



63rd Annual Business Meeting

Up, Up and Away!

ESTABLISHING A DRONE INSPECTION PROGRAM

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BUILDING OFFICIAL – CITY OF KINGSBURG

The Numbers

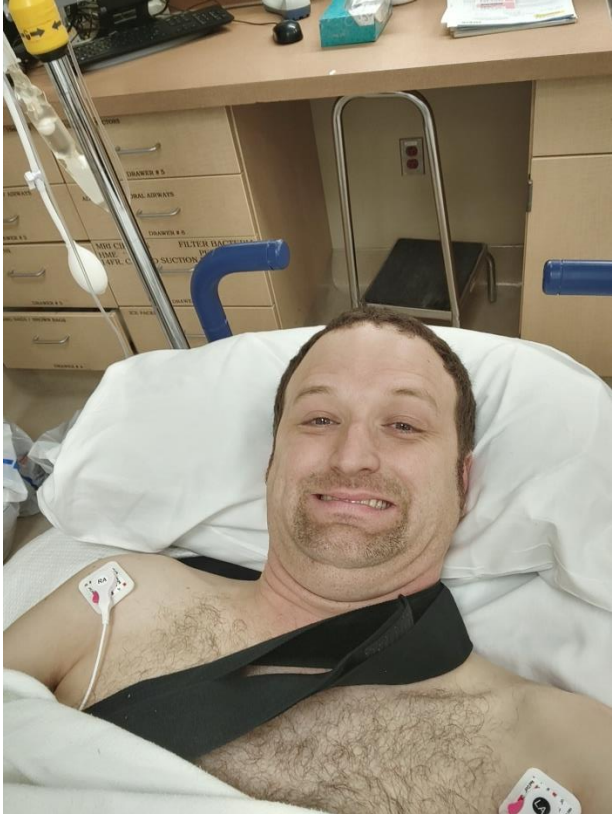
While overall fatal accidents went down slightly, nearly 1,000 individuals in the construction industry were killed on jobs in 2020.

Slips, trips, and falls accounted for almost 35% of those fatalities.

Non-fatal slips, trips, and falls occurred at a rate of nearly 42 incidents for every 100,000 workers in the construction industry.

Based on surveys, only 31% of construction workers admitted to using PPE.





The Effects

The NIH estimates that fatal injuries in the construction industry costs employers \$4 million per case, on average. For non-fatal cases, the costs are approximately \$40,000 per case, on average.

- Worker's Compensation
- Time Lost
- Legal

For Employees

- Loss of Income
- Disability
- Death

Building Safety Professionals



Performing Services for our Community

Ensuring Personal Safety

Ever Increasing Dangerous Situations

Safety Solutions

Eliminate the risks?

- Staying Off of Ladders
- Remote Inspections
- Self-Certifications

Mitigating the Risks?

- Building Code Amendments
- Altering Allowable Developments

Developing New Methods?

- New tricks to do the old job



Let's Talk About Drones

Unmanned Aircraft System – UAS

- Aircraft operated without the possibility of direct intervention from within or on the aircraft itself.
- UAS = Drones
- Primary Uses: recreational, agriculture, public safety, construction, defense.

According to the FAA, there are more than 1.5 million active drones being used for both recreational and commercial uses.

Use and regulation under CFR Part 107.





