

2007-2008 MARIN COUNTY CIVIL GRAND JURY

MARIN ON FIRE!

Not if, but when.



San Rafael Hill Fire June 2007

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SUMMARY

Marin residents are exposed to unnecessary fire risk due to widespread lack of compliance with, and enforcement of, residential vegetation management codes. This conclusion is based on interviews with fire professionals, research, and observation supported by photographs.

The 2002-03 Marin County Civil Grand Jury issued a report titled *Wildfires—Partners in Prevention*. An important finding and related recommendation addressed the need for increased enforcement of vegetation management codes, a key component in creating and maintaining defensible space (flammable vegetation trimmed or cleared). Not much has changed since that report was issued.

Firefighters from Marin County were among those called in to help battle the 2007 Angora Fire in the Lake Tahoe Basin. One of those on the front line told the present Marin County Civil Grand Jury that two-thirds of the houses with defensible space were saved.

This Grand Jury asked fire professionals throughout the county, "Will there be another wildfire in Marin in the next 10 years?" Each answered "yes," unequivocally. So, the real issue is: "Not if, but when."



Novato: Dry Grass on Hillside September 2007



San Rafael: Lush, fire-prone vegetation November 2007

While a number of elements contribute to wildfires, including topography, weather and fuel, this report concentrates on the one area where residents of Marin have the most control: careful maintenance of vegetation (fuel) to create defensible space around their homes.

The Grand Jury finds:

- Defensible space problems are much more widespread and difficult now, due to vegetation growth in the county.
- Vegetation management requires active homeowner participation. However, it is
 costly to properly create and maintain defensible space. Public attitudes are
 apathetic, and compliance is low.
- While stricter fire codes have been adopted recently, they apply to new
 developments or major home remodels—not most homeowners. Furthermore,
 codes and educational materials vary by fire jurisdiction, making them hard to
 interpret.
- Resource constraints make "best practice" enforcement difficult. Citations are almost never used.
- The San Rafael Fire Department adopted a novel vegetation management approach in 2007, combining a simple, clear code with an aggressive three-year enforcement plan. Initial indications are that homeowner response is positive and vegetation risk is being reduced.
- More resources and political will are required to achieve significant progress in enforcing vegetation management and defensible space codes.

The Grand Jury recommends:

- Vegetation management and defensible space codes be updated by June 30, 2009, to ensure they are enforceable and well understood by the public.
- Fire jurisdictions develop plans with compliance goals by June 30, 2009, for enforcement of vegetation management and defensible space codes.

The Grand Jury hopes to alert both the community-at-large and the boards responsible for managing our fire jurisdictions about the actual and unnecessarily unsafe conditions in our neighborhoods. Greater community awareness and understanding and stricter enforcement can be achieved. In the process, property—and maybe even lives—can be saved.

BACKGROUND

During the disastrous 2007 San Diego wildfire, Marin dispatched men and equipment to Southern California to help. A hiker above one of our wooded neighborhoods commented to a local fire professional, "Thank God that couldn't happen here." Perhaps our hiker friend doesn't think a major fire is possible in Marin, because we are bounded on three sides by water. But, it **has** happened.

A short wildfire history for Marin County:

- 1881: 65,000 acres burned
- 1891: 12,000 acres burned
- 1894: Mill Valley to the Pacific Ocean burned
- 1904: Fairfax to Stinson Beach burned
- 1923: Ignacio to Fairfax burned
- 1929: Mill Valley to top of Mt. Tamalpais burned
- 1945: Kent Lake to Bolinas burned
- 1995: Mt. Vision 12,000 acres and 48 homes lost near Inverness

In the United States last year, wildfires scorched an area four times the size of Yellowstone National Park, destroying more than 5,200 buildings. One of those that hit closest to home was the Angora Fire at South Lake Tahoe in June. It covered 3,100 acres, destroyed over 300 homes and commercial structures, at a loss estimated at nearly \$150 million. Who can forget the 1991 Oakland hills fire where 25 lives and nearly 3,000 homes were lost? Economic damage from that fire was estimated at \$1.5 billion.

