



# **Assessing Safety Through Mobility Performance Measures: Collapse and Closure of the Francis Scott Key Bridge, MD**

Session 3A: Incident Management and Special Events

ITS Texas Annual Meeting



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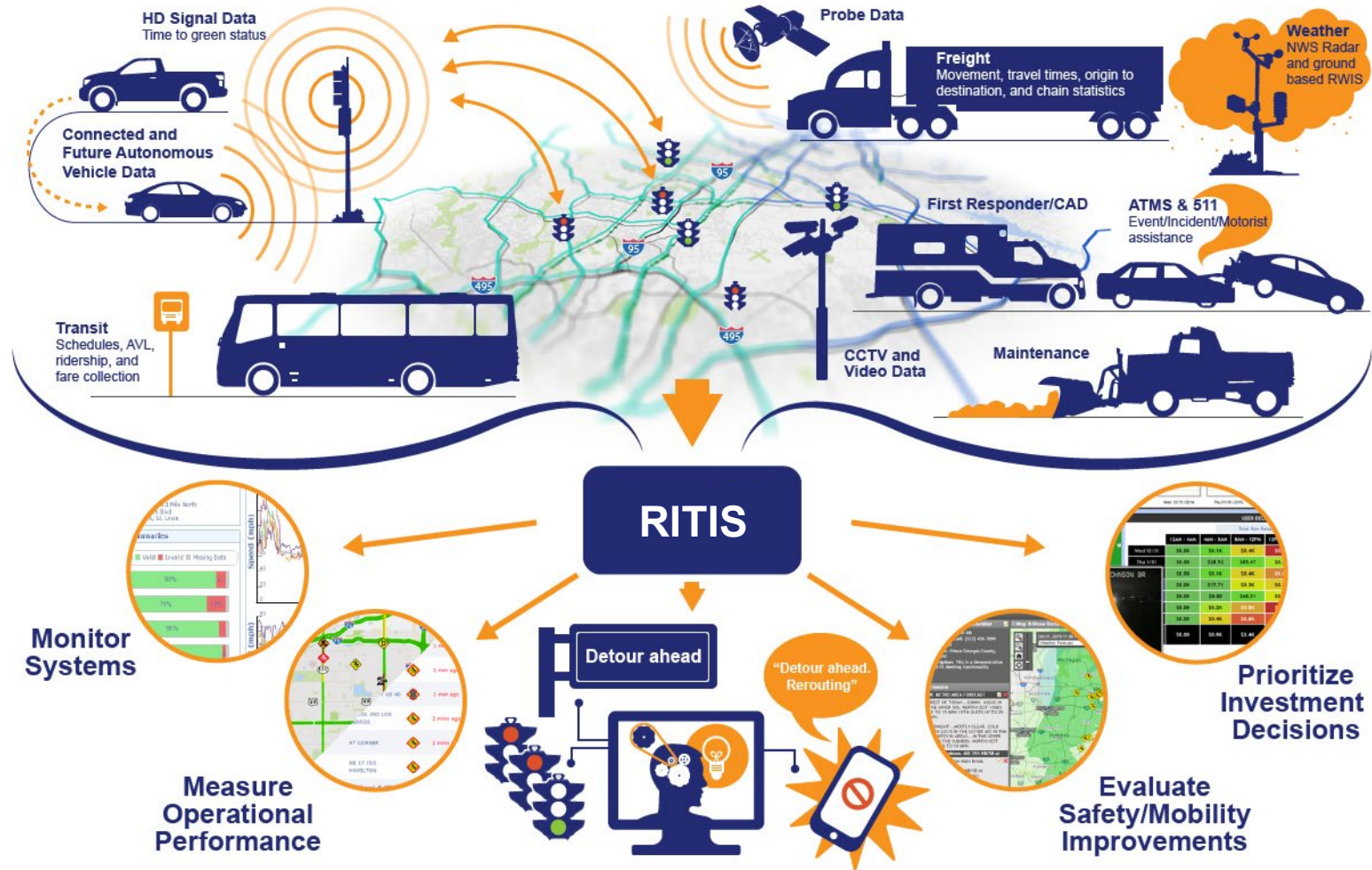
**November 20, 2025**

# CATT Lab (who we are)

- The CATT Lab operates the world's largest transportation data archive and analytics platform
- We help transportation agencies across the nation use big data to improve transportation planning and operations
  - Big data analytics
  - Data visualization
  - System integration
  - Performance management



# RITIS: the Regional Integrated Transportation Information System





# Key Bridge collapse and transportation impacts

## Incident Summary

- Date: March 26, 2024
- Event: Dali struck pier, collapsing 1.6-mile I-695 section
- Response: Traffic halted; 6 workers lost; port/highway closed

## Transportation Impacts

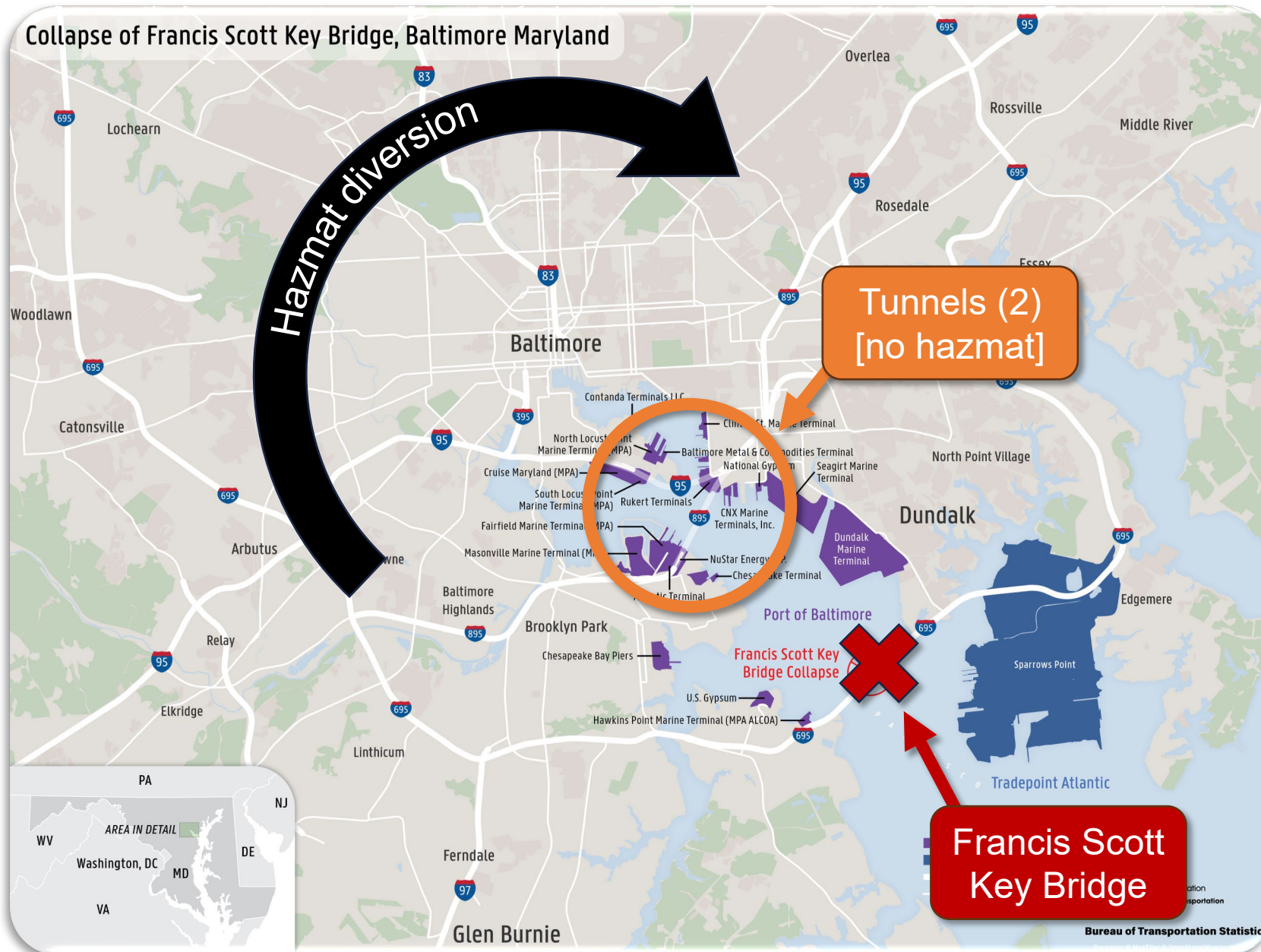
- Traffic: 30+ miles of backups on I-95; TTs doubled
- Trucks: No hazmat in tunnels, long detours
- Costs: \$100M+ in user delays initially
- Safety: Exposed vessel collision risks

