



EVALUATING DATA TO ASSESS PAST AND PRESENT PROJECTS FOR MOBILITY

NOVEMBER 6, 2024

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IN ASSOCIATION WITH THE MARYLAND STATE HIGHWAY ADMINISTRATION





MARYLAND MOBILITY REPORT

Annual Report

- What is happening?
- What is SHA doing?
- What are the outcomes?



MARYLAND MOBILITY REPORT

Congestion and Mobility

- Statewide
- Worst 15 Freeway and Arterial Sections AM/PM Peak
- Summer Analysis
- Freight
- Pedestrians and Bicycles



PERFORMANCE MEASURES

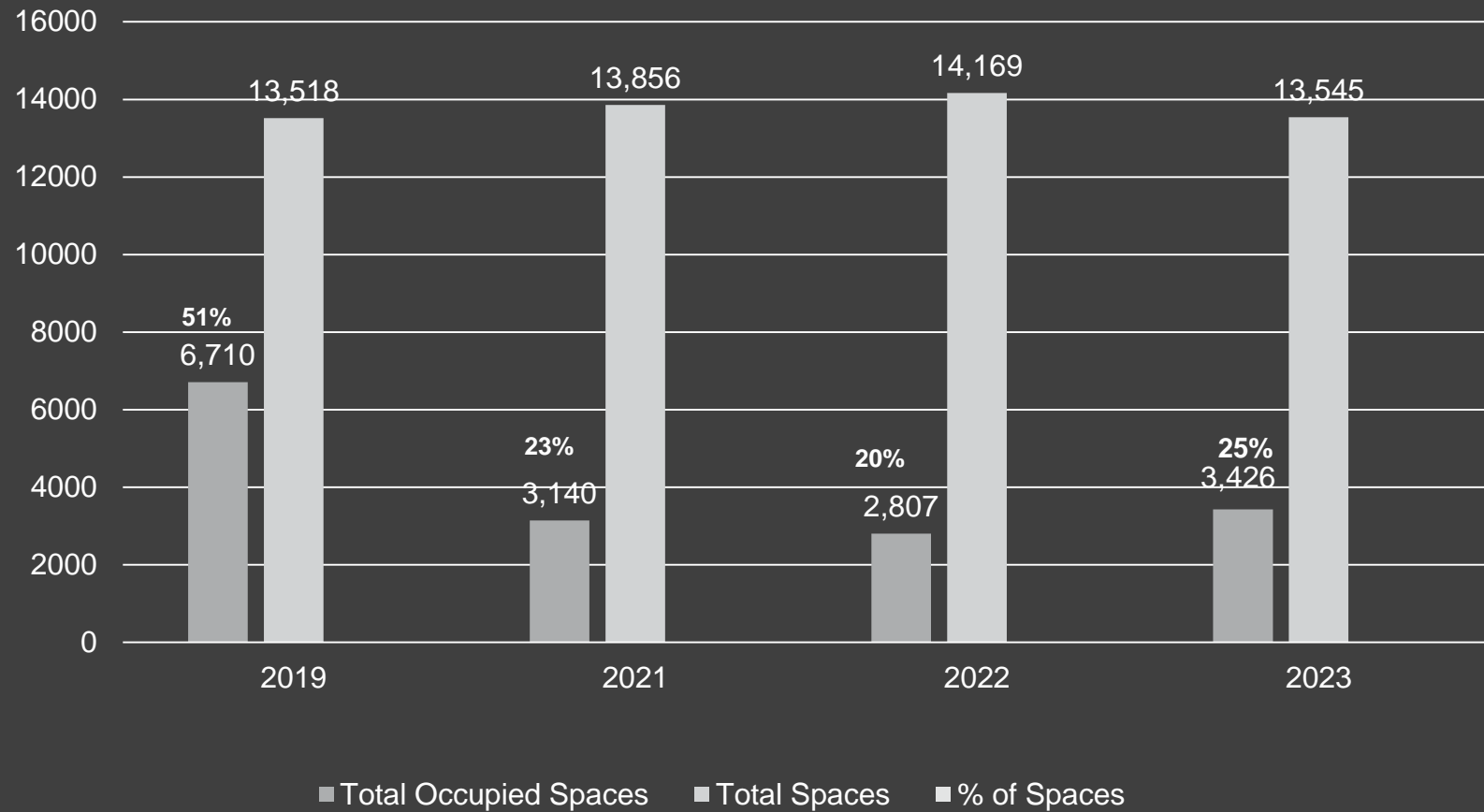
- TTI – 50th Percentile Travel Time on a segment for a particular hour versus the off peak travel time
- PTI – 95th Percentile Travel Time on a segment for a particular hour versus the off peak travel time

