



REPORT TO COUNCIL

DATE: May 22, 2018
AUTHOR: Lori Wiedeman, Chief Administrative Officer
SUBJECT: Boat Launch Upgrade Project Completion

CONCLUSIONS:

1. The Boat Launch Upgrade Project has significantly increased the functionality, safety and desirability of the boat launch in a heavily boat dependant region.
2. The original conceptual design estimate of **\$559,000** was unable to take the site limitations into account as topographical and hydrographical surveys were not available when it was developed.
3. Following Phase 1 of the project, Phase 2 came in **3% over budget** at \$371,935 instead of \$359,700 and Phase 3 came in **38% under budget** at \$144,880 instead of \$232,723.
4. The final cost of the project was **\$881,664**, or **58% above** the original conceptual estimate.
5. The lessons learned from this project resulted in the development of a comprehensive Project Business Case tool that provides more rigor and analysis up front, while building in project phasing where feasible to keep the scope manageable; and the development and implementation of a Communications Strategy for the Village.

STRATEGIC ALIGNMENT:

This project supports the following Key Strategic Priorities from the Council Strategic Plan:

- **Transportation Planning and Infrastructure Development** – to develop short and long term plans to ensure sustainability of community assets and community planning
- **Public Spaces and Recreation** – to develop community gathering spaces and recreational facilities to promote a healthy lifestyle, community recreation and youth activities

This project supports the following sections of the Official Community Plan: Section 6: **Community Growth**; Section 7: **Social Well Being**; Section 9: **Commercial Land Use – Marine Commercial**; Section 12: **Parks, Trails and Recreational Land Use**; Section 15: **Transportation – Water Transport**; and Section 16: **Municipal Infrastructure/Community Services – Emergency Services**.

BACKGROUND:

Originally built for airplane use, the previous ramp design was a simple black top extending into the bay. Unprotected from weather and lacking any kind of docking facility, the ramp was poorly reinforced and under threat of complete deterioration as the rock protection along both edges of the ramp had been undermined by wave forces, exposing the ramp structure which was rapidly eroding.

The project was initiated based on a conceptual design provided by Stantec Engineering, which was estimated to cost \$559,000. The design envisioned a protective access barrier, a floating walk-way, an expanded parking area and improved drainage.

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The project received initial grant funding from Gwaii Trust, the Northern Development Initiative Trust (NDIT) and the Federal Gas Tax Community Works fund for a total of \$490,000. This was enough to move forward with the engineered design while continuing to seek funding.

An additional \$391,664 was applied for and approved in 2016 and 2017 from Gwaii Trust and the Federal Gas Tax Community Works fund allowing the Village to complete the project. The generous support of all of our grant funders has been greatly appreciated.

PROJECT PHASES:

Phase 1 – Engineering, manufacture and transportation - \$364,830

This phase of the project involved developing a construction ready engineered design, and the manufacture and delivery of the components and supplies for the breakwater construction.

Skyline Engineering was the successful bidder with Cord MacLean assigned as the lead engineer. After conducting site surveys, both on the land and underwater, and completing archeological and environmental evaluations, two options were provided for Council to consider: a blast rock breakwater and a lock block breakwater. Site specific constraints included mitigation measures to prevent serious harm to fish, and a significant drop off at the end of the existing ramp that limited the potential length and type of breakwater structure that could be built.

The Village held a public consultation on June 16, 2015, at the Youth Centre with the engineer present. The plans were presented and the public was invited to view them and ask questions. The feedback from this session was that residents preferred the lock block option and wanted a floating dock structure for as many months as possible each year.

Council approved the lock block breakwater option on August 10, 2015. The lock blocks, ramp sections, and geogrid fabric were ordered, the Kagan Bay log sort was used as a staging ground, and additional grant funding was secured prior to moving forward with Phase 2.

Phase 2 – Construction - \$371,935

The initial budget for this phase of the project was \$359,700. Berg-Mac Industries Ltd. (a local contractor) was the successful bidder for the construction of the lock block breakwater. The contract included: installation of the cement ramp panels, deadman anchor and 2 apron panel sections; installation of the lock block breakwater; placement of rip rap; and installation of the cast in place concrete section at the top of the ramp as per the engineered drawings. In order to minimize delays, the Village ordered and supplied the geo-grid material used to anchor the lock blocks together. The contractor was responsible for implementing all of the Department of Fisheries and Oceans mitigation measures as listed in the permit and an environmental/archeological monitor was on site during construction. Drainage work on the parking area was also completed during this phase of the project.

As construction had to be timed to the tides for the intertidal work, the Village partnered with BC Ferries to provide access to the Skidegate Terminal Kwuna Ramp during construction closures.

During construction a small area of liquefiable soil was identified. Compaction was performed by vibratory roller compactor except for areas within several feet of that soil as instructed by Ryzuk Geotechnical. Construction was delayed until the first few layers of lock blocks had settled sufficiently to recommence construction.

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Overall a minimal amount of settling was noted on the bottom east corner of the breakwater, approximately 7/8", which is less than what was predicted by the geotechnical engineer. Ongoing monitoring has confirmed that there has been no additional settling since construction was completed.

The initial timeframe for completion of this phase of the project was the end of September 2016, and the project was completed on July 31, 2016.

Phase 3 – Floating Docks - \$144,880

Council conducted a Boat Launch Survey between August 19 and September 3, 2016 to help guide what would be included in the next phase of the project. The results showed that the majority of respondents ranked a floating dock system or floating breakwater as the most important improvements that could be made. As a result, Council approved moving forward with Phase 3 on September 19, 2016.

