

Westbound Bay Bridge Deck Rehabilitation Project Update



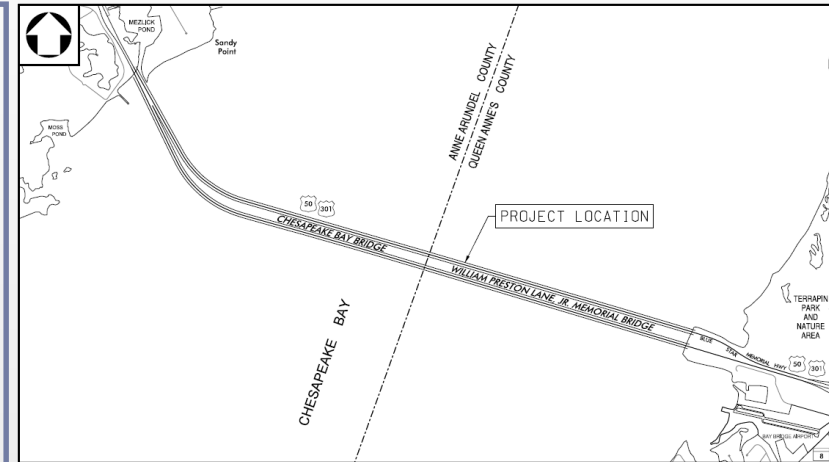
BB-2819: Westbound Bay Bridge (WPL) Deck Rehabilitation & Misc. Modifications

Construction Cost:

- \$26.7 M Low Bid
- Contractor: Wagman Heavy Civil

Schedule:

- Construction NTP: Sept. 9, 2019
- Construction Complete: August 2021



Location Map



BB-2819: Westbound Bay Bridge (WPL) Deck Rehabilitation & Misc. Modifications

Existing WB Bay Bridge

- Constructed in 1973 – 21,051 LF \pm of structure with 122 spans
- Two-lanes with curb-to-curb width of 38 FT \pm
- WB Deck and Overlay Replacement history
 - 2002 to 2004 – replaced decks in select beam & girder spans (est. 21% of area) and micro-silica fume (MS) overlays of all other spans, except Suspension & Thru Truss spans.
 - 2004 to 2005 – replaced portions of Center and Left Lanes having defective MS overlays with new latex modified concrete (LMC) overlays (est. 33% of area). Right lane not replaced.
 - 2007 to 2010 – replaced deck and floor system of Suspension & Thru Truss spans (est. 21% of area).

