MARYLAND DEPARTMENT OF TRANSPORTATION

Historical Studies on Ferries and Transit Across the Chesapeake Bay

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Maryland Department of Transportation
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MISSION STATEMENT

"The Maryland Department of Transportation is a customer-driven leader that delivers safe, sustainable, intelligent, and exceptional transportation solutions in order to connect our customers to life's opportunities."

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MDOT AT-A-Glance

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MARYLAND PORT ADMINISTRATION

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MARYLAND TRANSIT ADMINISTRATION

Maryland Transportation Authority

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STATE HIGHWAY ADMINISTRATION

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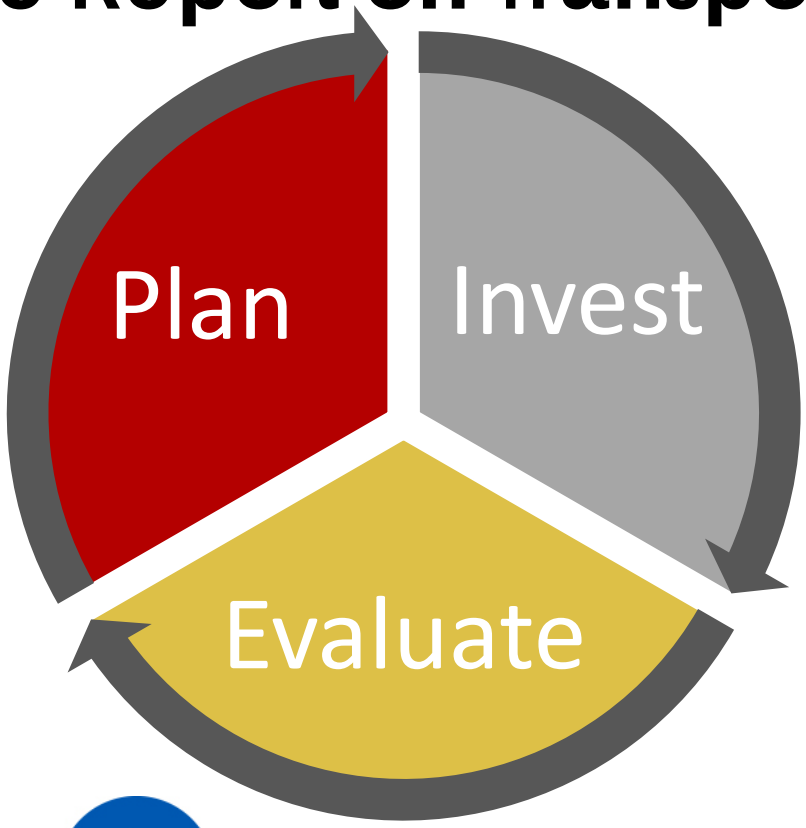
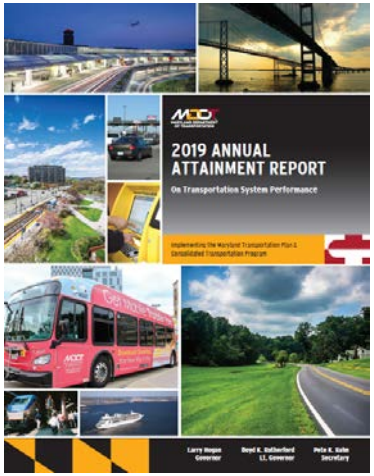
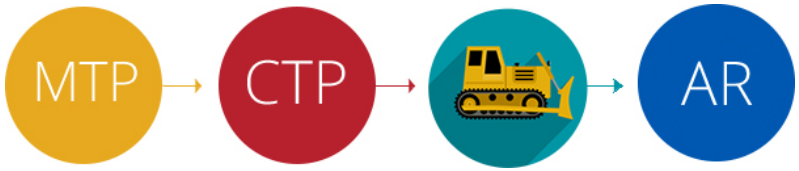
The State Report on Transportation



The State Report on Transportation is submitted annually to the Maryland General Assembly.





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Would Ferries Reduce Congestion on the Bay Bridge?

