CARON WEATHER CONSULTANCY

WEATHER FINDINGS REPORT — SAMPLE

Snow, freezing rain, freezing fog and visibility on Interstate 35E near Corinth, Denton County, Texas

Date and time at issue: Thursday, January 9, 2025, about 10:40 a.m. CST

ILLUSTRATIVE SAMPLE — the crash, vehicles and parties are fictitious. The weather data are real archived National Weather Service and NOAA records for January 9, 2025.

Item	Detail
Scenario (fictitious)	A loaded tractor-trailer traveling southbound on I-35E loses control and jackknifes across the travel lanes near Corinth; following vehicles collide with it.
Location	I-35E southbound near Corinth, Denton County, Texas — 33.1541°N, 97.0659°W
Prepared for	Sample — counsel for the motor carrier (fictitious)
Prepared by	James M. Caron, Certified Consulting Meteorologist (AMS CCM #652)
Report date	November 4, 2026 (sample)

The bottom line

At 10:40 a.m. the crash area was under the heaviest snow of the morning, falling with freezing fog at 30 to 31°F, on roads that had already taken freezing rain about two hours earlier. Denton's airport, 8.5 miles away, reported visibility of one-quarter mile two minutes after the crash time. None of this came without warning: the National Weather Service issued a Winter Storm Warning for Denton County about 30 hours ahead, and conditions at the crash site had been getting worse for about three hours before the crash.

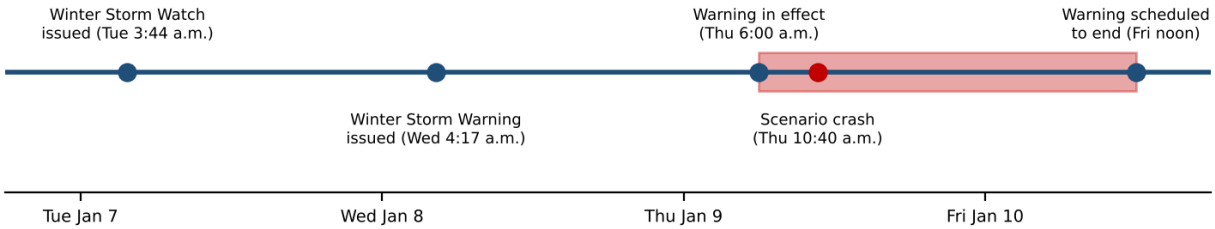
- **Forecast and warned.** Winter Storm Watch Tuesday 3:44 a.m.; Winter Storm Warning Wednesday 4:17 a.m., in effect from 6 a.m. Thursday. The warning said travel “could be very difficult” on the Thursday morning commute and told drivers to “be prepared for sudden changes in visibility.”
- **Ice came first.** Sleet and freezing rain reached the area between about 6:40 and 7:50 a.m. Denton's airport reported freezing rain from 8:09 to 8:34 a.m., and its ice sensor measured ice building on it. The air stayed at or below 32°F from about 7:30 a.m. onward.
- **Then heavy snow and freezing fog.** Visibility fell to one-quarter mile in heavy snow and freezing fog at Denton (9:32, 10:42 and 10:51 a.m.) and McKinney (10:07 and 10:31 a.m.). Lake Dallas, 3 miles from the crash site, reported 3.75 inches of snow at 10:51 a.m.
- **Strongest radar echo of the morning was over the crash site at 10:40 a.m.** It read 46.8 dBZ, against 35.2 dBZ over Denton's airport at the same moment, which points to snow at least as heavy at the crash site as at the airport.
- **Best estimate at the crash site, 10:40 a.m.:** visibility about one-quarter to one-half mile in heavy snow, possibly lower for short periods and possibly up to about 1 mile in lulls; air 30 to 31°F; wind from the southeast at about 7 to 9 mph; no direct sunlight, so no sun glare.
- **This report addresses the weather only.** Driver conduct, vehicle speed, road treatment and the collision sequence are outside its scope.

1. The question asked

Counsel asked what the weather was at the crash site at about 10:40 a.m. on January 9, 2025: whether snow, ice or fog was present, how far a driver could likely see, whether the road was likely to be slick, whether sun glare played any part, and whether the conditions were forecast or came on suddenly. The answers below come from the archived National Weather Service record: airport weather observations, radar, the Weather Service's own warnings and its storm reports. Where the record does not reach the crash site directly, the report says so and gives a range.

