

CALVERT COUNTY



TRANSPORTATION PLAN

Planning Commission Work Session

Thursday, September 26, 2019

7 p.m.

Calvert Pines Senior Center

Prince Frederick, MD





BACKGROUND INFORMATION

- Calvert County adopted 1st Transportation Plan – 1997
- RFP process began - July 2018
- Contract awarded to Sabra & Associates - October 2018
- Notice to Proceed - January 2019
- Kickoff Meeting – January 25, 2019
- 1st Public Workshop – April 2, 2019
- Final Public Workshop – August 14, 2019



PUBLIC WORKSHOP 1 – EXISTING CONDITIONS

- April 2, 2019
- Current road network
- Crash hot spots
- Transit Service (local and regional commuter)
- Commuting
 - outbound commutes
 - inbound commutes
 - through traffic



FINAL PUBLIC WORKSHOP
2040 Traffic Analysis & Transportation Plan Overview

- August 14, 2019
- 2040 Traffic Analysis
- Countywide Transportation Plan Overview
- Draft released – August 23, 2019
- Public Comments received through September 6, 2019

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CHALLENGES

- Major thoroughfares owned and maintained by Maryland Department of Transportation - State Highway Administration (MDOT-SHA).
- Calvert County competes with 23 other counties for MDOT-SHA funding.
- Local and State government officials work on transportation priorities with MDOT-SHA.
- State budgetary restraints.

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TRANSPORTATION PLAN

DRAFT PLAN

- Provides functional guidance to relieve traffic congestion and maintain acceptable levels of service.
- Applies practical and effective strategies to address County needs.
 - Traffic management tools
 - County funded or initiated improvement projects

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TRANSPORTATION PLAN

Calvert County Planning Commission

September 26, 2019

Agenda

- › Brief review of existing conditions.
- › Future traffic conditions.
- › Summary of transportation plan.



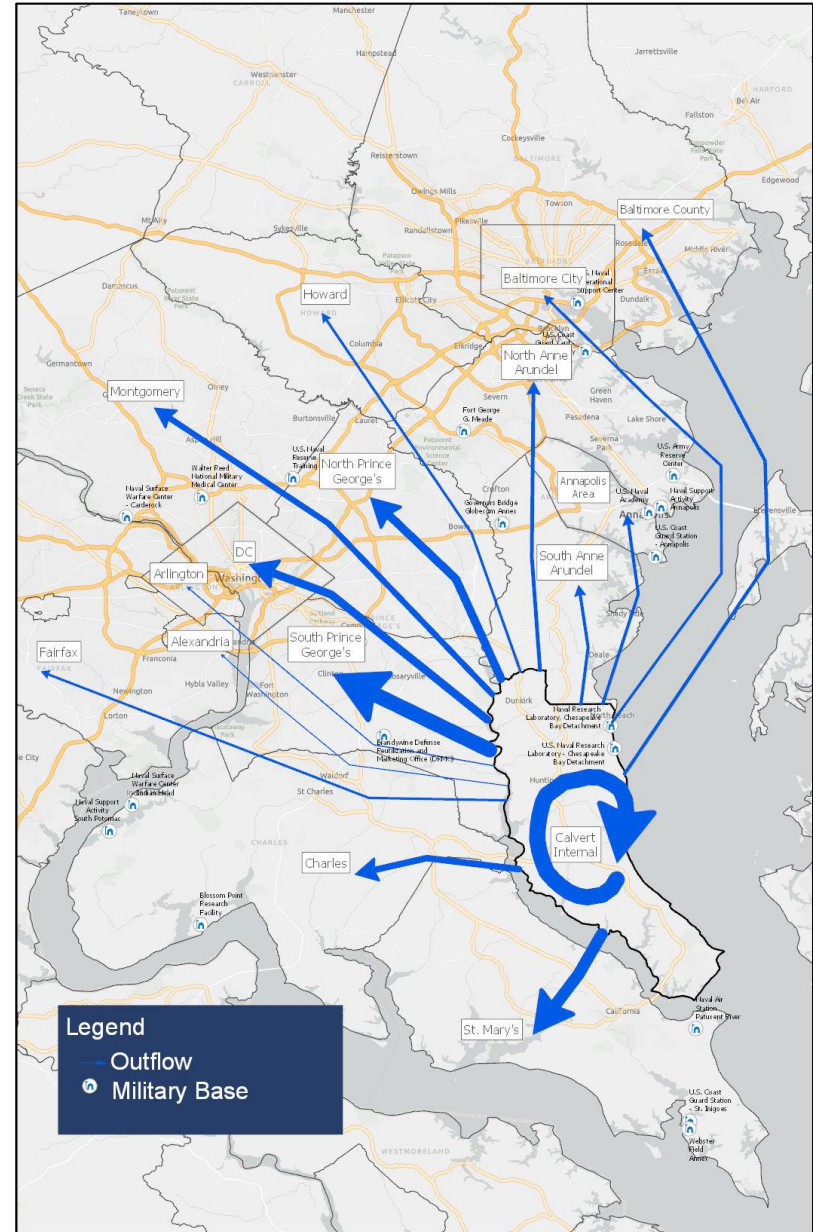
Review of

Existing Conditions

Outbound Commutes

- 12,083 Calvert County residents work in Calvert County.
- 22,697 residents commute to other counties.

Destinations	% of Trips
Calvert County	34.7%
Southern Prince George's	11.8%
St. Mary's County	9.3%
Northern Prince George's	6.4%
Washington, D.C.	6.2%
Charles County	4.9%
Montgomery County	4.5%
Baltimore City/ Baltimore County	4.4%
Northern Anne Arundel (BWI/Ft. Meade)	4.4%
Annapolis/Southern Anne Arundel	4.4%
All Other Locations	10.6%



