

National Association of State Foresters Forest Fire Protection Committee

Costs Containment On Large Fires:

Efficient Utilization Of Wildland Fire Suppression Resources

July 1, 2000

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Forest Fire Protection Committee
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Introduction

For several years the rising costs of forest fire suppression have been a source of administrative concern for both federal and state agencies. Following the 1994 forest fire season, the most expensive fire season in history, several studies of forest fire suppression costs were instituted. In 1995, those studies culminated in the publication of several reports concerning the economics of forest fire suppression. In 1997, an analysis of 25 years of US Forest Service expenditures on forest fire suppression was published, as well.

The extraordinary forest fire activity in Florida and Texas during the 1998 forest fire season brought about some of the most costly suppression action on a per acre basis in the history of forest fire fighting. In response, the National Association of State Foresters (NASF) Forest Fire Protection Committee formed an ad hoc subcommittee to examine the utilization of resources in the suppression of wildfire. The charge issued to the Fire Resources Utilization Subcommittee (FRUS) was to examine strategies to address the rising costs of fire suppression without decreasing program effectiveness.

The subcommittee roster may be found in the appendices of this report. Appointed to the subcommittee were four State Foresters and two State forest fire program supervisors. The US Forest Service Director of Fire & Aviation agreed to assist the subcommittee in data gathering and analysis. A representative of the US Department of Interior also agreed to assist the subcommittee in its work.

There can be no question as to whether federal and state agencies will continue to suppress wildland fires. There is a long and honorable history of heroic work in combating wildland fire – and there are certainly future chapters to be written.

In publishing this document, the National Association of State Foresters does not seek to erode the bedrock-solid foundation of these agencies' commitment to wildland fire suppression. To the contrary, the National Association of State Foresters seeks to uncover potential efficiencies in the suppression of wildland fire and to promote their immediate application. It is our firm belief that a return to high levels of efficiency and effectiveness in fire suppression will quickly yield a widespread, vibrant, "esprit de corps" within our nation's wildland fire suppression organization. It is time for the "Can do!" spirit – the grit of firefighting legend – to breathe new life into that organization: from the fireline all the way to the halls of government.

Executive Summary

The burgeoning problem of containing suppression costs for large wildland fires was first recognized by the federal wildland firefighting agencies in 1994. During that year, wildfire suppression costs neared \$1 billion dollars. A group of reports commissioned following that year developed and presented over 100 recommendations that were well substantiated by facts. Those reports included:

- *Course to the Future: Positioning Fire and Aviation Management, May 1995*
- *Fire Suppression Costs on Large Fires, August 1995*
- *Fire Economics Assessment Report, September, 1995*
- *Federal Wildland Fire Management Policy & Program Review, December 1995*

In 1997, an analysis of 25 years of US Forest Service expenditures on forest fire suppression was published, as well.

While federal agency resources were expended in generating those reports, (indicating an awareness and acceptance that a problem exists), little in the way of broad and effective change has been implemented at the federal or state level in response to those reports.

Most recently, attention has again been focused on the problem with the publication of another report, *Policy Implications of Large Fire Management: A Strategic Assessment of Factors Influencing Costs* in January, 2000. The report was well received by the US Forest Service and a commitment has been expressed to implementation of many recommendations within the report. The NASF endorses such a commitment and urges enthusiastic follow-through.

This comprehensive report, independently prepared by the NASF Forest Fire Protection Committee, presents detailed recommendations intended to address seven findings. When these recommendations are applied at the administrative and land management level, they result in the prudent use of fire suppression resources. The ultimate outcome is lower suppression cost and increased efficiency.

The committee found that a “corporate will” to change appears to be lacking throughout the national organization. Strong national leadership in containing costs is essential and must be accompanied by the allocation of accountability for cost containment throughout the national organization.

The committee also found that, across the nation, citizens and decision-makers are dangerously unaware of the dangerous, raw power of wildland fire. This is manifested particularly where residential, commercial or industrial development co-exists with wildland conditions. To Fire, fuel is fuel: whether it is in the form of forest vegetation or a residence makes no difference. It all burns – and there is very little that firefighters, alone, can do about it. An important goal of the national wildland fire suppression organization must be to bring the nation to an understanding of the real world in the face of wildfire.

A series of factors have combined to create an environment that fosters increases in the cost of suppressing large fires. The committee strongly encourages renewed emphasis on redesign of the nation’s wildland fire prevention program – and sufficient funding of that program. In light

of the modern understanding of fire's role in ecology, the redesign must be extended to include an update of Smokey's message. The least expensive fire is the one that never starts in the first place. Prevention dollars are the least expensive suppression dollars – and the most effective.

Suppression costs escalate significantly as fire size increases. A wildland fire becomes a local emergency before it evolves into a State, then regional, then national incident. Our national wildland fire suppression program should hold, as its highest priority, the strengthening of first-response fire fighting forces to safely and effectively suppress wildland fires without the direct assistance of outside resources. These strong first-response forces will then be able to minimize the number of campaign fires – thereby minimizing suppression costs.

As government budgets have become leaner and as federal and state workforces have aged, the preparedness level of federal and state firefighting forces has slipped. Fire management planning thus becomes more important to insure that precious resources are positioned and expended in the most effective and efficient manner possible. Emphasis should be on the use of nearby resources first, before importing distant resources that must be transported, housed, and fed. Accordingly, nearby resources should include non-redcarded personnel who can fill specific suppression, prevention, or support roles.

It is important that the erosion of the pool of qualified and experienced firefighting personnel be halted. Federal and state employees should be encouraged to participate in training and then made available for suppression dispatching. The use of local fire department personnel should be expanded, as should the use of recent federal/state fire program retirees as mentors.

Fire managers are, of course, held accountable for the safety of their personnel. In recent years managers have increasingly been held accountable with regard to the impact of fire suppression efforts on land management issues and environmental concerns. Interestingly, the committee found that the concept of accountability in fire suppression rarely extends to the costs incurred in suppressing fires. The committee believes that containment of costs of suppression should be second only to firefighter safety.

Establishing an organization-wide ethic of accountability for suppression costs will reintroduce the rule of reason in the administration of suppression efforts. Valid concerns exist over firefighter safety and environmental impacts. However, it is not reasonable to allow those concerns to create a “blank check”, funding 100% safe and 100% environmentally benign strategies and tactics – strategies and tactics that are ineffectual in achieving the primary mission of the organization: putting the fire out as quickly as possible. Instead, accountability for expenditures must be established – along with a tolerance for prudent and acceptable risk.

Accountability must extend beyond the line officer or Incident Management Team. Agency administrators must be held accountable for providing the legislative authorities, agency policies, and fiscal resources necessary for the fire managers to do their job effectively.

Once a fire starts, the nature of the fuels available to it directly affects the cost of suppression. Widely scattered throughout the nation, extreme levels of fuel loading present a staggering threat to public safety and ecological integrity. Once ignited, fires in many areas will be so intense as to be unstoppable by human intervention. This situation must not be allowed to continue unabated. Action must be taken by developing and implementing a comprehensive national policy affecting federal, state, and private lands.

Finally, the committee found that Agency Line Officers (ALO's) are failing to provide strong and effective leadership, guidance, and oversight to Incident Management Teams (IMT's). Once an IMT has arrived to assist in managing a wildfire, their actions largely determine the final cost of suppression for that incident. An IMT's decisions and actions revolve directly around the input and guidance they receive from the representative of the host agency, the ALO. If cost containment is to be a key factor in the IMT's management of an incident, that priority must be clearly and effectively communicated to the IMT by the ALO at the outset. That priority must be reinforced as the Line Officer provides strong leadership to the IMT throughout the incident. Knowledgeable and capable Line Officers are essential to effective cost containment.

The recommendations provided in this report should be acted upon. It has been nearly five years since the publication of several of the reports commissioned following the 1994 fire season. In that time, little measurable progress has been evidenced toward addressing escalating suppression costs.

This report is intended to provide effective, practical, common-sense measures to facilitate cost containment in the suppression of large fires. The report's seven key issues provide a much-needed focus and the committee's recommendations for addressing each issue provide a foundation from which a "re-programming" of the national wildland fire suppression organization may begin.

The NASF will work to see the implementation of the recommendations found in this document.

Methodology

The subcommittee met by conference call in April of 1999 and determined that the work of the committee should include a review of fire cost analyses from large fires over the previous five years. The subcommittee also chose to review the reports issued by the US Forest Service in 1995 and 1997, as well as a recent “emerging issues” paper prepared by the Western States Fire Managers.

The information was disseminated to the members for review by the subcommittee prior to an August meeting where the implications of the reports were thoroughly discussed. At that meeting the subcommittee identified issues and recommendations for improving the efficient utilization of forest fire suppression resources. Further, they determined that many of the issues identified in the 1995 reports still existed and had not been adequately addressed. The subcommittee decided that many of the recommendations contained in those reports had not been carried out and must be reiterated and reinforced by the subcommittee.

The subcommittee also determined that previous reports had failed to adequately probe the practical knowledge and experience of personnel who were experienced in incident management and who had firsthand, practical knowledge of factors contributing to escalating suppression costs. Also missing from previous analyses was input from State forestry/fire agency personnel.

