

# Upon Further Review...

## The May 18, 1995 Severe Weather Outbreak

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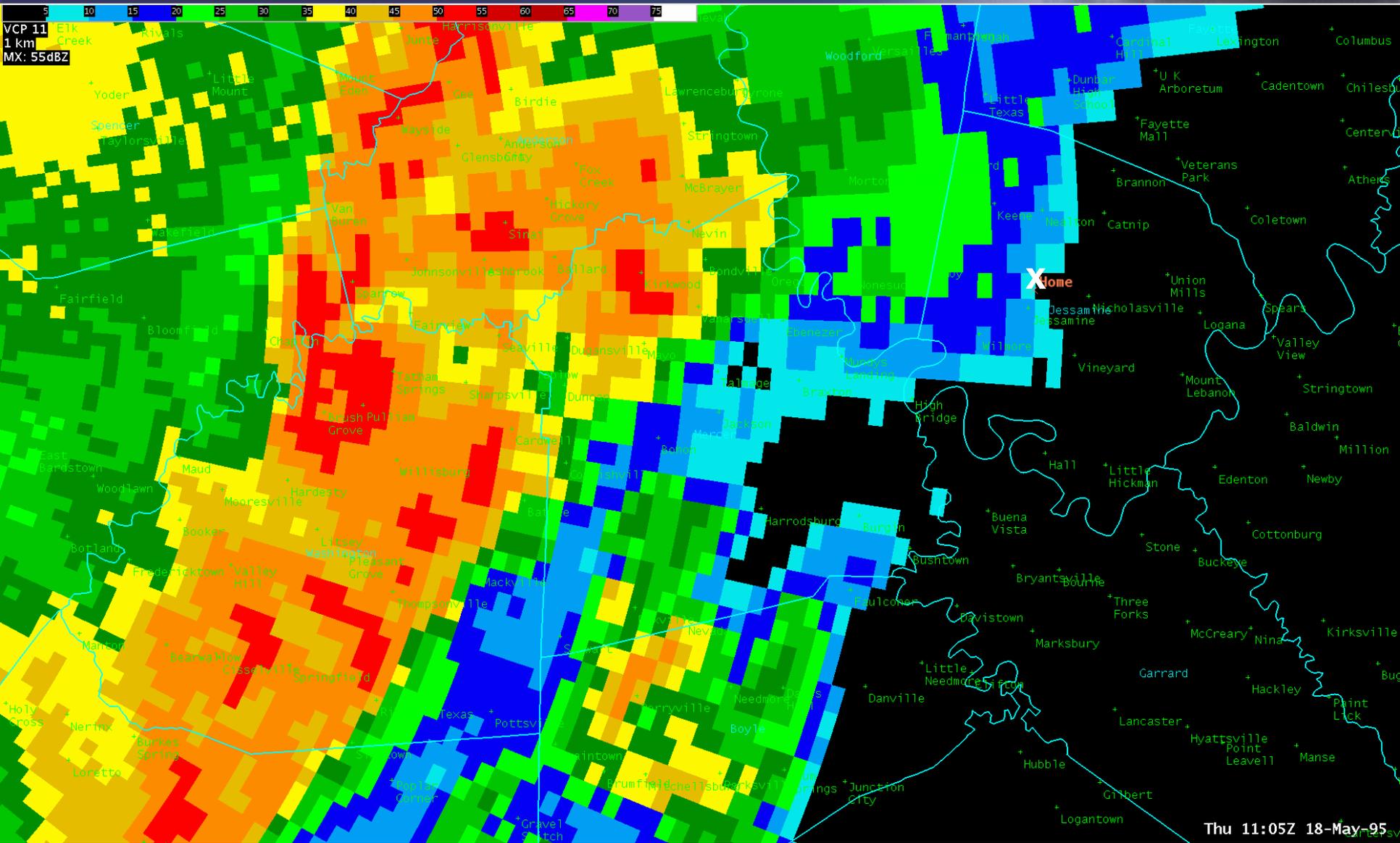
# Where This Saga Began