There are currently 17 separate fire jurisdictions in Marin, each with a long list of responsibilities. They include fire suppression, medical emergency, search and rescue, hazardous materials response, evacuation planning, non-residential vegetation management, including controlled burns, fire breaks, open space clearing, training, specialized rescue and vehicle extraction, and more. Residential vegetation management is a small but important part. This Grand Jury did not attempt to evaluate or prioritize each responsibility. Priorities vary from one jurisdiction to the next, and each must determine its own. But prudent management of residential vegetation is both practical and achievable.

What is defensible space?

Defensible space does not eliminate risk, but it significantly reduces the risk of structure loss in a wildfire. Blowing embers, sometimes miles from a burning fire, land in flammable vegetation, and on roofs and decks, igniting structures. Defensible space reduces the fuel and allows for easier evaluation, access and fire suppression. Firefighters are unanimous in pointing to the importance of defensible space around homes. What's not unanimous is the definition. What is defensible space?

There is no clear-cut definition, or national or statewide standard, and no consistency from one code to the next. In California, defensible space of 100 feet is probably the most common. In Marin, the City of San Rafael has a clear definition of defensible space:

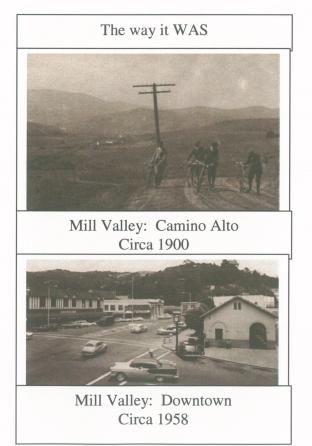
An area, either natural or manmade, where material capable of causing a fire to spread has been treated, cleared, reduced, or changed to act as a barrier between an advancing wildland fire and resources or lives at risk.

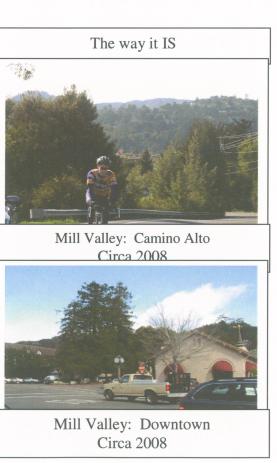
In practice, defensible space is generally defined as an area of 100 feet or more around a structure in which combustible brush and dead or dry vegetation have been properly managed to Fire Department requirements.

Costs and attitudes contribute to the problem

Homeowners: The problem is very large and difficult. Unlike most Fire Department responsibilities, residential vegetation management requires the active participation of property owners every year. The problem compounds as vegetation either grows continuously or dies.

In 1900, as a result of natural fires and grazing, Marin County had a lot less vegetation, as demonstrated by historical photos. The contrast is evident at the same locations pictured today.





The effort and/or cost to properly create defensible space around structures and then to maintain it year after year is large, and not undertaken by a majority of homeowners. Despite significant, ongoing education activities of fire jurisdictions, many homeowners remain unaware of their noncompliance and, if aware, are not motivated. Who could blame them since noncompliance is common?

Fire Jurisdictions: Different fire jurisdictions expend varying but usually insufficient resources on residential inspections, notices and citations to make any major changes. Holding steady or making small improvements is the norm.

METHODOLOGY

The 2007-08 Marin County Civil Grand Jury interviewed representatives from the following:

- Marin County Fire Department
- San Rafael Fire Department
- Mill Valley Fire Department
- Novato Fire Protection District
- Tiburon Belvedere Fire Protection District
- Retired Marin-based Fire Chiefs
- FIRESafe Marin
- Marin County Board of Supervisors
- Contra Costa Fire Protection District

The interviews focused on residential vegetation management codes and enforcement practices, as well as attitudes and existing conditions. The Grand Jury also reviewed state and local codes and homeowner fire education materials.

