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### ALBERTA FIRE CHIEFS ASSOCIATION CONTRACT

- Conditional 18 month contracts to:
  - Provide two - 4 person teams
  - Develop an Alberta WUI training Program
  - Respond for WUI events in the Province
- Contracts awarded to:
  - Town of High Level
  - Clearwater County



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### TRAINING PROGRAMS

- Three programs have been developed
- Validation process for the first year
- A focus on interagency cross training
- Contributors to the program:
  - Alberta Wildfire
  - Hinton Training Center
  - Parkland County Fire Service



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WUI for Leaders	S-115	S-215
<ul style="list-style-type: none"> <li>Designed for CAO's, DEM, Council Members and Incident Management teams</li> <li>Discuss terminology used on the fire ground</li> <li>Brief overview of field operations</li> <li>Approximately 2hrs</li> </ul>	<ul style="list-style-type: none"> <li>Designed for Municipal and Wildland Firefighters</li> <li>Discuss the differences between Municipal and Wildland firefighting operations</li> <li>Basics of WUI events, focusing on common terminology.               <ul style="list-style-type: none"> <li>8hrs:                   <ul style="list-style-type: none"> <li>4hr classroom</li> <li>4hr sprinkler practical</li> </ul> </li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>Designed for Team Leads, Supervisors, and Truck Officers</li> <li>Expands on topics covered in the S-115</li> <li>Practical component includes Triage, Site Prep, Engine Operations, and Sprinklering               <ul style="list-style-type: none"> <li>2.5 Days:                   <ul style="list-style-type: none"> <li>8hr classroom</li> <li>4hr for each practical component</li> </ul> </li> </ul> </li> </ul>

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## Wildland Urban Interface Environment

### What is the Wildland Urban Interface?

Different types of wildland structure environments include:

Interface	Occluded	Intermix
		

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## Incident Phases

Pre-Impingement	Impingement	Post-Impingement
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### Pre-Impingement

- Evacuation
- Calling additional resources
- ICS set-up
- Briefing
- Triage
- Site prep
- Sprinkler protection
- Hazard reduction
- Area familiarization
- Utilities shut off
- Documenting



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### Impingement

- Evacuation
- Animals
- Firefighting operations
- Start sprinkler systems
- Personnel Accountability Reports
- Communicating updates
- Maintaining a perimeter



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### Post-Impingement

- Mop-up
- Tactical patrols
- Firefighting operations
- Debriefing
- Equipment retrieval
- Inventory
- Documenting
- Shift changes
- Re-stocking
- Re-entry



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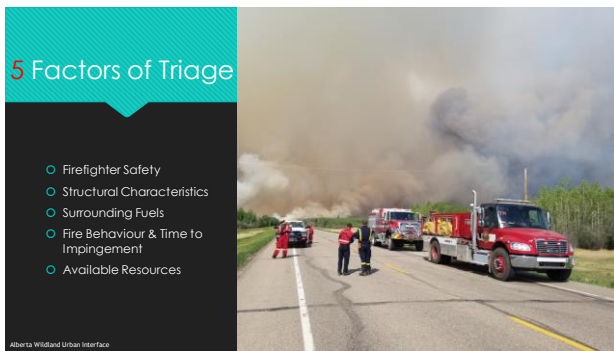
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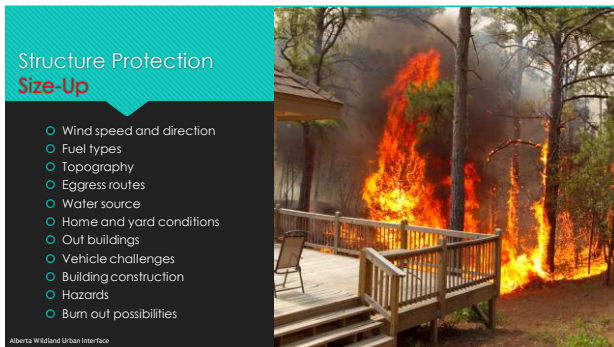
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### How Do Homes Ignite?



