DroneTower

COMMUNITY FLYING LOOKOUT

A fire-awareness training program that puts community members in the air with a consumer drone and a structured observation protocol. The drone is the tool. Reading fire is the skill. DroneTower trains people to see what is coming before centralized systems know it has started.

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1. A Modern Take on an Old Idea

Canada once had over 1,500 fire towers. In Ontario alone, 325 of them stood watch through the mid-twentieth century, staffed by trained lookouts who read the horizon for smoke and radioed alerts the moment they saw something. Slow by modern standards. But local, resilient, and always present.

Then satellite detection arrived, aerial patrol contracts expanded, and the towers came down. The argument was efficiency: why post a person on a platform when a satellite can scan the same area from orbit?

The answer, which wildfire seasons from 2017 onward have made painfully clear: because satellites pass on a schedule. Patrols fly fixed routes. Neither is watching your community's north flank at 2pm on a 38-degree day when the FWI is 28 and the wind just shifted northwest.

> **The Gap Nobody Fixed**
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> **Between a lightning strike or a campfire left burning and the first official aircraft response, there is a window of one to six hours where the fire is detectable, manageable, and invisible to the system. That window is where the fire towers lived. Nobody replaced them.**

DroneTower replaces them. Not with a tower -- with a person, a consumer drone, and a protocol built around reading fire, not flying aircraft.

The lookout returns. Not in wood and steel, but in silicon and sky.

2. The Program

DroneTower trains community members to become DroneTower Spotters: people who know when and where to deploy, what to look for once they are airborne, and how to report what they see in a format that reaches the right people fast.

The curriculum is fire-first. Participants learn how wildfire behaves, how it moves, what it looks like from 80 to 120 metres above the treeline in the minutes before it becomes a crisis. The drone is the tool that gets them there. It is not the subject.

2.1 Curriculum Overview

Four modules. Approximately eight hours total. Designed for asynchronous online delivery with a remote flight review and coaching session to complete certification.

Module	Content
Module 1	Know Your Sky -- Reading fire weather conditions in plain language. The FWI system, FFMC, BUI, and what the numbers mean for a community observer. Wind, humidity, inversion layers. When to deploy and when conditions say stay grounded.
Module 2	Know Your Land -- Reading the exposure picture for your specific community. How wildfire moves through terrain. Fuel types and accumulation zones. How to identify the corridors that need watching before a fire starts. For communities with a HaloScout assessment, this module runs directly from their FRIZ exposure data.

Module	Content
Module 3	RPAS Essentials, Sub-250g -- The minimum drone knowledge needed to operate safely and legally. Transport Canada sub-250g rules, pre-flight checks, basic maneuvers, flight planning for a defined observation. Not a typical ground school. A mission primer. Essential skills and knowledge about operating in the complex wildfire environment so as to avoid conflict are a core aspect of this module.
Module 4	Spotter Protocol -- The operational core. When to launch, how to run a yaw-stop patrol across community risk corridors, smoke signature recognition, and how to confidently flag findings for escalation using a standardized report format that agency dispatchers can quickly verify. Spotters observe, document, and report -- they do not confirm, classify, or diagnose fire cause, behaviour, or official status; that determination rests with the ministry. Spotters also stand down and land immediately when manned aircraft are inbound, an unconditional rule covered in Module 4 and reinforced in section 2.4. The full loop from boots on the ground to intelligence in the right hands.

Curriculum Emphasis

Modules 1 and 2 are fire education. Module 3 drone education focused on being safe and legal coupled with a real understanding of the risks in complex wildfire environment to avoid conflict. Module 4 brings it together into a repeatable, community-owned observation protocol. Participants who finish this course know more about how wildfire behaves and moves than most people in the system who are not professional fire managers. In many ways this program can act as a gateway to more complex future drone operations within a community.

2.2 The Hardware

Sub-250g drones are consumer products. They are sold at Best Buy. People fly them to photograph their cottages and video their kids playing hockey. That is exactly the point.

In Canada, sub-250g drone operations require no registration and no Advanced RPAS certification for most operational contexts. The regulatory barrier that stops every other drone wildfire program from reaching remote communities does not exist at this weight class.

A fire warden in Hornepayne does not need a pilot licence to put a DJI Lito 1 in the air and scan their north treeline when conditions go critical. That is the unlock.

One drone, confidently and durably under 250g, with real obstacle avoidance, covers every deployment:

Drone	Retail Price (CAD)	Role
DJI Lito 1 (Fly More Combo) — Included	$449	DroneTower Standard. Included with every subscription. Omnidirectional obstacle sensing, GPS-stabilized flight, reliable Return-to-Home — more than enough for a structured look-see patrol. Released April 2026.