One official in charge of enforcing vegetation management policies took Grand Jurors on an inspection tour of one of the neighborhoods in his community, meeting with individual homeowners in the juror's presence to review conditions and discuss steps necessary for compliance.

The Grand Jury also toured a number of neighborhoods on its own, looking for what appeared to us to be particularly egregious overgrowth. It was, sadly, easy to find.



Tiburon: Sea of Juniper November 2007



Ross: Cypress & Shingles February 2008

In addition, all 17 jurisdictions were asked in a memo from the Grand Jury to provide specific code and enforcement statistics and information. (See **Appendix A**.)

DISCUSSION

Homeowners can only reduce risk by reducing FUEL

Three common conditions play a major role in wildfires:

- Topography—steep hills
- Weather—hot, dry winds (in Marin, 20 or so days per year)
- Fuel—plentiful amounts of it

Of the three, we only have control over fuel. In simplest terms, fuel is defined as anything that burns. In wildfires, this is principally vegetation, but also includes structures.

Marin is well known for a large number of homes on wooded hillsides. For many of us it is one of the reasons we live here. Copious vegetation is fashionable. Look in any home or garden magazine and you'll find photos of lush vegetation, often dangerously close to decks and wooden structures.

Current resource allocation within fire jurisdictions precludes large-scale one-on-one homeowner interaction and property-specific advice. Well-meaning homeowners left to their own devices without one-on-one advice from fire professionals usually do not end up in compliance with local jurisdiction codes. Too often they don't even think about it.

New stricter fire codes don't impact most homeowners

Each jurisdiction has its own codes and educational material for homeowners. There has been much publicity on this front because adoption of new Wildland Urban Interface (WUI) codes accelerated during 2007. WUI is generally defined as the area where structures and other human development meet or intermingle with undeveloped wildland (a dangerous combination). The new WUI codes recognize the heightened fire danger in these areas and require stricter building and initial vegetation conditions.

Defining the geographic boundary of a WUI in a municipality is the responsibility of the local fire jurisdiction. Some publish WUI maps on their websites. It is not a stretch to say that much of Marin County is in a WUI.

These new WUI codes have no impact on vegetation management for the vast majority of Marin property owners. They deal with new construction or major remodel projects. Therefore, for most of us, being in a WUI only means we will receive a little more inspection attention, but the specific codes are unchanged.

"Flammable Vegetation" in the codes and homeowner educational material varies by jurisdiction

At first glance, all codes appear similar. All make restrictions on the "flammable vegetation" near structures. But, as is the case with so many key terms bandied about by different jurisdictions, the definition of "flammable vegetation" in the codes does not mean what most people might think.

Based on common definitions one could be excused for thinking that flammable vegetation means vegetation that could burn, that is to say, all vegetation. Wrong.

In San Rafael, for instance, it means whatever the city council says it means, which at present is a list of 16 plants, many of which you will not find in a Marin yard. (See **Appendix B**.) This is the narrowest definition, but does include juniper and bamboo, two of the most flammable, and in the case of juniper, most common plants.

In the Novato Fire Protection District, flammable vegetation means "pyrophytic" vegetation, a term it defines by listings in a publication from a University of California advisory group which helps protect California's natural resources. (See **Bibliography**.) These plants are considered to be the most fire prone. They "ignite readily and burn intensely." This list includes junipers, cedars, pines, eucalyptus, fir, manzanita, acacia, bay laurel and many more.

In the balance of jurisdictions flammable vegetation is less well defined. In general you could say "it depends." The conditions which result in "high risk" classification or

treatment as "flammable vegetation" can vary. In addition to pyrophytic characteristics, these can include:

Condition of plant: hydrated (wet is good); amount of dead wood (none is good); and size (small is good).

Slope: steepness (flat is good); direction (north is good); adjacent vegetation (less is good); distance from structure (far is good).