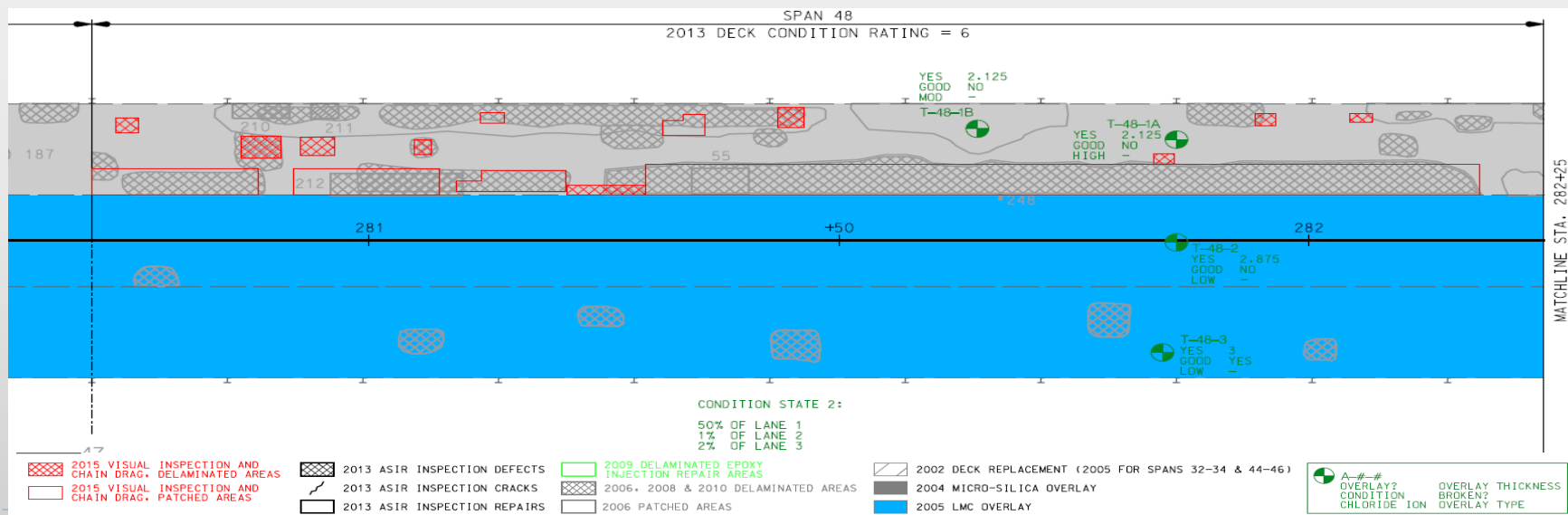


View of WB Left Lane emergency replacement in 2004

BB-2819: Westbound Bay Bridge (WPL) Deck Rehabilitation & Misc. Modifications

Purpose and Need

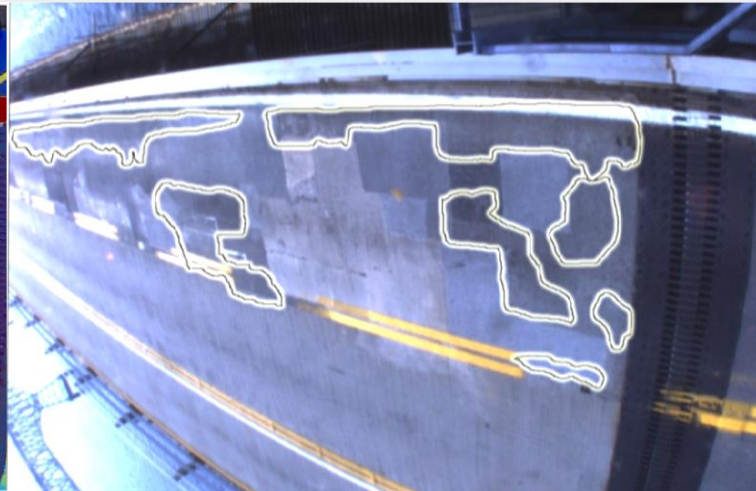
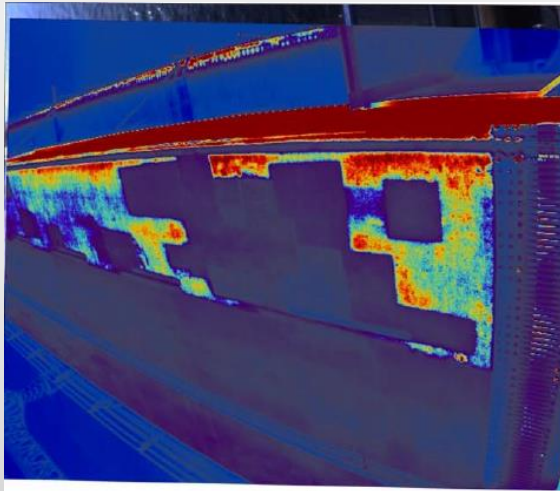
- Deck Condition Study and Biennial Inspections indicate Right Lane is significantly in need of repair:
 - Span B13A – 75% of deck needs repair
 - Many Spans – 50% of deck needs repair
- Studies performed include nondestructive testing (NDT) to determine extent needed deck repairs:



BB-2819: Westbound Bay Bridge (WPL) Deck Rehabilitation & Misc. Modifications

Purpose and Need (Cont'd)

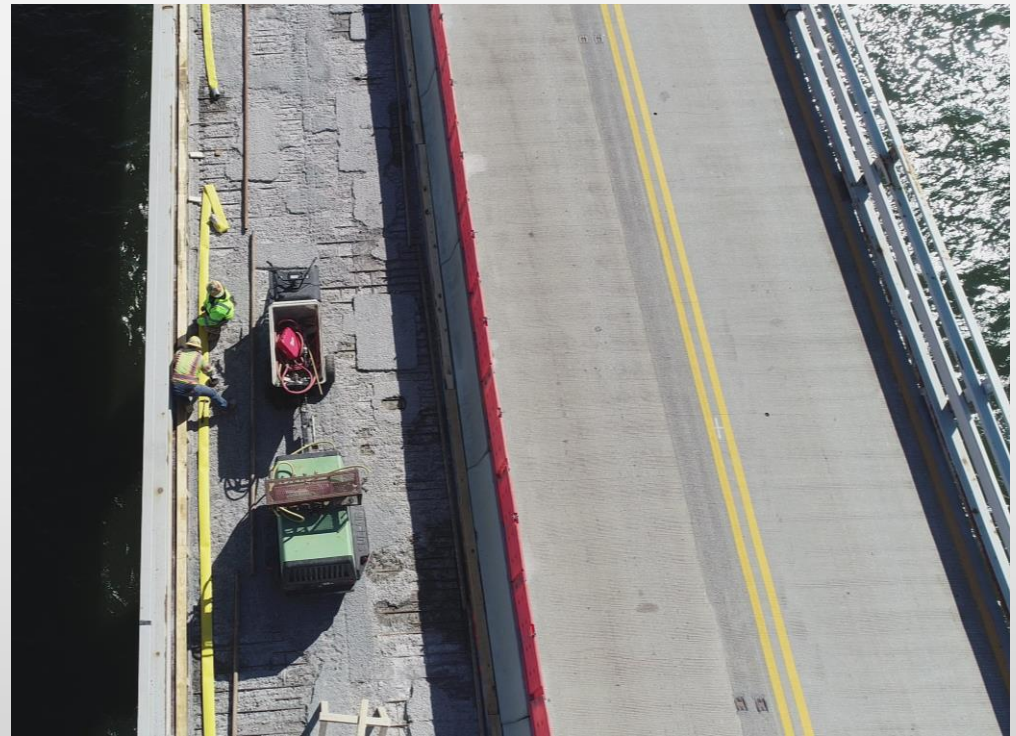
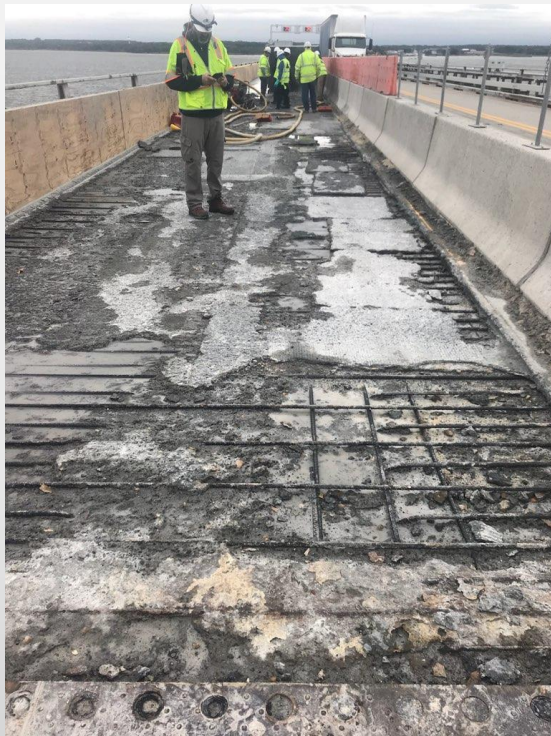
- NDT program findings indicate internal repair needs
- Physical soundings, inspection and coring program performed to validate NDT
- This presents a number of safety risks given the frequency of patching and emergency holding patches



