



August 23, 2016

Shilpa Mulik
Regional Engineer
FEMA Region IX
1111 Broadway, Suite 1200
Oakland, California 94607

Dear Ms. Mulik,

The Federal Emergency Management Agency (FEMA) has recently released Preliminary Flood Insurance Rate Maps (FIRMs) with proposed/revised Base Flood Elevations (BFEs) and Special Flood Hazard Area (SFHA) boundaries for San Mateo County. The newly released FIRMs are to replace the effective FIRMs released in 2012. The preliminary FIRMs show new areas within the City of San Bruno (the City) jurisdiction mapped as a SFHA. We understand that as part of being a partner in the National Flood Insurance Program (NFIP), which provides flood disaster relief for participating communities, flood insurance is mandatory and must be purchased for areas mapped as a SFHA.

Prior to the release of the preliminary FIRMs, the City had been mapped as Zone D, areas with possible but undetermined flood hazards, because there are no flooding sources located within City limits. However, the current preliminary FIRMs show flooding from areas outside of the City limits would cause potential flood hazards at areas known as Belle Air neighborhood in the City. As shown in the attached figure, the Belle Air neighborhood is located east of the Caltrain tracks, west of highway 101 (Hwy-101) and south of Interstate 380 (I-380). The draft preliminary FIRM indicates coastal floodwaters from City of South San Francisco and San Francisco International Airport (SFIA) will flood the Belle Air neighborhood, which is a neighborhood with a high density of residential housing. An AE Zone with an elevation of 10 feet above NAVD88 is designated. The residents of the Belle Air neighborhood will be required to purchase flood insurance, according to the current preliminary FIRMs.

The BFEs shown on FIRMs and on the Flood Profiles in Flood Insurance Study (FIS) reports are the basis for the detailed floodplain boundaries, detailed flood insurance risk zones, and floodway boundaries. We understand that FEMA provides communities with an opportunity to review new or revised BFEs before they become final and to appeal if they are believed to be scientifically or technically incorrect. FEMA Region IX initiated a 90-day appeal period on May 27th, 2016, following the issuance of the preliminary FIRMs.

The City contracted with Moffatt & Nichol (M&N), who has conducted a new coastal analysis based on alternative methodology using the FEMA-computed coastal SWELs and the digital topographic data provided by FEMA. The analysis shows that the extent of coastal flooding affecting the Belle Air neighborhood will be significantly less than the FEMA determined 1% annual chance flood extent. In accordance with Title 44 of the Code of Federal Regulations (CFR) Section 67.6, we believe the City's FIRMs are eligible for appeal because we are in possession of knowledge and information indicating:

- The proposed BFEs in the City's preliminary FIRMs are scientifically incorrect; and
- The designations of the identified SFHAs in the City's preliminary FIRMs are scientifically incorrect.

The City is therefore appealing the BFEs and SFHA zone boundaries within the City limits. The attached report provides the necessary documentation required for a formal appeal of the FEMA preliminary FIRMs for the City. The basis of our appeal is "*alternative methods or applications result in more correct estimates of base flood elevations, thus demonstrating that FEMA's estimates are incorrect (44 CFR §67.6).*"

Following an assessment of FEMA's preliminary FIRM coastal analysis by its consultant (M&N), the City has identified the primary source of scientific error that results in incorrect BFEs and SFHA boundaries is that FEMA applied a steady state approach in mapping flood zones under the BFEs. FEMA's methodology of mapping all areas below the BFEs contiguous to a flooding source, regardless of duration of elevated water levels and terrain changes, provides an incorrect estimate of flood extents within the City. An alternative method described in the attached report uses an unsteady two-dimensional hydrodynamic model to produce the surface flooding area under the same 1% and 0.2% SWEL used in the FEMA study. The two-dimensional (2D) flow model XPSWMM (Version 17.0) is used in this appeal study. The XPSWMM 2D is one of the FEMA accepted hydraulic models that meet the requirements of NFIP for flood hazard mapping activities. This appeal follows the FEMA guidance mentioned in the "Criteria for Appeals of Flood Insurance Rate Maps" (FEMA, 2011). All supporting data and methodologies have been documented in the attached report.