And on and on. These issues are all important to understanding fire risk. However, they make the job of a homeowner confusing without professional guidance, and complicate the job of enforcement professionals.



Woodacre: near Marin fire hqtrs. February 2008



Mill Valley February 2008

In the end, the interpretation of the codes is based on the code language modified by the common-sense application of basic principles of fire risk and the practical ability to achieve property owner support. In order for a property owner to know how to comply with the codes, a one-on-one meeting with an inspector who has access to the whole property is best. This process is expensive and seldom used.

There is a curious but telling absence of discussion about tree management in all jurisdictions. It's mostly limited to advice on trimming lower limbs and cleaning out the deadwood and perhaps trimming under eaves. Otherwise, Marin is not yet ready to discuss the removal of healthy trees, except eucalyptus, for vegetation management purposes. Maybe after the next big fire. The prevailing attitude seems to be that removing trees would be both too costly and unpopular. The combination of high cost and public attitudes takes trees off the table, for now.

Apathetic public attitudes

Several fire professionals used "apathetic" to describe the approach of homeowners when it comes to creating and properly maintaining the defensible space around their homes.

FIRE Safe Marin is a nonprofit organization dedicated to improving fire safety and readiness in the county. According to FIRE Safe, homeowners give many reasons for not creating defensible space. The most common are:

- I didn't know I was supposed to
- It won't happen to me
- I like my privacy
- I don't care
- I don't have the time/money
- It's not my responsibility, I pay taxes
- Insurance will cover a loss
- It's wrong to cut trees
- I can't get rid of the waste
- I don't want to do the work

The costs for homeowners in either time or money to create defensible space are often very large. Several thousand dollars is not an unusual amount to initially create a defensible space, even without tree removal. Many hundreds of dollars annually is common for ongoing maintenance. Finding a solution for owners who lack the resources to make their property more fire-safe is an important challenge.

The concept of "home as castle" is firmly embedded in the Fourth Amendment and generally in our culture. As a consequence, fire inspectors do NOT enter a property without owner permission, absent an emergency. A court order is necessary if a homeowner denies permission. This option is seldom exercised. In addition, the idea that any public official can dictate how to manage a private yard is offensive to some. All of this inhibits meaningful interaction between homeowners and fire professionals.

There are many reasons homeowners should want to create defensible space:

- Defensible space decreases the odds that a structure will burn.
- Defensible space increases the odds of receiving protection. Firefighters will deploy their manpower and equipment where they will provide the most benefit.1
- Firefighters are trained to lookout for their own safety first, increasing the chances for a house with defensible space to receive protection.

April 1, 2008

¹ A Marin professional who fought in San Diego in 2007 said, "As difficult as it was, we drove by houses that homeowners had neglected where ... vegetation was growing right up to the house and driveways were overgrown. We selected those structures where the homeowners had taken the time to create defensible space for us."

- Property values can increase with good defensible space. High-value real estate is more likely to have well-manicured and good defensible space than lower-priced properties.
- In addition to increasing the odds that your own structure will survive, you also increase your neighbors' chances.
- Insurance companies are increasingly wary of WUI properties and sometimes review properties on an individual basis before issuing policies. WUI existence is a disclosable item in real estate transactions.

Low compliance rates

Not surprisingly, vegetation code compliance estimates vary. For example, Kent Woodlands is generally considered to have one of the more successful programs. A fire official reported that code compliance there ranges from 80 percent in some neighborhoods to less than 50 percent in others.

Based on our admittedly unscientific survey, driving through many random neighborhoods in several jurisdictions, this Grand Jury believes the lower compliance estimates are closer to the norm.



Kent Woodlands February 2008



Kentfield February 2008

Current low code compliance conditions are not acceptable, and nobody claims they are. The common theme is: "They are the best that can be achieved with available resources."

