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### Geodetic Connections to Tide Gauge at Lorne

#### RESULTS OF OPTICAL LEVELLING

Bench Mark Name	Lorne PM19	Lorne PM86	Lorne PM82	GPS Pillar	Lorne PM84	Lorne PM81	Lorne PM XL58/5	T.G. Ext. Datum
AHD Ht (m) Jun 1993	26.951	6.9848	7.6041	-	3.6747	4.0437	4.0605	3.0468
AHD Ht (m) Dec 1994	-	6.9848	7.6042	-	3.6749	4.0441	4.0611	3.0472
AHD Ht (m) Mar 1995	-	6.9848	7.6043	5.5335	3.6749	4.0441	4.0607	3.0469
AHD Ht (m) Apr 1996	-	6.9848	7.6043	-	3.6753	4.0445	4.0612	3.0467
AHD Ht (m) Feb 1998	-	6.9848	7.6044	-	3.6755	4.0449	4.0619	3.0471
AHD Ht (m) Aug 1998	-	6.9848	7.6043	-	3.6752	4.0443	4.0615	3.0474
AHD Ht (m) Nov 2000	-	6.9848	7.6044	-	3.6750	4.0446	4.0614	3.0473
AHD Ht (m) Nov 2002	-	6.9848	7.6042	-	3.6748	4.0447	4.0615	3.0468
AHD Ht (m) Feb 2005	-	6.9848	7.6047	-	3.6756	4.0455	4.0624	3.0484
AHD Ht (m) Mar 2005	-	6.9848	7.6046	-	3.6754	4.0452	4.0621	3.0480
Comments	Datum for AHD heights. (GBM 424)	Adj. from GBM. Coastal array primary BM (P206-9H).	Coastal array BM (P206-7H).		Coastal array BM (P206-5)	Coastal array BM (P206-4)	Coastal array BM (P206-3). On pier.	Seaframe sensor recovery BM (P206-2). On pier.

\*\* In 2007 the tide gauge at Lorne was moved to a new pier. The 2007 level survey was the first connection to the new tide gauge and several coastal array BMs. The results of the 2007 survey and all subsequent surveys are shown on the following page. \*\*



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In 2007 the tide gauge at Lorne was moved to a new pier. The 2007 level survey was the first connection to the new tide gauge. Please note that most of the bench marks listed in this table are different to those surveyed in the previous surveys.

Bench Mark Name	Lorne PM86	Lorne PM82	Lorne PM85	Lorne PM84	Lorne P206-36	Lorne P206-37	SUTRON Ext. Datum
AHD Ht (m) Jun 1993	6.9848	7.6041	2.0448	3.6747	-	-	-
AHD Ht (m) Aug 2007	6.9848	7.6048	2.0456	3.6749	4.9864	4.7136	3.5734
AHD Ht (m) Oct 2009	6.9848	7.6048	2.0456	3.6754	4.9867	4.7139	3.5746
AHD Ht (m) Sep 2011	6.9848	7.6047	2.0458	3.6758	4.9872	4.7145	3.5752
AHD Ht (m) Mar 2013	6.9848	7.6047	Destroyed	3.6755	4.9870	4.7142	3.5771
AHD Ht (m) Apr 2015	6.9848	7.6048	-	3.6761	4.9872	Not observed	3.5761
AHD Ht (m) May 2017	6.9848	7.6049	-	3.6758	4.9866	4.7140	3.5758
AHD Ht (m) April 2019	6.9848	7.6056	-	3.6766	4.9895	4.7176	3.5814
Comments	Adj. from GBM. Coastal array primary BM (P206-9H).	Coastal array BM (P206-7H).	Coastal array BM	Coastal array BM (P206-5)	Coastal array BM	Coastal array BM	Seaframe sensor BM