## Relevance to Performance Measures & Safety

- Data: Probe/RITIS tracked congestion for rerouting
- Operations: Highlights safety metrics (response locations, bottlenecks)
- Focus: Drives need for proactive safety measures



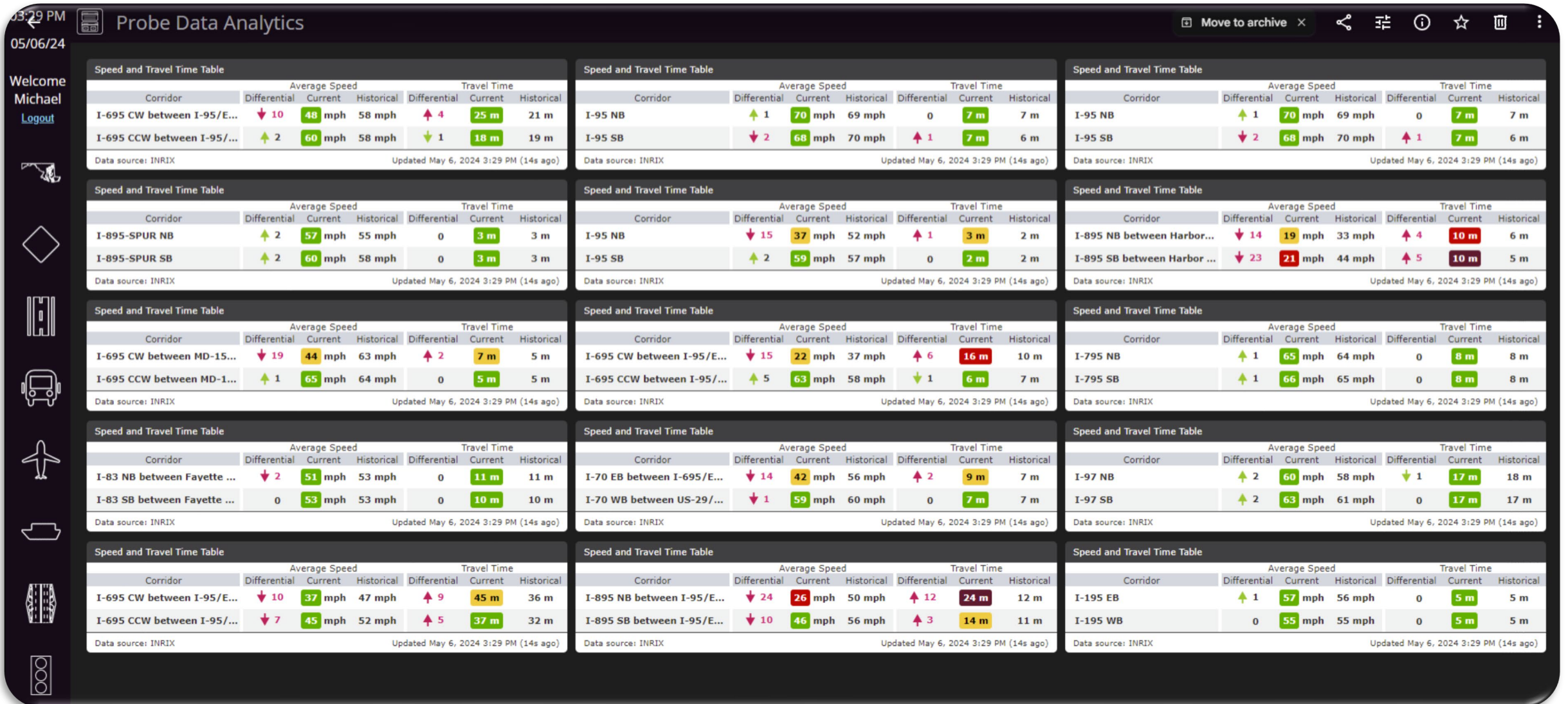






# Monitoring real-time impacts

# Real-time speed and travel time dashboards





# State of Maryland Common Operational Picture (COP)

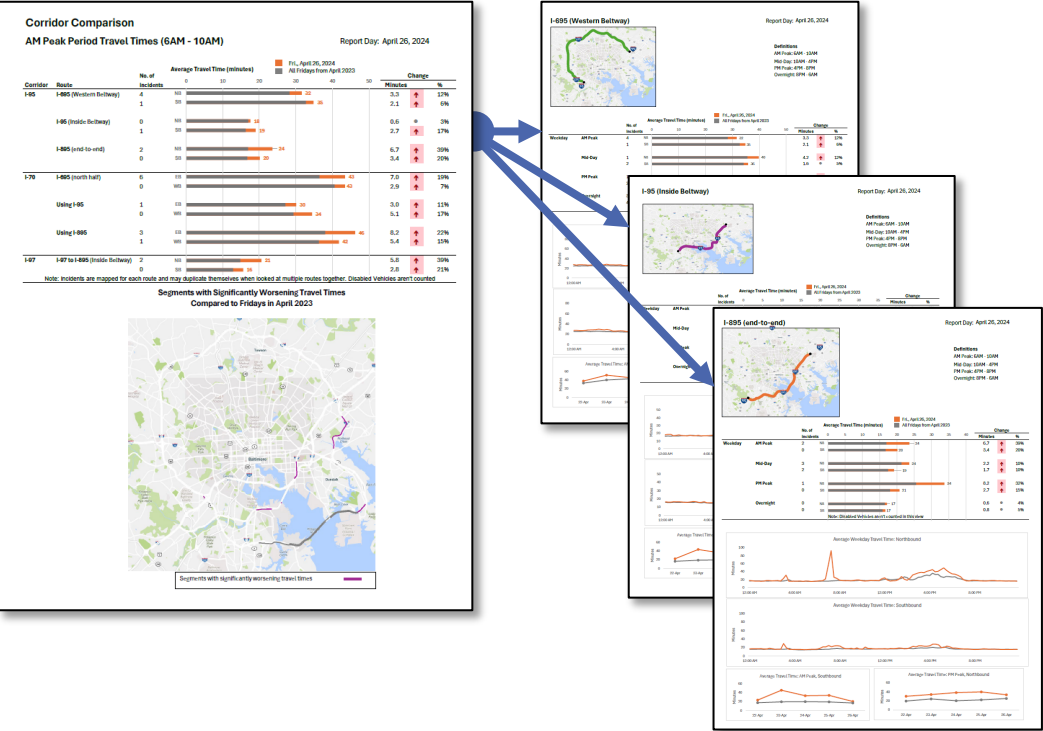
- Secretary of Transportation's COP
- Multi-modal situational awareness
- Improved Communication & Coordination
- Reducing port dwell times
- Data sharing and collaboration



