National Transportation Safety Board
Office of Highway Safety
Washington, DC 20594

HWY24MH013

SURVIVAL FACTORS

Group Chair's Factual Report

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A. CRASH INFORMATION

Location: Swanton Township, Lucas County, Ohio
Date: August 15, 2024
Time: 5:29 a.m. EDT

B. SURVIVAL FACTORS GROUP

Group Chair: Jason Zeitler
Senior Survival Factors Investigator
NTSB

C. CRASH SUMMARY

For a summary of the crash, refer to the *Crash Information and Summary Report*, which can be found in the NTSB docket for this investigation.

D. DETAILS OF THE INVESTIGATION

The Survival Factors Group investigation focused on vehicles, occupants, and emergency response for the collision. Vehicle examinations focused on the interiors, and survival aspects, such as seats, seatbelts, and airbags. Occupant information, including age, gender, and injury severity were explored. The emergency response investigation focused on agencies involved and their response to the incident. After the initial collision occurred, two subsequent collisions occurred that resulted in a total of four minor injuries, five serious injuries, and two fatal injuries. Interviews of first responders will be explored in this report. Regarding the orientation of the vehicles, "left" refers to the driver's side of the vehicle, while "right" refers to the passenger's side of the vehicle. In total, the collision resulted in two fatalities and three serious injuries.

1.0 Crash Location

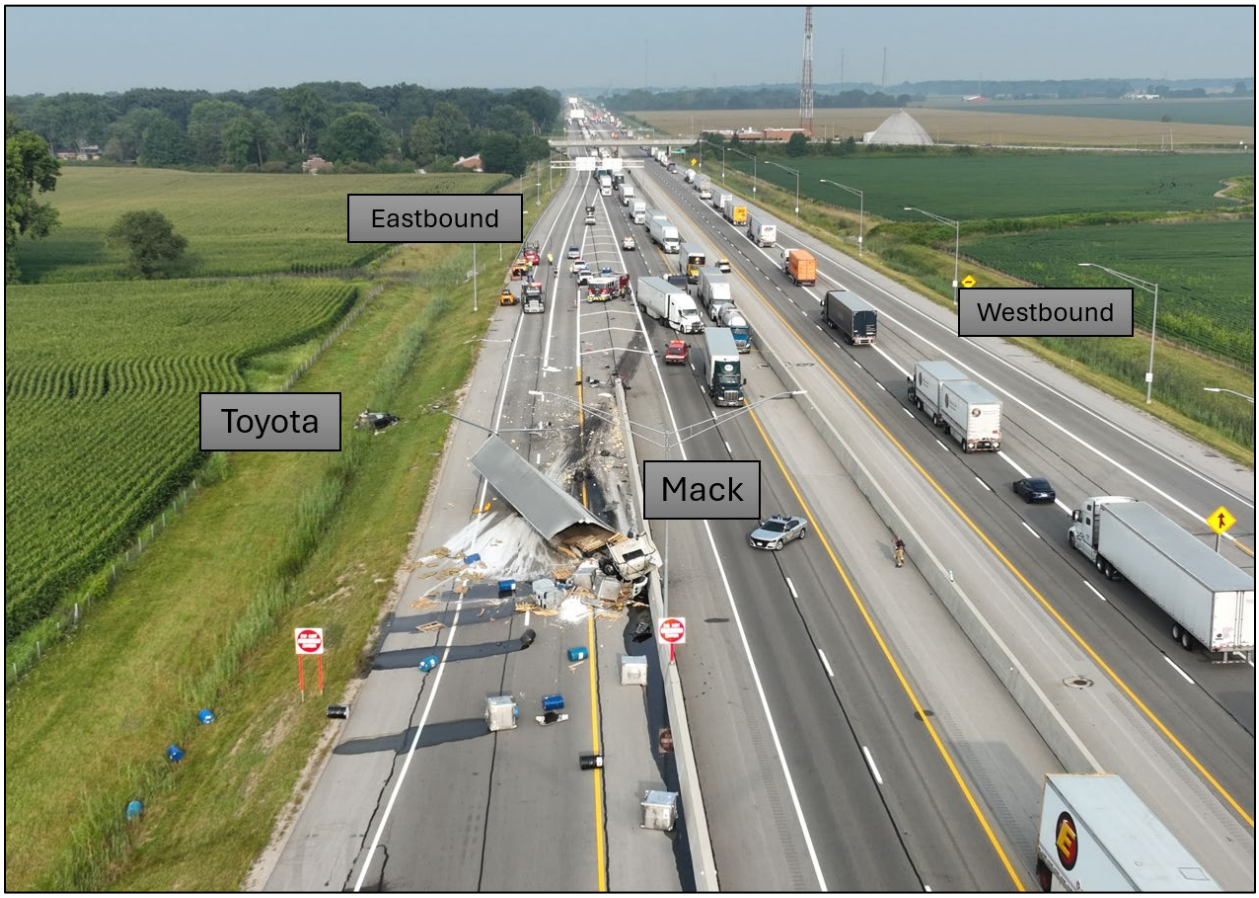

Figure 1. Scene overview looking to the west. (Source: Ohio State Highway Patrol (OSHP) – Annotated by the NTSB)

The crash scene was located in the eastbound lanes of the Ohio Turnpike, near Mile Post 49, in Swanton Township, Ohio, as observed in Figure 1. For further information regarding the scene, please see the Highway Factors Group Chair's Factual Report.

2.0 2019 Mack Anthem

2.1 General

Figure 2. Mack truck-tractor with cab separated.

The subject vehicle was a 2019 Mack Anthem truck-tractor that was in combination with a 2009 Great Dane semitrailer (Mack). The Mack's cab separated from the remainder of the truck-tractor, as observed in Figure 2. The Mack was inspected between August 16 and 19, 2024. During the inspection, a detailed examination of the vehicle's interior and exterior were performed. The driver was the sole occupant of the Mack. The Mack's cargo contained hazardous materials. Please see the Hazardous Materials Group Chair's Factual report for further information.

