

Eastbound I-94 @ Metro Parkway

Macomb County

Event Statistics



5

Vehicles
Involved



0

Fatalities



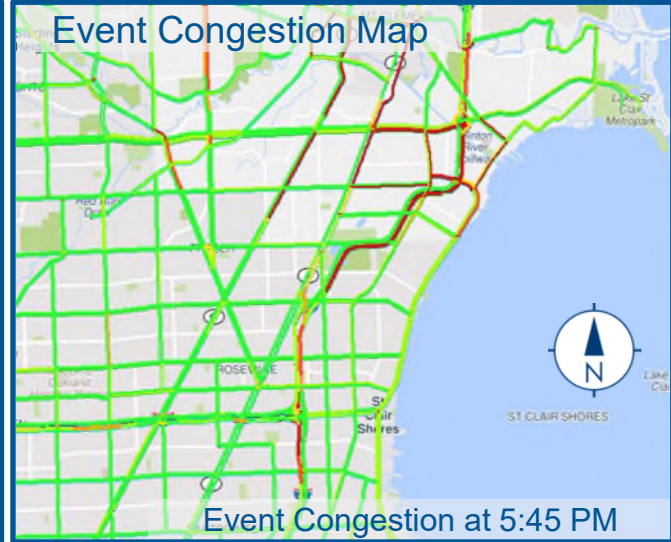
15,662

Twitter
Impressions



\$139k

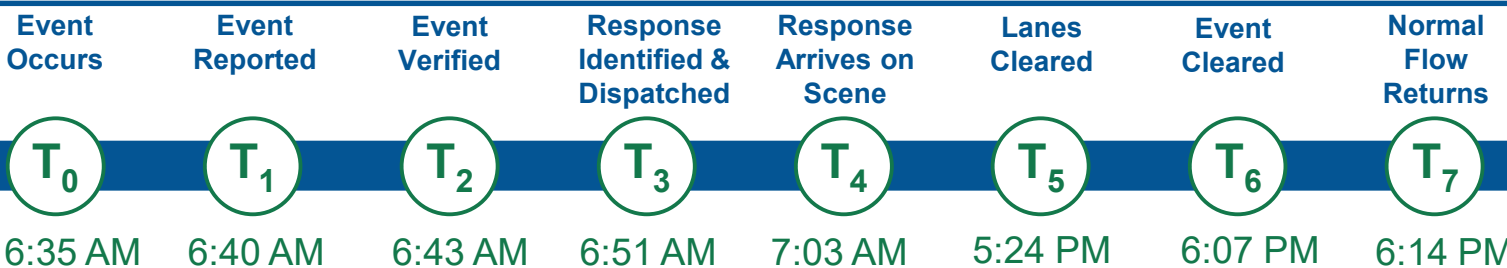
User Delay
Cost



On December 3, 2021 just before 06:40 AM, a gravel train truck traveling eastbound on I-94 near Metro Parkway lost material (later identified as industrial waste) due to a failed tailgate latch. This caused a four-car crash and an extensive cleanup effort at multiple locations. The eastbound traffic was reduced from three lanes down to one lane for 11 hours and 37 minutes causing serious delays and backups on both the freeway and surrounding arterial. During the afternoon hours, queues on the freeway were observed to be approximately five miles long.

At 06:40 AM the four-car crash was reported to Michigan State Police (MSP) 911 and was verified on camera by the Southeast Michigan Transportation Operations Center (SEMTOC). The driver of the gravel train truck pulled off the interstate at North River Road to notify his dispatch of the lost material and subsequently spilled more of the material while trying to secure the tailgate. The trucking company, *State Crushing*, dispatched *Byers Towing* to the spilled area to begin cleanup efforts. At 07:03 AM, MSP arrived on scene; local law enforcement and fire crews arrived just before MSP and managed the crash vehicles. Freeway Courtesy Patrol (FCP) arrived on scene at 07:11 AM to provide traffic control support. At approximately 07:40 AM, the crash cars were cleared from the scene. At approximately 08:35 AM, *Byers Towing* arrived on scene to assess the cleanup and resources needed. The material appeared slippery and was deemed a hazard on the roadway. Due to the unknown properties of the material a more extensive investigation into the substance was initiated. *US ecology* was contacted by *State Crushing*, and it was then reported that the slippery mud-like substance was industrial waste containing latex paint, hydraulic oil, e-coat and dry ash. At approximately 12:00 PM, it was determined the cleanup would require heavy duty power washing, street sweeping with metal bristles and a vacuum truck to remove the slippery substance from the roadway. At approximately 03:45 PM the street sweeper arrived on scene and the cleanup continued through 05:00 PM. At 05:24 PM, all cleanup vehicles were cleared from the lanes, traffic control support was given the clearance to begin opening lanes, FCP staggered the opening of entrance ramps to decrease the bottleneck effect and all lanes were open at 06:07 PM.

Additional cleanup efforts were deployed on Saturday December 4, 2021, to two other locations that appeared to have the same substance on the roadway. It was found that these areas, with considerably less traffic, were much easier to clean up than the initial location. A notable lesson learned, the adhesive substance in the material is activated when driven upon resulting in a more extensive cleanup effort.

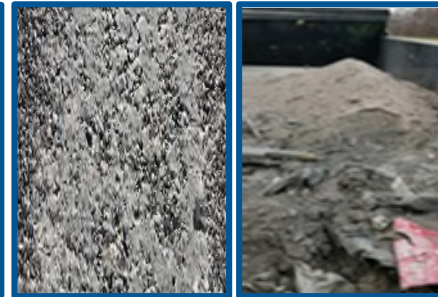


Additional Images & Information



AAR Biggest Challenges Identified: The initial challenge was identifying and understanding what the material was. Once identified as industrial waste with latex paint, hydraulic oil, e-coat and fly ash, it posed another significant challenge to get the substance up after being driven over and compressed into the roadway as this appeared to activate the adhesive nature of this material. Additionally, adequate cleanup equipment resources were not readily available. Forecasted rain later that weekend posed another challenge for the cleanup efforts. A major concern was the environmental impact with close proximity to the Clinton River that feeds into Michigan lakes. Additionally, all SEMTOC FCP resources were on scene and not available for other events.