Resource constraints make enforcement difficult

In answers to the Grand Jury memo (**Appendix A**), all jurisdictions except San Rafael indicated that the responsibility for code enforcement was distributed among staff, with no one person working full-time on this problem.

All jurisdictions interviewed report almost 100 percent cooperation of noncompliant homeowners when given a written notice, followed up by a visit from an inspector. This process produces more benefit for the same resources than legal pursuit of non-cooperative homeowners.

There are lots of properties that need attention, and when property owners are made aware of the situation, most want to cooperate. But most have received only mailers or door hangers. Citations are almost never used.

Several factors create problems that might be considered overwhelming:

- Code non-compliance is high.
- Resources for inspection and code enforcement are limited.
- Homeowner costs for code compliance can be extremely high.

An ideal or "best practice" program would engage each homeowner and a fire professional in a property-specific walk around all sides of a home. Where necessary, it would result in written recommendations for risk reduction, written notice of code violations, and most importantly, an explanation of why these conditions are dangerous.

Such a best practice approach would likely involve about four hours of departmental inspection and administrative time. At an estimated \$75 per hour, that's \$300 per property. If you consider involving only the roughly 30,000 WUI properties in Marin, this would cost \$9 million (one time) in very round numbers. And, that's without including homeowner costs, which very often would be considerable.

As a practical matter, while the "ideal" program seems logical, it would be a hard sell. Given current costs and code non-compliance, as well as other priorities, nobody seems willing to enter the battle.

Most jurisdictions seldom conduct on-site inspections with the property owner present; the primary exception is when inspections are requested by the owner. In other words, preaching to the choir.

Normally inspections are what the professionals call "through the windshield," cruising around a neighborhood, looking for the most obvious and seemingly dangerous violations of vegetation management codes. This has serious limitations. You don't get up close and personal, don't really look under the eaves, and you have no idea what's in the back or side yards. In addition, there is no communication or education for the homeowner.

Some jurisdictions, Novato in particular, perform almost no inspections except those resulting from complaints and owner requests.

The San Rafael experiment: A potential model

Among all the fire jurisdictions in Marin, only San Rafael has a program aimed at widespread compliance with simple and clear vegetation management codes, as well as a detailed plan for making it happen. While not adopting a process which involves one-on-one interaction with each homeowner, San Rafael's plan to invest about one hour per home over a three-year period exceeds the commitment of all other Marin jurisdictions.

This three-year project began in August 2007 and is not far enough along to draw firm conclusions. Key elements of the San Rafael plan include:

- Serious buy-in from the City Council which budgeted \$250,000 for clearing and maintaining vegetation on city property adjacent to residences, both open space and parks. This is in addition to the staff required to interact with property owners.
- An unusual code which defines "flammable vegetation" very narrowly. This simple change alters the whole compliance/enforcement equation. It makes it easier to comply, easier to explain and enforce. It is a logical first step, but only a first step to engage *all* property owners. It does attack juniper, the most flammable plant in town.
- The plan for neighborhood-by-neighborhood focus over a three-year period adds both predictability and commitment to achieving the compliance goal of 100 percent, and removes the "why me?" complaint from notice recipients. Also, fire department costs are spread out.

The program targets 16 WUI neighborhoods over this three-year period. In each neighborhood, there will be a period of educational mailings and meetings followed by an inspection of every home.

For violators, San Rafael has taken an aggressive approach. The homeowner receives a two-page letter "Notice and Order" from the Fire Captain citing the code, listing the required corrections and setting a re-inspection date. To this are attached sections of the code (eight pages) which include, among other things, portions on Notice of Hearing, Administrative Civil Penalties, Right of Judicial Review and Code Enforcement Assessment Lien.

The first neighborhood has not yet reached the hearing phase for any of its properties. The second neighborhood is still in the inspection phase. The third targeted neighborhood is in the educational and "get acquainted" phase.

