



SAN RAFAEL CITY COUNCIL AGENDA REPORT

Department: Fire

**Prepared by: Quinn Gardner, Deputy Director of
Emergency Management and Mary Skramstad,
Wildfire Mitigation Project Manager**

City Manager Approval: _____

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TOPIC: SET PUBLIC HEARING FOR AMENDMENT TO SAN RAFAEL'S BUILDING CODE TO REQUIRE REPLACEMENT OF WOOD ROOFING

SUBJECT: INTRODUCTION OF AN ORDINANCE AMENDING CHAPTERS 12.200 AND 12.255 OF THE SAN RAFAEL MUNICIPAL CODE TO MAKE LOCAL AMENDMENTS TO CALIFORNIA BUILDING CODES TO REQUIRE THAT WOOD ROOFING BE REPLACED BY MAY 31, 2027

RECOMMENDATION:

Pass to print an Ordinance Amending Chapters 12.200 and 12.255 of the San Rafael Municipal Code to Make Local Amendments to California Building Codes to Require that Wood Roofing be Replaced by May 31, 202 and set public hearing on the proposed ordinance for Monday, May 16, 2022.

BACKGROUND Following decades of research, post-fire analysis, and active suppression efforts, the California Department of Forestry and Fire Protection has identified a two-prong approach to reduce the likelihood of building loss or damage due to wildfire. This approach includes reducing risk through landscape changes, commonly called defensible space, and through changes to structures themselves, or what is commonly called home hardening. Many of these strategies are now required for new construction in the Wildland Urban Interface (WUI) or other similar high fire hazard areas. However, few regulations address the built-out environment, which encompasses the vast majority of San Rafael. The City has made great strides in addressing defensible space through the updates to San Rafael Municipal Code ("SRMC") Chapter 4.12 as approved by the City Council on August 3, 2020. However, as called for in the San Rafael Wildfire Prevention and Protection Action Plan (Wildfire Action Plan), items 17 and 18, additional efforts are needed to address home hardening.

Item 18 in the Wildfire Action Plan calls for the elimination of the fire hazard associated with wooden roofs. According to the National Board of Fire Underwriters, the roof is the most common structural fuel bed for ignition by firebrands or embers on a structure. For this reason, materials used to construct a roof are of great importance to protecting the home and other structures from wildfire.

Wooden shingle roofs were identified as the main factor that made fire worse in the official reports of the 1923 Berkeley Fire (National Board of Fire Underwriters 1923; Wilson 1962; Office of the City Manager

FOR CITY CLERK ONLY

Council Meeting:

Disposition:

1991) and the 1961 Bel-Aire fire; the National Fire Protection Association (NFPA) report of the 1961 Bel-Aire Fire was entitled 'Devil wind and wood shingles' (Wilson 1962).

Wood roofs pose a hazard to the structure itself, but also to nearby structures and firefighters. Burning wood roofing material can peel off, become firebrands, and be carried into additional receptive fuel beds, such as other combustible roofs and flammable vegetation in the surrounding landscape, further exacerbating the spread of wildfire. Firebrands consisting of burning wood roof covering have been a major contributing factor to numerous fires such as the 1923 Berkeley Fire. In the 1961 Bel-Air Fire, the aero-dynamic firebrands made of wooden roof shingles became long range fire starters when they were carried by the upper strata of the Santa Ana winds. New fires were ignited in the brush and among structures at great distances, at times spanning two or three canyons (Wilson 1962).

As a result of the increased risk, the State of California banned the use of wood roofs for new construction in 2001. However, to date, no state legislation has required the replacement of existing wood roofs. Some [cities pre-empted state](#) action by banning wood roofs for both new construction and reroofs; City of Los Angeles, Santa Barbara County, City of Santa Barbara, Carlsbad, Del Mar, El Cajon, and Vista. In 2008, the City Council in Big Bear Lake, a community of 5,200 in San Bernardino County, passed an ordinance declaring wood roofs "a severe fire hazard and danger" and ordered property owners to replace them by 2012.