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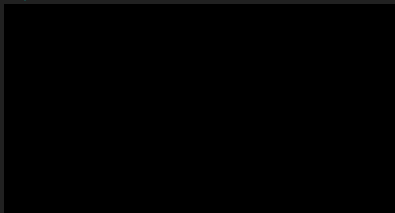
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### Ember Shower Video



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Video Provided by the Insurance Institute for Business & Home Safety

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### Triage Categories Not Threatened (needs no attention)



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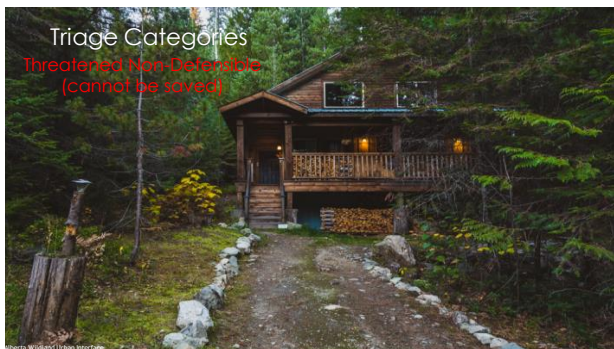
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Documentation & Forms

**Instructions for use**

Alberta Wildland Urban Interface

**Alberta Structure Triage Assessment**

Incident Information			
Incident Name/Number			
Structure Number			
Location (Address/lot length)			
Date Assessed			
Assessed By			
Evaluator/Structure/Assessed By			
Triage Factors	Comments		
Firefighter Safety			
Structure Characteristics			
Surrounding Fuel			
Fire Behaviour			
Resources Available			
Triage Category	Not Threatened	Threatened Deteriorate	Threatened Non-Deteriorate
Photos and/or Sketch			

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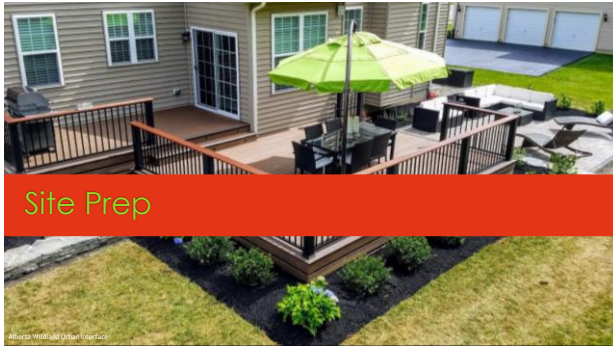
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**Site Prep**

Site prep can vary depending on the following:

- Are the homeowners present?
- Has there been a State of Emergency declared?
- Hazards that hinder the safety of firefighters



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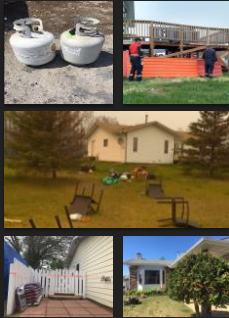
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Site Prep  
**Primary** Pass

- o Remove deck furniture
- o Remove propane tanks
- o Remove or cover wood piles
- o Eliminate ember traps
- o Identify hazards that could be eliminated



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Site Prep  
**Secondary** Pass

- o Thin and remove combustibles:
- o Shrubs and bark mulch
- o Create breaks in combustible fences
- o Remove nearby trees
- o Remove ladder fuels
- o Burn out operations



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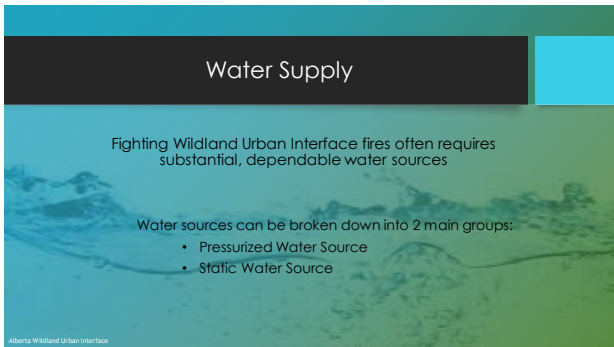
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### Pressurized Water Source