Early indications are very positive. A large number of notices, 160 to date, or 20 percent of 800 inspected homes, have been issued in the first neighborhood. Cooperation is the norm. At this pace, the three-year plan for the completion of all 16 neighborhoods is achievable but not assured. Front-line firefighters in engine companies added inspection

responsibility in March 2008, improving the odds that the 100 percent compliance goal can be achieved.

There is a sense of "critical mass" that is creating momentum. Property owners are responding favorably. For instance, the most recently added neighborhood, Fairhills, has asked for and received two meetings to further expand on homeowner education and understanding. A homeowner "pull" has developed where now some homeowners want their neighborhoods to be engaged sooner rather than later.

Several assumptions are being tested in San Rafael:

- That a single inspector with a support staff and help from the engine companies can keep up with the workload of this program.
- That the Administrative Hearing process for difficult property situations, as planned, will be efficient enough to proceed at a reasonable pace.
- That homeowners will be cooperative and generally support this process.
- That there will be considerable and noticeably improved understanding and compliance with vegetation management and defensible space codes.

The stage will be set for Phase Two starting in year four. This phase can ratchet up the standards: juniper and bamboo prohibition out to 100-feet is pre-announced. There are other options, such as expanding the list of "flammable vegetation" beyond the current list of 16.

The politics: Need for board action

Every fire jurisdiction in Marin is responsible to an elected board: City, County or Fire Protection District. These elected boards respond to the perceived wishes of their constituents. Obviously, the vegetation management codes have not been a top-of-mind issue. Last year's disastrous wildfires in California should teach us otherwise. We need to heed the warning of fire professionals in every jurisdiction we surveyed: "It will happen here. Not if, but when." It is incumbent upon all of us, as residents of Marin, to make our wishes known, to express our concerns, and to actually do something about it

The governing board of each fire jurisdiction in Marin must ask its Chief and Fire Marshal for an updated assessment of its own vegetation management codes. This assessment would ideally include the applicable code paragraphs, the estimated compliance rates and the enforcement policies and budget.

While 100 percent compliance on all high risk residential parcels in Marin is not realistic, the Chiefs should provide information to their boards on how much money and

manpower would be required to achieve a 90 percent compliance rate within three or four years.

FINDINGS

- **F1**. Compliance with vegetation management codes and the threat of wildland fires in Marin are not top-of-mind public concerns.
- **F2**. Easily identifiable egregious vegetation management code violations exist throughout Marin County.
- **F3.** Homeowners can decrease fire risk by increasing defensible space, which reduces fuel.
- **F4**. A number of municipalities in Marin have made significant changes in building codes for new construction and major remodels. These new Wildland Urban Interface codes have little impact on the vast majority of Marin homeowners.
- **F5**. There is inconsistency in various vegetation management codes throughout the county.
- **F6.** Most vegetation management codes and homeowner educational materials are difficult to interpret and confusing to the layman.
- **F7**. "Best practice" vegetation management policies require fire department access to the whole property in the company of the owner. No jurisdiction has a plan for this.
- **F8**. Not all Marin County fire jurisdictions proactively inspect for vegetation management code compliance without a complaint or owner request.
- **F9.** Resources for fire jurisdiction inspection and enforcement are limited, and homeowner costs for compliance can be extremely high.



Fairfax February 2008



San Anselmo February 2008

- **F10**. The San Rafael Fire Department in August 2007 adopted a novel vegetation management approach, combining a simple and clear code with a specific aggressive three-year enforcement plan.
- **F11.** While it is too early to evaluate long-term results in San Rafael, there are initial indications that homeowner response is positive and vegetation risk is being reduced. If successful, the San Rafael experiment would demonstrate one way to bridge the gap between where we are and full compliance—at costs acceptable to both fire departments and homeowners.
- **F12**. Significant progress in enforcing vegetation management and defensible space codes will require additional resources and/or a change in direction by governing boards.