To capture such information, the subcommittee conducted a nation-wide survey late in 1999 of state and federal wildland fire personnel who had filled the role of Incident Commander or Agency Line Officer. The survey was also directed to State Fire Program Supervisors and their federal equivalents in the US Forest Service and the Department of Interior agencies.

The survey was distributed to all US Forest Service Regional Offices and all State Foresters with instructions to distribute the survey form throughout their organizations. The survey was also distributed to key staff within the Department of Interior. 134 completed surveys were received and tabulated.

Survey Response Parameters

<i>Employer</i>		<i>Geographic Area</i>		<i>Hierarchical Role</i>	
Federal	29	NW quadrant	30	Agency Line Officer	61
State	105	NE quadrant	35	Incident Commander	31
<i>Total</i>	<i>134</i>	SW quadrant	36	Neither	42
		SE quadrant	23	<i>Total</i>	<i>134</i>
		Plains	4		
		Alaska	4		
		Pacific Islands	2		
		<i>Total</i>	<i>134</i>		

The survey was intended to capture information from across a particular segment of the wildland fire suppression community that had been insufficiently addressed in previous reports. The analysis of the survey results may be found in **the appendices** of this report. That analysis

presents the results of the survey and provides a detailed, prioritized listing of steps that survey respondents believe should be implemented to begin to achieve effective control of wildland fire suppression costs.

Committee Findings and Recommendations

Through comparison of the survey results to findings outlined in previous reports, the subcommittee has identified seven broad findings and has prepared recommendations to address each of those findings. Those broad findings and recommendations are listed below. More detailed survey results and analysis may be found in the appendix of this report.

In general, the subcommittee believes that excessive wildland fire suppression costs are not a symptom of a failed system. Indeed, we find those costs to be a result of a failure by those who operate the system.

1. Systemic Issue: “There Exists A Lack of Corporate Will To Change”

In the past five years, numerous reports have been prepared on the subject of excessive suppression costs and over 100 recommendations have been issued. Those reports included:

- *Course to the Future: Positioning Fire and Aviation Management, May 1995*
- *Fire Suppression Costs on Large Fires, August 1995*
- *Fire Economics Assessment Report, September, 1995*
- *Federal Wildland Fire Management Policy & Program Review, December 1995*

In 1997, an analysis of 25 years of US Forest Service expenditures on forest fire suppression was published, as well.

While federal agency resources have been expended in generating the reports, (indicating an awareness and acceptance that a problem exists), little in the way of broad and effective change has been implemented at the federal or state level in response to those reports.

The subcommittee views this as strong evidence of a lack of commitment to resolve the issue of runaway suppression costs once and for all. This pervasive lack of commitment exists throughout all levels of the national wildland fire fighting structure. It is a lack of “corporate will” to effectively control suppression costs.

Considerable responsibility for this lack of commitment lies with the highest administrative levels in both federal and state agencies with responsibility for fighting wildland fires. In any organization, the marching orders come from the top, as does enforcement of those orders.

We Recommend . . .

- The change must begin at the very top of the organization, with each agency formally establishing cost control in wildland fire suppression as a high priority. Every aspect of the fire suppression program must be scrutinized to insure that priorities are understood, accepted, and upheld - and all impediments to effectively addressing cost containment on large incidents (including personnel) are immediately and effectively dealt with. All levels of the organization must recognize that its leadership is united and is earnest about cost containment.
- Further, only when every member of the nation’s wildland fire fighting organization is held accountable for his or her role in containing costs will a corporate resolve begin to coalesce and emerge. Meaningful accountability for cost containment must be instituted throughout all levels of the nation’s wildland fire suppression program.
- Better fire cost thresholds should be developed to ensure proper oversight of large fire management.

Our Rationale . . .

Uniting all levels of a large organization behind any “mission” requires strong leadership from the highest levels of the organization and allocation of accountability for achieving that mission throughout the organization. Our current national wildland fire fighting organization is lacking on both counts.

2. Cultural Issue: “Citizens, Politicians, Administrators, and the Media Have No Concept of Reality”

The overwhelming majority of the citizens of the United States remain blissfully unaware of the true destructive power of uncontrolled wildland fire and the inability of local, state, and federal fire fighting forces to protect them from it. The over-whelming majority of Americans have never experienced the raw fury of uncontrolled fire firsthand. Consequently, they persist in a belief that local, state, or federal fire fighting organizations will be able to protect them and their property from wildland fire.

This belief manifests itself in an accelerating expansion of residential and commercial development into wildland areas that are ripe for catastrophic fire events. In their rush to own a home nestled into nature, people routinely overlook fuel loading, topography, emergency access needs, fire resistive construction and a host of other factors that affect the odds of survival in the event of uncontrolled wildland fire.

Compounding the problem, most Americans fail to assume primary responsibility for their own safety and the safety of their family and property. Instead, they rely on the local fire department to save them.

It is false security.

The cold, hard fact is that even the best equipped, best trained, best staffed fire department in the nation cannot, and will not, guarantee anyone’s safety in the face of a wildfire.

Further, in the belief that local, state, and federal firefighters are somehow able to prevent the loss of lives and property in the face of catastrophic wildfire, citizens, politicians, and the media exert extreme pressure on Incident Management Teams (IMT’s) and Agency Line Officers (ALO’s) to employ costly extraordinary suppression measures to do so. Many times this pressure forces IMT’s and ALO’s into faulty (and costly) strategic or tactical decisions, expending resources that are critical to the primary mission, (containing and suppressing the wildfire), on protecting structures. Failure to concentrate all available resources on the suppression of a wildfire leads to greatly increased fire size and, consequently, significantly greater exposure to the risk of loss of life or property. To safely and effectively suppress wildland fire, it is critical that IMT’s and ALO’s be allowed to focus on their primary mission of wildfire suppression as they make strategic and tactical decisions.

We Recommend . . .

- That the nation’s community of wildland fire fighting organizations develop a common message of reality and relentlessly hammer that message home to all Americans and their elected representatives in all levels of government. The message must clearly state:
 - ❑ Wildfire kills people and destroys homes - especially when people are foolish enough to place themselves and their homes in Fire’s path.
 - ❑ People must take responsibility for their own safety and that of their family - because the fire department cannot always be there and, even when the fire department arrives in time, they may be no match for a wildfire.
 - ❑ Firefighters must be able to choose the ground where they will meet the fire and win. They

must not be forced to expend resources to defend property that is indefensible.

- Fire plays an important role in the management of forest ecosystems and can be a very cost-effective tool in the stewardship of wildland forests.

This will require a communications campaign on the scale of the early Smokey Bear campaign - call it Smokey's "Tough Love" campaign - and take it on with a similar degree of national commitment - a will to change people's minds must exist at all levels of the national wildland fire suppression program.

- By itself, providing the nation with a healthy dose of reality does little to provide citizens and local governments with the information they must have available to them as they begin to assume primary responsibility for their own safety. It is incumbent upon federal and state wildland fire agencies to assist local government in their efforts. Accordingly, the following measures are recommended:
 - In conjunction with local fire departments, conduct assessments of all interface areas and rate them according to their defensibility.
 - Publicize the results of the rating system. Further, notify homeowners whether or not local, state, and federal fire fighting forces plan to attempt to defend their home or simply help them to evacuate in the event of threatening wildland fire.
 - Establish written agreements among local, state, tribal and federal agencies detailing responsibilities with respect to structure protection in the interface.
 - The "FireWise Community" effort holds great promise in changing the equation of "homeowner as victim and firefighter as protector/savior." Actively promote intensive "firewise" education efforts, promoting homeowner and community responsibility and spawning a "partner" relationship.
 - Plan and execute fuel reduction projects adjacent to interface areas.

Our Rationale . . .

Citizens, politicians, and media representatives who understand the realities of wildland fire and the limitations of fire fighting forces in the face of wildland fire are more likely to allow fire fighters to concentrate on reasonable, achievable and cost-effective fire suppression goals. They are less likely to exert political pressure to force the use of suppression resources on indefensible properties. They are more likely to take the initiative in making their home environment less combustible and more survivable. They are less likely to foster development in areas with a significant risk of catastrophic fire.

3. Administrative Issue: “Fostering A Costly Fire Suppression Environment”

Federal, state, and local governments have unwittingly combined to create an administrative and political environment that discourages attempts to suppress wildland fire cost-effectively. A preoccupation with risk, a failure to properly support both an effective fire prevention program and aggressive initial attack, an unwillingness to address development in the wildland/urban interface, and misplaced concern over environmental factors each contribute to the problem.