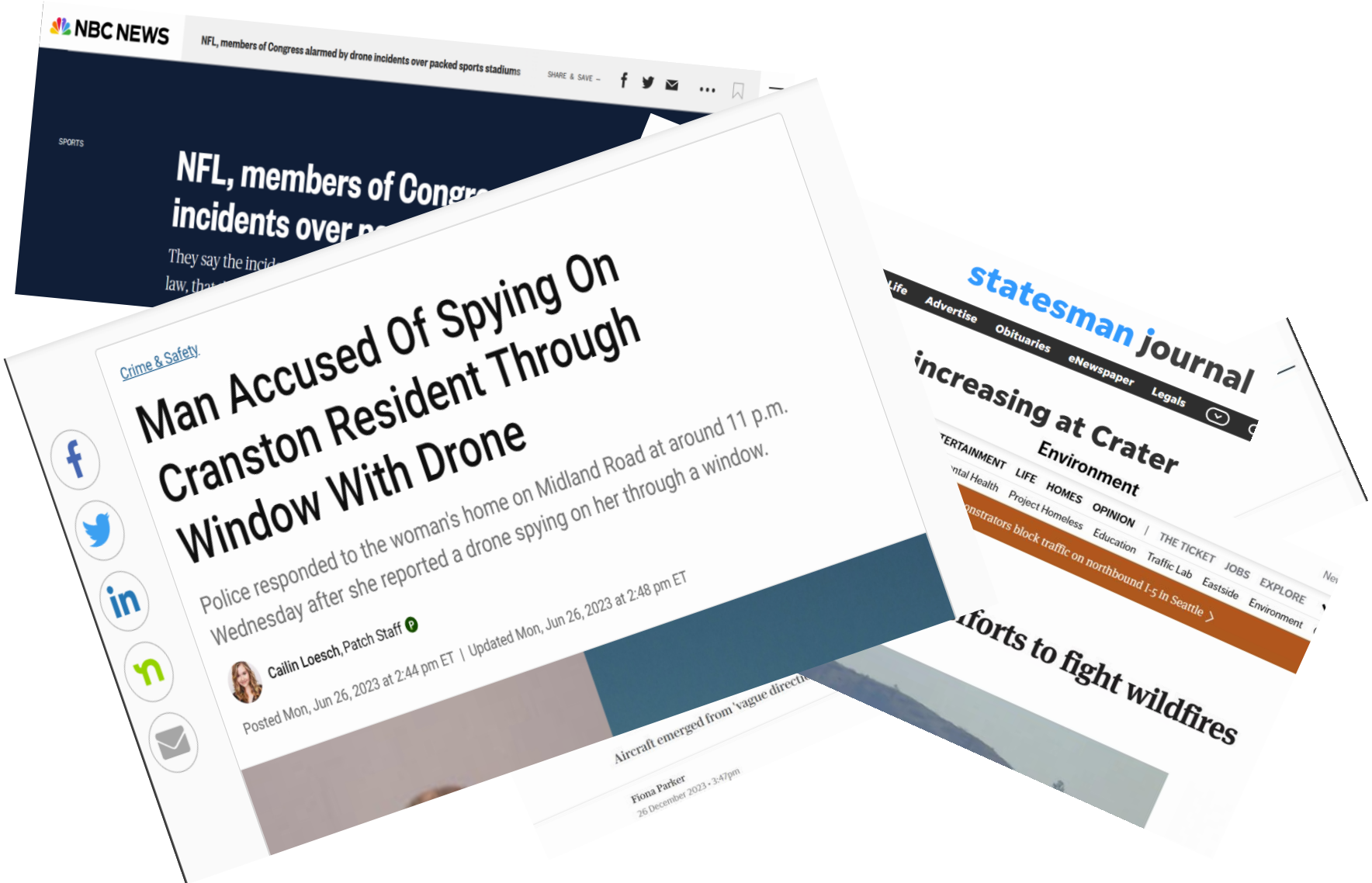
Part 107 - Summary

- Commercial Uses require operators to be licensed.
- Any aircraft weighing .55 pounds, or more is required to be registered.
- Remote ID must be installed.
- Max altitude – 400ft AGL
- Min Visibility – 3 statute miles
- Can't fly over people or moving vehicles.
- Flying prohibited in certain areas:
 - National Parks
 - Stadiums
 - Military Installations

Using Drones to do Building Inspections!

WHAT COULD POSSIBLY GO WRONG WITH THAT???





