

MIAMI BEACH



FIREFLY DRONE SHOWS THE CITY OF MIAMI BEACH

Response to ITQ 2024-0380-001

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A. EXPERIENCE AND QUALIFICATIONS

A1. BIOGRAPHY

It began with three partners and a dream to bring a new eco-friendly, awe-inspiring, and creatively uncapped activation to the event industry. From the ground up, Firefly Drone Shows, LLC was established in 2017. Ensuring the quality and precision in each drone show production and continuing to drive innovation in the industry, Firefly is still operated by its original three partners along with a highly trained network of experts. This includes the development team, production and design team, and operations team. The development team consists of a mixture of in-house and subcontracted industry leading hardware/software developers, innovative autonomous quadcopter flight specialists, as well as master systems engineers that bring Firefly's drone systems to life. Alongside development, Firefly's production team carries each project from any creative vision to a fully programmed drone show. This team consists of industry leading in-house animators, designers, and audio engineers; along with a partnering high-end animation studio. These talented artists bring each idea to life. After programming and animation, Firefly's seasoned pilots, field managers, crew hands, and logistics coordinators successfully deploy each show with precise expertise. Every step of the process, Firefly's experienced drone show producers continue to carry each project's vision all the way to the day of show. Altogether our team of 30+ full-time professionals and network of subcontractors currently design, produce, and perform over 150 shows annually. As the 3rd company in the world to be fully licensed by the FAA; we've performed shows across the entire United States, as well as a handful of countries internationally. Since its conception, Firefly continues to exponentially grow in size and quality to ultimately provide the most impressive productions and memorable drone shows yet. All of Firefly's drone fleets, positioning/communications systems, and piloting software are proprietary and are specifically designed for drone light shows.

Regarding Firefly's stability and accumulated experience; Firefly has successfully persevered through the challenges a new industry may face over time. Through economic dips, computer chip shortages, and a global pandemic that ultimately halted the event industry; Firefly has prevailed with grit and determination to maintain its industry leading and innovative reputation. To this day, over 7 years after its doors have opened, Firefly has honored every contract and does not cease to grow financially, organizationally, and technologically under any circumstances. Even on social media platforms, our projects have gained an extensive amount of impressions. With some of our latest posts gaining over 50 million views!



In the last year and a half, Firefly performed a total of 222 live drone shows, with a total of 71,800 successful live drone flights. Below is the list of states serviced in the last year: Florida, Arizona, Arkansas, California, Colorado, Connecticut, Georgia, Hawaii, Idaho, Illinois, Indiana, Iowa, Kansas, Kentucky, Massachusetts, Michigan, Minnesota, New York, North Carolina, Ohio, Oklahoma, Pennsylvania, South Carolina, Tennessee, Texas, Utah, Virginia, Washington, West Virginia, Wisconsin, and the Virgin Islands.

To share a bit more regarding our company, please navigate to our latest [Production Highlight Video](https://www.youtube.com/watch?v=brxViIMy4rI). (<https://www.youtube.com/watch?v=brxViIMy4rI>)

A2. PORTFOLIO

Firefly has had the distinct pleasure to work with a number of different clientele. From cities to amusement parks, Some of our clients include; PGA Tour, T-Mobile, Capital One, Google Cloud, Xbox, Marvel, Amazon Music, Dell Technologies, Acura, Ford Motor Co, Sinclair Gasoline, Empire Records, Holiday World, as well as the Canyons Village Management Association to name a few. To view our portfolio, please navigate to our [work page](http://fireflydroneshow.com/work) on our website (fireflydroneshow.com/work). There you can find the wide array of different experiences we've greatly enjoyed cultivating over the years.

A3. OUR TEAM

Kyle Dorosz - CEO and Co-founder of Firefly Drone Shows, LLC. Kyle has been designing and programming quadcopters since 2010. Having founded and operated an industry leading aerial imagery company since 2013, (<https://www.aerialimageryworks.com>), it was no question for Kyle's entrepreneurial spirit to lead his interest in more innovative drone applications. Kyle now continues to run the Research and Development of drone swarm technologies along with ensuring that all operations are up to a premium standard. Kyle holds both a Part 107 UAS and Part 41 Private Pilots License.

Adam Gray - COO and Partner of Firefly Drone Shows, LLC. Adam has been operating quadcopters for various applications including autonomous drone surveying and mapping since 2014. Having an intense passion and understanding for the capabilities of autonomous flight, Adam leads as the Chief Pilot in command. Overseeing all operations for pilots and drone technicians here at Firefly.



