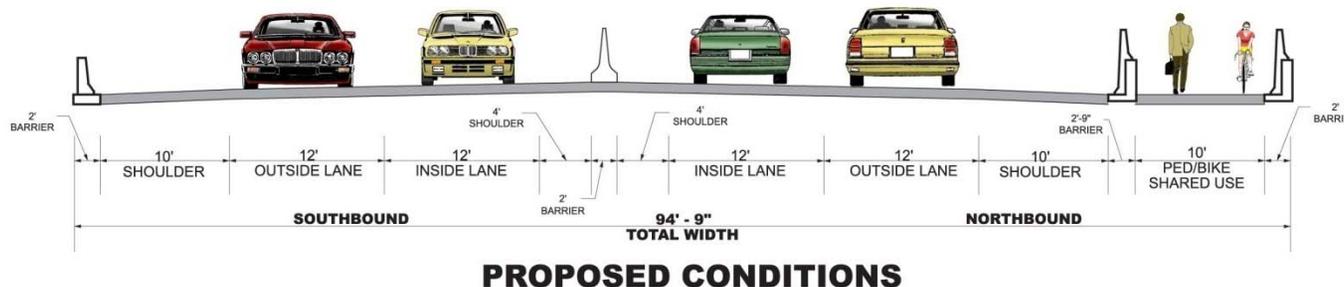


**PROPOSED CONDITIONS**



# ALTERNATIVE 5 – 4-LANE MYRTLE POINT CROSSING

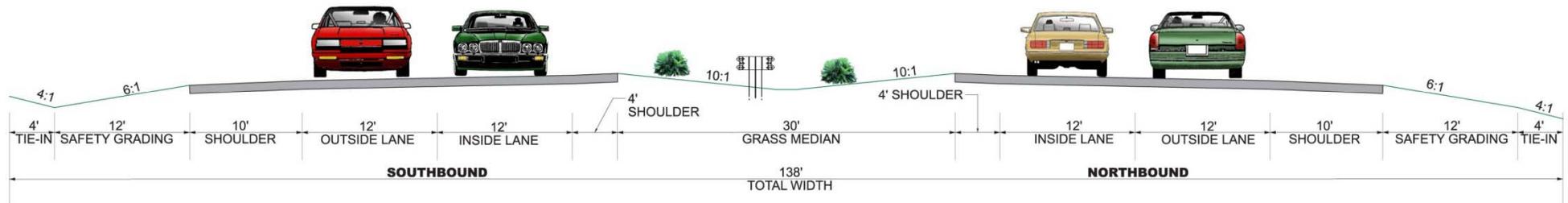
- Existing Structure: To be eventually removed
- New River Crossing: Two lanes in each direction separated by a concrete barrier with four-foot inside shoulders and 10-foot outside shoulders
- Pedestrian/Bicycle Facility: 10-foot shared-use path
- Bridge Crossing: 8,300' Long



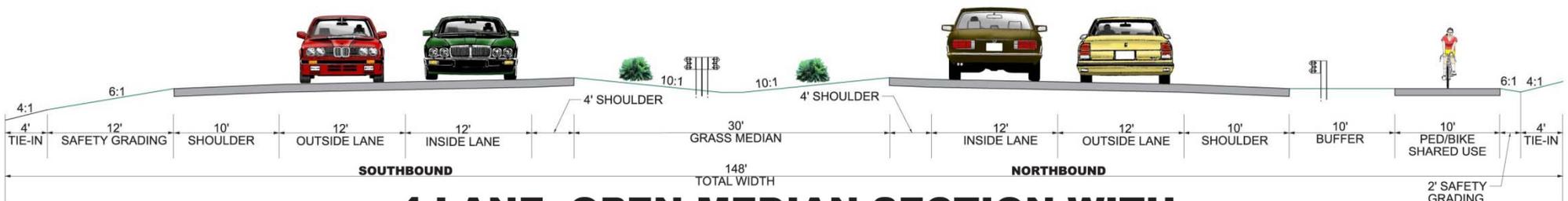


# MD 4 MAINLINE

- 4-lane Roadway: 12-foot lanes; two lanes in each direction with 30-foot median
- 10-foot Outside Shoulders: To accommodate pedestrian/bicycle traffic and emergency use
- Median and edge of roadway to be open sections
- An option for a 10-foot pedestrian/bicycle facility along the south side



## 4-LANE OPEN-MEDIAN SECTION



## 4-LANE, OPEN-MEDIAN SECTION WITH SEPARATE PEDESTRIAN/BICYCLE FACILITY



# MD 4 / MD 235 INTERSECTION OPTIONS

- Option A – Continuous Flow Intersection
- Option B – At-Grade Intersection with One-Directional Flyover
- Option C – Partial Cloverleaf Interchange
- Option D – Single-Point Urban Interchange



# CONTINUOUS FLOW INTERSECTION: Examples of Similar Facilities:



- MD 210 and MD 228



- Baton Rouge, LA



# SINGLE-POINT URBAN INTERCHANGE

## Examples of Similar Facilities:



- Riva Road and MD 655



- Reisterstown Road and I-695



- Coventry Way and MD 5



# PEDESTRIAN/BICYCLE FACILITIES

- Pedestrians and bicyclists are allowed along MD 4.
- In Calvert County, pedestrians and bicyclists use the 10-foot outside shoulder.
- St Mary's County is implementing the Three Notch Trail along MD 235. All build alternatives will tie-in to the trail.
- The build alternative bridge crossings of the Patuxent River include a 10-foot shared-use facility
- Along MD 4 between MD 235 and the Patuxent River, pedestrians and bicyclists can use the 10-foot outside shoulder. An option for a separate facility along the south side is under consideration



