



Wildland Firefighting

1.1 Wildland Firefighting - Introduction

The intent of these guidelines is to improve safety and effectiveness during Wildland fire operations. These guidelines provide a common approach to wildland firefighting within the Urban Interface throughout Kitsap County. The principles and policies within KCIMP reiterate the commitment made to firefighter and public safety. No resource or property value is worth unnecessary risks; all of our actions followed in these guidelines must reflect this commitment. The protection of resources and property is based on the relative values to be protected and should be continually evaluated through risk management.

These guidelines, along with the firefighter safety and health standards detailed in WAC 296-305, establish a baseline from which all fire agencies within Kitsap County shall operate. This allows incident commanders to assign resources with the knowledge that responding personnel are trained (ref. WAC 296-305-07010) and equipped (ref. and 296-305-07012) to operate on wildland incidents. Likewise, personnel can operate with the knowledge that their supervisors are trained to perform incident management in the wildland environment and will follow the applicable Heat Stress and Incident Rehabilitation standards (ref. WAC 296-305-07004 and WAC 296-305-05004). There is an expectation that each agency will develop their own training and operational guidelines for response to any type of brush fire or wildland fire that occurs in the urban interface. However, through adherence to these adopted guidelines, effective interoperability will be achieved and firefighter safety provided for.

1.1 Incident Action Planning

This procedure provides a process for managing wildland fire incidents through the development of incident strategies and an incident action plan.

When responding to a Wildland fire:

1. Slow down and see the big picture
2. Situational awareness
3. Consider weather, fuel and topography
4. Ensure LCES is in place
5. Adapt to hazards
6. Gather this info and "THINK, PLAN, ACT"!



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1.2 Size-up

THINK...

The size up begins as the 1st arriving officer approaches the scene and possibly well before through pre-incident knowledge and situational awareness:

1. Pre-Arrival

- A. Confirm the incident address and cross streets when acknowledging response and be prepared for inaccuracies due to the nature of brush fires in the urban interface.
- B. Time should be taken to gather pertinent information on the location/terrain, weather conditions/forecasts, potential hazards and time of day. Consider how these factors can impact fire behavior. This information is shared in the initial arriving report and prepares incoming units on what to anticipate.
- C. Use caution when approaching the scene. Observe fire scene for “**Look Up, Look Down, Look Around**” concerns.
- D. Identify best access routes into fire and escape routes; pass information on to incoming resources.

2. Arrival Report

A. Unit arrival:

- B. Situational snapshot: What do you have?
 - a. Size or estimated involvement in _#_ acres
 - b. What's the flame length at head of fire?
 - c. Fuel type (grass, brush, trees)?
 - d. Additional resources needed?

C. Command Status

- a. During the course of ALL wildland incidents, the status of command will be in one of the following : **I.E.A.T: *Initiate, Establish, Assume, Terminate***
- b. Initiate Command
- c. Establish Command
- d. A command post should be in a location which will be safe and not have to move if the fire changes direction.
- e. Assume Command
- f. Terminate Command

D. Initial attack strategy:

- a. Describe your initial attack strategy (direct/indirect) .



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- b. Assign additional arriving units upon their arrival
- c. Plan for water supply

E. Other safety and access conditions:

- a. **Do not cross the fire's head unless it can be done safely!**
- b. Anticipate the dynamic nature of wildland fire behavior and the issues that are unique to Urban Interface.
- c. Narrow, unpaved roadways.
- d. Difficult to locate occupancies/address.
- e. Abundance of vegetation and combustible buildings.
- f. Utilities, infrastructure, hazardous materials
- g. How much of your fire can you see?
- h. Can you get all the way around the fire?
- i. Can you get someone else to help you see what is on the other side?

F. If appropriate, follow up with a structured size up: Conduct the size-up to the extent possible. Briefly describe the incident conditions and what's being implemented to manage the incident and should follow "Arrival report". Radio report contains:

- a. 360' complete or not complete
- b. Situational snapshot (update)
- c. Identified hazards/problems
- d. Initial attack strategy (update)
- e. Strategic Objectives
- f. Command Status (update)
- g. Additional resources (if needed)

1.3 Developing the Incident Action Plan

PLAN...

Develop objectives for your incident. Objectives allow for the establishment of benchmarks and flexibility of potential plan revision

Develop an IAP to mitigate the incident. Define the:

- Incident Priorities
- Strategy
- Strategic Objectives
- Tactical Assignments

Fight fire aggressively, but
provide for safety first!



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Incident Priorities: Life safety, incident stabilization and/or property conservation

Life Safety

1. In a wildland fire setting, the life safety benchmarks must include fire fighters as well as civilians.
2. The IC must develop a plan that includes **LaCES** (**L**ookouts, **A**nchor points, **C**ommunications, **E**scape routes, **S**afety zones) for firefighters and equipment.
3. LaCES must be in place prior to any fire suppression operations.
4. Specific Teams, Groups or Divisions can establish escape routes and secondary safety zones depending on need or location.
5. Escape routes and safety zones should be easily accessible and large enough to prevent radiant heat injuries or direct flame impingement.