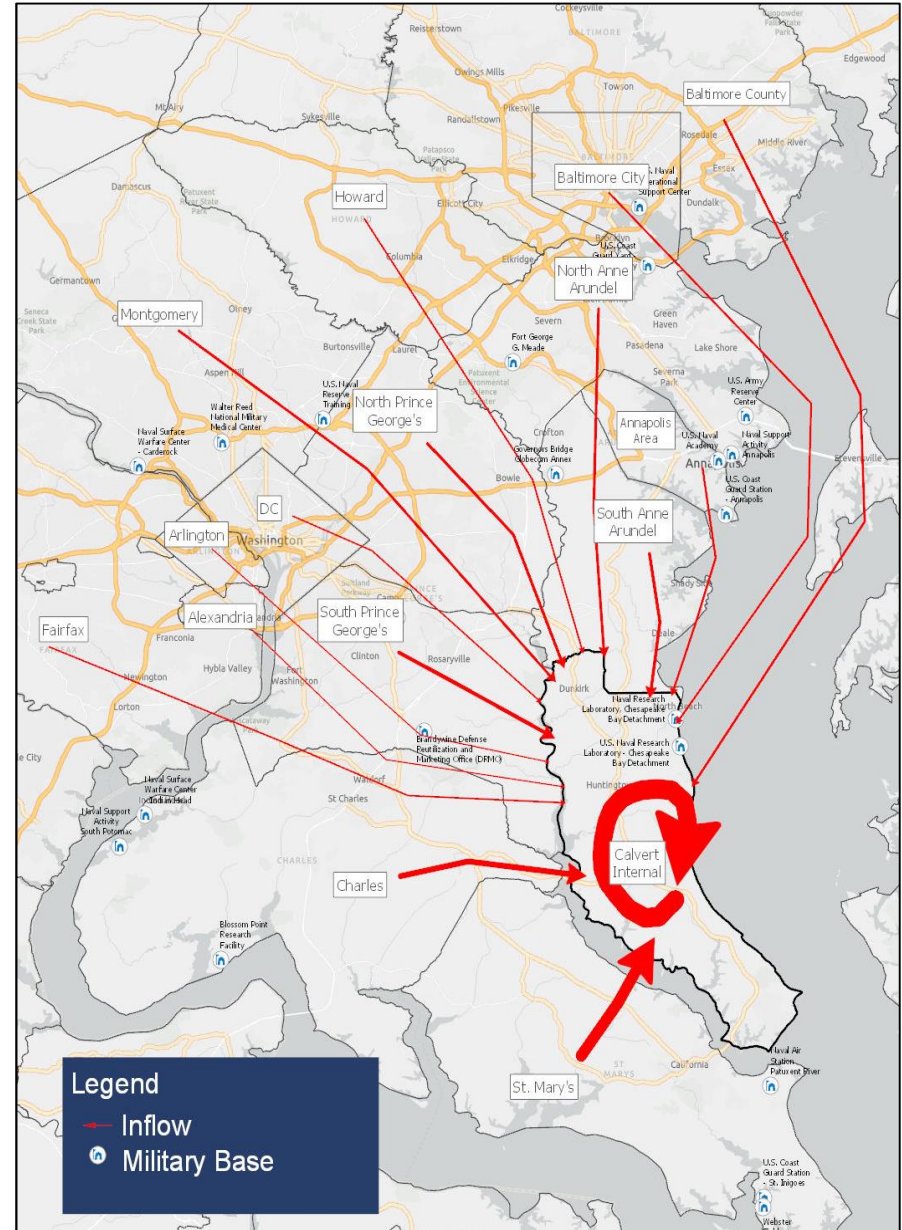
Source: Census LEHD/LODES File 2016

Inbound Commutes

- 12,083 Calvert County residents work in Calvert County.
- 9,153 people commute into Calvert County.

Destinations	% of Trips
St. Mary's County	28.3%
Charles County	12.3%
Annapolis/ Southern Anne Arundel	8.9%
Southern Prince George's	7.6%
Baltimore City/County	6.3%
Northern Prince George's	5.2%
Northern Anne Arundel (BWI/Ft. Meade)	4.7%
Montgomery County	4.2%
Northern Virginia	2.0%
Howard	1.7%
Washington, D.C.	1.3%

Source: US Department of Labor LODES, 2017



Source: Census LEHD/LODES File 2016

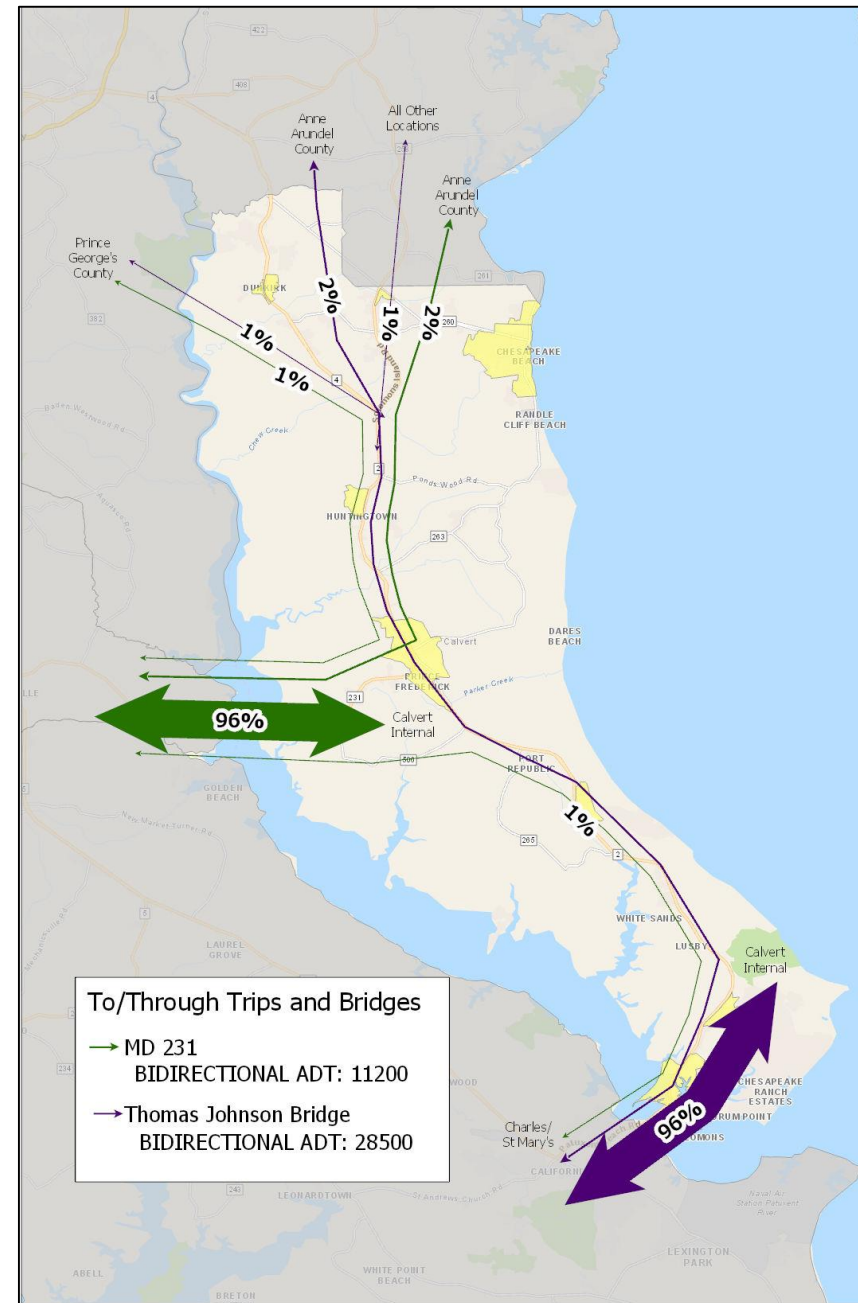
Through Traffic

Thomas Johnson Bridge

- 96% of all trips across Thomas Johnson bridge are to and from Calvert County.
- 4% to/from Anne Arundel, Prince George's, etc. (+/- 540 trips daily).

