

# ORANGE COUNTY FIRE AUTHORITY

Planning & Development Services Section

1 Fire Authority Road, Building A, Irvine, CA 92602 [www.ocfa.org](http://www.ocfa.org) 714-573-6100

## Guideline for Alternative Materials & Methods Requests



### Guideline A-01

Serving the Cities of: Aliso Viejo, Buena Park • Cypress • Dana Point • Irvine • Laguna Hills • Laguna Niguel • Laguna Woods • Lake Forest • La Palma • Los Alamitos • Mission Viejo • Placentia • Rancho Santa Margarita • San Clemente • San Juan Capistrano • Santa Ana • Seal Beach • Stanton • Tustin • Villa Park • Westminster • Yorba Linda • and Unincorporated Areas of Orange County

# Alternative Materials & Methods Requests

## PURPOSE

This guideline is intended to provide direction for submitting requests for use of Alternative Materials and Methods (AM&M) in accordance with the 2016 California Fire Code (CFC), Chapter 1, Section 104.9.

## SCOPE

Requests for AM&M shall be evaluated by OCFA staff to ensure the proposed design, use, or operation satisfactorily complies with the intent of the CFC. Additionally, the alternatives that are being proposed will be evaluated to determine they are at least equivalent to, if not better than, what is prescribed in the CFC in terms of quality, strength, effectiveness, fire resistance, durability, and/or safety for a particular project or application.

It is important to keep in mind that ***an AM&M is NOT a waiver***. It does not excuse a project from meeting the level of safety or performance required by the code, only to achieve it in a way that does not match the precise manner described in the code.

## REQUIREMENTS

### 1. AM&M Request Letter

The applicant shall provide the information indicated below, in writing, with those plans necessary to evaluate the proposed AM&M. Refer to the sample letter provided in this document for general guidance in preparation and formatting of your request.

- A. **Applicant and project information:** Provide the OCFA Service Request number, project name and address, and contact information in the letter. If the contact for technical questions is different than that for submittal coordination or processing of the request, please provide the necessary contact information for each person.
- B. **Project Description:** Provide a brief description of the overall project, such as building use/occupancy, construction type, area, or other information necessary to understand the general scope of the project. Include more detailed information specific to all areas where the project is deficient or that may be related to the alternative being proposed.
- C. **Code Section/Requirement and Intent:** List the code section(s) or requirement(s) that the project does not comply with or that you are proposing an alternative to. A single code section can include multiple requirements or methods of compliance, so be specific in terms of which part of the code section is being addressed by the alternative. Briefly describe the intent of the code section or requirement as it pertains to fire- and life-safety, emergency response, and/or firefighting, as appropriate.
- D. **Deficiency:** Describe the conditions of the project that necessitate the AM&M and why compliance with the standard requirements is not possible, feasible, or desirable.

- E. **Proposal:** Describe *in detail* the alternatives that are being proposed to mitigate the deficiency or code requirement. This section should include only those features or measures that are provided to offset or mitigate the deficiency. Do not include any features that are otherwise already required by the code in the “Proposal” section of the letter—when relevant, provide that type of information or commentary in the letter’s Justification section.
- F. **Justification:** In this section, you must justify how the project or design approach utilizing the proposed alternative material or method is as safe or effective as if the project were built in the manner detailed in the code. Describe how the proposed alternative offsets the standard requirement. Whenever possible, the alternative should directly offset the deficiency. For example, if project deficiencies would delay emergency response to a building fire, the alternative should provide early notification to the fire department, slow the rate of the fire’s growth, contain the spread of fire to one part of building, or otherwise mitigate the negative effects of a delayed response. In this example, additional hydrants along the fire lane would not be a suitable alternative as they would do little to mitigate a delay in response or affect the behavior of the fire prior to the start of firefighting operations.

You can also provide any other relevant information related to the project or proposal in this section. For instance, if the proposed alternative further enhances the effectiveness of other features *already* required by code in some particular way, this information could be included as additional support. Engineering reports, product certifications or listing sheets, testing information, etc. that are included with the AM&M proposal as evidence of equivalency should be listed as attachments here as well.

- G. **Affected Plans:** List the plans that a copy of the approved AM&M will be incorporated into. This will generally include the plan that the AM&M proposal is most directly associated with (see Section 3.A below) as well as each plan type affected by the proposed alternative. For instance, an AM&M proposing the addition of fire-rated walls to offset an access deficiency would be included in the fire master plan submitted to OCFA as well as the architectural plan submitted to the OCFA and/or local building department.
- H. **Approval Block:** Include the following approval block at the end of the letter to facilitate processing of the AM&M:

**OCFA APPROVAL:**

\_\_\_\_\_  
 (Plan Reviewer's Name)  
 (Plan Reviewer's Job Title)

\_\_\_\_\_  
 Vahid Toossi, P.E.  
 Fire Protection Engineer

- NO ADDITIONAL CONDITIONS OF APPROVAL REQUIRED.  
 ADDITIONAL CONDITIONS OF APPROVAL APPLY. SEE ATTACHED LETTER.