Drone Inspection Program



- Preparation and Planning
- Risk Management & Legal
- Funding
- Legislative Approval
- Implementation

Preparation and Planning – Part 107 Certification

Eligibility to Fly under Part 107

- Be at least 16-years old.
- Be able to read, speak, write, and understand English.
- Be in physical and mental condition to fly an aircraft.
- Pass the Unmanned Aircraft General Exam.

Exam Areas

- Airspace and airport operations
- Aviation weather
- Emergency procedures
- Radio Communication

60 multiple choice questions. 70% to pass.

Study Guide ~ \$100. Test Fees ~ \$200

Preparation and Planning – Experience

Experienced Pilots give credibility to any Drone Program.

Cheap Drones on Amazon ~ \$50

Backyard flying is the best place to learn!

Aim for your Program participants to have 10-15 hours of flight time.



Risk Management & Legal – Hot Takes

Airspace is public.

Drones are considered Aircraft, just like a Cessna or a 747. Pilot's license.

Drone Flights → Covered under Federal Regulations.

Any recordings obtained by a Drone are public.

Take-Off/Landing → Can be regulated at local level.

Anti-Snooping and Anti-Surveillance Laws are a real thing.

Self Limitation

Risk Management & Legal – Policy Beginnings

Get your Insurance carrier and City Attorney involved in the Policy development as early as possible!

Voluntary Best Practices for UAS Privacy, Transparency and Accountability document from White House.

Using other cities' programs as a guide.

Building Inspections only - - bye, bye Code Enforcement!

Risk Management & Legal – What to Expect

Policy for taking pictures or recording.

- When they will be used?
- How will they be stored?
- Who will have access?

How will you notify homeowners of the flights?

- Neighboring properties?

Coverage can be provided for the aircraft and its operation, BUT...

- Certified Pilots.
- Pre-approval for their Use.

Risk Management & Legal – Staying Grounded to Fly

Use Drones only for Inspection types that can be considered hazardous because of falls.

- Solar
- Reroofs
- Structural Assemblies \geq 2-stories
- Signage

Put a disclaimer on the Permit Application but give people the option to opt-out.

Always attempt to notify the homeowner on the day of inspection of a Drone flight.





CONSTRUCTION PERMIT APPLICATION

City of Kingsburg
 Building Department
 1401 Draper Street Kingsburg, CA 93631
 Phone (559) 897-5328 Inspection (559)897-6526

Date Received _____

Permit # _____

RTMF form given for
 New Residential or Commercial
 Addition to Commercial or Industrial

CONTRACTOR	OWNER/PROJECT INFORMATION
Contractor License No _____	Project Address: _____
Contractor Name.: _____	Owner Name: _____
Mailing Address _____	City/State/Zip _____
City/State/Zip _____	Phone _____ Cell _____
Phone _____ E-mail _____	E-mail _____
CONTACT PERSON	ARCHITECT/ENGINEER
Name: _____	Company Name: _____
Phone: _____	License No. _____
E-mail _____	Mailing Address _____

Valuation (cost of project): \$ _____ Lot # _____ APN# _____ Tract # _____

Residential Commercial:
 ___ New structure ___ Addition ___ Remodel ___ Tenant Imp ___ Signs ___ Fire Damage ___ Fire Alarms
 ___ Electrical ___ Mechanical ___ Plumbing ___ Patio Cover ___ Fence Other _____

Project Description: _____

SFR SQ FT	SOLAR	A/C	POOL	RE-ROOF	SPRINKLERS
RESIDENCE	# OF PANELS _____	TONS _____	GALLONS	TEAR-OFF	# OF HEADS
PATIO	MSP- NEW OR EXISTING	DUCTWORK _____		OVERLAY	BLDG SQ FT
GARAGE	BATTERY STORAGE				

State Law requires all cities to report the disposal and recycling of project waste. Please fill out the Construction and Demolition Management Plan completely and turn in all weight tickets in order to qualify for a return on deposits and to avoid additional penalties. The waste hauler you use must be registered with the City and have a Franchise Agreement and Business License.

