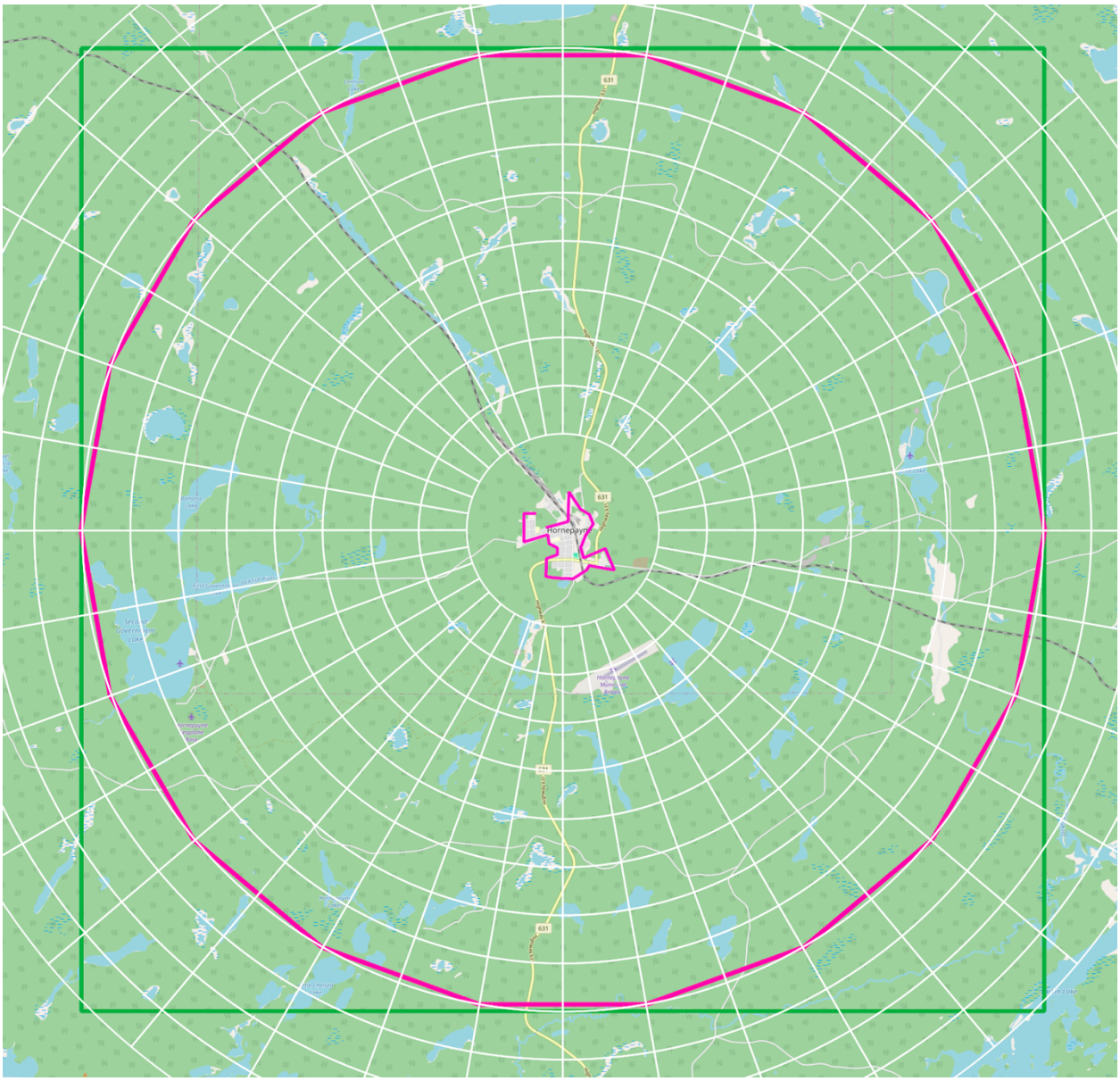
FIREARC



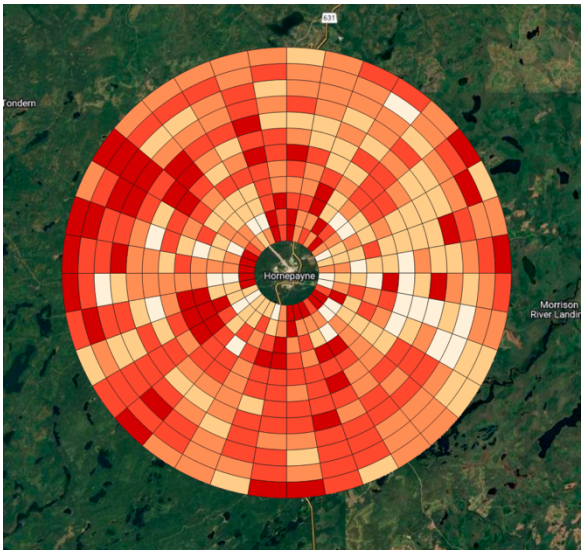
The FRIZ™

Flame Risk Identification Zone. FireArc's visual language for understanding landscape and risk.

Brady Gilchrist
Founder & CEO FIREARC INC.

Executive Summary

Wildfire has shifted from a seasonal emergency to a permanent condition of the landscape. Communities, governments, utilities, and insurers are increasingly exposed to compound wildfire risk — yet most planning tools remain fragmented, technical, and misaligned with how real decisions are made.



FRIZ (Fire Risk Identification Zones) is a cell-based decision framework designed to translate complex wildfire risk into shared, actionable understanding. It enables diverse stakeholders to see the same risk picture, prioritize interventions, justify funding, estimate risk directionally, and communicate decisions with clarity and confidence.

FRIZ does not replace fire science or predictive modeling. It bridges the persistent gap between data and decision.

The Problem: Risk Without Alignment

Over the past two decades, wildfire science has advanced rapidly. Wildfire decision-making has not kept pace.

Fragmented risk views separate fire, planning, infrastructure, and emergency management. Over-technical outputs disengage senior leaders and elected officials. Static, report-based plans resist prioritization and sequencing. Funding narratives remain weak, disconnected from place and consequence. And inconsistent public communication erodes the trust communities need to act.