2.2 Exterior

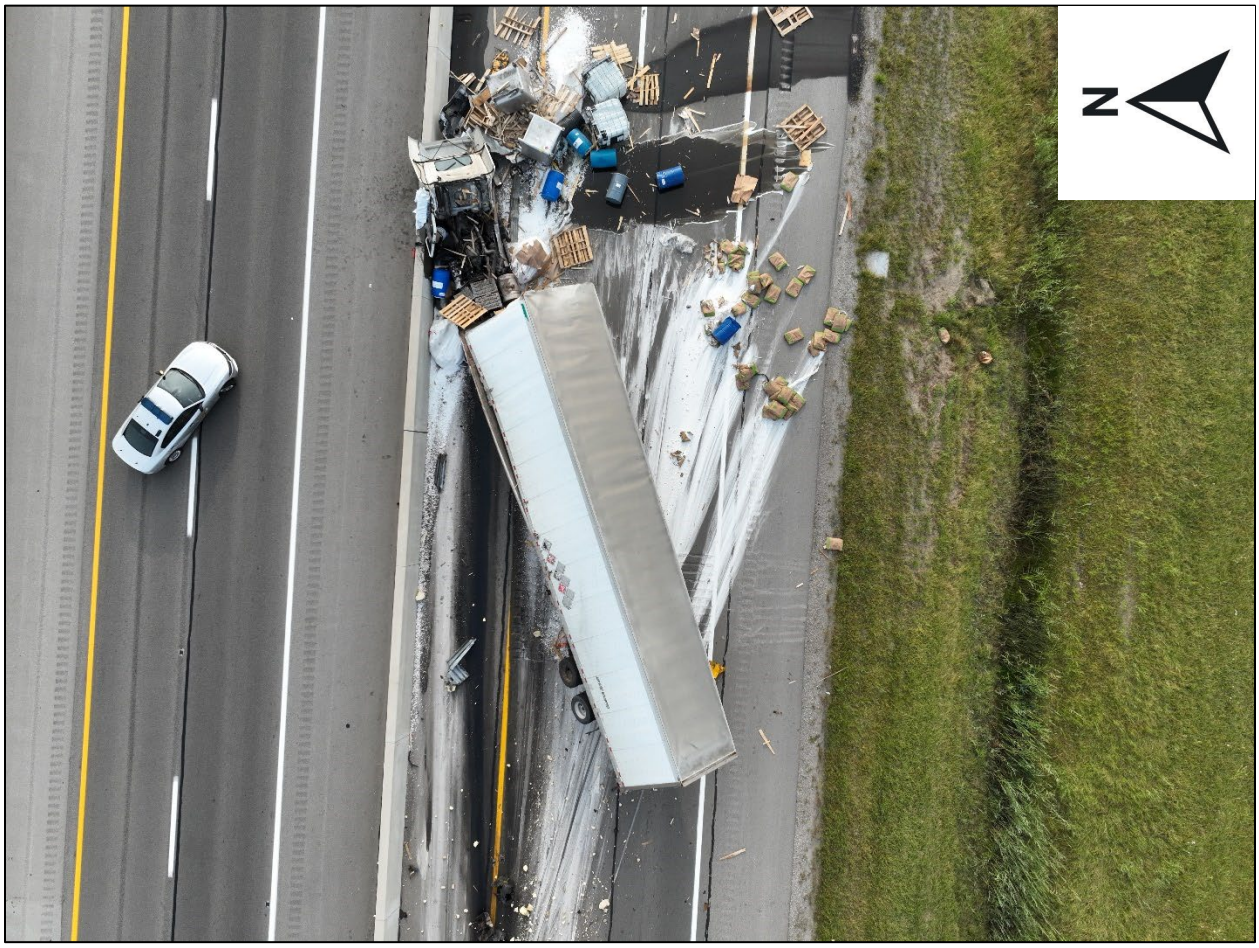

Figure 3. Mack - Final rest position. (Source: OSHP)

The Mack combination vehicle sustained damage to all major components during the crash sequence. At final rest, the Mack's cab can be observed resting on its front-face and engine, as the cab rotated approximately 110 degrees clockwise along its pitch axis, as observed in Figure 3. The left side of the semitrailer's waist-rail was observed to have separated from the sidewall.

Figure 4. Mack - Cab inspection.

The Mack's cab and engine separated from the truck-tractor, as observed in Figure 4. All exterior cab components were damaged, including the wind deflector, windshield, hood, left side-mirror, and doors.

2.3 Interior

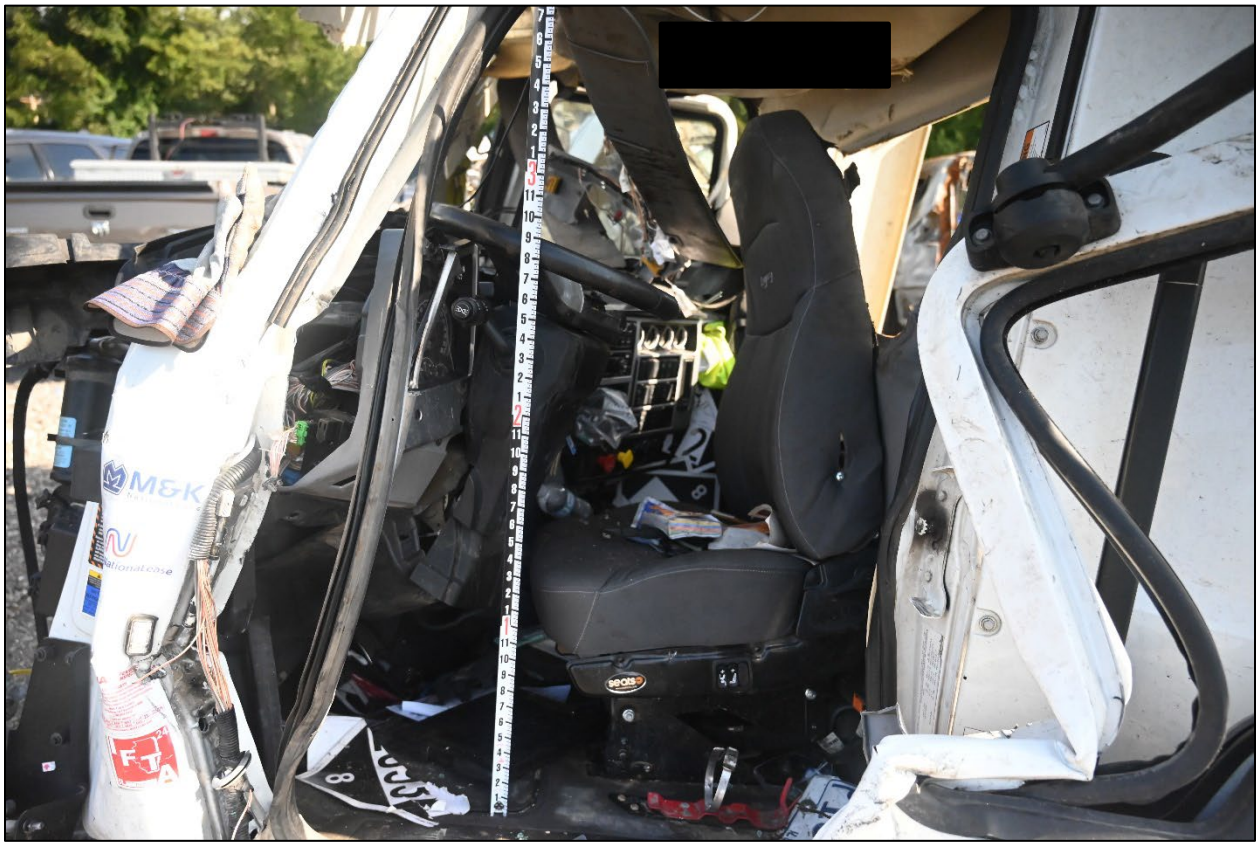

Figure 5. Mack - Occupant compartment.

