

# National Transportation Safety Board

Office of Highway Safety

Washington, DC 20594



HWY23MH015

## **HIGHWAY FACTORS**

Group Chair's Factual Report

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## **A. CRASH INFORMATION**

Location: Highland, Madison County, Illinois  
Date: July 12, 2023  
Time: 1:48 a.m. CDT

## **B. HIGHWAY FACTORS GROUP**

Group Chair Dan Walsh, P.E.  
Senior Highway Factors Investigator  
NTSB

Group Member Joseph Monroe, P.E.  
District 8 Engineer of Operations  
Illinois Department of Transportation

## **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 Highway Factors Group Chair's Factual Report begins with a discussion on roadway data that includes the crash location, construction history, average daily traffic volumes, traffic crash summary, speed limit, typical section, horizontal and vertical alignment, signage prior to the crash, highway markings, rumble strips, and highway lighting. The report documents the issues associated with truck parking on the shoulder of the exit ramp<sup>1</sup> at the crash location. The report summarizes research in which the NTSB has a history of investigating truck parking areas. In addition, research was performed on truck parking shortages as a national concern and the results from a survey of truck parking in Illinois. Finally, the report concludes with a discussion of the clear zone concept.

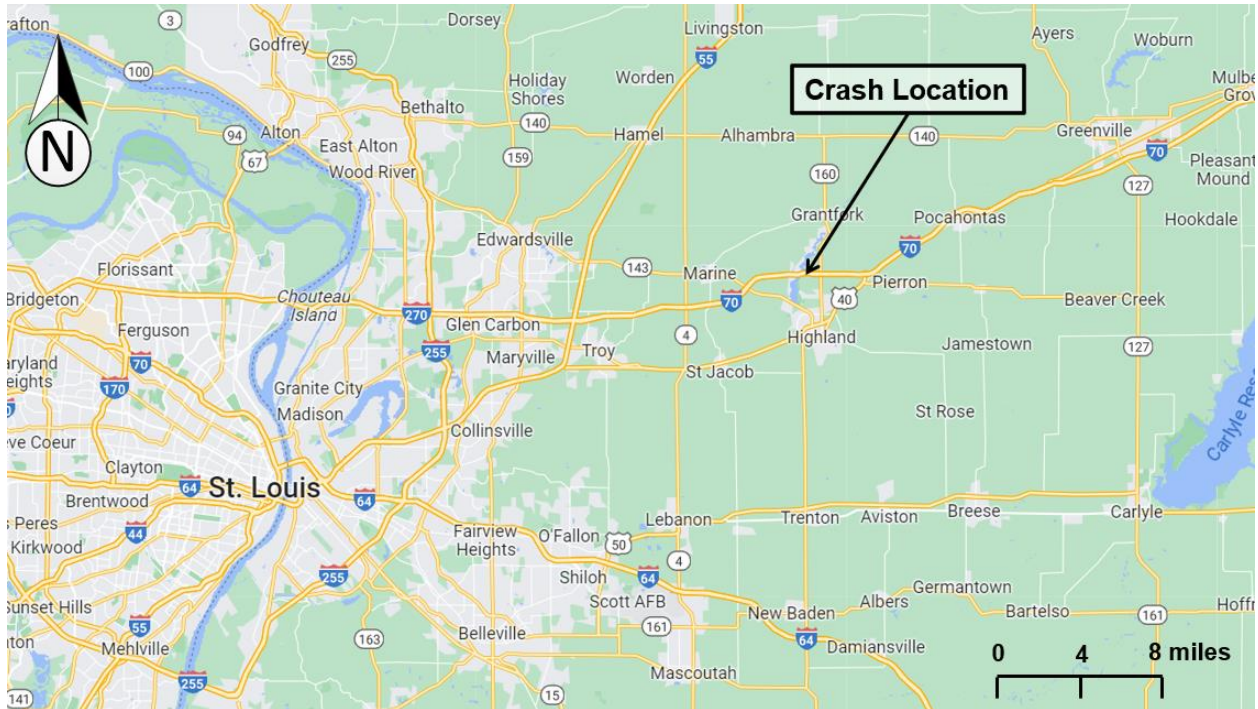
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<sup>1</sup> Throughout this report the exit ramp refers to the exit from Interstate 70 (I-70) and the entrance to the Silver Lake rest stop. The entrance ramp refers to the entrance to Interstate 70 (I-70) and the exit from the Silver Lake rest stop. Similar nomenclature can be used for the exit and entrance ramps at other locations.

## E. ROADWAY DATA

### 1.0 Crash Location

The crash occurred on Interstate 70 (I-70) at milepost 27.4 in the westbound direction on a paved shoulder of the Silver Lake rest stop exit ramp near Highland, Madison County, Illinois. **Figure 1** is a crash map that illustrates the crash location was approximately 30 miles northeast of St. Louis, Missouri.



**Figure 1:** Crash map. (Source: Google Maps revised)

### 2.0 Construction History

#### 2.1 Interstate 70

Interstate 70 (I-70) was constructed in 1962 as four-lane divided highway, two-lanes in each direction, separated by a depressed earthen median.<sup>2</sup> The pavement thickness consisted of an approximate 8-inch reinforced concrete surface over a 4-inch stabilized sub-base. The latest resurfacing project was completed in 2016 that removed and replaced an approximate 5-inch hot mix asphalt surface to the travel lanes. Additional resurfacing projects occurred in 1988 and 1999.

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<sup>2</sup> See Highway Factors Attachment - Construction plans for I-70 completed in 1962 in the vicinity of the crash.

## 2.2 Silver Lake Rest Stop

Illinois Department of Transportation (IDOT) grading and paving contracts show the Silver Lake rest stop areas in the eastbound and westbound directions of I-70 were built in 1973.<sup>3</sup> According to the contracts, the landscaping<sup>4</sup> and lighting<sup>5</sup> for the rest stop areas were completed in 1984 with the rest stop building constructed in 1986. The rest stop building underwent repairs from 1998 through 2016 with upgrades to the water heaters, relocation of sewage pipes, and replacement of the ceiling. The latest resurfacing project to the rest stop parking lots, including the exit and entrance ramps, was completed in 2016.

The pavement thickness of the exit and entrance ramps to and from the rest stops, when originally constructed in 1973, consisted of an approximate 8-inch reinforced concrete surface over a 4-inch stabilized sub-base. As part of the 1973 original project, the rest stop parking lot was constructed using an approximate 8-inch reinforced concrete surface. The latest resurfacing project, completed in 2016, removed and replaced an approximate 4-inch hot mix asphalt surface on the ramps and placed an approximate 4-inch hot mix asphalt surface in the parking area.<sup>6</sup>

In 2016, the parking lot at the westbound Silver Lake rest stop was restriped to comply with the Americans with Disabilities Act (ADA).<sup>7</sup> Prior to restriping, the number of truck parking spaces and passenger car parking spaces at the westbound Silver Lake rest stop was 23 spaces and 44 spaces, respectively. After the restriping, the number of truck parking spaces was reduced to 21 spaces, including one truck handicap parking space. The number of passenger car parking spaces was reduced to 43 spaces, including four passenger car handicap parking spaces. No additional truck or passenger car parking spaces have been added to the westbound Silver Lake rest stop since the original construction in 1973.

**Figure 2** is an aerial view of what the westbound Silver Lake rest stop looked like after the crash. The areas highlighted in red identify the truck parking spaces, including the truck handicap parking space. The areas highlighted in blue identify the passenger car parking spaces, including the passenger car handicap parking spaces.