Along with his role as COO and Chief Pilot, Adam also serves as the Lead FAA Liaison for all Airspace Authorizations and Waiver Approvals. Adam holds a Part 107 UAS License.

Ryan Sigmon - Director of Sales and Co-founder of Firefly Drone Shows, LLC. Ryan has maintained an enthusiasm for introducing customers to this new technology across the country. With a background in creative design and licensed consumer products since 2011, Ryan continues to ensure that every customer's vision is thoroughly heard and carried out to the best quality possible. While working directly with the animation and production team, Ryan also serves as the Executive Producer for Firefly.

Jonathan Hearl - Pilot at Firefly Drone Shows, LLC. Jon has been an enthusiast in quadcopters since 2014. Having graduated from the prestigious Embry-Riddle Aeronautical University with a 4 year UAS degree, obtained a Part 107 UAS license, a Part 41 Private Pilot's license, and a passion for drone technology, Jon makes a great fit to Pilot Drone Shows across the Nation.

Joseph Poppleton - Pilot at Firefly Drone Shows, LLC. Joey has also been an enthusiast in quadcopters since 2014. Having been in the first graduating class of the UAS program at University of Nebraska, obtained a Part 107 UAS License, and with field experience in autonomous quadcopter flight in both drone swarms and surveying since 2018, Joey continues to Pilot Drone Shows Nationwide.

Matthew Sanker - Sales Manager at Firefly Drone Shows, LLC. Matthew has been in the event industry since 2015. Having a passion for entertainment, customer relations, event production, and project management, Matthew continues to bring projects to completion with a standard of excellence, ensuring that the customer's vision is brought to the sky. Matthew holds a Part 107 UAS license.

Michael Sanker - Creative Director at Firefly Drone Shows, LLC. Michael has been involved in several creative mediums for just under two decades and in the event industry since 2015. With a passion in creative design, experiential artistry, animation, and media production, Michael continues to lead and create with Firefly's immersive drone show design and animation team.

A4. REFERENCES

City of Miami Beach, FL

Contact: Lissette García Arrogante, Director, Tourism & Culture Department | (305) 673-7577 | LissetteArrogante@miamibeachfl.gov

Project Overview: On July 4th, 2024; Firefly brought out 300 drones to finale the City's Fire on the 4th Independence Day Celebration. With thousands in attendance, the drone show featured exciting and memorable designs presenting patriotic and tropical themes. Since the display was well received, Firefly will be bringing two more 400 drone shows back to Miami Beach for the upcoming Holiday Celebration this December.

Highlight Video: <https://youtu.be/pb5LNiVkNmww?si=sQtmvmyWQo8p322RA>

City of Pompano Beach, FL

Contact: Sandra King, Communications Administrator | (954) 786-4527 | Sandra.King@copbfl.com

Project Overview: With an estimated number of over 20,000 guests, Pompano City Beach has created an event solely around a drone light show taking place next to their landmark pier. Firefly performed a 200-drone show in 2022 for this Southern Floridian Community which received such a positive response, that the city has decided to make the event an annual occurrence. Firefly performed two 300-drone show displays this past November and will be back this year with 400 drones!

Highlight Video: <https://youtu.be/SWYig2jJJOI?si=VOjAEUjVPzr5VqOW&t=56>

Canyons Village Management Association, UT

Contact: Brian Madacsi, President and CEO | (435) 655-2582 | bmadacsi@cvma.com

Project Overview: For three consecutive nights on July 1st-3rd, 2022; Firefly performed a 200-drone show at the Forum Festival Event held at Canyons Village. For four consecutive nights on July 1st-4th, 2023 and 2024; Firefly performed a 300-drone show at the Forum Festival Event held at Canyons Village. Due to the event's success these past three years, Firefly will be performing another set of drone shows for three consecutive nights in 2025.

Highlight Video: <https://youtu.be/fWVvYE44YZl8?si=P66vvSLccPwiTz7Y>

Shelby Township, MI

Contact: Nicholas Monacelli, Production Coordinator | (586)-254-7130 | nmonacelli@shelbytwp.org

Project Overview: As the Township was looking for an alternative to fireworks for their 2023 and 2024 Holiday Celebrations. Firefly was awarded the bid to provide a 300 drone show for the annual Christmas Aglow event and 4th of July Celebration. With a resounding response from the community, Firefly has won a bid to provide a total of 10 shows within the next 5 years.

