

Meteorological Analysis — 06-13-2026

2807 Janan Drive, Bellevue, Nebraska 68005, United States · Nearest NEXRAD KOAX (25.6 mi · 298° WNW) · Hazard(s): Hail

MAX HAIL REPORTED

1"

PEAK REFLECTIVITY

56 dBZ

PEAK RADIAL VEL

42 kt

BEAM HT AT PARCEL

1,465 ft AGL

SBCAPE

0 J/kg

DCAPE

656 J/kg

NEAREST REPORT

1.1 mi

CONCLUSIONS BY HAZARD

 **Hail** High confidence (capped: plausible/consistent)

Estimated hail size: 1" (parcel vicinity — not measured at the structure) · methods: Reported hail size

Large hail at this property on this date is physically plausible and consistent with the event as documented by nearby reports and the near-storm environment. Radar reflectivity does NOT confirm hail at the structure: no human-verified hail signature exists in the parcel gate.

Significant hail (≥ 1.0 in) in a confirmed report	✓	Largest nearby hail 1".
Proximity of nearest confirmed report	✓	Nearest confirmed hail report is 1.1 mi from the parcel.
Reflectivity core (≥ 50 dBZ) over the parcel	✓	Peak reflectivity sampled at the parcel was 56 dBZ.
Candidate hail signature AT the parcel gate	—	No candidate signature in the parcel gate (the usual case).
Near-storm environment supportive of large hail	—	Environment not clearly supportive (or sounding unavailable).

Confidence in the estimate

High confidence

METEOROLOGICAL REASONING

IN PLAIN LANGUAGE

The National Weather Service forecast discussion before this event noted the potential for strong storms in the area. The air had weak to moderate instability (a measure of how easily storms can develop). Mid-level winds were moderately tilted.

For hail, the instability could have lifted hailstones upward. The freezing level was around 3,935 meters (about 12,900 feet) above ground, and conditions were somewhat less favorable for very large hail to survive the fall to the ground.

Radar station KOAX detected a peak reflectivity (a measure of storm intensity) of 56 dBZ over the storm at about 1,465 feet above ground. No strong rotating winds were detected. Nearby weather reports included hail up to 1 inch, with the closest report 1.1 miles from the property. The nearest airport reported thunderstorm with rain and gusts up to 31 knots around the time of the event.

Taken together, the storm and surrounding observations were consistent with hail large enough to damage roofing at this property. This is an assessment based on available data showing it is plausible, not a confirmation that damage actually occurred. Radar does not independently confirm a hazard reached the structure, and these conclusions remain unverified pending review by a meteorologist.

TECHNICAL DETAIL

The NWS Area Forecast Discussion issued ahead of this event highlighted the potential for active convective weather in the area. A marginally unstable airmass was in place ($\text{MUCAPE} \approx 216 \text{ J/kg}$, $\text{SBCAPE} \approx 0 \text{ J/kg}$). Mid-level (700–500 mb) lapse rates were moderately steep (6.5°C/km).

For the hail threat, the instability noted above could loft hailstones, with a freezing level near 3935 m AGL and a wet-bulb-zero height of 3850 m (less favorable for large hail reaching the surface).

NEXRAD KOAX sampled a peak reflectivity of 56 dBZ over the parcel at a beam height of $\approx 1,465 \text{ ft AGL}$. No parcel-gate velocity couplet was detected. Nearby storm reports included hail to 1", the closest 1.1 mi from the property. The nearest aerodrome (OFF) reported -TSRAGR, gusts to 31 kt around event time.

Taken together, the near-storm environment and surrounding observations were consistent with hail of a magnitude that can damage roofing at this property. This is a data-driven plausibility assessment, not confirmation that damage occurred: radar does not independently confirm a hazard at the structure, and conclusions stay UNVERIFIED pending meteorologist review.

