

Appendix 3.34.1: Method of cost-analysis related to holding tank installation

Below is an approximation of projected costs of holding tank fit-outs across the recreational boating community. Absent from this analysis are some pieces of critical data which were not available at the time this report was drafted:

- Number of vessels in Auckland that possess a holding tank system.
- Comprehensive analysis of the total cost of a holding tank system and installation;

Cost framework

An average cost of \$733 has been assumed as a reasonable mid-point for a holding tank fit out. This is based on the costs identified in the below table. The cost of components is based on the retail prices sourced from a New Zealand based retail outlet (Discount Marine), except where specified.

Component	Comments	Price
Holding tank	This is variable and dependant on the type of system and size of tank installed. A basic 24-litre tank has been assumed for this component.	\$165.00
Pump	Single diaphragm pump	\$299.00
Hose	38mm waste hose	\$39.00
Other components	This includes <ul style="list-style-type: none"> • Pipe fittings • Stainless steel clamps • Breather pipe Estimated based on circumstantial evidence in addition to retail prices	\$80.00
Installation	Estimated based on circumstantial evidence	\$150.00
Total		\$733.00

Number of vessels

The number of vessels used in this analysis is based on figures estimated by Beca (2012) and results in 57,000 boats in Auckland. The classes of vessels included are as below:

Vessel type	Estimated numbers (Beca 2012)
Yachts and launches	11,000
Trailer power boats (3.5m – 8.5m)	38,000
Personal water craft	3,000
Trailer sailing boats (5m – 8m)	5,000
Total	57,000

In order to determine the number of vessels able to install and benefit from a holding tank, the following category of vessel was not included:

Dinghy/ canoe/ Lasers/ Optimists/ windsurfers etc (75,000)

Analysis

Scenarios based on the Alternatives identified in 3.0 have been used to determine costs associated with the likelihood of uptake. These are presented in the table below:

Scenario	Description	Uptake (% of current vessel stock)	Total vessel fit-outs	Cost (nearest thousand)
Alternative 1	Low take up based on Alternative 1, due to ease in which sewage can be lawfully discharge.	5%	2,850	\$2,089,000
Alternative	Medium take up based on a balance	15%	8,550	\$6,267,000

2	between fit-outs and boats choosing to 2km exclusion area.			
Alternative 3	Medium take up based on a balance between fit-outs and boats choosing to exit harbours.	17.5%	9,975	\$7,312,700
Alternative 4	High level of uptake based on exclusion	25%	14,250	\$10,445,000