Incident Stabilization

1. Fire officers are expected to stabilize wildland fire conditions with an appropriate, aggressive, offensive attack whenever possible.
2. This effort should be supported with whatever resources and actions are required to contain and control the wildfire.
3. Identify threatened exposures
4. Request additional resources as necessary.

Property Conservation:

1. A standard procedure to commit whatever resources are required to keep property loss and environmental damage to a minimum.
2. Three objectives may be considered during property conservation operations:
 - a. Verifying the fire is completely extinguished and "Mopped up".
 - b. Determining the fire cause and origin.
 - c. Returning the area to use, when possible



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Strategy – how the incident will be handled

Prepare a general plan or direction on how to accomplish the incident priorities. Give a general direction to the personnel operating the incident. Do you have a defined IDLH or hot zone? If yes, the incident may be mitigated with an Offensive or Defensive strategy (structural protection).

The suppression strategy used during initial attack depends on the rate of spread, intensity, spotting potential, values at risk, size, available resources and the ability to establish and maintain LCES.

Offensive strategy

Confine and control fire by using direct and indirect tactics

- Must have LCES established
- Must have secure anchor point (LaCES)
- Must have adequate resources

Defensive strategy

- Fire behavior is such that an Offensive action is too dangerous
- Inadequate resources
- Strategies focused on protecting life and property
- Personnel will not be placed in a position of greater risk

Structure Protection strategy:

- Be prepared to assign designated units to conduct structural triage or firefighting if necessary
- Units assigned to protect structures or improvement should thoroughly size up the site to ensure firefighter safety can be maintained. Good access and egress must be maintained throughout.
- Hose lays should be as short as possible and limited to 1 or 2 if possible.
- Back into driveways
- Pre-treat structure with foam if possible
- Tactical challenges and hazards in structural protection:
 - Narrow roads, unknown bridge limits and septic tank locations
 - Combustible debris next to structure
 - Wood siding or roof
 - Open roof vents, eaves, decks
 - Fuel tanks and hazardous materials
 - Power lines
 - Limited water source
 - **STAY MOBILE BE PREPARED TO MOVE OUT QUICKLY**



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Strategic Objectives:

- d. Develop measurable, attainable, results-oriented timely goals consistent with the strategy.
- e. Objectives allow for the establishment of benchmarks and flexibility of potential plan revision.
- f. Although the first arriving officer must address the life safety, incident stabilization and property conservation benchmarks, base all objectives on the specific wildland incident. Common initial attack wildland fire objectives often include but are not limited to the following:
 - Provide for the safety of the public and responders
 - Protect values at risk
 - Create a geographic “box” around fire in which to contain fire
 - Evacuate homes as necessary

Wildland Fire – Strategic Objectives

Life Safety	Incident Stabilization	Property conservation
LCES	“Box” containment	Mop up
Anchor point - LaCES	Fire control	Fire cause and origin
Rescue	Defensive triage	Returning area to use
Evacuation	Structure/exposure protection	
	Mop up	



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1.4 Implementing the IAP

ACT...

1. Assign tactical assignments to accomplish strategic objectives
2. The IC is responsible for the efficient use of resources to accomplish the strategic objectives, while providing for safety first.
3. Completing the strategic objectives is accomplished by assigning resources to tactical assignments

Strategic benchmarks are critical assignments objectives to be achieved in order to mitigate the incident. Although benchmarks may vary depending on incident, they're valuable tools to monitor progress on significant Wildland fires.

Example: Strategic Objective: Containment of fire = Tactical assignment: direct attack on right flank using progressive hose lay to created "wet line" followed by hand tools for fireline construction

Example: Strategic Objective: Incident Rehab = Tactical assignment: Provide Formal Incident Rehabilitation for sustained operations.

When assigning resources, consider the following to ensure the safety of your assigned personnel:

- Fight fire in fuels consistent with engine capabilities
- Use direct attack when possible
- Attack flank with greatest potential for escape
- Minimize unburned fuels
- Use extreme caution during frontal assaults
- Recognize topography hazards
- Preserve area of origin
- Be aware of environmental factors

Tactical Assignments

Direct Attack

1. Direct attack should be used whenever the fire conditions allow fire personnel to work directly and safely on the fires edge.
2. This tactic minimizes the burned area and usually provides the safest place for firefighters to work. It is used when the fire perimeter is burning a low intensity and fuels are light.
 - MUST HAVE LCES IN PLACE
 - MUST HAVE SECURE ANCHOR POINT (LaCES)



