

**Island Coastal Economic Trust**

**The Cowichan Bay Harbour Improvement and Expansion Project**

**Completion Report**



**Submitted by:**

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## **Executive Summary**

The Cowichan Bay Harbour Improvement and Expansion Project was a partnership project between the Cowichan Bay Fishermen's Wharf Association (Proponent), Community Fisheries Development Centre, Small Craft Harbours / Fisheries and Oceans Canada, Human Resources Canada / Ministry of Housing and Social Development, the West Coast Community Adjustment Program and Island Coastal Economic Trust.

Historically, Cowichan Bay has been highly dependent upon the fishing and forestry sectors for local employment and economy. The dramatic downturn in the salmon fishery in the late 1990's had a devastating effect on employment in the community. With continuing declines in income and employment from the resource-based sectors (forestry and fisheries) in the community, the local economy continued to diversify towards tourism opportunities and investments in the region for new sustainable employment and economic development. This infrastructure project further supported the diversification of the local economy, expanded employment opportunities within existing tourism related businesses in Cowichan Bay and created new employment opportunities through the creation of new businesses through attracting more visitors and business to the region.

Over 106 man months of employment was directly generated through the two construction phases of this project including local electricians, plumbers and pile drivers. One full time employee was also hired by the harbour to help meet the new demand for the increase in use to the facility. A local supplier, Jornic Marine Construction of Lake Cowichan supplied all treated lumber and float kit materials for the expansion and upgrade. Hardware, tools and construction equipment required for the project was also be purchased locally. Upon completion the improved harbour facility has increased employment opportunities within existing local businesses and will generate many new employment opportunities for new businesses to operate in Cowichan Bay in the future.

The harbour upgrade and expansion project was required to meet the needs of current harbour users, serve the current unmet demand from both traditional and new markets for harbour space, and ensure the continued viability of the mixed use Cowichan Harbour. The additional 840 feet of tie up space now provides moorage for the transient recreational market in the summer season. The Visitors dock offering deep-water moorage for larger recreational vessels, fresh water, hydro and full onshore services will attract significant new economic opportunity to the area. The expansive repairs and upgrades to the existing docks will ensure the facility will continue to provide safe and reliable marine infrastructure in the community.

The expansion of float space has included the construction and installation of two new 100 ft. x 9 ft. float fingers and two new 90ft. x 12 ft. float fingers. These float fingers are attached to the end of the existing F Float run north for 90 ft then west for 100 ft forming an L. The floats will were constructed on site at Cherry Point, launched and installed by a local crew of unemployed resource based industry workers. The project provided a total of fifteen months of work experience and skills training for nine different

participants, assisting them in upgrading their skill sets to reenter the local workforce. Local contractors carried out all electrical upgrades, float installation and diving contracts.

Total cost of the project was \$ 1,097,576.00. The start date of the project was December 3, 2007 with a completion date of August 2, 2010.

### **Summary of Work**

The Cowichan Bay Harbour Improvement and Expansion Project started on December 3, 2007. The Project Manager notified Global Vocational Services in writing on December 3 of the start and end dates, description of the project as well as a detailed job description for participants. Although some interest was shown by a number of clients, an advertisement in the local paper helped to generate more interest in the project. The site supervisor, Al Ladret, (*Snuffy*) was hired and the workboat (Wild Thing) was brought down from Campbell River and positioned at the main floats in Cowichan Bay on Dec 13. Accounts with local suppliers were set up in town as well.

On December 13 the Project Manager and Site Supervisor conducted interviews and selected four participants for the project. Over the next few days four eligible clients were signed up and started working on the project on December 17 –18, 2007. Appropriate signage for the project was produced, laminated and posted on site in Cowichan Bay.

Meetings were also set up in Cowichan Bay with the Harbour Manager with a full discussion on the project objectives and goals being discussed. All of the new decking, sideboards and bullrail materials had arrived on site by December 14. As much of the old decking and materials as possible was to be recycled. The Site Supervisor and Project Manager carried out another thorough inspection of the facility.

The crew was issued a complete set of personal safety gear, including personal floatation devices, raingear, steel toed boots, safety glasses and hearing protection. All participants signed for their gear. The Project Manager and Site Supervisor delivered a full safety and project orientation to the crew prior to work beginning on the project. Over twelve metres of bullrails, sideboards and decking were replaced on D float during the first month of the project.

Significant progress was made on the Project in the month of January. Float finger D was completed. All decking, sideboards, bullrails, risers, piling wells and necessary structural beams were replaced. Light standards and power boxes were removed with new beams and decking being replaced underneath prior to reinstallation. All piling wells were realigned with heavy plastic liners and new kickboards installed around each well. The dry water line was removed and reinstalled when the decking was completed. This work resulted in the complete restoration of 38.4 metres of float in the harbour.



The crew also began work on G float finger in January. Decking, bullrails, sideboards and risers began to be replaced. The oversized piling well at the end of the dock was rebuilt and framed to an appropriate size. Several of the beams under the electrical outlets were replaced. This was very time consuming and difficult work. All of the materials for the project arrived and were on site. The crew assisted in the unloading and stacking of all of the materials for the floats.