2.3 Bring Your Own Drone

A community does not need to buy a drone from FireArc to put a certified DroneTower Spotter in the air. If a fire department, First Nation, or municipality already owns a drone, purchased for a building assessment, a search-and-rescue unit, or a council member who bought one and never quite found a use for it, that hardware is a legitimate way into the program.

DroneTower is a training program and an operating protocol first. It is not a hardware sale that happens to come with a course attached. Communities that already have a compliant drone sitting in a cabinet can apply a hardware credit against their subscription, or put that value toward more operators or an on-site onboarding upgrade.

This also removes real procurement friction at exactly the communities DroneTower targets. First Nations running natural-resource monitoring drones, municipalities with a building or infrastructure inspection unit, fire departments with a SAR-capable aircraft, many of them already have compliant hardware doing other work most of the year. Asking them to buy a second drone to unlock DroneTower is the kind of friction the program is built to avoid.

The flight review that already gates Tier I certification does double duty here. It is also where a self-supplied drone gets checked against program requirements, so there is no separate hardware approval process to build or navigate.

Minimum spec for certification:

- Confirmed takeoff weight under 250g on the specific aircraft and battery combination being flown, not the manufacturer's advertised nominal weight.
- Proper existing training an certificates for pilots flying over 250g in the airspace of the specific region.
- GPS-stabilized flight with a functioning Return-to-Home
- At least 20 minutes of continuous flight time per battery
- A camera capable of clear, stabilized video the operator can review for smoke-signature recognition
- A pilot able to complete the Module 4 patrol route and reporting demonstration on that hardware

Already Own a Larger Drone?

First Nations and municipalities received funding in recent years for larger, SAR-class drones, capable aircraft, but well beyond what DroneTower's sub-250g protocol requires, and often sitting underused. That hardware doesn't have to go to waste.

A drone over 250g can be used for DroneTower, but it falls outside Transport Canada's sub-250g exemption, so the pilot flying it needs valid RPAS certification, a separate qualification that isn't part of DroneTower's core curriculum. If your operator already holds it, the drone is eligible for the same flight review and Tier I certification as any sub-250g aircraft. If not, FireArc can arrange access to RPAS certification as a separate, additionally priced engagement.

This doesn't change DroneTower's core promise. The program itself has no certification barrier. Using a heavier drone re-introduces the barrier Transport Canada already put there, DroneTower isn't removing that rule, it's just not requiring you to buy new hardware to avoid it if you'd rather use what you already have.

Element	Cost (CAD)	Notes
Bring Your Own Drone	$0	Community supplies a compliant sub-250g drone; checked against program requirements during the flight review at no added cost.

Element	Cost (CAD)	Notes
TC Certification Arrangement — Basic Operations	From $100	For an existing drone over 250g where the operator does not already hold Basic Operations certification; arranged by FireArc as a separate engagement (see Section 2.3).
TC Certification Arrangement — Advanced Operations	From $500	For an existing drone over 250g where the operator does not already hold Advanced Operations certification; arranged by FireArc as a separate engagement (see Section 2.3).

Hardware-Agnostic by Design

DroneTower is built around the protocol, not the product. Any sub-250g drone that clears the flight review earns the same DroneTower Lookout Operator, Tier I certification as one bought through this program. The training is what makes a Spotter, not the logo on the drone.

2.4 Airspace and Deconfliction

Sub-250g status does not exempt a Spotter from the most important rule in wildfire airspace: when manned firefighting aircraft are working a fire, drones stand down immediately. Water bombers and helicopters work low, fast, and without the traffic separation support they'd have anywhere else; a drone sharing that airspace is a collision risk serious enough that a single reported sighting typically grounds the entire aerial response until the area is cleared.

DroneTower's operating window is built around this constraint, not in spite of it. The program's entire value sits in the gap before official response arrives: the one to six hours between ignition and the first aircraft on scene. Module 4 trains Spotters to treat any indication of inbound manned aircraft -- a dispatcher radio call, a NOTAM, visual or audible contact -- as an immediate land-and-clear order, with no discretion left to the operator in the field. Yet it provides a group of qualified spotters whose skills could be deployed on request if needed by authorities.

> **Stand-Down Is Not Optional**
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> **A DroneTower Spotter's authority to fly ends the moment official aircraft are inbound. This is trained as a hard rule, not a judgment call, because the operators are volunteers and community members, not licensed pilots making airspace decisions under pressure. If you fly, they can't.**

3. How Delivery Works

3.1 Community Onboarding

Every DroneTower deployment starts with a Community DroneTower Plan, not with a drone in a box. Before any operator picks up a controller, the onboarding engagement defines who owns the program locally, what conditions trigger a spotter flight, where patrols launch from, how a report gets escalated, and which stakeholders -- the band office, the fire department, the regional MNRF contact, the FireSmart committee -- need to be part of that chain.

