

DRONE VERSUS TRADITIONAL FIREWORKS SHOW REPORT

The chart below shows a cost comparison of Drone versus a traditional fireworks show:

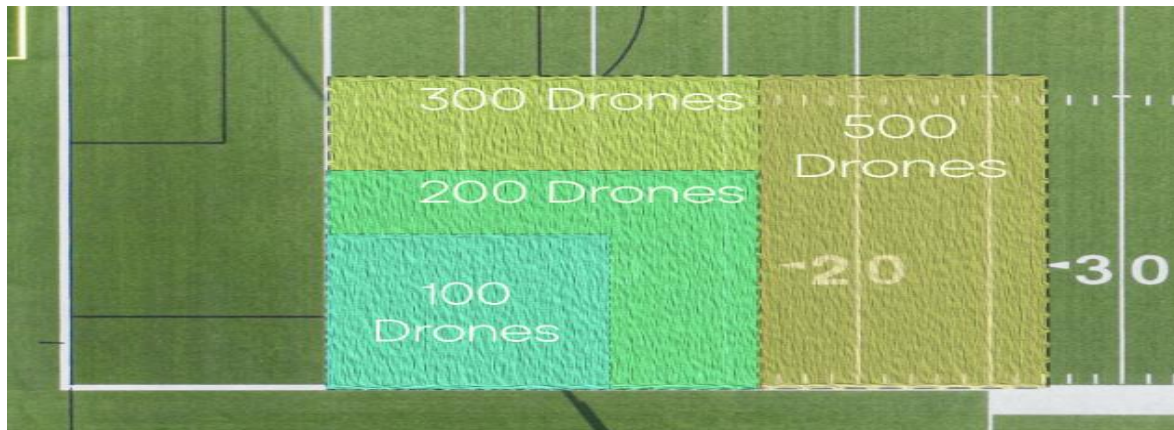
REFERENCE	Type of Event	Classic 8-Minute Experience (200-300 Drones)	Premium 11-Minute Experience (300-500 Drones)	Program A 20 Minute Showcase	Program B 20 Minute Showcase
DRONE SHOW					
The Drone Girl	Drone	200= \$149,000 300 =\$199,000 + Lodging Expenses	300 =\$199,00 500 =\$299,00 + Lodging Expenses		
Sky Worx	Drone	12-Minute Experience \$200-\$400 Per Drone + Lodging Expenses	200 = \$40k - \$80,000 300 = \$60k - \$120,000 500=\$100k - \$200,000		
Intel	Drone	200= \$99,000 300= \$149,000 + Lodging Expenses	300= \$199,000 500= \$299,000 + Lodging Expenses		
TRADITIONAL FIREWORKS SHOWS					
Pyro Spectaculars	Fireworks (Land Shoot)			\$64,400	
Pyro Spectaculars	Fireworks (Barge Launch)				\$103,185

Lodging Expenses Information:

Item Needed	Expense
Lodging Includes: Three Days, (3) Rooms w/Double Bed / prefer Airbnb	TBD / \$220 per night @ (3) Nights = \$680.00
Launch Area: Desired locations are flat areas, can launch from an area with a slight grade. Prefer no tall grass and not in an area that has a lot of metal	TBD

Pictures of Drone Show displays

The chart below shows the specifications of the area for drones for the display:



