

A photograph of the Bay Bridge at sunset. The bridge spans across a body of water, with its towers and cables silhouetted against a bright orange and yellow sky. The water reflects the light from the setting sun.

Bay Bridge

Contra-flow Operations

A photograph of the Bay Bridge at sunset. The bridge spans across a body of water, with its towers and cables silhouetted against a sky of orange and purple. The text "Bay Bridge" is overlaid in a white, cursive font.

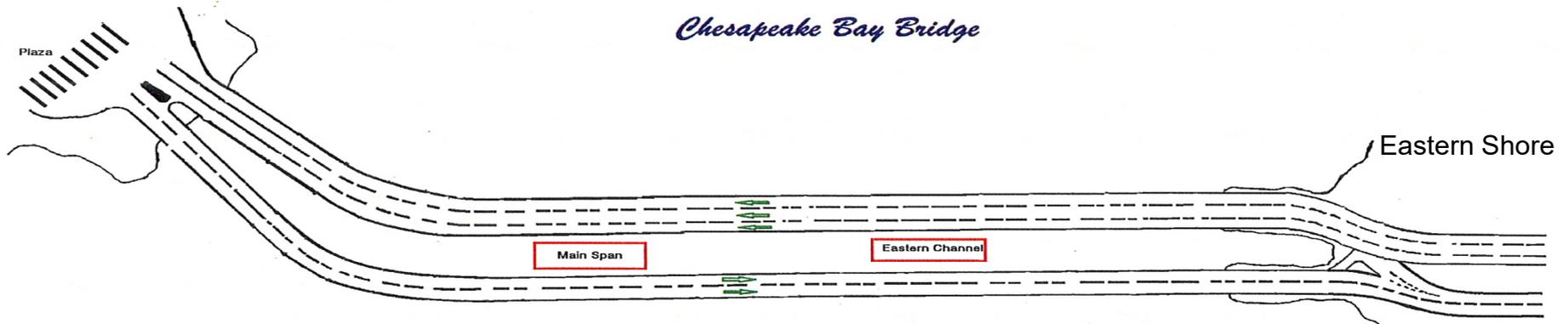
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What is Contra-flow?

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Bridge Layout - Normal Operation

Western Shore

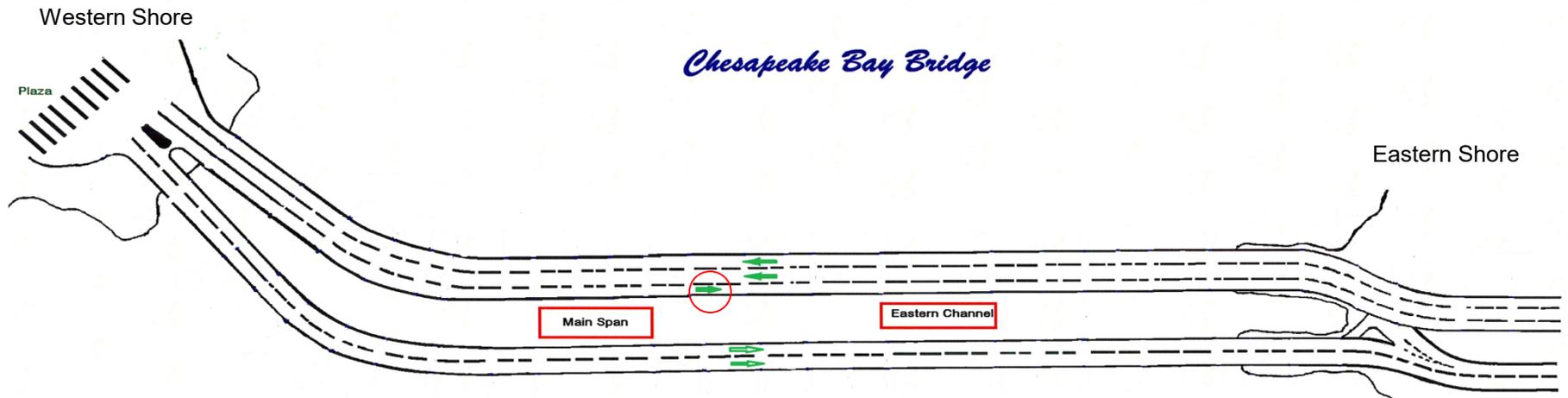


- **Two Bridge Spans**

- North Bridge : 3 Lanes Westbound
- South Bridge : 2 Lanes Eastbound
- Single Lane Capacity 1,500 VPH
 - North Bridge Max 4,500 VPH
 - South Bridge Max 3,000 VPH

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Bridge Layout – Contra-flow



- **Contra-Flow**

- Uses one of the Westbound Bridge lanes for Eastbound Movement
- Provides a 3rd Eastbound Lane
- **Not implemented during inclement weather**

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Contra-flow Operation

- **Increases Eastbound traffic throughput from 3,000 vph to 4,500 vph**
- **Implemented only during ideal weather conditions**
 - No Rain
 - No Frozen Precipitation
 - Winds below 30 mph
 - No Fog



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Contra-flow Operation

- **Maintenance of traffic consist of:**
 - Lane Signals
 - 28 North Bridge (Westbound)
 - 24 South Bridge (Eastbound)
 - Strobe on signals to indicate reverse traffic
 - Traffic barrels and cones to create tapers and directional lanes
 - Requires approximately 20-30 minutes for setup
 - Hourly Monitoring of volumes and travel & direction



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Contra-flow - When?