During the inspection of the Mack's occupant compartment, the seatbelt mechanism, and the interior deformation were examined.

The driver's seat consisted of a Seats Incorporated electronically adjustable (fore, aft, and height) weight-based damping suspension seat. The seatback contained mechanical controls for adjustment. The driver's seat pan and seatback were pushed forward from deformation from the rear of the cab. The driver's seatback was rotated forward about the pitch axis, as observed in Figure 5. The driver's seat pan measured 9.3 degrees from the horizon, with the front of the seat pan being rotated downward (clockwise). The seatback measured 4.2 degrees from vertical, with the seatback being rotated forward (clockwise). The steering wheel was cut during extrication, as observed in Figure 6.

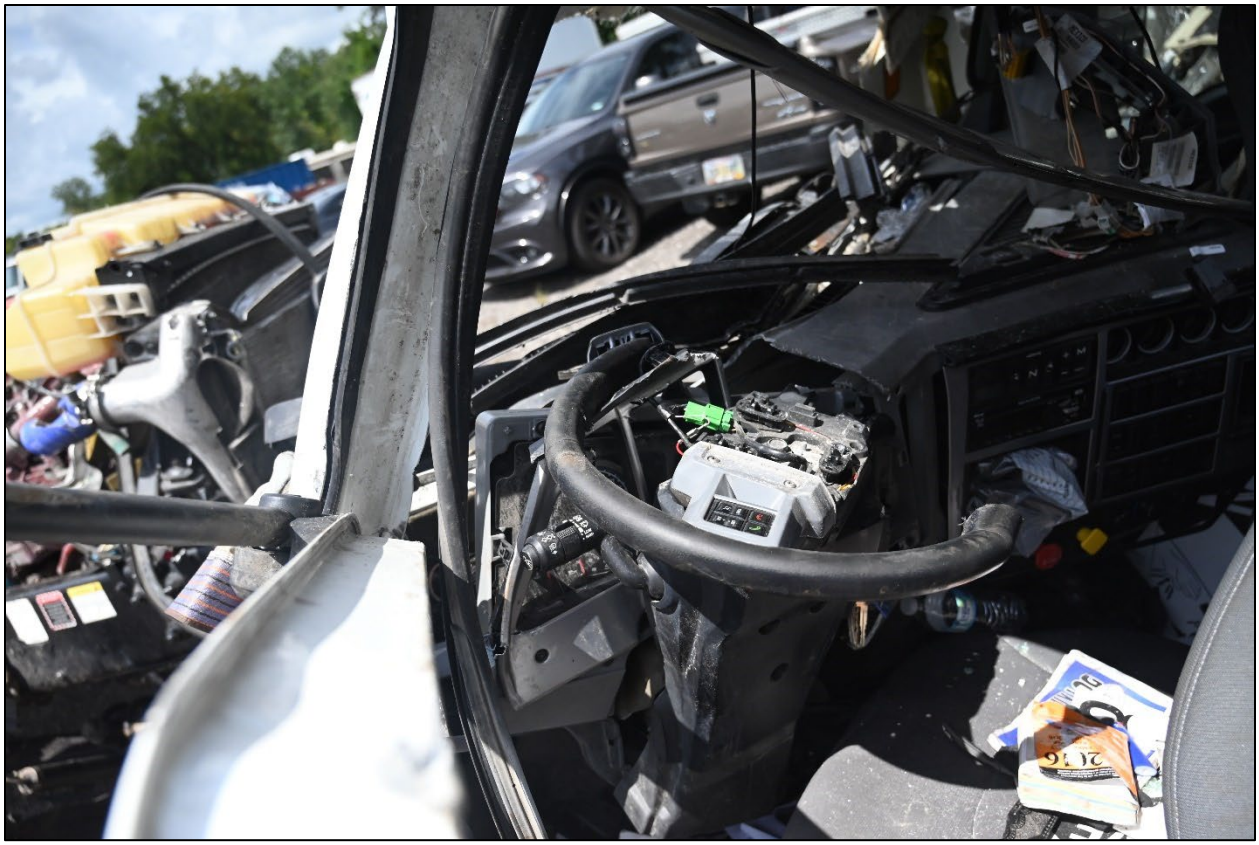

Figure 6. Mack - Steering wheel.

The occupant compartment sustained a loss in survival space. The extents of the front of the footwell to the rear of the interior portion of the cab measured 44 inches, as observed in Figure 7. Reduction in survival space was observed in the longitudinal direction (x-axis) as the rear of the cab was crushed forward, as well as the negative z-direction, as the cab sustained inward roof deformation. At the most intrusive point, the separation between the roof and the floor of the cab measured only 46 inches. The separation between the driver's seat and the steering column measured only 2-3 inches. Lateral deformation (y-axis) was not observed. The driver's visor assembly and ceiling-mounted driver controls were deformed downward into the driver's survivable space. The ceiling-mounted driver controls and ceiling contained evidence of biological fluids.

After the Mack came to a final rest, the driver was pinned in the driver's seat and required assistance from the responding Fire Rescue and Emergency Medical Services (EMS). The responding EMS agencies cut the driver's door and steering wheel to free the trapped driver.

Figure 7. Mack - Occupant compartment reduced.

2.3.1 Seatbelts

Seatbelt mechanisms were examined for damage. The driver's IMMI seatbelt was found in a retracted position and did not possess the ability to be extended. The seatbelt mechanism contained a retractor and did not contain a pyrotechnic pretensioner. The seatbelt webbing was inspected and did not contain fiber stretching or heat transfer. The D-ring was inspected and was free from heat or fiber transfer. The driver stated that he was not wearing his seatbelt during an interview with investigators.

2.3.2 Airbags

The Mack was not equipped with a supplemental inflatable restraint system.

2.4 Occupant Information, Injuries, and Treating Hospital

The Mack was occupied by a 43-year-old male driver. The driver was extricated from the cab of the Mack by EMS personnel and transported to University of Toledo

Medical Center (UTMC) for medical treatment by Medic 91. The driver complained of pain to both legs and right shoulder, abrasions to his right forearm, and a laceration to his chin. The driver was admitted to UTMC on August 15 and discharged more than 48-hours later, on August 17, 2024.

The driver sustained intra-articular lateral left tibial plateau fracture with 2-millimeter depression of the mid-articular surface. The driver's right forearm sustained abrasions and a punctate foreign bodies or debris in the soft tissues of his proximal radius and ulna dorsal soft tissue. The driver's injures were classified as "serious".[1]

[1] The injury levels were evaluated according to Title 49 Code of Federal Regulations (*CFR*) Part 830.2, which defines fatal injury as "any injury which results in death within 30 days of the accident" and serious injury as "any injury which: (1) requires hospitalization for more than 48 hours, commencing within seven days from the date the injury was received; (2) results in a fracture of any bone (except simple fractures of fingers, toes, or nose); (3) causes severe hemorrhages, nerve, or tendon damage; (4) involves any internal organ; or (5) involves second- or third-degree burns, or any burn affecting more than 5 percent of the body surface."