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- MUST HAVE ADEQUATE RESOURCES
3. Flame lengths **consistently** less than 4 ft. (1.2 m) can be fought directly with hand tools and *handlines*. When working in this manner, **keep one foot in the black** and one foot in the unburned area.
 4. Flames **consistently** up to 8 ft. (2.4 m) may require special resources such as *heavy equipment* or *airdrops*.
 5. A **direct attack using water** is the fastest control method available to counteract wildfire spread. The preferred methods are as follows:
 - a. Brush trucks can accomplish this through pump-and-roll tactics and simple hose lays.
 - b. Type 1 engine using simple hose lays or a 1 ¾" pre-connected attack line and the wildland progressive lay packs.
 - c. Combination of both
 6. **Direct attack tactics** include:
 - a. **Flank** – direct attack along one side of fire.
 - b. **Pincer** - direct attack around both sides of a fire working in opposite directions by two or more fire control resources eventually “Pinching off the head”.
 - c. **Tandem** - direct attack along a part of the fire perimeter by two or more fire control resources. Control resources follow each other (can leap frog or bump method).
 - d. **Envelopment** - the fire’s perimeter is attacked at several places at one time with multiple anchor points. Critical areas are attacked first using the hotspotting technique, then the engines start moving towards each other. If this method is used, timing must be well coordinated. If not, a section of line may be overlooked, and the fire may escape, outflanking firefighters. This technique is commonly associated with structure protection in the wildland/urban interface.
 7. Personnel should anchor and flank a fire by first establishing a safe location. This is usually at the origin or the bottom of the fire terrain.
 8. Maintain radio communications with all assigned forces.
 9. Keeping one foot in solid black is the best safety zone during direct attack. If that is not possible, establish suitable safety zones and escape routes.
 10. Apply resources to the “hot flank” first. The down-wind flank of the fire will have the highest fire intensity and greatest rate of spread. Apply your forces to that flank first, then address the “cold flank” or upwind flank of the fire.
 11. Generally fight fire from the lower side and work uphill. If you’re constrained to working downhill, evaluate downhill line construction in your IRPG.

Direct attack/Downhill fireline construction

1. A fire origination below the access point (i.e. anywhere on a slope with no access below).
2. Due to the inherent dangers of “slope driven fires”, extreme caution (or all together avoidance) of suppression efforts in these circumstances should be avoided.
3. Always consider the application of a below-grade source of suppression.

Example: beach/shore access with portable pumps



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Any downhill line construction should be authorized by the IC, using the **IRPG “Downhill Fireline Construction”** checklist, and placement of additional Lookouts/Safety officers.

Indirect attack

1. **Indirect attack shall only be done by properly trained personnel!**
2. Locations can be chosen where fuel, topography and natural breaks will work in your favor.
3. The fireline is constructed some distance from the fire perimeter.
4. If available, natural or constructed barriers should be used in the fireline construction.
5. Requires carefully scrutiny and lookouts must be posted.
6. Identify any natural barriers from which to work. Trails, driveways, roads, utility rights of way, harvested fields, gravel pits, irrigated ground, and parking lots can all be used to your advantage.
7. Identify suitable safety zones and the escape routes to be used for ALL personnel assigned.
8. Identify a contingency line to fall back to if your primary line becomes challenged.
9. Assign resources to reinforce the natural barriers you chose and consider using a dozer to build line.
10. Post lookouts and keep in constant radio contact with them. Establish trigger points where lookouts must notify everyone that the fire has reached that point.
11. Establish and maintain clear radio communications with all assigned resources.
12. Assign resources to provide for protection of structure and any other threatened resources that are within the area you intend to write off to the fire. This can include residences, barns, crops, livestock, utility poles, vehicles, etc.
13. Assign resources to patrol across the line looking for and attacking spot fires and slop overs should they occur. Ensure they notify you if this happens and size-up they've found. If too much fire slops over your line, move your forces back to your emergency line, conduct a PAR, re-establish safety zones, re-evaluate and re-engage.
14. Firing operations then must be carried out to reinforce these barriers to slow or stop the progression on the main fire front. **(Firing shall only be done by properly trained personnel!)**
15. Burning out of indirect line is handled as a second phase of line construction.

Extended Attack Operations

The suppression activity for a wildfire that has not been contained or controlled by initial attack or contingency forces and for which more firefighting resources are arriving, en route, or being ordered by the Initial Attack Incident Commander.

Characteristics of an Extended Attack Incident

- Usually less than 100 acres in size; however, size is only one determining factor.
- Firefighting resources vary from several single resources to several Task Forces/Strike Teams.



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- The incident may be divided into divisions, but would not meet the Division/Group Supervisor complexity.
- The incident is not expected to be contained and/or controlled in the first operational period.
- Some of the Command and General Staff functions, such as Operations, Planning, Logistics, Safety, and Liaison, may be staffed.
- Staging Areas may be used and in some instances a small incident Base established.

Change From an Initial Attack Incident to an Extended Attack Incident

Early recognition by the Initial Attack IC that the Initial Attack forces will not control a fire is important. As soon as the IC recognizes that additional resources are needed or knows additional forces are en route, the IC may need to withdraw from direct fireline suppression and must prepare for an Extended Attack mode of operation. **The IC will refer to the IRPG and NWCG Wildland Fire Incident Management Field Guide for the guidelines for changing from an Initial Attack wildland fire to an Extended Attack Incident.**