- Between 2000 – 2007 MDOT was involved in six different studies looking at bringing major additional ferry service to Maryland.
- The economic downturn changed the picture for the next 10 years.
- Technology has evolved but the results are similar.

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Historical Ferry Studies

- 2000 – Potomac Ferry Boat Feasibility Study of High-Speed Passenger Service by VDOT
  - Woodbridge, VA – Navy Yard, DC
- 2001 – Crisfield to Point Lookout Ferry Feasibility Study of High-Speed Passenger Catamaran by MDOT
- 2002 – Mid-Chesapeake Bay Ferry Feasibility Study of Medium-Speed Catamaran (Phase I/II) by Northern Neck Planning District Commission of VDOT
  - Reedville, VA, Western Shore to Accomack, VA, Eastern Shore

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Historical Ferry Studies

- 2004 – Chesapeake Bay Ferry Feasibility Study of both High-Speed Catamaran and Low-Speed Conventional Hull by MDOT
  - Canton, MD – Rock Hall, MD
  - Chesapeake Beach, MD – Cambridge, MD
  - Solomons Island, MD – Cambridge, MD
  - Solomons Island, MD – Crisfield, MD
- 2005 – Maryland-Virginia Ferry Feasibility Study of Medium-Speed Catamaran by Somerset County, City of Crisfield, Northern Neck Planning District of VDOT
  - Crisfield, MD – Reedville, VA
- 2007 Ad Hoc High Speed Ferry Committee Report

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Potomac River Ferry Boat Study

Type: Passenger Only

Cars Removed from Bay Bridge: None

Fare: $8.80 roundtrip

Travel Time: 45 minutes

Capital Cost: $9.7 million (2000 $s)

Overview:

- Sponsored by VDOT; completed in 2000
- Woodbridge, VA to Navy Yard, DC
- Private operator with public support
- Attempts to secure federal grants and other funding sources were unsuccessful

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Crisfield to Point Lookout Ferry Study

Type: Passenger Only

Cars Removed from Bay Bridge: 276 a day

Fare: $20 roundtrip for passengers

Travel Time: 60 minutes

Capital Cost: $137 million (2001 $s)

Overview:

- Sponsored by MDOT; completed in 2001
- Crisfield, MD to Point Lookout, MD
- Public operator
- Point Lookout deemed an unsuitable terminal

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Mid-Chesapeake Bay Ferry Study

Type: Passengers and vehicles

Cars Removed from Bay Bridge: 685 a day

Fare: N/A

Travel Time: 120 minutes

Capital Cost: N/A

Overview:

- Sponsored by VDOT and NNPDC; completed in 2002
- Reedville, VA, Western Shore to Accomack, VA, Eastern Shore
- Private operator with public support
- Deemed infeasible due to lack of public support for terminal on Virginia's Eastern Shore

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Chesapeake Bay Ferry Feasibility Studies

OVERVIEW:

- Sponsored by MDOT and MDTA; completed in 2003/2004
- Fatal flaw analysis (land/water/environment impacts) leading to four routings for detailed study for low and high speed options:
  - Canton to Rock Hall
  - Chesapeake Beach to Cambridge
  - Solomons Island to Cambridge
  - Solomons Island to Crisfield

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Ferry Study - Canton to Rock Hall

Ferry Type: Passengers/Vehicles	Low Speed Conventional	High Speed Catamaran
Vehicles (Cars/Trucks) Removed Daily from Bay Bridge	93 (84/9)	29 (27/2)
Round-Trip Fare (Cars/Trucks)	$50/$150	$75/$225
Travel Time (includes boarding)	100 minutes	87 minutes
Capital Cost (2004 $s)	$17.8 million	$44.3 million

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Ferry Study-Chesapeake Beach to Cambridge

Ferry Type: Passengers/Vehicles	Low Speed Conventional	High Speed Catamaran
Vehicles (Cars/Trucks) Removed Daily from Bay Bridge	917 (835/82)	372 (340/32)
Round-Trip Fare (Cars/Trucks)	$50/$150	$75/$225
Travel Time (includes boarding)	82 minutes	55 minutes
Capital Cost (2004 $s)	$26.9 million	$79.9 million