3.0 2015 Toyota Highlander

3.1 General

Figure 8. Toyota - View of rear-left damage.

The subject vehicle was a 2015 Toyota Highlander (Toyota). The Toyota was inspected between August 16 and 19, 2024. During the inspection, a detailed examination of the vehicle's remaining exterior and interior, which included an evaluation of the seatbelt mechanisms, was conducted. The Toyota was equipped with three seating rows, which included eight seating positions; at the time of the crash, the third-row seating was retracted and used to store luggage. The Toyota was occupied by the driver and three passengers during the collision event.

3.2 Exterior

During the collision sequence, the Toyota and the Mack, and the rear-left of the Toyota sustained damage. The rear-left section of the vehicle up to the B-pillar, the roof structure extending to the left B-pillar, and the liftgate sustained damage, which exposed the occupant compartment's second and third rows, allowing for possible ejection portals to exist for the rear occupants of the vehicle. The front-right and rear-right side windows to the Toyota were stil.l intact. The driver's door, left fender, and

hood were dented inward and contained linear scratches of varying directionality. The entire length and width of the windshield was broken and collapsed. The front bumper fascia was disconnected on the right side, exposing the front bumper beam. The right headlight assembly was damaged and missing. The right fender was crushed inward, as observed in Figure 9.

Figure 9. Toyota - View from front-right.

3.3 Interior

The Toyota's trunk sustained exterior damage, which compromised the trunk and third-row seating area. The third-row seating was crushed and compressed forward, resulting in a near-horizontal alignment. Row 2 seating consisted of a bench seating configuration, with capacity to accommodate three occupants.

The driver and front passenger seating positions did not sustain a loss in survival space. The second-row seating area experienced a reduction in occupant survival space, with the seat frames displaced forward, leaving only a few inches of clearance from the rear of the Row 1 seatbacks. The left seat of Row 2 was also crushed and compressed forward, with the seatback measuring approximately 30 degrees from the horizon, as observed in Figure 10. The driver's seat headrest was missing.

Figure 10. Toyota - View of Row 2 from rear.

3.3.1 Seatbelts

The Toyota's seatbelt mechanisms were examined. The driver's three-point lap/shoulder seatbelt was found extended, and did not possess the ability to retract as the pyrotechnic pretensioner deployed locking the seatbelt's position, as observed in Figure 11. The Toyota was equipped with an airbag control module (ACM) that contained event data recording (EDR) capabilities. The ACM was imaged by OSHP. According to the Crash Data Retrieval (CDR) report, the Toyota's ACM recorded that the driver's *Safety Belt Status* was "on" (buckled), but the front passenger's *Safety Belt Status* was "off" (not buckled). The ACM recorded that the driver and front passenger's pyrotechnic pretensioners were commanded to deploy during the collision sequence.

Figure 11. Toyota - Driver's seatbelt.

The front passenger three-point lap/shoulder seatbelt was found retracted and was not able to be extended as the pyrotechnic pretensioner deployed locking the seatbelt's position. There was no webbing fiber stretching or heat transfer observed on the seatbelt mechanisms.

The second-row seatbelts were inspected. The left seating position's seatbelt was entangled in the collision debris. Seatbelt webbing was compromised due to the webbing contacting sharp metal debris. The D-ring was displaced forward and outward of the ejection portal created in this seating location. The seatbelt was unable to extend or retract and no further testing was possible due to damage present on portions of seatbelt mechanism. Row 2's center seating position seatbelt was found retracted and possessed the ability to extend and retract. The inertial wheel was tested and functioned properly. There was no fiber stretching or heat transfer observed. Row 2's right seating position's seatbelt was found caught behind the seat extended and possessed the ability to slowly retract (assistance feeding the seatbelt webbing into the retractor was necessary). The tilt wheel was tested and worked properly. There was no fiber stretching or heat transfer observed.

Figure 12. Toyota - Seatbelt webbing - Row 2-left seating position.

The seatbacks of Row 3 were crushed forward and compressed downward. The center seatbelt of Row 3 was unable to be accessed due to collision related damage. The left seating position of Row 3's seatbelt was located amongst the vehicle debris. The left seatbelt was caught in vehicle debris and damaged. The webbing was found damaged from contact with sharp metal debris. The seatbelt for the right seating position of Row 3 was found pinned in vehicle damage. The seatbelt possessed the ability to extend but not retract due to the collision damage. The tilt wheel was tested and was in working condition. According to the driver's statements, there were no occupants seated in Row 3.

3.3.2 Airbags

The Toyota was equipped with driver and front passenger dual-stage airbags, driver and front passenger seat-mounted side airbags, a driver knee airbag, and left and right side-curtain airbags.[2] The right-side curtain airbags deployed during the

[2] Safety Features in the 2015 Toyota Highlander - Accessed 01/07/2025

subject collision, as observed in Figure 13. It is unknown if the left-side curtain airbag deployed during the collision sequence due to the extensive left-side damage sustained by the Toyota. The Toyota's ACM recorded a deployment command for the side curtain airbag, but did not specify which curtain airbag(s) were commanded to deploy, as observed in Figure 14. The right curtain airbag was cut in Row 1 occupant area.

Figure 13. Toyota - Right curtain airbag deployment.

System Status at Event (1st Prior Event, TRG 5)

Recording Status, Rollover Crash Info.	Complete
Crash Type	Rollover
TRG Count (times)	5
Previous Crash Type	Front/Rear Crash
Time from Pre-Crash TRG (msec)	63
Linked Pre-Crash Page	0
Side Curtain Airbag Deployment, Time to Deploy (msec)	731
Pretensioner Deployment, Time to Fire, Driver (msec)	731
Pretensioner Deployment, Time to Fire, Front Passenger (msec)	731

Figure 14. Toyota - Side curtain airbag deployment command.

3.4 Occupant Information, Injuries, and Treating Hospital

Table 1 shows an injury summary for all Toyota occupants.

Table 1. Toyota - Occupant Injury Summary.

Injuries	Driver	Passengers	Total
None	0	0	0
Minor	0	0	0
Serious	1	1	2
Fatal	0	2	2
Total	1	3	4

The Toyota was occupied by a 58-year-old female driver and three passengers. According to statements provided by the Toyota's driver, there was no passenger seated in the front passenger seat and all three passengers were located in Row 2, as observed in Figure 15.

