



Cities on Volcanoes 9
November 20-25, 2016
Puerto Varas, Chile

'Understanding volcanoes and society: the key for risk mitigation'



Feasibility of lava diversion as a risk mitigation tool

John P. Lockwood ¹ and Frank A. Trusdell ²

¹Geohazards Consultants International, Volcano, Hawaii

²USGS Hawaiian Volcano Observatory, Hawaii Volcanoes National Park P.O., Hawaii

Key words: Lava diversion; lava flow hazards and risk

The artificial diversion of lava active flows by human intervention has been attempted many times since the first recorded effort on the flanks of Etna volcano in 1669. Although most of these efforts have failed, technological advances (powerful earthmoving equipment, high capacity water pumps, explosives delivery) and better understandings of lava flow transport systems have led to successful flow diversion, most notably in Sicily, Iceland, and most recently in Hawaii. Lava flow diversion is not normally a feasible option, and after an eruption begins, it can only be considered under very special circumstances - where there is ample time, where terrain is favorable, and where economic and socio-political factors justify the major efforts and costs that may be involved. Construction of lava diversion structures to protect high value properties in advance of eruptive activity may be warranted in high hazard zones.