BB-2819: Westbound Bay Bridge (WPL) Deck Rehabilitation & Misc. Modifications

Purpose and Need (Cont'd)

- Actual deck conditions demonstrate that work is needed now to avoid longer and more costly redecking:



Milling operations removing below reinforcing in numerous areas

BB-2819: Westbound Bay Bridge (WPL) Deck Rehabilitation & Misc. Modifications

Overall Scope of Work

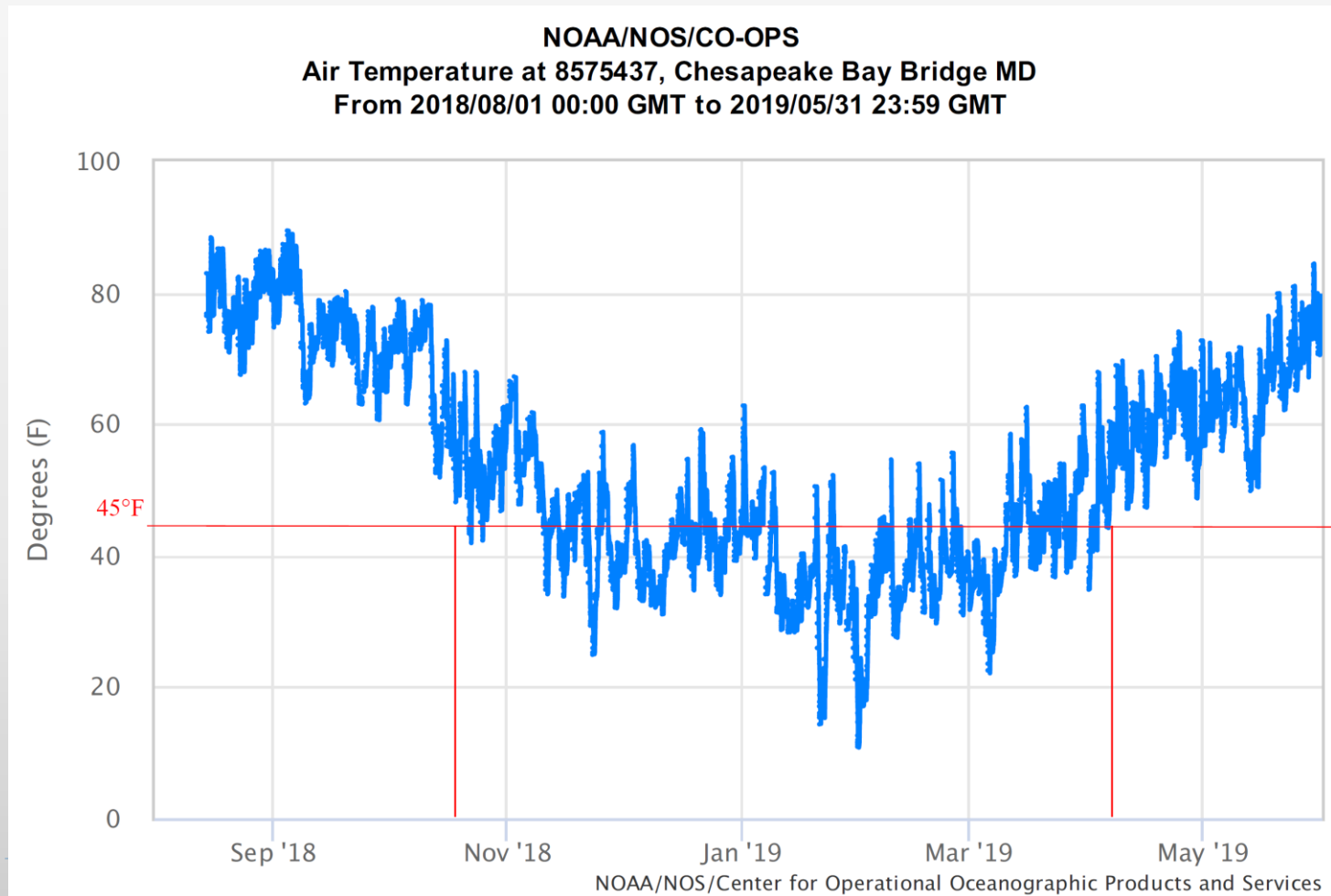
- Replace Existing Right Lane Overlay (Approx. 19% of Deck Area)
 - Remove existing MS Overlay and replace with LMC
 - Full-Time Barrier Separated Lane Closure
 - Nighttime Full Bridge Closures / Daytime Lane Closures
- Complete Localized Deck Repairs in Center and Left Lanes
- Seal the entire bridge deck
- Complete Priority Repairs
- Upgrade and Replace existing Lane Use Signals and gantries
- Replace rail posts



