US AIRPORT LIGHTNING RISK INDEX 2015-2019
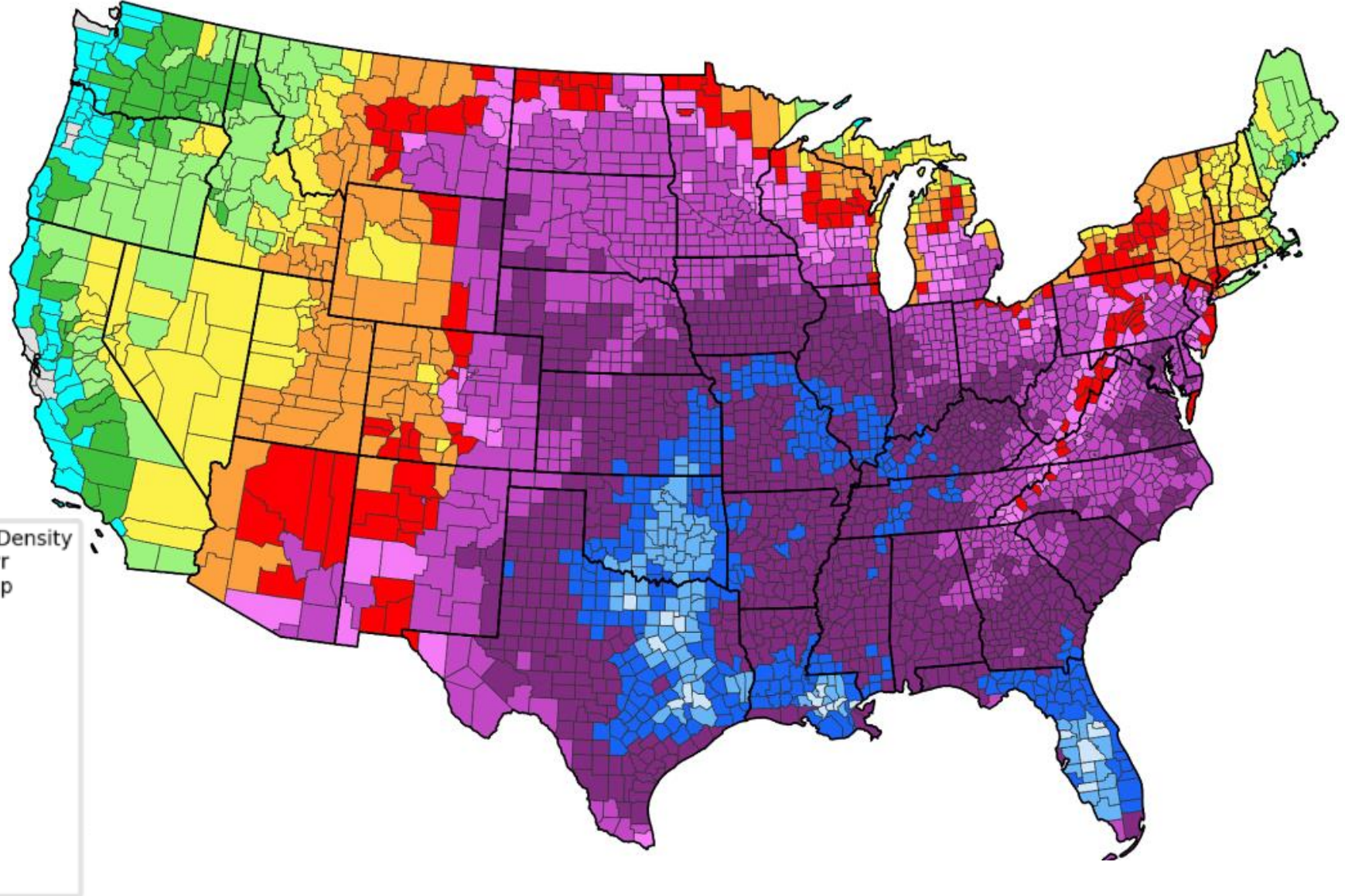
How is Airport Lightning Risk Index calculated?