2. Forecasts and warnings

The National Weather Service office in Fort Worth flagged the storm days ahead. A Winter Storm Watch covering Denton County was issued at 3:44 a.m. on Tuesday, January 7. It was upgraded to a Winter Storm Warning at 4:17 a.m. on Wednesday, January 8, about 30 hours before the crash time. The warning took effect at 6 a.m. Thursday, January 9 and was scheduled to run to noon Friday. It covered Cooke, Grayson, Fannin, Lamar, Wise, Denton, Collin, Hunt, Delta, Hopkins, Parker, Tarrant, Dallas and Rockwall counties, naming Denton, Lewisville, Frisco and Flower Mound among its cities.



When the watch and warning were issued, when the warning took effect, and where the crash time falls inside it.

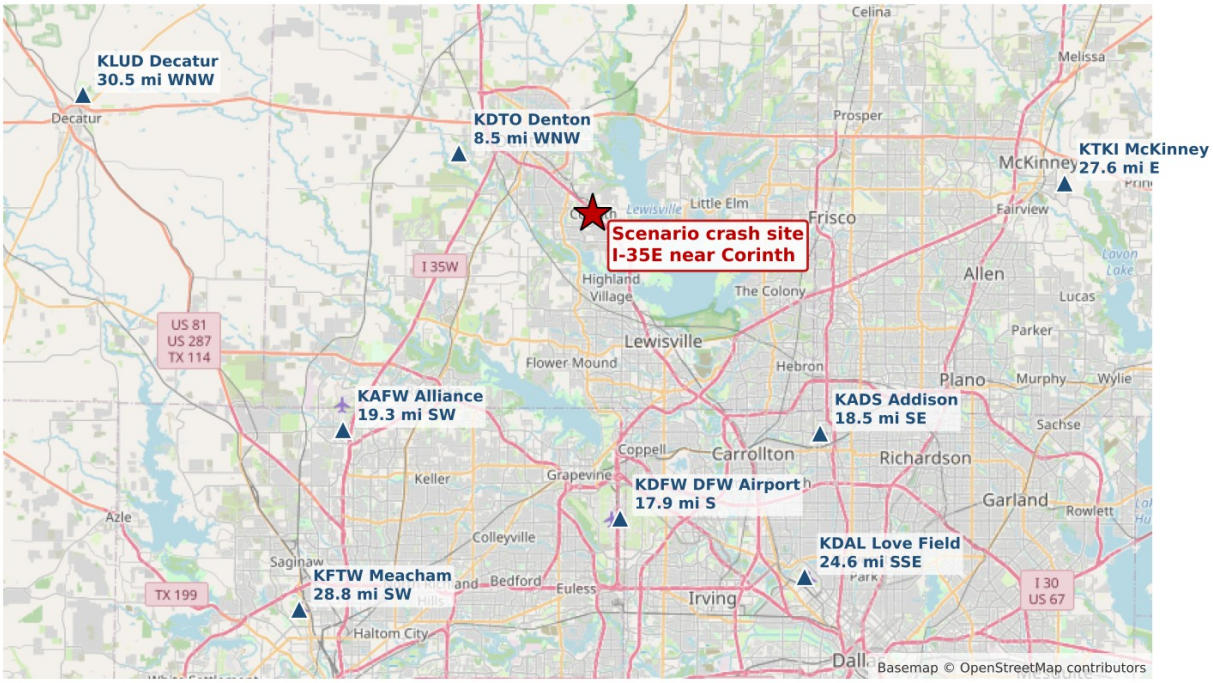
The warning text, in the Weather Service's words:

> *"Heavy mixed precipitation expected with a transition to all snow Thursday evening. Total snow accumulations between 2 and 4 inches."*
>
> *"Travel could be very difficult. The hazardous conditions could impact the Thursday morning and evening commutes."*
>
> *"Persons should delay travel if possible. If travel is absolutely necessary, drive with extreme caution and be prepared for sudden changes in visibility. Leave plenty of room between you and the motorist ahead of you … Avoid sudden braking or acceleration."*

The storm arrived as forecast. Snow near the crash site came heavier and earlier than the warning's storm total suggested: Lake Dallas, 3 miles from the site, had 3.75 inches by 10:51 a.m. Thursday, already near the top of the forecast 2-to-4-inch range.