View of WB Right Lane with patching & deterioration

BB-2819: Westbound Bay Bridge (WPL) Deck Rehabilitation & Misc. Modifications

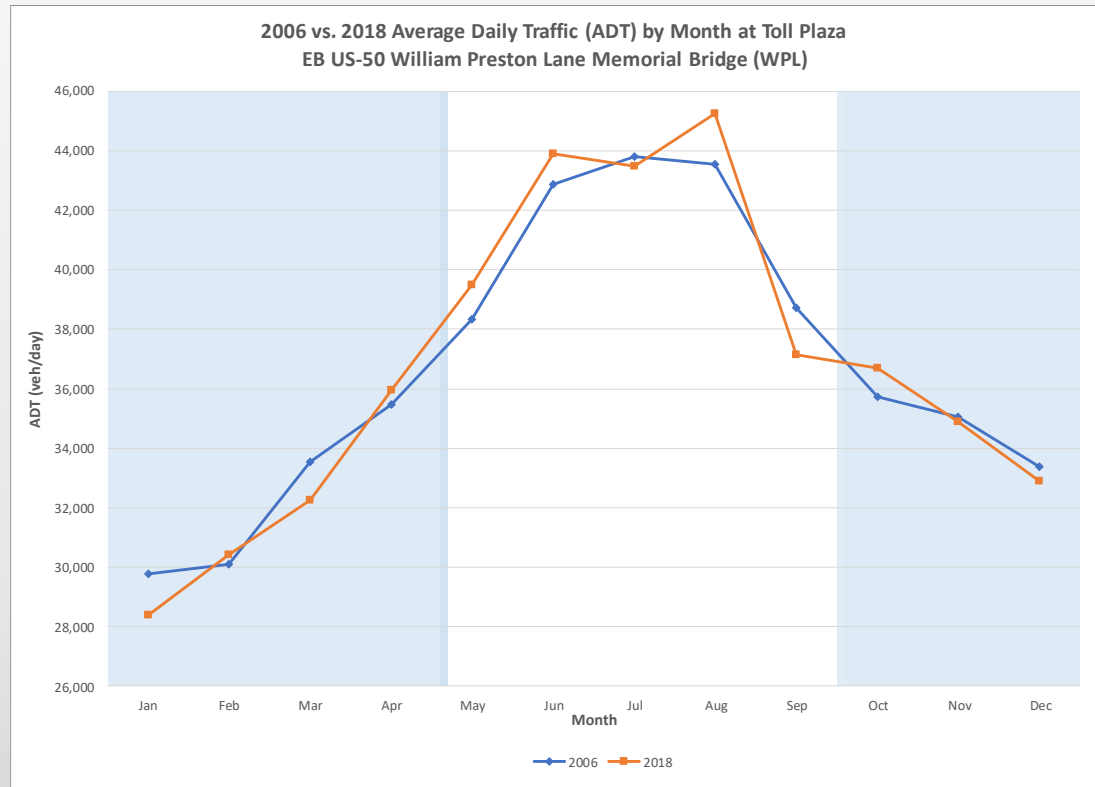
Temperature Sensitive



BB-2819: Westbound Bay Bridge (WPL) Deck Rehabilitation & Misc. Modifications

Traffic 'Then' versus 'Now'

- Traffic volumes have returned to pre-recession levels
- Volumes in 2006 similar to current conditions
- Expect similar managed congestion, during construction
- Will require extensive public outreach campaign



BB-2819: Westbound Bay Bridge (WPL) Deck Rehabilitation & Misc. Modifications

Traffic Impacts

- Indicated that typical weekday queues during construction period estimated to be up to 3 miles during normal conditions, and worse during holidays, weather and incidents,
 - Average has been approximately 2.5 miles, which has included some incidents
- Summer weekend backups have been consistently severe for the years,