The City of Kingsburg Building Division has been authorized to use Unmanned Aerial Systems, "Drones", to perform certain inspections. If you **do not** permit this method of inspection, please check and initial here:

All residences must have working Smoke/Carbon Monoxide Detectors installed prior to final inspection.

Applicant Statement: I certify that I have read this application and state that the above information is correct to the best of my knowledge. I agree to comply with all city and county ordinances and state laws relating to building construction, and hereby authorize representatives of the City to enter upon the above-mentioned property for inspection purposes. I (We) agree to save, indemnify and keep harmless the City of Kingsburg against liabilities, judgments, costs and expenses which may accrue against said City on consequence of the granting of this permit.

Risk Management & Legal – Staying Grounded to Fly



Pictures only – No Videos!

- Level of Liability Risk
- Availability of Storage

Only take pictures if a Code violation exists and needs to be corrected.

Treat that picture the same as if it's a Special Inspection or Soils Report.





Risk Management & Legal – Staying Grounded to Fly



The aircraft must have all the “bells-and-whistles.”

- Obstacle Avoidance
- On-board lighting
- Remote ID

Operator will have full PPE while piloting.

- Safety Glasses
- Hard hat
- Reflective Vest

All flights will be logged.

Funding – Show Me the Money \$\$\$

Professional Drones can cost hundreds of thousands of dollars.

Legitimacy of the Program can be obtained by using a commercially-available Drone that anyone can buy.

Self-limitation measures may limit the selection of a Drone and increase the costs.



Funding – CalAPP Grant



SB 379 –
Instantaneous
Automated
Online Solar
Permitting
Platform.
“SolarAPP+”



Residential Solar
Permits are
instantly issued.
Plan Check is
done by a
computer.



SB 129 –
Established grant
funding for
jurisdictions to
set up the online
platform.
“CalAPP Grant”



**Application
Deadline has
passed, but
appropriated funds
may still be used**

Funding – CalAPP Grant

Items that could be caught at plan check are now self-certified by the applicant in the “SolarAPP+” program.

- CRC R324.6 and CFC 1205.2 & 1205.3, Roof Access and Setbacks.

Verification of these elements is now done in the field, by the Inspector, after the installation of the panels.

Using a Drone will allow an Inspector to verify for Code compliance pathways and setbacks in a safe manner.

The CalAPP Grant can be used to reimburse jurisdictions for the Drone and any needed accessories.

Legislative Approval – Management Support

Involve the City Manager and associated administration early on.

Require approval from legislative body.

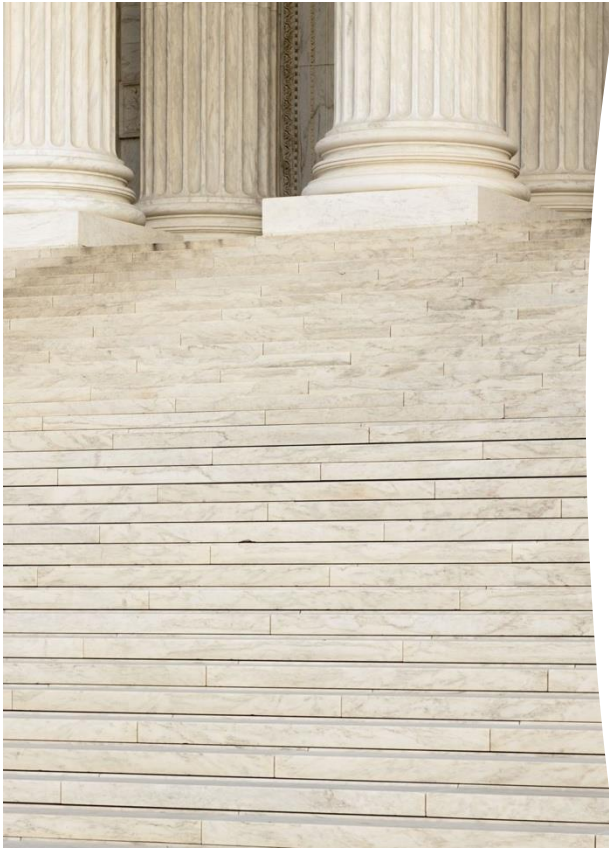
Other City Divisions can be effective advocates.