The core issue is not a lack of data. It is the absence of a shared decision structure — a way for many stakeholders to reason about wildfire risk together without requiring everyone to become an expert.

What Is FRIZ

A FRIZ is a defined wildfire decision perimeter typically extending 10 to 15 km around a community, asset, or landscape — organized into a cell-based grid that integrates multiple dimensions of wildfire risk.

A FRIZ document is not a technical report. It is a decision map.

At its core, FRIZ functions as a translation layer between wildfire science and governance, planning, funding, and public communication. Its key characteristics: a single, shared spatial framework; a cell-based structure that preserves place while enabling integration; plain-language interpretability without sacrificing analytical

rigor; directional, perimeter-aware logic; upgradeability over time as new data becomes available; and governance neutrality — supporting decisions without prescribing outcomes.

Why a Cell-Based Framework Is the Core Innovation

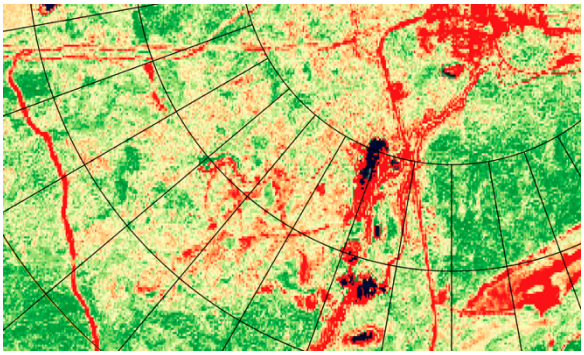
From Fields and Scores to Decision Units

Traditional wildfire tools rely on continuous hazard fields — fuel, slope, fire weather indices — or abstract scores that collapse many variables into a single number. Both approaches fail decision-makers.