Recent fires have demonstrated the importance of roofing material and other home hardening strategies. For example, in the 2019 Camp Fire, about 51 percent of the 350 single-family homes built after 2008 in the path of the fire were undamaged, according to an analysis of Cal Fire data and Butte County property records. By contrast, only 18 percent of the 12,100 homes built prior to 2008 escaped damage. However, since San Rafael is a largely built-out environment, replacement roofing material requirements will be needed to adapt to wildfire.

The San Rafael Municipal Code, largely aligned with State Fire and Building Code, acknowledges the importance of appropriately fire adapted or Class A rated roofing material. The existing requirements only apply to new construction or substantial remodel. While they acknowledge the importance of fire-rated roofing, they do not require action on existing structures. Pursuant to amended California Building Code Section 1505.1.3 set forth in SRMC Section 12.200.020 and California Residential Code Section R902.1.3 set forth in SRMC Section 12.255.020, the City Council declared that all roof coverings in the City shall be Class A roof covering in 2019.

ANALYSIS:

For property owners with wood roofs, the most long-term and reliable measure available to reduce roof vulnerability to wildfire is to reroof with fire resistant materials. Spray-on or brush-on treatments of fire-retardant chemical to wood roofs have limited longevity. Soon after application, these treatments begin to lose their fire-resistant characteristics due to leaching and exposure to sunlight. To be effective, these treatments must be reapplied on a regular basis. Generally, these treatments have not received certification from the Underwriters Laboratories or the State Fire Marshals of California. Overall, fires involving wood roofs, more so than other roofs, present certain challenges because the fire can easily run both across the top of the roof and underneath it. This is a significant consideration when performing fire attack in buildings with wood roofs.

When wood roofing materials were first available with fire retardant coatings, they were rated as a Class C covering. Before that, they were non-rated. Pressure treated wood roof materials receive a Class A

rating only when installed with a solid underlayment. Fire protection is provided by pressure impregnating fire retardant polymers into the innermost cells of the material. However, there are no required inspections or tests after installation of roofs to determine the status of the fire retardant. It would also be difficult to tell when, or if, a roof was pressure treated or has lost its original treatment by inspection. The California Building Code specifies the testing wood shakes and shingles must pass for use in California. These tests include: Intermittent Flame Test; Spread of Flame Test; Burning Brand Test; Flying Brand Test; Rain Test; and Weathering Test.

In the [Chemco FTX Five Year Natural Weathering Test](#), the wood shingles ignited three minutes into the test and burned for an additional 23 minutes and 30 seconds after the burner flame was turned off. The results of that test and the Los Angeles Fire Department’s Standard No. 43 Test for Determining the Flammability of Solid Materials demonstrated that the fire-retardant pressure treated wood shingles support combustion. The five-year test proved that treated wood shingles ignite and continue to burn long after flame exposure. Los Angeles Fire Department adds “It is our experience that a material that exhibits that type of burning characteristics combined with our local climactic conditions (high wind velocities, low humidity, and high temperatures) has the potential for spreading fire downwind in the form of flying burning brands”.