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Ferry Study - Solomons Island to Cambridge

Ferry Type: Passengers/Vehicles	Low Speed Conventional	High Speed Catamaran
Vehicles (Cars/Trucks) Removed Daily from Bay Bridge	317 (260/57)	136 (106/30)
Round-Trip Fare (Cars/Trucks)	$50/$150	$75/$225
Travel Time (includes boarding)	120 minutes	117 minutes
Capital Cost (2004 $s)	$27 million	$45 million

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Ferry Study - Solomons Island to Crisfield

Ferry Type: Passengers/Vehicles	Low Speed Conventional	High Speed Catamaran
Vehicles (Cars/Trucks) Removed Daily from Bay Bridge	67 (57/10)	25 (20/5)
Round-Trip Fare (Cars/Trucks)	$50/$150	$75/$225
Travel Time (includes boarding)	145 minutes	79 minutes
Capital Cost (2004 $s)	$18.2 million	$44.7 million

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Maryland-Virginia Ferry Study

Type: Passenger Only

Cars Removed from Bay Bridge: 317 to 625 a day

Fare: $45 roundtrip passengers

Travel Time: N/A

Capital Cost: $47 million (in 2005 $s)

Overview:

- Sponsored by Somerset County and others; completed in 2005
- Crisfield, MD, to Reedville, VA
- Private operator with public support
- Little local support for Reedville terminal

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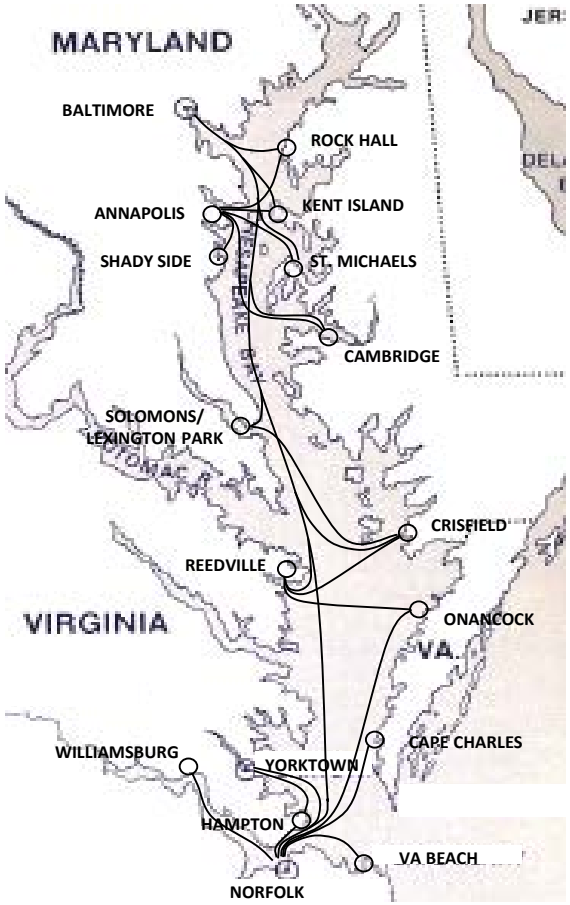
Ad Hoc High Speed Ferry Committee Report

- Ad Hoc High Speed Ferry Committee Report
  - Sponsored by private group; completed in 2007
  - Multiple passenger only and vehicle/passenger ferry routes connecting termini in Maryland and Virginia –
    - Canton/Annapolis/Rock Hall passenger only ferry system was emphasized.
  - No estimates of passengers, costs or time
  - Relationship to 3rd Bay Bridge crossing discounted
  - P3 approach recommended