In the past decade, Incident Management Teams, Agency Line Officers, and agency administrators seem to have developed an inclination to avoid even minor risks in their administration of an incident. Many of them now tend to reject any risk, whether reasonable or not, in the management of an incident. This arises from a combination of the following three factors:

- A lack of fire and or management experience leaves IMT's and ALO's with too little background and practical knowledge on which to base tactical and strategy decisions during an incident. Because they aren't confident that they can predict a fire's development and the dangers to personnel, they pass up significant opportunities to establish control earlier.
- Many people fear their personal exposure to litigation.
- Perhaps as a direct result of several well-publicized fatalities in the past few years, it appears that the lead agencies in wildfire suppression are reticent to officially condone any level of risk in the management of an incident. Many Incident Commanders (IC's) and ALO's are unsure whether their tactical and strategic decisions will be defended by their superiors, so they opt for less effective tactics and strategies that delay control of an incident and, consequently, increase suppression costs.

The least expensive wildfire is the one that never starts. Fire prevention is an important factor in minimizing wildfire suppression costs. However, the national wildfire prevention program is outdated and under-funded. After decades of work aimed at convincing the American public that fire is evil and must be eliminated, natural resource managers now understand that fire is an essential part of nature. In many areas, fire must be managed as any natural resource would be managed. As a result, the public has become confused about the message of Smokey Bear. Where once they knew that fire was bad and must be prevented, now they're not so sure.

The demographics of Smokey's audience have changed, as well. At the outset of the Smokey campaign, Americans either lived on the land and farmed it or lived in the cities and visited the forests only occasionally. Today, urban-raised and urban-oriented Americans increasingly live in the forest and commute to distant cities for work. While they understand that wildfire is dangerous, they still harbor an urban-based trust in local emergency services and view them as their protector-savior. They tend to assume that the same rapid and well-equipped response found in urban areas will happen in their new rural surroundings. Trusting in their unfounded assumptions, they remain unaware of the need to employ even the simplest of common-sense precautions to advance their own safety. Smokey needs to talk to these people not only about fire prevention, but also about ensuring their own safety in the face of wildland fire.

Logic dictates that minimizing the size of a fire will also minimize the cost of suppressing it. However, federal and state agencies consistently are unable to adequately promote and fund

aggressive initial attack on wildland fires. Because local forces are often the first on the scene of a wildfire, emphasis on aggressive attack must begin locally. Federal and state agencies should focus meaningful financial and technical assistance at the local level to strengthen the local resources that will first be brought to bear on an incident. To some extent, this is not currently happening because of misplaced agency priorities. However, federal agencies are hamstrung by a failure on the part of administrators within the Office of Management and Budget, the Department of Agriculture, and the Department of the Interior to request adequate levels of funding for preparedness from Congress. State agencies suffer from a similar shortfall in funding for preparedness.

Further, in some geographic areas of the United States, it now appears that administration of wildland fire suppression too often emphasizes indirect attack strategies. Likely a consequence of risk-averse behavior, such strategies allow fires to grow larger and, thus, more expensive to contain. As the Cost Containment Survey in the appendix of this report illustrates, many seasoned fire management personnel advocate a strong emphasis on aggressive initial attack.

There are many areas of the nation where planning, zoning, and building regulations are too permissive, allowing poorly controlled development to occur in high hazard areas. In such areas, unsafe homes are built, they burn, and they are then rebuilt – most times incorporating the same designs, construction materials or locations that originally led to their destruction. There is a need for local and state governments to use their regulatory authorities to strike a safe balance between the siting of structures, the use of fire-wise construction materials and methods, and the creation of defensible space.

In many locations, environmental and safety policies, rules, or regulations are too restrictive, creating a bureaucratic quagmire that precludes the use of certain strategies or tactics in combating wildland fire or managing natural resources. While an oppressive regulatory environment may deter some firefighting tactics or strategies, there are restrictions on some uses/management practices on some lands, (particularly federal lands), that preclude effective fuels management practices or restrict emergency access. Examples are roadless areas that lack adequate emergency or management access and areas where the use of prescribed burning in fuels management or ecosystem management is denied.

We Recommend . . .

- The development and implementation of clear and firm fire management policy to promote program consistency, efficiency and effectiveness. Strong and clear policy also serves to deflect political intervention as we implement our fire management and fire protection programs.
- It is time to convene a body of public and private public relations professionals to develop a new fire prevention message: a message that is as clear, concise and timely as Smokey's original message once was. Armed with a new message that promises to resonate within the hearts of Americans, the community of wildfire fighters must promote that message with the same enthusiasm that has been the hallmark of Smokey Bear – and back it up with a new emphasis on law enforcement.
- All federal, state and local agencies engaged in the suppression of wildland fire need to formalize and embrace a policy of aggressive initial attack. Such a policy will require a

commitment of sufficient funding and technical assistance to fully train, equip and maintain first-response forces capable of quick response and sustained aggressive initial attack.

- While aggressive initial attack will serve to minimize the size of fires, not all fires can be quickly contained and controlled. Many state agencies maintain regional caches of equipment to assist local fire departments and pre-position State equipment and personnel during periods of high or extreme fire danger. Federal agencies should expand their use of equipment caches and pre-positioned equipment and personnel to quickly bolster first-response forces – even to the point of co-locating federal and state resources.

Our Rationale . . .

There are few areas in the management of an incident where significant cost savings can be achieved. The keys to minimizing the cost of suppressing wildland fires lie in:

- Preventing a fire from occurring in the first place.
- Immediately and aggressively attacking a fire to contain it and control it when it is small.

The administration of the national wildland fire program must aggressively and enthusiastically act in accord with these two key principles.

4. Administrative Issue: “A Failure To Prepare”

A well-prepared organization is better able to respond quickly and effectively to a crisis than an ill-prepared organization. In suppressing wildland fire, a slow or ineffective response will result in higher overall suppression costs. The level of preparedness of the national wildland fire suppression program has eroded significantly and is increasingly costly. Factors contributing to this decline in preparedness include: a failure to provide adequate funding for the development of first-response resources; a decline in the numbers of trained and experienced fire fighting personnel; a lack of emphasis on sound planning; and the diversion of fire program funding to soften funding shortfalls in other agency programs.

Analysis of costs for the Interior agencies with wildland fire responsibility has revealed that there is a reduction of five to seven dollars in the costs of suppression and emergency rehabilitation for every additional preparedness dollar received. Paradoxically, federal and state agencies appear to be reluctant to adequately fund initial attack resources or prevention efforts. Likewise, inter-agency planning for initial attack and prevention is often lacking or inadequate.

An immediate and effective local response to a reported wildfire is critical to minimizing suppression costs. Properly equipped and trained local resources have a much shorter response time and have a much better chance of catching a fire and keeping it small (and inexpensive). In this sense, developing and maintaining the “first response” local resources (counted on to quickly contain and control fires) should be a high priority component of the national program. Unfortunately, these important resources are largely being ignored by the federal government. Very little of the federal fire budget is being expended to equip, train, and support these resources.

In providing staffing for wildfires that have withstood vigorous initial attack and are administered by an IMT, the dispatch system frequently overlooks qualified resources that are available nearby, resulting in unnecessarily high administrative and transportation costs to bring distant resources to bear. Available resources should be prioritized by how distant they are and dispatched accordingly. Local resources are almost always available to fill support roles that do not require advanced firefighting skills (clerical and business functions, etc).

As a result of several factors, including efforts at down-sizing government, the pool of personnel who are qualified to assume fire suppression assignments is decreasing in most federal and state agencies. In addition, fewer people are either willing or able to progress to higher-level, more responsible, positions. We are faced with an aging, less experienced work force in fire management. The danger exists that a shortage of qualified personnel may soon develop.

As available resources become scarcer, the need to ensure their efficient expenditure grows more imperative. Most governmental programs incorporate standards of one sort or another. Yet, the expenditure of resources in support of the suppression of wildland fire is not guided by any such standards. Absent a set of performance/cost standards, there is little incentive for IMT's to evaluate their strategy and tactics from a cost/benefit standpoint, to enhance the efficiency of both mobilization and de-mobilization of resources, to strictly control the use of Type I aviation resources, or to eliminate over-ordering of resources.

Effective preparation for emergency response during any natural disaster requires comprehensive planning efforts that are multi-disciplinary and cross-jurisdictional. Agency Administrators and

Fire Managers have been too provincial in preparing for fire disasters. As a result, costs increase dramatically because local and regional non-suppression resources are often not included, or are overlooked. Most municipalities plan for disaster events such as airplane crashes, hurricanes, chemical spills and fires, etc., on a multi-agency, private and public joint basis. Conversely, fire organizations most often look only within their wildland fire community for resources to respond to fire incidents.

The level of intra-agency planning is suspect, as well. For example, less than 5% of National Forests have current, approved fire plans. The USFS is not in compliance with the National Fire Management Policy.

States, counties and local governments have been remiss in failing to adequately fund rural fire protection and in failing to provide incentives for membership in rural fire departments. In many communities, particularly where there is a large federal presence nearby, the temptation exists to rely on federal and state forces for wildland fire protection. However, federal agencies (and to some extent State agencies) have failed to effectively advocate increased allocation of federal and state financial/technical support for the development of first-response wildland fire suppression capabilities.