A permanent floating dock system was considered but due to the regular and intense storms that can occur, mostly in the fall and winter, it is likely that any permanent structure could be damaged over the fall and winter months requiring more frequent replacement. As well, with removable floats, maintenance can be performed annually when they are pulled out and returned.

The initial budget for this phase of the project was \$232,723, with an anticipated ongoing operating and maintenance cost for the entire project of approximately \$5,650 annually.

Pineault Welding and Fabricating Ltd. (a local contractor) was the successful bidder for the construction and installation of the floating dock system. The project included the manufacture, supply and delivery of floating docks and dock guide system including installation hardware and concrete work; and the installation of the dock guide system and floating dock sections, as per the engineered drawings.

The initial timeframe for completing this portion of the project was the end of September 2017, however, due to delivery delays and contractor staffing challenges, the project completion was extended, with final completion in February 2018.

Phase 4 – Parking Lot

The final phase of the project will be the paving of the parking area. With the approval of the 3-year \$4 million Transportation Network Improvement Project in 2018 the Village is planning to make upgrades to the parking area by widening and flaring the entrance and tying the pavement into the start of the boat ramp. The exact timing of these improvements will be determined in the planning stage.



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OTHER IMPACTS:

The facility is no longer able to be used for seaplanes, however, seaplanes can use the seaplane dock at the QC harbour or, if capable, they can use the airport to land for repairs.

PERFORMANCE MEASURES:

Measure	Result
Increased tourism and improved visitor satisfaction	Tourists survey planned for 2018
Improved satisfaction of local boat launch users	Resident Satisfaction Survey planned for 2018
Positive comments around infrastructure improvements brought forth to Council and Village staff	Several residents have reported to both staff and Council that they are enjoying the facility
Increased recreation and business usage of the boat launch facility	Since completion of Phase 2 the boat launch has seen steady use, which has increased with the addition of the floating docks
Decreased reports of damage to boats and other property experienced by launch users, and overall improvement to safety	We have heard reports that some boat users are no longer using the docks at the harbour and are instead using the boat launch as they find it more convenient with the new dock system – no boat damage has been reported
Revenue generation and percentage of local uptake of the annual boat launch pass program	System will not be implemented until Phase 4 of the project is complete

LESSONS LEARNED:

Both Council and staff have learned a lot from this project which is the largest infrastructure project since the \$6.2 Million Water Treatment Plant. With a new Council and a new CAO, this project came with a steep learning curve. We learned that the planning phase of projects is essential and we should seek more planning level funding to give Council more information when they are making decisions about major projects. As a result, staff have created our Project Business Case which has been used for all major projects since Phase 2 of the Boat Launch Upgrade Project. This decision making tool adds more rigor and analysis to reports, while building in project phasing up front where feasible to keep the scope manageable. We also learned that we need to do a better job communicating with the community and we have initiated a projects page on our website and Council has adopted a Communications Strategy with assistance from the Northern Development Initiative Trust (NDIT) which was most recently utilized in the Sewer Treatment Property Purchase Proposal Referendum.

BUDGETARY IMPACT (if applicable):

The following tables detail the project funding (based on date approved) and expenditures and the anticipated ongoing operations and maintenance requirements for the improved facility.

Funding	2015	2016	2017	2018	TOTAL
Federal Gas Tax	\$120,000	\$21,531		\$45,065	\$186,596
Gwaii Trust MC	\$120,000		\$99,815		\$219,815
Gwaii Trust VHGC		\$225,233			\$225,233
NDIT	\$115,533	\$134,467			\$250,000
TOTAL	\$355,533	\$381,231	\$99,815	\$45,065	\$881,644

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Expenses	2015	2016	2017	2018	TOTAL
Phase 1	\$364,830				\$364,830
Phase 2		\$371,935			\$371,934
Phase 3			\$84,816	\$60,064	\$144,880
TOTAL	\$364,830	\$371,935	\$84,816	\$60,064	\$881,644

Post Project Operations and Maintenance	
<i>Projected Lifespan:</i>	20 + years for floating docks and 50 + years for breakwater and ramp
<i>Projected Maintenance Schedule:</i>	<ul style="list-style-type: none"> • Pressure wash ramp spring and fall (\$900) • Remove floats for winter, inspect and repair (\$1,000) • Re-install floats for spring, inspect and repair (\$1,000) • Weekly inspections during peak season • Weekly garbage removal and bathroom inspection/cleaning (\$500) • Quarterly bathroom pump-out (\$1,500) • Annual breakwater/ramp condition inspection • Annual parking lot condition inspection and repair/grading (\$750)
<i>Additional Equipment Requirements:</i>	<ul style="list-style-type: none"> • Annual removal and re-installation of the floats will be tendered to a local contractor with the appropriate equipment • Quarterly bathroom pump-out will be tendered to a local contractor with the appropriate equipment
<i>Projected Total Operations and Maintenance costs over Lifespan:</i>	\$5,650 annually x 50 years = \$282,500 <i>Note: does not project inflation</i>

Note: With ongoing maintenance managed through the Village, the anticipated lifespan of the floating dock sections is 20 years. The potential impact of teredos (a boring mollusk found on the coast of BC) on the yellow cedar will be monitored closely. Aluminum caps will be added to the tops of the piles, and if the docks are removed from the water for a period of 1 month each year, it should effectively kill off any teredo worms or eggs. All wood components of the dock within the waterline can be easily replaced. The wood structure of the docks has been designed to be stronger than usual and therefore is capable of losing some of the integrity of the wood without compromising the overall dock integrity. Cord MacLean, Skyline Engineering

Budgeted Amount: \$5,650 annually Unbudgeted Amount: N/A

SIGNATURES:



Lori Wiedeman, Chief Administrative Officer