Highlight Video: https://youtu.be/GeGoKXq5bTA?si=JErJYAL_Uh-ayBcJ



North Huntingdon Township, PA

Contact: Dan Miller, Director of Parks & Recreation | (724)-863-3806 ext. 124 | dmiller@nhtpa.us

Project Overview: Celebrating their SesterCentennial in 2023, Firefly provided a 300 drone show for the community at a carnival event. With over a thousand people in attendance, the show made a big impact.

Highlight Video: <https://youtu.be/mZlJ-yJTfEA?si=Yqj5hiPLgIH960jH>

Milwaukee Downtown, WI

Contact: Beth Weirick, CEO | 414-220-4700 ext. 1 | bweirick@milwaukee downtown.com

Project Overview: Towards the end of the pandemic (December, 2021), Milwaukee Downtown and Firefly produced a live streamed drone show for Milwaukee Holiday Lights Festival. This show took place just outside of Downtown Milwaukee, creating a spectacle for many to see live streamed or in person.

Highlight Video: <https://youtu.be/RjBZWZTPRCw?si=HPNyJMjN9YQEIUB->

City of Sequim, WA

Contact: Barbara Hanna, Marketing Director | (360) 681-3422 | bhanna@sequimwa.gov

Project Overview: Since 2020, Firefly has worked with the City of Sequim to plan, design, produce and perform a drone light show for the annual Sunshine Festival. In 2024 Firefly brought out a 300-drone show to the event, and is set to execute another show on March 8th, 2025. Our show has been known for bringing out the largest crowds for any event held in Sequim.

Highlight Video: <https://youtu.be/-tiOd9zu8og?si=yR5yIz8gGRMJxSFr>

A5. CUSTOMER TESTIMONIALS

Holiday World & Splashin' Safari - Santa Claus, IN

Testimonial:

"The Firefly Drone Shows team has been incredible to work with. Four unique shows have been designed and flown over our Indiana theme park nearly 100 times over the last two years. Their drone technology has rapidly improved to become the brightest and most accurate drones in the industry. Our guests love every show and thousands of people stay to watch every night! We've seen a lift in satisfaction scores plus increased revenue as a result.

To top it off, Firefly is a company of good people. They are responsive, professional, and collaborative. Their passion for perfection shines bright and I look forward to working with them on another 50+ shows in 2025."

- Eric Snow | Vice President & Chief Marketing Officer

Highlight Video: <https://youtu.be/cWn9-v01kDs?si=NdtCAiyHnrH8W-wp&t=38>

Exploration Place, Science and Discovery Center - Wichita, KS

Testimonial:

"Firefly Drones is a first-class partner, and Exploration Place is proud to be a repeat customer. Taking on our first drone light show was a bit of a risk for our science museum because it is a significant investment and something our community had no experience with. During our first conversation with Ryan and the Firefly team, we were impressed by their technical expertise as well as their consideration for legal requirements and risk management. Their breadth of knowledge and depth of experience figured significantly in our decision to hire Firefly Drones.

But drone shows are not just about technical precision. There truly is an artistry to these productions, and we loved working with the Firefly creative team to put together shows that absolutely wowed our community. We worked together on our vision, and the Firefly team took great care in designing custom formations and transitions that were deeply meaningful to Wichita, Kansas."

- Laura Roddy | Vice President for Advancement

Highlight Video: <https://youtu.be/Oj-WaigLJJo?si=PO6LvIVNK-CpoHGv>

Episcopal Collegiate School - Little Rock, AR

Testimonial:

"Where do we begin with the Firefly team? Between their patience, reliability, and willingness to go above and beyond to ensure that our school had the perfect show- it's hard to articulate our appreciation in a few short sentences.

They executed a wonderful production and made it work seamlessly with what our school already had on hand, whether that meant navigating space/facilities, technology, or student/campus life, the priority was to make the event as memorable and easy for us as possible, and that's what they did.

Thank you again for playing such a big part in our school's 25th Anniversary Celebration. It made for an unforgettable experience that our community will be talking about for years to come."

- Lauren Curtis | Director of Marketing & Community Outreach



Township Sestercentennial Celebration - North Huntingdon, PA

Testimonial:

"Very professional from the initial phone call to the launch. - Matt was a clear communicator from the start educating me about product, service and packaging. We had a vision that was shared and he gave exactly what we hoped for. The night of the show, Ryan and his team of pilots, techs and videographer were outstanding seeing the event to the finish line. Thank you soooo much for exceeding our expectations."