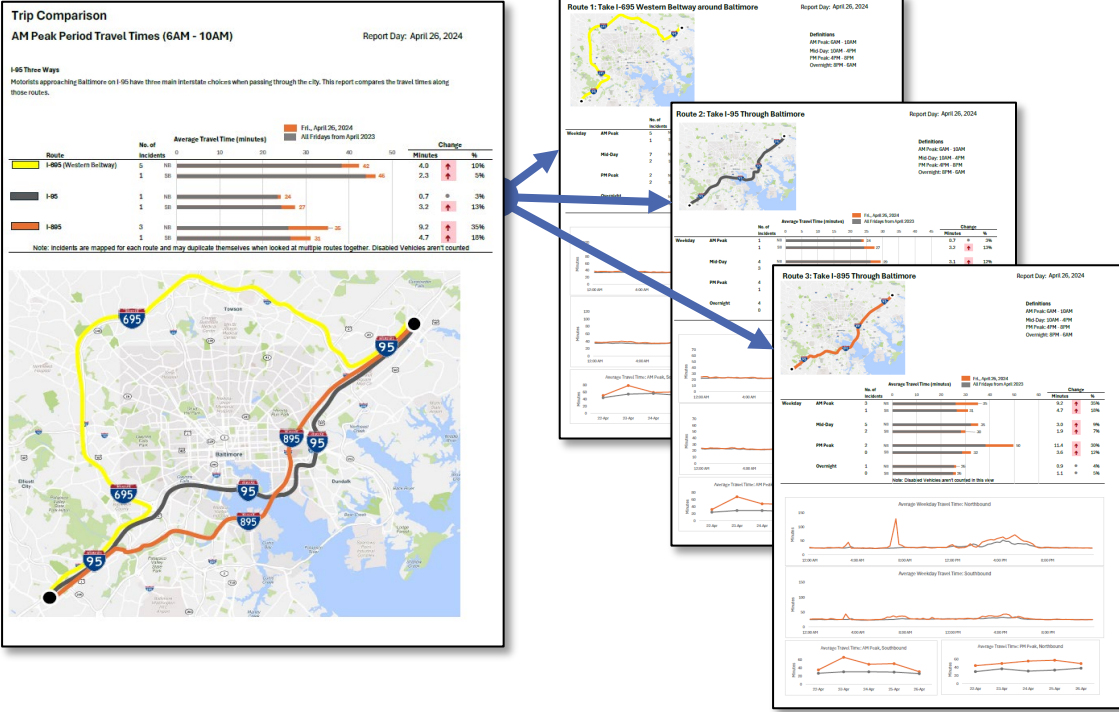


# Tracking daily performance

# Secretary's daily travel time reports



Category 1: Regional Summary + Route Details



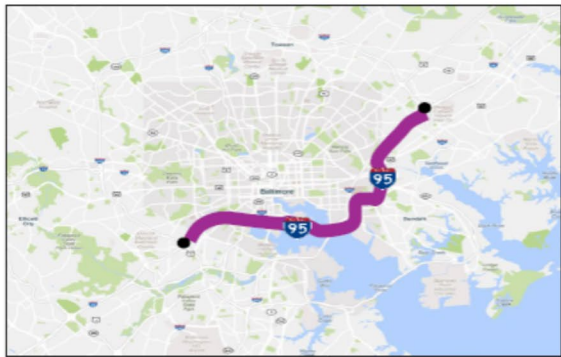
Category 2: Travel Scenarios + Route Details



How bad is traffic?

I-95 (Inside Beltway)

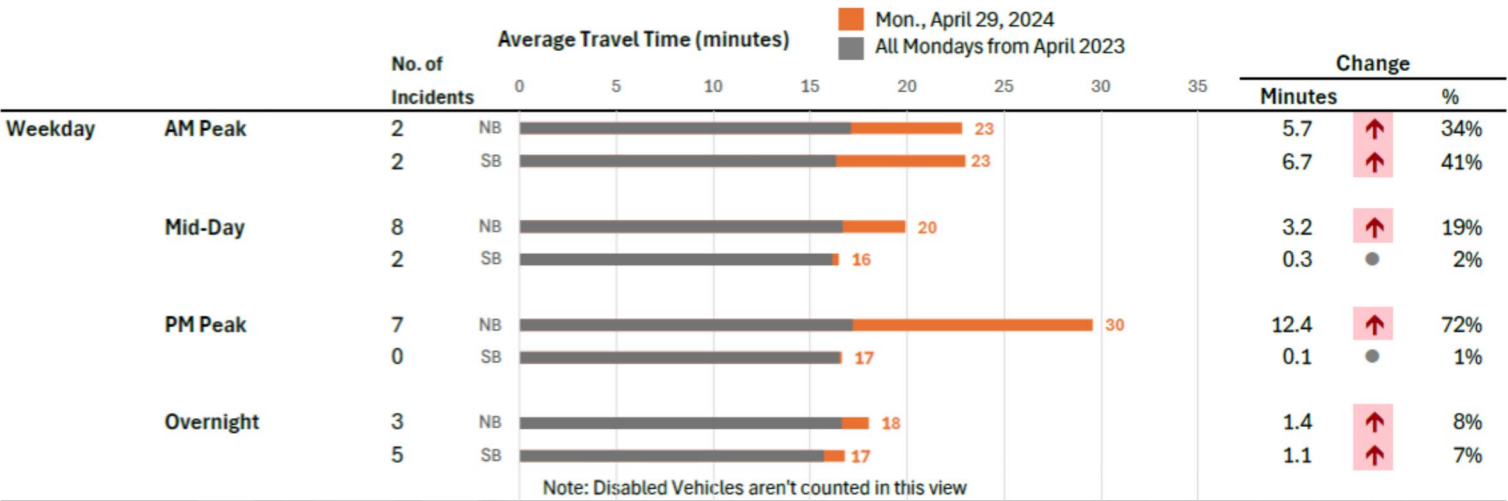
Report Day: April 29, 2024



Compare travel  
times with last year

How much did travel  
times change?