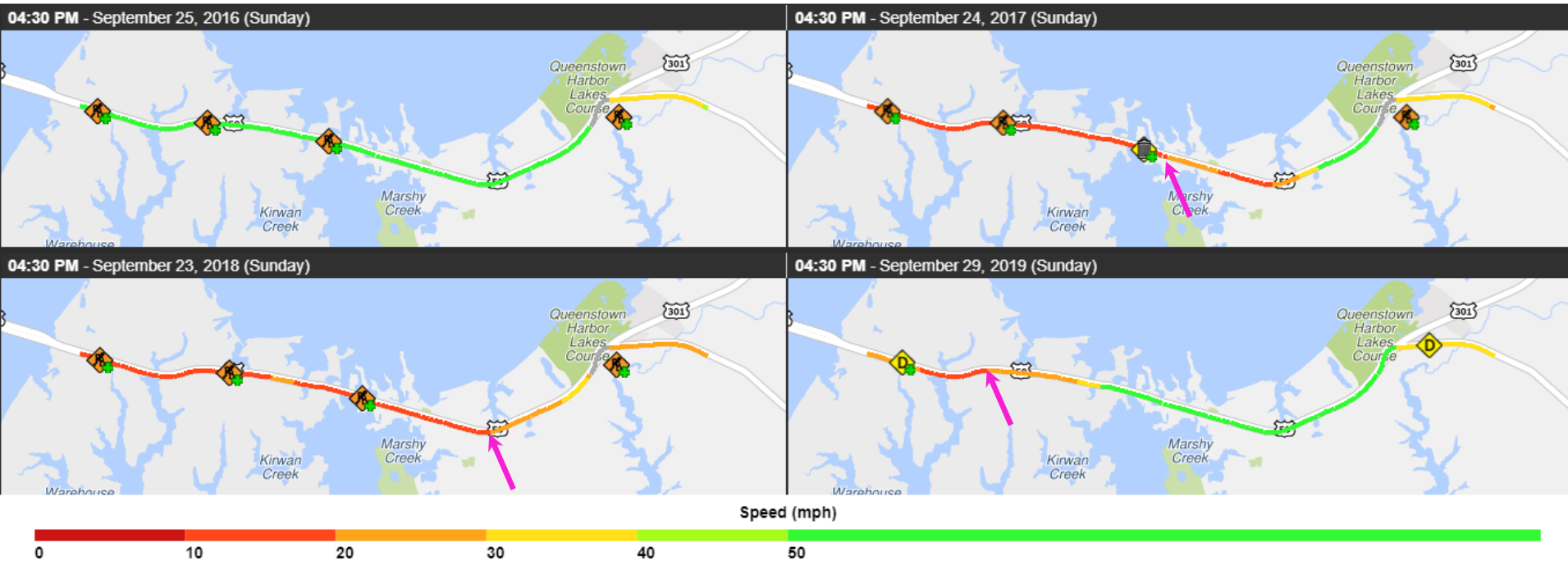


BB-2819: Westbound Bay Bridge (WPL) Deck Rehabilitation & Misc. Modifications

Traffic Impacts (Cont'd.)

- Summer weekend westbound traffic in 2017 and 2018 has been worse on certain days than during the 2019 construction.

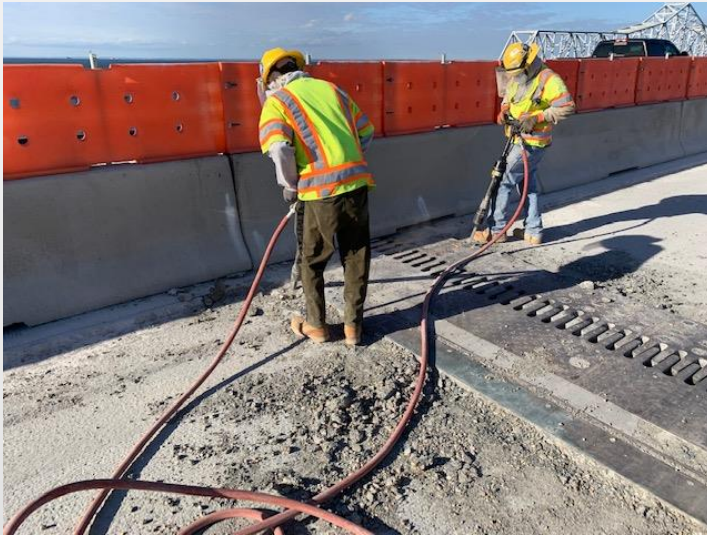
Westbound between MD-8/Exit 37 and US-301/Blue Star Memorial Hwy Speed Trend Map for September 25, 2016 and September 24, 2017 and September 23, 2018 and September 29, 2019



BB-2819: Westbound Bay Bridge (WPL) Deck Rehabilitation & Misc. Modifications

Work Operations

- Working two daily shifts,
- Shift changes between day and night shift at approximately 530 am/pm,



