FIREFIGHTER SAFETY SERIES

STRUCTURE PROTECTION STRATEGIES

IN THE WILDLAND/URBAN INTERFACE

Sponsored by
Wildland/Urban Interface Working Team
USDA Forest Service
US Department of the Interior
- Bureau of Indian Affairs
- Bureau of Land Management
- Fish & Wildlife Service
- National Park Service

National Fire Protection Association
Federal Emergency Mgmt. Agency
US Fire Administration
National Assn. of State Foresters
International Association of Fire Chiefs
National Emergency Management Assn.
National Assn. of State Fire Marshals

An instructional presentation to accompany the video series from the National Wildland/Urban Interface Fire Program

For use with the Structure Protection Strategies Instructor Guide

Video 2

Overview of the structure protection video

Incident command

Developing an action plan

Structure triage

Factors that lower triage rating

Know when to abandon

During the off-season: Plan!

- Benefits
  - Avoids emergency time pressures
  - More time for every consideration
- Help make homes firewise
  - Share info with homeowners
- Improve interagency communications
  - Joint training exercises
  - Interagency agreements

Discussion:

In the local area, what fire protection agencies can be expected to work together on a large interface fire?

How can they plan better in the off-season?
Do they?

Control wildfire or protect homes?

- Limited resources can’t handle both
  - Anticipate this fire service dilemma
  - How best to handle wildland firefighters
  - How best to handle structural firefighters
- Rethink priorities
  - Take time to size up the situation
  - Protect fire crews while saving civilians
- One strategy from two approaches
  - Use available resources to accomplish as much as possible

Discussion:

Do the separate structural and wildland firefighters in the local area have a good awareness of the role of each type of firefighter and how they can effectively work together at interface fires?

Incident command: offense or defense

- Determined by size-up
  - Fire behavior factors of fuels, weather, and topography
- Offense
  - Position is strong, ample time, ample resources available
- Defense
  - Fire already too big, resources not in place, too many homes

Discussion:

What are some of the defensive tactics, as shown in the video, that were used to mitigate the homes described in West Creek.

How successful were they?

The incident command system

- A standardized emergency management system for coordinating multiagency incidents
  - One person in charge
  - Organized delegation of functions
  - Effective span of control
  - Common terminology
  - Integrated communications
  - Comprehensive resource management

Discussion:

Is it true that communication problems at large incidents are often really coordination problems in disguise?

How can the incident command system help?

The incident command system

- Flexible modular design
  - Single jurisdiction/single agency
  - Single jurisdiction/multi-agency
  - Multi-jurisdiction/multi-agency
- Five main functional areas
  - Command
  - Operations
  - Planning
  - Logistics
  - Finance/administration

Discussion:

When and why was the incident command system developed?

Is this system used in your local area?

If not, do you think it should be?

Incident command: Command

- Has overall incident responsibility
  - Individual is incident commander
  - Organized system for changing command
- Sets all objectives and priorities
  - Even as incident grows
- Assigned support staff
  - Information officer
  - Liaison officer
  - Safety officer

Discussion:

Describe what information would need to be communicated during any change-over of incident commander during a large incident.

Incident command: Operations

- Responsible for tactical operations to carry out the plan
  - Plan comes from Planning function
- Directs the use of all resources
- Subdivisions for large incidents
  - Staging areas
  - Air operations
  - Strike teams
  - Task forces

Discussion:

Describe the benefits of setting up an organized staging area at a large incident.

Is this routinely done at large incidents in your local area?

Incident command: Planning

- Develops the action plan
  - Designed to accomplish objectives of incident commander
- Collects available information
  - Maintains status report on resources
  - Maintains incident documentation
- Evaluates information
- Later: plan for ending incident
  - Demobilization unit

Discussion:

What types of information will be needed by planning for the development of an action plan for a large incident?

How will the information be collected?

Incident command: Logistics

- Provides support for incident
  - Supply unit for equipment
  - Facilities unit
- Provides special services
  - Communications unit
  - Medical unit
  - Food unit to feed personnel
  - Drinking water
  - Fuel for vehicles

Discussion:

Describe the kinds of preparation planning that must be accomplished to be able to rapidly supply food, water, and fuel to a large incident.

