SAVING LIVES - TOGETHER

CHESAPEAKE BAY BRIDGE AUTOMATED LANE CLOSURE SYSTEM



ITS Texas 2022 Annual Meeting

Marie Seguin, Versilis



SAFET

Our Mission:

Reducing Worker Exposure to Live Traffic



CHESAPEAKE BAY BRIDGE OVERVIEW



Chesapeake Bay Bridge

- Vital Link between Maryland Shores
 - Commuters
 - Commerce
 - Vacation travelers
- 2 Bridge Structures





Chesapeake Bay Bridge

- FY 2022 AADT: ~74,000
- Limited Detour options
 - Alternate routes
 exceed 100 miles





Bridge Layout – Normal Operation

- WB Bridge: 3 lanes WB
- EB Bridge: 2 lanes EB







Bridge Layout – Contraflow Operation

- WB Bridge: 2 lanes WB + 1 lane EB
- EB Bridge: 2 lanes EB







BAY BRIDGE CURRENT MANUAL OPERATION

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Contraflow Traffic Operations

• Contraflow operations implemented in 1974, cones and barrels





Complex Traffic Control

- Safety Concern
- Time Consuming
- Labor intensive





Operational Challenges

- Creates safety concerns to staff and customers
- 20 30 minutes are required to implement and remove
- Up to 250 M.O.T. devices are required (depending on closure/operation)
- Up to 10 staff required (Maintenance and Police) in live traffic and inclement weather





Safety Challenges

- Over past five years, contraflow traffic operations on Bay Bridge resulted in 108 crashes:
 - 82% of which were rear-end collisions
 - 8% were head-on collisions
- Causes:
 - Distracted driving
 - Following too closely
 - Excessive speed





BAY BRIDGE AUTOMATED LANE CLOSURE SYSTEM





What is the Chesapeake Bay Bridge ALCS?

- Transition from a manual barrel and cone process for our 7 different lane closure scenarios, including contraflow
- The ALCS is a State-of the-art intelligent transportation system that includes:
 - 12 new dynamic message boards/signs
 - 100 new overhead lane-use signals
 - 46 new horizontal swing gates
 - Multiple illuminated pavement markers
 - Closed circuit television (CCTV) cameras















Expected ALCS Benefits

SAFETY (workers and travelers)

- INCREASED SAFETY No more workers in live lanes
- Increased motorist compliance
- Increased visibility
- Advance notifications of lane closures and incidents
- Reduction in secondary crashes





Expected ALCS Benefits <u>EFFICIENCY</u>

- Less time to implement and remove
- Reduce response time
- Increase trip reliability
- Environmental impacts less idle time





Expected ALCS Benefits RETENTION & RECRUITMENT

- Staff can do more challenging roles, increase KSA's
- Boost morale, break repetitive everyday "cone & barrel shuffle"
- Keep employees engaged in more exciting tasks





Improved Traffic Operations

- Reduce safety concerns for staff and customers
- Approx. 10 15 minutes to implement and remove
- Approx. 10 M.O.T. devices required (depending on closure/operation)
- Approx. 3 staff required (Maintenance and Police) in-vehicle and not in live traffic or inclement weather





Public Awareness

Gates on Route 50 at Chesapeake Bay Bridge are part of elaborate new lane-closure system

MDTA to start using first-of-its-kind automated lane-closure system in the fall



WBALTV Updated: 6:22 PM EDT Aug 12, 2022

Infinite Scroll Enabled







MDTA 🕗 @TheMDTA · 18h ATTN BAY BRIDGE TRAVELERS: The best times to cross today are before 6am and after 5pm. Expect US 50 westbound congestion. #MDShorebound TUESDAY SEPTEMBER 6, 2022 **BEFORE 7 AM / AFTER 6 PM**

EXPECT CONGESTION ON: WESTBOUND US 50 0 12 仚 17 5

0





The ALCS will include overhead lane-use signals, dynamic message signs, horizontal swing gates, and illumina

Capital Projects

Engineering & Construction Pro
 Project Planning Studies
 2040 Maryland Transportation I

Projects · Bay Bridge ALCS I-95 At Belvidere Road Interchang
 I-895/Battimore Harbor Tunnel Tol interchange Improvements Project

I-95 ETL Northbound Extensio Nice/Middleton Bridge Project I-895 Bridge Project
 I-95 Ramp Rehab Studies

I-95 At Belvidere Road Transportati



Stay Informed



Email address

System Project

be integrated into the existing bridge traffic control syste

Sign up for updates and alerts from the







William Preston Lane Jr. Memorial (Bay) Bridge Automated Lane Closure

The Bay Bridge automated lane closure system (ALCS) is a project constructed for opening and closing lanes including two-way traffic operations on the bridge

The beyond automate in dustrie system (vecce) is a project consistent on spenning and coardy sitters including wervay same operations or in the integri-Since two-way operations were implemented, lane closures have been done manually. The ALCS will enhance the current manual system for motorists by allowing maintenance crews to remotely implement and discontinue two-way traffic on the Bay Bridge's Eastern and Western Shores.

Work on the project, such as conduit boring and installation, began in February 2020 on the Eastern Shore and January 2021 on the Western Shore. In Fall 2022, the automated lane closure system will be in place. After the system is live, the MDTA will provide a transitional period with some manual support of the gates system to familiate motivists to the closure scenarios.



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Next Steps

- Testing of all devices
- Communication integration testing
- General procedure plan testing
- Final acceptance
- Anticipated completion fall of 2022







NEXT STEP: IN-VEHICLE NOTIFICATIONS

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Digital Alerts



- Integrated Infrastructure-to-Vehicle (I2V) solution
- Provides real-time digital lane closure notifications through in-vehicle systems and navigation applications such as WAZE
- Allows generation of a compliant Work Zone Data Exchange feed
- Goal: share the feed with the USDOT WZDx which will enable any third party to work with the feed





Thank You

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