There are numerous ways to utilize fire hydrants:

- Hooked directly into fire engine
- Attached to drop tanks for continuous filling
- Tagged for water shuttle operations
- Hooked directly into sprinkler system as water/pressure supply
- Hooked to water storage tanks for ease of top up

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### Pressurized Water Source

Considerations:

- Consider fire hydrants as a last resort
- Fire hydrants generally rely on the power grid
- Avoid contamination of water system
- Avoid unnecessary wear and tear

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### Static Water Source

#### Bladders/Porta-tanks



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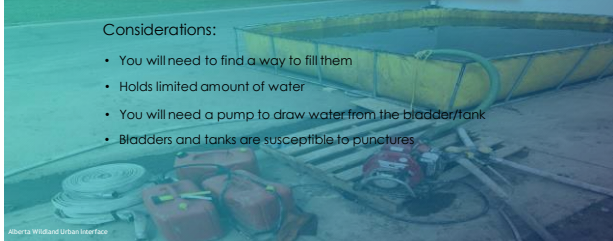
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### Static Water Source

Considerations:

- You will need to find a way to fill them
- Holds limited amount of water
- You will need a pump to draw water from the bladder/tank
- Bladders and tanks are susceptible to punctures



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31

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### Static Water Source

Natural bodies of water

- May need to dig a hole in the stream/river bed, or make a small dam to allow sufficient depth to draw from
- Often limited accessibility
- Be creative in making an appropriate pump site
- Be very careful not to contaminate water



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### Streams/Rivers



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### Pumps

Dip Stick = Straight Gas  
 No Dip Stick = Mixed Gas

**Mark 3®**

Single:

- 38mm (1.5") hose
- 270 LPM (60 gpm) @ 700 kPa

When paralleled:

- 65mm (2.5") hose
- 540 LPM (120 gpm) @ 700 kPa

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### Pumps

**BB4®**

- 38mm (1.5") discharge
- 475Lpm (105gpm) @ 700 kPa

**BB4-B2®**

- 65mm (2.5") discharge
- 570Lpm (125gpm) @ 700 kPa

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# Whirling Disease

- Prevalent throughout Central/South Alberta
- Avoid cross contamination
- Declared in 4 major watersheds within Alberta
- Disinfect equipment



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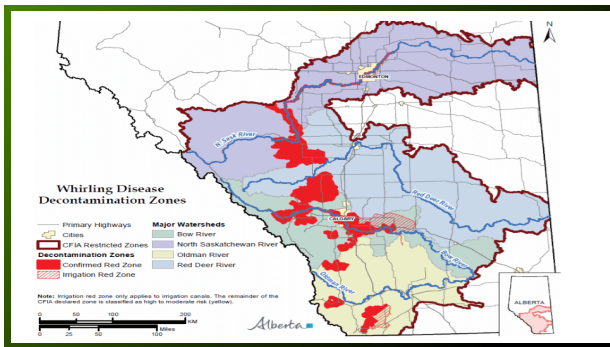
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### Sprinkler Protection

Sprinkler systems allow firefighters to start the system and leave; making this a very safe option for structure protection



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A sprinkler protection system should be designed to survive impingement!



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### Sprinkler Set Up



EXAMPLE:  
SINGLE LOOP OF THIS SYSTEMS  
CLOSED LOOP OF THIS SYSTEMS

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42

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### Sprinkler Set Up Cont.