☰ RADAR AT THE PARCEL

Reflectivity

TIME	DBZ	BEAM HT (FT AGL)
13:25:59Z	10	1,465
13:31:57Z	36	1,465
13:38:03Z	46	1,465
13:44:08Z	56	1,465
13:50:14Z	46	1,465

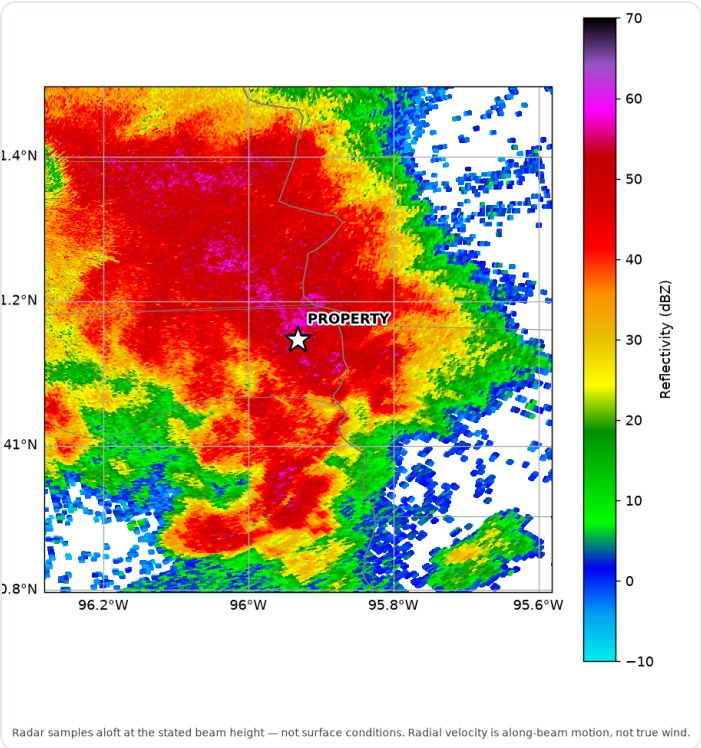
TIME	DBZ	BEAM HT (FT AGL)
13:56:19Z	24	1,465

Radial velocity

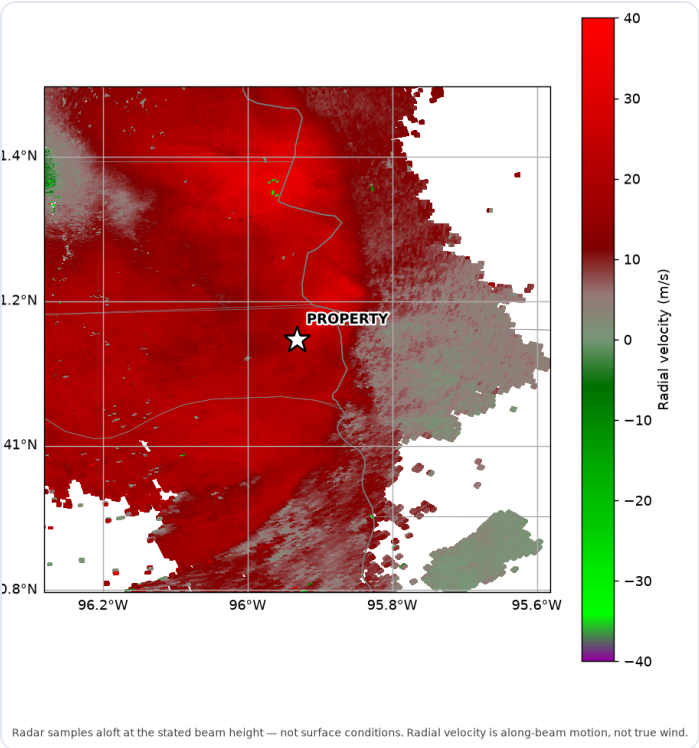
TIME	RADIAL VEL (KT)	BEAM HT (FT AGL)	RF SUSPECT
13:25:59Z	5	1,465	no
13:31:57Z	1	1,465	no
13:38:03Z	10	1,465	no
13:44:08Z	42	1,465	no
13:50:14Z	26	1,465	no
13:56:19Z	28	1,465	no

Value is radar RADIAL velocity (motion toward/away from the radar along the beam), not true horizontal wind speed, and is sampled at the stated beam height above ground — not at roof/surface level.