MD 231

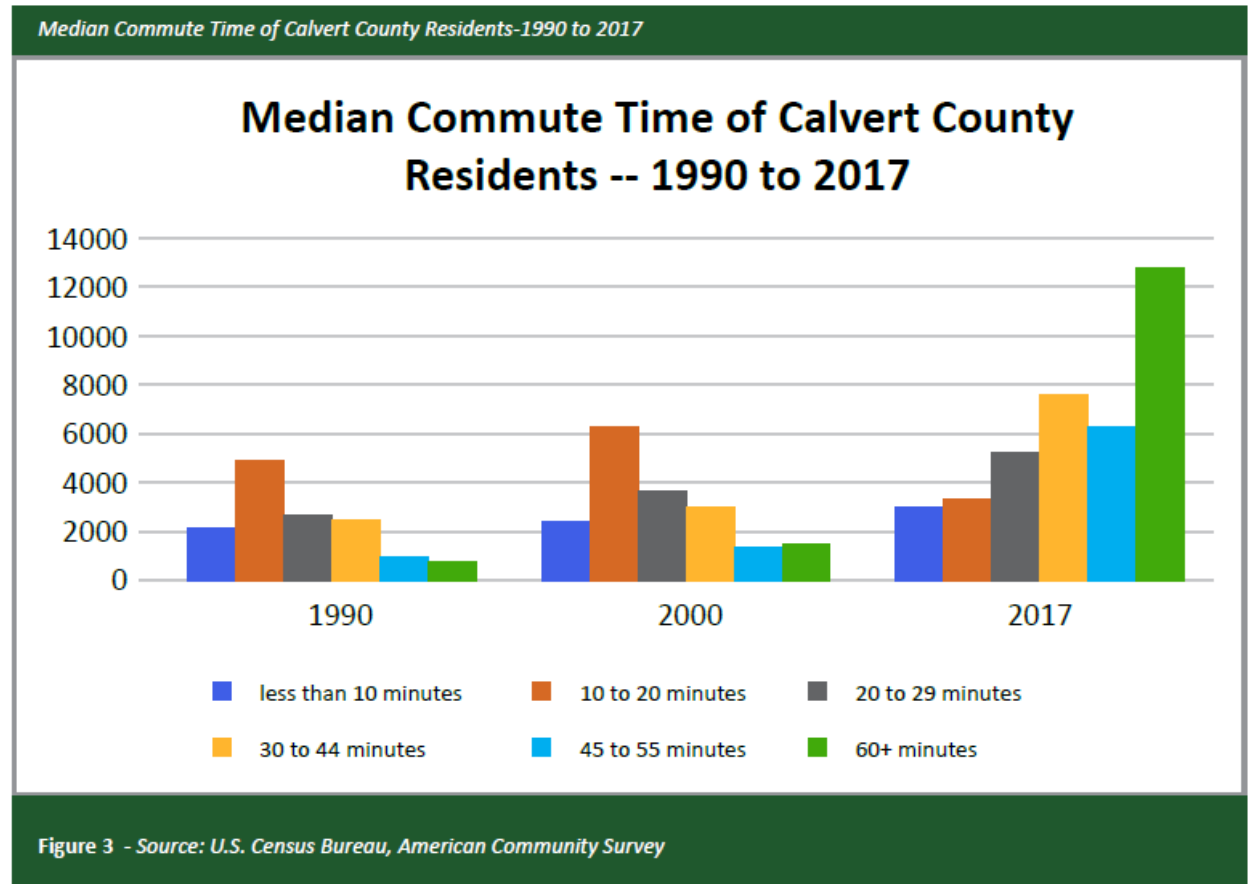
- 96% of all trips across MD 231 bridge are to and from Calvert County.
- 4% to/from Anne Arundel, St. Mary's, Prince George's, etc. (+/- 280 trips per day).



Source: 2017 Annual Traffic Analysis Streetlight: Data for Mobility (proprietary data set) 2018