Incident command: Finance/admin

- Only needed for large incidents
  - Provides accountability
- Cost unit
  - Tracks all incident costs
- Procurement unit
  - Contracts
  - Travel
- Compensation/claims unit

Discussion:

How does Finance/ Administration acquire a unique, specialized piece of equipment needed for an incident when it was not included in a pre-incident plan?

Developing an action plan

- Many factors to be considered
  - Fire behavior
  - Access
  - Resources
  - Possibility of changing fire conditions
  - Always: firefighter safety
- Three operational priorities
  - Life safety
  - Incident stabilization
  - Property conservation

Discussion:

What are some of the “changing fire conditions” that could adversely affect an action plan?

How will the incident commander stay up to date?

Plan for communications

- Action plan must be communicated
  - The plan is not functional until it gets to the people who will execute it
- Communications must be clear
  - Takes special effort to say what you mean
  - Requires standardized equipment
- Message must be understood
  - Requires listening skills
  - Intent is to prevent unexpected, negative outcomes

Discussion:

Have you seen an example of a fire situation where poor communications interfered with the action plan?

What happened, and how did it affect the end result?

Structure triage

- When hard choices must be made
  - If too many homes threatened
  - If not enough protection resources
  - Some homes written off to save other homes
  - Even if contrary to usual firefighting philosophy
- Timing
  - Worst time for decisions in under duress of approaching fire
  - Best time to consider survivability of a home is before the fire
    - Survey the deficiencies for fire protection
    - Take necessary action (clear defensible space)

Discussion:

Do homeowners have an unreasonable expectation if they assume that all homes threatened by an interface fire will be protected equally?

Three categories of triage

Needs little protection for now

- Structure and adjacent area have positive survivability factors; fire protection not needed

Need protection but can be saved

- Structure and adjacent area have increased risks, but structure can be saved with active fire protection resources

Hopeless; cannot be saved

- Structure, area have so many deficiencies that even extra protection resources will not help

Discussion:

Be on the lookout in your local interface areas for homes that may be classified as "Hopeless; cannot be saved."

What could the homeowner do to improve the situation?

Factors that lower triage decisions

- Lay of the land
  - Being up-slope from fire
- Construction of roof and structure
  - Combustible roof
  - Buildup of combustible debris on roof
  - Eaves with unscreened vents
  - Other vents
  - Combustible walls
  - Large window openings
  - Wooden decks

Discussion:

Describe different roof and structure construction features that would result in a “needs little protection” and also a “hopeless” triage decision for a structure.

Factors that lower triage decisions

- Fuel loading around structure
  - No defensible space
  - Continuous light fuels leading to structure
  - Overhanging tree branches
  - Nearby outbuildings
  - Nearby fuel tanks
- Hazardous materials storage
  - In structure
  - In outbuildings
  - In vehicles not evacuated

Discussion:

How much defensible space is typically recommended for the area around a structure in the interface?

Factors that lower triage decisions

- Unavailable firefighting personnel
  - More firefighters can protect more homes
  - If enroute, know when they will arrive
- Unavailable fire vehicles and water supplies
  - Homes rated “needs protection” assume that water can be applied
  - Water on one pumping apparatus not sufficient to protect home and crew

Discussion:

If more firefighters and vehicles become available during a large fire incident, how can you decide whether to commit them to protecting structures or to controlling the fire?

Factors that lower triage decisions

- Poor vehicle access
  - Narrow, winding access road
  - Access along steep slopes
  - Cul-de-sacs with tight turnaround space
  - Long driveways
  - Driveways with wooden fences, fuel tanks
- Final actions by homeowners
  - Natural gas or fuel oil supply not shut off
  - Water supplies not shut off
  - No external hose bib for firefighting

Discussion:

Are there places in your local area where poor access for firefighting vehicles could reduce the triage rating for an entire community?

Should homeowners be told now?

If necessary, abandon the structure

- Continue protection when:
  - Fire conditions, resources are positive
- Abandon when:
  - Fire conditions overcome protection
  - Further protection reduces crew safety
  - Spot fires increase
  - Escape route about to be blocked
- Remember:
  - Home ignitability and loss in an interface fire is first a homeowner & community responsibility

Discussion:

If you have to abandon fire protection for a home, can you describe the reasons to the homeowner?