FRIZ introduces the cell as the smallest meaningful unit of wildfire decision intelligence. Each cell is geospatially bounded, multi-layered (risk, consequence, mitigation), quantifiable yet explainable, and composable into larger patterns. This transforms wildfire risk from something that is merely described into something that can be reasoned about, combined, and prioritized.

Preserving Spatial Truth While Enabling Integration

Most systems force a trade-off: maps preserve geography but resist synthesis; scores synthesize but erase place. FRIZ cells resolve this by anchoring every variable to the same spatial unit.



Fuel, ignition pressure, wind alignment, structure vulnerability, evacuation complexity, and mitigation opportunity coexist within each cell — without being flattened or averaged away. Integration without losing spatial truth.

Directional and Perimeter-Aware Risk

Wildfire does not arrive evenly from all directions. It moves along corridors, shaped by wind, slope, and fuel continuity. Because FRIZ is cell-based, it can identify attack paths across adjacent cells, weight exposure directionally, and aggregate risk along arcs, sectors, and corridors.

Without cells, risk remains static. With cells, risk becomes path aware.

Separating Exposure, Consequence, and Opportunity

A critical failure of many wildfire tools is the collapse of everything into hazard. FRIZ explicitly separates, within each cell, three

distinct layers: risk exposure (fuels, ignition likelihood, fire behaviour drivers); consequence (structures, infrastructure, evacuation, cascading impacts); and mitigation potential (what can realistically be changed, where, and when).

This allows decision-makers to ask not just how flammable a place is — but how dangerous it is to lose it, and what can actually be done about it.

What a FRIZ Document Enables

Shared Understanding Across Stakeholders

FRIZ provides a single reference picture used by fire services, planners and engineers, emergency managers, councils and executives, and funders and partners alike. This shared picture reduces institutional friction and accelerates alignment.

Planning and Prioritization

FRIZ does not say everything is risky. It shows where risk concentrates, which areas warrant near-term action, and which can be monitored or sequenced later. This supports phased, realistic planning under uncertainty.

Funding and Due Diligence

Because FRIZ ties risk to place, consequence, and priority, it strengthens funding narratives. It enables organizations to demonstrate defensible prioritization, align proposals with funder risk language, and show why specific investments matter now. FRIZ does not guarantee funding — it makes funding logic coherent.

Risk Estimation Without False Precision

FRIZ avoids brittle numerical certainty. Instead, it provides directional risk intelligence: higher versus lower concern, near-term versus long-term exposure, high-consequence versus low-consequence cells. This approach is more robust in governance, insurance, and public accountability contexts.

Clear, Credible Communication

A FRIZ document is explainable. The same map can support a council briefing, interdepartmental coordination, a public engagement session, and media communication. Consistency builds trust.

What FRIZ Is — and Is Not

FRIZ is a wildfire decision framework. It is a shared literacy and governance tool. It is a bridge between science and action.

FRIZ is not a predictive fire model. It is not a replacement for detailed analysis. It is not a regulatory compliance document. It is not a one-time static report.

Its strength lies in clarity, alignment, and usability.

Why FRIZ Matters Now

As wildfire becomes a permanent condition, the limiting factor is no longer awareness — it is the ability to make coherent, defensible decisions across many stakeholders, under uncertainty.

FRIZ addresses this gap. By breaking wildfire risk into cells and reassembling it as a shared decision system, FRIZ transforms how communities see themselves before the flame — and how they act because of that understanding.

FRIZ is not just a map.

It is not just a framework.

It is a new way of seeing wildfire risk as a governable system — one that respects science, honors place and enables action.

FRIZ is proprietary decision architecture developed by FireArc Inc. The cell-based methodology, spatial framework, and analytical structure form the foundation of FireArc's HaloScout, HaloScan, and SmartMoat systems. Use of the framework beyond descriptive reference requires licensing. FireArc actively protects its intellectual property.

In an age of flame, clarity is resilience.