Average Commute Time

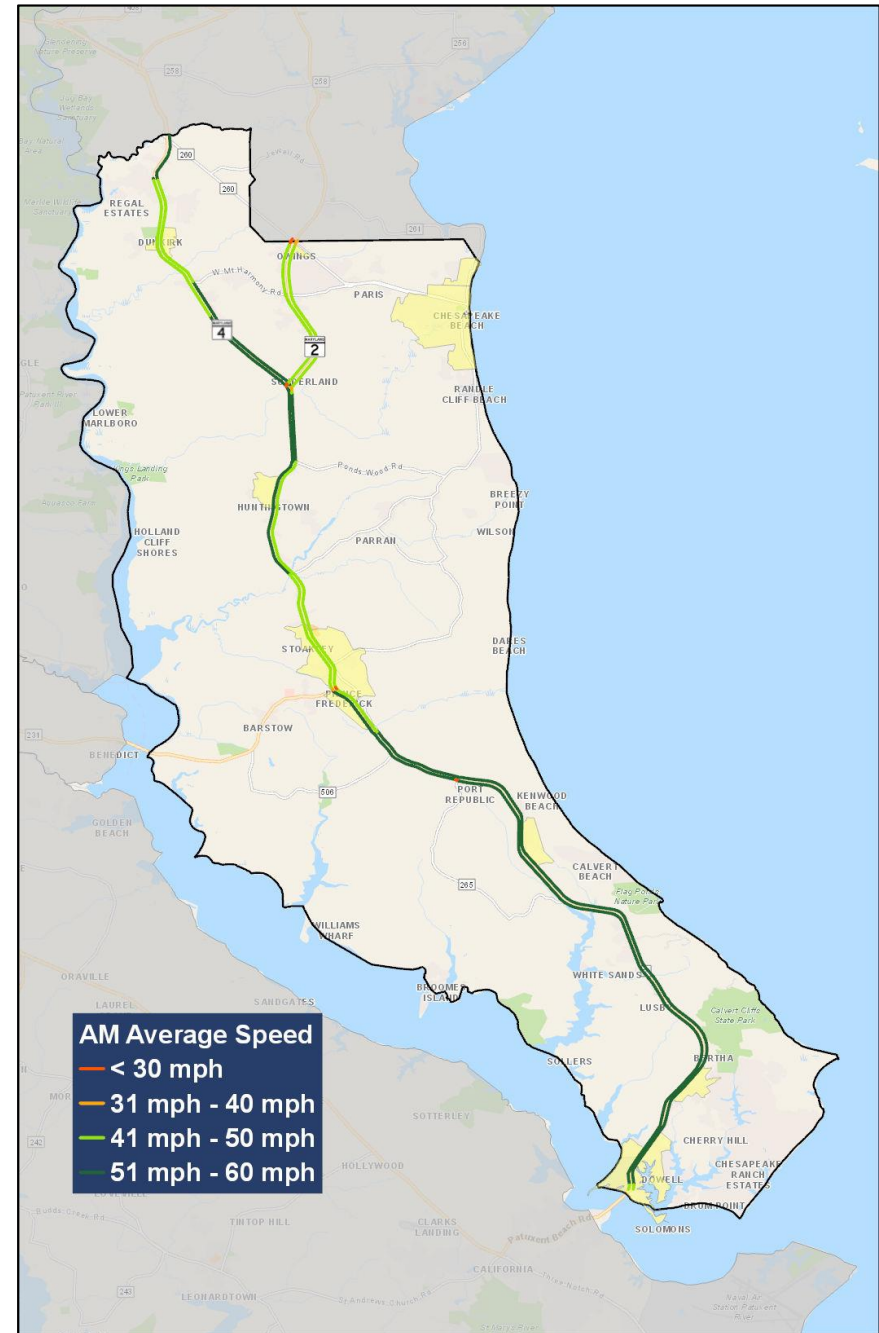
- Commuting distance of residents has changed dramatically since 1990.
- 1990 – largest share of commuters is travelling 10-20 minutes. Fewer than 1,000 people commuting 60 minutes or more.
- 2000 – commuting time grows roughly proportionate to population growth.
- 2017 - 7x more people commuting 60 minutes or more than in 1990 vs. population growth of 1.8x during same period.



Average Travel Speed (AM Peak)

Existing Conditions (2017)

- All segments operate at or above posted speed.



Source: Inrix, 2018

Average Travel Speed (PM Peak)

Existing Conditions (2017)

- All road segments operate at or just below posted speed limit.
- Travel speed is somewhat reduced approaching Prince Frederick from Plum Point Road.



Source: Inrix, 2018

Intersection Level of Service

Existing Conditions (2017)

Intersection	Control	Existing - AM			Existing - PM		
		V/C	Delay (s)	LOS	V/C	Delay (s)	LOS
MD 4 & Ward Rd.	Signalized	0.68	26.2	C	0.86	48.3	D
MD 2-4/MD 4 & MD 2	Signalized	0.82	39.2	D	0.84	28.4	C
MD 2-4 & MD 524/Cox Road	Signalized	0.86	45.8	D	1.31	217.5	F
MD 2/4 & MD 263 Plum Point Rd.	Signalized	0.78	25.3	C	0.74	16.7	B
MD 2-4 & Stoakley/Hospital	Signalized	0.75	21.3	C	0.85	46.4	D
MD 2-4 & MD 402	Signalized	0.76	27.6	C	0.85	39.7	D
MD 2-4 & MD 231/Church St.	Signalized	0.56	26.2	C	0.70	32.9	C
MD 508 Adelina Rd. & MD 231	Unsignalized	-	-	B	-	-	C
MD 2-4 & Sixes Rd.	Unsignalized	-	-	F	-	-	F
MD 2-4 & MD 264	Signalized	0.61	11.7	B	0.73	11.6	B
MD 2/4 & Ball Rd./Calvert Beach Rd.	Signalized	0.67	23.8	C	0.78	38.6	D
MD 2-4 & MD 497 Cove Point Rd.	Signalized	0.51	12.9	B	0.72	24.7	C
MD 2-4 & Monticello Dr./Dowell Rd.	Unsignalized	-	-	C	-	-	C

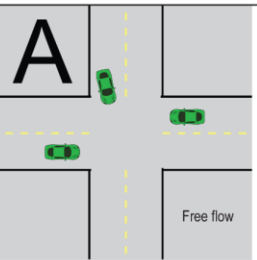
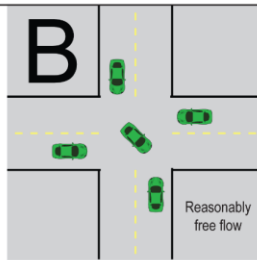
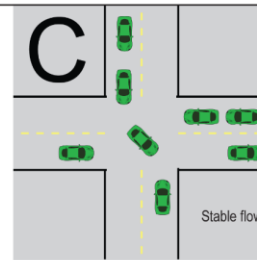
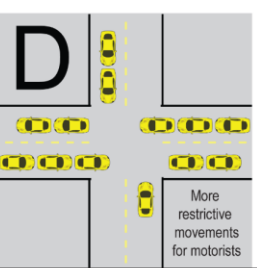
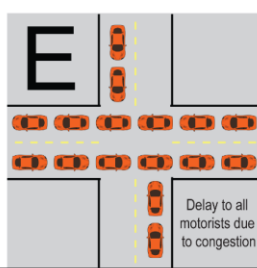
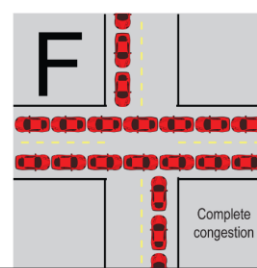
The Road Ahead:

