"What Do We Do Now, Ollie?"[1]

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Abstract: A personal overview of why California is suffering billion-dollar-per-year costs and losses from wildland fire is presented. Two primary and ten supplemental factors contribute to the huge losses. The primary factors are lack of planning effectiveness and lack of adequate fuels management on a sustained basis. Supplemental factors target organizational and political weaknesses that contribute to the destructive consequences of the primary factors. Correction or elimination of the dozen factors can significantly reduce costs and losses in the future. Actions to make the needed corrections are suggested.

"What do we do now, Ollie?" is an expression that means "something has gone wrong"—i.e., plans have gone awry, a procedure has failed, expected outcomes are not happening. A classic example is about two piano movers who are trying to get a heavy piano up to a second–story apartment on a flight of exterior stairs. They push, pull, strain, sweat, and get the piano to the top with great difficulty. As they rest and congratulate each other on a job well done, the piano begins to slip away. It bumps down the stairs and rolls into the street where it is struck by a passing truck and totally destroyed. That is when one mover says to the other, "What do we do now, Ollie?"

California fire agencies, planners, and others need to ask that question of themselves in relation to the State's wildland-structural fire problems.

Hard Work

California fire agencies have struggled for more than 40 years to develop the best wildland fire suppression capabilities in the world. When needed, they can activate more aircraft than many nations have in their military arsenals. The combined agencies can mobilize 20,000 firefighters with equipment and support in 72 hours or less. The agencies have a superior organizational structure in the Incident Command System, sophisticated communications, and effective multiagency coordination. And, they have consistently used these capabilities to achieve a 97 percent success ratio: only about 3 percent of all fires do excessive damage.

California land-use planning law and planning procedures have also matured over time. Slowly, but surely, the State's planning process has gotten more thorough and sophisticated. In 1971, the State upgraded standards for local governments' General Plans to improve future growth and development decisions. Also in the early 1970's, passage of the Subdivision Map Act and the California Environmental Quality Act (CEQA) offered increased opportunities for local control over project design. In 1980, General Plan Safety Elements were required to include wildland fire concerns. Since about 1987, a number of counties and some cities have refined their wildland fire safety requirements to some degree.

Hard Questions

Why then has the State continued to suffer billion dollar costs and losses annually from wildfire since 1985? Why, before the Northridge earthquake event of January 17, 1994, had the total costs and losses from wildland fire exceeded those of all the earthquakes in the State since 1934? Why has the problem gotten worse instead of better since 1950? Why has each fire season since 1987 been declared "the worst" in California's history?

Most people's answers to these questions would focus on factors such as "weather," "population growth," "development," or "politics"—which are all valid reasons, but they are also the easy answers. They only summarize categories of real causes, they do not define them.

Hard Answers

The hard answers involve fundamental cause-and-effect relationships and can be divided into two major categories: (1) lack of effective wildland land-use planning, and (2) lack of adequate fuels management on a sustained basis. Land and fire managers, planning experts, and others may argue that they deserve credit rather than criticism in these endeavors, especially because of all their positive efforts. The magnitude and pervasive nature of wildland fire losses, however, clearly indicate that efforts to date have been inadequate. The land and the people still suffer beyond acceptable limits. Why?

Lack of Effective Planning

California planning law has not been thoroughly understood and has never been assertively pursued by fire agencies. No wonder they are frequently frustrated by local government approvals of unsafe developments. Local planners have not assimilated nor institutionalized the fundamentals of fire behavior and suppression requirements. No wonder

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they have supported project after project in high-risk areas without adequate mitigation. Although the fire and planning cultures have increased their interactions over the past decade, they still have not communicated with each other about the fundamental requirements of their professions. There has not been much trading of skills and knowledge in the areas that could significantly improve fire safety.

Fire Weaknesses

In the past, fire agencies consistently set forth their requirements for mitigating fires at the end of the planning process, rather than at the beginning. The power of the General Plan and its requirements has remained relatively unknown and drastically underutilized by the fire community. Thus, instead of promulgating one set of comprehensive standards in the General Plan that would henceforth be applied to all projects, the agencies have placed themselves in the position of trying to achieve mitigation on one project after another—much work for low rewards.

Perhaps the most damaging omission, and the largest contributor to ineffective planning on the part of fire agencies, has been the failure to plan on a strategic basis. Every entry-level firefighter knows that fire does not distinguish between project or jurisdictional boundaries, yet that is where protection planning has stopped. *Detailed* protection planning has not been done on a total fire environment basis covering an entire watershed or jurisdiction. Thus, even relatively well-mitigated developments in high-risk areas have remained vulnerable. On major fires in the wildland-structural fire environment, Incident Commanders are constrained by the past planning failures and omissions of others. Suppression forces have little, if any, strategic initiatives in developed areas. The vegetated areas between developments are "second priority" for force assignments, and the fire moves on, only to threaten another development. Firefighting is characterized by one tactical move after another, some of which work, and some of which do not.

