



REPORT TO COUNCIL

DATE: August 10, 2015
AUTHOR: Lori Wiedeman, Chief Administrative Officer
SUBJECT: Boat Launch Breakwater Option Decision

RECOMMENDATION:

That Council selects an option for the breakwater so that staff can proceed with the bidding and construction phases.

Either option would provide the protection of the shoreline and ensure the safety of the users of the ramp and should see life spans in excess of 70 years. Both options have the necessary upgrades to the ramp and drainage at the site and the concrete precast panels should see a life span of 50+ years with proper maintenance and cleaning.

The pros and cons for each option are outlined below for Council’s consideration.

Option 1: Blast Rock		Option 2: Lock Block	
Pros	Cons	Pros	Cons
<ul style="list-style-type: none"> • Lower up-front costs than Option 2 (\$2,997). • Potential to involve more local contractors. • Lower final costs at \$816,477 (\$33,665 lower). • Blends in with adjacent beachfront. 	<ul style="list-style-type: none"> • \$23,807 over current approved funding total. • 36 feet less usable distance for the boat ramp and floats (up to 50% less usability). • Float storage in parking lot. • \$513,807 cost does not include floats, paving or parking meter (additional \$302,670). • Disturbance to existing beach due to expanse of the breakwater toe. 	<ul style="list-style-type: none"> • Longer dock (36 feet), greatly increases usability. • Less width at bottom of ramp. • Smaller water lot lease required. • Could provide a viewpoint/ public space on top. • More cost effective/ simple floating dock support structure • Float storage on top of breakwater 	<ul style="list-style-type: none"> • \$26,804 over current approved funding total. • Higher up-front costs than Option 1 (\$2,997). • Material must be sourced off island. • \$516,804 cost does not include floats, paving or parking meter (additional \$333,338). • Higher final costs at \$850,142 (\$33,665 higher). • Longer construction time. • Does not blend in to natural surrounding as well.

BACKGROUND:

Skyline Engineering has provided two options for the breakwater portion of the Boat Launch Project. The information provided by the engineer has been used to source quotes for quantities for each option.

Option 1: Blast Rock Breakwater

Items Included				Cost
Pre-cast Concrete Ramp				\$237,832
Armour Layer	Under Layer	Core Layer	Concrete Pads	\$270,975
Rock Placement	Steel Pipes	Steel Bracing		
Parking Lot Drainage				\$5,000
TOTAL				\$513,807

Option 2: Lock Block Breakwater

Items Included				Cost
Pre-cast Concrete Ramp				\$237,832
Lock Blocks	Rock Fill	Armour Layer		\$273,972
Geogrid Textile	Rock/Block Placement	Dock Guide Piles		
Parking Lot Drainage				\$5,000
TOTAL				\$516,804

NOTE: Floating Dock Sections

The floating dock structures have shorter life expectancies due to the wood content and salt water conditions. They are also the only non-static components and as such will wear around the hinges and piling supports.

Option 1: Blast Rock – 33 linear meters	Option 2: Lock Block – 44 linear meters
\$92,004	\$122,672

In order to cost the floating dock sections, we contacted the Small Craft Harbour Program with the Department of Fisheries and Oceans and they have provided their costs for similar dock sections at \$3,788 per meter. Skyline Engineering has recommended using a price of \$2,788 per meter which is reflected in the quotes above.

Engineering Comments:

	Option 1: Blast Rock Breakwater	Option 2: Lock Block Breakwater
Cost	\$513,807	\$516,804
Useability	Approx. 50% usability of the floating dock structure (medium to high tide only).	Approx. 80% usability for the floating dock structure due to the extended length.

If budget constraints do not allow for the lock block breakwater I recommend deletion of the floating dock structure and replacement with a fixed dock (i.e. 3” concrete platform next to ramp that submerges when tide comes up. This fixed dock also reduces the height requirements of the breakwater and you could have a much more economical smaller blast rock breakwater).

It is up to the Council to decide if a floating dock structure is affordable. There is no doubt that the users will greatly appreciate the floating dock. In the lower mainland launch facilities with floating docks see 70% to 80% more traffic than the ones without.

The benefits that are provided by a floating dock structure are listed below:

- Increased safety for occupants (submerged concrete fixed docks get slippery and have to follow the slope of the ramp)
- Increased safety for boaters. Exiting and entering the boat is difficult without a floating dock
- Increased ability to use ramp in rough water
- Decreased loading and unloading time (quicker to get on and off the boat as well as having multiple boats at the dock at one time)
- Increased tourist usage (many tourists will not utilize a facility that does not have a floating dock due to concerns about damage to boat)

BUDGETARY IMPACT:

Source	Amount
Gwaii Trust	\$120,000
NDIT	\$250,000
VQC Gas Tax	\$120,000
Sub Total (approved funds)	\$490,000

Canada 150 (not approved)	\$100,233
VQC Surplus (or grant)	\$100,433
TOTAL	\$690,666

Original Budget Estimate	
Boat Ramp	\$44,888
Floats and Breakwater	\$332,500
Culvert	\$5,000
Parking Meter	\$10,000
Paving	\$200,666
TOTAL	\$593,054

Option 1: Blast Rock	
Survey	\$5,121
Engineering	\$40,877
Boat Ramp	\$237,832
Breakwater	\$270,975
Culvert	\$5,000
Sub Total	\$513,807

Option 2: Lock Block	
Survey	\$5,121
Engineering	\$40,877
Boat Ramp	\$237,832
Breakwater	\$273,972
Culvert	\$5,000
Sub Total	\$516,804

Floats *	\$92,004
Parking Meter **	\$10,000
Paving ***	\$200,666
Sub Total	\$302,670

Floats *	\$122,672
Parking Meter **	\$10,000
Paving ***	\$200,666
Sub Total	\$333,338

TOTAL	\$816,477
--------------	------------------

TOTAL	\$850,142
--------------	------------------

Note *: Seeking further quotes/options for floats

Note **: Could consider cheaper options for user pay vs Parking Meter

Note ***: Paving includes costs for mobilization – Canada 150 Grant application in process

SIGNATURE:



Lori Wiedeman, Chief Administrative Officer