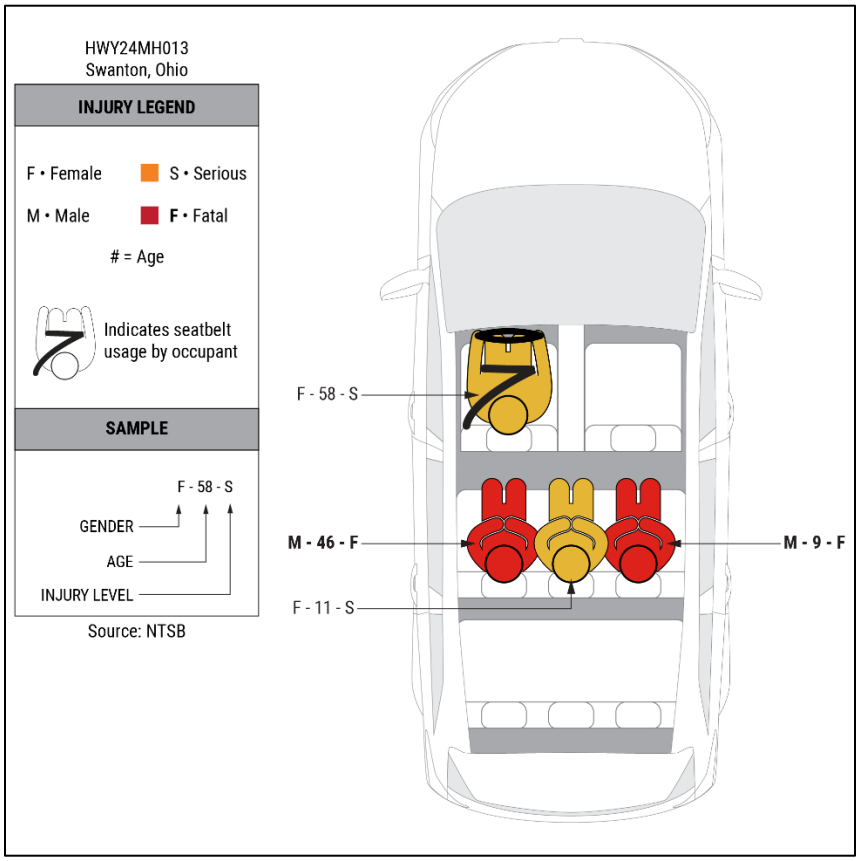

Figure 15. Toyota - Pre-collision seating positions.

3.4.1 Toyota Occupant 1 (T1)

T1 was a 58-year-old female and was seated in the driver's seating position of the Toyota. T1 was wearing a seatbelt according to physical evidence and the collision data recorded by the Toyota's ACM. T1 sustained serious injuries as a result of the

subject collision. T1 sustained a closed displaced comminuted fracture of the shaft of the left humerus and a fracture of the distal end of the left humerus. T1 was admitted to SVMC on 8/15/24 at 7:22 am and discharged on 8/16/24 at 6:46 pm. T1 sustained serious injuries.

3.4.2 Toyota Occupant 2 (T2)

T2 was a 46-year-old male and was seated in the left seating position of Row 2. It is unknown if T2 was wearing his seatbelt due to the extensive crash damage to the left-rear of the vehicle. T2 sustained fatal injuries as a result of the subject collision. T2 was ejected during the collision and came to a final rest in the roadway.

3.4.3 Toyota Occupant 3 (T3)

T3 was a 11-year-old female and was seated in the center seating position of Row 2. T3 was unrestrained and ejected from the vehicle. T3 came to a final rest in the roadway. T3 sustained serious injuries as a result of the subject collision. T3 was transported by LifeFlight and received treatment at SVMC. T3 sustained an open trimalleolar fracture of left ankle as well as a liver and splenic injury. T3 was admitted to SVMC on 8/15/24 at 12:12pm and was discharged on 8/22/24 at 8:10 pm.

3.4.4 Toyota Occupant 4 (T4)

T4 was a 9-year-old male and was seated in the right seating position of Row 2. T4 was unrestrained and ejected from the vehicle. T4 came to a final rest in the roadway. T4 sustained fatal injuries as a result of the subject collision.

3.5 Autopsies

Autopsy examinations were performed on T2 and T4 by the Lucas County Coroner's Office, located in Toledo, Ohio, on August 15 and 16, 2024.

3.5.1 Occupant T2

According to the autopsy report, the 46-year-old male occupant sustained injuries that included a laceration above the left eyebrow; fracture of the cervical spine at C4 with hemorrhage in the surrounding tissues; multiple bilateral rib fractures including the anterior aspect of all the ribs on the right side and most of the ribs on the left.

3.5.2 Occupant T4

According to the autopsy report, the 9-year-old male occupant sustained extensive (blunt force) head injuries.

4.0 Emergency Response

4.1 911 Calls and Notifications

The Lucas County 911 Regional Council of Governments (RCOG) is a consolidated 911 emergency communication center that provides services to 13 fire departments and 18 law enforcement agencies.[3] RCOG provided 14 audio files containing 911 calls related to the subject crash. Of the 14 audio files, one was an Apple crash notification. A synopsis of each call can be observed below:

1.) 8.15.2024_05.31.08_911 Call 1_CT15

Truck crash – Ohio turnpike service plaza at the pay station. Unknown injuries.

2.) 8.15.2024_05.31.25_911 Call 2_CT5

Apple Notification: Latitude 41.5996 Longitude -83.8765; unknown if dispatcher uses the information from the notification.

3.) 8.15.2024_05.32.27_911 Call 3_CT5_CB1

Recording of voicemail. Attempted callback to a phone.

4.) 8.15.2024_05.33.00_911 Call 4_CT5_CB2

Recording of voicemail. Attempted callback to a phone.

5.) 8.15.2024_05.33.25_911 Call 5_CT5_CB3

Recording of voicemail. Attempted callback to a phone.

6.) 8.15.2024_05.33.27_911 Call 6_CT1

Semi crash turnpike eastbound between Lucas and Scott Road, in front of tollbooth.

7.) 8.15.2024_05.34.15_911 Call 7_CT5

[3] Lucas County 911 Regional Council of Governments - Accessed 01/07/2025

Ohio Turnpike MM 49 eastbound – semi crashed into wall.

8.) 8.15.2024_05.35.33_911 Call 8_CT15

Crash on I-80 eastbound by the ticket booth. Child approximately 10 years old, on ground injured with lower extremity injuries. Caller states there is a gentleman also that appears to have passed away.

9.) 8.15.2024_05.37.10_EMD Call E1_CT15_EMD1

EMS transfer from previous caller. States police arrived. One person is dead. Child has a leg/foot injuries. A gentleman with leg injuries, conscious, on the ground.

10.) 8.15.2024_05.38.17_911 Call 9_CT5

Turnpike employee calling to check if crash was reported and if medical was enroute.

10.) 8.15.2024_05.38.47_911 Call 10_CT15

Caller: Lucas County 911 – calling to ensure that dispatch center was aware of crash.

12) 8.15.2024_05.47.25_911 NON-EMERG Call 11_CT3

Caller: Fulton County - calling to ensure that dispatch center was aware of crash.

13.) 8.15.2024_05.49.01_911 Call 12_CT15

Dispatch center calling a 911 hangup caller. Caller was reached and provided details about the crash.

14.) 8.15.2024_05.49.03_911 NON-EMERG Call 11B_CT3

Dispatcher speaks with Fulton County and requests assistance with extrication.