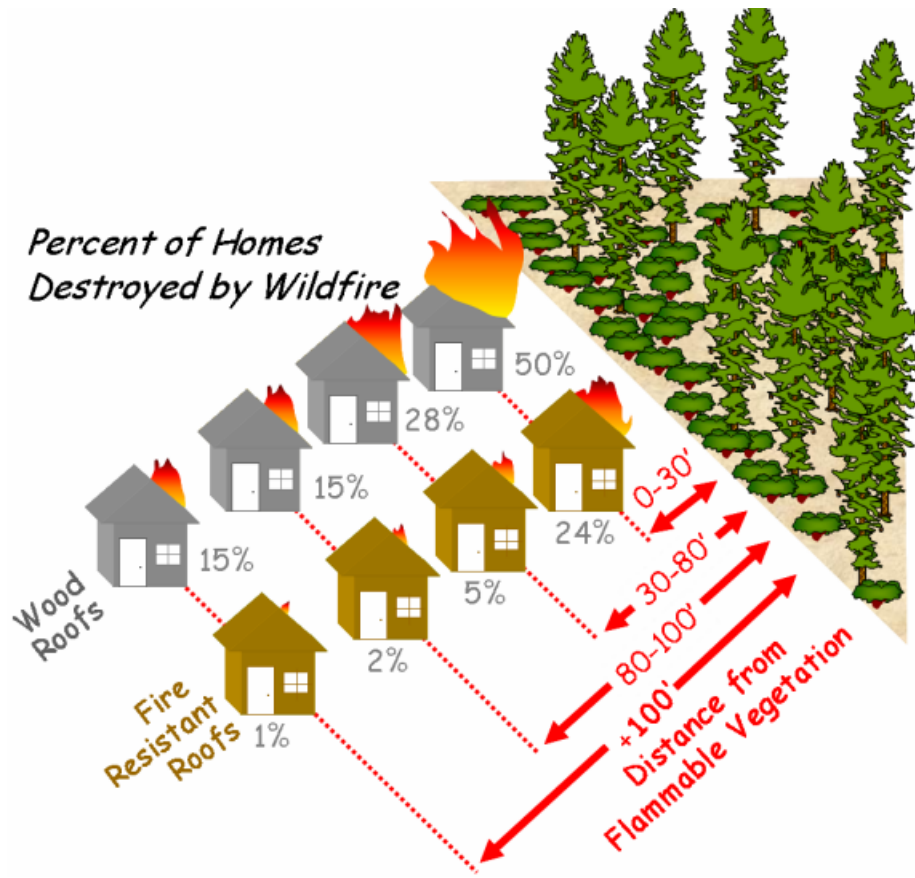


Figure 1. Percent of homes destroyed by wildfire.

The Wood Shake and Shingle Roof Hazard, University of Nevada Cooperative Extension

According to the [University of Nevada Cooperative Extension report on Wood Shake and Shingle Roof Hazard](#), the probability of a house surviving a wildfire is greatly influenced by the type of roofing material involved and the amount of clearance of flammable vegetation. An investigation of 1,850 Southern California homes found that depending upon the amount of brush clearance, houses with untreated wood roofs were 2 to 21 times more likely to be destroyed by wildfire than those with fire-resistant roofs. Other wildfire statistics collected from the Santa Monica Mountains of California, suggested that the most cost-effective method of increasing house survivability during a wildfire event is the presence of a fire-resistant roof and property clearance of vegetation around the structure.

Several plans approved by the City of San Rafael have touched on the measures necessary to protect property from wildfire. The San Rafael Local Hazard Mitigation Plan calls out measures for property protection including wildfires. The San Rafael Wildfire Prevention and Protection Action Plan, passed in August 2020, outlines various goals to proactively and aggressively address the growing risks associated with wildfire. The primary objective of the plan includes ordinance changes to mitigate wildfire risk

The table below summarizes the recommendations regarding wooden roofs in various plans:

Plan	Details
San Rafael C-18 Local Hazard Mitigation Plan	<p>PROPERTY PROTECTION: Property protection measures are used to modify buildings subject to damage rather than to keep the hazard away. A community may find these to be inexpensive measures because often they are implemented by or cost-shared with property owners. Many of the measures do not affect the appearance or use of a building, which makes them particularly appropriate for historical sites and landmarks. Wildfire, Grassfires;</p> <ul style="list-style-type: none"> • Replacing building components with fireproof materials • Roofing
San Rafael Wildfire Prevention and Protection Action Plan	<p>Section 18 titled Eliminate fire hazard associated with wooden roofs. Action: Ordinance change. Update building code to require all wood roofs be replaced in five years. Require structures with wood roofs disclose the replacement requirement at time of resale.</p>
Marin County Community Wildfire Protection Plan	<p>Under page 82 subsection 'Ignition-Resistant Roofing to Reduce Structural Ignitability', Marin County urges other fire agencies throughout Marin to consider providing incentives for property owners to replace wood roofs.</p>
Marin County Multi-Jurisdictional Local Hazard Mitigation Plan	<p>Novato proposes to develop an inventory of structures with wood roofing material to identify and target education efforts and the need for roof conversions. The purpose of the Building and Housing code is to establish rules and regulations governing building activity in the city and to safeguard life, health, property, and public welfare by providing minimum fire retardancy requirements for new roof coverings. This information is also needed to assist the city in compiling information on the use, location, and condition of properties within the jurisdiction of the City of Novato and provides for the abatement of unsafe buildings. By agreement, for health and safety reasons, the city may share this information or resultant vital statistics with other governmental agencies.</p>