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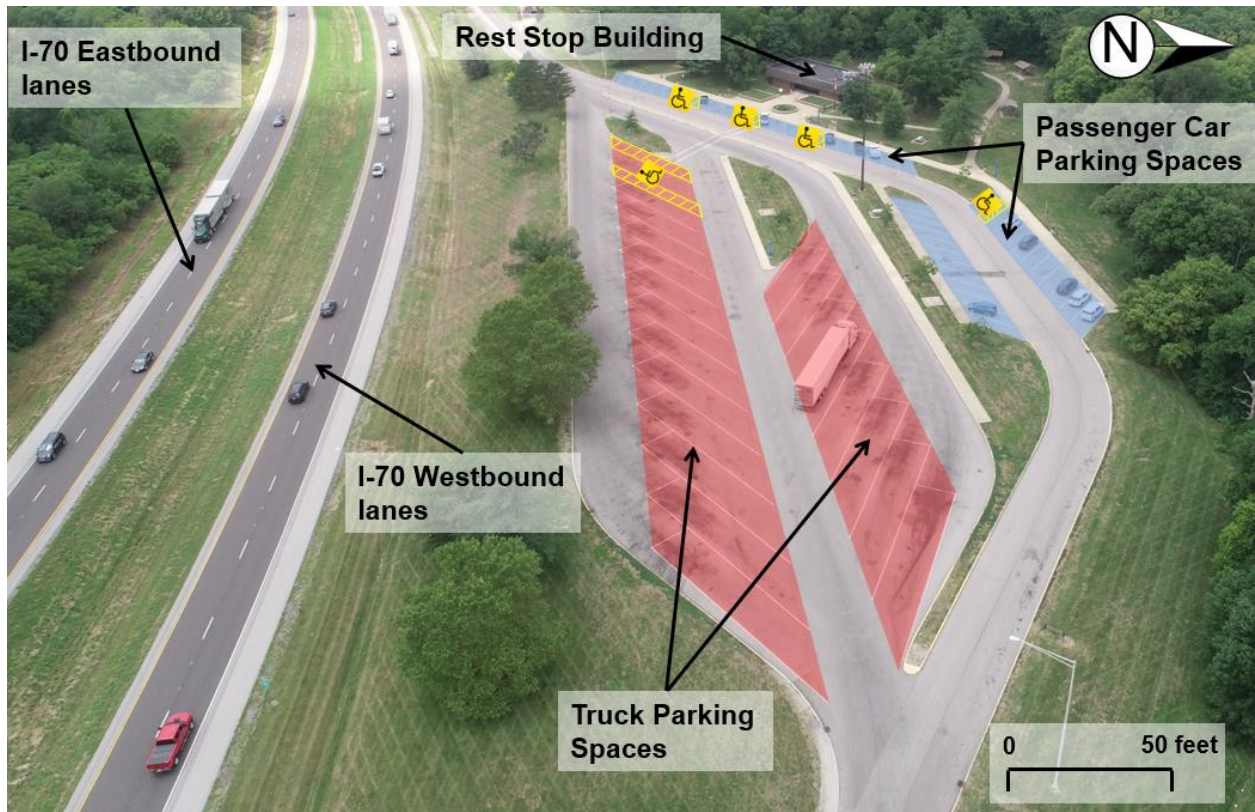
<sup>3</sup> See Highway Factors Attachment - Grading and paving plans for the westbound Silver Lake rest stop completed in 1973.

<sup>4</sup> See Highway Factors Attachment - Landscaping plans for the westbound Silver Lake rest stop completed in 1984.

<sup>5</sup> See Highway Factors Attachment - Lighting plans for the westbound Silver Lake rest stop completed in 1984.

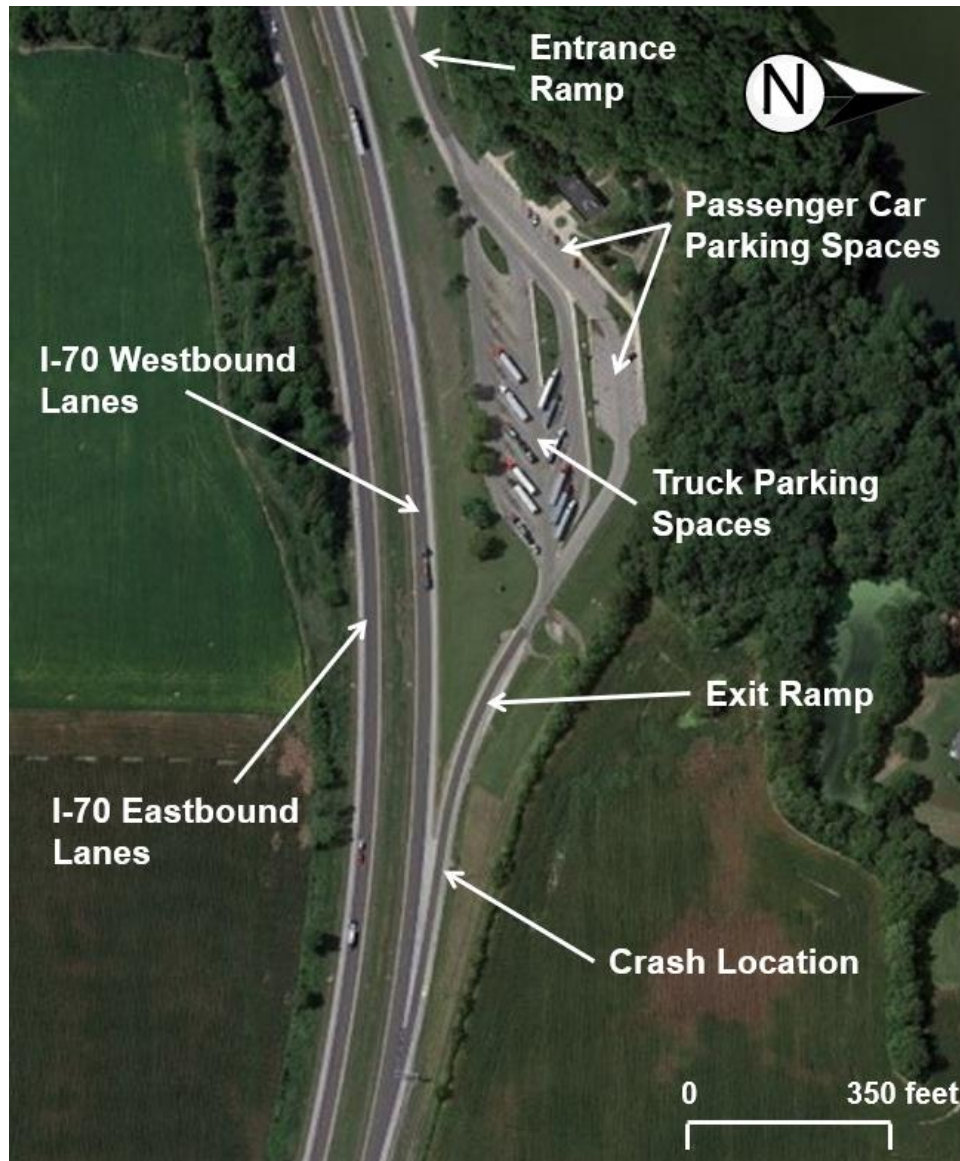
<sup>6</sup> See Highway Factors Attachment - Resurfacing plans for the westbound Silver Lake rest stop completed in 2016.

<sup>7</sup> Accessible parking spaces must be provided and comply with the Americans with Disabilities Act (ADA) at all parking facilities. Accessible parking spaces are different than traditional parking spaces. They have specific features that make it easier for people with disabilities to access goods and services.



**Figure 2:** Aerial view of what the westbound Silver Lake rest stop looked like after the crash, truck parking spaces are highlighted in red, while passenger car parking spaces are highlighted in blue.

**Figure 3** is an expanded aerial view of the westbound Silver Lake rest stop illustrating the truck parking spaces, passenger car parking spaces, exit and entrance ramps, and crash location relative to I-70.



**Figure 3:** Expanded aerial view of the westbound Silver Lake rest stop illustrating the truck parking spaces, passenger car parking spaces, exit and entrance ramps, and crash location relative to I-70. (Source: Google Earth revised)

### 3.0 Average Daily Traffic Volumes and Vehicle Classification Count

**Table 1** summarizes the average daily traffic volumes and vehicle classification count on I-70 in the westbound and eastbound directions in the vicinity of the crash.