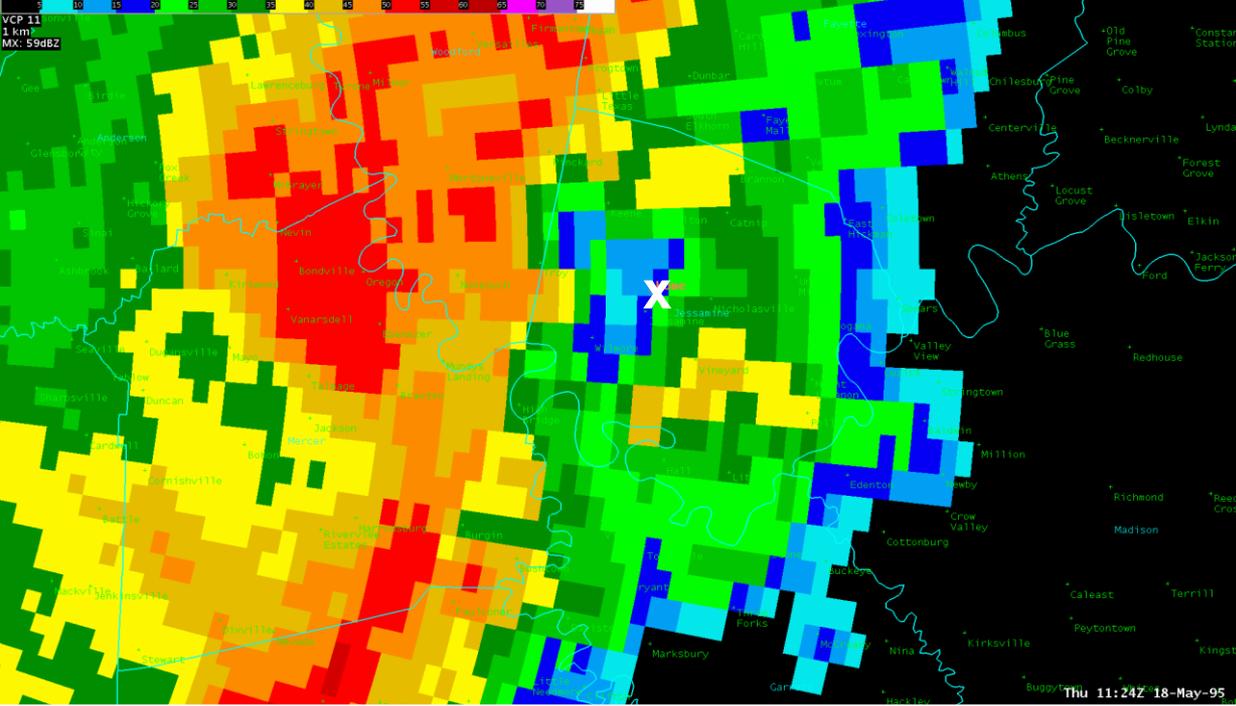
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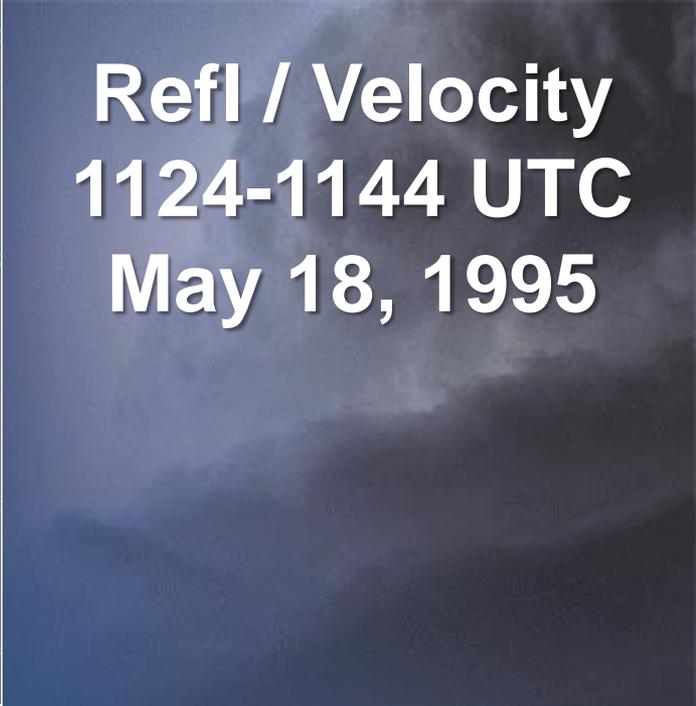
# Reflectivity – 1105-1149 UTC May 18, 1995