The wildland-structural fire situation that California has experienced during the past decades will continue to worsen unless fire agencies regain suppression initiative through implementation of strategic fire planning.

Planning Weaknesses

Local and State land-use planning in the United States has always been powerfully influenced by our political system. Elected officials, not planners, make final decisions about development. If professional planners had been "masters of their fate" during the past 40 years, things might be better today in the wildland-structural fire situation. But planners only recommend, they only propose, and every action is subject to approval of at least one elected body. Given that caveat, the professional planning culture has still shown weaknesses in wildland fire safety.

Because comprehensive, area-wide, strategic fire input that addresses overall fire potential has not been developed, planning has always been done on a case-by-case basis. A project is approved here, another there. Fire concerns and mitigation requirements have been limited to the project areas. External factors (e.g., fuels, slope, aspect, fire behavior) have not been considered. Because of 50 years of such practice, California's wildlands have become a mix of flammable vegetation and structures. This case-by-case process has often been called "ad hoc planning," meaning that no coherent overall plan exists, resulting in the failure to consider a project's relationship to its whole environment.

Wildland planning has also been negatively influenced by the urban bias that is ingrained in planners and the planning process. Although the wildland-structural fire problem began to surface more than 40 years ago, only recently has professional curriculum included the wildland issues that concern California. As late as 1990, no college or university in the nation offered a degree in wildland planning. Thus, the planning process has been overseen for decades by people whose basic training and process orientation was urban-oriented. Compounding this situation is the fact that legislators who pass laws, judges who interpret those laws, and elected officials who administer them have also traditionally been influenced by urban rather than wildland concerns.

The urban bias has resulted in thousands of subdivisions and major developments with roads on the inside and structures on the outside of the project (if planning had been more cognizant of wildland fire, roads would have been placed around developments to serve as fuel-breaks). The bias has brought perhaps 50,000 cul-de-sacs in wildland subdivisions, with only a handful suitable for helicopter operations. Power and telephone lines have been routinely planned over or alongside cul-de-sacs, preventing their possible use as emergency landing sites. Water supply facilities have not been included in their construction. One half-million miles of roads may not be capable of carrying emergency response and evacuation traffic at the same time. And, to add to that problem, fire hydrants (where feasible) have been placed at curbside just as they have been since Boston and New York began installing them in the 1830's. This requires engines and water tenders to block the very roads suppression forces and evacuees need to keep clear.

Retrofitting all of these consequences of urban bias may not be possible. However, California will continue to experience significant growth in the wildlands, and it is imperative that future wildland fire safety needs are emphasized so that they outrank urban traditions in planning.

Lack of Effective Fuels Management

The current wildland-structural fire situation has been negatively influenced by the lack of effective fuels management activities. The most destructive fires in California history are those characterized by the presence of structures

intermixed with high volumes of vegetative fuels. From a simplistic view, it can be argued that "if the fuels were not there, the fire would not be there." From a more realistic view, vegetation exacerbates the problem even in cases where structures serve as their own fuel supply. With fire jumping from roof to roof and from house to house, vegetative combustion creates smoke, radiated heat, firebrands, and safety hazards that hamper suppression. Why are the fuels there?

Project Funding

The management of vegetative fuels to achieve fire protection, wildlife habitat, water production, and esthetic values has been a "step-child" in Federal, State, and local agencies for decades.

At all government levels budget allowances for fuels programs tend to be allocated after supression needs are satisfied. Sources of funding are fragmented. Some dollars come from one pocket, some from another. At the local level, bond issues, ordinances, or other special efforts may be required to authorize and fund fuel reduction programs. Many times only the initial projects are funded. Maintenance financing frequently diminishes over time, and once-effective fuels modification areas return to high hazard status.

Both the USDA Forest Service and the California Department of Forestry and Fire Protection (CDF) have missed opportunities to improve this situation. Since the mid-1970's, it has been possible to utilize General Plan requirements, the Subdivision Map Act, and CEQA to require developers to fund fuel treatments. These legal tools could have, and should have, been used to zone hazardous parts of private lands for permanent fuel breaks, greenbelts, fuel reduction, and other mitigation requirements. Some critical National Forest lands could have been included.

Landowners and developers could have been funding construction and maintenance of these improvements for the past 20 years. But that did not happen. Failure to use these opportunities may have been caused by lack of knowledge, lack of organizational purpose, or other factors. Whatever the causes, California now has thousands of developments that are more vulnerable than they need be. Natural resources on thousands of acres of National Forest land adjacent to developed areas are at high risk because the Forest Service missed opportunities to have fuels reduced by private enterprise.These conditions can be reversed to a significant degree if the wildland fire agencies begin to assertively pursue all the legal options available for fuels management.