Nationally, funding of the federal fire management programs is currently at about 75% of Most Efficient Level (MEL). This level of funding considers only those lands for which the federal agencies have direct fire protection responsibility. It does not include non-federal wildlands – and, most notably, it does not include wildland-urban interface fire protection. Clearly, this funding level is inadequate and will leave federal agencies without sufficient resources to deal with non-federal lands. It is incumbent upon State and local agencies to seek adequate funding to provide for their own preparedness. It is incumbent upon federal agencies to seek funding at levels that properly reflect their mission to help State and local governments develop their fire fighting capabilities.

We Recommend . . .

- Increase initial and extended attack resources. This includes budgeting for preparedness resources at the Most Efficient Level and developing a cohesive, long-term budget strategy that includes preparedness, emergency suppression, fuel management, and state fire assistance in order to implement an effective, cost-efficient fire management program. Further supportive measures would include:
 - ❑ Direct funding and training towards maximizing the capabilities of first-response forces, thereby minimizing the opportunities for fires to develop into campaign fires.
 - ❑ Expand financial assistance to states, specifically in the area of training fire fighters and providing them with personal protective equipment.
 - ❑ Develop master mutual aid agreements for initial attack among state, federal, tribal and local government fire organizations.
- Implement fire management planning and standards development on a large-scale, consistent basis. Community involvement and public education is important. Further supportive measures would include:

- ❑ Create national, or regional, suppression cost standards to assist IMT's in their administration of suppression efforts and to measure the IMT's efficiency.
- ❑ Develop cooperative agreements, shared training, local standards and plans involving other many agencies, communications networks useable by all local groups, and directories of local skills found in the community.
- ❑ Formalize, in written agreements, the use of local government forces and private contractors in each geographic zone.
- ❑ Develop written resource drawdown plans among state, federal, local, tribal and private organizations as part of an overall mobilization plan for each zone.
- ❑ For areas that have a historical record of large fire events, consider using the common FEMA process of Planning, followed by Table Tops, and finally full scale Simulations that use the full range of local expertise to fill tasks not requiring specialized fire line/aircraft skills.
 - Promote utilization of the full range of available resources and their use in the most effective manner. Of particular concern should be the appropriate use of nearby resources. Further supportive measures include:
 - ❑ Re-emphasize the importance of Type III incident management teams for extended attack and for smaller fires and insist on their use in appropriate situations. Avoid ordering a Type II team if an incident is of a complexity that will allow the safe use of a Type III team.
 - ❑ Train local dispatchers to first seek to fill orders locally before calling for distant resources that are more expensive to transport, house, and care for. Require that no order be passed up the chain until dispatch personnel have made a reasonable effort to locate resources within the geographic zone. Regional dispatch personnel must be required to make the same effort regionally before sending orders to Boise. Avoid ordering dispatch help from out-of-state or region, unless the dispatch center is able to provide adequate supervision and direction to ensure that all local avenues for filling orders are exhausted before orders are sent to a higher level.
 - ❑ Work with NWCG to identify specific ICS positions that, if ordered, are not to be passed on to Boise to be filled from national resources. Such positions should be labeled as "state or regional fill, only." Examples include Timekeeper, Check-in Recorder, Contracting Officer, Food Unit leader, and Document Unit leader and law enforcement positions. Further, whenever possible, ensure that fire prevention experts and fire prevention team members are not immediately dispatched to a suppression assignment, so that they remain available for prevention assignments.
 - ❑ Reaffirm that non-"red carded" employees in local fire management agency offices should be made available for fire assignments. While not all employees of land management agencies have the skill, demeanor, or physical ability to serve on a fire, most are capable of performing wildland fire suppression or prevention activities at some specific, defined level. Insert this requirement in the individual's position description, and include a requirement for a training plan that identifies the position(s) to which the employee is aspiring.
 - ❑ Through the NWCG, reduce the standard size of national incident management teams, filling

necessary support positions locally or from within the region.

- Encourage ALO's to order "short" incident management teams for smaller fires and fires that are likely to be of short duration.
- Work with the NWCG to promote an in-depth examination of factors contributing to the erosion of the pool of experienced forest fire suppression personnel and to develop strategies for reversing the trend. Supportive measures would include:
 - Insist that supervisors allow employees the time to attend formal training to advance their fire suppression qualifications according to their training plan.
 - Place a high priority on ensuring that qualified people are allowed to be available for suppression dispatches.
 - Help local fire department personnel to acquire ICS qualifications to enable them to accept wildfire assignments. This may require more extensive involvement of federal personnel in the training of volunteer fire departments.
 - Use qualified retirees for fire assignments where appropriate – particularly for "mentoring" posts.

Our Rationale . . .

A wildland fire becomes a local emergency before it evolves into a State, then regional, then national incident. Our national wildland fire suppression program should hold, as its highest priority, the strengthening of first-response fire fighting forces to safely and effectively suppress wildland fires without the direct assistance of outside resources. These strong first-response forces will then be able to minimize the number of campaign fires – thereby minimizing suppression costs.

5. Administrative Issue: “No One Is Accountable”

Currently, IMT’s (and to some extent Line Officers) understand and accept that they will be held accountable for the conduct of suppression efforts on an incident. Generally, the understanding is that they will be specifically accountable for firefighter safety and, to a slightly lesser degree, for heeding environmental concerns and minimizing the disruption of sensitive ecological features.

Historically, the concept of accountability has rarely extended to the costs of suppression. IMT’s, Line Officers, and agency directors have generally perceived their charge as strictly to extinguish the wildfire in as safe a manner as possible and with as little environmental disruption as possible. Throughout the national wildland fire suppression organization, costs and cost-effectiveness have rarely been regarded as a priority and many IMT’s have operated under the assumption that they have an open checkbook available to them.

The lack of accountability for costs allows for runaway inflation in the cost of wildland fire suppression.

We Recommend . . .

- Introduce accountability – and mean it! Agencies, Line Officers, and IMT’s must consistently be held accountable for employing sound, aggressive strategies to minimize fire size and, thereby reduce costs. The safety of firefighters must remain the first priority for everyone involved in incident management. However, Incident Commanders and Line Officers must regard cost containment as a priority, as well. The overall approach should be to balance the priorities of maximum safety, minimum fire size, and minimum cost. In the final analysis, smaller fires present fewer safety risks and fewer conflicts with land use policies.

Accountability cannot be a one-way street. Program administrators play important roles in securing fiscal and legislative support for the efforts of the firefighter on the line. It is their responsibility to see that the resources allocated to their agencies are properly and efficiently expended. For example, within the USFS it is estimated that only 40-50% of Most Efficient Level funding actually gets to the ground. Clearly, it is incumbent upon all agencies, (not just the USFS), to review their policies and strive to maximize the amount of funding reaching the ground.

- Require annual reviews of a sample of large fires, focusing on the impact of strategy, tactics, and decision-making on cost, risk and accountability.

Our Rationale . . .

Establishing an organization-wide ethic of accountability for suppression costs will reintroduce the rule of reason in the administration of suppression efforts. Valid concerns exist over firefighter safety and environmental impacts. However, it is not reasonable to allow those concerns to create a “blank check”, funding 100% safe and 100% environmentally benign strategies and tactics – strategies and tactics that are ineffectual in achieving the primary mission of the organization: putting the fire out as quickly as possible. Instead, accountability for expenditures must be established – along with a tolerance for prudent and acceptable risk.

6. Operational Issue: “Unprecedented Levels Of Fuels Accumulation”

On millions of acres of our nation’s wildlands, a long history of land use patterns and a century of fire suppression efforts have resulted in the gradual accumulation of dangerous amounts of burnable biomass per acre. The most extensive accumulations occur in the western states, but the problem is found locally across the nation. Unless these areas of heavy fuel loading receive treatment to reduce the levels of available fuel, large, intense, and unstoppable wildfires are inevitable. Generally, these fires will not be extinguished until available fuels are exhausted or significant rain occurs.

While some areas of moderate to light fuel loading may be treated by controlled burning to consume fuels safely, areas with heavy fuel loading cannot be burned safely or without significant impacts on air quality. Instead, they must be mechanically treated.

The scope of this problem is staggering. In a recent report, the General Accounting Office estimated that on National Forests, alone, there are 39 million high-risk acres in need of some form of fuels treatment. The 1999 report estimated the annual cost of that treatment to be \$725 million.

We Recommend . . .

- There is an urgent need for the design and implementation of a comprehensive national fuels management policy and program. Fuels management must address factors that affect fuel loading on both public and private lands and must seek to mitigate not only those factors, but existing fuel loads as well - especially in wildland/urban interface areas. A national fuels management policy should establish fuels management standards to guide IMT’s and federal/state agencies should promote and defend such a policy. The 1999 US Forest Service report, “*Protecting People and Sustaining Resources in Fire-Adapted Ecosystems: A Cohesive Strategy*” is a valuable resource and should form the basis for such a national policy.
- On some incidents, fire and fuel parameters may be such that it may be desirable to let a fire burn in order to reduce fuel loading. In those cases, ALO’s and IMT’s should be guided by fire management plans and fuels management standards. They should be confident that their decisions in such matters will be defended in public by their superiors as being in conformance with accepted standards and policies.
- The preferable course is always to deal with fuel loads as a component in a sound resource management program well in advance of any potential incident. Federal and State resource management administrators must develop and implement resource management policies that incorporate measures to address fuel loading. These administrators must also strive to provide support and funding that is adequate to properly implement those policies.