Compare  
travel times by  
time of day

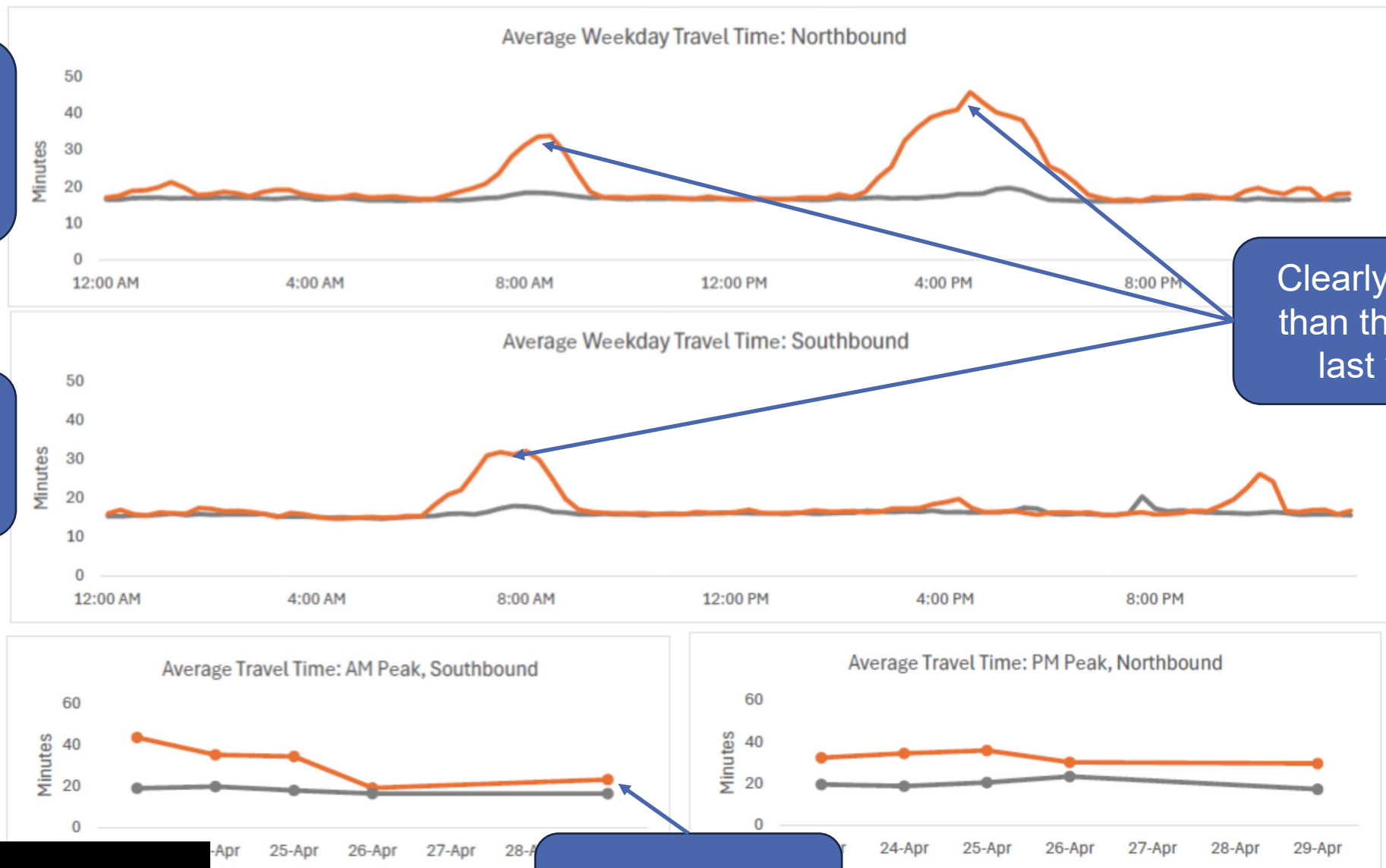


Travel time  
throughout  
the day

Compare peak  
direction with  
previous days

## DETAIL SHEET EXAMPLE

### Regional Summary



Clearly worse  
than this time  
last year

Trending better  
than last week

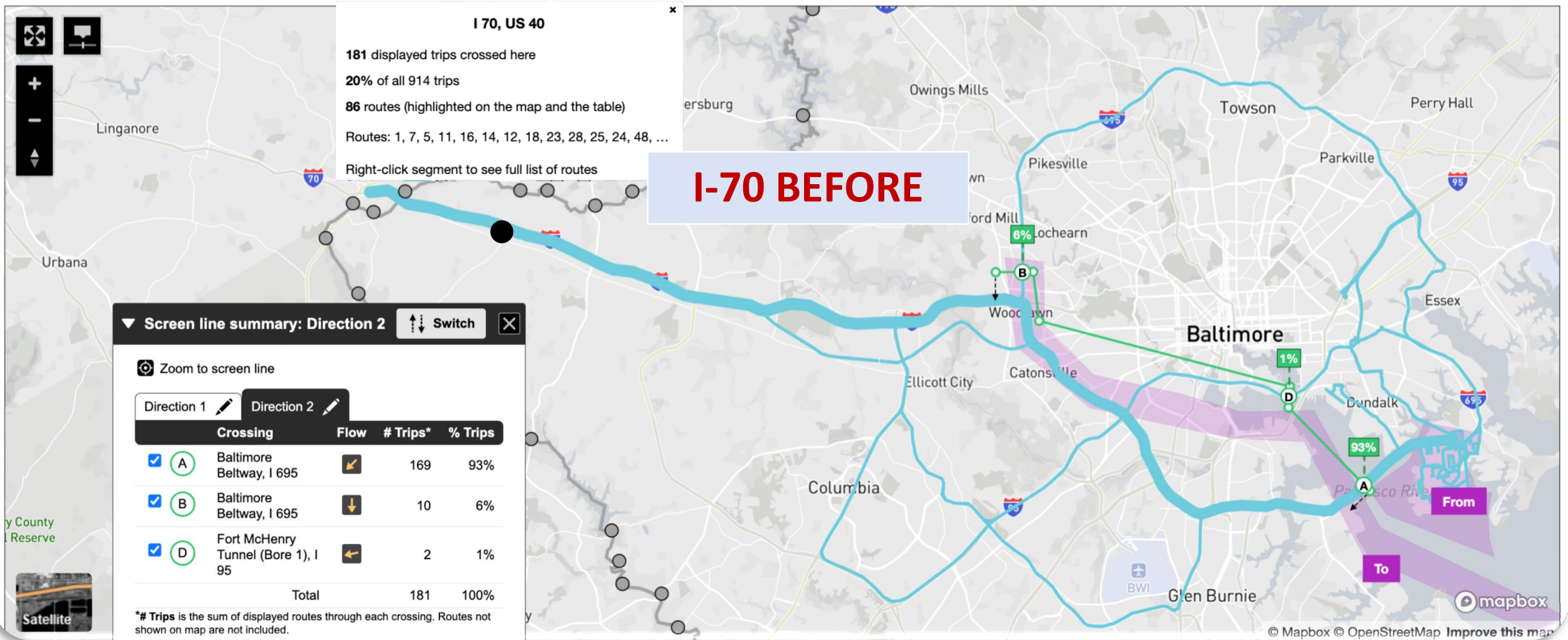


# Examining changes in travel routes



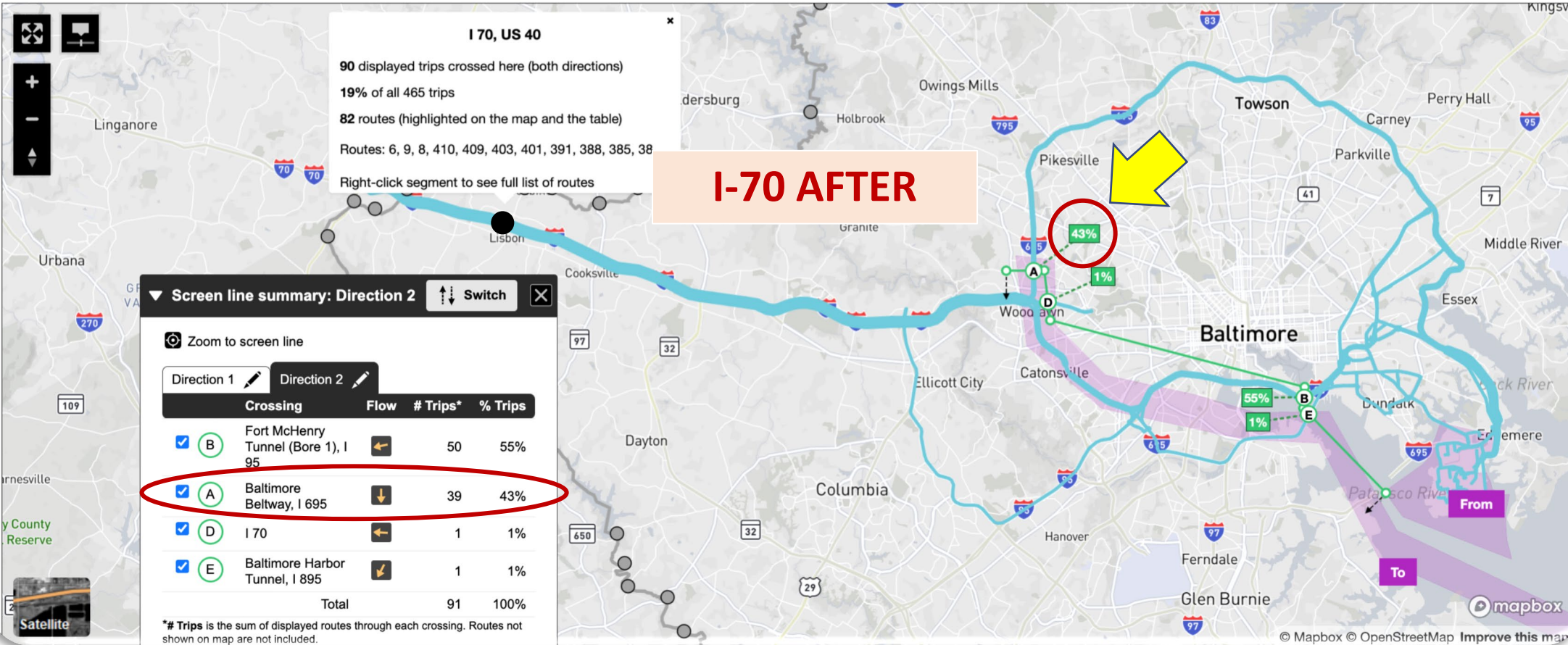
# BEFORE: Route Map Isolating I-70 Pathways

Map	Rank	Route	# of Trips	Medium Vehicles	Heavy Vehicles	Avg Speed	Length	Avg TT	5% TT	50% TT	95% TT	Reliability
<input checked="" type="checkbox"/>	1	► Wharf Road; Bethlehem Boulevard, MD 158; Peninsula Expressway, MD 157; Ba	16	13	3	47 mph	45 mi	58 m	46 m	56 m	1 h 15 m	1.12
<input checked="" type="checkbox"/>	2	► Tin Mill Road; Riverside Drive; Bethlehem Boulevard; Bethlehem Boulevard, MD	13	0	13	42 mph	29 mi	42 m	36 m	42 m	52 m	1.1
<input checked="" type="checkbox"/>	3	Peninsula Expressway, MD 157; Baltimore Beltway, I 695; I 95; I 95	10	10	0	49 mph	29 mi	36 m	30 m	33 m	48 m	1.21
<input checked="" type="checkbox"/>	4	► Tin Mill Road; Riverside Drive; Bethlehem Boulevard; Bethlehem Boulevard, MD	10	0	10	47 mph	31 mi	40 m	34 m	37 m	55 m	1.19
<input checked="" type="checkbox"/>	5	► Shipyard Road; Riverside Drive; Bethlehem Boulevard; Bethlehem Boulevard, MI	9	4	5	46 mph	45 mi	1 h 00 m	53 m	58 m	1 h 09 m	1.17
Total			914	531	383							