Under the first signature line, insert the name and title of the OCFA plan reviewer who is assigned to review of the plan that the AM&M is tied to (see Section 3.A below). If this information is unknown at the time of submittal, a revised letter including this information letter must be provided prior to approval.

## 2. Submittal and Review Process

- A. **Fee Code and Plan Type:** Whenever possible, an AM&M must be processed using fee code PR910 under the Service Request for the plan the *deficiency or omission* is related to, regardless of what form the proposed alternative solution takes. For example, an alternative addressing an access deficiency should be evaluated during the fire master plan review and not the architectural review, even if it proposes an architectural solution such as enhancing fire-resistive building construction to offset the access deficiency. Similarly, an AM&M addressing a building code compliance issue should be proposed as part of the architectural plan review, even if the proposal includes adding a sprinkler or alarm system to the building.
- B. **Submittal Format, Timing, and Location:** Where the AM&M is included as part of the initial plan submittal, provide one hard copy of the letter and any supporting documentation. Submit the AM&M letter as part of the plan package submitted to the City/County or directly to OCFA Planning & Development, as indicated on the OCFA Plan Routing list.

Where the AM&M is initiated on the second or subsequent submittal in response to corrections or comments issued by OCFA instead of during the initial submittal of the plan, electronic submittal of the AM&M via email may be coordinated directly with the plan reviewer. Where the AM&M is added to a service request in this manner, additional AM&M fees will be due upon resubmittal or pick-up of plans as determined by the plan reviewer. Should evaluation of the AM&M proposal require time and resources beyond the standard allotted for this activity, additional time and materials fees may be applied. In jurisdictions where the initial plan submittal is normally made at the City/County instead of directly to OCFA, additional administrative fees may also be assessed by the Planning/Building Department.

- C. **Evaluation:** All AM&M requests are evaluated on a case-by-case basis in the context of the specific project being reviewed. Approval of the request is based

upon several factors, including, but not limited to, the level of equivalency achieved (as described under “Scope” in this guideline), the effect of the AM&M on fire and emergency response, and site conditions.

Where the AM&M proposal affects project elements under the jurisdiction of another agency, review or concurrence from that agency may also be required. Similarly, where an AM&M is proposed to the local Planning or Building Department and the alternative is within the scope of OCFA’s authority, such as sprinklers or alarms, concurrence from OCFA is required.

- D. **Approved AM&M:** If OCFA determines that the AM&M proposal provides an equivalent level of protection considering all related factors pertaining to the project, as determined by the Fire Code Official, OCFA staff will sign the approval block at the end of the request letter. Such approval may be conditional upon implementation of additional requirements that were not part of the original AM&M proposal. If additional conditions are required, the plan reviewer will either:
- i) ask that the AM&M be rewritten to include the additional items and sign the revised AM&M proposal; or,
  - ii) check the appropriate box in the approval block and provide conditions on a separate response letter.

The plan reviewer will then scan and email a digital copy of the approved AM&M, and additional conditions of approval, if necessary, to the applicant and/or provide an original hardcopy for pick-up at the OCFA Fire Prevention Counter, as requested by the applicant. Approval is granted only for the specific project under review and the conditions for approval shall not be construed as applicable to any other project.

- E. **Denied AM&M:** In the event that OCFA determines that the AM&M proposal does not provide an equivalent level of protection, the request will be denied and a response letter will be issued to this effect. Should the applicant submit a different AM&M request for this project or choose to revise and resubmit the previously denied request, additional AM&M fees may apply. To facilitate the evaluation process, include any previously denied AM&M proposals when submitting a revised AM&M request.
- F. **AM&M for Individual Single Family Home or Duplex:** Many proposed single family residential or duplex projects have similar code deficiencies (e.g., insufficient access or deficient fire flow) and similar solutions to mitigate them (e.g., installation of or upgrade to a fire sprinkler system). An abbreviated AM&M process is available to facilitate review and approval of these projects. Please use the “AM&M Request for Single Family Residence or Duplex Site” form included on page 7 of this guideline, and complete the information, including signature and date, in Part 1. Submit the form along with the residential site plan to the OCFA for consideration. In some cases where deficiencies or solutions for a residence are atypical or numerous, such as with the scenario described in the sample AM&M letter included in this guideline, the standard AM&M request letter detailed in Section 1 may be required; please

discuss the applicability of the abbreviated form or standard request letter with your plan reviewer prior to using either one.