The entire crew completed their Saint John's Ambulance First Aid Course in Duncan on January 15<sup>th</sup> and completed their Transportation Endorsement on February 1<sup>st</sup>. The crew also completed the first day of a two-day WCB certified chainsaw operators safety course on January 30. The second half of the course was completed the next month. A Safety Officer from Worksafe BC visited the site January 29, 2008. We were instructed to install ground fault circuit interrupters on our electrical extension cords. The site supervisor made up new cords with interrupters and sent the report back to Worksafe BC. All other safety equipment and safety procedures were found to be in compliance with WCB regulations. Safety meetings continued to be held on a regular basis with the crew and site supervisor.

Once again, significant progress was made on the Cowichan Bay Harbour Project in the month of February. Float finger G was completed. All necessary decking, sideboards, bullrails, risers, piling wells and necessary structural beams were replaced. Light standards and power boxes were removed with new beams and decking being replaced underneath prior to reinstallation. All piling wells were realigned with heavy plastic liners and new kickboards installed around each well. The dry water line was removed and reinstalled when the decking was completed. This work resulted in the complete restoration of 36.58 metres of float in the harbour.



The crew also began work on A float finger in February. Decking, bullrails, sideboards and risers on the outside of A finger were replaced. All piling wells were reframed and lined with plastic. Several of the beams under the electrical outlets were replaced. Several old bullrails were reused as support beams under the floats. The new float kits arrived and were stored at the Cherry Point location. These new floats would be assembled and launched at the Cherry Point site and towed to the Cowichan Bay harbour once completed.

Warmer spring weather allowed significantly more progress to be made on the Cowichan Bay Harbour Project in the month of March. Float finger A was completed. All necessary decking, sideboards, bullrails, risers, piling wells and necessary structural beams were replaced. Light standards and power boxes were removed with new beams and decking being replaced underneath prior to reinstallation. All piling wells were realigned with heavy plastic liners and new kickboards installed around each well. The dry water line was removed and reinstalled when the decking was completed. This work resulted in the complete restoration of a further 45.11 metres of float in the harbour.

The crew also began work on D float finger this month. Decking, bullrails, sideboards and risers on the outside of D finger were replaced. All piling wells were reframed and lined with plastic. Several of the beams under the electrical outlets were replaced. New creosoted beams were used as support beams under the floats. The six new float module kits were assembled at Cherry Point this month. Reading from the blueprints the modules were each assembled loaded with materials, launched and towed over to the breakwater in Cowichan Bay with the workboat.

In April work continued on M Float. A total of 35 metres of new bullrails and 30 metres of sideboards were replaced on the front of the float and 30 metres of new bullrails and 30 meters of sideboards on the back of the float were replaced. New higher risers were installed on over 70 metres of bullrails on C float as well as another 30 metres of sideboards.

The six new float module kits that were assembled at Cherry Point last month were all spliced together. Four eight metre sections were joined for one finger and another two eight metre sections were joined to make the other finger. All bullrails and sideboards were installed on the new floats. Decking was to be completed once the floats are installed.



SCH agreed to supply more material in order to repair several underwater flange beams throughout the floats. Much of the underwater damage was discovered once the floats were taken apart for repair.

Summer like weather allowed significant progress to be made on the Cowichan Bay Harbour Project in the month of May. Work continued on M Float this month. Another 15 metres of decking was replaced and 18 metres of sideboards. Piling wells were rebuilt and 4" plastic rub strips were installed. Work also continued on A float with 77 metres of bullrails and 55 metres of sideboards being replaced. Fire extinguisher boxes were rebuilt and painted on A float. New beams, crossties and decking were installed under the two electrical light standards on B float and another 28 metres of bullrails were installed. The crew gained valuable work experience and skill enhancement in replacing 310 metres of underwater flange beams on B float this month as well. A final 10 metres of sideboards were installed on C float.

Work continued on M Float in the month of June. Another 30 metres of decking was replaced and 45 metres of sideboards. Three piling wells were rebuilt and 4" plastic rub strips were installed. The end of M float was rebuilt in preparation of attaching new floats. Work also continued on A float with 61 metres of bullrails and 107 metres of sideboards and 16 metres of decking being replaced.



Four new 7 metre float kits were assembled, launched at Cherry Point and towed over to Cowichan Bay Harbour. This made a total of ten new float kits now waiting to be spliced together, decked and installed in the coming weeks. This would increase the new float space by over 200 (61.9 metres) feet of floats.

By the third week in July the HRDC crew had completed their time on the project. A total of five different participants received a total of 32 weeks of valuable work experience and skill enhancement through participating on the project. Skill enhancement in the operation of power saws, power tools, air and electric as well as a wide variety of hand tools was provided to participants over the period of the project. Work experience in carpentry, float construction, reading blueprints and construction work was provided to each participant.

Over 8,000 square feet of cedar decking, 1,500 linear feet of bullrails and sideboards were replaced. Piling wells, cross ties and underwater beams were replaced as required. Two one hundred foot new float sections were built and installed by the crew. Two of the crew as well as the site supervisor were hired by the harbour to complete the installation of the floats in the coming months.