$$Airport\ Lightning\ Risk\ Index = Lightning\ Density \times (Takeoffs + Landings)$$

- Airport Lightning Risk Index is a measure of how much each airport is impacted by lightning
- For these rankings, all data is from 2015-2019
  - Total operations (Takeoff + Landing) include civil, passenger, and commercial (cargo, etc.)
    - Source: FAA Air Traffic Activity Systems (ATADS)
  - Lightning density value is from 5-year gridded density report that Vaisala created based on data from Vaisala's U.S. National Lightning Detection Network (NLDN)
  - Only for top 75 airports by total operations for the US 48 states (CONUS)
  - Original calculated value is divided by 1000 for simplicity of index values
  - US Airport Lightning Risk Index values ranged from 2 to more than 83,000

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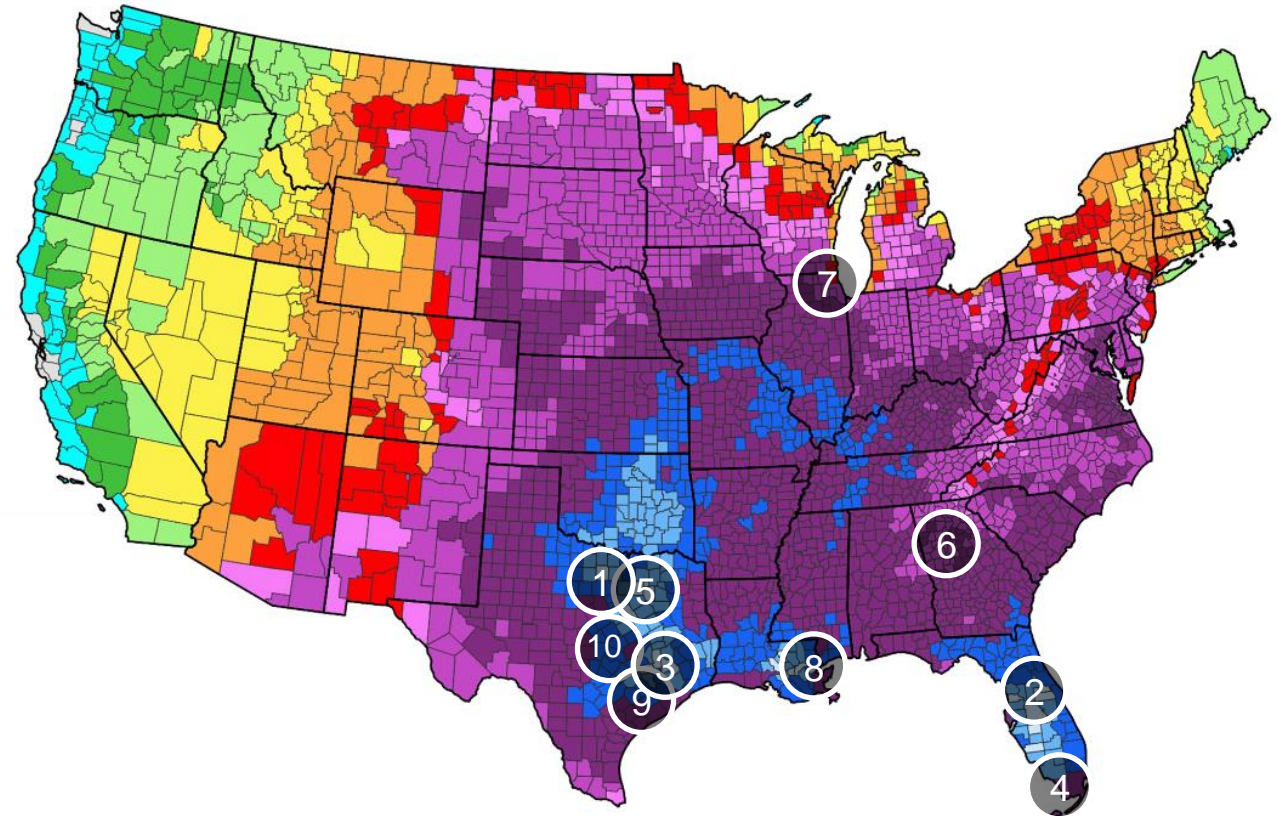# Average U.S. total lightning density in 2015-2019
per county