**Table 1:** Average daily traffic volumes and vehicle classification count on I-70.

Year	Westbound	Single Unit Trucks	Multi-Unit Trucks	Eastbound	Single Unit Trucks	Multi-Unit Trucks
2021	11,800	350	4,100	11,900	350	4,700
2019	12,000	300	4,700	12,000	275	4,700
2017	11,400	350	4,400	11,700	350	4,600
2015	11,200	375	3,800	11,500	400	3,400
2013	11,400	350	3,500	11,400	350	3,800

### 4.0 Traffic Crash Summary

**Table 2** summarizes the crash data for parked trucks on the shoulder within a 5-mile radius of the crash for the last 10 years. A total of four crashes have occurred, with two crashes at the Silver Lake rest stops, one in the eastbound direction and the second in the westbound direction of I-70. None of the crashes involved injuries or fatalities. In reviewing the description of the crashes, all the crashes involved the driver of the truck located in the sleeper berth. The damaged areas of the truck were minor including side and rear impacts.

**Table 2:** Crash data for parked trucks on the shoulder within a 5-mile radius of the crash for the last 10 years.

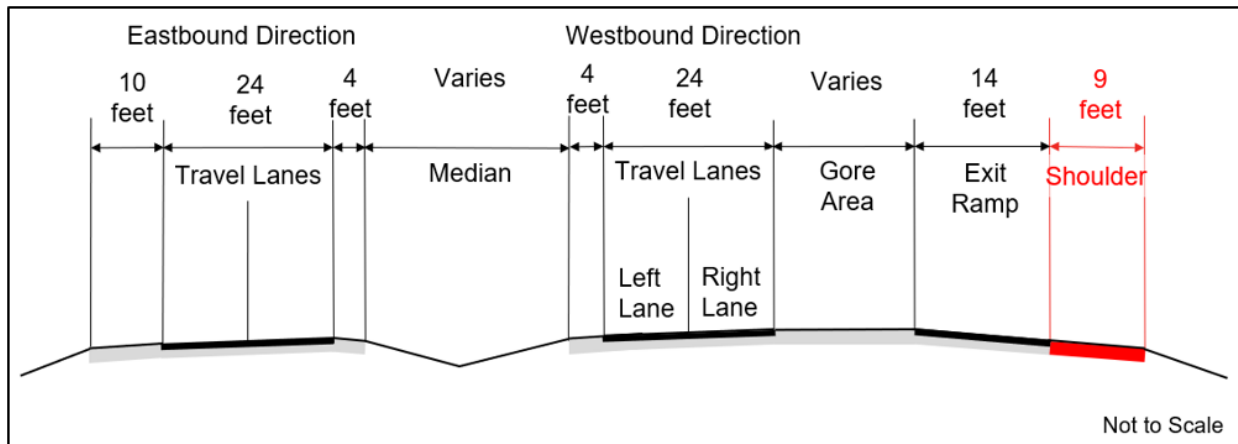
Date	Location	Milepost or Exit Number	Direction	Injuries / Fatalities
2/2/2022	Exit ramp to Silver Lake rest stop	MP 26	I-70 Eastbound	0
5/28/2022	Exit ramp to US-40	Exit 30	I-70 Eastbound	0
2/10/2023	Entrance ramp from Silver Lake rest stop	MP 27	I-70 Westbound	0
3/28/2023	Exit ramp to SR-143	Exit 24	I-70 Eastbound	0

### 5.0 Speed Limit

A regulatory speed limit sign was posted approximately 2.3 miles prior to the crash, indicating a 70-mph speed limit and 45-mph minimum speed limit. A 40-mph advisory speed limit sign was posted for the westbound exit ramp to the Silver Lake rest stop, approximately 350 feet prior to the crash.

## 6.0 Typical Section for I-70 Travel Lanes and Exit Ramp

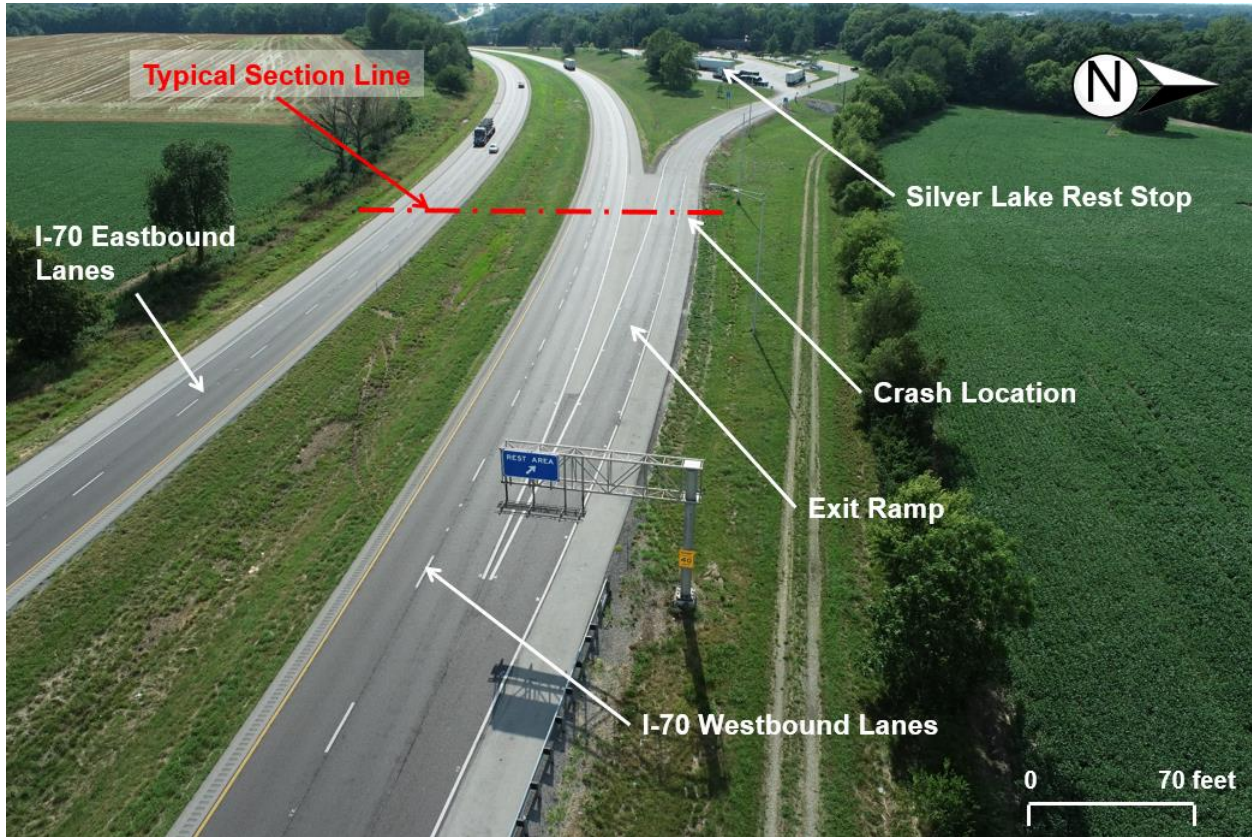
**Figure 4** illustrates the typical section for the I-70 travel lanes and exit ramp in the vicinity of the crash location. I-70 consisted of two westbound travel lanes and two eastbound travel lanes, separated by a median. The total width of the travel lanes in each direction was approximately 24-feet. A gore area separated the westbound travel lanes from the exit ramp.<sup>8</sup> The exit ramp was approximately 14-feet wide. The crash occurred on the right shoulder of the exit ramp denoted by the red highlighted text. The right shoulder of the exit ramp was approximately 9-feet wide.



**Figure 4:** Typical section for the I-70 travel lanes and exit ramp in the vicinity of the crash location.

<sup>8</sup> The gore area is the divider between a travel lane and either an exit or entrance ramp.