3. Where the observations come from

No weather station sits at the crash site. The nearest airport weather stations are listed below with their distance and direction from the site, and the observation each made closest to 10:40 a.m. Denton Enterprise Airport (KDTO) is the closest and is weighted most heavily. Wind speeds are converted from knots to miles per hour.



Airport weather stations used in this report, with distance and direction from the scenario crash site.

Station	From the site	Time	Weather reported	Visibility	Air temp.	Wind
KDTO Denton	**8.5 mi WNW**	**10:42**	**Snow, freezing fog**	**¼ mi**	**31°F**	**SE 9 mph**
KDFW DFW Airport	17.9 mi S	10:32	Light snow and sleet	1½ mi	31°F	ESE 8 mph
KADS Addison	18.5 mi SE	10:47	Snow, mist	1 mi	32°F	ESE 9 mph
KAFW Alliance	19.3 mi SW	10:34	Light snow, mist	1¼ mi	31°F	ESE 8 mph
KDAL Love Field	24.6 mi SSE	10:48	Light sleet and snow, mist	2½ mi	32°F	ESE 5 mph
KTKI McKinney	27.6 mi E	10:35	Light snow, freezing fog	½ mi	31°F	SE 6 mph
KFTW Meacham	28.8 mi SW	10:45	Light snow, mist	¾ mi	30°F	SE 8 mph
KLUD Decatur	30.5 mi WNW	10:35	Light snow	½ mi	30°F	ESE 8 mph

Each station's observation closest to 10:40 a.m. CST. All eight stations reported falling snow, every one was at 30 to 32°F, and the wind everywhere was light, from the east-southeast to southeast.

4. How conditions developed through the morning

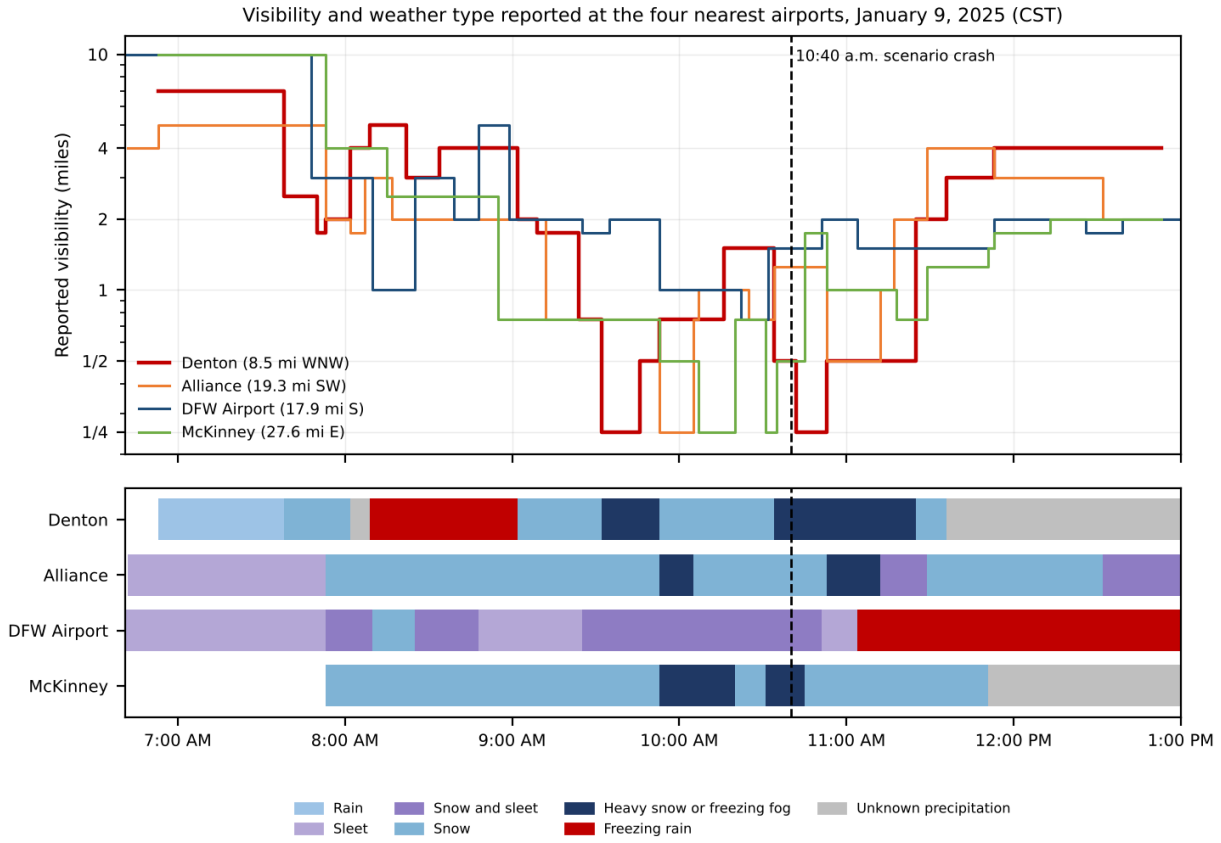
The record shows a building hazard rather than a sudden one. Rain and sleet arrived first, the air cooled to freezing, freezing rain glazed surfaces, and then snow took over and grew heavier into late morning. The chronology at Denton's airport, the nearest station, is set out below.