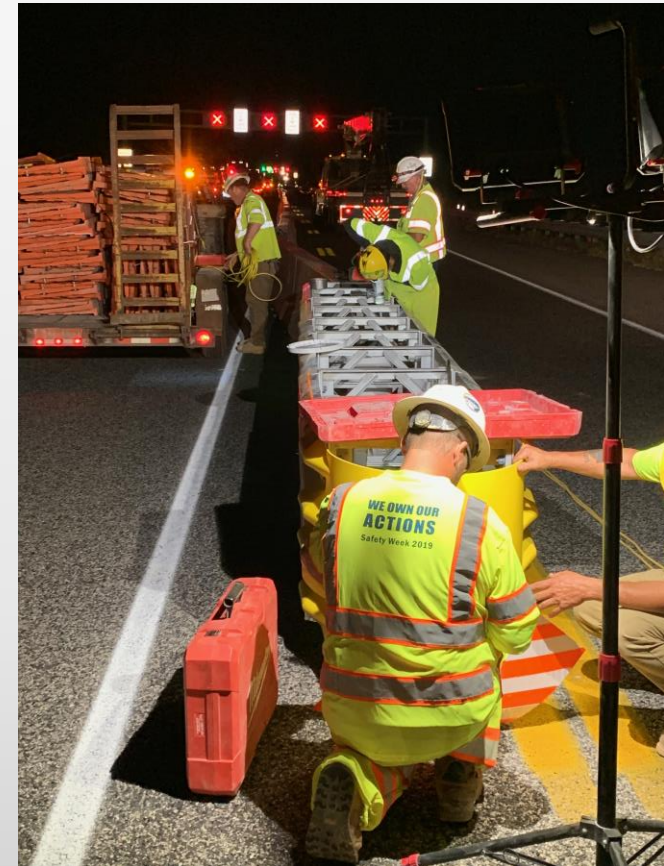
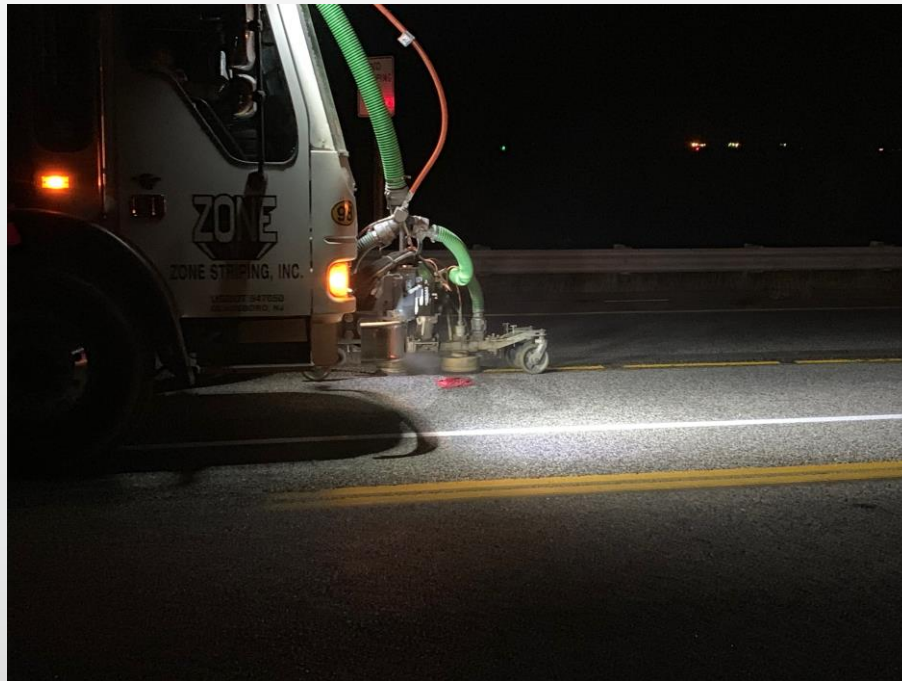
Day Shift



Night Shift

BB-2819: Westbound Bay Bridge (WPL) Deck Rehabilitation & Misc. Modifications

Work Operations – Line Restripping and Traffic Devices



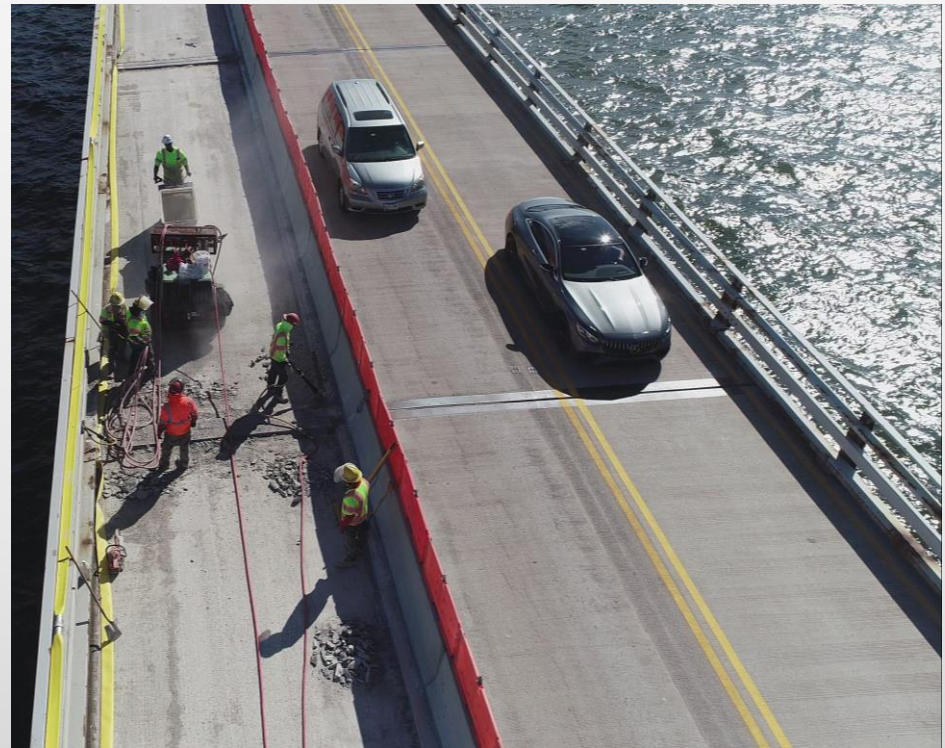
BB-2819: Westbound Bay Bridge (WPL) Deck Rehabilitation & Misc. Modifications