This is what makes the program legible to a community, rather than landing as equipment with a manual. It is also where FireArc walks a community through how the program is built to grow: Phase 1 puts trained operators in the air on consumer hardware today, and the onboarding conversation is where a community sees how Phase 2's CloudTower backend, agency integration, and HaloScout-driven patrol routes fit onto that same foundation later.

Remote community onboarding is included with every DroneTower subscription. On-site onboarding is available as an optional upgrade for communities that want the full stakeholder process run in person:

- Remote onboarding — included with subscription. Evaluation plus a stakeholder meeting so everyone understands the deployment process.
- On-site onboarding (~$2,000–$3,500, optional upgrade) -- a 4-day on-site engagement for communities that want the full stakeholder process run in person.

> **Built to Grow**
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> **Onboarding isn't a one-time kickoff meeting. It produces a working Operations and Deployment Manual the community keeps and updates, and that same manual is what plugs into Phase 2 integration when a community is ready for it.**

3.2 Online Course

All four course modules are delivered online and can be completed asynchronously. Participants work through video instruction, scenario exercises, and knowledge checks on their own schedule, from wherever they are.

This matters because the communities that need DroneTower most are often the hardest to reach. A fly-in First Nations community in Northern Ontario should not need an instructor to travel there before their people can get trained. The course comes to them.

3.3 Remote Flight Review and Coaching

Certification is completed through a recorded flight review. The operator flies a structured observation, demonstrates smoke-signature recognition, and narrates the reporting workflow on camera -- recorded straight to the drone's onboard storage or a phone, no live connection required in the field. The video is uploaded whenever the operator reaches a signal point: the community centre, the band office, or a satellite connection where one is available.

Every submission is assessed by a FireArc-certified reviewer against a fire-aware airmanship standard, not generic drone instruction, and every operator receives detailed written feedback before Tier I certification is issued.

Built for Where the Signal Isn't

The communities DroneTower serves are often the same ones with the least reliable connectivity. That is why the flight review is recorded, not streamed. Flying and transmitting are two separate steps: the flight happens in the field regardless of signal, and the upload happens whenever a connection is available, whether that is community Wi-Fi, a satellite link, or a slow rural connection. No live link, no plane ride, and no dependence on broadband that most of these communities do not have.

3.4 What Communities Get

- Completed Community DroneTower Plan and Operations and Deployment Manual, from onboarding
- Certified DroneTower Spotter -- DroneTower Lookout Operator, Tier I, from FireArc, per operator
- Certified Spotter ID, used when reporting to 310-FIRE so dispatchers can identify a trained, certified operator on the call
- Access to the online course modules (self-paced, revisitable)
- Remote flight review and debrief session with a FireArc reviewer
- Field SOP card set (laminated, deploy-ready)
- Mission log templates for patrol documentation
- Access to FireArc's operator support channel for the first operational season

4. Phase 1 and Phase 2

DroneTower deploys in two phases. Phase 1 is available now. Phase 2 follows as field data and community adoption justify the build. Phase 2 will be developed if regional connectivity is viewed as useful by Government agencies. Phase 1 is designed to completely empower local agency and reduce detection time, giving communities a real time advantage in deploying wildfire resilience methods.

Phase 1 -- Available Now

The subscription, the included drone, the course, and the remote certification review. Everything a community needs to put trained DroneTower Spotters in the air this fire season.

- Community DroneTower Plan (remote onboarding, included with subscription)
- Online course modules delivered via LMS (asynchronous)
- Included DJI Lito 1 drone, shipped with subscription activation, or a compatibility check for communities supplying their own drone
- Remote flight review and Tier I certification
- Field SOP kit and mission log workflow
- Phone and email support through first operational season

Phase 1 puts real operators on real patrols in real communities today, running on consumer hardware communities can buy right now.

> **The Sequencing Logic**
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> **A trained operator with a consumer drone and a structured protocol is already more than most remote communities have today. Future integration in phase 2 makes those operators part of a coordinated regional intelligence network. The backend follows the operators. The operators come first.**

Future Enterprise Integration (Phase 2) -- CloudTower Backend (Following Field Validation)

Once DroneTower Spotters are in the field generating observations, Phase 2 connects those observations to an intelligence layer that makes the data consequential beyond the individual community.

- CloudTower mission app: structured flagging workflow, offline AI plume recognition, GPS-tagged image logging
- CloudTower network: data aggregation across operators and communities, connected and offline-first sync
- AI analysis layer: smoke signature scoring, cross-validation across operator reports, risk contextualization
- Agency integration: data packages formatted for 310-FIRE, MNRF nodes, fire wardens, First Nations leadership

5. Pricing and Funding

5.1 The Subscription

DroneTower runs on a single flat-rate subscription: $300/month per community, on a two-year term. Every subscription includes a DJI Lito 1 drone, a field kit, and remote community onboarding — no separate hardware purchase and no separate onboarding fee. Certification is $200 per operator (one-time, up to 10 operators per community). Communities supplying their own compliant drone follow the same subscription with a hardware credit applied.