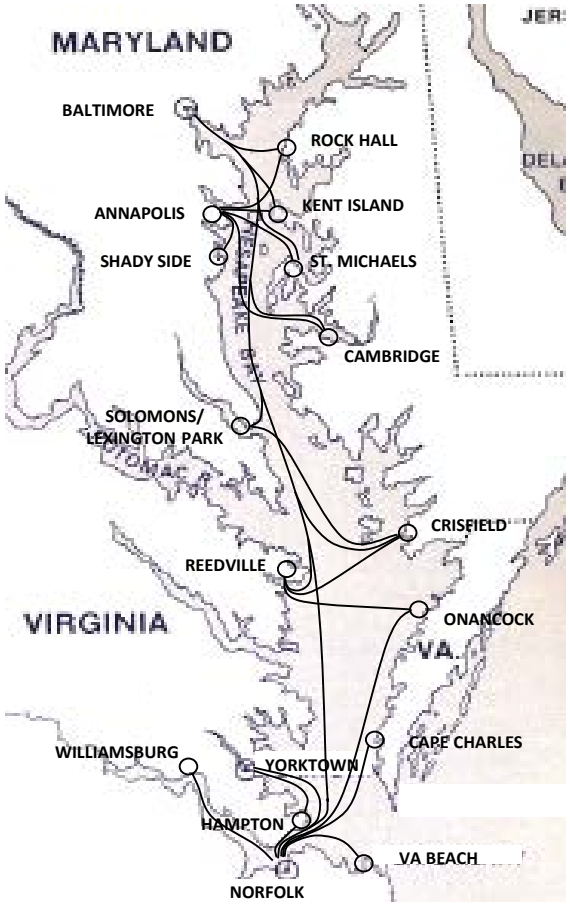
Ad Hoc High Speed Ferry Committee Report

- Report to then Governor Martin O'Malley to encourage ferry service (November 7, 2007).
- "Whereas a ferry system could begin now to put boats in the water and help relieve traffic at the margins."
- Report states that "the discussion of a ferry system needs to be decoupled from that of a third bridge."



Ad Hoc High Speed Ferry Committee Report

- Issues raised that would need to be overcome by ferry service in a rural area:
  - Smart Growth Considerations,
  - Economic Development Issues and
  - Environmental Consideration
  - Other considerations included outreach and collaboration with local jurisdictions, US Coast Guard, Homeland Security, etc.



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Ferry Conclusions

- In the past two decades, Maryland has undertaken numerous feasibility and technical planning studies to investigate possible cross-bay ferry service, assessing the latest technologies, trends and public opinions.
- Geography and population density are key to successful operations.
- At least one end of the route is in a town center or major destination point.
- Passenger-to-vehicle ratios suggest many walk-on passengers that mean connectivity to other modes of transit is absolute.

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Ferry Conclusions

- The very small number of cars removed from the Bay Bridge indicate that potential cross-bay ferry service will result in **NO appreciable improvement to traffic congestion and that relief of Bay Bridge traffic congestion should not be relied upon as a major justification for such service**.
- Additional roadway capacity will need to be provided, as will access to terminal parking areas.
- Public subsidy would likely be necessary to ensure a successfully ferry service. Many areas have a special tax to pay for it.
- A public-private partnership would likely be required.

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Bay Transit Only Assessment

- September, 2007 – Analysis of Transit Only Concepts to Address Traffic Capacity Across the Chesapeake Bay
  - Kent Island – Washington, DC/Annapolis/Baltimore
  - Baltimore/Annapolis/Washington, DC – Ocean City
  - Kent Island – Washington, DC/Annapolis/Baltimore