Based on data from Vaisala's U.S. National Lightning Detection Network (NLDN)

Total Lightning Density
Events / km² / yr

- 128 and up
- 96 to 128
- 64 to 96
- 32 to 64
- 16 to 32
- 12 to 16
- 8 to 12
- 4 to 8
- 2 to 4
- 1 to 2
- 0.5 to 1
- 0.1 to 0.5
- up to 0.1

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The top 10 US airports have both a lot of lightning and a lot of flight activity, need to take lightning seriously

Airport Lightning Risk Index Rankings:

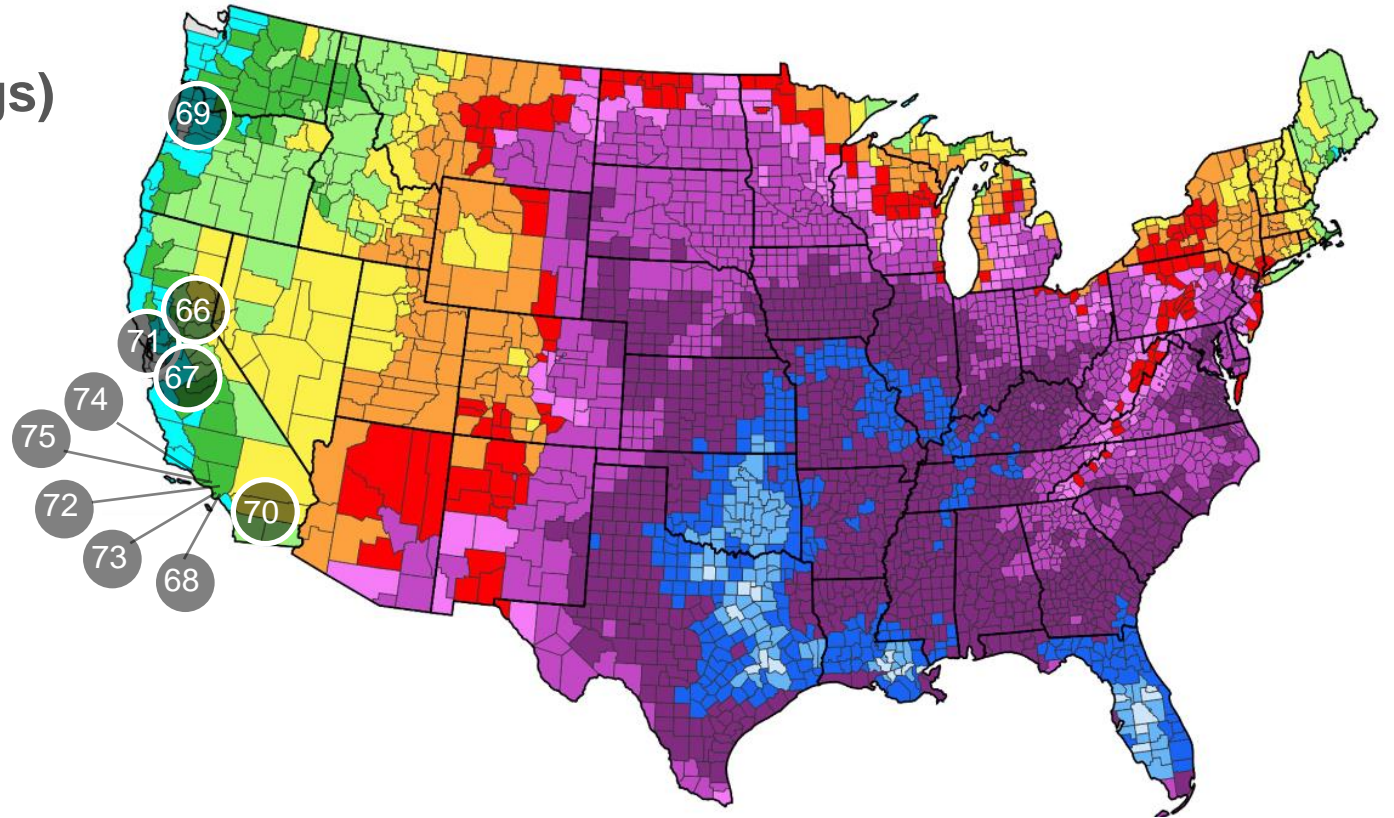**Lightning Density x (Takeoffs + Landings)**