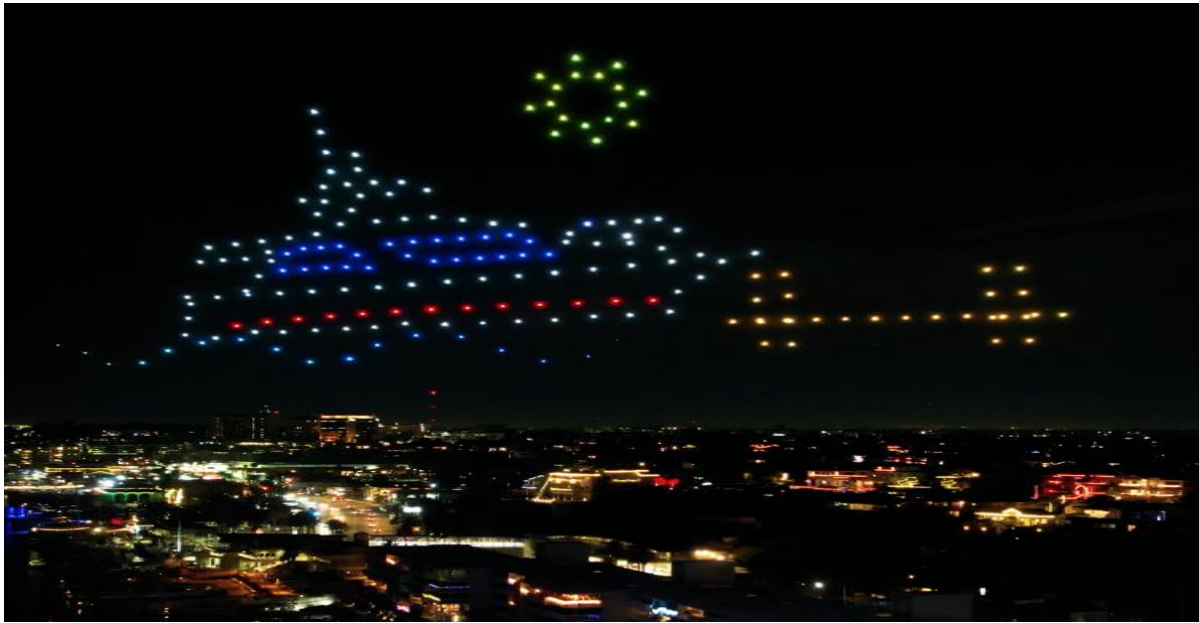
The table below shows the space requirement for drone show displays:

Number of drones	Space needed for the drone show display
100	900 square feet
200	1800 square feet
300	2700 square feet
500	4500 square feet

All these can be adjusted to fit into a parking lot or designated area in a park. They can even grid the launch pad in different shapes than rectangles and squares to fit into the desired location. There is no additional cost to synchronize music.

The drone shows with different quantities of drones are illustrated below:

Display with 200 drones:



Display with 300 drones



Display with 500 drones



The table below shows the results of a survey of Surrounding Bay Area Cities within 150 miles of Richmond that host Firework Showcases for various events.

San Francisco	The city usually has spectacular fireworks display over the Bay viewable from various points like Fisherman’s Wharf and Pier 39
Berkeley	The Berkeley Marina hosts a 4 th of July celebration with fireworks
Oakland	The Oakland A’s often have fireworks shows after their games.
Suisun City	Festival and Parade
Vallejo	Six Flags Discovery Kingdom has a fireworks show
Sacramento	The city hosts a large fireworks show at Cal Expo
Santa Cruz	Fireworks can be seen at the Santa Cruz Beach Boardwalk
Marin County	The Marin County Fair includes fireworks each night of the fair
Concord	The Toyota Pavilion at Concord often hosts fireworks events

Experiences of Northern California Cities

Napa	The city hosted its largest drone show in 2024, with 400 drones creating intricate light displays. The shift to drones was driven by environmental concerns and the desire to minimize wildfire risks. The community has embraced the change, and the event is now a highlight of the city's climate action initiatives.
North Lake Tahoe	The area has completely replaced fireworks with drone shows since 2022, focusing on protecting the local environment, including Lake Tahoe itself. The decision, while initially controversial, has been well-received as people recognize the long-term benefits.
Rancho Cordova	This city has experimented with combining drone shows with traditional fireworks, offering a blend of old and new. The drone segments provide unique visuals, complementing the familiar fireworks experience.

The table below is of cities within approximately 200 miles of Richmond categorized by their use of drone showcases, traditional fireworks, or a combination of both for their July 4th celebrations:

#	City	Drone Showcases	Traditional Fireworks	Combination of Drone & Fireworks
1	Napa	Yes	No	No
2	North Lake Tahoe	Yes	No	No
3	Rancho Cordova	No	Yes	Yes
4	Visalia	Yes	No	No
5	San Francisco	No	Yes	No
6	Oakland	No	Yes	No
7	Berkeley	No	Yes	No
8	San Jose	No	Yes	No
9	Sacramento	No	Yes	No
10	Concord	No	Yes	No
11	Fresno	No	Yes	No
12	Monterey	No	Yes	No

Attachment 1: Drone versus Traditional Fireworks Show

13	Santa Cruz	No	Yes	No
14	Stockton	No	Yes	No
15	Modesto	No	Yes	No
16	Santa Rosa	No	Yes	No