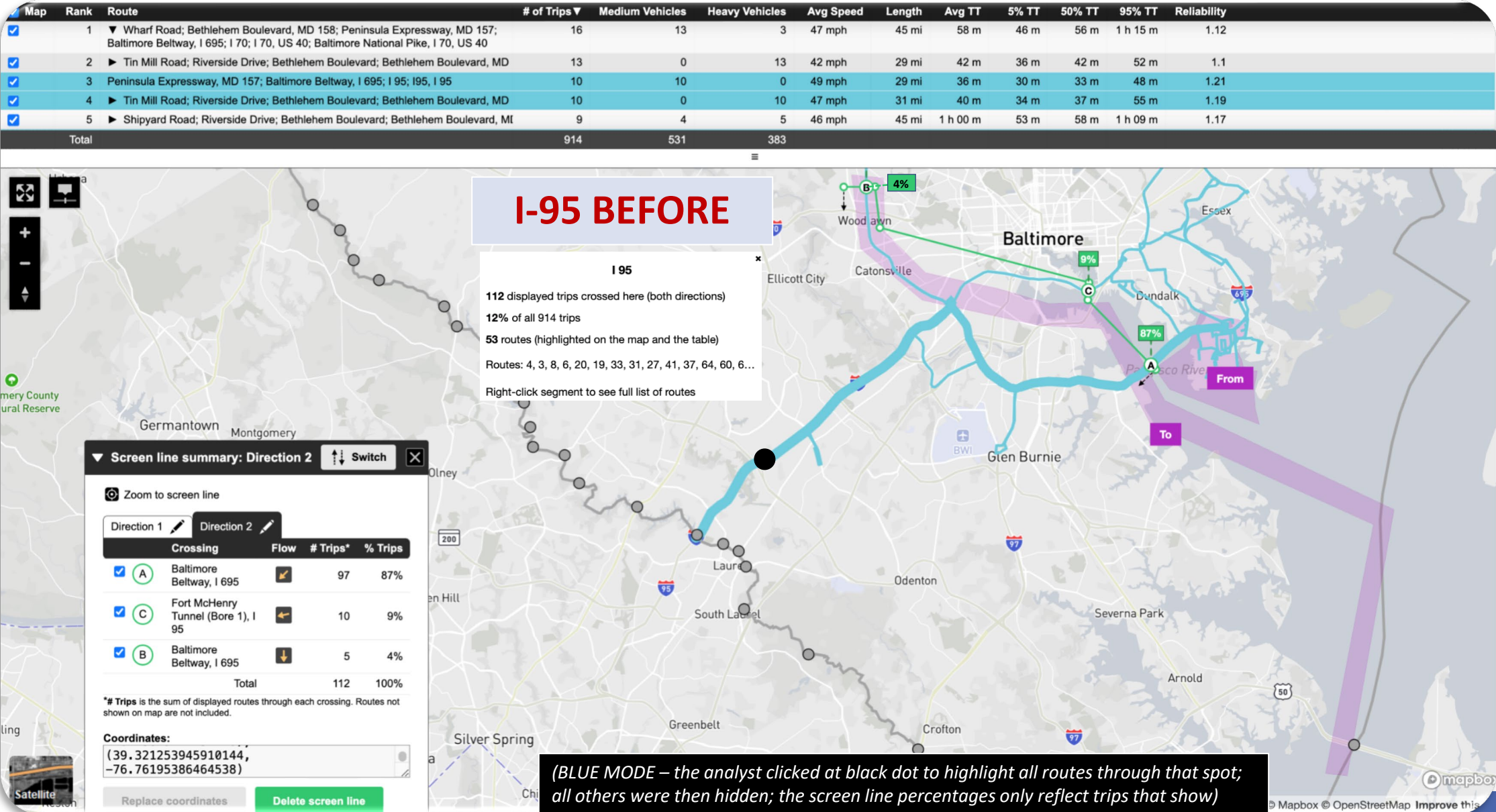
# AFTER: Route Map Isolating I-70 Pathways

Map	Rank	Route	# of Trips▼	Medium Vehicles	Heavy Vehicles	Avg Speed	Length	Avg TT	5% TT	50% TT	95% TT	Reliability
<input checked="" type="checkbox"/>	1	Tin Mill Road; Riverside Drive; Bethlehem Boulevard; Bethlehem Boulevard, MD 158; Balti	17	0	17	43 mph	34 mi	48 m	42 m	46 m	1 h 02 m	1.12
<input checked="" type="checkbox"/>	2	Cold Mill Road; Bethlehem Boulevard, MD 158; Baltimore Beltway, I 695; North Point Boulk	7	0	7	41 mph	33 mi	48 m	36 m	45 m	1 h 02 m	1.25
<input checked="" type="checkbox"/>	3	7th Street West; B Street; Tradepoint Avenue; Sparrows Point Boulevard, MD 151; Sparrov	6	2	4	41 mph	33 mi	48 m	42 m	49 m	54 m	1.04
<input checked="" type="checkbox"/>	4	Tradepoint Avenue; Sparrows Point Boulevard, MD 151; Sparrows Point Road, MD 151; Ni	5	1	4	42 mph	33 mi	47 m	38 m	44 m	57 m	1.15
<input checked="" type="checkbox"/>	5	9th Street; 7th Street West; B Street; Tradepoint Avenue; Sparrows Point Boulevard, MD 1:	5	5	0	40 mph	26 mi	40 m	38 m	40 m	41 m	1
Total			465	245	220							





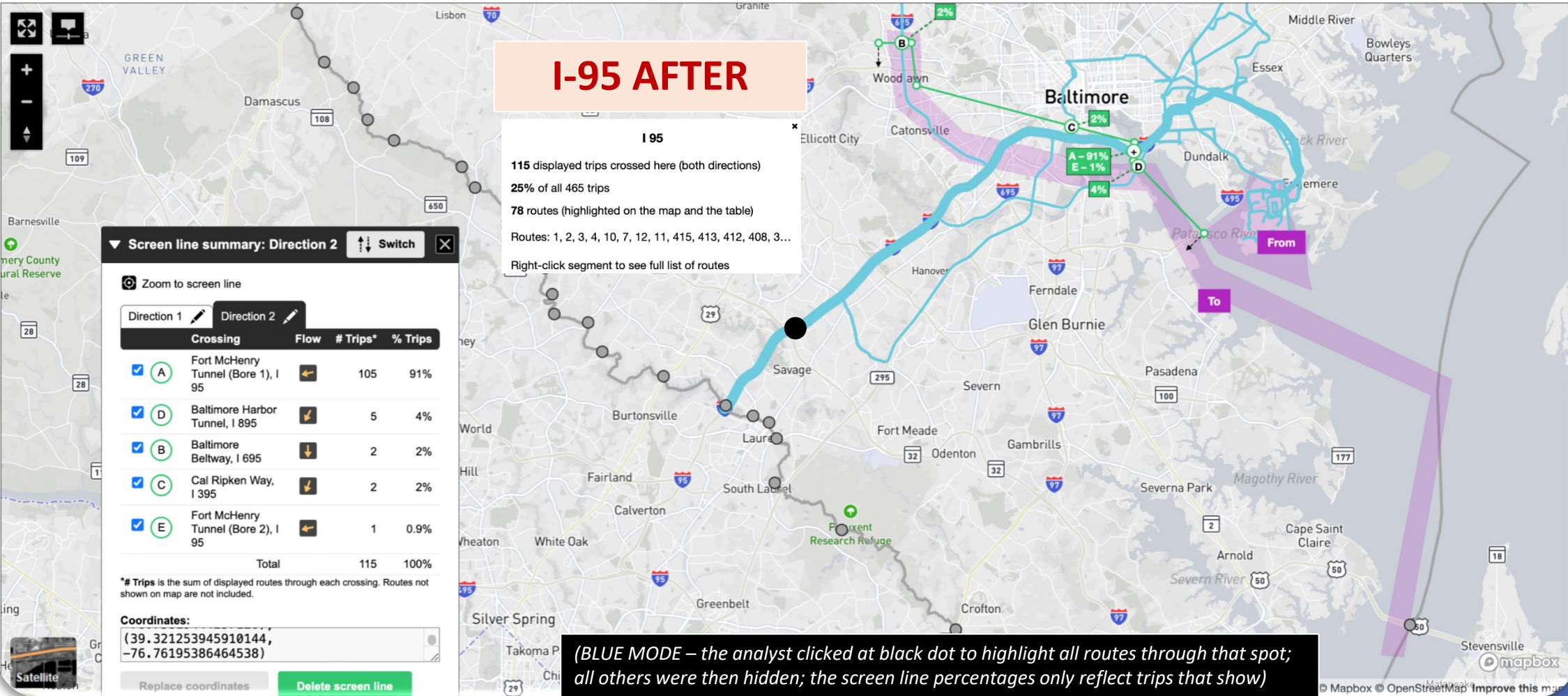
# BEFORE: Route Map Isolating I-95 Pathways