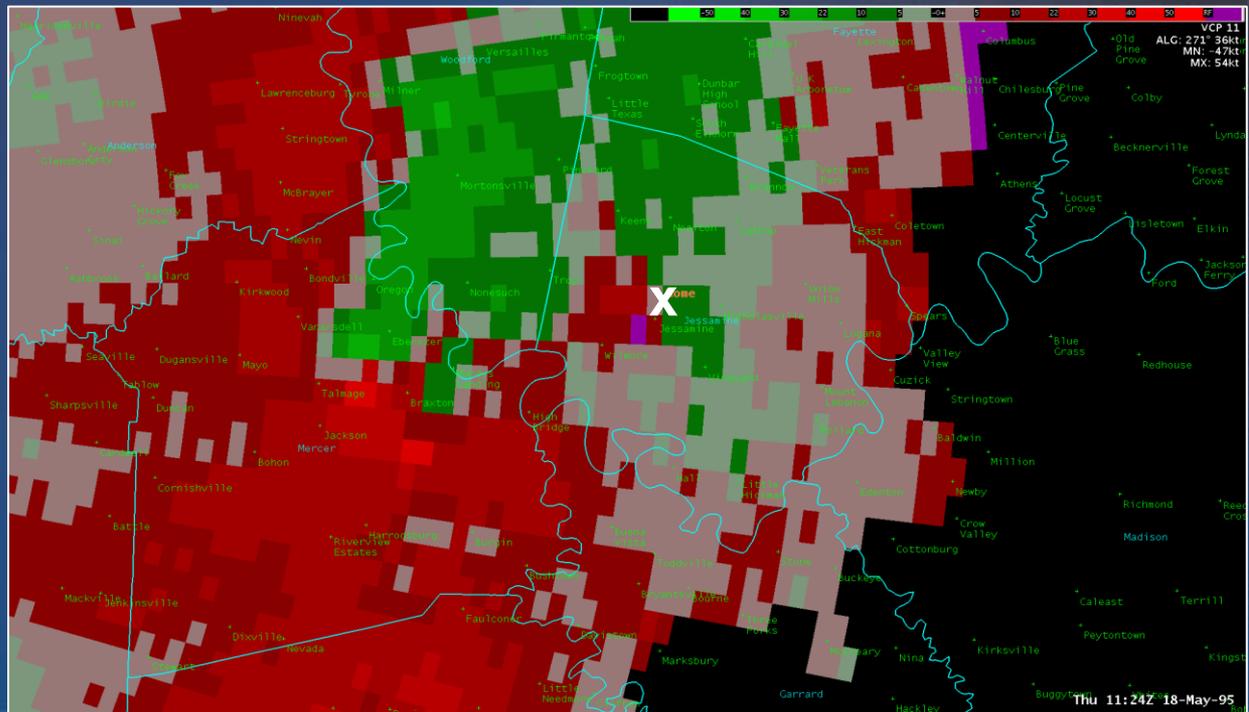




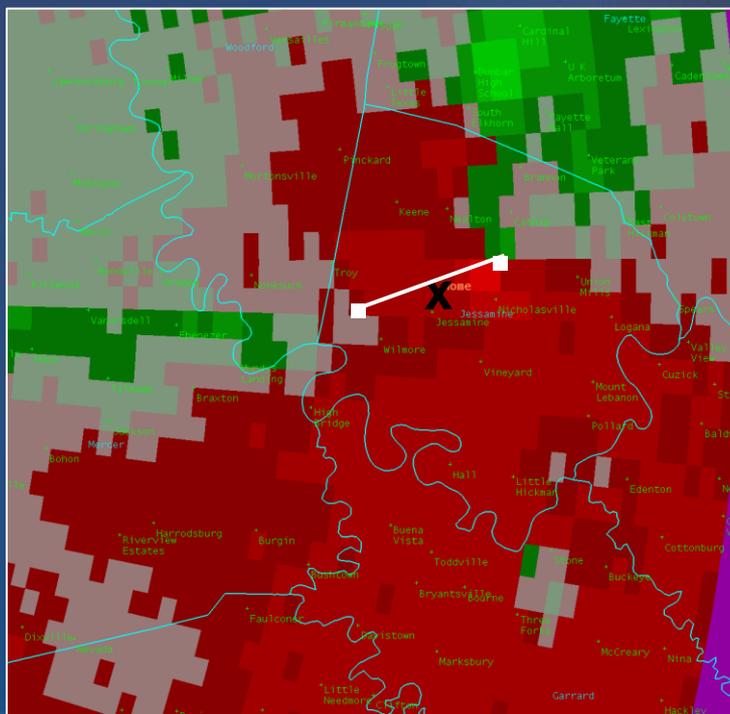
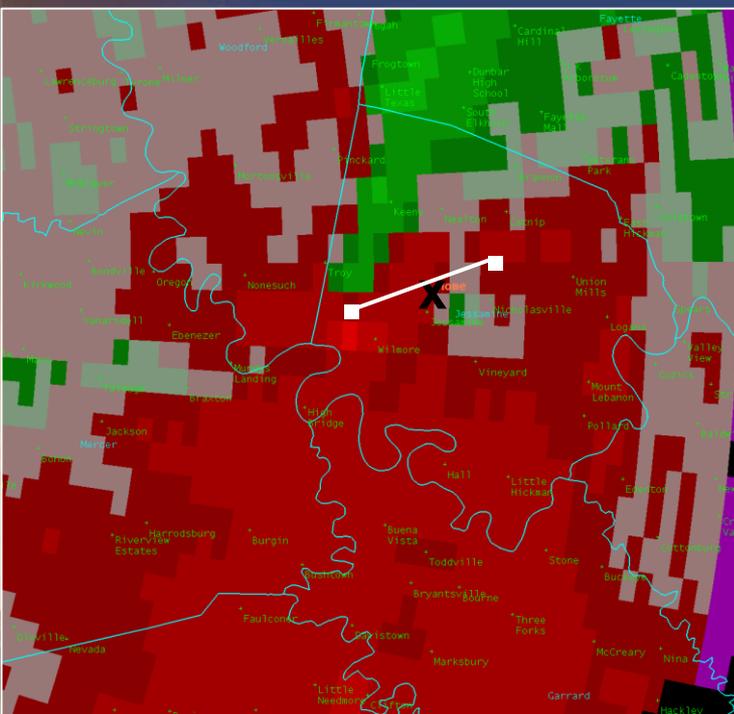