A photograph of the Bay Bridge at sunset. The bridge spans across the water, with its towers and cables visible against a sky of orange and blue. The title "Bay Bridge" is overlaid in a white, cursive font.

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Daytime Closures

- **Closures due to construction, inspection and preventive maintenance repairs on EB Bridge – requires contraflow ops**
- **Monday thru Wednesday – 9:00 am to 2:30 pm**
- **Thursday – 9:00 am to 1:30 pm**
- **Friday – no lane closures permitted**



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Contra-flow Operations

Contra-flow Operation (Weekday):

- **Maintain a minimum of 2 lanes in each direction**
 - 5:00 am – 9:00 am – 3 lanes for Westbound Commuters
 - 9:00 am to 2:30 pm – Lane closures to support Maintenance/Projects/Lane Closures
 - 3:00 pm to 7:00 pm – 3 lanes eastbound for returning Commuter traffic
 - Contra-flow is based on traffic volumes

A photograph of the Bay Bridge at sunset. The bridge spans across the water, with its towers and cables visible against a colorful sky. The sun is low on the horizon, creating a warm glow. The text "Bay Bridge" is overlaid in a white, cursive font.

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Contra-flow Operations

Typical Summer Commute Contra-flow times:

- **Monday thru Wednesday – 3:00 pm to 7:00 pm**
- **Thursday – 2:00 pm to 8:00 pm**
- **Friday – 10:00 am to 10:00 pm**

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Contra-flow Operations

- **Heavy WB return traffic could force us to discontinue contra-flow**
- **WB traffic given priority when delays hit Exit-39 (approx. 2 miles)**
 - Route 18 parallels US 50
 - Traffic diverts off US 50 to Route 8 and 18 to bypass US 50 traffic backups
 - Route 8 and 18 becomes gridlocked and impacts Emergency Services
- **When traffic delays reach Exit-39 – Contra-flow operation EB is discontinued**

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Why Contra-flow?

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Contra-flow Operations

Contra-flow traffic volumes are monitored hourly and discontinued if:

- **Traffic volumes drop below 900 VPH for the contraflow lane**
- **Weather conditions become unfavorable**
- **Eastbound hourly traffic volumes fall below 3,000 VPH**



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Wind Policy

Wind/Gust Levels:

- Phase I, Wind Warnings (30 to 39 mph)
 - notify and alert the public for awareness
- Phase II, Limited Wind Restrictions (40 to 49 mph)
 - restriction prohibiting empty trucks or other vehicles
- Phase III, Full Wind Restrictions (50 to 55 mph)
 - restriction requiring trucks to exceed 64,000 lbs.
- Phase IV, Traffic Hold (> 55 mph)
 - may require traffic hold

Duration

- Wind speeds and duration are now identified for consistent application

Authorization

- Requires Facility Administrator and/or Police Commander to approve prior to traffic hold phase
- Provides written authorization for the highest ranking on-site official to close during a sudden increase



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Contra-flow Operation & Weather

- **Safety is always 1st priority**
- **Contra-flow operations require consistent monitoring:**
 - 4.3 miles of bridge with no shoulders
 - Constant monitoring for anything that restricts visibility
 - Oncoming traffic
 - Lane Signals
 - Subject to cross winds & erratic changes in wind speeds
- **Bay Bridge Weather**
 - Conditions over the Chesapeake can be turbulent
 - Conditions can vary from shore to shore
 - Conditions at sea level different at 185' above the bay
 - Winds stronger & more erratic
 - Visibility differences
 - Precipitation changes
 - Temperature differences

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Safety Enhancements

- **MDTA has implemented and continues to investigate new technologies & processes**
 - Lane Signal Improvements
 - Cameras
 - Wind Monitoring System
 - Bridge Weather Sensors
 - Remote Access
 - Uninterruptable Power Supply
 - Your Speed Is (Electronic Readout)
 - Congestion Ahead Flashers
 - Headlight Requirements
 - Curve warning signs and 40 mph speed limit signs
 - Do not tailgate sign at approach of EB bridge
 - Plaza pavement lane markings
 - NOAA (enhanced understanding of weather patterns and text alerts)



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Contra-flow Operation (Summary)

- **Safety is always 1st priority.**
- **Weather Restricted/Dependent**
- **Dependent on traffic volumes**
- **Reduced speed from 50 mph to 40 mph in contraflow lane**
- **Flashers/strobes used to denote two-way traffic**
- **Variable message signs are used to alert drivers prior to bridge**
- **Maintain volume of traffic in contraflow lane (reduce gaps)**
- **Lane signals visibility is critical**
- **Emergency vehicles lead traffic at the start; follow at the end**
- **VRT's staged at each end to assist motorists**
- **Implemented only during ideal weather conditions**
 - No rain
 - No frozen precipitation
 - No Precipitation of any type
 - Winds must be below 30 mph
 - No fog



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Multi-Agency Coordination

- **Extensive outreach with QAC and AACo agencies**
 - Emergency Management
 - Maryland State Police
 - Sheriff Department
 - State Highway Administration (SHA)
- **Traffic Plans Developed During Emergencies**
 - Plans designed to reduce impact on Kent Island
 - Rt. 18
 - Rt. 8
 - Maintain emergency services during serious events

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Questions?