- Assessed
  - Bus Rapid Transit (BRT)
  - Heavy Rail
  - Light Rail

- All alternatives were at the existing crossing using the existing bridges

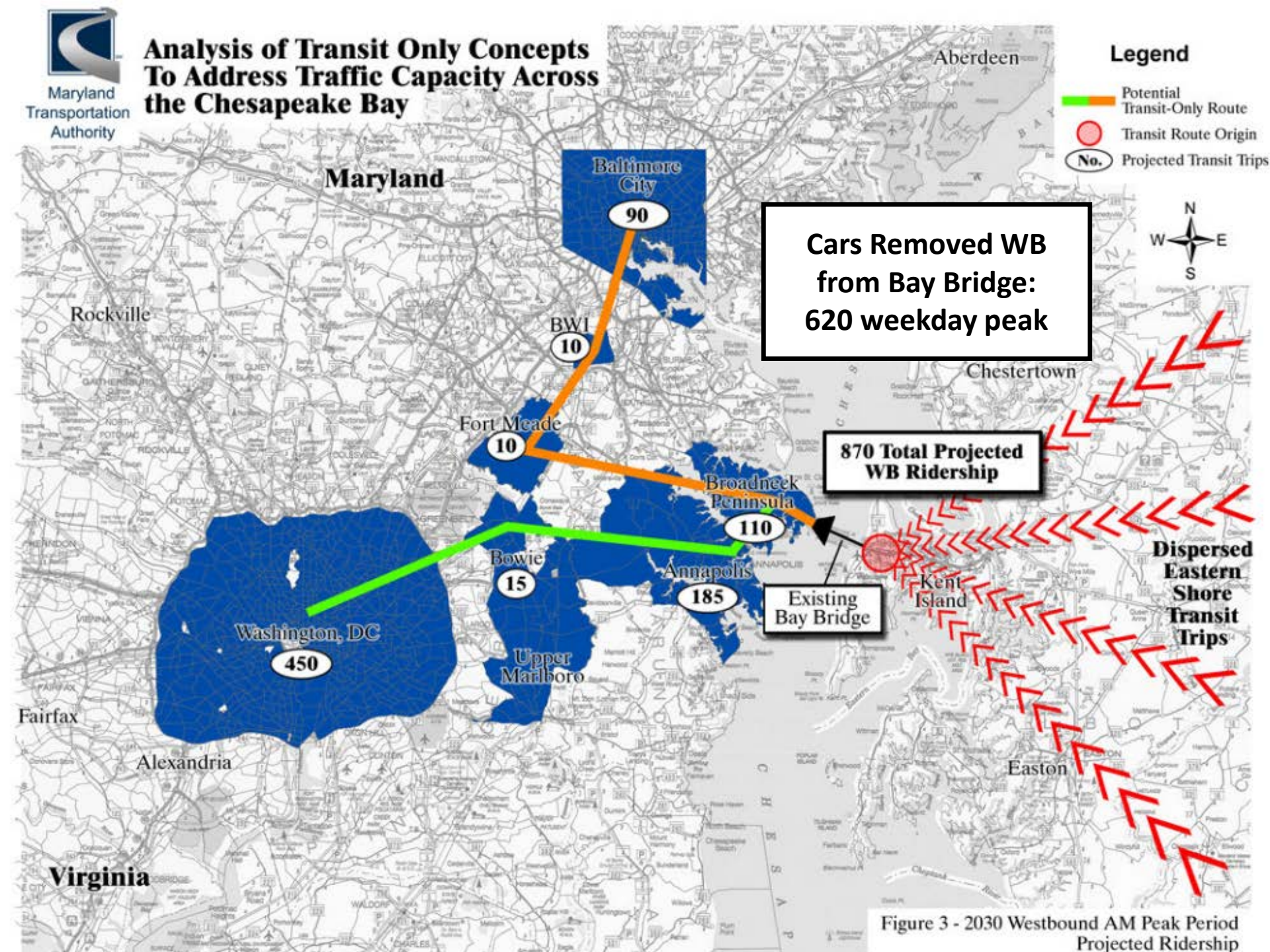
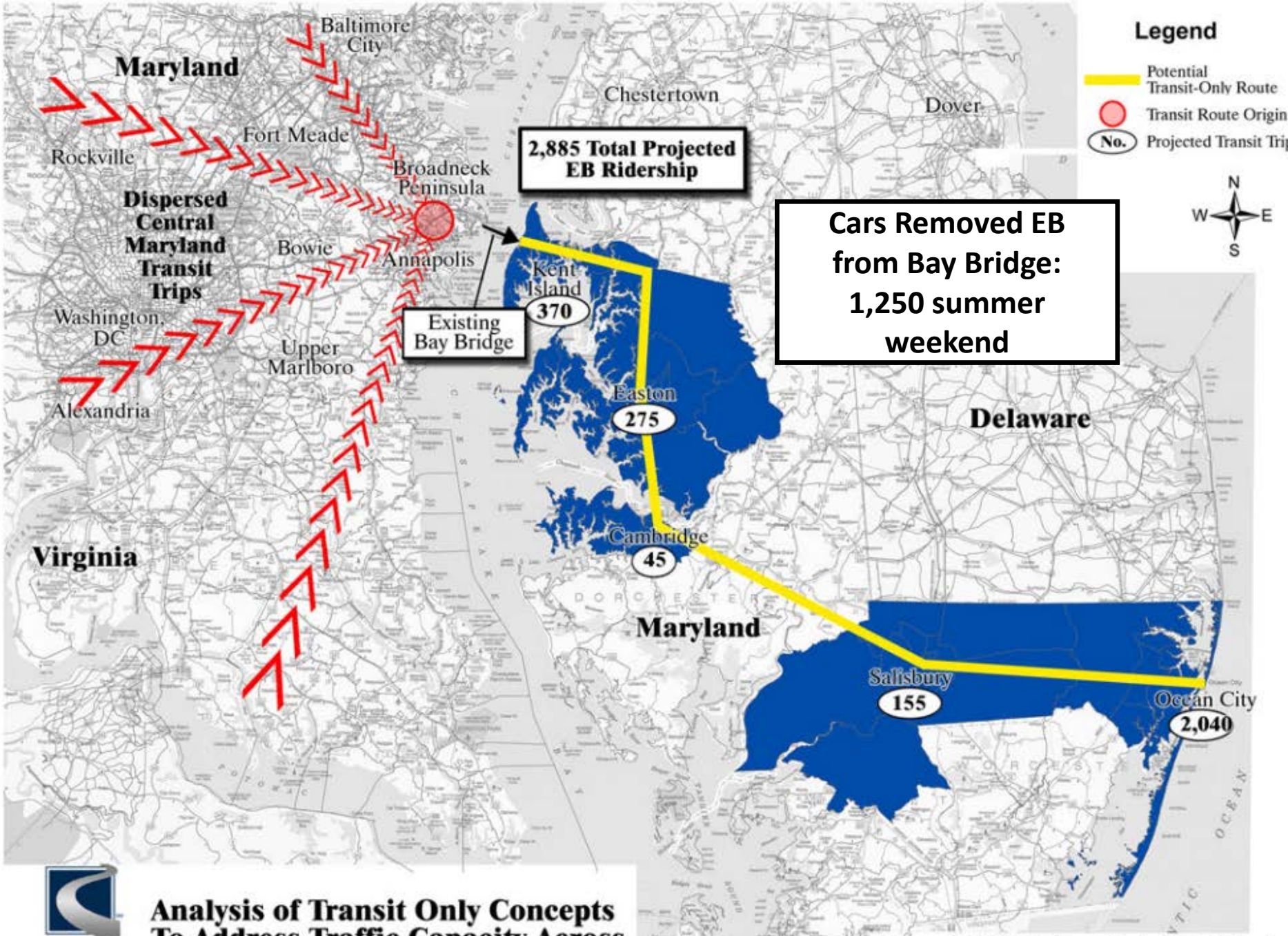