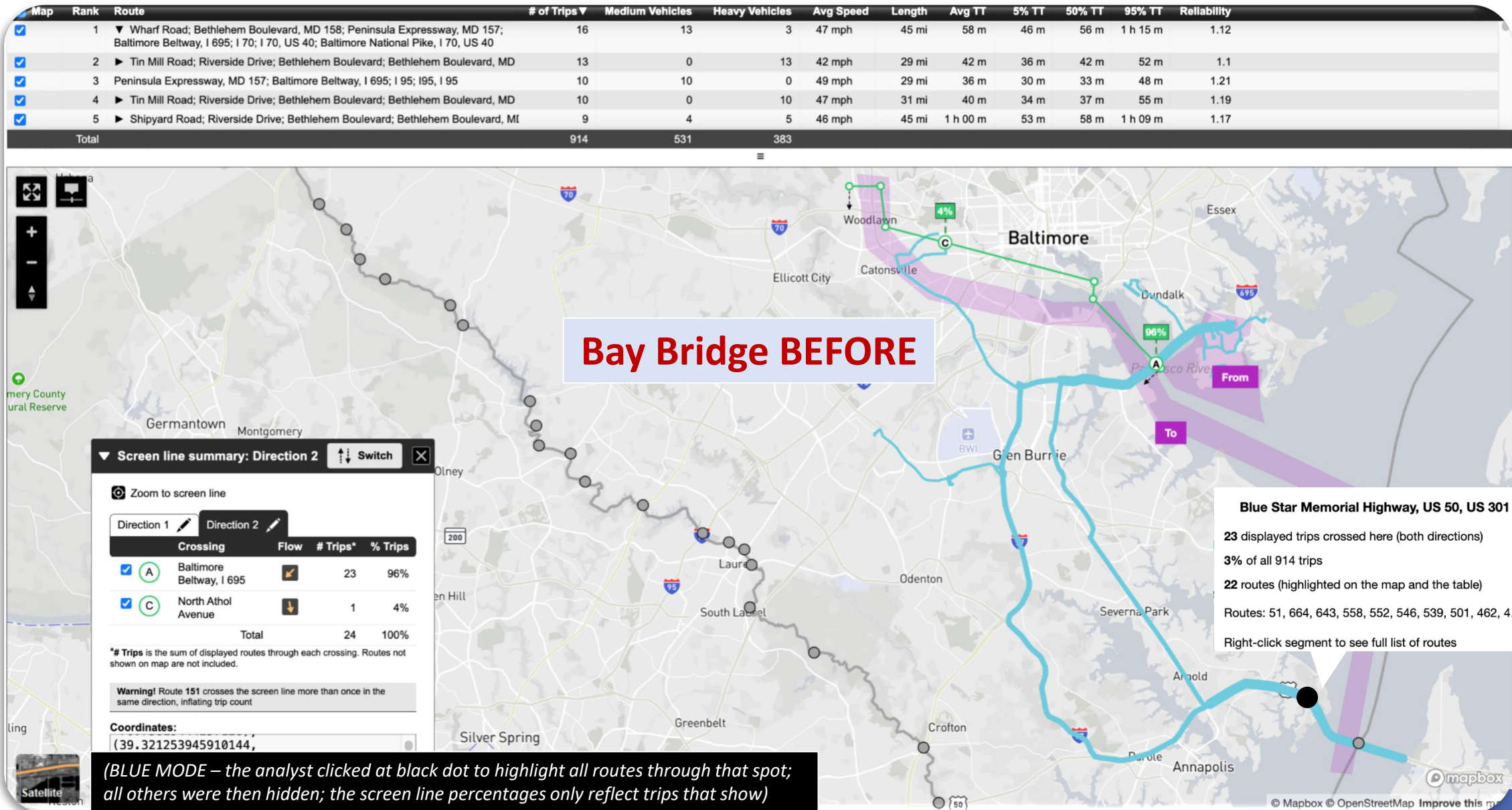


# AFTER: Route Map Isolating I-95 Pathways

Map	Rank	Route	# of Trips	Medium Vehicles	Heavy Vehicles	Avg Speed	Length	Avg TT	5% TT	50% TT	95% TT	Reliability
<input checked="" type="checkbox"/>	1	▼ Tin Mill Road; Riverside Drive; Bethlehem Boulevard; Bethlehem Boulevard, MD 158; Baltimore Beltway, I 695; North Point Boulevard, MD 151; Eastern Avenue, MD 150; I 95; Fort McHenry Tunnel (Bore 1), I 95; I 95	17	0	17	43 mph	34 mi	48 m	42 m	46 m	1 h 02 m	1.12
<input checked="" type="checkbox"/>	2	► Cold Mill Road; Bethlehem Boulevard, MD 158; Baltimore Beltway, I 695; North Point Boulevard, MD 151; Eastern Avenue, MD 150; I 9	7	0	7	41 mph	33 mi	48 m	36 m	45 m	1 h 02 m	1.25
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Total			465	245	220							