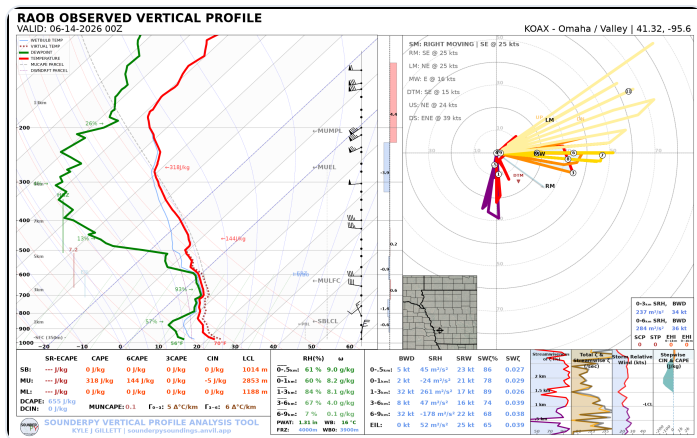
⚡ RADAR IMAGERY — PROPERTY GEOREFERENCED



Reflectivity at 2026-06-13 13:44 UTC, elevation 0.48°, beam height ≈ 1,467 ft AGL over the property.



Radial velocity at 2026-06-13 13:44 UTC, elevation 0.48°, beam height ≈ 1,467 ft AGL over the property.



Observed skew-T & hodograph — KOAX 06-14-2026 00Z (nearest RAOB; near-storm environment).

The property is pinned at its geocoded location; radar echoes are at the stated beam height ABOVE GROUND, not the surface. The tropical track figure, when present, shows best-track wind-field exposure, not a measured wind.

NEARBY LOCAL STORM REPORTS (PRELIMINARY)

TYPE	MAGNITUDE		DIST	AZIM	TIME	SOURCE
HAIL	1"	measured	1.9 mi	61°	13:40Z	NWS product
HAIL	1"	measured	1.1 mi	34°	13:40Z	NWS product

OFFICIAL NCEI STORM EVENTS RECORD

No official NCEI Storm Events record matched — the database was consulted; absence of a record is itself meaningful.

NEAR-STORM ENVIRONMENT & SKEW-T

NWS forecast discussion: [DISCUSSION] Issued at 1056 PM CDT Fri Jun 12 2026 After a quiet Friday, thunderstorms return to the forecast early Saturday morning. These thunderstorms will be in response to moisture return on a low-level jet impinging on a slowly sagging cold front. Elevated showers and thunderstorms are expected to develop over portions of eastern Nebraska prior to sunrise. These thunderstorms will be in an environment that is forecast to have sufficient instability and shear for the development of large hail in the strongest cells. A damaging microburst can't be entirely ruled out also. These thunderstorms gradually shift east of the area through the remainder of the morning hours. [...]

Nearest RAOB KOAX · 21.0 mi · 55° NE from the property, valid 2026-06-14T00:00:00+00:00 (pre-event sounding).

SBCAPE	0 J/kg	Lifted Index	2.1 °C
MUCAPE	216 J/kg	DCAPE	656 J/kg
MLCAPE	0 J/kg	PWAT	33 mm

700–500mb lapse	6.5 °C/km	0–1km SRH	0 m²/s²
Freezing level	3935 m	0–3km SRH	0 m²/s²
Wet-bulb-zero	3850 m		

 DATA COMPLETENESS

radar: ok

AFD: ok

sounding: ok

storm events: ok

 SOURCE DATA FOR THIS STORM



15 primary-source file(s) (76.5 MB) for this storm — every radar volume, sounding, AFD, LSR, and NCEI record behind this analysis, with a manifest.

Scan to download, or use the link below. Permanent link.

<https://meteorological-report-data.s3.us-east-2.amazonaws.com/evidence/c636c386f0834ae794e803d7de36c757/2026-06-13/source-data.zip>

 HANDOFFS & DISCLOSURES

- **Roof-damage assessment** (cause, extent, repair) is handed off to a licensed roofing contractor / forensic engineer.
- **Legal evaluation** is handed off to counsel.
- **Interest disclosure:** This draft was prepared at the request of the retaining party in connection with a property-damage matter. The preparer's compensation is not contingent on the conclusions reached.

Radar radial velocity is along-beam motion, not true surface wind; radar beam height aloft is not roof level. Roof-damage causation and extent are separate engineering assessments.