

25JUN2019

Stephen Mair

AFM

Mercer Island Fire Department

RE: 1812-087 (8243 West Mercer Way), FIRE CODE ALTERNATE REQUEST

Dear Stephen,

Per the attached Fire Code Alternate Request form and instructions, please review the following request for this project at 8243 West Mercer Way:

NEW SINGLE FAMILY HOME ON EXISTING VACANT LOT. EXISTING LOT IS APPROXIMATELY 18,616 SQUARE FEET AND THE PROPOSED SINGLE FAMILY HOME IS 3 LEVELS WITH APPROXIMATELY 5433 GROSS SQUARE FEET.

The existing site is accessed via a long, steep driveway shared with several other properties. The configuration will not accommodate any way to "Improve turning radius and or turnaround for fire apparatus" as stated in the Fire Review Form (copy attached). Also, noted in this form and your subsequent clarification, the 13R sprinkler system and monitored household fire alarm will be our base to remove the fire flow issues.

We propose the following items to mitigate road width, turnaround and grade for your consideration:

- 1) Fire retardant coating treatment in crawl space(s).
- 2) Roof design does not include any attic spaces. All roof framing is single rafter depth.
- 3) Install 1-hr rated gypsum in all areas.

We believe the above proposed items taken together are equal to or better than the code requirement.

Sincerely,



Peter Bocek,

PB Architects

5506 6th Avenue S. #202

Seattle, WA 98108



Mercer Island Fire Marshal's Office
3030 78th Avenue SE
Mercer Island, WA 98040
(206) 275-7966

FIRE CODE ALTERNATE REQUEST

This document is intended to provide guidance on the approval process for a code alternate request.

The unique and challenging geography, water system, and design desires often make it difficult to meet the Fire Code requirements for a project on Mercer Island. The fire code allows applicants to propose alternate fire protection or design methods to be used to overcome these deficiencies.

2012 IFC - [A] 104.9 Alternative materials and methods.

The provisions of this code are not intended to prevent the installation of any material or to prohibit any method of construction not specifically prescribed by this code, provided that any such alternative has been approved. The fire code official is authorized to approve an alternative material or method of construction where the fire code official finds that the proposed design is satisfactory and complies with the intent of the provisions of this code, and that the material, method or work offered is, for the purpose intended, at least the equivalent of that prescribed in this code in quality, strength, effectiveness, fire resistance, durability and safety.

Draft Submittal and Review Process:

Before you propose an alternative to mitigate a fire service deficiency, you will be provided with a "Fire Plan Review" sheet with the specific deficiencies for your project. You will need to address each fire deficiency noted. Checked items marked on this review sheet are areas where the required code is not met. You will draft your request letter, stating the scope of work for the project, citing the deficiencies that were identified from the review sheet, proposing your specific items that you propose as alternative(s) to meeting the code, and finally a summary statement which states "We believe the proposed is equal to or better than the code requirement." Your proposal or "code alternate" will be reviewed to determine if your proposal meets this final summary statement.

Below is a list of items that will be considered as alternative fire protections.

- An "NFPA 13D - Standard" sprinkler system
- An upgrade to an "NFPA 13D - Plus" sprinkler system
- An upgrade to an "NFPA 13R - Plus" sprinkler system
- Installation of a "Household Fire Alarm System" per NFPA 72 Chapter 29
- Provide fire retardant coating treatment in the attic and crawl space
- Install 1-hr rated gypsum in all areas.
- Provide solid core or fire rated doors
- Any other items that you would like to propose

All fire code alternate proposals are required to be submitted for review to our Mercer Island Development Services Group. Either in person or submitted to our FTP site. Please contact the Mercer Island Fire Marshal's office for additional information.



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 Mercer Island, WA 98040
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Permit No: 1812-087

FIRE PLAN REVIEW

Name: _____

Address: 8243 West Mercer Way

1. PROJECT TYPE

- NSF
- Alteration or Addition

Valuation Ratio

Proposed Work _____ / Assessed Value _____ =
 _____ % (from Fire Area Work Sheet)

- Exempt structure - detached garage or similar structure less than 750 sf.
- Less than 10% (fire review not required)
- 10 - 49% (monitored Household Fire Alarm System per NFPA 72 Chapter 29, if fire deficiency)
- 50% or greater (substantial alteration)

2. FIRE AREA

- Fire Area = 5895 square feet (sf) (from Fire Area Worksheet)
- ≥ 10000 SF Requires a NFPA 13R or 13 sprinkler system (use 13R sprinkler system as base)

3. FIRE FLOW

Hydrant ID# J3-27 PSI 87

Flow Required 2000 GPM @ 20 psi (from IFC table B105.1)

With Sprinkler Reduction 1000 GPM @ 20 psi (50% reduction)

Available 813 GPM @ 20 psi (Max of 500gpm for a 2-port hydrant)

- Does not meet fire flow even with sprinkler reduction (use 13R sprinkler system as base)

4. HYDRANTS

Number Required: 1 Spacing _____ Max. Frontage _____

- Number Available: 2 Spacing _____ Frontage _____

- Distance from all building points to a hydrant 600 (300' Max, 600' w/ Sprinklers)
 OK w/ Sprinklers

5. FIRE ACCESS ROADS

- Distance from all points to access road (150'). 450 to West Mercer Way
- Length provided: 300 ft.
- Width Required: 20 ($< 500' = 20, \geq 500' = 26'$)
- Width provided: $\geq 16'$ 12' - 16' $\leq 12'$ 10
- Radius provided (minimum 28' inside/45' outside): _____ ft.
- Turnaround provided: None Sub Standard Standard
- Grade Provided: $< 10'$ $< 15'$ $< 20'$ $> 20'$ 24

6. CODE ALT/DEFICIENCIES

- Distance 300
- Length _____ = Width 20' 26'
- Width Provided: _____
- 16'
- 12' - 16'
- $\leq 12'$ (Code Alternate Required)
- Radius _____
- Turn Around
- Substandard
- None
- Grade _____
- 10' - 15'
- 15' - 20'
- Over 20' (Code Alternate Required)