Contributing Influences

Low levels of fuels management funding and missed opportunities are not the only reasons that California is vulnerable. A more intensive review of fuels management history shows that other forces were also at work.

Diffusion of Responsibility

Who is responsible for fuel reduction for fire protection? The answer varies around the State. CDF is primarily responsible for about 33 million acres of privately owned land in 56 of the State's 58 counties. These are classified as "State Responsibility Area" lands (SRA). SRA lands are dotted with more than a thousand rural fire districts, incorporated areas, and other land classifications described as "Local Responsibility Area" (LRA). CDF contracts with a few counties to protect SRA lands within their jurisdictions. They also contract to manage various levels of dispatch and supervision of local fire districts in other counties. The USDA Forest Service contracts with CDF to protect private lands within National Forests, in return for CDF protection of more than a million acres of National Forest land in other areas. (The term "protect" in this context means suppression, not management.) Most counties assume that their compliance with Public Resources Code 4290 (the "Defensible Space" law) fulfills their responsibility for fuel modification. Too many local fire districts feel that their fire protection responsibilities are limited to the structural component of wildland fire, the "protection of life and property," and that the vegetative component is CDF's problem. CDF acceptance for the responsibility varies, depending largely upon the orientation of the ranger in charge of the area involved. At best, the state-wide diffusion of responsibility for fuel modification has led to confusion in budgets, program actions, and serious gaps in performance. At worst, it escalates damages from the conflagrations that are becoming commonplace.

Liability

Liability has hampered attempts at fuel modification for fire protection. In the 1950's and 1960's, CDF had active prescribed burning programs for range improvement and brushland conversion. Landowners were an important part of the programs, providing equipment and work that materially reduced CDF costs. In the 1970's several of the burns escaped and caused minor to moderate damage on adjacent lands. Lawyers and insurance companies found new career opportunities. Insurance for the burns became prohibitive for landowners, and lawsuits became serious burdens to both CDF and their private cooperators. To a lesser but still significant level, USDA Forest Service activities were hampered by the same forces.

Environmental Requirements

The implementation of the California Environmental Quality Act (CEQA) brought new analytic and administrative workloads to fuel managers at the State and local levels. In its first decade of application (1971-81) there were few CEQA guidelines for fuel modification projects. Preparation of environmental documents went forward on a trial-and- error basis. The error rate was high. Lawyers found more career opportunities, and environmental groups found new crusades. Fuel managers found no increase in budgets, but much higher administrative costs and time requirements. In some cases it

cost more in time and money to justify a project than it would to implement it. Frustrations mounted, motivation dropped, and production declined. Implementation of air quality controls acted to further reduce production and raise costs.

Easy Money

While it became more difficult to efficiently conduct fuel treatments, the availability of "emergency funds" did not diminish. The USDA Forest Service, the CDF, and some local fire departments had almost unlimited suppression funds. "You light them, we will fight them" became a popular firefighter slogan in the 1970's. Occasionally the United States Congress or the State legislature would complain about excessive suppression funds and require the agencies to repay part of the costs from other programs. But this did not happen often, it did not hurt very much, and it did not last very long. Following years usually saw even more emergency expenditures. Intelligent fire managers began to contrast the grief of modifying fuels with the glories and recognition of valiant suppression efforts. Fuels management lost.

Other Dynamics

The State's wildland-structural fire problem is analogous to rivers that gather volume and force from tributaries as they flow: over time, more contributory events added strength and destructive power to wildland fire. Some of the most important dynamics that supplemented the increases in destruction can be identified.

Hands-Off Local Decisions

For at least 40 years, the CDF and Forest Service made conscious (albeit unwritten) organizational efforts to avoid influence on local matters. However well intended these policies were, the result has been the profusion of less-than-safe developments in wildlands. Since about 1980 the agency comment process has improved, and a level of review on development proposals is now more routine. This improvement, however, has more to do with CEQA compliance than with agency commitment to assure fire safety. Federal and State fire inputs to local governments are still weak. With the possible exception of Public Resources Code 4290, inputs have been of a "comment" or "advisory" nature.

Failure to Pursue Legal Avenues for Better Protection

No local decision to allow less-than-safe development has been legally protested, appealed, or contested in court by fire agencies. Other Federal and State agencies have used the courts and the legislature to achieve specific safety standards at the local government level. The State Seismic Safety Commission had precise earthquake safety standards enacted into law. The State Water Resources Board and the Federal Emergency Management Agency did the same for flood plain planning and zoning. The State Department of Fish and Game has taken local governments to court to force compliance with wildlife habitat needs. Beyond the recent effort to pass the "defensible space" law, neither CDF nor the USDA Forest Service has used these avenues to improve fire protection.