Figure 3 - 2030 Westbound AM Peak Period Projected Ridership



Maryland Transportation

Analysis of Transit Only Concepts To Address Traffic Capacity Across the Chesapeake Bay

Figure 6 - 2030 Eastbound Saturday (24-hour) Projected Ridership

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Transit Study – Bus Rapid Transit

Type: Bus Rapid Transit – Kent Island

Cars Removed from Bay Bridge a day:

1,250 eastbound on summer weekends (2030)

620 westbound on weekday morning (2030)

2017 Bay Bridge daily traffic: 118,000 summer/68,000 off-peak

Fare: N/A

Travel Options: Kent Island to DC/Annapolis/Baltimore

Travel Mileage: 59/20/59

Capital Cost: $1.3 billion/$400 million/$1.3 billion (2007 $s)

Impact to existing Bay Bridge:

- 5 lanes reduced to 4 lanes using one reversible lane
- Leaving 21,750 additional vehicles crowding other lanes

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Transit Study – Bus Rapid Transit

Type: Bus Rapid Transit – Ocean City

Cars Removed from Bay Bridge a day:

1,250 eastbound on summer weekends (2030)

620 westbound on weekday morning (2030)

2017 Bay Bridge daily traffic: 118,000 summer/68,000 off-peak

Fare: N/A

Travel Options: Ocean City to DC/Annapolis/Baltimore

Travel Mileage: 168/118/145

Capital Cost: $3.7 billion/$2.6 billion/$3.2 billion (2007 $s)

Impact to existing Bay Bridge:

- 5 lanes reduced to 4 lanes using one reversible lane
- Leaving 21,750 additional vehicles crowding other lanes

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Transit Study – Light Rail

Type: Light Rail system – Kent Island

Cars Removed from Bay Bridge a day:

1,250 eastbound on summer weekends (2030)

620 westbound on weekday morning (2030)

2017 Bay Bridge daily traffic: 118,000 summer/68,000 off-peak

Fare: N/A

Travel Options: Kent Island to DC/Annapolis/Baltimore

Travel Mileage: 59/20/59

Capital Cost: $3.1 billion/$1 billion/$3.1 billion (2007 $s)

Impact to existing Bay Bridge:

- A Light Rail system requires a new Bay Bridge to be built (not included in capital costs above)

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Transit Study – Light Rail

Type: Light Rail system – Ocean City
Cars Removed from Bay Bridge a day:
1,250 eastbound on summer weekends (2030)
620 westbound on weekday morning (2030)
2017 Bay Bridge daily traffic:118,000 summer/68,000 off-peak
Fare: N/A
Travel Options: Ocean City to DC/Annapolis/Baltimore
Travel Mileage: 168/118/145
Capital Cost: $8.7 billion/$6.1 billion/$7.5 billion (2007 $s)
Impact to existing Bay Bridge:

- A Light Rail system requires a new Bay Bridge to be built (not included in capital costs above)

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Transit Study – Heavy Rail

Type: Heavy Rail system – Kent Island

Cars Removed from Bay Bridge a day:

1,250 eastbound on summer weekends (2030)

620 westbound on weekday morning (2030)

2017 Bay Bridge daily traffic: 118,000 summer/68,000 off-peak

Fare: N/A

Travel Options: Kent Island to DC/Annapolis/Baltimore

Travel Mileage: 59/20/59

Capital Cost: $10.3 billion/$3.5 billion/$10.3 billion (2007 $s)

Impact to existing Bay Bridge:

- A Heavy Rail system requires a new Bay Bridge to be built (not included in capital costs above)

MARYLAND DEPARTMENT OF TRANSPORTATION

Transit Study – Heavy Rail

Type: Heavy Rail system – Ocean City

Cars Removed from Bay Bridge a day:

1,250 eastbound on summer weekends (2030)

620 westbound on weekday morning (2030)

2017 Bay Bridge daily traffic: 118,000 summer/68,000 off-peak

Fare: N/A

Travel Options: Ocean City to DC/Annapolis/Baltimore

Travel Mileage: 168/118/145

Capital Cost: $29.4 billion/$20.7 billion/$25.4 billion (2007 $s)

Impact to existing Bay Bridge:

- A Heavy Rail system requires a new Bay Bridge to be built(not included in capital costs above)

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Bay Transit Only Assessment

- **CONCLUSIONS:**

- Population and employment densities on the Eastern Shore do not support a fixed guideway or Bus Rapid Transit service

- Diversion off the existing bridge ranged from 4.3% (2900) weekday and $1.1% (1250) summer weekends in 2030

- Study shows that there is some demand for transit but not enough to look at transit only alternatives and not looking at a fixed guideway service.