Component	Details	Price
DroneTower Subscription	Per community, 2-year term. Includes DJI Lito 1 drone, field kit, remote onboarding, online course, and future yearly recertification.	$300/month
Initial Certification	Per operator, one-time. Up to 5 operators per community included.	$200/operator
On-Site Onboarding	Optional upgrade: a 2-day in-person engagement instead of the included remote onboarding. Does not include travel costs.	+$2,000–$3,500

Both the on-site onboarding upgrade and yearly recertification are covered in the table above — recertification carries no separate renewal fee for the life of the subscription.

5.2 Cost Breakdown Reference

For funding applications that require a line-item breakdown, or to customize beyond the standard bundles above (additional operators, a different onboarding tier), here is the full itemized pricing:

Element	Cost (CAD)	Notes
Field SOP kit	Included	Laminated field cards with standardized reporting script, mission log pad, deployment checklist
Included Drone — DJI Lito 1	Included	Standard drone included with every subscription. Same safety profile as heavier platforms, no long field track record yet (new April 2026).
Bring Your Own Drone	$0	Community supplies a compliant sub-250g drone; checked against program requirements during the flight review at no added cost. If drone is >250g operators must have existing Transport Canada certification or we can provide access to that at additional cost if required.
Remote Onboarding	Included	Included with every subscription: evaluation plus stakeholder meeting. On-site version available as an optional $2,000–$3,500 upgrade.

5.3 Funding Pathways

- CEPG (Community Emergency Preparedness Grant): DroneTower's subscription, certification, and field kit position the program's operational core as a single ongoing preparedness line item. No capital project approval required.
- CWRP (Canadian Wildfire Resilience Program): Community allocation funding through provincial channels, particularly for First Nations and remote municipalities already engaged with CWRP streams — a natural fit for the onboarding engagement as well as hardware and training.
- Municipal emergency management budgets: Standard operational budget line for communities with active emergency management programs; typically the pathway for the onboarding engagement where CEPG is reserved for equipment.
- FireSmart Canada integration: Positions naturally as the operational activation layer for communities that have completed FireSmart assessments and want a real-time observation capability to go with them.

6. Who This Is For

DroneTower is designed for three community types where the detection gap is largest and the institutional barriers to adopting complex technology are highest.

First Nations Communities in Fire-Prone Regions

Communities in Northern Ontario, BC Interior, northern Quebec, and Labrador that are routinely among the last to receive official fire detection and response. DroneTower gives these communities sovereignty over their own early warning capability. The knowledge stays local. The protocol is theirs to run.

Remote and Rural WUI Municipalities

Small municipalities at the wildland-urban interface with limited emergency resources and no dedicated aerial surveillance capacity. A trained DroneTower Spotter costs less than one hour of contracted aerial patrol -- and is available every day, not just when the budget allows a flight.

Community Fire Departments and Emergency Management Organizations

Fire crews, emergency coordinators, and FireSmart committee members who want a practical, affordable observation tool that connects to their existing response chain. DroneTower fits into existing emergency management protocols without requiring new infrastructure.

> **On Community Sovereignty**
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> **Every other drone wildfire program in Canada requires agency infrastructure, Advanced certification, or capital investment that remote communities cannot easily access. DroneTower is the only program designed from the ground up around what a remote community can own, operate, and sustain on its own -- with consumer hardware, an online course, and a remote coaching session.**

7. Getting Started

Standing up DroneTower capability in a community takes less time than the fire season preparation that is already underway.

When	What Happens
Week 1	Community activates its DroneTower subscription and completes the included remote onboarding engagement (or the optional on-site version), identifies two participants for initial operator training, and either receives its included DJI Lito 1 drone or confirms an existing community drone meets program requirements.
Weeks 2-3	Participants complete the four online modules at their own pace. Approximately eight hours of instructional content. Can be done evenings and weekends. Communities should have their drone at this point.
Week 3-4	Operators record their flight review -- patrol protocol, smoke recognition, and reporting workflow -- and submit it for review. DroneTower Lookout Operator -- Tier I certification issued on review.
Week 4	Field SOP kit delivered. Community begins operational patrols on high-FWI days following the DroneTower Spotter deployment protocol, including the airspace stand-down rule.
Ongoing	FireArc support available through first operational season. Yearly recertification, included in the subscription, keeps operators current. Phase 2 CloudTower integration available as community readiness and program scale justify.