San Rafael General Plan Safety and Resilience Element Policy S-4.2 Fire Resilience in Developed Areas	Reduction of Structure Hazards. Implement measures to reduce wildfire hazards to existing structures, including fire-resistant landscaping, and building materials, protected vents and gutters, phasing out wood roofs, vegetation management around structures, limits on highly flammable plant materials, restricted parking on narrow streets, and enforcement and abatement programs. Focus on measures that provide the greatest fire safety benefits relative to their costs to the City and private sector.
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Since the proposed ordinance would amend California construction codes the City has adopted by reference, state law requires that after introduction of the ordinance, the City Council must set a public hearing on the ordinance. Staff recommends setting the public hearing on the agenda for the next City Council meeting.

COMMUNITY OUTREACH: Two community meetings regarding the proposed ordinance changes were held on March 16, 2022, and April 7, 2022. Prior to and during implementation of this ordinance amendment, staff will conduct direct outreach with properties affected.

FISCAL IMPACT: There are no anticipated impacts to the General Fund.

OPTIONS: The City Council has the following options to consider on this matter:

1. Pass the proposed ordinance to print and set a public hearing on the ordinance on Monday, May 16, 2022.
2. Direct staff to return with more information.
3. Take no action.

RECOMMENDED ACTION:

Pass to print an Ordinance Amending Chapters 12.200 and 12.255 of the San Rafael Municipal Code to Make Local Amendments to California Building Codes to Require that Wood Roofing be Replaced by May 31, 202 and set public hearing on the proposed ordinance for Monday, May 16, 2022.

ATTACHMENTS:

1. Ordinance

ORDINANCE NO.

**AN ORDINANCE OF THE CITY COUNCIL OF THE CITY OF SAN RAFAEL
AMENDING CHAPTERS 12.200 AND 12.255 OF THE SAN RAFAEL
MUNICIPAL CODE TO MAKE LOCAL AMENDMENTS TO CALIFORNIA
BUILDING CODES TO REQUIRE THAT WOOD ROOFING BE REPLACED
BY MAY 31, 2027**

THE CITY COUNCIL OF THE CITY OF SAN RAFAEL DOES ORDAIN AS FOLLOWS:

DIVISION 1. FINDINGS.

WHEREAS, on November 18, 2019, the City Council adopted Ordinance No. 1974 which amended Title 12 of the San Rafael Municipal Code to adopt by reference the 2019 California Building Code, 2019 California Residential Code, the 2019 California Mechanical Code, the 2019 California Plumbing Code, the 2019 California Electrical Code, the 2018 International Property Maintenance Code, the 2018 International Pool and Spa Code, the 2019 California Existing Building Code, the 2019 California Green Building Standards Code, and the California Referenced Standard Code with appendices (together, the “2019 California Construction Codes”); and

WHEREAS, Sections 17958.5, 17958.7, and 18941.5 of the California Health and Safety Code allow a local governing body to modify state building standards and to establish more restrictive standards if it determines such building standards are reasonably necessary because of local climatic, geological, or topographical conditions, and pursuant to that statute Ordinance No. 1974 included certain local amendments to the 2019 California Construction Codes adopted by that Ordinance; and