1. DFW – Dallas-Fort Worth International Airport
2. MCO – Orlando International Airport
3. IAH – George Bush Intercontinental Airport
4. MIA – Miami International Airport
5. DAL – Dallas Love Field
6. ATL – Hartsfield-Jackson Atlanta International Airport
7. ORD – Chicago O'Hare International Airport
8. MSY – Louis Armstrong New Orleans International Airport
9. HOU – William P. Hobby Airport
10. AUS – Austin-Bergstrom International Airport

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The bottom 10 US airports have less lightning and flight activity, but still need to take lightning seriously

Airport Lightning Risk Index Rankings:

Lightning Density x (Takeoffs + Landings)

66. SMF – Sacramento International Airport

67. SJC – San Jose International Airport

68. SNA – John Wayne Airport

69. PDX – Portland International Airport

70. SAN – San Diego International Airport

71. OAK – Oakland International Airport

72. BUR – Hollywood Burbank Airport

73. LGB – Long Beach Airport

74. OXR – Oxnard Airport

75. VNY – Van Nuys Airport

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Complete US Airport Lightning Risk Index rankings of top 75 airports (1st - 45th)

1	DFW	Dallas Fort Worth
2	MCO	Orlando
3	IAH	Houston George Bush
4	MIA	Miami
5	DAL	Love Field
6	ATL	Atlanta
7	ORD	O'Hare
8	MSY	New Orleans
9	HOU	Hobby
10	AUS	Austin
11	CLT	Charlotte
12	TPA	Tampa Bay
13	MEM	Memphis
14	STL	St Louis
15	FLL	Fort Lauderdale

16	OKC	Oklahoma City
17	RSW	Fort Myers
18	PBI	Palm Beach
19	SAT	San Antonio
20	BNA	Nashville
21	DEN	Denver
22	MCI	Kansas City
23	BWI	Baltimore
24	JAX	Jacksonville
25	DTW	Detroit
26	SDF	Louisville
27	DCA	Reagan
28	IAD	Dulles
29	RDU	Raleigh-Durham
30	MDW	Midway

31	TUL	Tulsa
32	CVG	Cincinatti
33	PHL	Philadelphia
34	MSP	Minneapolis
35	BHM	Birmingham
36	IND	Indianapolis
37	EWR	Newark
38	JFK	New York JFK
39	LGA	New York LaGuardia
40	OMA	Omaha
41	CLE	Cleveland
42	PHX	Phoenix
43	PIT	Pittsburgh
44	TUS	Tucson
45	BOS	Boston

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Complete US Airport Lightning Risk Index rankings of top 75 airports (46th - 75th)

46	MKE	Milwaukee
47	HPN	Westchester
48	DAY	Dayton
49	RFD	Rockford
50	ABQ	Albuquerque
51	TEB	Teterboro
52	LAS	Las Vegas
53	BUF	Buffalo
54	BDL	Bradley
55	SLC	Salt Lake City
56	GYY	Gary
57	ISP	Long Island MacArthur
58	SWF	New York Stewart
59	SEA	Seattle
60	PVD	TF Green Rhode Island

61	PSP	Palm Springs
62	LAX	Los Angeles
63	MHT	Manchester/Boston
64	SFO	San Franciso
65	ONT	Ontario California
66	SMF	Sacramento
67	SJC	San Jose
68	SNA	John Wayne
69	PDX	Portland
70	SAN	San Diego
71	OAK	Oakland
72	BUR	Burbank
73	LGB	Long Beach
74	OXR	Oxnard California
75	VNY	Van Nuys

- **Even small airports not included in the rankings can be impacted by lightning and should take it seriously**

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