EVALUATION OF PRESENT PROJECTS

- Express toll lanes
- HOV lanes
- Truck parking
- Park and Ride lots



MDOT SHA/MDTA PARK AND RIDE LOT SPACES AND OCCUPANCY



PARK AND RIDE LOTS

- Yearly survey
- Expansion of lots



EVALUATING PAST PROJECTS

- Completed mobility improvement projects in the past year
- Major project completions
- Signal system upgrades

COMPLETED MOBILITY IMPROVEMENT PROJECTS IN THE PAST YEAR

What projects qualify?

Types of projects

- Roadway widenings
- New interchanges
- Intersection improvements



DATA REQUIREMENTS

TMC	LOCATION	ROUTE	DIRECTION	MILEAGE	TTI AM	TTI PM
110+04632	MD-450/ANNAPOLIS RD/EXIT 20	I-495	CLOCKWISE	2.023205	1.345739	1.435218
110P04632	MD-450/ANNAPOLIS RD/EXIT 20	I-495	CLOCKWISE	0.228207	1.552595	1.608055
110+04633	US-50/EXIT 19	I-495	CLOCKWISE	0.532344	1.342086	1.448654
110P04633	US-50/EXIT 19	I-495	CLOCKWISE	0.809347	1.264666	1.549444
110+16073	I-495/I-95 EXP	I-495	CLOCKWISE	1.035502	1.459573	1.804137
110P16073	I-495/I-95 EXP	I-495	CLOCKWISE	0.097591	1.180041	1.477953

- Traffic counts
- Field observations
- INRIX data
- Crash data
- Construction cost



DELAY SAVINGS

- Synchro/Vissim models
 - Calibration
- Network delay



SAFETY SAVINGS

Analysis of 3 years of data

Predictive analysis

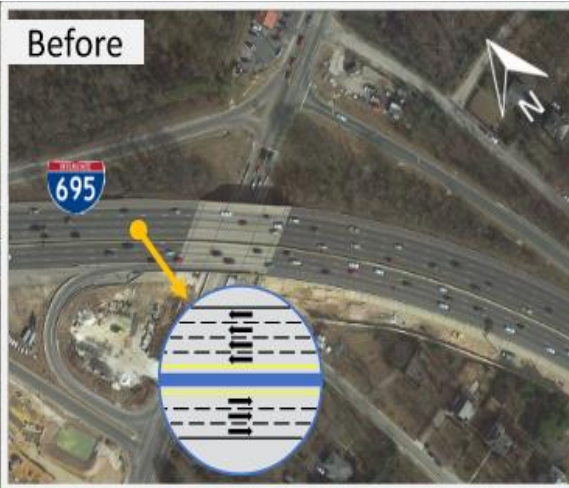
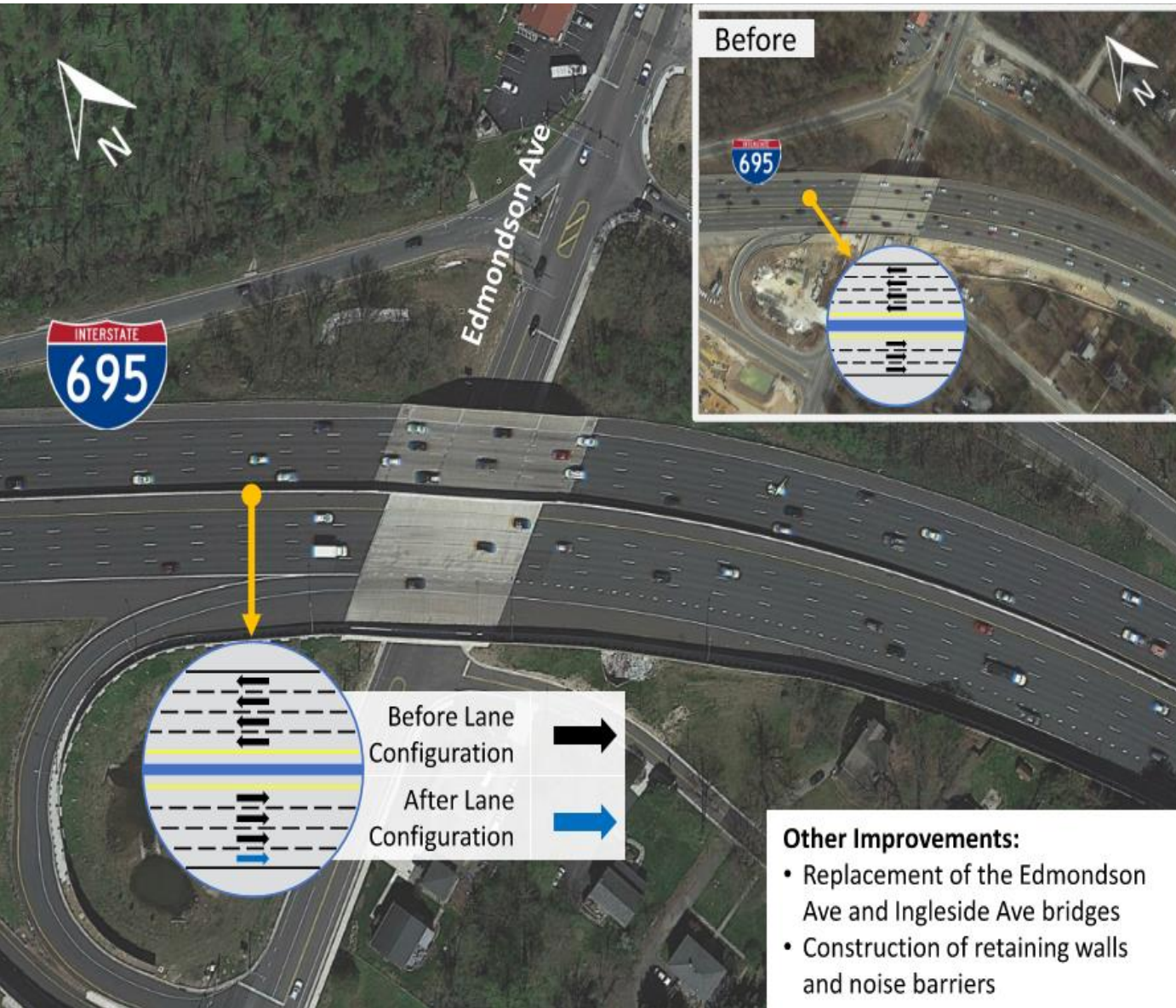
Highway Safety Manual

