



DEPARTMENT OF THE AIR FORCE
HEADQUARTERS UNITED STATES AIR FORCE
WASHINGTON, DC

MEMORANDUM FOR AFCEC/CL (Mr. Terry G. Edwards)

FROM: HQ USAF/A4C
1260 Air Force Pentagon
Washington, DC 20330-1260

SUBJECT: Tyndall AFB Design Flood Elevation (DFE)

I am issuing this design guidance to the Air Force Civil Engineer Center (AFCEC) and the Tyndall Project Management Office (PMO) to establish DFE levels for the redevelopment of Tyndall AFB, Florida, following its destruction by Hurricane Michael in October 2018. This guidance is applicable only to Tyndall AFB and is intended to ensure that the design of infrastructure and facilities is more resilient to future severe weather events.

Design Flood Elevation is defined as the minimum elevation to design assets considering not just the Base Flood Elevation (BFE), but other factors such as historic storm surge data, sea level change, regulatory mandates, state or local requirements, building code requirements, and an asset owner's risk tolerance. This memorandum established two DFE values for the Tyndall AFB design effort:

- a. For the Gulf side (generally southwesterly of Highway 98) the DFE is 19' above today's mean sea-level (MSL); and
- b. For the East Bay side, generally northeasterly of Highway 98, the DFE is 14' above MSL.

BFE is defined in UFC 3-201-01, *Civil Engineering*, as the, "elevation of flooding, including wave height, having a 1% change of being equaled or exceeded in a given year." BFE is also used to refer to the 100-year flood (or 1% annual chance event (ACE)).

The DFE levels were derived by summing the BFE and the locally adjusted, highest regionalized sea level rise scenario for the year 2100 (representing a global scenario of 2.0 meters by 2100). On the Gulf side, the BFE has been established by the Federal Emergency Management Agency (FEMA) as 12' above MSL, while on the East Bay side, BFE is 7' above MSL¹. The locally adjusted, highest regionalized sea level rise scenario for 2100 is 7' for the Tyndall AFB area.

The Tyndall AFB DFEs consider FEMA BFEs, high water mark data, and sea level rise projections. The DFEs demonstrate long-term risk aversion with minimal cost implications. They

¹ FEMA Federal Insurance Rate Map (FIRM) 2009 and 2019 Preliminary FIRM for Bay County, FL were referenced.

consider the long term potential effects of permanent inundation by incorporating future sea level rise projections and existing flood plain values. Due to the existing topography of Tyndall AFB, and the location of most current and planned construction, the established DFEs will result in the best use of taxpayer dollars while constructing a resilient 21st Century Installation.

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