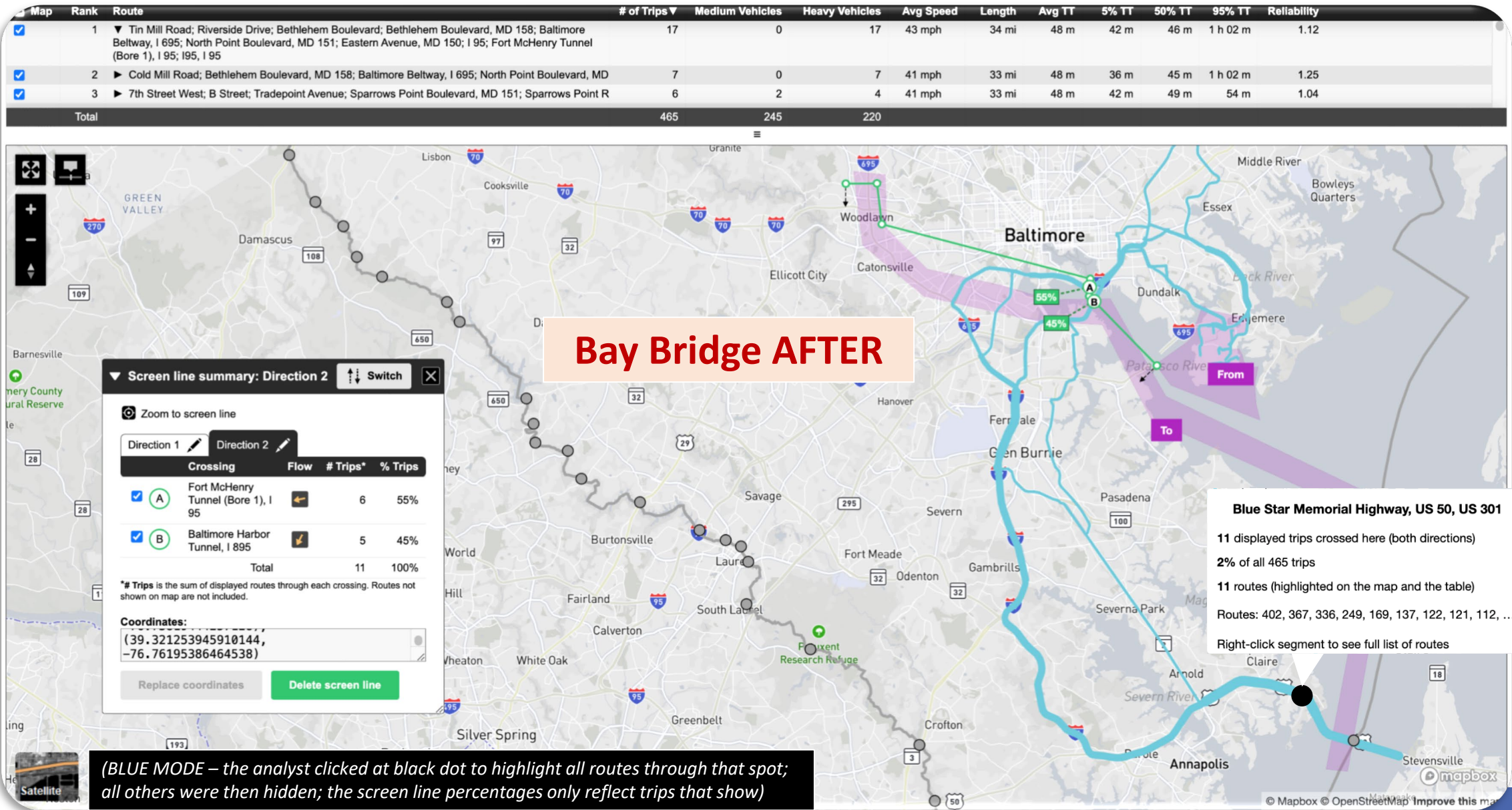


# BEFORE: Route Map Isolating Bay Bridge Pathways



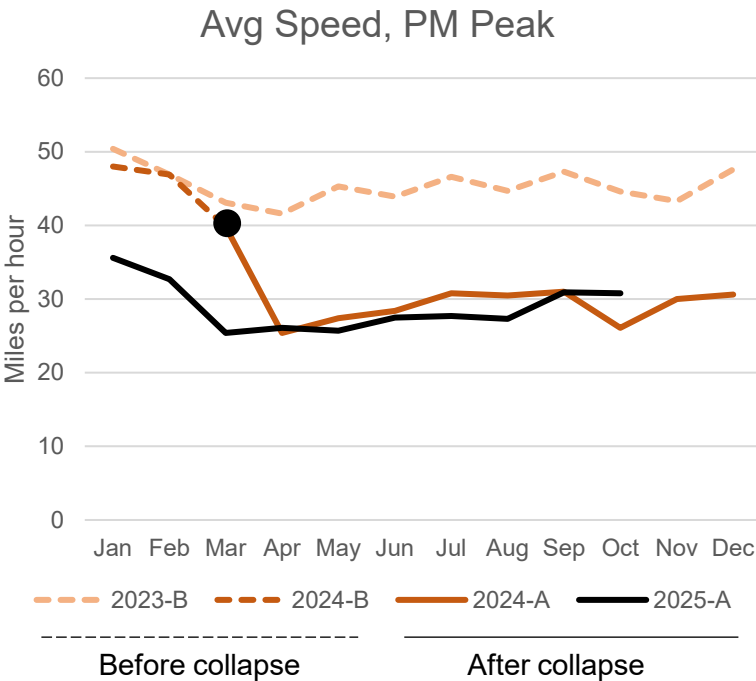
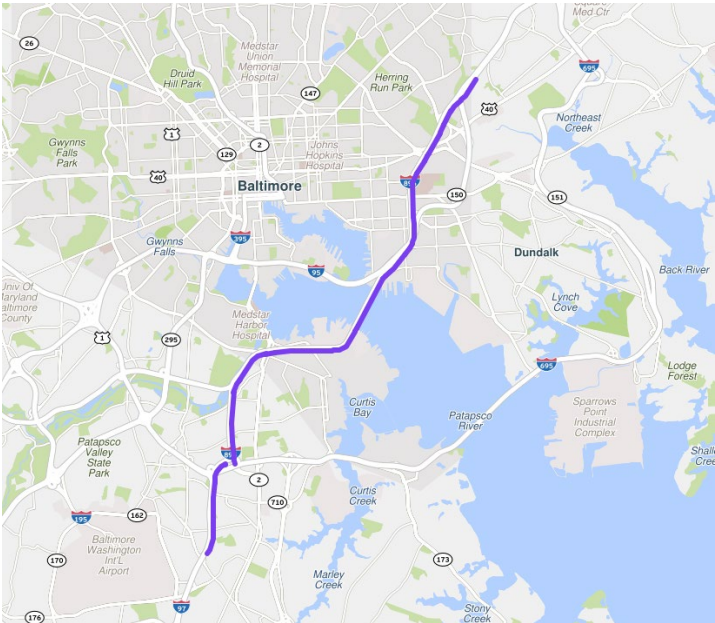


# AFTER: Route Map Isolating Bay Bridge Pathways



# Traffic impacts continue

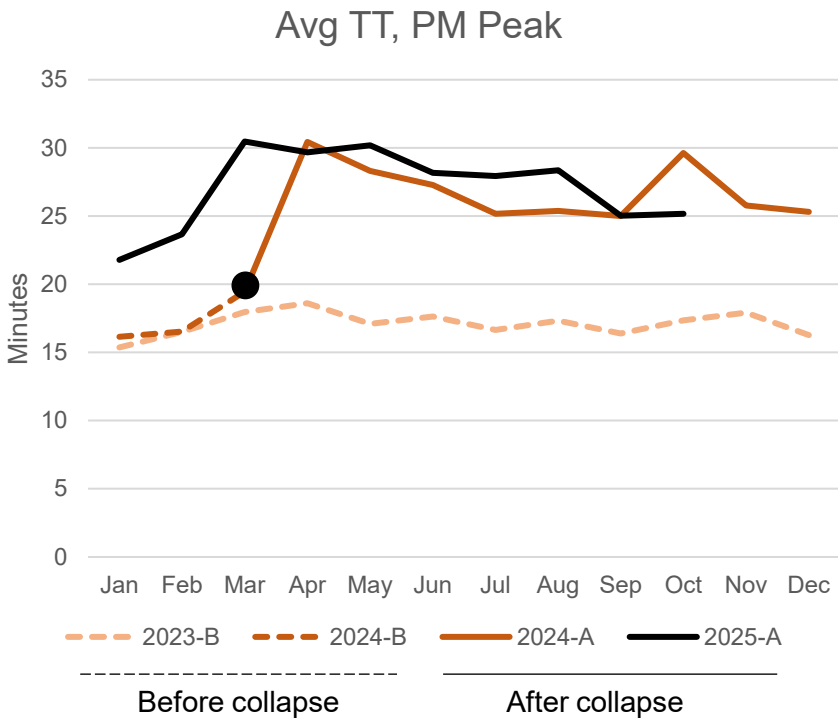
I-895 Northbound  
4PM – 8PM



**45** MPH

**29** MPH

**35** % decrease



**17** minutes

**27** minutes

**55** % increase





# QUESTIONS



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