Time	Weather	Visibility	Air temp.	Note
6:53 a.m.	Light rain	7 mi	36°F	Precipitation begins; still above freezing
7:38 a.m.	Light snow, mist	2½ mi	32°F	Changeover to snow; air reaches freezing
8:09–8:34 a.m.	Freezing rain, mist	3–5 mi	31°F	Ice measured on the station's ice sensor: a trace, then 0.01 inch in the hour by 8:34
9:02–9:24 a.m.	Light snow, mist	2 → ¾ mi	31–32°F	Back to snow; visibility falling
9:32 a.m.	Heavy snow, freezing fog	¼ mi	31°F	First drop to one-quarter mile
9:46–10:16 a.m.	Snow / light snow	½ → 1½ mi	30–31°F	Brief improvement
10:34 a.m.	Snow, freezing fog	½ mi	31°F	Visibility falling again

Time	Weather	Visibility	Air temp.	Note
10:42 a.m.	**Snow, freezing fog**	**¼ mi**	**31°F**	**Two minutes after the crash time**
10:51 a.m.	Snow, freezing fog	¼ mi	30°F	0.12 inch of melted precipitation in the hour ending 10:53
10:53–11:05 a.m.	Snow, freezing fog	½ mi	31°F	Heavy snow continues
11:25 a.m.	Light snow, mist	2 mi	31°F	Heavy snow ends at Denton

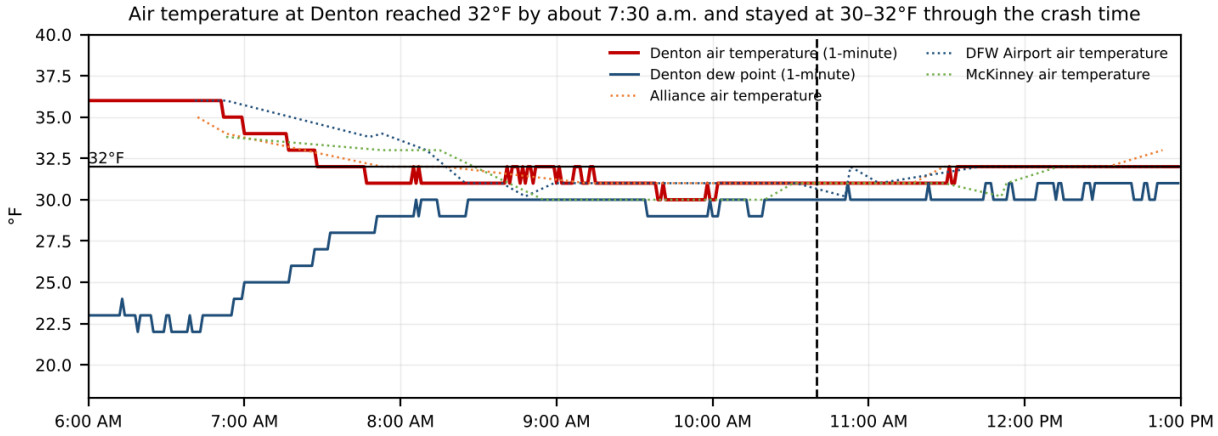
Denton Enterprise Airport (KDTO), 8.5 miles west-northwest of the scenario crash site, January 9, 2025. Times CST.

