Documentation backing the safety factor for approaches with Vertical Guidance

We have found two documents which confirm the 8 times safety factor afforded by an instrument approach with vertical guidance over lateral guidance alone.

The first is a Working Paper from the International Civil Aviation Organization (ICAO) entitled "Performance-based Navigation – The Implementation Challenge" dated 10/9/2010. On page 2, under "Discussion" it states **"ICAO controlled flight into terrain (CFIT) studies have shown that runway-aligned approaches (LNAV only) are some 25 times safer than circling approaches, and that once some form of vertical guidance is added to these approaches the safety margin is increased again by a factor of eight."** To read the entire document follow the link:

https://www.icao.int/Meetings/AMC/Assembly37/Working%20Papers%20by%20Number/wp148_en.pdf

Note that Chatham only currently has circling approaches (without lateral guidance), so according to the ICAO, adding just the runway aligned (straight in) approaches would be 25 times safer than the circling approaches we have now.

The second document is a slide presentation made on January 16, 2014 by AOPA Australia and New Zealand (see the actual slides below). The second slide is titled "APVs (**AP**proaches with **V**ertical Guidance) Would Bring Significant Safety Benefits". On the slide there are multiple fatal accidents cited, and at the bottom it is stated "**Approaches with Vertical Guidance (APV) are eight times safer than lateral guidance alone"**

A recent accident in our region highlights the increased risk associated with circling approaches. NTSB Accident Number ERA13FA358 describes a tragic accident in East Haven Connecticut on Aust 9, 2013. The accident occurred on an instrument circling approach. There were 4 fatalities: 2 in the aircraft and 2 on the ground. **This accident could have been prevented with a straight-in approach.**

The airport commission is duty bound to apply for safer approaches than the ones currently in use in Chatham. Just because we have not had an accident in Chatham, does not mean we can ignore the lessons learned from accidents which have occurred in other places. We must work to prevent accidents from happening in the future.

APVs Would Bring Significant Safety Benefits

- 1993: Seven deaths, including school children in Piper Navajo, on approach near Young
- 2003: Beech King Air struck sea wall on approach at Coffs Harbour
- 2004: Six deaths in Piper Cheyenne on approach at Benalla
- 2005: Three deaths in Piper Chieftain on approach at Mt Hotham
- 2005: Fifteen deaths in Fairchild Metro-liner on approach at Lockhart River

Safety issues associated with descent below minimum altitudes are not just confined to small and regional aircraft.*

* Examples of multiple ATSB reports since 2010; more similar incidents could exist:
(AO-2010-027: Airbus A330; AO-2011-091: Embraer 190; AO-2012-040: Boeing 737;
AO-2012-120: Boeing 747; AO-2011-086: Boeing 777; AO-2011-070: Airbus A320)

Approaches with Vertical Guidance (APV) are eight times safer than lateral guidance alone.