Work Operations – Barrier and Gawk Screen Placement



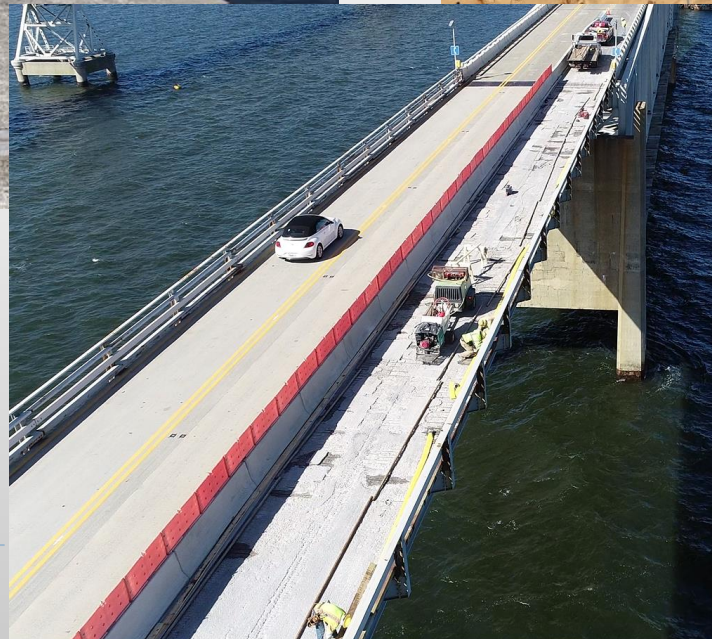
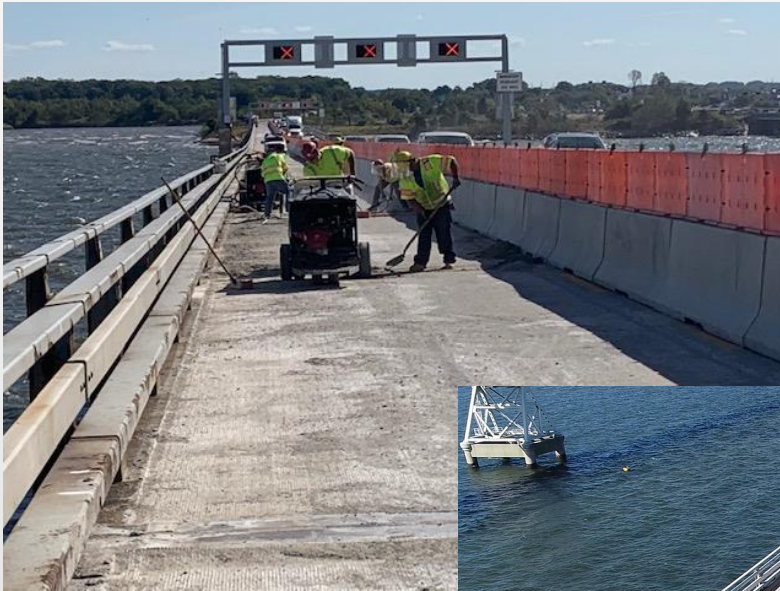
BB-2819: Westbound Bay Bridge (WPL) Deck Rehabilitation & Misc. Modifications