- Dan Miller | Director of Parks & Recreation

Highlight Video: <https://youtu.be/mZIJ-yJTfA?si=0K9RjzWoL4Ls-tWJ>

Pompano City Beach Veteran's Day Celebration - Pompano, FL

Testimonial:

"I used Firefly two years in a row to provide drone shows on the beach, and am extremely pleased with the quality of the program they were able to provide. I plan to work with them again, and can recommend them without reservation to others in need of a unique, exciting and well-run drone show. A few examples of their high-quality services include:

- Professional staff yet easy to work with.
- Very responsive and helpful customer service.
- Everything they said they would provide, they delivered in a timely manner
- They are extremely creative and listen to the client for what theme and transitions to use for the show.

I am very happy to recommend Firefly Drone Shows to you, and trust that your experience with them will be as positive as mine."

- Sandra King | Strategic Communications Administrator

Highlight Video: <https://youtu.be/SWYig2jJJQI?si=6ttSIHQFF78PoTv>

Juniata River Valley Visitors Bureau - Lewistown, PA

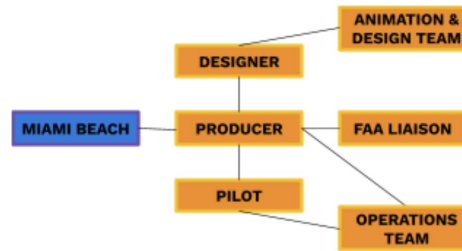
Testimonial:

"Wow! The Goose Day Drone Light Show that Firefly produced was a rousing success here in Central PA. People are still talking about it and asking if we'll host it again next year. Of course! Nothing has brought this kind of attention and excitement to our annual holiday. It also has to be one of the easiest events I've ever produced. Using only maps, your staff found the best location to set up the drones and could also help us advertise the best places to view the show. For a first year event, that was critical information and spot on. We're looking forward to next year's show and are requesting an additional 100 drones. We can only see this show getting bigger and better every year. Thank you again for making us look so good!"

- Jenny Barron Landis | Executive Director

Highlight Video: <https://youtu.be/auSXvs0lUg0?si=ojqYv2LkiKCVhF9g>

B. PROJECT APPROACH



BI. PLAN EXPLANATION

Throughout the years, Firefly has found that consistent communication and collaboration with our clients will often produce the most impressive results. With this in mind, attention to detail, comprehension of the end goal, and flexibility to match our customer’s timeline has proven to be our key attributes to bring an unforgettable drone show to life. Considering these are our core tenants for every project, Firefly will look to The City of Miami Beach Event Team as our partner throughout the entire production process.

Typically, we like to start each project with an introductory call to listen and take note of our partner’s vision for their show. From that initial conversation, we will piece together action items and a timeline to match them. The below timeline is a preliminary template we often work within. Depending on the scope of the design and necessary action items, we are flexible to work with an earlier introduction to the project to allow for additional correspondence between partners. After the scope is defined, our team will get to work. The animation and design team will begin piecing together concepts of the designs agreed upon. Our producers/sales team will be available at any point throughout the process for any questions or material deliverables the customer may need. Including, but not limited to; sharing key items necessary in the planning process, preparing the logistics for the upcoming event, going over any safety protocols necessary, and supplying frequent progress reports from the design team. Our team will continue this process leading up to the show until the logistics, creative content, safety requirements, and client satisfaction has been fulfilled. When executing the performance on the night of the event, Firefly’s operation team will professionally and efficiently deploy, operate, and stow Firefly’s proprietary drone show system within a few hours surrounding



show time. The onsite Team Lead will remain as a point of contact with the appropriate event representatives to properly carry out a safe and successful display. In conjunction with these operations, our FAA Liaison will handle all FAA approvals necessary for our operations to take place at the time and location of the event and will additionally ensure each production is in compliance with Firefly Drone Shows, LLC and FAA standards.