WHEREAS, the local amendments to the 2019 California Building Code adopted by Ordinance No. 1974 were codified in Section 12.200.020 of Chapter 12.200 of the San Rafael Municipal Code and included an amendment to Section 1505.1.3 of the California Building Code entitled “Roof coverings within all other areas”; and

WHEREAS, the local amendments to the 2019 California Residential Code adopted by Ordinance No. 1974 were codified in Section 12.255.020 of Chapter 12.255 of the San Rafael Municipal Code and included an amendment to Section R902.1.3 of the California Residential Code, entitled “Roof coverings within all other areas”; and

WHEREAS, the City of San Rafael has a Community Wildfire Protection Plan (CWPP) issued in 2016, developed in collaboration with the County of Marin, which recommends as a pre-disaster mitigation “the removal of existing wood roofs” due to data that supports non-flammable roofing as being 3.68 times more effective at preventing structural ignition in wildland fire situations; and

WHEREAS, on August 3, 2020 the City Council adopted Resolution No. 14847 accepting a final “San Rafael Wildfire Prevention and Protection Action Plan”, Section 18 of which calls for a change to the City’s building code to require all wood roofs to be replaced within five years to mitigate wildfire risk, and sets forth the rationale for the change; and

WHEREAS, wood roofs are comprised of materials that create a unique and significant fire hazard and danger to an extent that they constitute a public nuisance, as set forth by Section 3480 of the California Civil Code, because they are injurious to the health

and safety of and substantially endanger entire communities; and

WHEREAS, wood roofs are a severe fire hazard and danger to the lives, health, property and safety of the residents of the City of San Rafael and the surrounding communities; and

WHEREAS, the City Council wishes to amend the San Rafael Municipal Code to address these dangers to the citizens of San Rafael and the surrounding community; and

WHEREAS, the City Council hereby finds and declares that five (5) years is a reasonable amount of time for all existing buildings or structures within the City of San Rafael with wood roofs to install roofs comprised of class A fire-resistant as required by the regulations adopted by this Ordinance; and

WHEREAS, the City Council finds that the local amendments to the 2019 California Construction Codes, as set forth in this Ordinance, are reasonably necessary because of climatic, geological and topographical conditions existing in the City, including strong wind conditions, dry weather and dry vegetation, that contribute to the loss or damage of open space and structures in the surrounding area resulting from wildfires;

NOW THEREFORE, THE CITY COUNCIL OF THE CITY OF SAN RAFAEL DOES ORDAIN AS FOLLOWS:

DIVISION 2. AMENDMENT OF MUNICIPAL CODE.

Chapter 12.200 of the San Rafael Municipal Code entitled “California Building Code Amendments” is hereby amended as follows: The amendment to California Building Code Section 1505.1.3 contained in San Rafael Municipal Code Section 12.200.020 is hereby amended to read in its entirety as follows (*strikeouts show deletions from California Building Code and underlines show additions*):

1505.1.3 Roof coverings within all other areas. The entire roof covering of every existing structure, where more than 50% of the total roof area is replaced within any one-year period, the entire roof covering of every new structure, and any roof covering applied in the alteration, repair or replacement of the roof of every existing structure, shall be a fire-retardant roof covering that is at least Class ~~C-A~~.

All roofs coverings that are not at least Class A, shall be a fire-retardant roof covering that is at least Class A by May 31, 2027.

DIVISION 3. AMENDMENT OF MUNICIPAL CODE.

Chapter 12.255 of the San Rafael Municipal Code entitled “California Residential Code Amendments” is hereby amended as follows: The amendment to California Residential Code Section R902.1.3 contained in San Rafael Municipal Code Section 12.255.020 is hereby amended to read in its entirety as follows (*strikeouts show deletions from California Residential Code and underlines show additions*):

R902.1.3 Roof coverings within all other areas. The entire roof covering of every existing structure, where more than 50% of the total roof area is replaced within any one-year period, the entire roof covering of every new structure, and any roof

covering applied in the alteration, repair or replacement of the roof of every existing structure, shall be a fire-retardant roof covering that is at least Class C-A and shall also comply with Section R337.5.