Elsewhere, sleet was first reported at DFW Airport at 6:41 a.m. and at Alliance at 6:42 a.m., and freezing rain at Addison at 7:47 a.m. McKinney, 27.6 miles east, reported one-quarter mile in heavy snow and freezing fog at 10:07 and 10:31 a.m. Alliance reported one-half mile in light snow and freezing fog at 10:53 a.m. DFW Airport went to freezing rain at 11:04 a.m.



Top: visibility at the four nearest airports through the morning. Bottom: the type of precipitation each was reporting. All four reached one-quarter to one-half mile around the crash time.

The chart shows the same pattern at all four stations: visibility drops in steps from 7 to 10 miles at dawn to between one-quarter and one-half mile by mid-morning, with the lowest readings clustered between about 9:30 and 11:00 a.m. Each line is made of individual reports, so conditions between reports, which can change within minutes in heavy snow, are not captured.

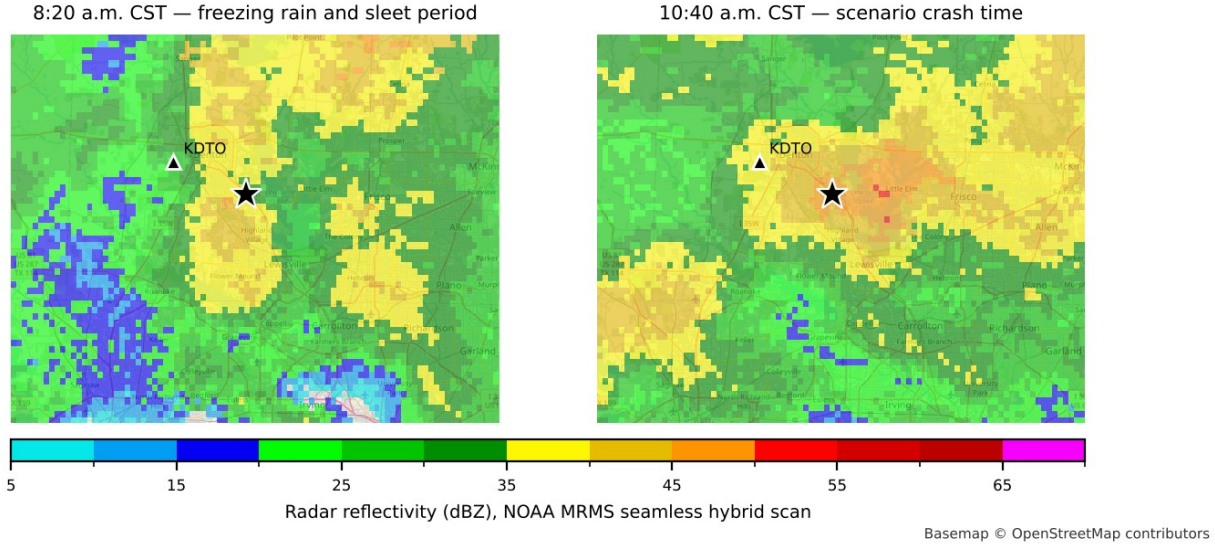


Air temperature and dew point at Denton (one-minute readings), with the other nearest airports for comparison.