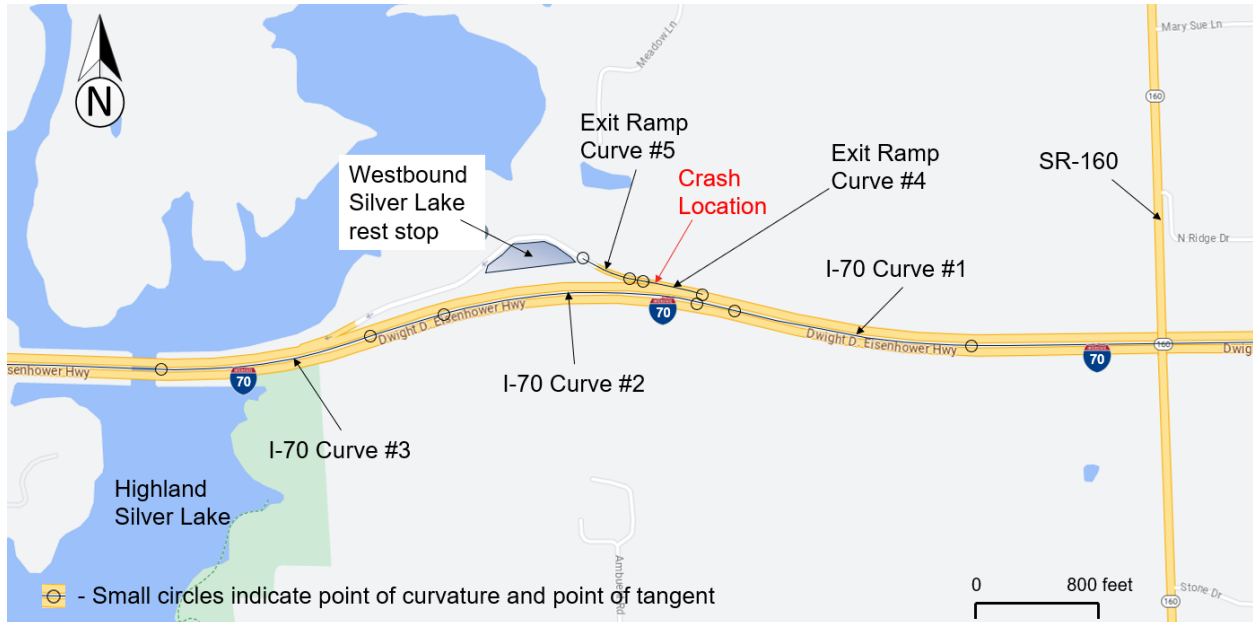
**Figure 5** illustrates the crash location from an aerial view looking to the west with a line depicting the location in which the typical section was drawn as shown in **Figure 4**.



**Figure 5:** Crash location from an aerial view looking to the west with a line depicting the location in which the typical section was drawn. (Source: IDOT Division of Aeronautics revised)

## 7.0 Horizontal Alignment

**Figure 6** illustrates the horizontal alignment immediately before and after the crash location. The horizontal curves are identified on I-70 and the exit ramp to the westbound Silver Lake rest stop.



**Figure 6:** Horizontal curves identified on I-70 and the exit ramp to the westbound Silver Lake rest stop before and after the crash location. (Source: Google Maps revised)

**Table 3** summarizes the data for each horizontal curve shown in **Figure 6**.

**Table 3:** Summary of data for each horizontal curve before and after the crash location.

Curve Number	Degree of Curve	Length of Curve	Turn of Curve in Westbound Direction of Travel
I-70 Curve #1	1°	1,510 feet	Curve to the right
I-70 Curve #2	1° 30'	2,189 feet	Curve to the left
I-70 Curve #3	1° 30'	1,396 feet	Curve to the right
Exit Ramp Curve #4	1° 28' 46" <sup>9</sup>	663 feet	Curve to the left
Exit Ramp Curve #5	6° 44'	365 feet	Curve to the right

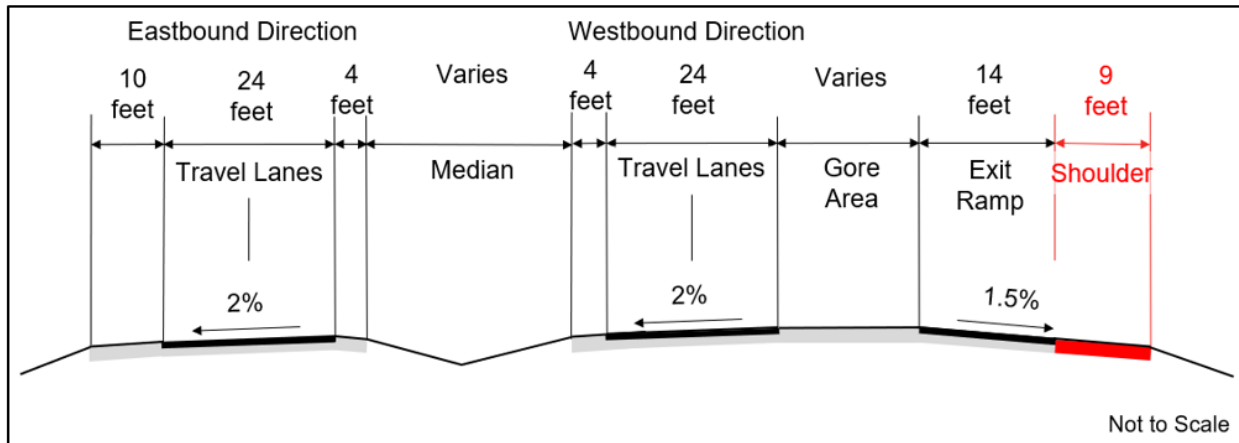
## 8.0 Vertical Alignment

The vertical alignment for I-70 in the vicinity of the crash consisted of an upgrade slope positive (+) 0.26% grade for motorists traveling in the westbound direction. Similarly, the vertical alignment for the exit ramp to the westbound Silver Lake rest stop at the crash location consisted of an upgrade slope positive (+) 0.05% grade.

<sup>9</sup> 1° 28' 46" equates to a 1 degree, 28 minutes, and 46 seconds degree of curve.

## 9.0 Superelevation for I-70 Travel Lanes and Exit Ramp

**Figure 7** illustrates the superelevation for the I-70 travel lanes and exit ramp in the vicinity of the crash location.<sup>10</sup> The superelevation for the I-70 travel lanes in the westbound and eastbound direction sloped downward to the south at an approximate 2 percent slope. The superelevation for the exit ramp to the westbound Silver Lake rest stop sloped downward to the north at an approximate 1.5 percent slope.



**Figure 7:** Superelevation for the I-70 travel lanes and exit ramp in the vicinity of the crash location.


## 10.0 Signage Prior to the Crash

**Table 4** summarizes the signage prior to the crash on I-70 in the westbound direction.

**Table 4:** Signage prior to the crash on I-70 in the westbound direction.

Signage	Distance from Signage to Crash
	350 feet
	350 feet

<sup>10</sup> Superelevation is the transverse slope provided to counteract the effect of centrifugal force by raising the pavement outer edge with respect to the pavement inner edge.

	<p style="text-align: center;"><b>REST AREA</b> <b>1/2 MILE</b></p> <hr/> <p style="text-align: center;"><b>VENDING MACHINES</b></p>	2,360 feet
	<p style="text-align: center;"><b>REST AREA</b> <b>1 MILE</b></p>	1.0 mile
		2.3 miles

**11.0 Highway Markings**

The highway marking separating the paved shoulder from the rightmost travel lane on I-70 in the westbound direction consisted of a permanent 6-inch-wide solid white line. The highway markings separating the two westbound travel lanes consisted of permanent 6-inch-wide broken white lines with a pattern consisting of 10-foot-long dashes with 30-foot spacing supplemented with clear retroreflective pavement markers. The highway marking separating the paved shoulder from the leftmost travel lane consisted of a 6-inch-wide solid yellow line.