CAPITAL IMPROVEMENT PROJECTS OPENING YEAR BENEFITS

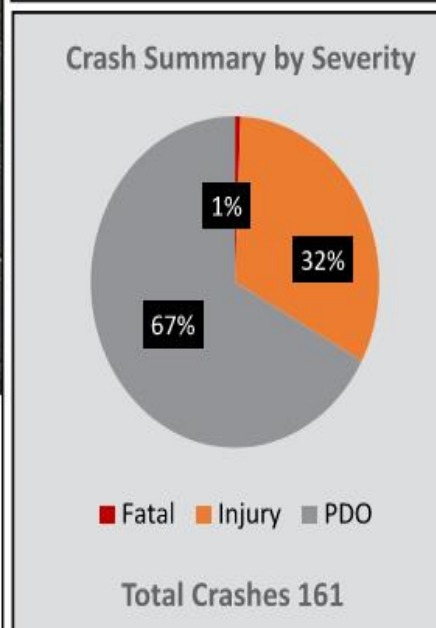
COUNTY	ROUTE	LIMITS	CONGESTION & FUEL SAVINGS	SAFETY SAVINGS	ANNUAL COST SAVINGS
			\$ (Thousands)		
Anne Arundel	MD 175	Reece Rd to Disney Rd	\$8,139	\$499	\$8,638
Baltimore	I-695	US 40 to MD 144	\$17,075	\$4,938	\$22,013
Baltimore	MD 140	Garrison View Rd to North of Painters Mill Rd	\$4,051	\$74	\$4,125
Carroll	MD 27	Gillis Falls Rd/ Harrisville Rd	\$148	\$398	\$546
Carroll	MD 32	Bennett Rd/Jonesville Rd	\$435	\$75	\$510
Cecil	MD 272	South of US 40 to Rogers Rd	\$433	\$180	\$613
Frederick	MD 26	Old Annapolis Rd/Water Street Rd	-\$80	\$615	\$535
Garrett	US 219	I-68 to Old Salisbury Rd	\$79	\$178	\$257
Howard	US 1	Kit Kat Rd	\$202	\$59	\$261
Montgomery	MD 355	Brink Rd to South of Greenridge Dr	\$1,032	\$209	\$1,241
Prince George's	MD 5	MD 373	\$56,806	\$3,760	\$60,566
Prince George's	I-95/I-495	MD 214	\$17	\$851	\$868
-	Total	-	\$88,337	\$11,836	\$101,173