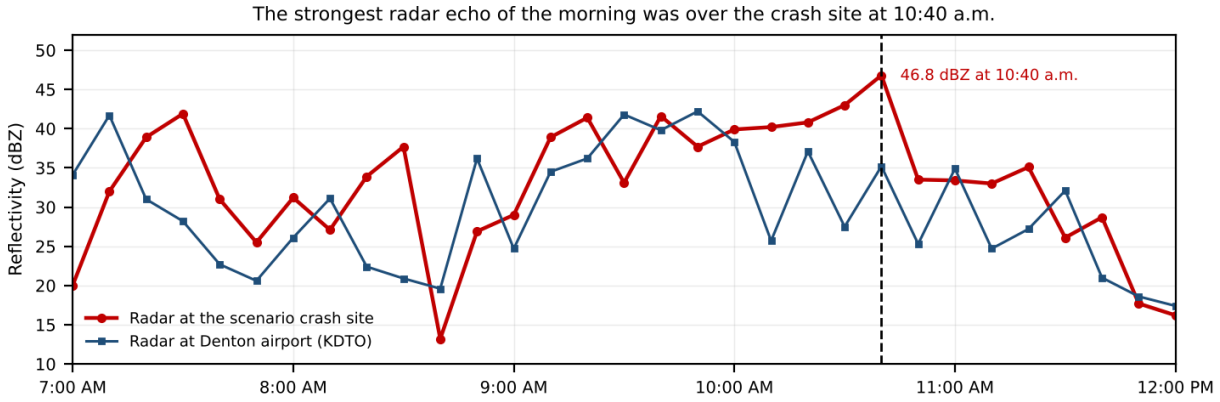
Denton's air temperature fell from 36°F at dawn to 32°F by about 7:30 a.m. and stayed between 30 and 32°F through the crash time. The dew point rose from about 23°F to 30°F over the same period, which means the air near the ground became nearly saturated. The other airports followed the same course. With the air at or below freezing, rain falling from warmer air above would freeze on contact with the road, vehicles and windshields, and snow would not melt on untreated surfaces.

5. Radar over the crash site

The National Weather Service's merged radar product (NOAA Multi-Radar Multi-Sensor, MRMS) was read every 10 minutes from 7:00 a.m. to noon at the grid cell containing the crash site and at the grid cell containing Denton's airport. Stronger radar echoes in a snowstorm generally mean heavier precipitation, and heavier snow means lower visibility.



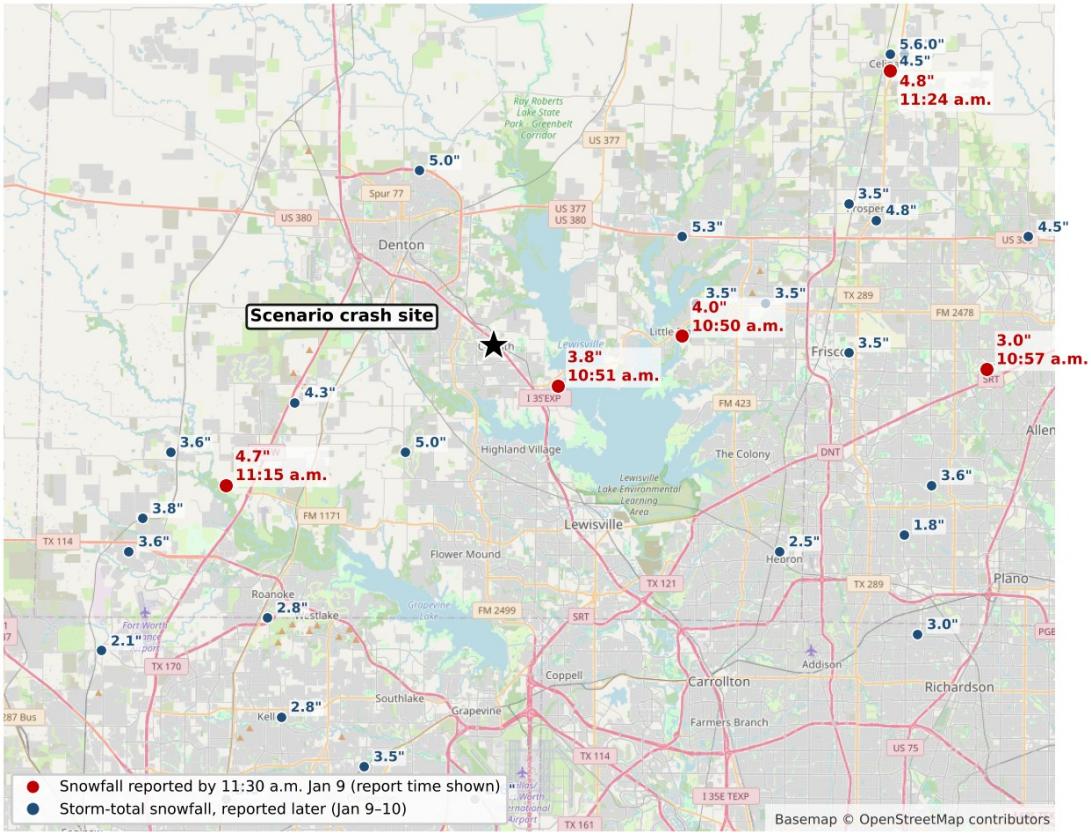
Radar reflectivity over the area during the freezing rain and sleet period (left) and at the scenario crash time (right). The star marks the crash site.