Our Rationale . . .

Unless the national fuel-loading problem is effectively addressed, any attempts to curb suppression costs will be frustrated by catastrophic wildfires that are extraordinarily expensive yet defy all efforts to contain and control them.

7. Operational Issue: “Weak Oversight Of Incident Management Teams By Line Officers”

As a wildfire grows in size, ferocity, and complexity local or State fire suppression forces led by an ALO look to the federal government for IMT assistance in managing the fire. When an IMT arrives to take control of the fire, too often line officers turn the fire over to the IMT and assume a “hands-off” stance, leaving the IMT to operate with minimal input or guidance from the host agency.

The fact of the matter is that the overall responsibility for the fire remains with the host agency and it is that agency’s obligation to remain closely involved in the management of the incident. This involvement is achieved through the host agency’s designation of a Line Officer to provide direction and guidance to the IMT.

Early in an incident, ALO’s must make immediate, high cost decisions that directly influence the manner in which suppression efforts develop on a fire. Many times ALO’s will have minimal experience and limited knowledge of fire effects, fire management or fire behavior. As a consequence, inexperienced line officers are prone to making critical, but poor, decisions that lead to higher suppression costs, or they may fail to make important administrative or operational choices that could reduce overall incident costs. There is a strong need for agency heads to increase oversight of type I & II incidents and to hold line officers accountable for their actions or lack of action.

There is a tendency for ALO’s and IMT’s to make strategic and tactical decisions based largely on risk avoidance, often leading to unnecessarily high costs. Agency heads need to provide line officers and IMT’s with better decision-making tools and then support and encourage calculated risk-taking as they set suppression objectives. However, this does not mean putting firefighters at risk.

We Recommend . . .

- Agency heads should ensure that line officers responsible for fire suppression actions are properly trained for their responsibilities, including the proper and effective use of the Wildland Fire Situation Analysis (WFSA). While the proper use of the WFSA does not guarantee that sound decisions will be made, it does provide the IMT and the Line Officer with valuable information necessary for decision-making.
- All agency line officers must be required to attend either the national, or a regional, training course in fire management leadership.
- Current training for line officers and incident management personnel should be reviewed and amended as necessary to include methods of cost containment and efficient management of suppression resources.
- Establish clear, uniform, job performance standards for ALO’s.
- Accurately document line officer performance, related to a wildland fire incident, in his/her annual performance appraisal.
- Assign experienced line officers to mentor inexperienced line officers prior to an actual incident, and to coach them during an actual incident.

- Provide incentives for line officers to take appropriate risks without compromising firefighter safety, regardless of political pressures, media presence, or worries over possible litigation
- Publicly support line officers who make sensible yet difficult or politically unpopular choices in order to reduce costs.
- Incident goals must be measurable and attainable. Incident objectives must be linked to the costs of attaining them. Well-developed fire management objectives should address the environmental, social, economic and political issues and therefore provide excellent insight into setting priorities, cost benefit guidance and what types of fire management strategies are acceptable.
- Require that an agency line officer order an “incident business advisor” to collaborate with him/her in providing proper fiscal oversight to incident management teams.
- Conduct business reviews during incidents.
- All suppression alternatives must be accompanied by cost estimates, which can be evaluated against the benefits of suppression actions
- It is important for the fire management personnel to keep a current Fire Management Leadership Desk Reference available for the line officer and to review this annually. Such a reference has been created by the National Advanced Resource Technology Center (NARTC) but to be of real value it must be localized.
- Require post-fire critiques which emphasize the comparison between cost of suppression and suppression objectives.

Our Rationale . . .

Once an IMT has arrived to assist in managing a wildfire, their actions largely determine the final cost of suppression for that incident. An IMT’s decisions and actions revolve directly around the input and guidance they receive from the representative of the host agency, the ALO. If cost containment is to be a key factor in the IMT’s management of an incident, that priority must be clearly and effectively communicated to the IMT by the ALO at the outset. That priority must be reinforced as the Line Officer provides strong leadership to the IMT throughout the incident. Knowledgeable and capable Line Officers are essential to effective cost containment.

Appendix A 1.

National Fire Suppression Cost Containment Survey Results

Cost Factors & Barriers to Cost Reduction

The survey asked respondents to identify significant factors that, in their opinion, contribute to escalating fire suppression costs. Respondents were also asked to identify barriers to efforts to reduce fire suppression costs. Many times respondents regarded the factors that contribute to escalating costs as also presenting barriers to efforts at cost reduction. *(As an example, poorly controlled development in the wildland/urban interface forces additional suppression expense in order to deal with the presence of structures. The cultural environment that allows such poorly controlled development in the W/UI to continue poses a serious barrier to attempts to reduce suppression costs in the W/UI.)*

Analysis of the returns reveals that the responses quite easily fall into three general contexts:

- issues that are inherent in the wildland fire “culture” or are systemic;
- issues that arise from the administration of wildland fire suppression as a program, whether federal, state, or local.
- issues that arise out of the wildland fire operational arena; and

Accordingly, responses have grouped by the wildland fire context to which they refer and are then listed in descending priority within each context.

The results of this portion of the survey identify factors within each context that contribute to escalating wildland fire suppression costs. The results also provide a measure of how significant an impediment those factors will present to efforts to control the costs of suppressing large wildland fires.

I. Cultural/Systemic Context *(17% of responses)*

A. Wildland/Urban Interface

45% of the comments received within this context identified factors/barriers associated with the wildland/urban interface. The comments provided indicated that this issue is equally regarded as a factor in escalating suppression costs and a barrier to efforts to control those costs. Particular items identified by respondents include:

- lack of rules, reg’s, and ordinances concerning ignitability of a structure, access, and defensible space
- Failure of the landowner to accept personal responsibility for their own safety and that of their family
- Gov’t/insurance programs and policies that allow rebuilding in hazard areas or rebuilding without prudent protections in location and construction

B. Unrealistic Expectations

19% of the comments received within this context identified factors/barriers associated with unrealistic expectations of what wildland fire suppression can and cannot do. The comments indicated that this issue is regarded more as a barrier to meaningful cost control than it is a factor contributing to increasing suppression costs. Particular items identified by respondents include:

- expectations that are unreasonable, impractical or cling to tradition without justification - these can be maintained by the general public with respect to suppression capabilities in general or can be held by Line Officers with respect to suppression capabilities of resources on a particular incident
- the expectation that all wildland fires must be put out immediately
- the expectation that all homes will be protected – employing extraordinary measures, if necessary

B. Risk Avoidance Behavior

13% of the comments received within this context identified factors/barriers associated with a propensity for IMT's, Agency Line Officers, and agency administrators to avoid even minor risks in the administration of an incident. The comments provided indicated that this issue is equally regarded as a factor in escalating suppression costs and a barrier to efforts to control those costs. Respondents identified a reluctance to accept safety risks or the risk of potential litigation as particular influences on suppression costs.

C. Traditions

13% of the comments received within this context identified factors/barriers associated with adherence to tradition and the traditional ways of doing things. The comments indicated that this issue is heavily regarded as a barrier to meaningful cost control more than it is a factor contributing to increasing suppression costs. Particular items identified by respondents include:

- “common knowledge” that any and all wildland fires are bad
- assumption that all fires must be suppressed at any cost
- the assumption that the Western U.S. perception of wildfire and its suppression is applicable to all wildfire incidents across the nation

B. Conflicting Objectives

6% of the comments received within this context identified factors/barriers associated with conflicting objectives. The comments provided indicated that this issue is equally regarded as a factor in escalating suppression costs and a barrier to efforts to control those costs. In particular, respondents cited a conflict between the reliance of many western U.S. citizens on fire as an employer and as a factor in the health of the local economy.

C. General Costs

4% of the comments received within this context identified factors/barriers associated with a national trend of general cost increases. The comments indicated that this issue is more regarded as a barrier to meaningful cost control than it is as a factor contributing to increasing suppression costs. Respondents referred to this issue as the steady increase in costs, without regard to operational or administrative inefficiencies.

II. Administrative Context

(42% of responses)

A. Resource Availability

32% of the comments received within this context identified factors/barriers associated with a general decline in the availability of resources relied upon during fire suppression. The comments indicated that this issue is equally regarded as a barrier to meaningful cost control and as a factor contributing to increasing suppression costs. Particular items identified by respondents include:

Experience & Training

- This refers to the on-going loss of federal, state, and local personnel experienced in strategies and tactics. The recent efforts at federal downsizing have accelerated this loss.

Local Resources

- IMT's have failed to emphasize the use of local resources over distant resources.
- Many times the failure to use local resources results from a lack of fed/state/local cooperation.
- The federal government has failed to provide adequate funding to insure the preparedness of state and first-response resources.
- US Forest Service policy encourages the hoarding of suppression resources by Regions.