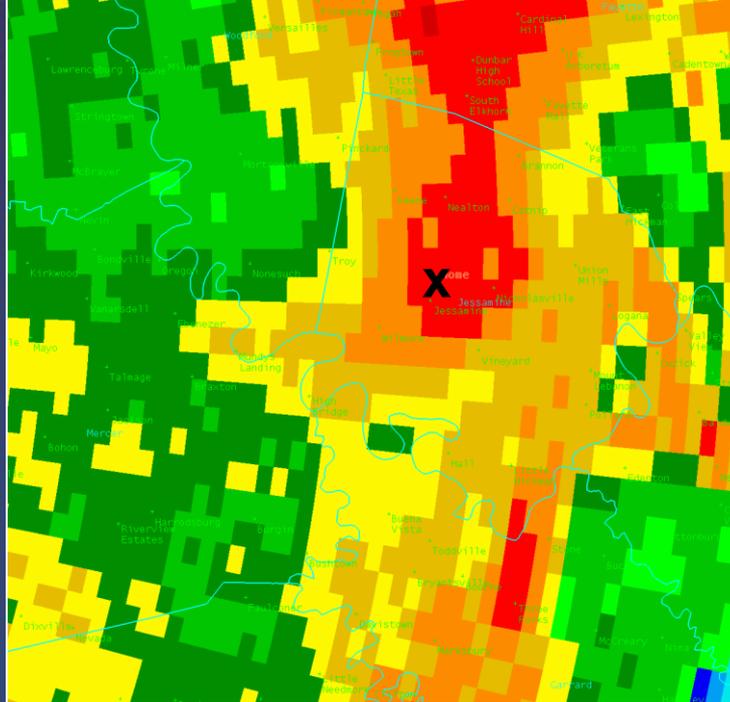
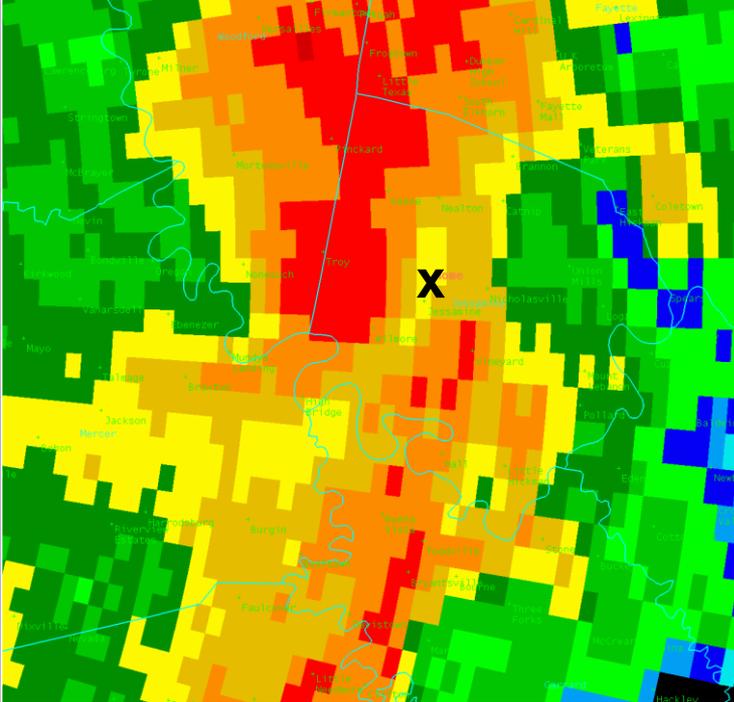
# Refl / Velocity 1124-1144 UTC May 18, 1995