The second call that was received by the RCOG at 5:31:25 am was an Apple Notification. The notification was received by the RCOG approximately 17 seconds after the first 911 call. The notification consisted of the following message: "*The owner of this iPhone was involved in a serious car crash and is not responding to their phone. The emergency location is latitude 41.5996 longitude -83.8765 with an estimated*

search radius of 5 meters. This message will repeat in 5 seconds." The call-taker can be heard saying "hello 911" and then 911 audio file becomes silent during the last 9 seconds of the message. It is unknown if the RCOG used the Apple Notification or not during the response to this incident. Many other 911 calls were received regarding this incident in addition to the Apple Notification.

4.2 Law Enforcement Response

The OSHP was the primary law enforcement agency that responded to the subject collision. OSHP's response times can be observed in Table 2. Several other law enforcement agencies responded to assist with the incident and can be observed in Table 3.[4]

The first 911 notification was received at 5:31 am by the RCOG. OSHP was notified of the collision approximately three minutes later. OSHP units were dispatched within one minute of their notification and were enroute within one minute after being dispatched. The first arriving dispatched agency was OSHP, who arrived approximately six minutes after the first 911 call was received by the RCOG.

Table 2. Emergency Response - Law Enforcement Response Times.

Law Enforcement Response	
Notification of Crash Received	5:34 am
First OSHP Unit Dispatched	5:35 am
First OSHP Unit Enroute	5:36 am
First OSHP Unit to Arrive	5:37 am

According to obtained computer-aided dispatch (CAD) reports for the incident, the following Police agencies aided with the subject collision.

Table 3. Emergency Response - Responding Police Agencies.

Responding Police Agencies
Ohio State Highway Patrol
Holland Police Department
Lucas County Sheriff's Office
Toledo Police Department

The primary roles of the responding law enforcement agencies in the subject collision included identifying and isolating victims and witnesses, providing initial first aid, assisting involved parties to safety, scene security, traffic control, preservation of evidence, conducting a traffic crash investigation and reconstruction, and performing a criminal investigation. Police agencies also assisted with aerial drone support to aid

[4] See Survival Factors Attachment: Fire Rescue, EMS, and Police CADs Report.

with the hazardous materials discovered on scene. See Section 4.4.1 for additional information regarding OSHP's response to this incident.

4.3 Fire Rescue and Emergency Medical Services Response

Several Fire Rescue and EMS agencies responded to the incident. The first agency that arrived on scene was Springfield Township Fire Department (STFD), who was also the primary Fire Rescue and EMS agency. STFD was dispatched within one minute of the initial 911 notification, enroute within three minutes after being dispatched, and arrived approximately 16 minutes after being enroute to the incident.

Table 4. Emergency Response - Fire Rescue & EMS Response Times.

Fire Rescue & EMS Response	
First 911 Call Received	5:31 am
First Agency Dispatched	5:32 am
First Agency Enroute	5:35 am
First Agency to Arrive	5:51 am

According to CADs report for the incident, the following Fire Rescue and EMS agencies aided with the response to the subject collision.

Table 5. Emergency Response - Responding Fire/EMS Agencies.

Responding Fire/EMS Agencies
Springfield Township Fire Department
Monclova Township Fire Department
Providence Township Fire & Rescue Department
Richfield Township Fire Department
Toledo Fire & Rescue Department

The primary responsibilities of the responding fire rescue and EMS agencies included providing first aid, triaging of patients, transporting injured patients to the hospital, and extricating the pinned Mack driver from the vehicle. See Section 4.4.2 for additional information regarding the fire rescue and EMS response to this incident.

4.3.1 Initial notification

First responders were dispatched to a crash involving a "semi" and possibly two passenger vehicles, in the eastbound lanes of the turnpike. Multiple callers stated that at least one occupant was deceased, and one occupant had a lower extremity injury.

4.3.2 Hazardous Materials

Please see the Hazardous Materials Group Chair's Factual report for further information.

4.4 Interviews – First Responders

4.4.1 Ohio State Highway Patrol

An interview was conducted with OSHP's Incident Commander (IC).[5] The IC has nearly 26 years of law enforcement experience and has held his current rank of Staff Lieutenant for approximately two and a half years. The IC typically oversees four sergeants and approximately 14 troopers, who have a five-day work week. When communicating on the radio, the units assigned to the Ohio Turnpike utilized a common radio frequency and used codes to effectively converse. OSHP has its own dispatch center and possesses the ability to patch radio channels with neighboring districts and agencies when dealing with large-scale incidents.

OSHP initially became aware of the subject crash after Lucas County 911 RCOG received 911 notifications regarding a vehicle collision near the toll plaza. The IC became aware of the subject crash after viewing an alert on his phone regarding a serious collision located on the turnpike approximately 20 minutes after the crash occurred. Prior to the IC receiving notification of the crash, the crash was commanded by two sergeants. The sergeants briefed the IC, and the IC took command of the law enforcement response.

Initially, two sergeants and four troopers responded to the crash scene. Arriving personnel initially encountered two deceased occupants, and a distressed female and child. Toledo Police Department (TPD) and the Holland Police Department (HPD) provided traffic control. Eastbound lanes were closed to allow for first responders to travel westbound in the eastbound lanes to the crash scene. As the IC arrived on scene, a 150-foot radius containment zone had already been established by fire rescue and EMS first responders in response to the released hazardous materials.

Prior to the hazmat containment zone being established, two sergeants, three troopers, and a motor carrier enforcement unit became exposed to the hazardous materials. The units were transported to local area hospitals to be decontaminated and were released on the same day. While six OSHP employees were transported for decontamination, no actual injuries were sustained by any member of OSHP during the response and investigation of the subject crash. The discovery of the hazardous materials complicated the investigation as it required the responding troopers to

[5] See Survival Factors Attachment: Interview of First Responders

temporarily suspend their investigation until safeguards to protect responders were in place. OSHP assisted fire rescue and EMS agencies with unmanned aircraft systems (UAS) to help identify the spilled materials from a safe distance. The UAS was outfitted with special test strips to help identify hazardous materials to prevent the need for human intervention in the contaminated area.

4.4.2 Springfield Township Fire Department and Toledo Fire & Rescue Department

An interview was conducted with STFD's IC. The IC held the rank of Battalion Chief (BC). Also present during the interview was STFD's Chief, Assistant Chief, and Toledo Fire & Rescue Department's (TFRD) Deputy Chief. The IC had approximately 25 years of fire rescue and EMS experience beginning his career as a volunteer. Throughout his career, he was a full-time paramedic and was promoted to lieutenant, captain, and BC. STFD is comprised of approximately 80 employees, whom are either full-time or part-time. The IC was assigned to Station 51 and oversaw approximately 12 employees from Stations 51, 52, 53, and 56. The full-time employees are assigned to a 24-hour workday which is followed by a 72-hour off period. STFD utilizes Lucas County 911 RCOG dispatch center and uses plain English when communicating on their radio network. The Lucas County 911 RCOG is shared with approximately 13 other fire rescue and EMS agencies. STFD commonly responds with neighboring agencies to large-scale incidents and does have the ability to patch radio channels with these departments, as well as many police agencies.