Team Collaboration: Several agencies worked seamlessly together to resolve this event and reopen lanes as soon as possible. SEMTOC specialists were able to locate this incident scene on camera less than 5 minutes after the initial notification. From there, several resources worked the scene. MDOT incident responders, local and state police, MDOT FCP, and local hazmat/towing companies worked diligently to provide the most efficient cleanup of this difficult material. MDOT incident responders and FCP provided SEMTOC operations staff with pertinent updates and timely details that made this event run as efficiently as possible. SEMTOC posted messages on the dynamic message boards and tweeted the information to inform travelers.



Traffic Signal Coordination: SEMTOC informed Macomb's Communication and Technology Center (COMTEC) of the crash and the traffic implications associated with it from a safety, congestion, and operations standpoint. SEMTOC coordinated with COMTEC on closure points, congestion status, and detour routes and remained in touch with COMTEC throughout the duration of the event. At certain times of the day, especially during the PM peak period, the congestion queue reached over five miles in length along EB I-94. As a result of this congestion, motorists sought alternate routes through the Macomb County arterial network adjacent to I-94. Through consistent collaboration and communication with COMTEC, numerous signal timing changes were performed to various intersections in an effort to alleviate the congestion on EB I-94 and on Macomb County's arterial network.

Lessons Learned and Action Items: We learned a great deal during this After Action Review and relationships among the responders, MDOT, TOC, trucking company and chemical company have been established for future protocols. We now know there are many trucks carrying this type of material through our region to the Port Huron area landfill and there is potential for another event of this nature. If the material is not cleaned properly, the fly ash will harden and could alter the surface of the roadway permanently. While not environmentally hazardous, the material is hazardous to motorist safety and needs to be removed from the roadway quickly. If this were to happen again, a traffic incident management plan will be prepared and implemented for quicker deployment of traffic control support. *US ecology* is looking into distributing a material handling sheet with drivers for easier identification of the material on board.

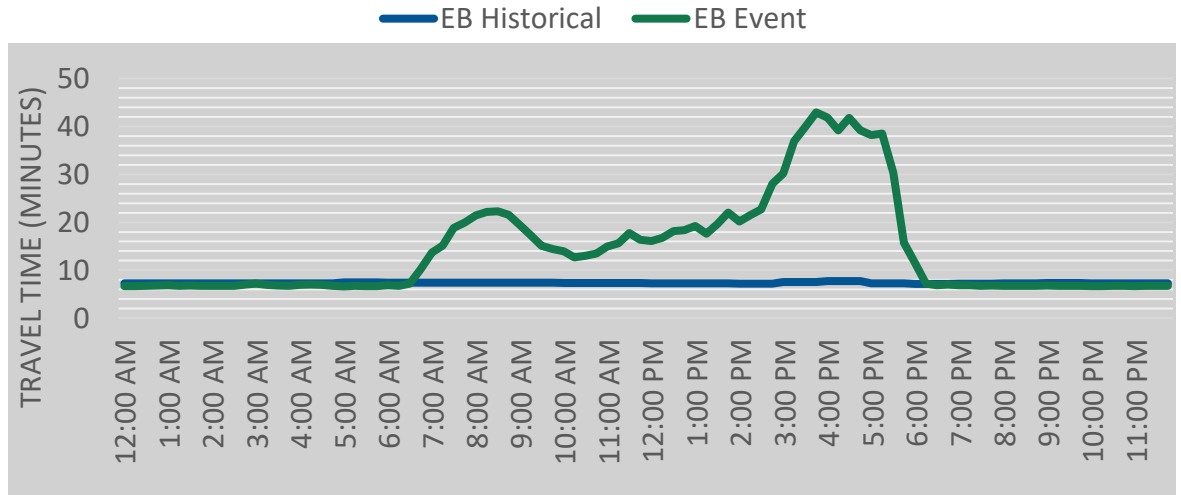
Performance Results



Travel Time

The event started at 6:35 AM causing extensive backups that dramatically increased around 3:45 PM as the cleanup intensified and afternoon rush increased volume in the area. Traffic lanes reopened at 5:24 PM with traffic flow returning to normal at 6:14 PM.

Eastbound



Reliability

During the event, the reliability metrics for eastbound I-94 dramatically changed compared to the weekday average of the two weeks prior to the event.

Travel Time



210%

Change in weekday travel time

Buffer Time



4,583%

Change in weekday buffer time

Planning Time



458%

Change in weekday planning time



Bottlenecks

Bottlenecks are defined where roadway conditions have fallen below 60% of the posted speed for over 5 minutes.

Event Bottleneck Overview

Bottleneck Location: I-94 at Metro Parkway

Max Bottleneck Length (miles)

5.38 mi

Bottleneck Duration (Daily)

11 h 03m



Delay Costs

“Average Weekdays” refer to the 10 previous weekdays (not including the Event Day).

User Delay Cost Detail

Measure	Average Weekdays	Event Day	△ Percent Difference
User Delay Cost (Dollars)	\$6,599	\$139,342	↑ \$132,743 (2,011%)
Hours of Delay (Person-hours)	286.3 h	6,044.2 h	↑ 5,757.9 h (2,011%)
Delay per VMT (minutes/mile)	0.032 min/mi	0.715 min/mi	↑ 0.683 min/mi (2,134%)