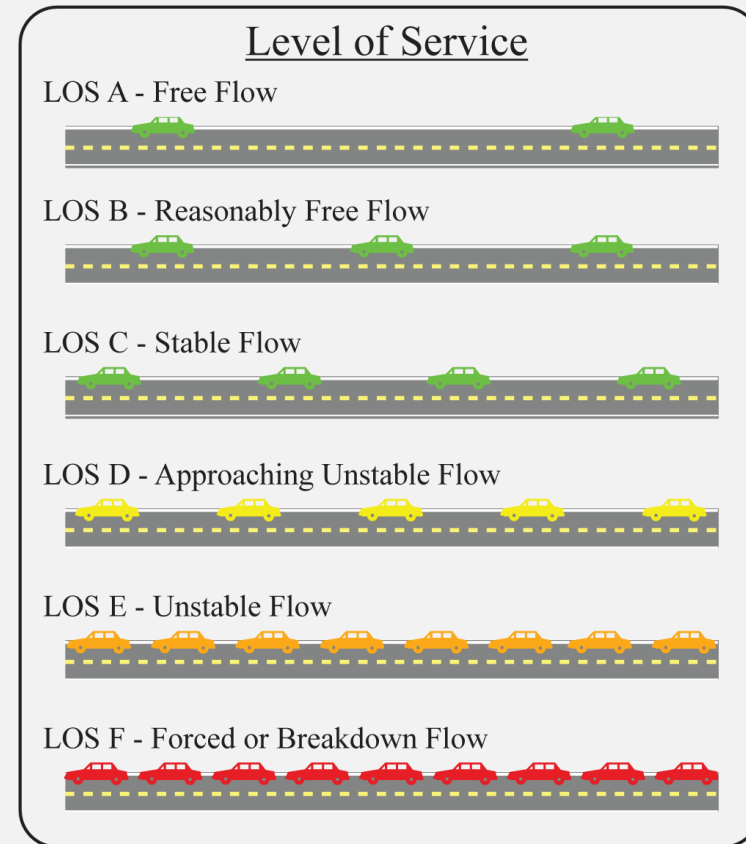
Forecasting Travel Demand

Objective Standards

Commonly Used in Transportation Planning

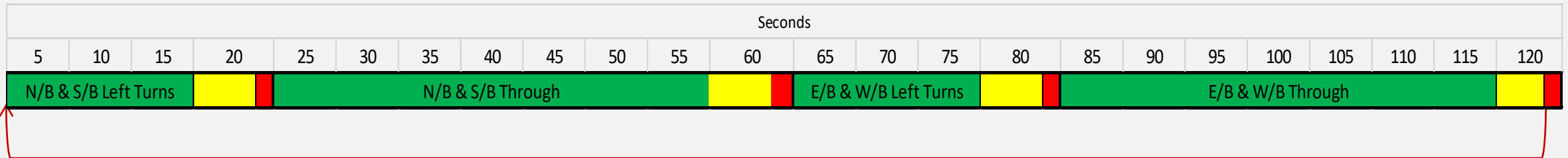
Level of Service (Signalized Intersections)	Average Vehicle Delay at Intersection (seconds)
A	≤10
B	>10 and ≤20
C	>20 and ≤35
D	>35 and ≤55
E	>55 and ≤80
F	>80

A		B		C	
	Free flow		Reasonably free flow		Stable flow
D		E		F	
	More restrictive movements for motorists		Delay to all motorists due to congestion		Complete congestion



Defining “Average Delay”

Average delay is a function of all vehicles through all phases of the traffic signal cycle. Vehicles that never stop when travelling through an intersection have no delay. A vehicle that sits through two signal cycles will have a delay of 240 – 360 seconds.



The cycle length includes the green time plus the vehicle signal change interval for each phase totaled to include all signal phases.

Longer cycles will accommodate more vehicles per hour but that will also produce higher average delays.

Intersection Level of Service

2017 vs. 2040 at Historic Growth Rate

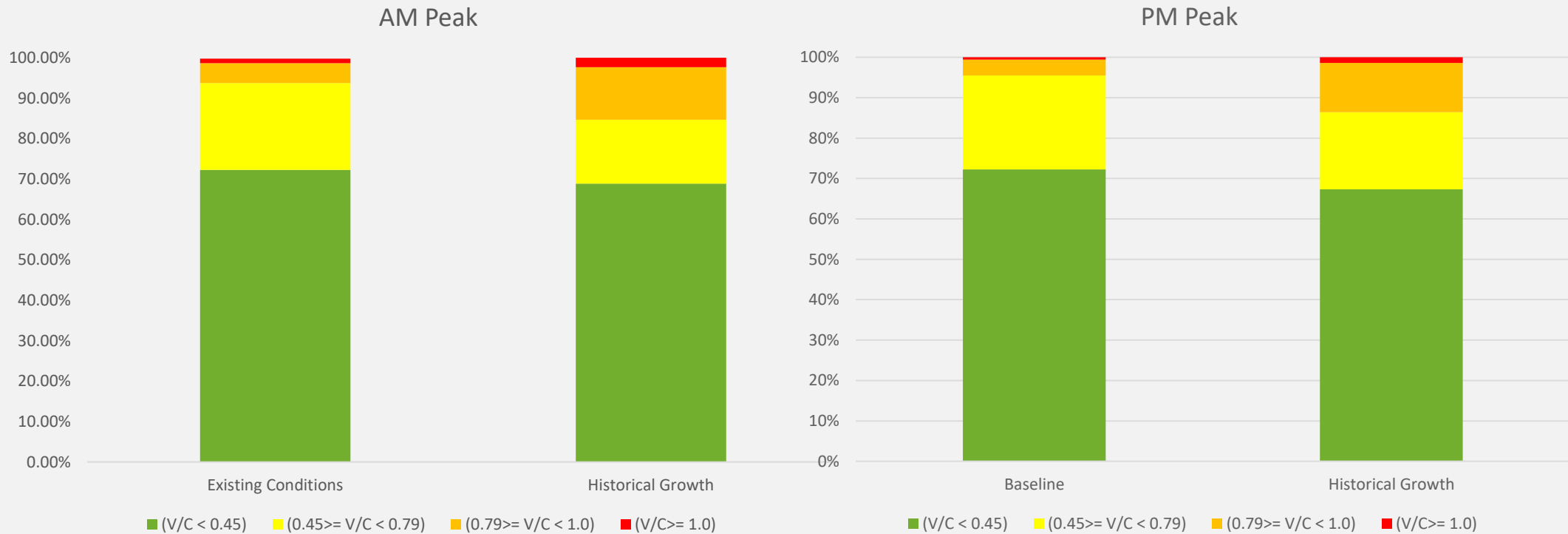
MWCOG travel demand model assumes that by 2040 the following improvements will be operational:

- › MD 2/4 widening from 2 to 4 lanes through Prince Frederick
- › Thomas Johnson Bridge will be widened from 2 to 4 lanes.
- › Fox Run Boulevard will be connected between MD 2/4 and Dares Beach Road

Intersection	2017		Historical Growth with MWCOG Improvements*	Historical Growth with MWCOG + Additional Improvements		
	AM	PM			AM	PM
MD 4 @ Ward Rd	C	D	C	E	C	E
MD 2/4 Split	D	C	E	D	E	D
MD 2/4 @ Cox Rd/MD 524	D	F	F	F	D	F
MD 2/4 @ Plum Point Rd/MD 263	C	B	C	B	C	B
MD2/4 @ Stoakley Rd	C	D	D	F	C	E
MD 2/4 @ Dares Beach Rd/MD 402	C	D	E	F	C	E
MD 2/4 @ Hallowing Point Rd/MD 231/Church St	C	C	C	D	C	D
Adelina Rd/MD 508 @ Hallowing Point Rd/MD 231	B	C	C	D	C	D
MD 2/4 @ Sixes Road/MD 506 (E/B Approach)	F	F	A	C	A	C
MD 4 @ Broomes Island Rd/MD 264	B	B	B	B	B	B
MD 2/4 @ Calvert Beach Rd	C	D	C	D	C	D
MD 2/4 @ Cove Point Rd	B	C	B	D	B	D
MD 2/4 @ Dowell Road/Monticello Dr*	C	C	D	F	D	F

Congested Mileage

2017 vs. 2040 Historical Growth Scenario



Congestion increases in some road segments under forecast based on growth rates from past 20 years, but very little increase in overall “failing” road segments.