In the vicinity of the crash location, the highway marking separating the exit ramp to the westbound Silver Lake rest stop from the right paved shoulder consisted of a 6-inch-wide solid white line. The highway marking separating the exit ramp from the gore area consisted of an 8-inch-wide solid white line.

**12.0 Rumble Strips**

Grooved longitudinal rumble strips existed in the paved shoulders adjacent to the rightmost travel lane and leftmost travel lane in the westbound direction of travel on I-70. The rumble strip dimensions were approximately 16-inches long and 7-inches wide.<sup>11</sup> The rumble strips were spaced approximately 12-inches apart measured from the centerline of the rumble strip. The depression of the rumble strip into the pavement was approximately 1/2-inch. The rumble strips were offset from the edge of traveled way by approximately 12-inches.

The grooved longitudinal rumble strips terminated in the paved shoulder adjacent to the rightmost travel lane on I-70 approximately 560 feet prior to the crash.

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<sup>11</sup> See Highway Factors Attachment - Illinois DOT shoulder rumble strip detail.

For areas in which exit, and entrance ramps existed on I-70, rumble strips were not installed in the paved shoulder adjacent to the rightmost travel lane per IDOT's shoulder rumble strip standard.

## **F. CLEAR ZONE CONCEPT**

The clear zone concept involves providing a traversable and unobstructed roadside area beyond the edge of the through traveled way for the recovery of errant vehicles. On high-speed highways, such as interstates, the width of the clear zone is usually set at 30 feet.<sup>12</sup> Any obstacle beyond 30 feet is not required to be shielded.

The 2011 Roadside Design Guide indicated the following regarding the clear zone concept:<sup>13</sup>

*"Studies have indicated that on high-speed highways, a width of 9 meters [30 feet] or more from the edge of the through traveled way permits about 80 percent of the errant vehicles leaving the roadway to recover.*

*Subsequently, most highway agencies began to try to provide a 9 meter [30 feet] clear zone, particularly on high-volume, high-speed, rural roadways. A clear zone is the unobstructed, traversable area provided beyond the edge of the through traveled way for the recovery of errant vehicles. The clear zone includes shoulders, bike lanes, and auxiliary lanes, except those auxiliary lanes that function like through lanes."*

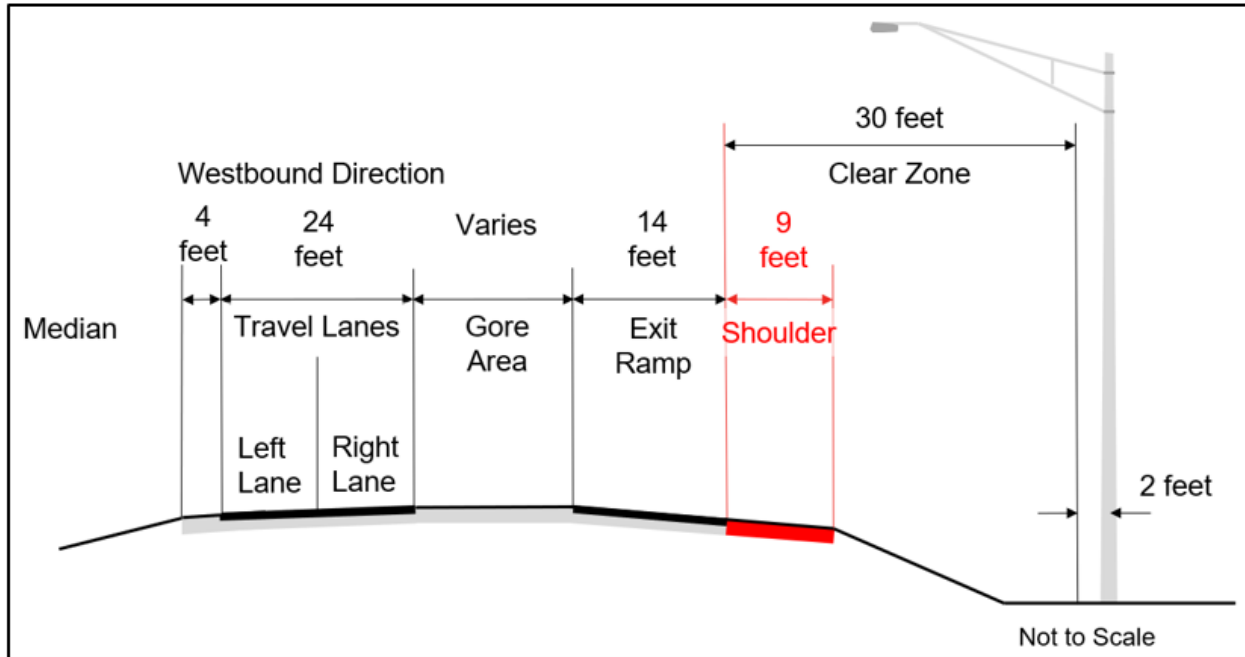
The three truck-tractor semi-trailer combination units parked on the right shoulder of the exit ramp to the westbound Silver Lake rest stop on Wednesday, July 12, 2023, at 1:48 a.m. were located closer than 30-feet from the traveled way of the exit ramp.

**Figure 8** illustrates the typical section for the I-70 westbound travel lanes and exit ramp in the vicinity of the crash location with the 30 feet clear zone.

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<sup>12</sup> The 30 feet is measured from the edge of the paved traveled way, or the intersection of the paved traveled way and shoulder.

<sup>13</sup> Roadside Design Guide, 4<sup>th</sup> Edition, 2011, American Association of State Highway and Transportation Officials (AASHTO), pages 3-1 and 3-2.



**Figure 8:** Typical section for the I-70 westbound travel lanes and exit ramp in the vicinity of the crash location with the 30 feet clear zone.

## 1.0 Highway Lighting

In the vicinity of the crash location, a single line of light poles was offset approximately 32 feet from the edge of the exit ramp traveled way to the westbound Silver Lake rest stop. The light poles extended approximately 50-feet high above the ground surface and contained one 400-watt high pressure sodium luminaire attached to the end of the mast arm. The light poles were spaced approximately 200-250 feet on center.

## G. TRUCK PARKING ON SHOULDERS AT THE CRASH LOCATION

### 1.0 Illinois Statute Section 11-1303

Illinois Statute Section 11-1303 indicated the following regarding stopping, standing, or parking which is prohibited in specified places:<sup>14</sup>

*“(a) Except when necessary to avoid conflict with other traffic, or in compliance with law or the directions of a police officer or official traffic-control device, no person shall:*

1. *Stop, stand or park a vehicle:*

<sup>14</sup> See Highway Factors Attachment - Illinois Statute Section 11-1303 regarding prohibition of parking a vehicle on any controlled-access highway.

*j. On any controlled-access highway.”<sup>15</sup>*

“No parking” signs were not present on the exit ramp to the Silver Lake Rest Stop at the time of the crash nor were they required.

## **2.0 Nighttime Scene Drive-Through of the Crash Location on July 15, 2023**

NTSB investigators conducted a nighttime scene drive-through of the crash location in the westbound direction of I-70 on July 15, 2023, three days after the crash. **Figure 9** illustrates a screenshot of two of the five truck-tractor semi-trailer combination units parked on the exit ramp shoulder to the westbound Silver Lake rest stop taken on Saturday, July 15, 2023, at approximately 9:30 p.m.



**Figure 9:** Screenshot of two of the five truck-tractor semi-trailer combination units parked on the exit ramp shoulder to the westbound Silver Lake rest stop taken on Saturday, July 15, 2023, at approximately 9:30 p.m.

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<sup>15</sup> A controlled-access highway is a type of highway that has been designed for high-speed vehicular traffic, with all traffic flow (ingress and egress) regulated. A controlled-access highway provides an unhindered flow of traffic, with no traffic signals, intersections, or property access. They are free of any at-grade crossings with other roads, railways, or pedestrian paths, which are instead carried by overpasses and underpasses. Entrances and exits to the highway are provided at interchanges by exit and entrance ramps. On the controlled-access highway, opposing directions of travel are generally separated by a median.