Federal downsizing

- fewer federal resources means more cooperators are necessary
- fewer Type I crews
- fewer non-fire federal employees
- Fewer qualified resources

Over-built National Firefighter Qualifications System

- results in fewer qualified resources

B. Policy, Rules & Regulations

13% of the comments received within this context identified factors/barriers associated with policies, rules, or regulations that militate against cost-effective wildland fire suppression. The comments indicated that this issue is more regarded as a barrier to meaningful cost control than it is as a factor contributing to increasing suppression costs. Particular items identified by respondents include:

- environmental and safety policies, rules, or regulations that are too restrictive and create a bureaucratic quagmire
- planning, zoning, and building policies, rules, or regulations that are too permissive and allow poorly controlled development to occur in high hazard areas
- labor unions
- restrictions on some uses/management practices on some lands, particularly federal lands - examples are roadless areas vs. adequate management access and prescribed burns vs. naturally occurring fire only

B. Tactics & Strategies

12% of the comments received within this context identified factors/barriers associated with faulty tactics and/or strategies. The primary issue here was the need for more aggressive initial attack. The comments indicated that this issue is heavily regarded as a factor contributing to increasing suppression costs more than it is a barrier to meaningful cost control. Particular items identified by respondents include:

- a firm commitment to aggressive initial attack is essential – including the commitment to provide sufficient resources to conduct aggressive initial attack.
- sound strategy is fundamental

B. Lack of Commitment

11% of the comments received within this context identified factors/barriers associated with a perceived widespread lack of commitment or resolve to effect controls on the costs of suppression. The comments indicated that this issue is much more heavily regarded as a barrier to meaningful cost control more than it is as a factor contributing to increasing suppression costs. Particular items identified by respondents include:

- a lack of an organization-wide “corporate will” to change
- lack of budgetary commitment for prevention measures, pre-suppression, aggressive initial attack, meaningful fuels management, and adequate numbers of properly prepared personnel
- lack of aggressiveness at the highest levels of USDA and USFS
- lack of committed employees as evidenced by their refusal to accept fire assignments and their focus on overtime pay.
- decreasing emphasis on pre-suppression
- failure to justify prevention activities

B. Accountability

10% of the comments received within this context identified factors/barriers associated with an absence of personal accountability for suppression costs. The comments indicated that this issue is more regarded as a barrier to meaningful cost control than it is as a factor contributing to increasing suppression costs. Particular items identified by respondents include:

- lack of personal accountability for suppression costs at all levels, including IMT’s, Line Officers, and Agency administrators
- as a result, federal unlimited spending leads to over-ordering & waste. The advent of unnecessary comforts in fire camps is a prime example.

B. Aviation

9% of the comments received within this context identified factors/barriers associated with the use of aviation resources. The comments indicated that this issue is heavily regarded as a factor contributing to increasing suppression costs more than it is a barrier to meaningful cost control. Respondents specifically referred to FAA restrictions on the use of non-private air resources

G. Miscellaneous Issues

13% of the comments received within this context identified factors/barriers associated with a variety of issues – each of which individually contribute less than 5% of the responses received within this context. Particular items identified by respondents include:

Politics (regarded more as a cost factor)

- agency and individual political agendas at times conflict with sound strategy or tactics
- political in-fighting between agencies
- the US Forest Service must stand firm and say “No” to attempts at political intervention in ongoing incidents. This is a particular problem in W/UI fires

Mismanagement (regarded as both cost factor and barrier to cost controls)

- suppression suffers from planning efforts that are not done, poorly done, or never implemented
- for the USFS, it is alleged that only 40-50% of Most Efficient Level funding actually gets to the ground – and the rest of the funding goes to indirect costs that are assigned according to a logic some do not understand.

Tradition (greatly regarded as a barrier to cost controls)

- transference of the western U.S. fire orientation to incidents across the nation

Conflicting Objectives (regarded as both cost factor and barrier to cost controls)

- the need to suppress wildland fire conflicts with the benefits of fire as a source of employment and a contributor to the local economy.
- no incentives currently exist within the US Forest Service for Regions to work to reduce either fire occurrence or fire size, as their Fire budgets are cut and resources redirected as fire occurrence and/or size decreases.

III. Fire Operations Context (41% of responses)

A. Fuels Management

24% of the comments received within this context identified factors/barriers associated with the fuels management. The comments indicated that this issue is regarded as a factor contributing to increasing suppression costs more than it is a barrier to meaningful cost control. Particular items identified by respondents include:

- the inability to properly manage fuels
- the refusal to let some fires burn to reduce the amount of fuel available to future fires.

B. Tactics & Strategies

13% of the comments received within this context identified factors/barriers associated with tactics and strategies employed during suppression. The comments indicated that this issue is heavily regarded as a factor contributing to increasing suppression costs more than it is a barrier to meaningful cost control. Particular items identified by respondents include:

- aggressive initial attack will keep fires small (and less expensive), but the US Forest Service is far too willing to go to indirect attack to minimize risk. Indirect attack does have its place, but it should be used sparingly
- to use aggressive IA, broad agency support needs to be there in the form of adequate resources and sound strategy

C. Local Resources

12% of the comments received within this context identified factors/barriers associated with a general decline in the availability of resources relied upon during fire suppression. The comments indicated that this issue is equally regarded as a barrier to meaningful cost control and as a factor contributing to increasing suppression costs. Particular items identified by respondents include:

- the decline in Regional resources and the failure to adequately prepare local resources leads to rapid expenditure of available resources, hence greater involvement of distant resources and cooperators/contractors.
- there are significant costs associated with not properly preparing and utilizing first-response resources, not the least of which is greatly extended response times.

D. Accountability

10% of the comments received within this context identified factors/barriers associated with a lack of personal accountability for suppression costs. The comments indicated that this issue is regarded as a factor contributing to increasing suppression costs more than it is a barrier to meaningful cost control. Of particular concern to respondents was the need for IMT's to incur expenditures only after cost/benefit analysis and to include non-federal comptroller functions on the IMT.

E. Incident Management Teams

10% of the comments received within this context identified factors/barriers associated with the proper function of IMT's. The comments indicated that this issue is more regarded as a barrier to meaningful cost control than it is as a factor contributing to increasing suppression costs. Particular items identified by respondents include:

- IMT's have grown too large, and are still growing.
- There is a major problem with IMT's having a "blank check" attitude.
- IMT's receive very little detailed direction when assigned to an incident and are poorly managed.
- more and more IMT members are poorly trained or lack experience. As a consequence, IMT's are making more poor decisions.
- IMT's (particularly Type I teams) are being assigned to incidents too quickly and then stay too long.

F. Contracted Resources

10% of the comments received within this context identified factors/barriers associated with a trend towards increased use of contracted resources during fire suppression. The comments indicated that this issue is equally regarded as a barrier to meaningful cost control and as a factor contributing to increasing suppression costs. Particular items identified by respondents include:

- US Forest Service downsizing has led to the wider use of contractors and a consequent increase in contract expenses.
- several respondents view federal contract bidding procedures as ineffective in assuring fair market contract pricing.

G. Line Officer

9% of the comments received within this context identified factors/barriers associated with an absence of personal accountability for suppression costs. The comments indicated that this issue

is strongly regarded as a barrier to meaningful cost control more than it is as a factor contributing to increasing suppression costs. Particular items identified by respondents include:

- Agency Line Officers too often regard the function of an IMT as “taking over” an incident and ending the agency’s role.
- ALO’s many times lack experience and training for their role.
- As a result of the above, ALO’s many times exert poor management and direction over the IMT.

H. Equipment

6% of the comments received within this context identified factors/barriers associated with the mechanized equipment employed during suppression. The comments indicated that this issue is heavily regarded as a factor contributing to increasing suppression costs more than it is a barrier to meaningful cost control. Particular items identified by respondents include:

- The cost of purchasing and maintaining mechanized equipment,
- The cost of upgrading mechanized equipment to take advantage of advances in technology.
- Excessive costs associated with mechanized equipment many times force reliance on the wrong equipment or to use equipment in inefficient ways.

I. Miscellaneous Issues

6% of the comments received within this context identified factors/barriers associated with a variety of issues – each of which individually contribute less than 5% of the responses received within this context. Particular items identified by respondents include:

Mismanagement (regarded as both cost factor and barrier to cost controls)

- planning at all levels of the wildland fire suppression program is either not done, poorly done, or never implemented
- too many times wildland fire is fought by reaction rather than pro-action
- logistical snafus are common occurrences on any incident and result in multiple inefficiencies. An example is the amount of “down time” crews experience as decisions are made with regard to their deployment.
- Federal, state, and local agencies routinely fail to effectively use partners that are available to them.
- resources are routinely held on incidents for too long.

Over-reaction (strongly regarded as a cost factor)

- too often, the assignment of resources to an incident is far in excess of what is warranted by fire parameters.

Weather/Climate (strongly regarded as a cost factor)

- at times, IMT’s fail to temper suppression strategies in recognition of extended meteorological trends that obviously preclude suppression.

Fire Complexity (strongly regarded as a cost factor)

- more complex fires lead to more expensive suppression efforts.

Appendix A 2.