Radar reflectivity at the crash site and at Denton's airport, every 10 minutes, 7:00 a.m. to noon.

Radar at the crash site rose through the morning and peaked at 46.8 dBZ at 10:40 a.m., the highest value at the site between 7:00 a.m. and noon. At the same moment Denton's airport, where one-quarter-mile visibility was reported two minutes later, read 35.2 dBZ. The radar's precipitation-type product classified the precipitation over the crash site at 10:40 a.m. as snow. By 10:50 a.m. the echo over the site had dropped back to about 34 dBZ as the heaviest band moved on.

6. Snowfall reports



Snowfall reports received by the National Weather Service. Red: reports timed by 11:30 a.m. January 9, with the report time. Blue: storm totals reported later on January 9 and 10.

The Weather Service received four snowfall reports near the site by late morning: 3.75 inches at Lake Dallas (about 3 miles from the site) at 10:51 a.m., 4.0 inches at Little Elm (about 8 miles) at 10:50 a.m., 4.7 inches at Northlake (about 13 miles) at 11:15 a.m., and 3.0 inches near Allen at 10:57 a.m. Storm totals reported later in Denton County ran from about 2.5 to 5.5 inches. At Denton's airport, the melted

equivalent of the precipitation was at least 0.42 inch between 6:53 a.m. and 11:53 a.m. (one hourly total is missing, so the true amount was somewhat higher).

7. Road surface and ice

No road-surface sensor data were reviewed for this sample. From the weather record alone:

- The air was at or below 32°F from about 7:30 a.m. onward at Denton and at every other airport in the area, so any freezing rain or sleet would have frozen or stayed frozen on untreated pavement.
- Freezing rain fell at Denton's airport from 8:09 to 8:34 a.m., and its ice sensor measured ice accumulating. Snow then fell on top. Untreated surfaces at the crash site were therefore likely to carry a layer of ice beneath the snow, the combination that tends to give the least traction.
- By the crash time about 3 to 4 inches of snow had fallen near the site, and heavy snow was falling at the time.

Whether that section of I-35E had been treated or plowed, and what the pavement was like at the moment of the crash, are outside the weather record. In a live matter I would add the Texas Department of Transportation road-weather sensor records and DriveTexas road-condition reports for the corridor, the crash report and any dash-camera or traffic-camera images, and compare them with the findings here.

8. Sun position and glare

At 10:40 a.m. CST the sun at the crash site was 28.4 degrees above the horizon, in the south-southeast (azimuth 149 degrees). Southbound I-35E at Corinth runs roughly toward the southeast, so on a clear day the sun would have been ahead of and slightly to the right of a southbound driver. On January 9, however, the sky was overcast: Denton's airport reported an overcast cloud deck at 1,200 to 3,900 feet with snow and freezing fog below it. No direct sunlight reached the road, so sun glare is not supported as a factor.

9. Best estimate of conditions at the crash site, 10:40 a.m.

Condition	Best estimate	Basis	Confidence
Visibility	About ¼ to ½ mile; possibly below ¼ mile for short periods and up to about 1 mile in lulls	Denton ½ mi at 10:34 and ¼ mi at 10:42; McKinney ¼ mi at 10:31; radar at the site at least as strong as at Denton	Moderate
What was falling	Snow, heavy at times	Snow at all eight airports; radar classified snow over the site; 3.75 inches at Lake Dallas by 10:51	High
Air temperature	30 to 31°F	All nearby airports 30 to 32°F	High
Wind	From the southeast, about 7 to 9 mph	All nearby airports east-southeast to southeast, 5 to 9 mph	High
Ice on the road	Likely on untreated pavement, beneath the snow	Freezing rain with measured ice at Denton 8:09–8:34; air at or below 32°F after 7:30	Moderate (no road-sensor data)
Daylight and glare	Daylight; no direct sun, no glare	Overcast cloud deck; sun 28° up in the south-southeast	High
How quickly it developed	Over about three hours, with warnings 30 hours ahead	Station chronology; Winter Storm Warning issued Wed 4:17 a.m.	High