Modified Mandates

The original organizational purpose for the wildland fire agencies was the protection of watershed lands and natural resources. Pressures from development, population, politics, and the honorable humanitarian desires to save lives and property have forced departures from the original purpose. The predominately tactical response (priority on structure protection) that is now commonplace in firefighting is inefficient. It may actually be contributing to higher losses in the long run.

Consider Nevada County's "49'er" fire of 1988. Total acres burned were 35,300. More than 500 structures were destroyed. CDF estimates indicate that the fire could have been controlled at about 7,000 acres (20 percent of the final total) if structures had not taken suppression priority. Many of the lost structures would have been saved if historical wildland suppression strategies had been used. Study of the "Stanislaus Complex" fires (Tuolumne County, 1987) and the "Fountain" fire (Shasta County, 1992) support this conclusion. In those cases, more than 100 million dollars in natural resources and long-term public revenues were lost because suppression resources were assigned to protect less than 1,000 structures.

Real Costs Not Documented

When elected officials approve developments their primary focus is on economic growth, tax revenues, and maximizing profit in the development and construction industries.

When fire agencies add up costs and losses they tend to amount to "negative growth."

A significant differential exists between hoped-for revenues, calculated costs, and real costs. Calculated costs show up in official records and media reports. Citizens and officials tend to accept that information. The real costs are not shown, and that leads to invalid assumptions on the part of all concerned.

A multitude of real costs has been ignored for decades. Whole towns have been shut down for days, and job holders have been delayed or prevented from getting to work. Vacationers have been diverted from their destinations. Motels, restaurants, and gas stations have lost income. Schools have been unable to conduct classes. State and local governments have spent months or years simply trying to return operations to the point they were at before conflagration struck. They have lost efficiency and public service opportunities during recovery. The "Cleveland" fire (El Dorado County, 1992) shut down the interstate highway from central California to Reno, Nevada. After several days of highway closure the Governor of Nevada complained to California's Governor that Nevada gambling enterprises were losing 8 million dollars per day because of travel restrictions. Commercial timber losses are calculated on stumpage value, not actual net return possible to local government, primary,

and secondary industry. Soil and erosion costs are estimated, not validated after the fact; fire's costs for flood prevention, control, and recovery are rarely, if ever, fully documented.

These real costs (and others) were not significant 40 years ago. They are today. Full documentation of total losses could change public and governmental perspectives about fire safety. It would certainly improve cost-benefit ratios for fuel modification projects. Local officials would find it harder to justify reduced mitigation requirements on new development in the name of "growth."

The Next Questions

The next questions should be: What is the worth of the best suppression organization in the world if costs and losses continue to increase? What is the worth of planning if it does not reduce billion-dollar-per-year losses? Must California continue to suffer such unnecessary costs?

We thus return to our original question: "What do we do now, Ollie?"

Recommendations

- The Governor's Office of Planning and Research should arrange a series of "Summit Meetings" between top-level fire, fuel management, and planning professionals. Primary goals should be to increase effective communication between the disciplines, design safer planning and fire mitigation procedures, and achieve higher standards of development in vegetated areas.
- The University of California and State universities should cooperate to increase the wildland fire education requirements in all land-use planning degree programs. Every extension and continuing education course for planners should include a wildland fire safety and fuel management component.
- The University of California should cooperate with Federal, State, and local fire agencies to define and publicize the real costs of fire. The effort should also refine cost-benefit ratios for fuel management programs.
- The Governor's Office of Emergency Services should analyze the relative costs and losses of tactical versus strategic suppression efforts after all major fires. Objectives would be to define social and economic outcomes of current structure protection practices compared to fuel modification and strategic alternatives. Results should be included in all State Hazard Mitigation Reports.
- Finally, the USDA Forest Service, California Department of Forestry, State Office of Emergency Services, and the State Fire Marshall should sponsor a cooperative initiative for a Statewide "Strategic Fuel Modification Program" with the primary objective to reduce hazardous fuel volumes and future fire intensities on critical lands, regardless of ownership or jurisdictional boundaries. The secondary objective should be to provide opportunities for productive work for currently nonproductive human resources, such as inmates from overcrowded prisons, homeless, welfare recipients, and "displaced" timber industry workers.

New Thinking for a New Century

This paper has shown many of the ways in which old habits and old thinking have led the State into its present situation. Policies and practices that continue old thinking will result only in more of the same. That does not have to be the case. California does not have to continue suffering exorbitant costs and losses from wildland fire.

As the year 2000 approaches, fire agencies, planners, educators and decision-makers at all government levels must dedicate themselves to making positive change in the wildland-structural fire situation. Some of that change can happen by taking corrective action on the weaknesses addressed in this analysis. Recommendations made here can be implemented before the turn of the century.