LECTURE KIT — MODULE 03

# FRIZ / Flame Risk Identification Zones

Seeing Wildfire Risk as a Governable System

Professional Development Lecture Kit

## 1 — Module Summary

Most communities approach wildfire risk using governance tools — neighbourhood boundaries, municipal zones, administrative lines. These are useful for bylaws and budgets. But they don't match how fire moves. Fire has geometry: it follows fuel, runs with terrain, and aligns with wind. The FRIZ framework solves a foundational problem — how to divide the threat perimeter surrounding a community in a way that actually reflects how fire approaches.

### THE THREE-PART PLANNING GAP

| LAYER | WHAT IT PROVIDES | STATUS IN MOST COMMUNITIES |
|---|---|---|
| **Prediction** | Fire weather forecasting / FWI alerts | Present — weather services provide this |
| **Prescription** | FireSmart / CWPP — actions to take | Present — most communities have some version |
| **Visibility** | Directional exposure — where fire would approach from and how | Missing — FRIZ is designed to provide this |

### HOW THE FRIZ GRID WORKS

The threat perimeter surrounding a community is divided into two dimensions: concentric rings representing distance from the community (near to far), and directional sectors. Every intersection of a ring and a sector is a cell — and every cell gets a unique ID. 36A is directly north, closest ring. 15D is southeast, three rings out. The grid gives every piece of the surrounding landscape a shared address that every stakeholder uses in every meeting.

### EXPOSURE GEOMETRY AND THE RX-1 CONCEPT

Not all cells carry equal threat. Exposure analysis weights each cell by fuel continuity, terrain, and wind alignment — identifying the dominant approach corridors where fire is most likely to travel toward the community. High-exposure cell clusters show where limited resources should concentrate first. Where satellite data shows elevated concern but cannot confirm ground-level conditions — dense canopy, closed-crown forest — cells are flagged as RX-1 (Unresolved Exposure), acknowledging uncertainty rather than hiding it behind false precision.

**KEY PRINCIPLE**

You are not managing data. You are building a shared vocabulary. In an age of flame, clarity is resilience.

## 2 — Key Terms

| TERM | DEFINITION |
|---|---|
| **FRIZ** | Flame Risk Identification Zones. A proprietary spatial framework by FireArc that divides the threat perimeter surrounding a community into a grid of addressable cells — each the intersection of a distance ring and a directional sector. |
| **Directional Exposure Visibility** | Knowledge of which direction(s) wildfire is most likely to approach from, and how that approach would interact with roads, infrastructure, evacuation routes, and vulnerable populations. |
| **Threat Perimeter** | The ring of landscape — typically 10–15 km — surrounding a community within which fire conditions most directly determine whether a wildfire becomes a community-level event. |
| **Cell** | The fundamental unit of the FRIZ grid. Each cell is the intersection of one distance ring and one directional sector, and carries a unique alphanumeric ID (e.g. NW-2). |
| **Exposure** | The measure of threat a given cell carries toward the community — determined by fuel continuity, terrain slope and aspect, and wind alignment. High-exposure cells indicate dominant approach corridors. |
| **Dominant Approach Corridor** | A directional pathway — typically 3 to 5 identified per community — where fuel, terrain, and wind combine to make fire approach most probable and most consequential. |
| **RX-1 Cell** | A FRIZ cell flagged as having Unresolved Exposure — where satellite data indicates elevated risk but cannot confirm ground-level conditions. Signals the need for follow-up reconnaissance rather than false precision. |
| **Corridor Fragility** | A BlindSpot condition in which an evacuation route or access road passes through one or more high-exposure FRIZ cells, making it potentially unreliable at the exact moment it is most needed. |
| **Fuel Continuity** | The unbroken pathway of combustible vegetation connecting the wildland to the community. Natural breaks — roads, wetlands, cleared areas — interrupt continuity and can significantly alter fire behaviour. |
| **Shared Vocabulary** | The goal of FRIZ implementation: a common spatial reference system that allows fire services, emergency managers, planners, councils, and the public to discuss wildfire risk using the same names for the same places. |

## 3 — Discussion Questions

*Questions progress from comprehension through application to systemic challenge. Use individually for reflection or in group settings for structured discussion.*