3. Engineering Evaluation

If the Fire Code Official deems an engineering evaluation necessary, it shall be performed and reported by a firm or individual that has been approved by the OCFA. The applicant is responsible for all costs associated with the preparation of the AM&M or associated analysis.

## SAMPLE AM&M PROPOSAL LETTER

April 11, 2017

Orange County Fire Authority  
Planning & Development Services  
PO Box 57115  
Irvine, CA 92619-7115

**SUBJECT: AM&M Proposal for the Stein Residence  
1234 Serpentine Road, Sierra Hills—Tract 16345, Lot 11  
OCFA Service Request Number 196872**

In accordance with Section 104.9 of the 2016 California Fire Code, I am requesting an alternate method of fire protection for the proposed project indicated above. This is in response to items 3, 4, and 6 on the January 3, 2017 correction letter for the site plan submitted under Service Request #196872.

### PROJECT DESCRIPTION

The proposed residence is located in the Sierra Hills community. The maximum driveway grade is 17% for a distance of approximately 30 feet in one location and 50 feet in another. The driveway, which is a required fire lane, is 20 feet wide and is approximately 700 feet long. This property is located within a Very High Fire Hazard Severity Zone (VHFHSZ), and is subject to fuel modification and CRC 327 requirements. The residence will be equipped with an automatic fire sprinkler system in accordance with 2016 NFPA 13D.

### APPLICABLE CODE SECTIONS and INTENT

CFC 503.2.1.1 and OCFA Guideline B-09 require a minimum 24 foot wide fire department access road in a Hazardous Fire Area for roadways serving 1 to 3 residences to facilitate evacuation and use of the roadway for moving and staging of apparatus. Such roadways are limited to 400 feet at this reduced width, otherwise a 28 foot wide road would be required. Roadway grade is limited to a maximum of 15% per OCFA Guideline B-09. A steep, narrow road can delay arrival of fire apparatus, and vehicles parked on the driveway in preparation for evacuation or staged for firefighting would present an obstruction to accessing the home.

### DEFICIENCY and PROPOSAL

The existing topography precludes compliance with OCFA's requirements for a maximum roadway grade of 15% for sprinklered buildings and a minimum driveway width of 24 feet at a maximum length of 400 feet for homes located in a VHFHSZ. Widening the road would require retaining walls 30 feet in height in some places, and limiting the driveway to 15% would require the proposed hilltop building pad to be lowered or driveway extended, which would have significant impacts on grading at this and adjacent sites and lengthen the already too-long driveway.

As an alternative, I would like to propose the following:

1. Provide a flat 20-foot by 60-foot paved, all-weather turnout on the driveway at the approximate mid-point between Serpentine and the house.
2. Extend the width of the fuel modification "A" zone from 20 to 30 feet and extend the width of the irrigated "B" zone to 70 feet. The "C" and "D" zones would be maintained at 50 feet each.

- 3. Enhance the protection provided by the sprinkler system by providing coverage in small closets, all bathrooms, and the attic, which would normally be omitted in a standard 13-D system.

**JUSTIFICATION**

The turnout on the road will allow fire trucks to pass each other safely and facilitate evacuation of the residents by providing a clear path to and from Serpentine Road. It will also provide an additional location to stage emergency response vehicles. Extension of the fuel modification zones would impede the advance of a wildfire, reducing the demand on firefighting resources to protect the property. The sprinkler enhancements would provide additional protection for the structure and assist in extinguishing or holding a fire in check until firefighters arrive, helping to offset any delays in responding due to the steep slope or the reduced width of the driveway.

We appreciate your consideration of this proposal. Should you find that the proposed items provide an equivalent level of protection to that prescribed in the CFC, we will revise the residential site and fuel modification plans to include a copy of the approved AM&M. A copy will also be included on the site plan submitted to the city. If you have any questions regarding this AM&M proposal or the project in general, please do not hesitate to contact me at peter@pventonbournes.com or at the number listed below.

Sincerely,

Peter Venton Bournes, P.E., Fire Protection Engineer

P. Venton Bournes Fire Safety and Consulting, Inc. | 714-555-4567(p) | 714-555-2468(f)  
987 Main Street, Anytown, CA 92700

**OCFA APPROVAL:**

\_\_\_\_\_  
(Plan Reviewer's Name)  
(Plan Reviewer's Job Title)

\_\_\_\_\_  
Vahid Toossi, P.E.  
Fire Protection Engineer

- NO ADDITIONAL CONDITIONS OF APPROVAL REQUIRED.
- ADDITIONAL CONDITIONS OF APPROVAL APPLY. SEE ATTACHED LETTER.