Radar shows a line of thunderstorms, with a “line break” and cyclonic circulation which pass over Jessamine County. These circulations can produce enhanced straight-line wind damage and/or tornadoes.



# Refl / Velocity 1134 and 1139 UTC May 18, 1995



X = West Jessamine High School.

White dots and line show location of the circulation that passed over/near the high school associated with the line of storms.



# Aerial View of Damage





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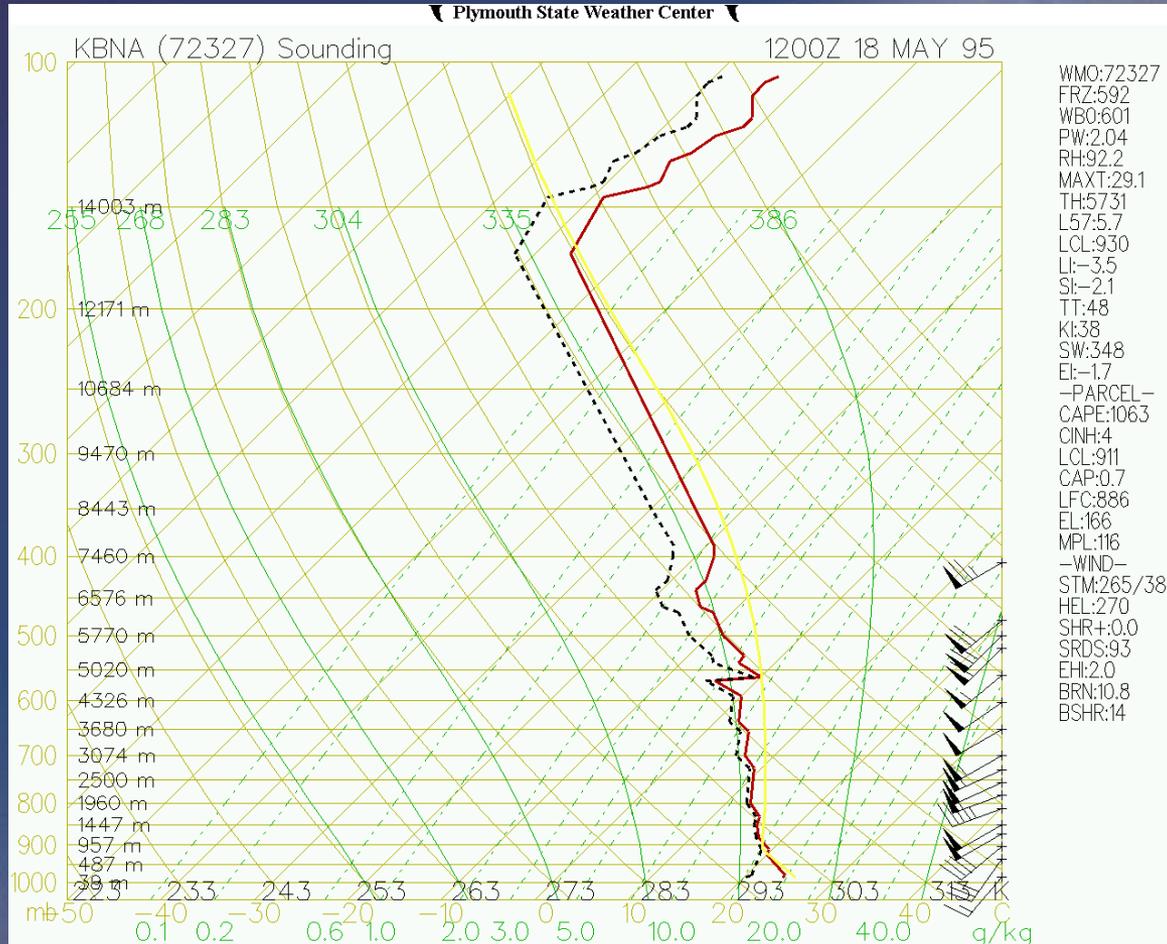