## H. 2020 ILLINOIS DOT STATEWIDE TRUCK PARKING STUDY

### 1.0 Results from Survey of Illinois Truck Parking Study

**Table 5** summarizes the results from a statewide survey conducted in 2020 on truck parking needs which revealed Illinois had a total of 11,262 truck spaces, with 1,622 truck spaces being public (or 14.4%) and 9,640 truck spaces being private (or 85.6%). The ratio of private to public truck spaces was 5.9 to 1. The number of public rest stops in Illinois was 90 and the number of private truck stops was 206. The number of spaces per 100,000 miles of combination truck vehicle-miles traveled was 76.9.

**Table 5:** Results from a statewide survey conducted in 2020 on truck parking needs in Illinois.

Key Indicator	Results
Number of Public Rest Stops	90
Number of Public Truck Spaces	1,622 (14.4%)
Number of Private Truck Stops	206
Number of Private Truck Spaces	9,640 (85.6%)
Ratio of Private to Public Truck Spaces	5.9 to 1
<b>Total Truck Spaces</b>	<b>11,262 (100%)</b>
All Spaces per 100,000 Miles of Combination Truck Vehicle-Miles Traveled (VMT)	76.9

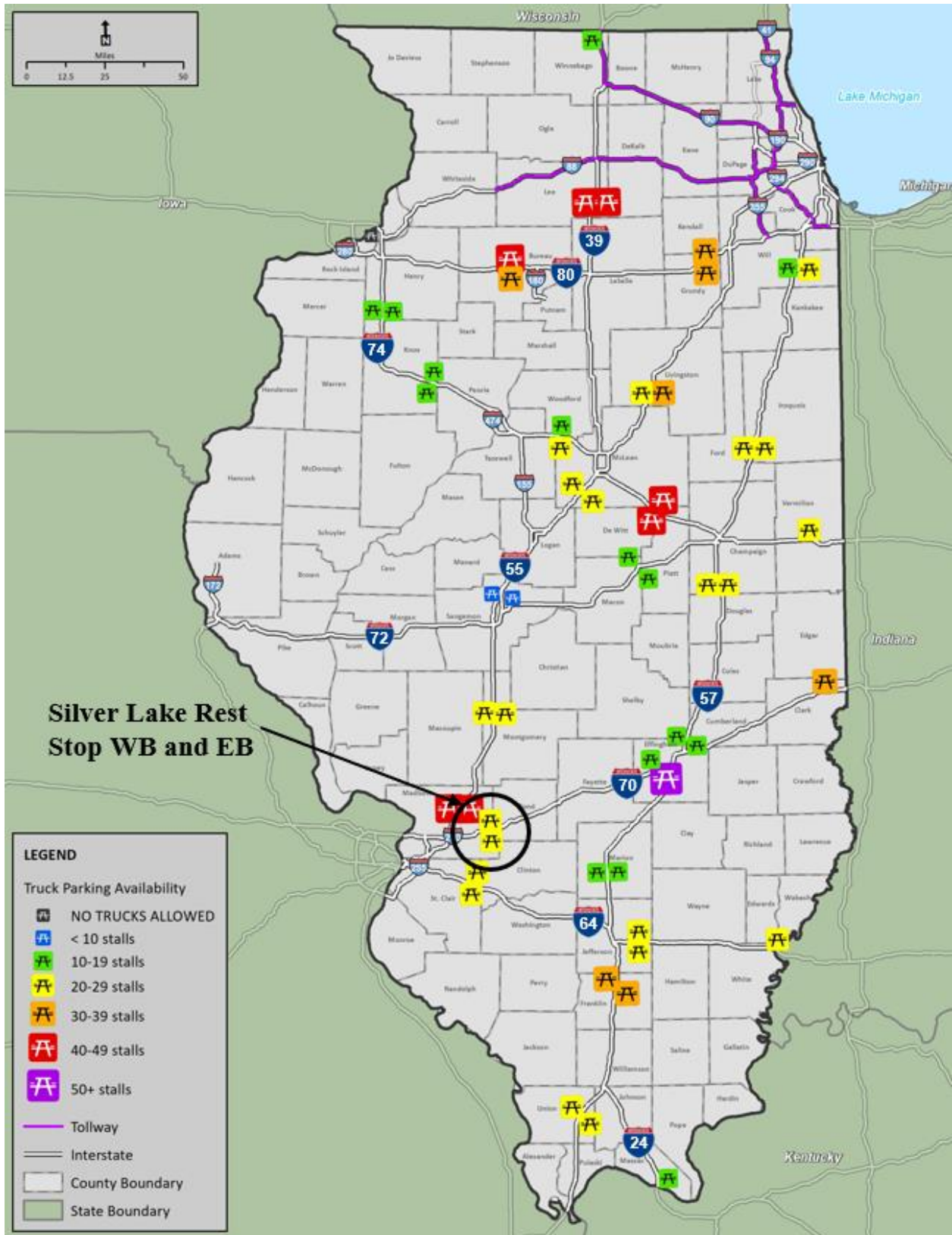
Illinois truck parking comparisons to other states revealed:

- Illinois ranked 8<sup>th</sup> for number of total spaces with 11,262 truck spaces.
- Illinois ranked 5<sup>th</sup> for number of public rest stops (with 90 public rest stops) and 8<sup>th</sup> for private truck stops (with 206 private rest stops).
- Illinois ranked 9<sup>th</sup> for number of public truck spaces (with 1,622 public truck spaces) and 8<sup>th</sup> for private truck spaces (with 9,640 private truck spaces).
- Illinois was in the lowest quartile of all 50 states for all spaces per 100,000 miles of combination truck vehicle-miles traveled.

### 2.0 Truck Parking Availability in Illinois

**Figure 10** illustrates the truck parking availability at each public rest stop in Illinois. As shown in **Figure 10**, the Silver Lake rest stop in the westbound and eastbound directions highlighted in yellow, fell into the category of truck parking availability that ranged from 20 to 29 stalls.<sup>16</sup>

<sup>16</sup> See Highway Factors Attachment – Illinois DOT Statewide Truck Parking Study dated January 30, 2020.



**Figure 10:** Truck parking availability at each public rest stop in Illinois. (Source: IDOT 2018 Rest Area Study revised)