STFD and the IC initially became aware of the subject crash after Lucas County 911 RCOG received 911 notifications and were dispatched to an "injury accident on the turnpike." Initially, the IC, an engine and two paramedics from Station 56 and a medic unit with three paramedics from Station 53 were sent to the crash. As more details pertaining to the severity of the collision were received, two additional medic units were commanded to respond to the scene and an air ambulance was placed on standby. As the IC arrived at the crash scene, he recalled that OSHP and the Ohio Department of Transportation (ODOT) had already arrived. During a scene size-up, the IC observed that the Mack driver, who was conscious and alert, was pinned by his legs in the overturned truck-tractor. The IC stated that he saw "containers" on the scene but initially did not know what they were and continued to search for patients in need of medical attention. The IC located a deceased child, a deceased male, an injured child, and the Toyota driver. All Toyota occupants were ejected from the vehicle, except for the driver. At this time, the air ambulance was requested to respond to the scene to aid with the injured occupants. At the same time, the responding engine began extrication efforts to free the pinned Mack driver.

While units were performing extrication efforts, the Mack driver stated that he was transporting sulfuric acid. The IC stated that this was the first moment that first

responders were aware that the crash involved hazardous materials. The IC located the material safety data sheet (MSDS) inside the cab of the Mack.[6] As the IC further assessed the scene, he observed that some of the containers containing the hazardous materials had leaked. At this time, TFRD was requested and responded to aid with the leaking hazardous materials. The IC informed the law enforcement officers, who were present near the chemicals, to vacate the area. The Environmental Protection Agency (EPA) was notified and requested. The air ambulance arrived and transported the surviving female child to St. Vincent Medical Center (SVMC). The other two surviving occupants of the collision were transported to local area hospitals. As resources were no longer needed at the subject crash, they were redirected to two additional collisions that occurred nearby.
The crash was not declared a mass-casualty incident due to a lack of patients involved in the subject crash.

4.4.2.1 Post-Collision Notable Procedural and Infrastructure Modifications

During the interview with STFD, it was learned that STFD did not have a direct access entrance point onto the turnpike roadway. STFD routinely responds to medical calls for service on the turnpike. Despite this, STFD must utilize local roads to access the nearest publicly available onramp. STFD stated that they have requested an access point be built for Station 53 in the past, but the stated that the Ohio Turnpike and Infrastructure Commission previously refused. Figure 16 shows STFD Station 53 response in the top graphic, compared to the streamlined proposed response in the bottom graphic. NTSB Investigators followed up with the Ohio Turnpike and Infrastructure Commission regarding the proposed access point. On February 13, 2025, the stated "*We have specifically looked at access at Holloway Road. There is property between Holloway Road and the turnpike which is owned by Lucas County. We are setting up a meeting with the fire department and the county to see how we can get a permanent easement to use the property off their wastewater treatment plant drive. Once we get that ironed out, we can proceed with construction of an access point.*"

[6] A material safety data sheet is a document that provides information about the safe use of a chemical or product.

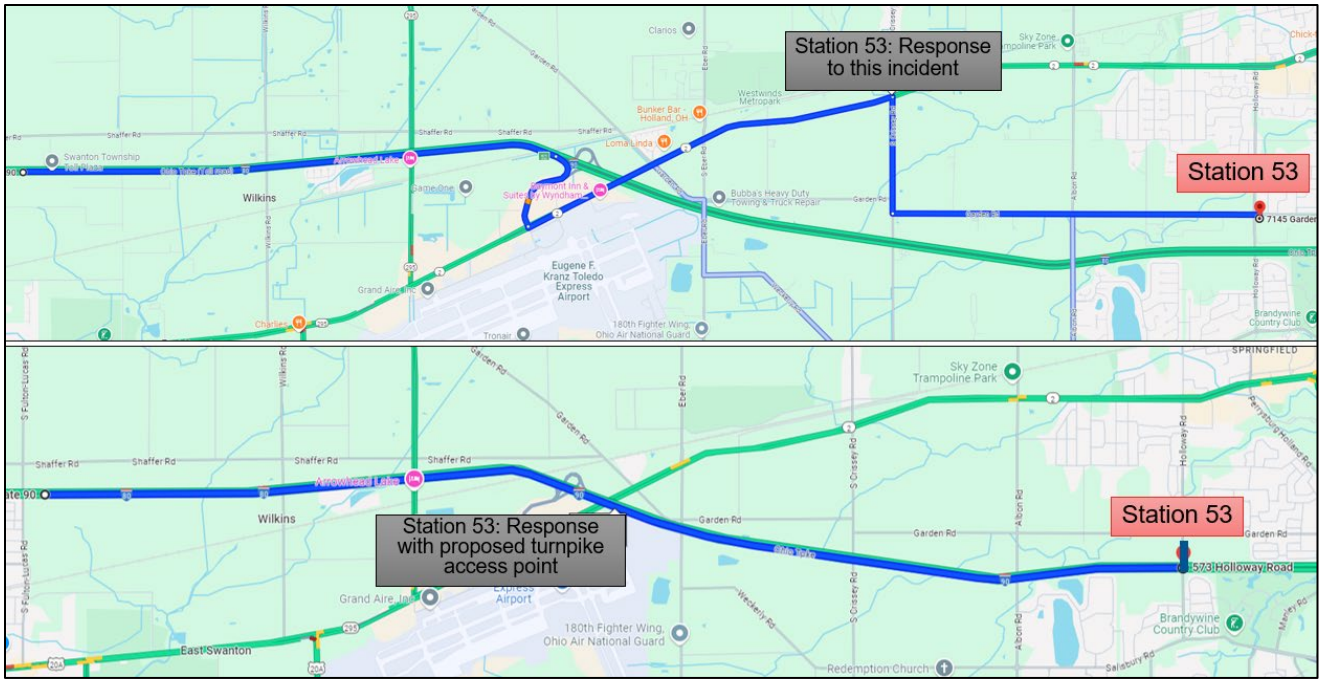

Figure 16. STFD - Turnpike response currently (top graphic) and proposed (bottom graphic).

During the interview with TFRD, it was learned that despite providing mutual aid to STFD for turnpike medical calls for service, none of the agency's emergency vehicles were provided turnpike toll transponders to gain access to the turnpike roadways. TFRD further stated, that on prior medical calls for service, while enroute with lights and sirens activated, they were refused access to the turnpike to provide medical attention to potentially injured patients. Only after a TFRD employee paid the tolls with personal funds, was the agency granted access to the turnpike to provide medical attention to the patients, which delayed the response of TFRD to render aid.

NTSB Investigators contacted local Fire Rescue and EMS agencies to determine where additional transponders would be needed. Five agencies requested a total of 48 non-revenue turnpike transponders, as observed in Table 6. This information was provided to the Ohio Turnpike Commission, who have distributed all transponders to the requesting agencies.