The visibility range reflects the 8.5-mile distance to the nearest station and the rapid changes seen in heavy snow.

10. Conclusions

- **The storm was forecast and warned.** A Winter Storm Warning naming Denton County was issued about 30 hours before the crash time and told drivers to expect very difficult travel on the Thursday morning commute and sudden changes in visibility.
- **The hazard built over about three hours.** Sleet and freezing rain arrived between about 6:40 and 7:50 a.m., ice was measured at Denton by 8:34 a.m., and heavy snow with freezing fog first brought Denton's visibility down to one-quarter mile at 9:32 a.m.

- **At 10:40 a.m. the crash site was under the heaviest snow of the morning.** Radar over the site peaked at that time, Denton reported one-quarter mile two minutes later, and Lake Dallas, 3 miles away, reported 3.75 inches of snow eleven minutes later. Best-estimate visibility at the site is one-quarter to one-half mile.
- **Untreated pavement was likely icy beneath the snow,** with air temperatures at 30 to 31°F.
- **Sun glare is not supported:** the sky was overcast.

I reserve the right to supplement these findings if additional information is provided, such as the crash report, road-sensor records or video.

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Sample report — not signed and not an opinion in any matter.

Data relied on, method and limitations

Surface observations: routine and special airport observations (METAR/SPECI) from the FAA/NWS Automated Surface Observing System at KDTO, KDFW, KADS, KAFW, KDAL, KTKI, KFTW and KLUD, and one-minute temperature and dew point at KDTO, for January 9, 2025, retrieved from the Iowa Environmental Mesonet (mesonet.agron.iastate.edu) archive. Times are converted to Central Standard Time. Wind speeds are converted from knots to miles per hour. Ice accretion is the automated freezing-rain sensor value in the KDTO remarks. Several KDTO observations carried the maintenance-check indicator ($); the values they report are consistent with the neighboring stations.

Visibility is the prevailing visibility reported by each station; values are discrete reports and conditions between reports are not observed. At automated stations, “freezing fog” is assigned when visibility is below five-eighths of a mile with the air below freezing and near saturation; when heavy snow is falling, much of the visibility loss may come from the snow itself. Either way, visibility at the reported values applies.

Radar: NOAA/NWS Multi-Radar Multi-Sensor (MRMS) seamless hybrid-scan reflectivity on a 0.01-degree grid (about 0.7 by 0.6 mile) at 10-minute intervals from 7:00 a.m. to noon CST, and the MRMS precipitation-type flag at 8:20 and 10:40 a.m., from the Iowa Environmental Mesonet MRMS archive (mtarchive.geol.iastate.edu). The MRMS precipitation-type flag does not identify freezing rain or sleet separately from rain and snow, so freezing precipitation is taken from the surface observations. Reflectivity in a mixed-precipitation event can be raised by partly melted particles aloft, so radar is used here to compare the site with Denton's airport, not to calculate a snowfall rate.

Warnings: NWS Fort Worth (FWD) Winter Storm Watch and Winter Storm Warning products and their valid times (VTEC event WS.W.0001), from the Iowa Environmental Mesonet NWS text and VTEC archives. Snowfall: NWS Fort Worth local storm reports for January 9–10, 2025; these are preliminary reports from the public, emergency managers and NWS staff, and their times are when the report was made. Distances and directions are great-circle values from the scenario site coordinates. Sun position is calculated from the standard NOAA solar-position equations. Map tiles © OpenStreetMap contributors.

Scope: this report addresses the weather at and near the location. It does not address driver perception or reaction, vehicle speed or condition, road treatment, the collision sequence, or fault. In a live matter the analysis would also review road-weather sensor data, the crash report, video and any witness accounts of conditions.