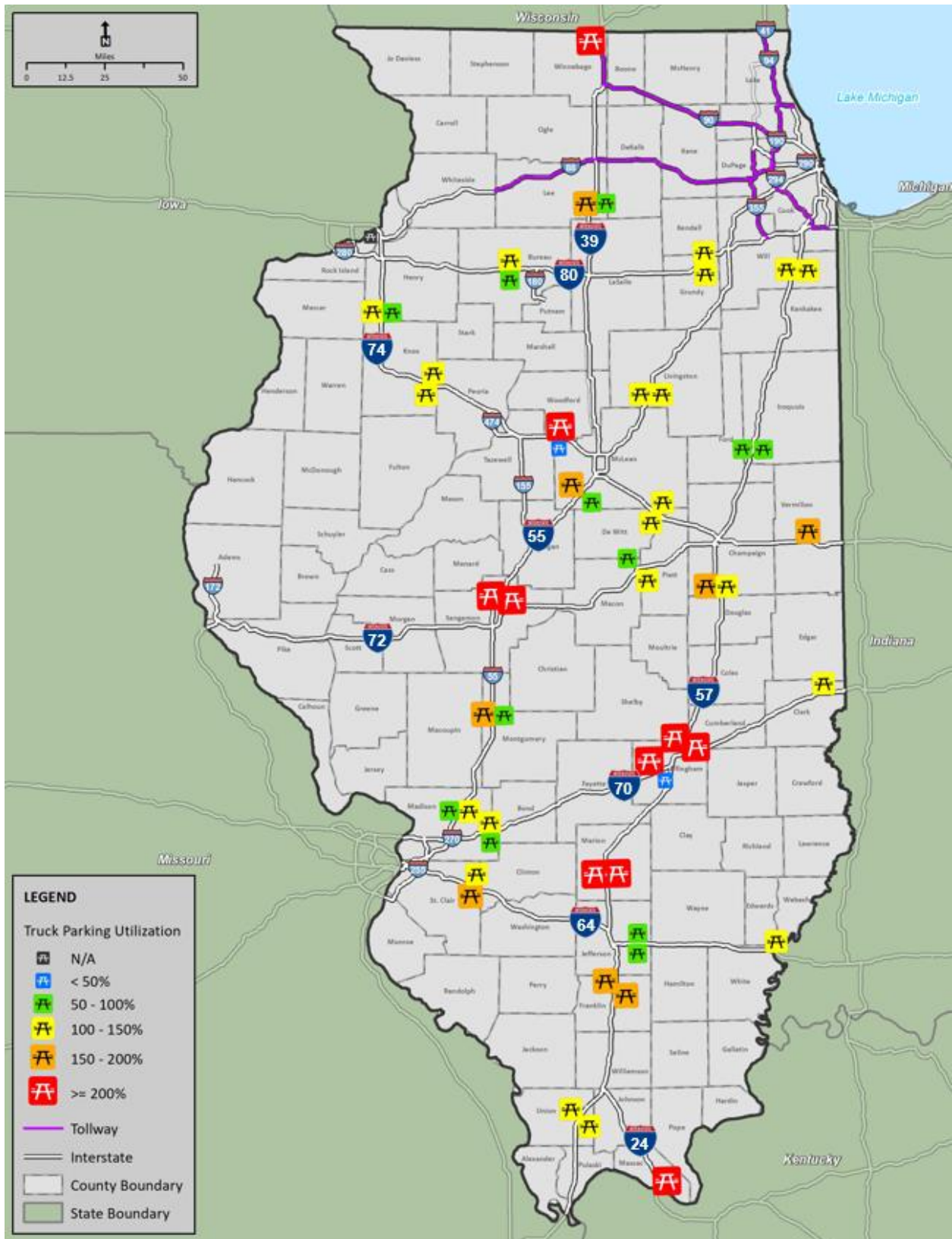
### 3.0 Truck Parking Utilization in Illinois

**Figure 11** illustrates the truck parking utilization at each public rest stop in Illinois. As shown in **Figure 11**, the public rest stops highlighted in red had truck parking utilization of greater than or equal to 200%. The average volume of truck shoulder parking was highest on I-55 and I-57.<sup>17</sup>

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<sup>17</sup> See Highway Factors Attachment - Illinois DOT Statewide Truck Parking Study dated July 30, 2020.



**Figure 11:** Truck parking utilization at each public rest stop in Illinois. (Source: IDOT 2018 Rest Area Study)

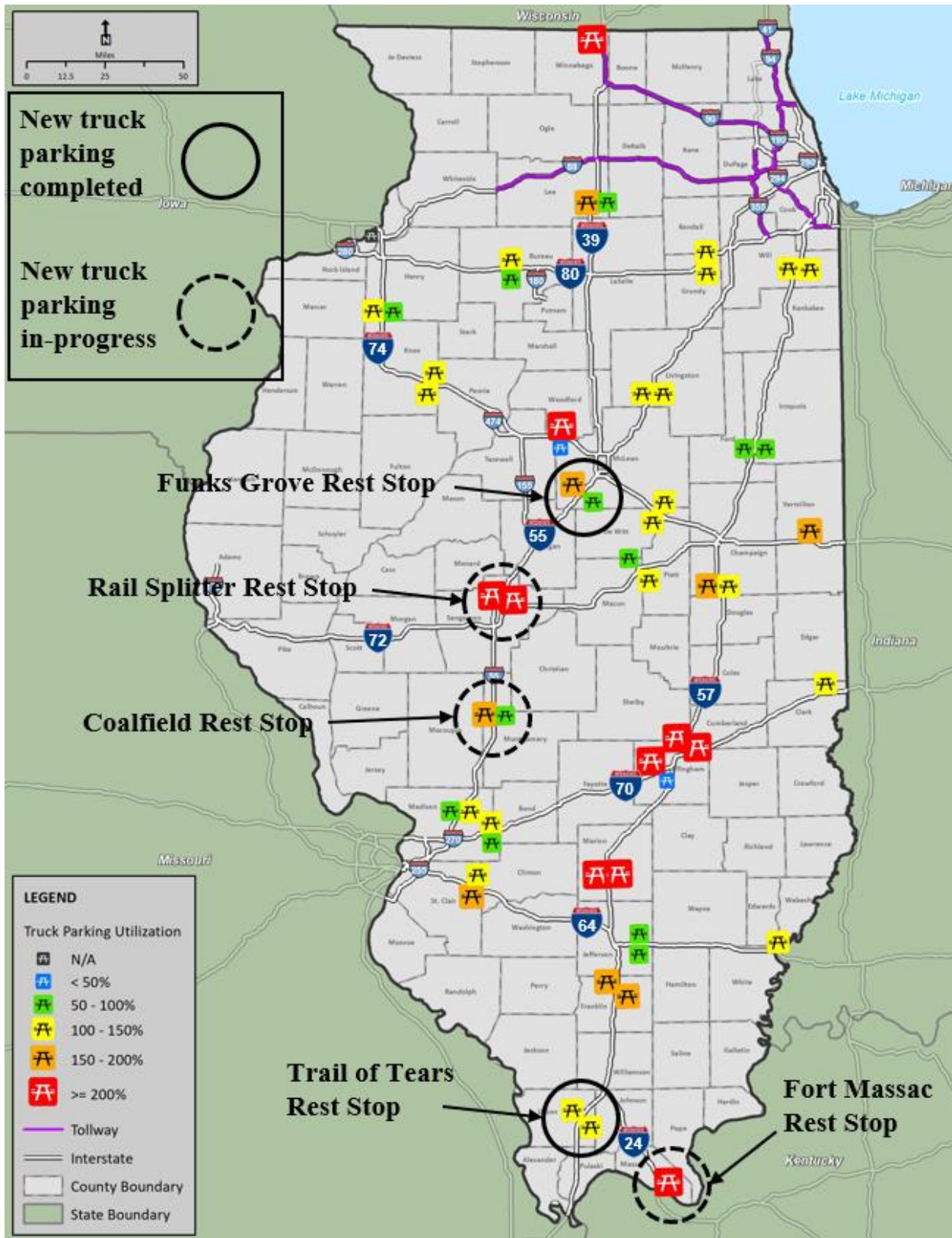
#### 4.0 New Truck Parking Spaces Completed or In-Progress in Illinois

IDOT had identified 218 new truck parking spaces as completed or in-progress at five rest stops located on I-55, I-57, and I-24 in a \$53 million investment.<sup>18</sup> **Figure 12** illustrates the locations of the five rest stops overlaid on the truck parking utilization map. The new truck parking spaces completed are located at the Funks Grove and Trail of Tears rest stops. The new truck parking spaces in-progress are located at the Rail Splitter, Coalfield, and Fort Massac rest stops.

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<sup>18</sup> See Highway Factors Attachment - Illinois DOT Statewide Rest Area Study, Rest Area Needs Assessment, dated September 2018.



**Figure 12:** Locations of the five rest stops identified for new truck parking spaces in Illinois. (Source: IDOT 2018 Rest Area Study revised)

**Table 6** summarizes the 218 new truck parking spaces completed or in-progress at five rest stops located on I-55, I-57, and I-24.