- Police and Fire
- Other jurisdictions

The justification for use can be extensive, but statistics and numbers are better for summaries.



Legislative Approval – The Big Day!



Preach “Safety, safety, safety!”

Think of what concerns residents might bring to the elected leaders.

- ChatGPT can be a helpful tool before the meeting.

Elected Leaders will be concerned with effectiveness of the program.

Sell the product! Sell, sell... SELL!

Implementation – Now You're Flying!

Certificates of Authorization

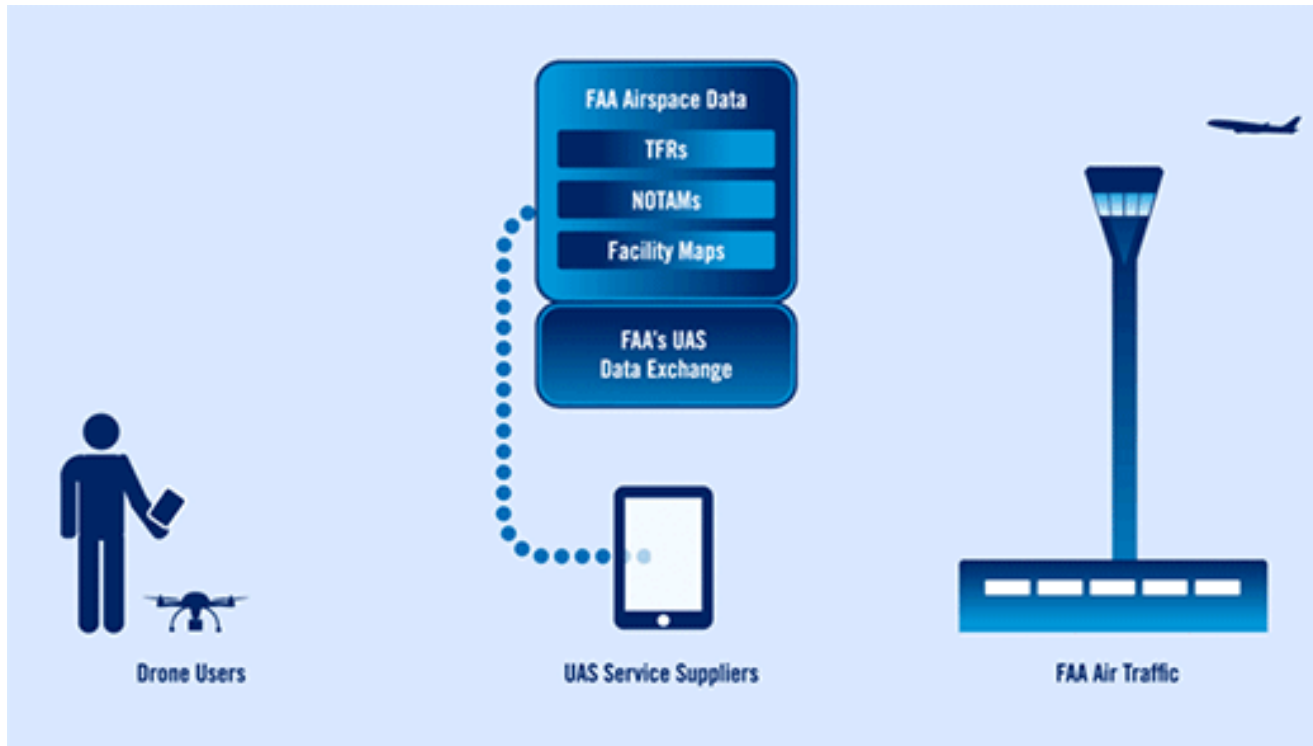
- May be required if flight operations are in certain classes of airspace or where there are restrictions.
- Application for Certificate of Authorization, ability to communicate with ATC.