Traffic Takeaways



Historical growth rate scenario indicates little new failure/delay through 2040.



Few mitigation measures are needed at historical growth rate.



Likelihood of significant investment by MDOT SHA is low.

The Plan:

Strategic Transportation Policies and Investments for Calvert County

Countywide Transportation Plan Overview

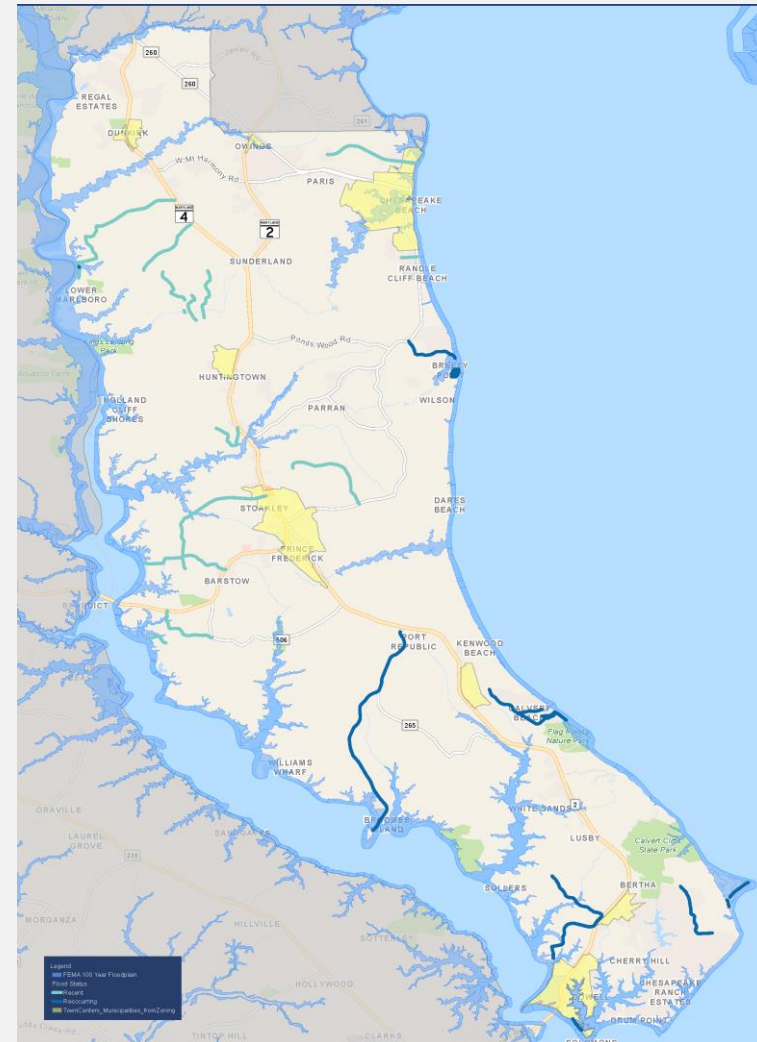
Planning Challenges:

- › Geographic & Environmental Constraints
- › An Aging Population
- › Traffic Safety
- › Limited Transportation Technology
- › Climate Change & Infrastructure Resiliency
- › Dispersed Travel Patterns & Lack of Trip Density
- › Coordinating Land Use, Growth & Infrastructure Investment

Strategic Policies & Investments

Goal 1: Build and maintain transportation assets that are safe, resilient and in a state of good repair.

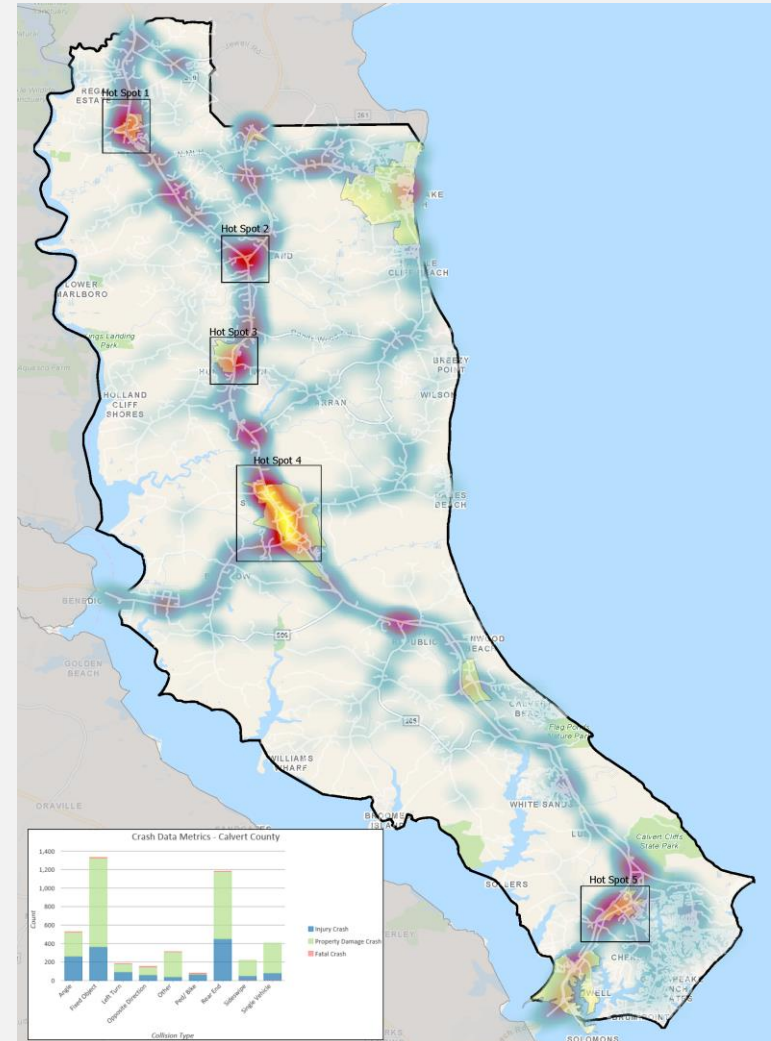
- › Calvert County's roads, bridges, culverts and transit vehicles will be maintained in a state of good repair as established by local standards.
- › Improve drainage along roadways that have recurring flooding or may be susceptible to storm surge.



