



## **Fire Code Alternate Request**

Date: August 26, 2025

To: Mercer Island Fire Marshal's Office

Address: 3030 78th Avenue SE, Mercer Island, WA 98040

Project: Toda Residence – 2262 78th Ave SE, Mercer Island, WA 98040

Applicant/Owner: John Toda – jktoda@yahoo.com

Contractor: Weaver Construction, LLC – melissa@weaverconstructionco.com

Re: Fire Code Alternate Request per IFC [A]104.9 – Single-Family Residence

Dear Fire Marshal Jung,

In accordance with IFC [A]104.9 and City of Mercer Island Fire Marshal guidelines, this letter respectfully requests approval of a Fire Code Alternate to mitigate deficiencies in fire apparatus access for the Toda Project.

### 1. Identified Code Deficiencies

- Distance from all points of building to approved fire apparatus access road

Required: ≤150 feet

Provided: 343 feet

- Access road width

Required: 20 feet minimum clear width

Provided: 12 feet

- Turnaround for access road length >150 feet

Required: Approved turnaround (per IFC App. D)

Provided: None possible

### 2. Proposed Alternate Means and Methods

To provide equivalent or greater fire and life safety protection, we propose the following mitigation package, incorporating the City of Mercer Island / Eastside Fire & Rescue “13D (Full Coverage) Residential Sprinkler Standard” (Updated 04-2025):

#### A. NFPA 13D (Full Coverage) Sprinkler System

- Install a full-coverage NFPA 13D system per Mercer Island's adopted 13D Full Coverage Standard.

- System design shall include:

- Water supply: While the standard requires a minimum 1.5" service line, the existing service line is 1.25". Upsizing to a 1.5" line would require replacing the entire underground service between the residence and the municipal water meter, a considerable distance in this case. Such replacement would cause great disruption to the site & neighboring properties, as well as significant cost to the homeowners. As an alternative, we propose the use of a fire booster pump and low-flow sprinkler heads designed to deliver the required performance while conserving demand on the existing service. Hydraulic calculations will be provided to confirm compliance with NFPA 13D performance criteria and City requirements.

- Permanently installed back-up power with an automatic transfer switch will be provided to ensure reliable operation of the fire booster pump and sprinkler system under all conditions.

- Backflow preventer: 1½" minimum with riser.

- Water flow monitoring: Water flow will be monitored by a Central Station. Connection of the water flow switch to the sounder side of line volt smoke alarms and an exterior 6" bell facing roadway.

- Garage coverage: Full coverage of attached garages, with 1½" feed for >4 heads.

- Sprinkler coverage extended to: all bathrooms (regardless of size), closets in common/egress paths, storage rooms (crawlspaces with full-size doors), and exterior balconies/decks/patios with overhead projections >4'.

- Spare heads and wrench cabinet provided.

- Drain: piped to exterior without landscape damage when in use.

#### B. Interior Fire-Hardening Features

- Solid core doors installed throughout the home, including bedrooms, closets >55 sq ft, mechanical rooms, and garage-to-house connection.

- 5/8" Type X gypsum board installed on all interior walls and ceilings, including garage spaces, to increase fire resistance and compartmentalization.

#### C. Access Road Maintenance & Operations

- Maintain driveway as an all-weather surface capable of supporting fire apparatus load.

- Ensure 12' clear width remains unobstructed, with required vertical clearance.

- Post addressing and fire lane signage as directed by Fire Marshal.

- Provide Knox access for any gates/security barriers.

#### 3. Equivalency Justification

- Early Suppression: The 13D Full Coverage sprinkler system, enhanced with a booster pump and low-flow heads, ensures water supply reliability even with the existing 1.25" service. This solution avoids the substantial disruption and cost of trenching and replacing

the long underground service line while still delivering equivalent system performance.

- Compartmentation & Delayed Spread: Solid core doors and 5/8" GWB throughout provide additional passive protection, slowing fire spread and increasing occupant egress time.
- Access Management: Although physical road width and turnaround deficiencies remain, maintaining the existing driveway to all-weather standard and posting signage ensures apparatus can still approach and engage the structure.

Taken together, this mitigation package provides a level of safety equal to or greater than that intended by strict compliance with the IFC requirements.

#### 4. Requested Action

We respectfully request approval of this Fire Code Alternate Request for the Toda Project. We will submit sprinkler design drawings, hydraulic calculations (incorporating booster pump and low-flow head selection), cut sheets, and monitoring details as part of the Fire Permit process.

Thank you for your consideration. Please advise of any conditions or additional requirements.

Respectfully submitted,  
John Toda – Applicant/Owner  
jktoda@yahoo.com

Weaver Construction, LLC – Contractor  
melissa@weaverconstructionco.com

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