**Table 6:** Summary of 218 new truck parking spaces completed or in-progress in Illinois.

<b>Rest Stop</b>	<b>Direction and Location</b>	<b>Original Truck Spaces</b>	<b>New Truck Spaces</b>	<b>Total Truck Spaces (% Increase)</b>	<b>Status</b>
Funks Grove	Single Point rest stop on I-55	20	16	36 (44%)	Completed
Trail of Tears	NB on I-57	20	13	33 (39%)	Completed
Trail of Tears	SB on I-57	20	21	41 (51%)	Completed
Fort Massac	Single Point rest stop on I-24	18	66	84 (79%)	In-progress
Coalfield	NB on I-55	28	35	63 (56%)	In-progress
Coalfield	SB on I-55	28	35	63 (56%)	In-progress
Rail Splitter	NB on I-55	6	16	22 (73%)	In-progress
Rail Splitter	SB on I-55	6	16	22 (73%)	In-progress
<b>Totals</b>		<b>146</b>	<b>218</b>	<b>364 (60%)</b>	

**Table 7** summarizes the federal funding amount, state funding amount, and total project costs for the new truck spaces at five rest stops located on I-55, I-57, and I-24.

**Table 7:** Federal funding amount, state funding amount, and total project costs for the new truck spaces at five rest stops in Illinois.

<b>Rest Stop</b>	<b>Direction and Location</b>	<b>Federal Funding Amount</b>	<b>State Funding Amount</b>	<b>Total Project Costs</b>
Funks Grove	Single Point rest stop on I-55	\$1,011,481	\$112,387	\$1,123,868
Trail of Tears	NB on I-57	\$1,300,165	\$325,041	\$1,625,206

Trail of Tears	SB on I-57			
Fort Massac	Single Point rest stop on I-24	\$2,000,000	\$9,679,234	\$11,679,234
Coalfield	NB on I-55	\$3,000,000	\$15,500,000	\$18,500,000
Coalfield	SB on I-55			
Rail Splitter	NB on I-55	\$2,200,000	\$17,950,000	\$20,150,000
Rail Splitter	SB on I-55			
<b>Totals</b>		<b>\$9,511,646</b>	<b>\$43,566,662</b>	<b>\$53,078,308</b>

**5.0 Alternative Service Locations (or Private Truck Stops) in Illinois**

Alternative service locations (or private truck stops) are typically in the form of truck stops and travel plazas. Alternative service locations can include gas stations and restaurants and may include additional services such as wi-fi and showers.

Truck parking is viewed by IDOT as one of the most critical services provided along Interstate routes based on the frequent over-utilization of public rest stops and the national attention to the general shortage of truck parking capacity. Most of the truck parking provided along IDOT rest area routes is located at alternative service locations.

**Figure 13** illustrates the locations of alternative service locations (or private truck stops) in Illinois with the approximate range of private truck spaces available. A circle with an X in the middle indicated the alternative service locations in which private truck spaces are consistently full.

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## **6.0 IDOT's Truck Parking Information Management System**

IDOT is in the development stage of installing a truck parking information management system at all rest stop locations that will determine the status of real time truck parking availability. This system consists of vehicle detection cameras which can detect the presence of trucks within individual parking spaces. IDOT is currently working with the maintainers of the Mid-America Association of State Transportation Officials (MAASTO) led website to incorporate the data feed within their website for wider public distribution. The truck parking information management system has been installed at two rest stops. IDOT is working with a consultant to develop plans and specifications to expand the system to fourteen more rest stops with the end goal of having the system installed at all rest stop locations.

### **I. APPENDIX A**

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

#### LIST OF ATTACHMENTS

Highway Factors Attachment - Construction plans for I-70 completed in 1962 in the vicinity of the crash

Highway Factors Attachment - Grading and paving plans for the westbound Silver Lake rest stop completed in 1973

Highway Factors Attachment - Landscaping plans for the westbound Silver Lake rest stop completed in 1984

Highway Factors Attachment - Lighting plans for the westbound Silver Lake rest stop completed in 1984

Highway Factors Attachment - Resurfacing plans for the westbound Silver Lake rest stop completed in 2016

Highway Factors Attachment - Illinois DOT shoulder rumble strip detail

Highway Factors Attachment - Illinois Statute Section 11-1303 regarding prohibition of parking a vehicle on any controlled-access highway

Highway Factors Attachment - Illinois DOT Statewide Truck Parking Study dated January 30, 2020

Highway Factors Attachment - Illinois DOT Statewide Truck Parking Study dated July 30, 2020

LIST OF PHOTOGRAPHS

Highway Factors Photo 1 - View of screen shot of two of the five truck-tractor semi-trailer combination units parked on the exit ramp shoulder to the westbound Silver Lake rest stop taken on Saturday, July 15, 2023, at approximately 9:30 p.m. looking to the west

Highway Factors Photo 2 - View of the regulatory speed limit sign posted approximately 2.3 miles prior to the crash, indicating a 70-mph speed limit and 45-mph minimum speed limit looking to the west

Highway Factors Photo 3 - View of the 40-mph advisory speed limit sign for the exit ramp to the westbound Silver Lake rest stop posted approximately 350 feet prior to the crash looking to the west

Highway Factors Photo 4 - View of the exit ramp to the westbound Silver Lake rest stop in the vicinity of the crash location standing on the edge of the paved right shoulder looking to the west

Highway Factors Photo 5 - View of the exit ramp to the westbound Silver Lake rest stop in the vicinity of the crash location standing on the paved right shoulder looking to the east

Highway Factors Photo 6 - View of the exit ramp to the westbound Silver Lake rest stop immediately west of the crash location standing on the exit ramp looking to the east

Highway Factors Photo 7 - View of the exit ramp to the westbound Silver Lake rest stop immediately west of the crash location standing on the exit ramp looking to the northwest

Highway Factors Photo 8 - View of the exit ramp to the westbound Silver Lake rest stop west of the crash location standing on the edge of the paved left shoulder looking to the east with "Wrong Way" signs located in the background

Highway Factors Photo 9 - View of the exit ramp to the westbound Silver Lake rest stop west of the crash location standing on the edge of the paved right shoulder looking to the northwest with directional signs for "Passenger Cars" and "Trucks and Vehicles Towing Trailers" located in the background

Highway Factors Photo 10 - View of the exit ramp to the westbound Silver Lake rest stop west of the crash location standing on the exit ramp looking to the northwest with the rest stop parking lot and building located in the background

Highway Factors Photo 11 - View of the exit ramp to the westbound Silver Lake rest stop west of the crash location standing at the entrance to the rest stop parking lot looking to the east with "Do Not Enter" signs located in the foreground

Highway Factors Photo 12 - View of the westbound Silver Lake rest stop parking lot standing in the aisle adjacent to the truck parking spaces looking to the west with the rest stop building located in the background

Highway Factors Photo 13 - View of the no parking symbol sign on the exit ramp to the Spring Creek rest stop area near Covington, IN on I-74 (Source: Google Street Maps)

Highway Factors Photo 14 - View of the no parking symbol sign on the entrance ramp from the Spring Creek rest stop area near Covington, IN on I-74 (Source: Google Street Maps)

Highway Factors Photo 15 - View of the no parking symbol sign on the entrance ramp from the rest stop area south of St. Augustine, FL on I-95 (Source: Google Street Maps)

Highway Factors Photo 16 - View of the no parking symbol sign on the exit ramp and traffic cones on the shoulder to the Ramapo rest stop area near Sloatsburg, NY on I-87 (Source: Google Street Maps)

Highway Factors Photo 17 - View of the "No Parking" sign on the exit ramp and flexible delineator posts on the shoulder to the Hill County safety rest area south of Hillsboro, Texas on I-35

Highway Factors Photo 18 - View of the "No Parking" sign on the shoulder of the I-35 mainline travel lanes adjacent to the Hill County safety rest area south of Hillsboro, Texas on I-35

Highway Factors Photo 19 - View of the "No Parking Any Time" sign on the exit ramp to the Portage rest stop area northwest of Poynette, WI on I-90 (Source: Google Street Maps)

Highway Factors Photo 20 - View of the "No Parking Any Time" sign on the entrance ramp and plastic drums placed at the edge of the shoulder from the Portage rest stop area northwest of Poynette, WI on I-90 (Source: Google Street Maps)

Submitted by:

Dan Walsh, P.E., Chair  
Senior Highway Factors Investigator