**UNDERSTAND — CONFIRM THE CONCEPTS**

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| **1** | The module identifies three layers of wildfire preparedness: prediction, prescription, and visibility. Most communities have the first two. Why is the third — directional exposure visibility — consistently absent, and what does that absence cost in practical terms? |
| **2** | The FRIZ grid is compared to a street address system. Before addresses, you described a location — 'turn left at the tall pine.' What specific coordination failures does the lack of a shared spatial address system create during a wildfire event? Can you give a concrete example from your own experience? |
| **3** | The module introduces the RX-1 designation for cells with unresolved exposure. Why does the framework treat acknowledged uncertainty as a credibility asset rather than a weakness — and do you agree with that logic? |

**APPLY — CONNECT TO YOUR COMMUNITY**

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| **4** | If you were to mentally draw a FRIZ grid around your community right now — without any data, just your knowledge of the landscape — which two or three sectors would you instinctively identify as highest exposure? What is driving that intuition, and how confident are you that it is accurate? |
| **5** | Corridor fragility occurs when an evacuation route passes through a high-exposure cell. Do you know, with confidence, whether any of your primary evacuation routes run through high-exposure terrain? If not, what would it take to find out? |
| **6** | The module argues that the current planning tools communities use — hazard maps, FireSmart checklists, CWPPs — are excellent at what they were designed to do, but were not designed to provide directional exposure visibility. Do you agree with that assessment? Where does it hold, and where might it need qualification? |

**CHALLENGE — PUSH INTO SYSTEMIC THINKING**

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| **7** | FRIZ is described as building a shared vocabulary — a common reference system across all stakeholders. In your experience, what are the real barriers to achieving shared spatial understanding across departments and jurisdictions? Are they technical, political, cultural, or some combination? |
| **8** | The module closes with: 'In an age of flame, clarity is resilience.' That's a compelling claim — but test it critically. Can you construct a scenario in which having a clear, shared spatial |

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| | picture of exposure does not translate into better outcomes? What would need to also be true for clarity alone to be insufficient? |
| **9** | FRIZ creates addressable cells — which means it creates a basis for accountability. If NW-2 is identified as a dominant approach corridor and nothing is done about it before a fire arrives from that direction, the record exists. How should communities think about the accountability implications of making risk this explicit — and does that prospect create any resistance to adopting the framework? |

## 4 — Community Self-Assessment

*This diagnostic is not an evaluation — there are no wrong answers, only honest ones. Use it individually before a team conversation, or complete it as a group to surface differences in perception.*

| | YES | PARTIAL | NO | DON'T KNOW |
|---|---|---|---|---|
| We have a shared, named way of referring to specific areas in the landscape surrounding our community — one that all departments and council use consistently. | ☐ | ☐ | ☐ | ☐ |
| We know which direction(s) wildfire is most likely to approach our community from, based on fuel, terrain, and wind analysis — not just intuition. | ☐ | ☐ | ☐ | ☐ |
| We have identified the 3–5 dominant approach corridors that represent our highest-probability fire pathways. | ☐ | ☐ | ☐ | ☐ |
| We have assessed our evacuation routes against our fire approach geometry — we know which routes pass through high-exposure terrain. | ☐ | ☐ | ☐ | ☐ |
| We have a process for flagging and following up on areas where our risk picture is incomplete or uncertain. | ☐ | ☐ | ☐ | ☐ |
| Our fire chief, emergency manager, planner, and council all use the same spatial reference when discussing wildfire risk — they are looking at the same map with the same names. | ☐ | ☐ | ☐ | ☐ |
| Our community's wildfire risk picture is organized in a way that allows us to make a spatially defensible argument to funders about where investment is most needed. | ☐ | ☐ | ☐ | ☐ |

**Reflection: If you were to implement a FRIZ grid for your community, which single outcome would matter most to you — better internal coordination, stronger funding proposals, more defensible public communication, or something else? What does that tell you about where the gap is most acute?**

## 5 — One Thing To Do This Week

*Three actions requiring no budget, no approval, and no technical expertise — just intention and attention.*

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| **Action 1** | Sketch a rough FRIZ grid on paper — just rings and sectors around a simple representation of your community. Don't worry about precision. The act of drawing it will immediately surface which directions you feel confident about and which you realise you've never thought about systematically. |
| **Action 2** | Identify the single evacuation route your community relies on most heavily. Then ask yourself: do I know what terrain that route passes through beyond the municipal boundary? If the answer is no or uncertain — that is a corridor fragility question that deserves a follow-up conversation. |
| **Action 3** | In your next wildfire-related meeting, notice whether everyone in the room is referencing the same geographic locations the same way. If they're not — if someone says 'the area north of town' while someone else says 'the ridge past the mill road' — you've just witnessed the shared vocabulary problem FRIZ is designed to solve. Name it in the room. |





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