RECOMMENDATIONS

The Grand Jury recommends that:

- **R1**. Governing boards of all fire jurisdictions in Marin County review and update current vegetation management and defensible space codes and homeowner educational materials to be certain they are realistic, achievable, enforceable and easily understood by the public-at-large. The boards should target completion by June 30, 2009.
- **R2.** All fire jurisdictions develop plans with specific goals for compliance and enforcement of vegetation management and defensible space codes by June 30, 2009.
- **R3**. The City of San Rafael provide quarterly reports to all other fire jurisdictions in Marin on the results of its new aggressive approach to vegetation management.

REQUEST FOR RESPONSES

Pursuant to Penal Code Section 933.05, the Grand Jury requests responses as follows:

From the following governing bodies: **F1** through **F9** and **F12**, **R1** and **R2**.

- Marin County Fire Department
- Bolinas Fire Protection District
- Corte Madera Fire Department
- Inverness Public Utilities District
- Kentfield Fire Protection District
- Larkspur Fire Department
- Marinwood Fire Department
- Mill Valley Fire Department

- Novato Fire Protection District
- Ross Department of Public Safety
- Ross Valley Fire Department
- San Rafael Fire Department
- Sausalito Fire Department
- Sleepy Hollow Fire Protection District
- Southern Marin Fire Protection District
- Stinson Beach Fire Protection District
- Tiburon Fire Protection District

F10 & F11 and R3, the governing body of:

San Rafael Fire Department

The governing bodies indicated above should be aware that the comment or response of the governing body must be conducted in accordance with Penal Code Section 933 (c) and subject to the notice, agenda and open meeting requirements of the Ralph M. Brown Act.

California Penal Code Section 933 (c) states that "...the governing body of the public agency shall comment to the presiding judge on the findings and recommendations pertaining to matters under the control of the governing body." Further, the Ralph M. Brown Act requires that any action of a public entity governing board occur only at a noticed and agendized public meeting.

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Reports issued by the Civil Grand Jury do not identify individuals interviewed. Penal Code Section 929 requires that reports of the Grand Jury not contain the name of any person, or facts leading to the identity of any person who provides information to the Civil Grand Jury. The California State Legislature has stated that it intends the provisions of Penal Code Section 929 prohibiting disclosure of witness identities to encourage full candor in testimony in Civil Grand Jury investigations by protecting the privacy and confidentiality of those who participate in any Civil Grand Jury investigation.

APPENDICES

APPENDIX A



Date:

November 26, 2007

To:

From:

Roberta Robinson, Foreperson Marin County Civil Grand Jury

Re:

VEGETATION MANAGEMENT

We are currently surveying fire agencies in Marin and need from you the following information:

- The codes or ordinances you use governing vegetation management in your jurisdiction. WUI and non-WUI.
- · A copy of your WUI map.
- Your department's policy regarding property inspections and how you handle citizen complaints about vegetation.
- Since 2005, in each year how many inspections have been conducted;
 complaints investigated; non-compliance notices issued; citations issued?
- How many people in your department are involved in inspections and follow through, and what kind of budget do you have for supporting this function?
- Please feel free to provide any additional information that you think useful in understanding your vegetation management code enforcement practices.

If you have any questions regarding this matter, please contact the Grand Juror coordinating this information:

We would appreciate receiving you response by December 15th.

Thanks very much for your assistance.

3501 Civic Center Drive, Room 303, San Rafael, CA 94903 Tel. 415-499-6132

APPENDIX B

(City of San Rafael)

COMBUSTIBLE VEGETATION

High Fire Hazard Native Shrubs				
Black Sage	Chamise/Greasewood	Chaparral Pea	Chinquapin, Giant	
Coyote Brush*	Sagebrush (California)	Scrub Oak (brushy oak)*		

High Fire Hazard (Introduced) Ecological Weeds				
Blackwood Acacia*	Bluegum Eucalyptus*	French Broom*	Gorse*	
Pampas Grass*	Scotch Broom*	Spanish Broom	Bamboo (Bambusa)	
Juniper (Juniperus)				
			*Invasive Species	