Precipitation is caused by several mechanisms including cyclones and tropical depressions, isolated thunderstorms, and orographic uplifting of trade-wind squalls over the high (300-600 m), mountainous ridge that runs the length of the island. Unlike many other Pacific Islands, the mountainous ridge runs parallel to the predominant wind direction, and does not cause a significant windward/leeward rainfall gradient. In Faga'alu watershed, rainfall records show average annual precipitation is 6,350 mm at Matafao Mtn. (653 m m.a.s.l), 5,280 mm at Matafao Reservoir (249 m m.a.s.l.) and about 3,800 mm on the coastal plain (Craig, 2009; Dames & Moore, 1981; Perreault, 2010; Tonkin & Taylor International Ltd., 1989; Wong, 1996). Mean annual potential evapotranspiration follows the opposite trend, varying from 890 mm at high elevation to 1,150 mm at sea level (Izuka, Giambelluca, & Nullet, 2005). Tropical cyclones are erratic but occurred on average every 1-13 years from 1981-2014 (Craig, 2009) and bring intense rainfall, flooding, landslides, and high sediment yield events (Buchanan-Banks, 1979).

Buchanan-Banks, J. (1979). The October 28, 1979 Landslidng on Tutuila. Open File Report 81-81. U.S. Geological Survey.

Craig, P. (2009). Natural History Guide to American Samoa. (N. P. of A. Samoa, Ed.). Pago Pago, American Samoa.

Dames & Moore. (1981). Hydrologic Investigation of Surface Water for Water Supply and Hydropower. Honolulu, HI: U.S. Army Engineer District, Honolulu.

Izuka, S. K., Giambelluca, T. W., & Nullet, M. A. (2005). Potential Evapotranspiration on Tutuila , American Samoa. Scientific Investigations Report 2005-5200. U.S. Geological Survey.

Perreault, J. (2010). *Development of a Water Budget in a Tropical Setting Accounting for Mountain Front Recharge: Tutuila, American Samoa*. University of Hawai’i.

Tonkin & Taylor International Ltd. (1989). Hydropower feasibility studies interim report - Phase 1. Ref: 97/10163. American Samoa Power Authority.

Wong, M. (1996). Analysis of Streamflow Characteristics for Streams on the Island of Tutuila, American Samoa. Water-Resources Investigations Report 95-4185. Honolulu, HI: U.S. Geological Survey.

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AM45 (Alex/Trent)

TO DO:

* Mitigation timeline pg 5
* Give before/after side-by-side quarry pics to Susie
  + Horsley-Witten schematic, page ??
* Reference QAPP?
  + deliverable to CRCP grant, post to CORIS?
  + send to Susie
* Change wording from journal article so not verbatim, self-plagiarism