- DO:**
- o Place on gable ends
  - o Elevate
  - o Overlap
  - o Make surrounding fuel wet
- DONT:**
- o Sprinkler non combustibles
  - o Cause structural damage
    - o Vents and openings
    - o Duration
    - o Doors/windows/siding



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43

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### Sprinkler Protection Testing

- o Making surrounding fuel wet
- o The nozzles are flowing water
- o Overlap of water flow
- o The sprinkler heads are rotating
- o Adequate pressure
- o No hose kinks
- o Not causing structural damage
- o Not impeding traffic



Video courtesy of The Government of Alberta

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### Sprinklers Types



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### Pumps

			
BB4 8-10 impact sprinklers	BB4 with B2X head 19-21 impact sprinklers	Mark 3 6-8 impact sprinklers	Mini Stryker 5-7 impact sprinklers

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## Engine Operations

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### Engine Ops Guidelines

- Identify LACES
- Face out
- Remain mobile
- Keep all egress routes clear
- Tank water reserve
- Truck protection line
- Be aware of water and fuel levels
- Do not rely on city or town water systems (hydrants)
- Ensure windows on engines are closed

NO STRUCTURE IS WORTH YOUR LIFE

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48

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## "Quick Deploy" Hose Loads

Use modified quick deploy hose lays



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## Engine Operations **Strategies** & Tactics

- Check and Go
- Prep and Go
- Prep and Defend
- Fire Front Following
- Bump and Run
- Anchor and Hold
- Tactical Patrol



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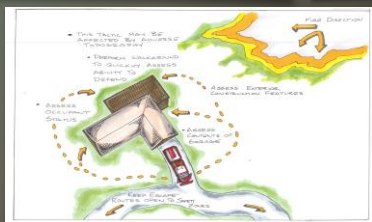
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## Check and Go

- NO safety zone
- Rapid evaluation
- Fire is imminent
- Fire behavior is NOT conducive for firefighter safety
- Poor egress
- Evaluate for follow-up



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### Prep and Go

- Prepare the structure
- Too dangerous to stay
- Advise residents to leave
- LEAVE with adequate time to avoid the loss of escape routes
- Follow-up after the fire front passes



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### Prep and Defend

- Firefighting personnel stay
- A safety zone MUST be present
- Escape routes to a safety zone
- Prepare the structure pre-impingement
- Fire behavior MUST be conducive for firefighter safety
- Sprinkler protection if resources permit



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53

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### Fire Front Following

- Come in behind the fire front
- Fire behavior is NOT conducive to firefighter safety
- Search for victims
- Effect perimeter control
- Extinguish hot spots and reduce ember production



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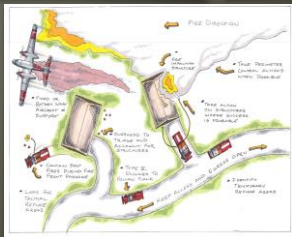
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### Bump and Run

- Ahead of the fire front
- Extinguishing spot fires
- Effective in fast-moving fires when resources are low
- Protect structure until fire front has passed
- Resources **MUST** remain mobile
- Defensive or offensive
- Extreme caution must be exercised



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### Anchor and Hold

- Control lines and large water
- Tied in
- Effective in urban setting
- Mix of mobile and fixed engines
- Burnout operations
- Lines deployed should be "as needed" but kept to a minimum



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56

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### Tactical Patrol

- Mobility
- Continuous monitoring of an assigned area
- Pre-impingement, impingement, post-impingement
- Active suppression actions
- 50-80% of structure loss happens post-impingement



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### Considerations for Grassland WUI

- Grassland Natural Region
  - Dry Mixedgrass
  - Foothills Fescue
  - Mixedgrass
  - Northern Fescue
- Parkland Natural Region
  - Central Parkland
  - Foothills Parkland
- Rocky Mountain Natural Region
  - Montane

Alberta

- Grasslands cover 95,566 km<sup>2</sup>
- Little of grasslands covered by forest protection area
- Firefighting responsibilities lie on local departments

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### Fuels

- Fine and flashy
- Very reactive to precipitation
- Fire spread may be very aggressive



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61

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### Grasslands Engine Ops/Structure protection

- Off road capabilities
- Sprinkler protection unlikely
- Utilize "Bump and Run" and "Prep and Go" tactics
- Farm machinery
- Controlled ignition operations




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62

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Controlled Ignition

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63

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## Burnout Basics



- **MUST** be approved by the IC
- Only performed by trained personnel
- Communication is key
- Timing and coordination



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64

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## Burnout Basics

Communication is a top priority for you and your crews safety.