National Fire Suppression Cost Containment Survey Results

The Cost Containment Message

The survey asked respondents whether a clear national message on the importance of cost containment in wildland fire suppression had been provided and supported. If the response was “No”, respondents were asked to identify how the message was insufficient.

The intent of this question was to establish a measure of how effective the national fire organization has been in communicating the message that containing costs in suppressing wildland fires is important and should be regarded as a priority by all involved.

The overwhelming response was that *the message is inadequate*. While 32 of the respondents (24 %) believed the message is being adequately presented and supported, 102 of them (76 %) believe the message is not being adequately presented or supported. Further, many of respondents stated that they had either never heard the message or that the message was universally ignored.

The results of this portion of the survey follow and are listed in order of decreasing priority. Unfortunately, of the 102 respondents who believe the message to be inadequately presented or supported, only 71 indicated how they felt the message fell short of the mark.

A. The message is adequately presented and supported (24%)

B. The message is NOT adequately presented and supported (76%)

Insufficient message.

Twenty nine percent (29%) of the respondents stated that they believed the message they were familiar with was insufficient in some manner. Comments were received to the effect that key elements were missing from the message – elements such as:

- Any indication that people would be held individually accountable for controlling suppression costs.
- An emphasis on costs.
- A single, consistent message – (an “agency mantra.”)
- A clear, consistent message regarding the need to manage fire to reduce cost over the long run.
- An exhortation to accept a certain amount of risk in order to effectively contain costs.
- An emphasis on controlling development in the wildland/urban interface.

Several respondents indicated that the agency had not yet presented a case for cost control to the general public. They believe that, until the public understands both the true nature of the cost problem as well as the need to manage fire, they will continue to demand all-out suppression efforts without regard to cost.

Insufficient support.

The effectiveness and clarity of a message is greatly enhanced when the actions of an agency show substantial support for it and are in harmony with it. An agency may espouse cost containment, but administrative actions speak louder than words. To quote the vernacular, an agency must not only “talk the talk”, but must also “walk the walk.”

Fifteen percent (15%) of respondents believe that the suppression cost containment message is not fully supported by the US Forest Service. As evidence, the respondents have cited the following:

- There is no follow-through on the message – no commitment
- Incident Management Teams continue to grow larger.
- The agency still engages in futile suppression attempts on uncontrollable fires in response to political pressure or to mollify the public.
- The agency provides too little funding for pre-suppression measures.
- Extraordinary suppression measures continue to be taken in W/UI, so that all homeowners now expect the same treatment.
- USFS Regions that succeed in reducing the number or size of fires are subsequently penalized by cuts in funding and resources.

No message.

Nine percent (9%) of respondents say they have failed to hear any message concerning the need to control the costs of wildland fire suppression.

Unspecified.

Twenty three percent (23%) of respondents believe the message is not adequately presented or supported, but failed to specify how the cost containment message is inadequate.

Appendix A 3.

National Fire Suppression Cost Containment Survey Results

The First Steps Toward Cost Containment

The survey asked each respondent to recommend a first step that should be taken to best control the cost of suppressing wildland fires in the United States.

Analysis of the returns revealed that, as with the responses regarding cost factors and barriers to cost control, the recommended first steps towards cost containment fell into three general contexts:

- measures that are inherent in the wildland fire “culture” or are systemic;
- measures that arise from the administration of wildland fire suppression as a program, whether federal, state, or local.
- measures that arise out of the wildland fire operational arena; and

Accordingly, the responses have been grouped by the wildland fire context to which they refer and are then listed in descending priority within each context. It should be noted that, in several cases, a response could be applied within both an operational context as well as an administrative context. (*As an example, “fuels management” could be applied operationally at times by allowing some fires to burn or through prescribed fires. Fuels management also can be applied in an administrative context through enhancement of funding for the reduction of fuels or the strengthening of agency policies with regard to fuels management.*) In these cases, the responses have been replicated and adapted for each applicable context.

I. Cultural/Systemic Context *(6% of recommended first steps)*

A. Create Realistic Expectations

69% of the comments received within this context advocated a concerted educational effort aimed at helping the general public, politicians, and non-Fire agency administrators to develop realistic expectations with regard to what a national wildland fire program can and cannot achieve. The expectation is that a realistic outlook on the part of those the fire program seeks to serve will insulate the fire program from political pressures and allow the program to concentrate on cost-effective suppression goals that are reasonable and attainable.

A key component of such an educational effort must be the tenets of the FireWise message: sound community fire planning, fire resistive building construction methods, defensible space, and personal responsibility for the safety of family and property. Further, government programs, financial institutions, and the insurance industry ought not to promote policies or programs counter to FireWise tenets.

Equally important in such an educational effort will be communicating to those same audiences precisely what the costs of wildfire suppression are and what else is not being accomplished in order that those costs may be paid. The connection between excessive suppression costs and an

American's wallet or pocketbook must be made. The American people must come to realize that they have two choices when it comes to the cost of wildfire: they can be FireWise, or dollar foolish.

B. Deal with Development in the Wildland/Urban Interface

15% of the comments received within this context urged the imposition of prudent controls on unplanned or poorly planned development in areas where the probability of uncontrolled wildfire poses a threat of catastrophic fire. Again, the FireWise message needs to be applied.

C. Eliminate Conflicting Objectives

8% of the comments received within this context called for the federal government, the US Forest Service in particular, to quickly coalesce and universally express, (in deeds as much as in words), a pervasive unity of purpose. The call has been issued for – a stern “corporate will” to effect meaningful and lasting change through all levels of the national wildfire suppression program that will contain suppression costs and improve efficiency.

D. Think “Outside the Box.”

8% of the comments received within this context urged that “tradition” be set aside in dealing with the issue of escalating suppression costs. Instead, a fresh perspective was encouraged – even, if necessary, removing the federal government from a leadership role in suppression in favor of State leadership bolstered by redirected federal resources and funding. Admittedly, this is a radical thought. But this one response is included here to highlight a point: a solution to the vexing problem of spiraling wildfire suppression costs will not evolve from an inflexible adherence to tradition.

II. Administrative Context

(64% of recommended first steps)

A. Policy, Rules & Regulations

41% of the comments received within this context called for the development and implementation of clear and firm policy to promote program consistency, efficiency and effectiveness. Strong and clear policy also serves to deflect political intervention as programs are implemented and practices are employed. The following areas were singled out as needing guidance by strong policies:

Fuels Management (14%)

Within both the administrative and operations contexts, the most urgent need expressed by respondents was for the design and implementation of a comprehensive fuels management policy and program. Fuels management must address factors that affect fuel loading on both public and private lands and must seek to mitigate not only those factors, but existing fuel loads as well - especially in wildland/urban interface areas. On some incidents, fire and fuel parameters may be such that it may be desirable to let a fire burn in order to reduce fuel loading. A national fuels management policy should establish fuels management standards to guide IMT's and federal/state agencies should promote and defend such a policy.

The preferable course is always to deal with fuel loads as a component in a sound resource management program well in advance of any potential incident. Federal and State resource management administrators must develop and implement resource management policies that

incorporate measure to address fuel loading. These administrators must also strive to provide support and funding that is adequate to properly implement those policies.

Initial Attack (14%)

Respondents overwhelmingly advocate that all federal, state and local agencies engaged in the suppression of wildland fire embrace a policy of aggressive initial attack. Such a policy will require a commitment of funding and technical assistance to fully train, equip and maintain first-response forces capable of quick response and sustained initial attack. Such policy would formalize a mission of minimizing the need to commit even a Type III incident management team.

Several respondents recommended that the US Forest Service routinely pre-position resources during times of high fire occurrence to quickly bolster initial attack forces when aid is requested.

Prevention (8%)

Respondents frequently stated that the least expensive wildfire is the one that never starts. In their opinion, the national wildfire prevention program needs to be updated from the ground up. The message of Smokey Bear has become clouded by a new realization that fire must be managed and that not all fire is bad. It is time to convene a body of public and private public relations professionals to develop a new fire prevention message: a message that is as clear, concise and timely as Smokey's original message once was. Armed with a new message that promises to resonate within the hearts of Americans, the community of wildfire fighters must promote that message with the same enthusiasm that has been the hallmark of Smokey Bear – and back it up with a new emphasis on law enforcement.

Measures Specific to the US Forest Service (4%)

Respondents believe that USFS policies fail to provide incentives for Regional staff to work for reductions in the number of fires or the acres burned. They recommended the following:

- Refrain from reallocating resources away from Regions that have been successful in achieving reductions
- Develop and institute national standards for suppression costs and then allocate all incident costs to the Region until such time as the Region's budget has been exhausted.

Wildland/Urban Interface (1%)

Respondents called for a re-evaluation of the federal role in the W/UI and the issuance of new, definitive policy. Issues surrounding the protection of structures in the W/UI greatly complicate the management of an incident, possibly diverting critical suppression resources to function in a structure protection role that has historically been served by local fire departments. As a consequence, both suppression costs and fire size escalate.