B2. EXAMPLE TIMELINE

Action Item	Date Completed
Initial Creative Call	Jan 1, 2024
Initial Design Preview Presented	Jan 19, 2024
Creative Finalized	Feb 1, 2024
Rehearsal at Test Field	Feb 5, 2024
Logistics Finalized	Feb 7, 2024
Safety Call	Feb 12, 2024
Load-in Onsite	Feb 23, 2024 12:00pm
Sound Check	Feb 23, 2024 5:00pm
Sunset	Feb 23, 2024 6:46pm
Safety Perimeter Secured	Feb 23, 2024 8:45pm
Showtime	Feb 23, 2024 9:00pm
Safety Perimeter Lifted	Feb 23, 2024 9:50pm
Load-out	Feb 23, 2024 11:00pm

***Please Note:** This timeline serves as an estimate for lead time and planning purposes. However these are set dates and times above, Firefly is capable of accommodating our client's desired production timeline to the best of our ability.*

B3. CREATIVE CONCEPTION

Miami Beach Logo: Live Photo (300 Drones)



Artistic Vision

The bright side to every drone show is that it can truly be specific to the event it entertains. Firefly's internal animation and design team specializes in creating unique drone show formations to match the event's theme which supplies never before seen images for community members to enjoy. Our designers focus on quality and innovation as a basis for every design, guaranteeing a stellar show. The sky's the limit with the ideas that The City of Miami Beach and Firefly Drone Shows can feature in any community drone show. Ultimately, it is our team's objective to bring each celebration's vision to the sky!



B4. TESTING PROCEDURES

Firefly will complete several testing procedures to ensure a safe and accurate autonomous flight is executed on each show day. We begin with checking every animation file for drone speed and proximity limits before leaving the studio. Once we have cleared the animation file verification process, the animation is then rehearsed in a controlled environment near Firefly headquarters before being brought onsite. Once brought on site, every drone goes through a preflight inspection. After the preflight inspection, every drone goes through a test hover to ensure the drone's performance is up to standard. Once each drone has cleared pre-flight checks and test hovers, our Remote Pilot in Command will complete several checks in Firefly's proprietary drone piloting software to ensure the location and heading parameters are correct. They will then be verified on site using small quantities. Throughout the testing process, if an error occurs or if a dissatisfactory result arises, our team will go through the process again to ensure the environment is optimal before the show's flight.

B5. ENVIRONMENTAL RESPONSIBILITY

A core value and motivating factor here at Firefly, is to provide an environmentally conscious alternative to the traditional firework display. With this in mind, Firefly continues to maintain sustainable practices to reduce the negative impact that can be left on the environment that we all share. From the office to the launch site, each Firefly team member is properly trained in maintaining a clean work area that prevents waste/debris from being added to the environment. Having switched to electric power sources for our ground control system and accessories, utilizing reusable components for every factor involved with deploying and tearing down each drone show display, adopting practices like Firefly staff using company issued reusable water bottles and providing recycling receptacles; Firefly can confidently reduce our negative environmental impact.

B6. SAFETY RECORD

Safety in operations and conduct is a key part of Firefly's core values. Firefly is proud to state that there have been 0 workplace accidents to present. Each team member is frequently trained with the safest procedures in executing a drone light show. In case of emergency, Firefly is well equipped with the materials and knowledge necessary to properly handle each risk scenario. The number one priority always being safety of all personnel and patrons.

B7. PYRO DRONES



Introducing Firefly's Pyro Drone - the ultimate fusion of aerial innovation and pyrotechnic spectacle. This is the latest addition to drone show special effects. The all new Pyro Drone has a max show time of 10 minutes and includes the capability to handle up to 2 individual pyrotechnic triggers lasting 30 seconds each.

Designed with precision and safety in mind, the Firefly Gen2 platform supports interchangeable payloads, including a pyrotechnic device that can carry up to 350g. Its fire-resistant polycarbonate holder ensures robust attachment and protection, providing a reliable and reusable solution for custom aerial displays. The integrated Electronic Triggering System and proprietary ignition controller guarantee reliable ignition, meeting all programmed safety conditions. Rigorous testing; including static load, vibration, shock, and thermal cycling tests, ensures the system's durability and reliability in various conditions.

***Please Note:** The Safety Buffer Zone for Pyro Drones is twice the size than the typical drone light show operation Safety Perimeter. On average, 300ft.*

C. IN CLOSING

Firefly would like to formally thank the City of Miami Beach for trusting us to provide unique drone shows in 2024. It has been a pleasure working with the City this year and we are excited by the opportunity to bring out more entertaining drone shows to the City's Special Events and Holiday Celebrations in the near future. We are keen on continuing to build a working relationship and will proceed to offer premium drone light show solutions for your events to come.