FAA B4UFLY App

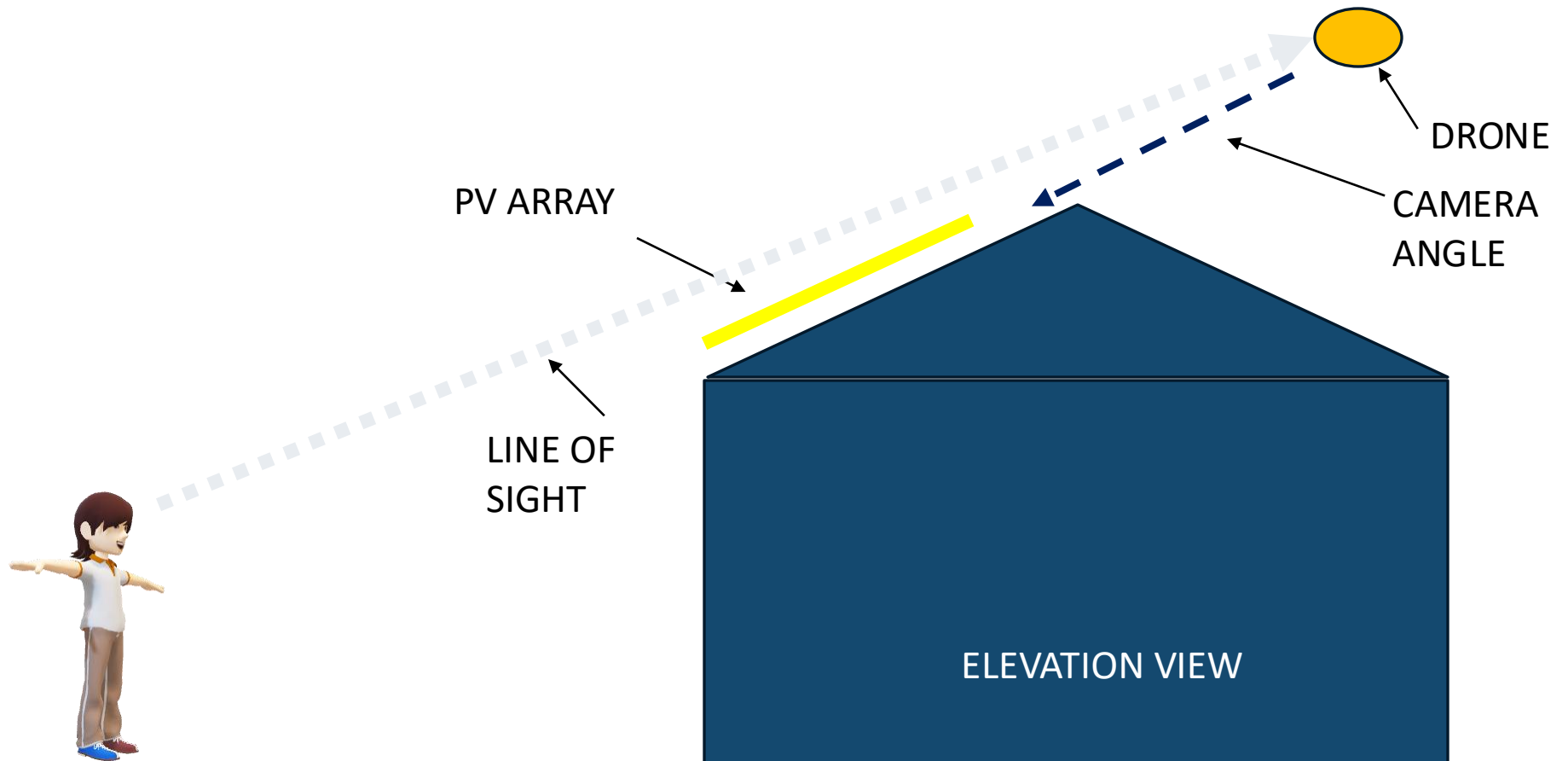


Implementation – Now You're Flying!