Work Operations – Mechanical Milling and Chipping



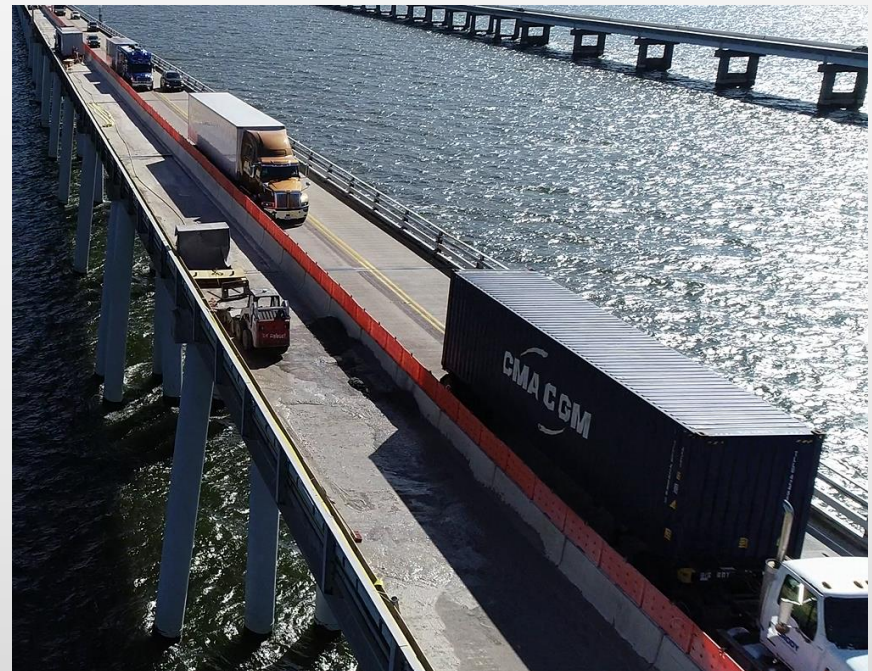
BB-2819: Westbound Bay Bridge (WPL) Deck Rehabilitation & Misc. Modifications

Work Operations – Mechanical Cleanup and Hydro Setup



BB-2819: Westbound Bay Bridge (WPL) Deck Rehabilitation & Misc. Modifications

Work Operations – Hydro-Milling



BB-2819: Westbound Bay Bridge (WPL) Deck Rehabilitation & Misc. Modifications

Work Operations – Hydro-Milling Cleanup



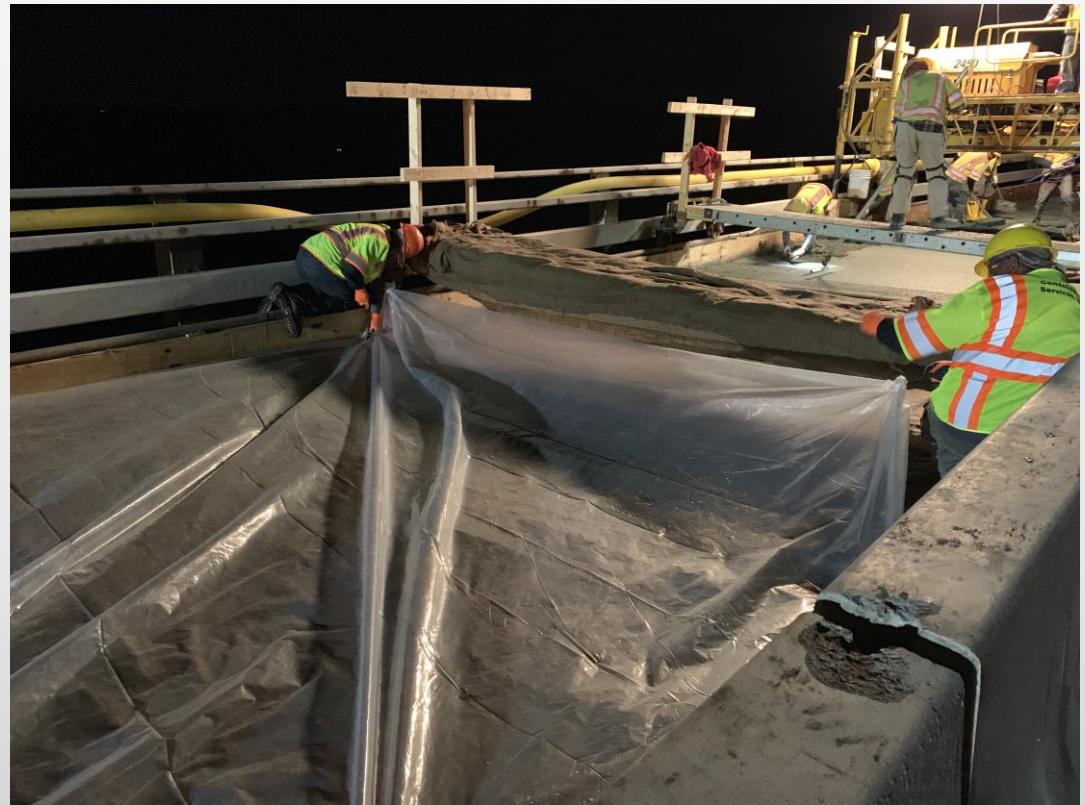
BB-2819: Westbound Bay Bridge (WPL) Deck Rehabilitation & Misc. Modifications

Work Operations – Screeding Setup and Pouring LMC



BB-2819: Westbound Bay Bridge (WPL) Deck Rehabilitation & Misc. Modifications

Work Operations – Tining and 5 Day Cure



BB-2819: Westbound Bay Bridge (WPL) Deck Rehabilitation & Misc. Modifications



Work Operations – Total to date as of 10/15/2019 night shift

- Total length (feet) barrier installed – 8,224 LF
- Total length of mechanical milling complete – 5,562 LF
- Total length of hydro-milling – 3,289 LF
- Total length of LMC placed – 514 LF