All roofs coverings that are not at least Class A, shall be a fire-retardant roof covering that is at least Class A by May 31, 2027.

DIVISION 4 FINDINGS.

California Health and Safety Code Sections 17958.5, 17958.7, and 18941.5 require that findings be made in order to change or modify building standards found in the California Building Standards Code based on local climatic, geologic, or topographic conditions. Therefore, the San Rafael City Council hereby finds that these changes or modifications to the California Building Code (“CBC”) as adopted in Chapter 12.200 of the San Rafael Municipal Code; and the California Residential Code (“CRC”) as adopted in Chapter 12.255; are reasonably necessary because of the following local climatic, geological and topographical conditions:

- I. Climatic conditions:
 - a) Most of the annual rainfall in San Rafael occurs during the winter, it receives no measurable precipitation between May and October. During this time, temperatures average between 70 and 90 degrees. These conditions eliminate most of the moisture in the natural vegetation and heavily wooded hillsides. The area also suffers periodic droughts that can extend the dry periods to other months of the year. These conditions can be further exacerbated by occasional off-shore hot, dry, Santa-Ana winds; all of which contribute to an elevated fire hazard.

- II. Topographic conditions:
 - a) Much of San Rafael is located in hilly areas, and many of the residential areas are heavily landscaped, and many exist adjacent to hilly open space areas which are characterized by dry vegetation and have limited access. In addition, the steepness of grades located in the hills and canyons results in narrow and winding roads, and limited water supply, making timely access, rescue and firefighting activities by emergency providers difficult.

More specifically, the above modified building standards are listed below with the corresponding climatic, geological or topographical condition which necessitates the modification.

CBC Section Number <i>1505.1</i>	Climatic, geological and topographical condition I(a), II(a)
CRC Section Numbers <i>R902.1</i>	I(a), II(a)

DIVISION 5. CALIFORNIA ENVIRONMENTAL QUALITY ACT (CEQA)

This Ordinance is exempt from the California Environmental Quality Act (CEQA), pursuant to 14 CCR Section 15061(b)(3), since it can be seen with certainty that there is no possibility

that the adoption of this Ordinance may have a significant effect on the environment. (14 Cal. Code Regs. Section 15061(b)(3), 'general rule' provision) and pursuant to 14 CCR Section 15301 (minor alterations to existing structures).

DIVISION 6 SEVERABILITY.

If any section, subsection, sentence, clause or phrase of this Ordinance is for any reason held to be invalid, such decision shall not affect the validity of the remaining portion of this Ordinance. The City Council of the City of San Rafael hereby declares that it would have adopted the Ordinance and each section, subsection, sentence, clause or phrase thereof, irrespective of the fact that any one or more sections, subsections, sentences, clauses or phrases shall be declared invalid.

DIVISION 7. PUBLICATION; EFFECTIVE DATE.

This Ordinance shall be published once, in full or in summary form, before its final passage, in a newspaper of general circulation, published, and circulated in the City of San Rafael, and shall be in full force and effect thirty (30) days after its final passage. If published in summary form, the summary shall also be published within fifteen (15) days after the adoption, together with the names of those Councilmembers voting for or against same, in a newspaper of general circulation published and circulated in the City of San Rafael, County of Marin, State of California.

KATE COLIN, Mayor

Attest:

LINDSAY LARA, City Clerk

The foregoing Ordinance No. _____ was introduced at a Regular Meeting of the City Council of the City of San Rafael, held on the 2nd day of May 2022, and ordered passed to print by the following vote, to wit:

AYES: Councilmembers:
NOES: Councilmembers:
ABSENT: Councilmembers:

and will come up for adoption as an Ordinance of the City of San Rafael at a Regular Meeting of the Council to be held on the 16th day of May 2022.

LINDSAY LARA, City Clerk