Strategic Policies & Investments

Goal 2: Eliminate traffic and pedestrian deaths and serious injuries.

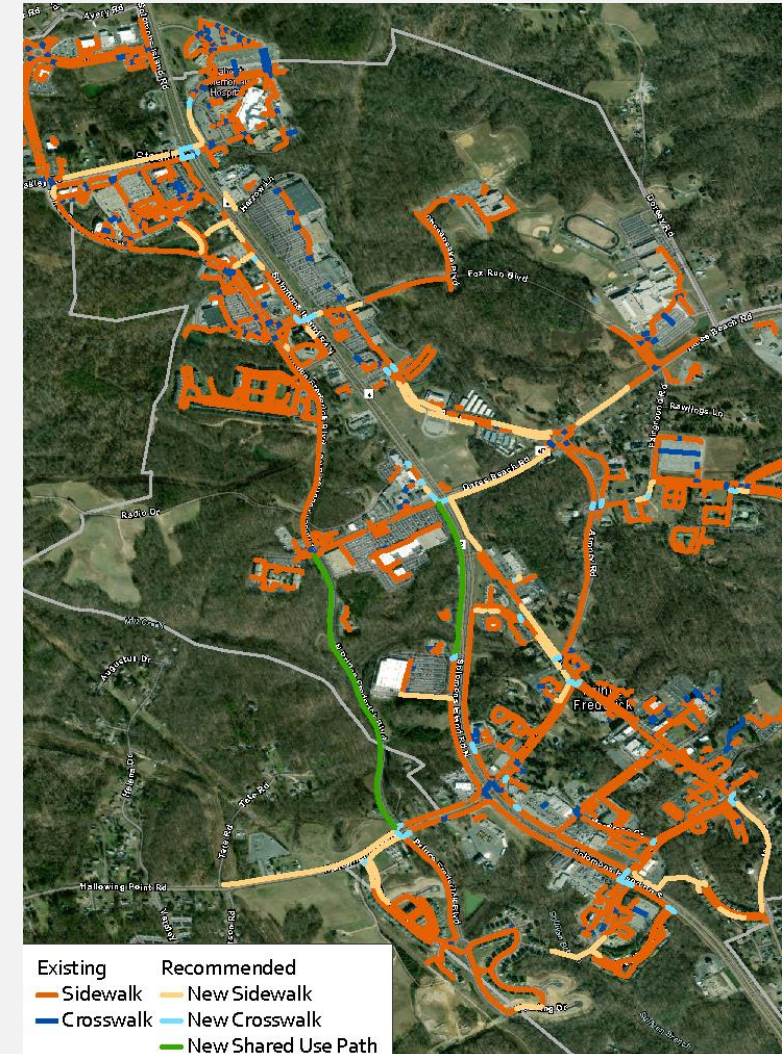
- › Improve data collection and dissemination to target enforcement activities to the highest causes and locations of traffic crashes.
- › Maintain a continuous pipeline of traffic safety improvements.



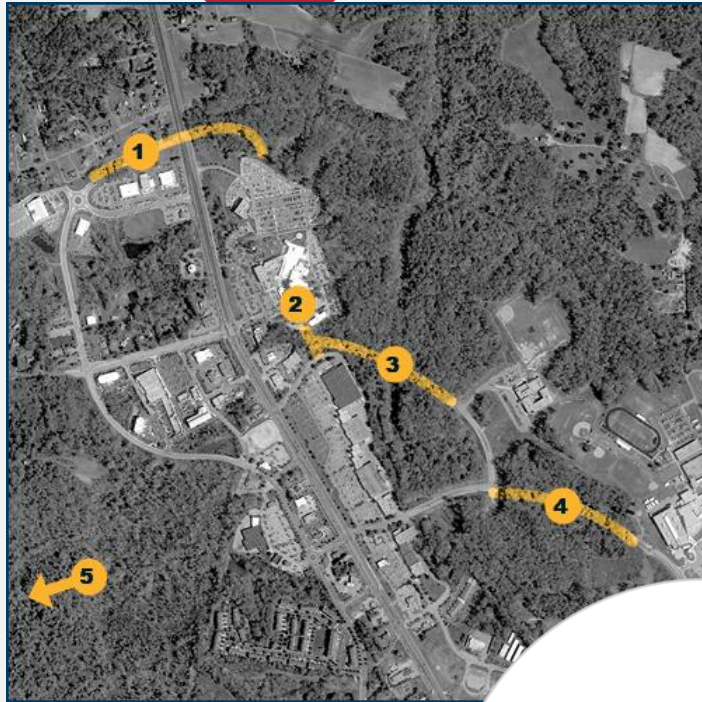
Strategic Policies & Investments

Goal 3: Improve mobility within and approaching town centers.