BENEFITS

- Delay
- Fuel consumption
- Safety



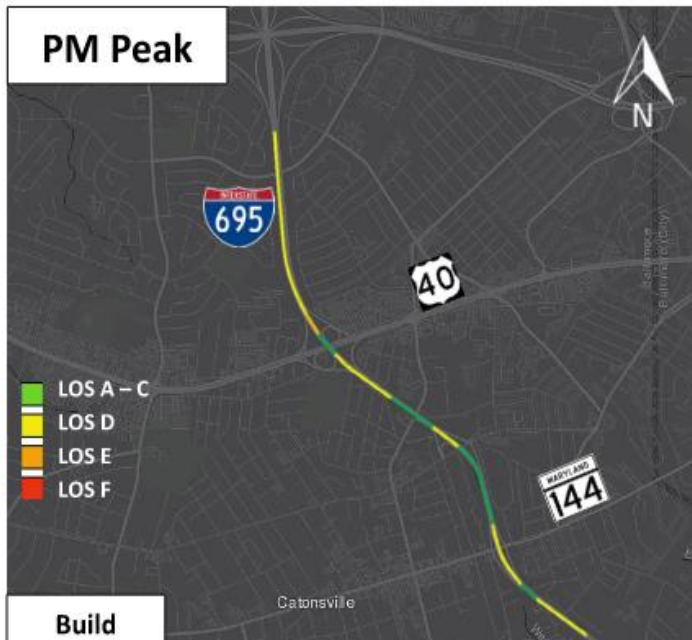
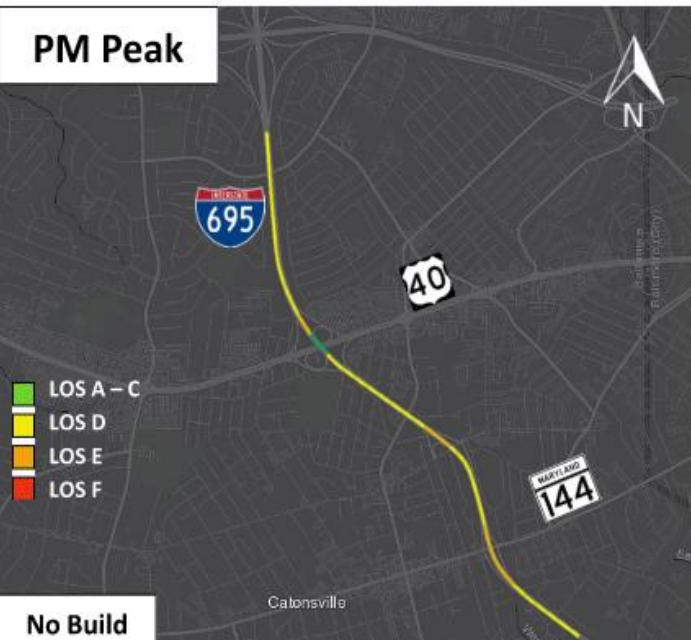
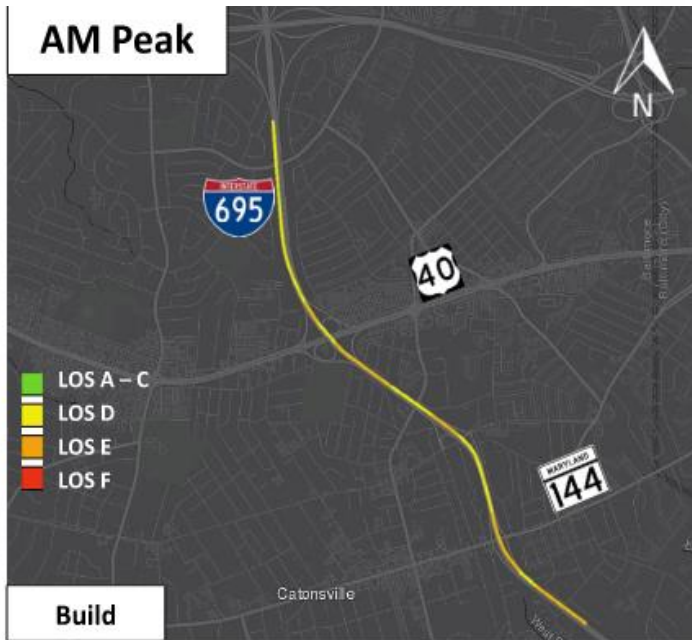
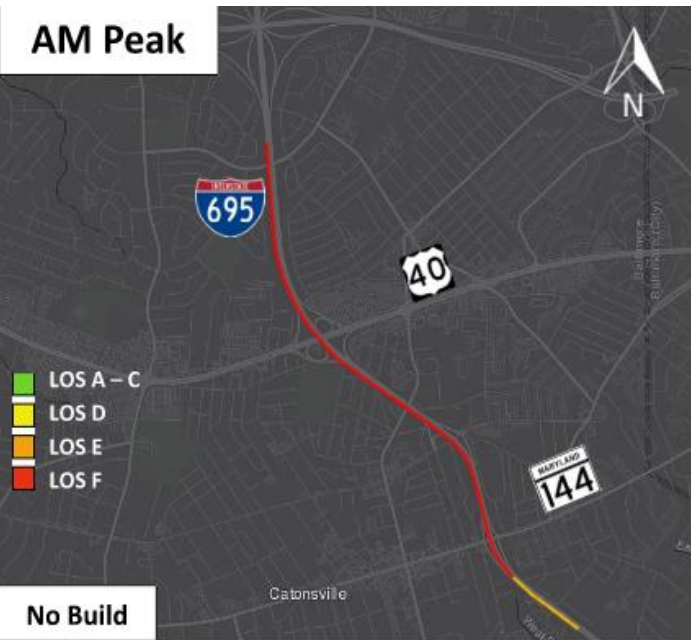
I-695 ADT : 185,000