# PRELIMINARY COST CONSIDERATIONS

Alternative	Capital Cost Range In 2008 Dollars
Alternative 1 – No-Build	N.A. (Routine Maintenance and Safety Operations Funded Separately)
Alternative 2 - TSM/TDM	\$10 Million - \$20 Million
Alternative 3 - 2-Lane Parallel Span	\$440 Million - \$465 Million (Includes approximately \$250 Million for the Patuxent River Bridge)
Alternative 4 - 4-Lane Parallel Span	\$620 Million - \$645 Million (Includes approximately \$430 Million for the Patuxent River Bridge)
Alternative 5 - 4-Lane Myrtle Point Crossing	\$675 Million - \$700 Million (Includes approximately \$480 Million for the Patuxent River Bridge)

- Costs include final design, right-of-way acquisition, and construction



# SAFETEA-LU SECTION 6002 SUMMARY OF DRAFT COORDINATION PLAN

- The purpose of SAFETEA-LU Section 6002 Coordination Plans are:
  1. To facilitate and document SHA's interaction with the public and other agencies
  2. To inform the public and agencies of how the plan will be accomplished
- Lead Agencies: Federal Highway Administration, State Highway Administration
- **Cooperating and Participating Agencies:** Maryland Department of the Environment, United States Army Corps of Engineers, United States Coast Guard, United States Environmental Protection Agency
- **Participating Agencies:** Critical Area Commission for the Chesapeake and Atlantic Coastal Bays, Maryland Department of Natural Resources, Maryland Department of Planning, Maryland Historical Trust, National Marine Fisheries Service, Naval Air Station-Patuxent River, Tri-County Council of Southern Maryland, US Fish and Wildlife Service, St. Mary's County Department of Public Works and Transportation, Calvert County Department of Planning and Zoning

Cooperating and participating agencies identify any issue of concern regarding the project's potential environment or socio-economic impacts which could delay or prevent an agency from granting a permit or other approvals



# SAFETEA-LU SECTION 6002 SUMMARY OF DRAFT COORIDINATION PLAN

- Concurrence points with other agencies are:
  - Purpose and Need and Study Area – Spring 2007
  - Alternatives Retained for Detailed Study – Spring 2008
  - Preliminary Draft Environmental Impact Statement (DEIS) – Spring 2009
  - Preferred Alternative and Conceptual Mitigation Package – Spring 2010
  
- Coordination with the public:
  - Public Meetings:
    - Open House Meeting – October 2007
    - Alternatives Public Workshop – Fall 2008
    - Informational Meeting – Spring 2009
    - Location / Design Public Hearing – Fall 2009
    - Possible additional Informational Meeting prior to the Selected Alternative – 2010
  
  - Newsletters published in Fall 2007, Spring 2008, Spring 2009, 2011



# ENVIRONMENTAL CONSIDERATIONS

RESOURCE CATEGORY	Mainline Alternatives*				
	Alternative 1: No-Build	Alternative 2: TSM/TDM	Alternative 3: 2-Lane Parallel Span	Alternative 4: 4-Lane Bridge Replacement	Alternative 5: 4-Lane Myrtle Point Crossing
Residential Relocations (number)	0	0	0	3	7
Business Displacements (number)	0	0	0	0	0
Stream Impacts (linear feet)	0	0	4,000-6,000	4,000-6,000	4,000-6,000
Floodplain (acre)	0	0	1-3	1-3	1-3
Woodland (acre)	0	0	6-10	7-11	13-18
Wetlands (acre)	0	0	1-2	1-2	1-2
Critical Area Impacted	No	No	Yes	Yes	Yes

\* - The impacts include the River Crossing and Mainline, but do not include MD 4/ MD 235 Intersection Improvements

RESOURCE CATEGORY	MD 4/MD 235 Intersection Improvements				
	Continuous Flow Intersection	At-Grade Intersection with 1-directional Flyover	Partial Cloverleaf Interchange	Single Point Urban Interchange	
Residential Relocations (number)	1	1	6	6	
Business Displacements (number)	4	3	2	6	
Stream Impacts (linear feet)	0	0	0	0	
Floodplain (acre)	0	0	0	0	
Woodland (acre)	2-3	1-2	4-5	2-3	
Wetlands (acre)	0-1	0-1	0-1	0-1	
Critical Area Impacted	No	No	No	No	



# RELATED SHA PROJECTS

Ongoing or recently completed studies and projects within and around the MD 4 study area:

- Lusby Connector
- MD 760 / MD 765
- MD 2 Solomon's Museum Ramp
- MD 237 from MD 235 to Pegg Road



# NEXT STEPS

- Evaluate and address public and agency comments resulting from studies to date and from the Alternates Public Workshop (Summer 2008)
- Identify alternatives to be retained for detailed study and complete detailed engineering (Spring 2009)
- Complete draft environmental document and hold a Location/Design Public Hearing (Fall 2009)
- Address Public Hearing comments
- Coordinate with Federal and State environmental resource agencies throughout the process
- Identify the SHA Preferred Alternative and Conceptual Mitigation (Spring 2010)
- Receive Location/Design Approval (Winter 2010/2011)