# Damage highlights

- Extensive damage to West Jessamine High School and surrounding buildings
  - \$2 million in damage at high school
  - School roof uplifted
  - 11 buses significantly damaged
  - Tobacco barn and greenhouse destroyed
- 30+ students injured
- Walmart and strip plaza sustained significant damage
- Path of wind damage to West Virginia state line



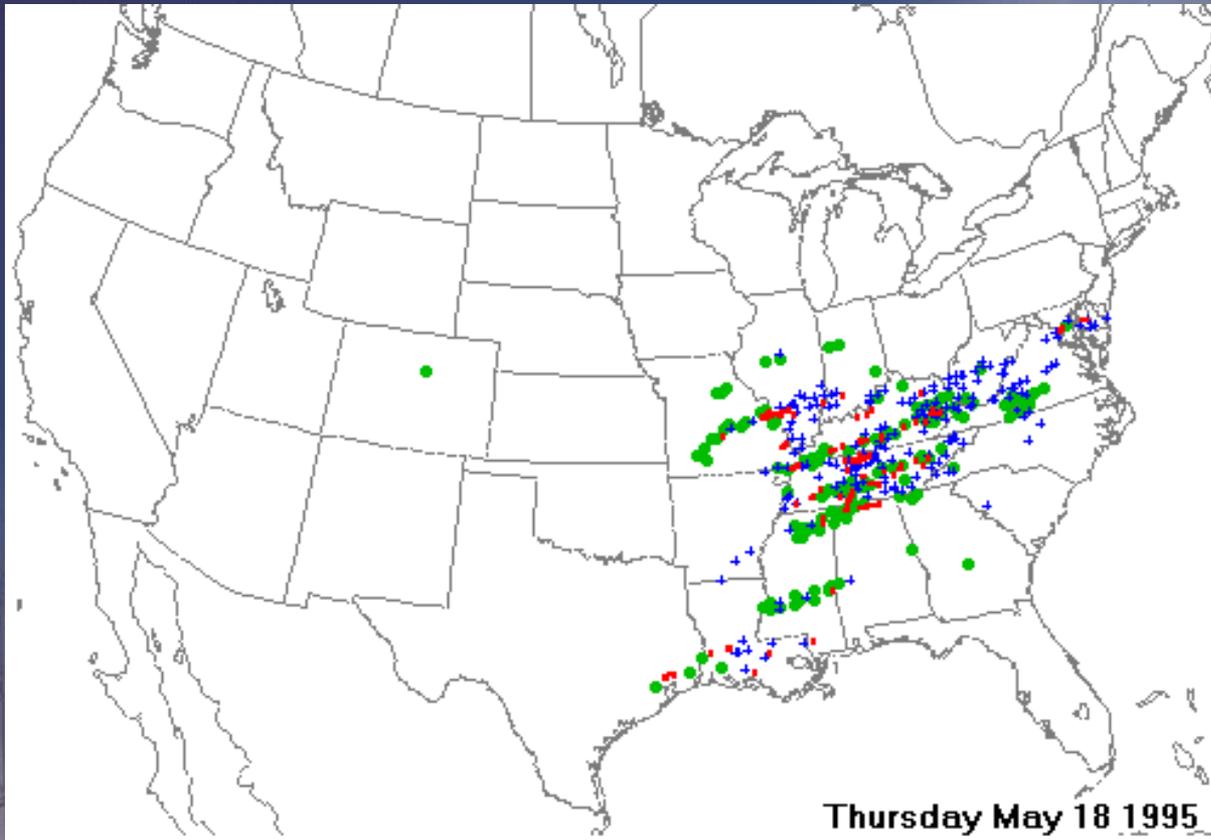
# Environment



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# Storm Reports



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# The Challenge

Fujita Scale		Enhanced Fujita Scale*	
		* In use since 2007	
F-0	40–72 mph winds	EF-0	65–85 mph winds
F-1	73–112 mph	EF-1	86–110 mph
F-2	113–157 mph	EF-2	111–135 mph
F-3	158–206 mph	EF-3	136–165 mph
F-4	207–260 mph	EF-4	166–200 mph
F-5	261–318 mph	EF-5	>200 mph

The processes and scale for determining the strength of tornadoes have changed significantly since 1995.



# Rating Process

Damage indicator:  
School – Jr. or Sr.  
High School



## Fujita Scale

F-0	40–72 mph winds
F-1	73–112 mph
F-2	113–157 mph
F-3	158–206 mph
F-4	207–260 mph
F-5	261–318 mph

DOD*	Damage description	EXP	LB	UB
1	Threshold of visible damage	68	55	83
2	Loss of roof covering (<20%)	79	66	99