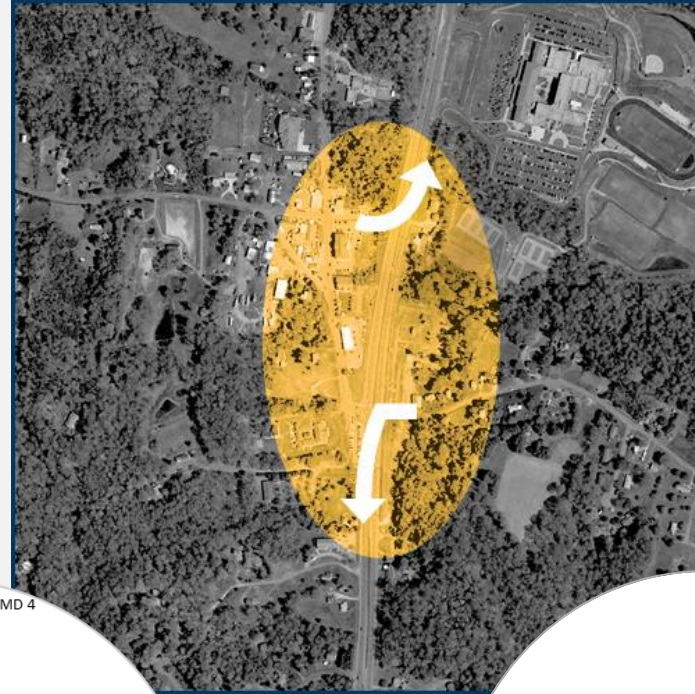
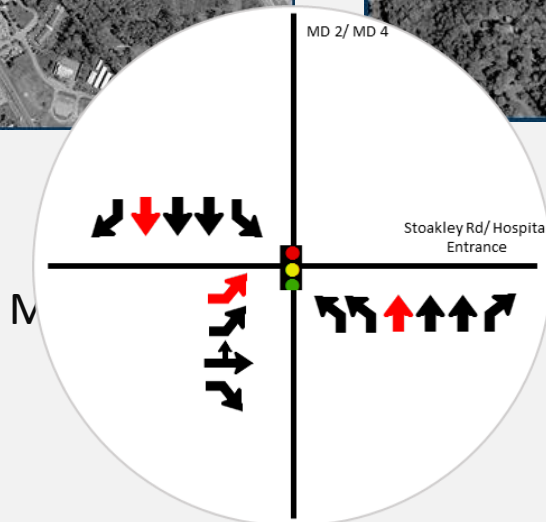
- › Reduce the need for local traffic to use MD 2/4 within and approaching the Prince Frederick, Huntingtown and Dunkirk town centers.
- › Upgrade the bicycle and pedestrian network where appropriate.
- › Strengthen policy and financial tools to achieve targeted investments.
- › Develop threshold for improvements during town center planning process.
- › Further examine potential operational and safety improvements on MD 231.



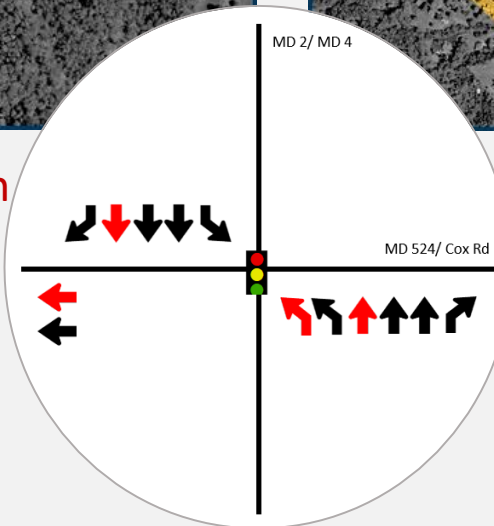
Reduce the need for local traffic to use MD 2/4 in Prince Frederick, Huntingtown and Dunkirk.



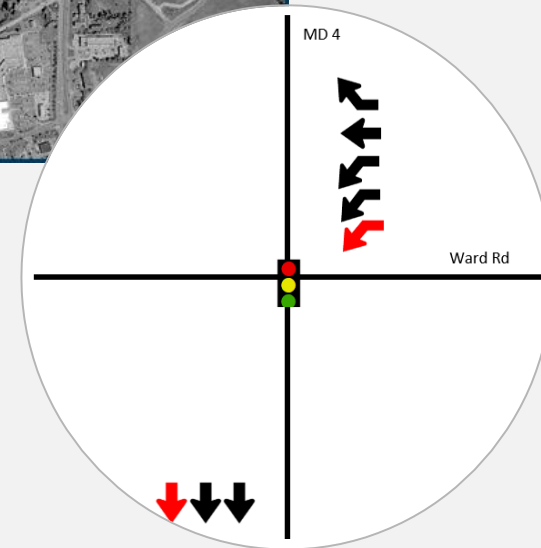
Prince Frederick



Huntingtown



Dunkirk



Strategic Policies & Investments

Goal 4: Expand practical choices and achieve reliable travel times for commuters using MD 2/4.

- › Gather and disseminate timely intelligence on traffic conditions along MD 2/4.
- › Deploy intelligent transportation technologies to improve travel time reliability on MD 2/4.
- › Jointly develop and implement an access management plan for MD 2/4 with MDOT SHA.
- › Improve congested intersections along MD 2/4, especially Cox Road and Stoakley Road.

Intersection Level of Service

2017 vs. 2040 at Historic Growth Rate

MWCOG travel demand model assumes that by 2040 the following improvements will be operational:

- › MD 2-4 widening from 2 to 4 lanes through Prince Frederick
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MD2/4 @ Stoakley Rd	C	D	D	F
MD 2/4 @ Dares Beach Rd/MD 402	C	D	E	F
MD 2/4 @ Hallowing Point Rd/MD 231/Church St	C	C	C	D
Adelina Rd/MD 508 @ Hallowing Point Rd/MD 231	B	C	C	D
MD 2/4 @ Sixes Road/MD 506 (E/B Approach)	F	F	A	C
MD 4 @ Broomes Island Rd/MD 264	B	B	B	B
MD 2/4 @ Calvert Beach Rd	C	D	C	D
MD 2/4 @ Cove Point Rd	B	C	B	D
MD 2/4 @ Dowell Road/Monticello Dr*	C	C	D	F

Conclusions

- › Objectively, future traffic conditions are acceptable with modest improvements.
- › More/widened roads are the most expensive solution to operational problems.
- › Pace and timing of development relative to road improvements needs to be addressed with policy and financial tools during town center planning.
- › Mobility-impaired populations will increase significantly over next 10 years; transportation needs exceed current capacity.
- › Resiliency of infrastructure will become a public safety concern in certain parts of the county.

Plan Revisions Made Based on Public Comment

- **Goal #1 – State of Good Repair**

- ✓ Replace county transit vehicles in accordance with useful standards established in the Maryland Transit Asset Management Plan.
- ✓ Monitor the adequacy of evacuation routes and revise or update as necessary.

- **Goal #2 – Safety**

- ✓ Placed additional emphasis on pedestrian safety.
- ✓ Added Mason Road to list of frequent crashes on locally-owned roads.

- **Goal #3 – Mobility within and approaching Town Centers**

- ✓ Examine and implement operational and safety improvements on MD 231 between the College of Southern Maryland Prince Frederick Campus and Sixes Road.
- ✓ Examine opportunities to improve pedestrian access to schools using the Safe Routes to Schools program model.
- ✓ Advance multi-use paths which primarily serve a transportation purpose as described in the Calvert County Land Preservation, Parks and Recreation Plan (LPPRP.)

- **Goal #5 – Unmet Transportation Needs for Limited Mobility Populations**

- ✓ Examine periodic fare increases consistent with MDOT MTA policies and/or increasing County funds to support local transit service

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TRANSPORTATION PLAN

NEXT STEPS

- 60 Day Agency Review
- Public Hearing
- Planning Commission recommends adoption or amendment to plan

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