



GUEMES ISLAND FERRY REPLACEMENT Preliminary Shoreside Cost Estimate

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References

1. *Guemes Island Ferry Replacement, Preliminary Design Report*, Glosten Inc., Report No. 17097.02-053-02.
2. *Anacortes / Guemes Island Ferry Replacement, 30% Review Set*, PND Engineers Inc., Project No. FEMP-5.
3. *28-Car Options Cost Estimate*, Glosten Inc., Project Memorandum 17097.01, 30 March 2018.
4. *Guemes Island Ferry Replacement, Preliminary Vessel Cost Estimate*, Glosten Inc., Report No. 17097.02-043-03.

Summary

A capital cost estimate has been developed commensurate with the preliminary shore electrical and terminal design shown in References 1 and 2. The total cost of work in this scope is estimated to be between \$5.1 and \$7.3 million, with a nominal price of \$6 million. Approximately two thirds of the cost is associated with shoreside charging equipment, and one third for terminal upgrades. The low to high range considers a range of shoreside electrical equipment costs and a range of terminal upgrade and modifications costs.

Using appropriate line items for a direct comparison, the previous estimate (Reference 3) was \$8.7M. An explanation for the decrease in the current nominal cost estimate to \$6.0M is provided in the Interpretation section below. Vessel costs are estimated in Reference 4.

Assumptions

The following metrics were used to develop the cost estimate:

- 0% tax on shore electrical improvements per RCW 82.08.996 (electric vessels exempt).
- 8.8% tax on terminal improvements not related to above exemption.

Cost Breakdown

Table 1 represents the anticipated capital cost breakdown of the shoreside charging infrastructure, terminal upgrades, and other components necessary to support a complete and functional electric vessel.

Table 1 Preliminary capital cost estimate for the replacement ferry program, cost x \$1,000

	High	Nominal	Low
Shore Construction Total	7,323	5,955	5,054
Shoreside Electrical Total	5,230	3,953	3,144
Outside Construction Management (4%)	179	134	106
PSE Utility Connection	123	123	123
Electrical Construction	4,480	3,360	2,650
Estimating Allowance (10%)	448	336	265
Shore Electrical System	2,000	1,500	1,300
Charging Apparatus	1,600	1,300	1,000
Shipping, installation, commissioning	880	560	350
Terminal Total	2,093	2,001	1,910
Construction Management (by Skagit)	-	-	-
Permitting	75	75	75
Terminal Construction	2,018	1,926	1,835
Terminal Tax (8.8%)	143	136	130
Estimating Allowance (10%)	171	163	155
Dolphin Upgrades	604	576	549
Apron Replacement	433	413	393
Wing Wall and Mooring Upgrades	413	394	376
Charging Platform and Access (tax exempt)	255	244	232

Interpretation

While the above costs do not include an explicit contingency, the High cost estimate of \$7.3M could be considered an upper budgetary cost.

The previous cost estimates published in 2018 (Reference 3) showed variations of ferry size (32 and 28 car). They also included alternative charging solutions (termed Limited) that purposefully undersize the charging system to save cost but result in a ferry that would be delayed often due to weather and higher tidal currents. The shore infrastructure presented herein supports a ferry that is fully capable of operating 95% of the time on electric power alone. With the ferry's onboard supplemental auxiliary generator, it will be able to maintain schedule on greater than 99% of all runs.

The shore equipment associated with the 28 Car cost estimate provided in Reference 3 is \$8.8M, while the 28 Car Limited cost is \$5.8M. For direct comparison, removing design costs and other superseded categories results in a total cost of \$7.8M and \$5.0M, respectively

Shoreside electrical equipment costs have decreased since the last cost estimate. This resulted from a better understanding of the magnitude and range of possible costs informed by the RFI process.

The terminal costs have increased due to several factors. Previous estimates only included dolphin upgrades and apron modifications. As a result of advancing the planned design of the charging apparatus and supporting structure, some of the estimated cost previously attributed to the shore charging apparatus is now categorized as a terminal upgrade. Finally, new work has exposed the need to modify the wingwalls (including disposal of treated lumber).