3	Broken windows	87	71	106
4	Exterior door failures	101	83	121
5	Uplift of metal roof decking; significant loss of roofing material (>20%); loss of rooftop HVAC	101	85	119
6	Damage to or loss of wall cladding	108	92	127
7	Collapse of tall masonry walls at gym, cafeteria or auditorium	114	94	136
8	Uplift or collapse of light steel roof structure	125	108	148
9	Collapse of exterior walls in top floor	139	121	153
10	Most interior walls of top floor collapsed	158	133	186
11	Complete destruction of all or a large section of building	192	163	224



# Rating Process

Damage Indicator:  
Warehouse (tilt up  
walls or heavy timber)

## Fujita Scale

F-0	40-72 mph winds
F-1	73-112 mph
F-2	113-157 mph
F-3	158-206 mph
F-4	207-260 mph
F-5	261-318 mph

DOD*	Damage description	EXP	LB	UB
1	Threshold of visible damage	68	55	83
2	Loss of roofing material (<20%)	83	69	105
3	Inward or outward collapse of overhead doors	88	75	107
4	Uplift of roof deck; significant loss of roofing material (>20%); loss of rooftop HVAC equipment	103	88	122
5	Collapse of other non-bearing exterior walls	114	93	126
6	Collapse of pre-cast concrete tilt-up panels	124	102	144
7	Total destruction of a large section of building or entire building	158	131	186