- Other Improvements:**
- Replacement of the Edmondson Ave and Ingleside Ave bridges
 - Construction of retaining walls and noise barriers

I-695 OUTERLOOP WIDENING – US 40 TO MD 144

*Location: Catonsville,
Baltimore County*



I-695 ADT : 185,000

- Non-Congestion Benefits**
- Mitigate noise impacts by installing noise barriers
 - Lowering congestion will reduce the probability of rear end crashes

- Congestion Benefits**
- Eliminated major bottleneck
 - Improve freeway operations from LOS F to LOS E/D during AM peak hour, and from LOS E/D to LOS D or better during PM peak hour
 - Reduce travel times

I-695 OUTERLOOP WIDENING – US 40 TO MD 144

*Location: Catonsville,
Baltimore County*

2023 USER SAVINGS DUE TO SHA CONGESTION MANAGEMENT	
CHART	\$ 2,030 Million
Traffic Signal Timing Reviews	\$30 Million
Capital Projects	\$2,734 Million
Park and Ride Programs	\$32 Million
Total	\$ 4,826 Million

OVERALL USER COST SAVINGS DUE TO CONGESTION MANAGEMENT

ANALYSIS OF MAJOR COMPLETED PROJECTS

- Freeway and major arterial widenings
- Data from pre-construction and latest year
- Improvement in mobility via delay measurements

BEFORE/AFTER TRAVEL TIME IMPROVEMENT

PAST PROJECT BENEFITS							
ROUTE/ PEAK HOUR/ DIRECTION	LIMITS	LENGTH (MILES)	COUNTY	PRECONSTR. YEAR	PRECONSTR. TTI	2022 TTI	% REDUCTION IN DELAY
MD 295/AM/ SB	I-695 to W. Nursery Road	1.1	Anne Arundel	2011	1.45	1.06	26%
MD 295/PM/ NB	I-195 to W. Nursery Road	1.8	Anne Arundel	2011	1.73	1.13	35%
US 50/PM/EB	MD 450 to MD 2	2.7	Anne Arundel	2017	2.08	1.12	46%
MD 175/AM/ NB	Mapes Road to Disney Road	1.8	Anne Arundel	2015	1.28	1.13	12%
MD 175/AM/ SB	Mapes Road to Disney Road	1.8	Anne Arundel	2015	1.19	1.17	2%
MD 175/PM/SB	Mapes Road to Disney Road	1.8	Anne Arundel	2015	1.49	1.27	15%
I-95/AM/SB	MD 43 to S of I-695	4.3	Baltimore	2011	1.75	1.06	40%
I-95/PM/NB	US 40 to MD 43	6.9	Baltimore	2011	1.32	1.08	18%



SIGNAL SYSTEMS

- Adaptive signal systems
- TTI and PTI values
- Delay savings

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QUESTIONS