We understand that FEMA will consider results of more focused hydraulic studies on the condition that the analysis is consistent with FEMA guidelines. A detailed discussion of the alternative unsteady modeling approach is discussed in the attached report. The analysis shows significant less areas of flooding in the Belle Air neighborhood, and revisions to FEMA's analysis are required in order to properly determine BFEs and SFHA boundaries in the City boundaries. The following actions were taken in order to meet the appeal requirements:

- Conducted a new coastal analysis based on the topographic data and stillwater elevations provided by FEMA;

- Applied alternative methodology with a 2D unsteady state model that would provide more accurate results;
- Revised SFHA zone boundaries based on the new analysis.

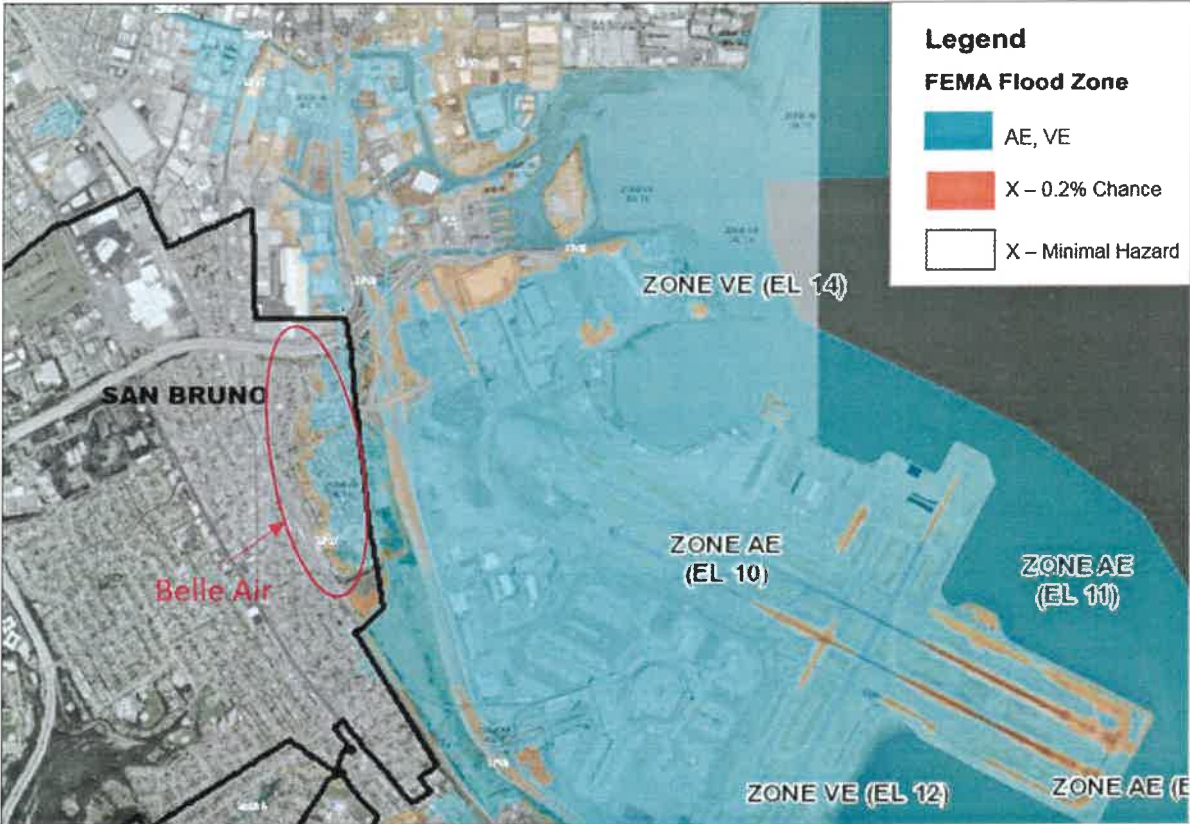
On behalf of the San Bruno City Council, I would like to respectfully request that FEMA gives full and fair consideration of the appeal report.

Sincerely,



Jim Ruane
Mayor

cc- San Bruno City Council
Juliette Hayes, Risk Analysis Branch Chief, FEMA, Region IX
Craig Fugate, Administrator, FEMA, Washington, DC



*Areas Mapped as SFHA That Are Being Appealed Marked with Red Outline