# Rating Process



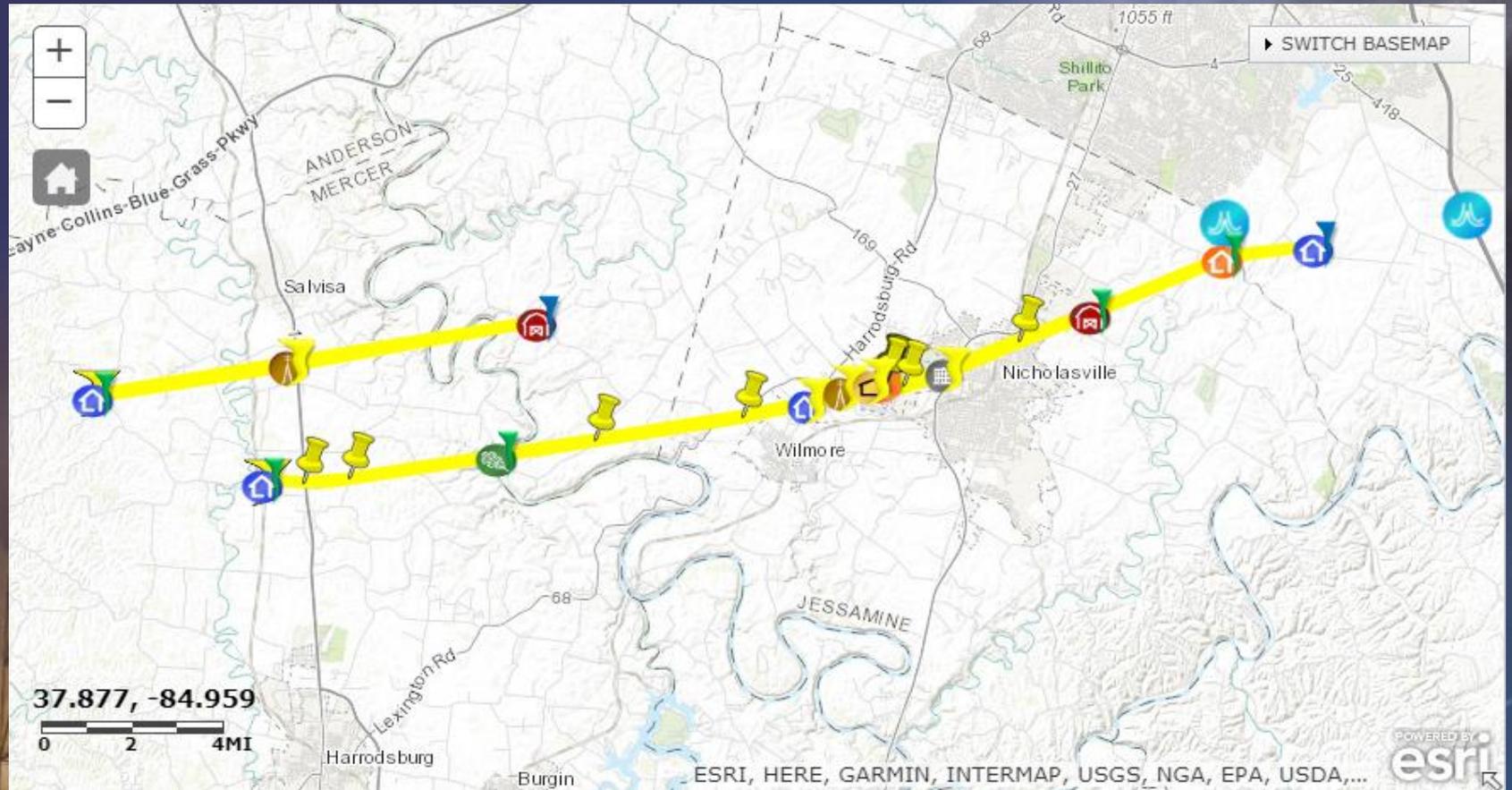
Damage Indicator:  
Large, isolated ("big box") retail building.

## Fujita Scale

F-0	40–72 mph winds
F-1	73–112 mph
F-2	113–157 mph
F-3	158–206 mph
F-4	207–260 mph
F-5	261–318 mph

DOD*	Damage description	EXP	LB	UB
1	Threshold of visible damage	68	57	83
2	Loss of roof covering (<20%)	81	68	103
3	Uplift of some roof decking; significant loss of roofing material (>20%); loss of rooftop HVAC	103	87	123
4	Long roof spans collapsed downward	122	103	144
5	Uplift and removal of roof structure	134	114	157
6	Inward or outward collapse of exterior walls	137	118	158
7	Complete destruction of all or a large section of the building	173	147	201

# Results



# Major Changes

**1995**

- **Straight line wind damage throughout Jessamine County**
- **F2 tornado near Salvisa, but with no wind speeds or path.**

**2017**

- **Reclassified straight line wind event to an F2 tornado**
- **Max winds of 145mph**
- **Path length of 24 miles over 4 counties**
- **Salvisa Tornado now has a 10 mile path with approximate starting and ending points.**



# Next Steps

- **Changes to storm data**
- **Changes to NCEI and SPC data bases**
- **Publication in NWA weather journal**



# Questions?



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