## AM&M REQUEST FOR SINGLE FAMILY RESIDENCE OR DUPLEX SITE

<b>PART 1—APPLICATION (to be completed by owner or owner’s representative)</b>	
OWNER’S NAME:	PROJECT NAME:
APPLICANT’S NAME:	PROJECT ADDRESS (NUMBER, STREET, CITY):
APPLICANT’S PHONE & FAX NUMBERS, INCLUDING AREA CODE:	TOTAL AREA OF STRUCTURE, INCLUDING ATTACHED GARAGE(S):
APPLICANT’S E-MAIL ADDRESS:	OCFA SERVICE REQUEST NUMBER:
<p>The above project does not fully conform to the 2016 California Fire Code. Pursuant to 2016 CFC Chapter 1, Section 104.9, I am requesting approval of an alternate material and/or method of construction to achieve the intent of the provisions of the code and provide at least an equivalent level of protection to that prescribed therein. I understand that approval of this request applies only to this project and shall not be construed as establishing a precedent for other projects. <i>If approved, a copy of this AM&amp;M request form will be provided on all subsequent plan submittals of this project to the OCFA or Building Department.</i></p> <p><b>Name &amp; Signature:</b> _____ <b>Date</b> _____</p>	

<b>PART 2—PROJECT CONSIDERATIONS (to be completed by OCFA Fire Code Official)</b>
<p><b>Is this project located in a fire area, adjacent to fuel modification, or other recognized location of concern?</b></p> <p><input type="checkbox"/> No</p> <p><input type="checkbox"/> Yes: <input type="checkbox"/> HFA (FHSZ/SFPA/WUI), <input type="checkbox"/> fuel mod, <input type="checkbox"/> Midway City, <input type="checkbox"/> other:</p> <p><b>Indicate type(s) of deficiencies (check all that apply and describe degree of deficiency in area provided):</b></p> <p><input type="checkbox"/> <b>Hose pull exceeded:</b> length of building perimeter exceeding hose pull: _____ feet</p> <p><input type="checkbox"/> <b>Water supply deficient:</b> <input type="checkbox"/> pressure, <input type="checkbox"/> quantity, <input type="checkbox"/> duration, <input type="checkbox"/> hydrant spacing/quantity</p> <p><input type="checkbox"/> <b>Access to site deficient:</b> <input type="checkbox"/> road/cul-de-sac width, <input type="checkbox"/> turning radii, <input type="checkbox"/> no turnaround, <input type="checkbox"/> grade &gt;15%</p> <p><input type="checkbox"/> <b>Access to structure deficient:</b> <input type="checkbox"/> topography/grade change, <input type="checkbox"/> obstructions</p> <p><input type="checkbox"/> <b>Other/Describe deficiency:</b></p> <div style="border: 1px solid black; height: 40px; width: 100%; margin-top: 5px;"></div>

<b>PART 3— REQUIRED MITIGATION (to be completed by OCFA Fire Code Official)</b>
<p><b>The following shall be provided to mitigate those deficiencies identified in Part 2 above. This shall in no way alter or eliminate any other requirements that may also apply to this project.</b></p> <p><input type="checkbox"/> <b>Provide NFPA 13-D sprinkler system:</b> <input type="checkbox"/> 2-head calc, <input type="checkbox"/> 3-head calc, <input type="checkbox"/> 4-head calc</p> <p><input type="checkbox"/> <b>Provide additional sprinkler coverage:</b> <input type="checkbox"/> small bathrooms/closets, <input type="checkbox"/> attic, <input type="checkbox"/> covered patios/porches</p> <p><input type="checkbox"/> <b>Improve sprinkler performance:</b> <input type="checkbox"/> FDC, <input type="checkbox"/> minimum size for U/G and O/H supply lines: _____ inches</p> <p><input type="checkbox"/> <b>Improve access/water:</b> <input type="checkbox"/> on-site fire roadway, <input type="checkbox"/> vehicle turnouts, <input type="checkbox"/> stairways, <input type="checkbox"/> FDC &amp; dry standpipe</p> <p><input type="checkbox"/> <b>Other/Describe mitigation:</b></p> <div style="border: 1px solid black; height: 40px; width: 100%; margin-top: 5px;"></div> <p><b>Fire Code Official Name &amp; Signature:</b> _____ <b>Date</b> _____</p> <p><input type="checkbox"/> APPROVED   <input type="checkbox"/> NOT APPROVED</p>