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Video courtesy of Alberta Wildfire

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## Burnout Goals

-  Immediately eliminate or reduce fuel to slow fire advancement.
-  Strengthen a homes defensible zones.

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Aircraft Operations



**Air Tankers**  
Air Tankers are grouped by their individual specialized water delivery method:

- Skimming capability
- Land based retardant loading
- Singular or tandem operations



**Birdogs**

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68

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Aircraft Operations

**Helicopters**

- Personnel and freight transport
- Reconnaissance
- Water and retardant delivery
- Aerial ignition
- Birdogging



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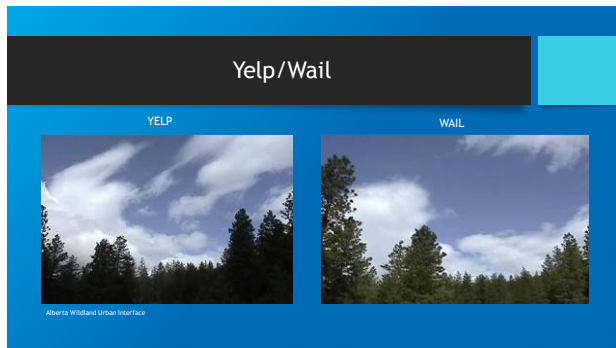
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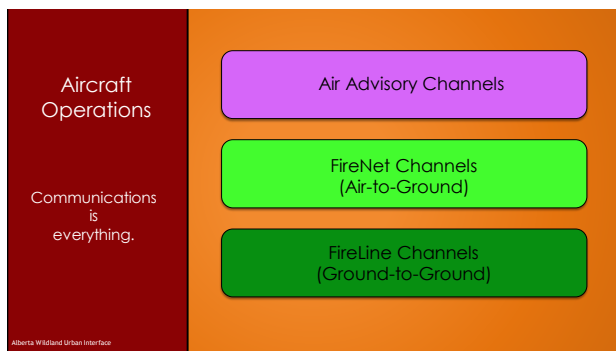
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## Heavy Equipment



- Effective communications with operators
- Understand the heavy equipments purpose
- Remain visible
- Never approach a heavy machine that's operating without making visual contact with the operator.
- Fall hazards
- Access limitations

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## Heavy Equipment

Specialized & Unique



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**SAFETY**

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# Safety

**WUI Incident Priorities**

1. Life Safety
2. Incident Stabilization
3. Structure and Community Protection

**Risk Management Process**

1. Situational Awareness
2. Hazard Assessment
3. Decision Making
4. Re-evaluation

**LACES**

- Lookouts
- Anchor Points
- Communications
- Escape Routes
- Safety Zones

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## Escape Routes and Safety Zones

Is the escape route realistic?



Is the safety zone defensible?



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## Fire Entrapment Survival Zones

**Structure Refuge**



**Forest Refuge**



**Vehicle Refuge**



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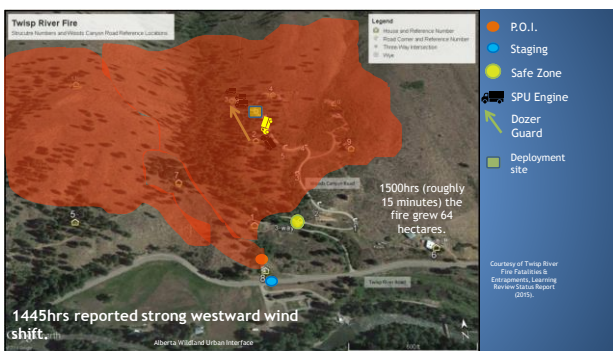
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