Table 6. Transponders Requested by Nearby Agencies.

Neighboring Fire/EMS Agencies - Transponder Requested
Sylvania Township Fire Department -10 transponders requested
Whitehouse Fire Department – 3 transponders requested
Waterville Fire Department – 3 transponders requested
Richfield Twp. Fire Dept – 2 transponders requested
Toledo Fire & Rescue Department- 30 transponders requested

Following the incident, the STFD proactively conducted Scene Size Up Review training between August 19-22, 2024. The training topic of Hands-On Spill Response Hazmat Review is scheduled to be completed between May 12-15, 2025.

4.5 Hospitals

Three injured parties were transported to two local hospitals from the collision scene, UTMC and SVMC, as observed in Figure 17. SVMC was a Level 1 trauma center and was located approximately 23 driving miles from the collision scene. UTMC was a Level 2 trauma center and was located approximately 16 driving miles from the collision scene.

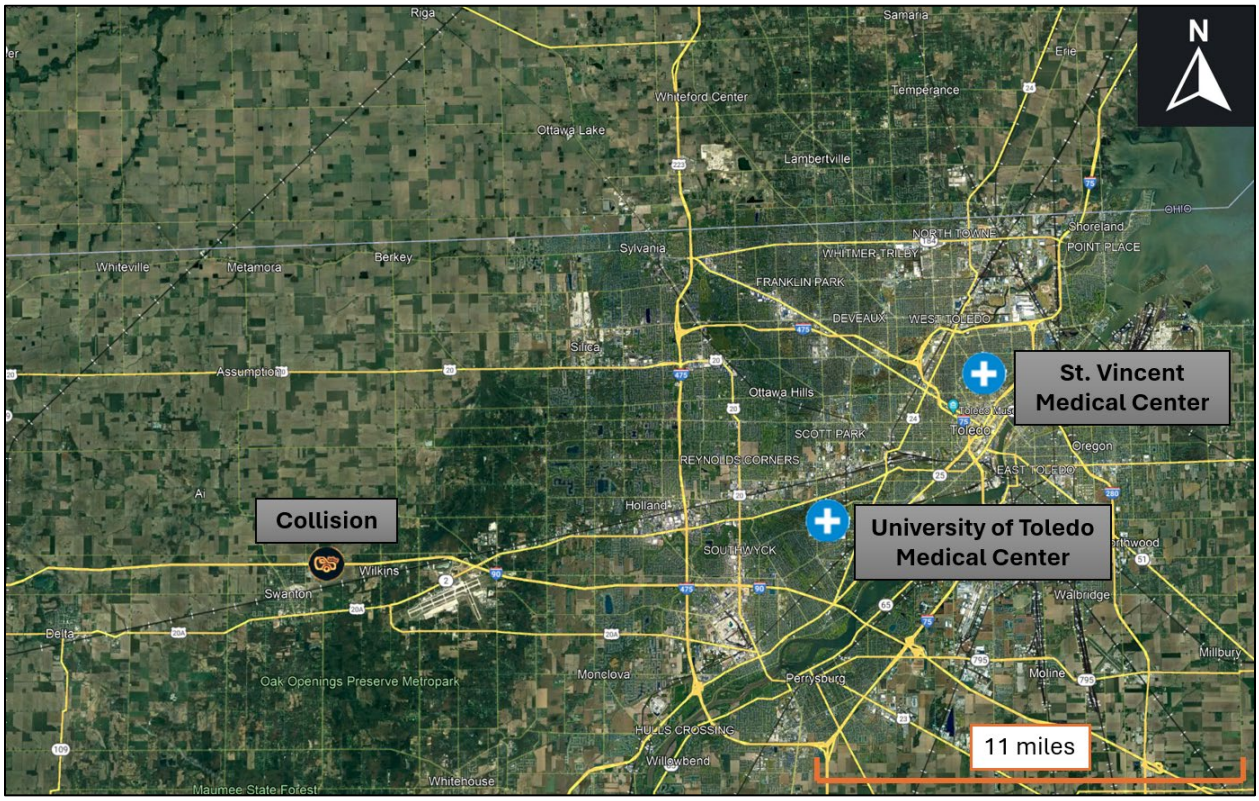

Figure 17. Emergency response hospital overview. (Source: Google Earth – Annotated by the NTSB)

5.0 Subsequent Collisions

Two separate collisions resulted after the initial subject crash that was outlined in this report occurred.

5.1 Collision Two – OSHP 89-0326-26

According to OSHP's Traffic Crash Report, the second collision occurred at approximately 5:54 am and involved six units (vehicles). Please see the Vehicle Factors Group Chair's Factual report for further information regarding the vehicles.

According to OSHP's Traffic Crash Report, the following injuries were sustained by the occupants involved in Collision Two:

1. 2022 Volvo
    a. Driver: Fatal injury
2. 2016 Volvo
    a. Driver: No injuries
3. 2024 Peterbilt
    a. Driver: Possible injuries
4. 2018 Freightliner
    a. Driver: No injuries
5. 2024 Freightliner
    a. Driver: No injuries
6. 2016 Nissan
    a. Driver: Suspected serious injuries
    b. Passenger 1: Suspected serious injuries
    c. Passenger 2: Suspected serious injuries

Table 7. Collision Two – Injury Summary Per OSHP.

Injuries	Driver	Passengers	Total
None	3	0	3
Possible	1	0	1
Minor	0	0	0
Serious	1	2	3
Fatal	1	0	1
Total	6	2	8

5.2 Collision Three – OSHP 89-0327-48

According to OSHP's Traffic Crash Report, the second collision occurred at approximately 6:24 am and involved five units (vehicles). Please see the Vehicle Factors Group Chair's Factual report for further information regarding the vehicles.

According to OSHP's Traffic Crash Report, the following injuries were sustained by the occupants involved in Collision Three:

1. 2024 Volvo
    a. Driver: No apparent injury
2. 2021 RAM
    a. Driver: Suspected minor injuries
3. 2023 Honda
    a. Driver: Suspected serious injuries
    b. Passenger 1: Suspected minor injuries
    c. Passenger 2: Suspected serious injuries
    d. Passenger 3: Fatal injuries
4. 2015 GMC
    a. Driver: Suspected minor injuries
    b. Passenger 1: Suspected minor injuries
5. 2017 Volvo
    a. Driver: Possible injury

Table 8. Collision Three – Injury Summar Per OSHP.

Injuries	Driver	Passengers	Total
None	1	0	1
Possible	1	0	1
Minor	2	2	4
Serious	1	1	2
Fatal	0	1	1
Total	5	4	9

E. DOCKET MATERIAL

The following attachments are included in the docket for this investigation:

List of Attachments:

Survival Factors Attachment-	Fire Rescue, EMS, and Police CADs Report
Survival Factors Attachment-	Interview of First Responders

Submitted by:

Jason Zeitler
Senior Survival Factors Investigator