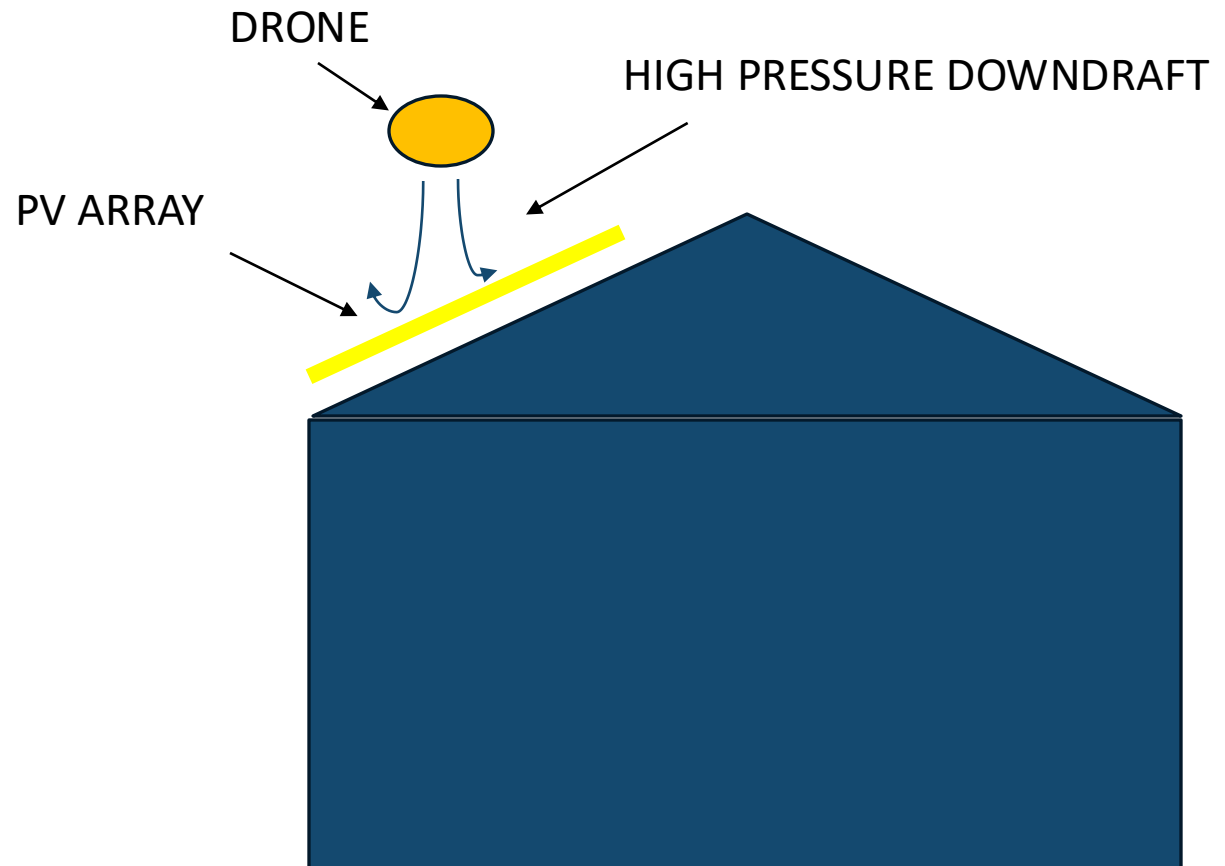
LAANC – Low Altitude Authorization and Notification Capability