A. Accountability

14% of the comments received within this context resoundingly expressed a desire for the US Forest Service, as the lead agency in wildland fire suppression, to introduce accountability for cost containment – and mean it! Respondents cited a “blank check” attitude on the part of all levels of incident command and expressed frustration at the silence of the USFS administration with regard to a clear, consistent mission. Repeatedly, the respondents cited a lack of commitment to cost containment on the part of federal agencies and translated that into a lack of “corporate will” to do something about it. Further, respondents cited a need to resume fighting fires

aggressively, to stop the “hand wringing” over land use issues on federal lands, and to be realistic about safety issues. The theme of the comments was that the agencies, Line Officers, and IMT’s must consistently be held accountable for employing sound, aggressive strategies to minimize fire size and, thereby costs. They should be mindful of land use issues, but not necessarily held accountable for them. They should also be realists, recognizing that firefighting is inherently dangerous. They should never expose firefighters to unwarranted dangers, but they should also recognize that firefighters cannot be preserved from all risk and yet still be effective. In the final analysis, smaller fires present fewer safety risks and fewer conflicts with land use policies.

Accountability cannot be a one-way street. Program administrators play important roles in securing fiscal and legislative support for the efforts of the firefighter on the line. It is their responsibility to see that the resources allocated to their agencies are properly and efficiently expended. An insightful comment was made to the effect that, in the USFS, it is alleged that only 40-50% of Most Efficient Level funds actually get to the ground. The rest is being eaten up by indirect costs that are assigned according to a logic that few understand.. Clearly, it is incumbent upon not only the USFS administration, but all federal and state agencies to retrofit wasteful policies to ensure that funding has as much impact on the fire ground as possible.

B. Resource availability

27% of the comments received within this context expressed considerable concern about a perceived decline in resources that are available for the suppression of wildland fire. They proposed several steps towards reversing this trend.

Prepare & Use Local Resources (13%)

Respondents believe that the “first response” local resources (counted on to quickly contain and control fires) are being largely ignored. Sentiment was that they are being ignored both by IMT’s (as nearby, low-cost resources for on-going incidents) and by federal policy (in the sense that very little of the federal fire budget is being expended to equip, train, and support those resources.)

Equally obvious was the desire that the federal government embark on a serious effort to dramatically enhance the preparedness of State and first-response resources. Such an effort will require a significant expansion of this program area and a meaningful commitment of budgetary resources.

Federal policy must embrace the concept that local forces have a better chance to quickly at the first report of a fire and limit its size (and therefore, cost.) In carrying out this policy, the administration must focus on keeping fires from reaching the point where even a Type III team is needed.

Experience & Training (8%)

Respondents suggested that much of the erosion of trained and experienced personnel could be reversed through more use of crews and overhead personnel that are available from the eastern states. Better, more efficient use of overhead positions was urged, as was an easing of the qualification standards.

More Efficient Use of Resources (6%)

According to the survey responses, much of the need for additional resources on an incident can be alleviated by more efficient use of existing resources. Recommendations were made specifically to:

- improve mobilization & de-mobilization efficiency
- request and allocate resources based on a cost/benefit analysis.
- request and allocate aviation resources that are best suited to the tasks they are destined for.

Much was made of the decreasing availability of federal personnel, especially experienced USFS personnel. Considerable concern was expressed over the growing number of USFS employees who opt out of fighting fires. Several respondents suggested that fire suppression should be made a mandatory part of the job.

A. Planning

6% of the comments received within this context advocated a stronger reliance upon national and regional planning to assure operational efficiency and optimal allocation of resources. A specific recommendation was made that the assessment of regional or national fire hazards and risks should be undertaken using a geographic information system platform. Any planning efforts must incorporate statistically valid evaluations of incident costs.

B. Increased funding support

6% of the comments received within this context strongly encouraged increased federal and state funding for: prevention; pre-suppression; fuels management; pre-positioning of resources; and aggressive initial attack.

C. Contracted Resources

3% of the comments received within this context view the contracting process with suspicion. They cite exorbitant prices for contractor services as evidence that the bid process is not working to ensure fair market contract prices. They urge a comprehensive review of the bid process, from the design of bid invitations through the review and award processes. They also urge acceptance of existing contract prices secured at a Regional or State level by any governmental entity. One comment suggested that, in developing contracts for aircraft, provision should be made for cost discounting during periods of extensive use of such resources.

D. Incident Management Teams

2% of the comments received within this context indicate that considerable sentiment exists that Incident Management Teams are now too large and are growing larger. They urge that the administrative policies be amended to streamline IMT's, establish criteria for their assignment, and establish guidelines for their usage.

E. Make new technologies widely available

1% of the comments received within this context suggest that new technologies such as Class A foam are not widely available. Any technology that is claimed to improve the efficiency of wildland fire suppression should be quickly and completely evaluated. All verified improvements in technology should be quickly transferred to the field and employed as appropriate. As a case in point, investigations are currently being conducted into the application of satellite-based remote sensing for detection of wildland fires. Should this technology prove to be both feasible and an advance over current technology, satellite-based wildland fire detection should quickly be employed in support of first-response resources. Rapid and accurate detection of fires certainly aids suppression efforts.

III. Fire Operations Context *(30% of recommended first steps)*

A. Fuels Management

32% of the comments received within this context stated that mitigation of existing fuel loads - especially in wildland/urban interface areas – is key to reducing the occurrence and consequences of catastrophic wildland fire. On some incidents, fire and fuel parameters may be such that it may be desirable to let a fire burn in order to reduce fuel loading. In those cases, IMT's should be guided by fuels management standards and should be confident that their decisions in such matters will be defended in public by their superiors as being in conformance with accepted standards and policies.

B. Local Resources

21% of the comments received within this context stated that IMT's must draw upon resources available locally before calling for expensive distant resources that must be transported, housed, and cared for at great expense. Properly equipped and trained first-response resources have an infinitely shorter response time and, therefore, have a much better chance of catching a fire and keeping it small (and inexpensive). Also, local resources are almost always available to fill support roles that do not require advanced firefighting skills (clerical and business functions, etc).

C. Tactics & Strategies

17% of the comments received within this context urged a program-wide commitment to aggressive initial attack. Most respondents decried a corporate spirit of caution that too often favors indirect attack. Most long for sufficient resources to vigorously attack a fire at the outset, thereby limiting the fire size, shortening the commitment of resources to the incident, and reducing suppression costs. Specific recommendations provided include:

- Emphasize (and critique) the use of natural firebreaks and burnout to reduce costs. Insist that control strategies be based on the concept of “the best ridge - not necessarily the next ridge”.
- Encourage night operations when it is prudent to do so.
- Discourage tactical reliance on large air tankers and type I helicopters. Encourage the availability and use of medium and light air tankers.

D. Incident Management Teams

21% of the comments received within this context perceived a need to address the function of IMT's.

Planning *(10%)*

Several comments were received to the effect that IMT's needed to engage in sound incident planning (using the best available data), periodic re-examination of those plans during the incident, and an immediate, post-incident evaluation. This process would allow for sound preparation, setting of realistic and attainable containment goals based on local conditions, adjustments of strategy and logistics during the incident, and education via 20/20 hindsight following the incident.

More Efficient Use of Resources *(10%)*

Respondents advised IMT's to:

- more efficiently utilize aviation resources, limiting their use of Type I aircraft in favor of

- smaller, less expensive (but more accurate) aircraft.
- improve mobilization & de-mobilization efficiency, requesting/allocating/releasing resources based on cost/benefit analyses

Firmly Resist Political Intervention/Influence (1%)

Respondents strongly advocated that IMT's ignore attempts at political intervention in their decision-making. Political contacts should be referred up the chain of command and business should proceed as usual.

E. Line Officers

9% of the comments received within this context clearly stated the need for more direct involvement with the IMT by the Agency Line Officer. IMT's function according to the goals and direction established for them by the Line Officer upon their assignment to the incident. Many respondents stated that the Agency Line Officer failed to provide the ITM with precise and clear direction and failed to stress the importance of cost containment. Respondents also urged the Agency Line Officer to firmly resist political intervention/influence in the management of an incident.

Appendix B. **Fire Resources Utilization Subcommittee Roster**

April, 1999

<u>Name</u>	<u>Agency</u>	<u>Address</u>
Donald Smith (Chair)	CT DEP Forestry	79 Elm St., 6 th Floor, Hartford, CT 06106
Gerald Rose	Minnesota DNR Forestry	500 Lafayette Rd., St. Paul, MN 55155-4044
Donald Artley	Montana DNRC Forestry	2705 Spurgin Rd., Missoula, MT 59804
Randy Acker	Washington DNR	Box 47037, 1111 Washington St., Olympia, WA 98504-7037
Ray Geiger	Florida Division of Forestry	3125 Conner Blvd., Tallahassee, FL 32399-1650
Miles Knight	So. Carolina Forestry Comm.	P.O. Box 21707, Columbia, SC 29221
The subcommittee will be working with the USFS Director of Fire & Aviation and his staff:		
Jose Cruz	USDA Forest Service	P.O. Box 96090, Washington, DC 20090-6090
The subcommittee will also be working with a representative from the U.S. Dept. of Interior:		
Gardner Ferry	USDI	3833 So. Development Ave., Boise, ID 83705-5354