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Study Year	Type	Round-Trip Fare	Travel Time	2017 Daily Traffic	Removes Cars from Bridge	Network Impact	Capital Cost
2001	Ferry	N/A	60 min	118,000 /68,000	276 (.2%/.4%)	**Conclusion:** Point Lookout unsuitable terminal	$137M (2001 $s)
2002	Ferry	N/A	120 min	118,000 /68,000	685 (.6%/1%)	**Conclusion:** Eastern Shore terminal unsupported	N/A
2004	Ferries speed lo/hi	$50/$75 cars; $150/$225 trucks	145/ 55 min	118,000 /68,000	25 to 917 (.02%/.04%) (.7%/1.2%)	**Needed:** Requires new terminal, parking and road network in small towns / rural areas	$17.8-$79.9M (2004 $s)
2005	Ferry	N/A	N/A	118,000 /68,000	317 to 625 (.3%/.5%) (.5%/.9%)	**Conclusion:** little support for Reedville Terminal	$47M (2005 $s)
2007	Bus Rapid Transit	N/A	N/A	118,000 /68,000	1,250 (1%) 620 (.9%) (2030)	Reduces lanes 5 to 4, forcing 22,350 cars into 4 remaining lanes	KI: $0.4-$1.3B OC: $2.6-$3.7B (2007 $s)
2007	Light & Heavy Rail	N/A	N/A	118,000 /68,000	1,250 (1%) 620 (.9%) (2030)	New Bridge Needed (cost not included)	KI: $1-$10.3B OC: $6.1-$29.4B (2007 $s)

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Baltimore Sun Ferry Comparison

Ferry	Round-Trip Fare	Travel Time	How far?	2017 Daily Traffic	Removes Cars from Bridge	Overview	Notes
TESO Ferry Line, Texel-Den Helden, Netherlands	$28-$41*	30 min	2.6 miles	118,000 / 68,000	3,562 (3%/5.2%)	2 ships, including hybrid Texelstroom; holding 300 to 350 vehicles each	*Rates vary, higher Saturday through Monday
Ampere Ferry, Lavik-Oppedal Norway	$62*	30 min	3.5 miles	118,000 / 68,000	4,080 (3.5%/6%)	Electric ferry with capacity of 120 vehicles; makes 34 trips daily	*Vehicle and driver; $4.80 for additional adults, $2.40 children
Mukilteo-Clinton, Washington State Ferry	$18.30*	35 min	4 miles	118,000 / 68,000	6,275 (5.3%/9.2%)	2 ferries, holding 144 cars each, are used in this state-subsidized system	*Vehicle and driver; $5 for additional adults, $2.50 children
Seattle-Bainbridge Island, Washington State Ferry	$30.70*	50 min	8.9 miles	118,000 / 68,000	5,175 (4.4%/7.6%)	2 ferries, holding 202 cars each, are used in this state-subsidized system	*Vehicle and driver; $8.50 for additional adults, $4.25 children

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Current Bay Crossing Study

- Tier I NEPA (National Environmental Policy Act) Environmental Impacts Statement (EIS) Study underway
  - Project Scoping Fall 2017
  - Purpose and Need Document is available now
  - Develop Corridor Alternatives – Winter 2019 (ongoing)
  - Spring Regional Public Open House Meetings (coming soon)
  - Draft EIS – Winter 2020
  - Public Hearing – Spring 2020
  - Select Preferred Corridor Alternative – Summer 2020
  - Final EIS – Winter 2020/2021
- Tier II Study would be needed to identify specific alignment alternatives within the preferred corridor.

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What is Commuter Choice Maryland?

- COMMUTER CHOICE MARYLAND promotes alternative options to driving alone to work such as public transportation, ridesharing, vanpooling, walking, biking, teleworking and flexible work schedules.

- Help reduce congestion, conserve energy, protect the environment and facilitate economic opportunity.

CommuterChoice Maryland

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Program Services

- **For Employers:**
  - Assist participating employers in implementing commuter benefits programs
  - Accomplish this through webinars, targeted materials and communications
  - Provide up-to-date information on commuter benefit options and the Maryland Commuter Tax Credit
  - Provide marketing materials and information on employee commute options

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Program Services

- **For Commuters:**
  - Provide online and printed resources on transportation options
  - Promote the use of Guaranteed Ride Home (where applicable)
  - Conduct outreach at events to increase their knowledge and comfort-level with using transportation options

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We Are Always Here to Help!

Commuter Choice Maryland
410-865-1100
commuterchoice@Mdot.Maryland.gov
CommuterChoiceMaryland.com
Employer Video: https://youtu.be/ruDzLipJK-Y
Commuter Video: https://youtu.be/VecL9C6nYeU

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Thank you!

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