Implementation – Tips and Tricks



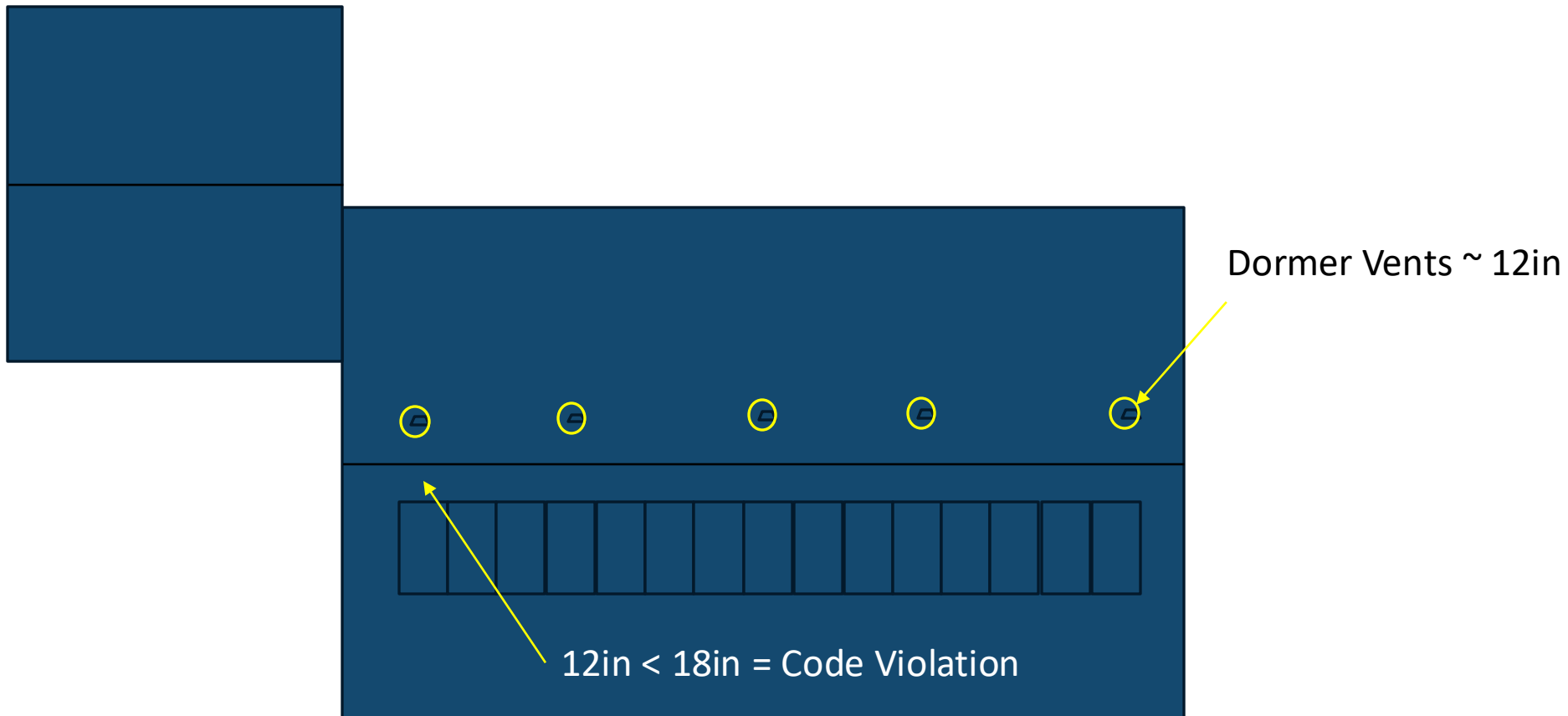
Implementation – Tips and Tricks





Implementation – Tips and Tricks

Drone View
Elevation ~ 50-100ft AGL





Implementation – Successes


City of Kingsburg adopted the Drone Inspection Program in June 2023. Flights began in August 2023.



Almost 500 flights, almost 80 total flight hours.



Primary inspections: Rooftop solar, reroofs, exterior brace walls.



As of April, only (3) applicants have opted out of the program.

Implementation - Successes



Questions?

If you have any questions,
please contact the CALBO Office at
info@calbo.org.