A professional marine consultant (Ted Appleton) was hired to design and install the anchoring system. Pacific Industrial Marine was contracted to install the anchoring system for the new floats. The crew installed freshwater lines and water taps on the floats. Houle Electric was contracted to install 14 new 30 amp electrical kiosks and 3 transformers on the docks including 4 new 30 amp kiosks for the two new floats and the floats had boats tied to it by late fall 2008.



## **Phase 2**

During the winter and early spring the harbour authority board worked hard on finding partners to complete phase 2 of the project. By early April 2009 they had successfully partnered with Small Craft Harbours, Community Fisheries Development Centre, Human Resources Skills Development Canada/Ministry of Housing and Social Development and West Coast Community Adjustment Program (WestCCAP) to fund Phase 2 of the project. Island Coastal Economic Trust was also an important partner in the second phase.

Having successfully completed Phase I of the project in 2008, this Phase II of the project would complete the upgrade to the existing floats as well as complete the proposed additional float expansion and expand the scope of the original proposal. At the time the floats and the approach to the main basin required significant more work to bring them back to a safe working standard. The primary focus of this phase of the project would be to complete the replacement of the decking and bull rails, sideboards, piling wells and underwater flange beams on both sets of floats that were started in Phase I. This would entail the removal and replacement of approximately another 1,500 linear feet of bull rails and sideboards and 7,000 sq. ft. of new decking. While replacing decking and bull rails, the crew would be inspecting and replacing beams, cross-members, piling wells and floatation as required. Recent surveys of the floats by Small Craft Harbours staff identified repairs and replacement requirements, but a more detailed plank-by-plank work plan would be developed as the crew removed strategic planks to uncover beams on the approach and floats.

In addition to repairing and upgrading the existing floats this project would also construct and install approximately another 200 feet of new floats in the existing harbour. The construction of these float modules would be carried out on shore and the 22' float modules would be launched, bolted together and installed and decked in the harbour. These two new recreational visitor's floats would be 12'x 90' and 14'x 100'.

The second phase of the Cowichan Bay Harbour Restoration Project started on May 17, 2009. The Project Manager notified the Global Vocational Career Centre in writing on May 11th of the start and end dates, description of the project as well as a detailed job description for participants. The site supervisor, Al Ladret was interviewed and on hired on May 22, 2009. Accounts with local suppliers were set up in town during the first week of the project

On May 25th the Project Manager and Site Supervisor conducted client interviews and selected four new participants for the project. Eligibility checks were completed on all four participants. All participants also completed applications and Return to Work Action Plans.

Meetings were set up at Cowichan Bay harbour with the Harbour Manager and staff where a full discussion of the project objectives and goals were discussed. The Site Supervisor and Project Manager carried out another thorough inspection of the site.

Prior to starting work on June 1, 2009 the entire crew was given a complete safety and project orientation by the Project Manager and Site Supervisor. Participants signed for and were issued safety boots, raingear, personal floatation devices and appropriate personal safety gear prior to starting work on the project. The crew completed the St. John's Ambulance Emergency First Aid course on June 24 and attended the Transportation Endorsements course on July 17. All participants also successfully completed their WCB certified chainsaw safety course on June 8<sup>th</sup> and 9<sup>th</sup>.

All necessary tools and equipment were brought on site and stored in the workboat at Cowichan Bay. Two small skiffs used on the project were resealed, fastened and painted by the crew. Stairs, railings and decking around the office and main dock were treated with wood preservative. Anti skid roofing tiles were replaced on both the 30' wharf and tugboat ramps.

Three 22' x 12' float module kits were assembled at the Cherry Point site. The crew were given detailed instruction by the site supervisor on the safe and proper use of a wide variety of power, air and hand tools, chainsaws, power saws, drills, small hand tools, and other construction related equipment required to complete the project. Harbour and Small Craft Harbour staffs are both very pleased with the quantity and quality of work completed to date.



In spite of contending with record-breaking temperatures at the end of July, much work was still accomplished on the Project. Over 150 feet of bullrails on the tugboat float were removed and replaced with new 5.5-inch risers. Another 150 feet of sideboards were also removed and replaced on the same float. Rusty waterline fittings on the float were also replaced. A new 2' x 2' x 4' plastic float billet was framed and installed on the tugboat float. Four new cleats were also installed on the cement breakwater floats. 70 feet of

new decking, bullrails, risers and sideboards were installed on the connector float between E and F float.

A total of five new 22' x 12' float module kits and ends were assembled at the Cherry Point site. Floatation billets were installed in all kits and float kits will be launched with floatation installed and connected in the water. Bull rails sideboards and decking would be installed after floats have been towed to Cowichan Bay site for installation.



In August a total of six new 22' x 12' float module kits and ends were completed, launched at the Cherry Point site and towed to Cowichan Bay with the work boat "Wild Thing". The crew assembled five float sections and two ends to form the main 130' x 12' float extension. Six more 9' x 22' float kits were ordered for delivery next month.

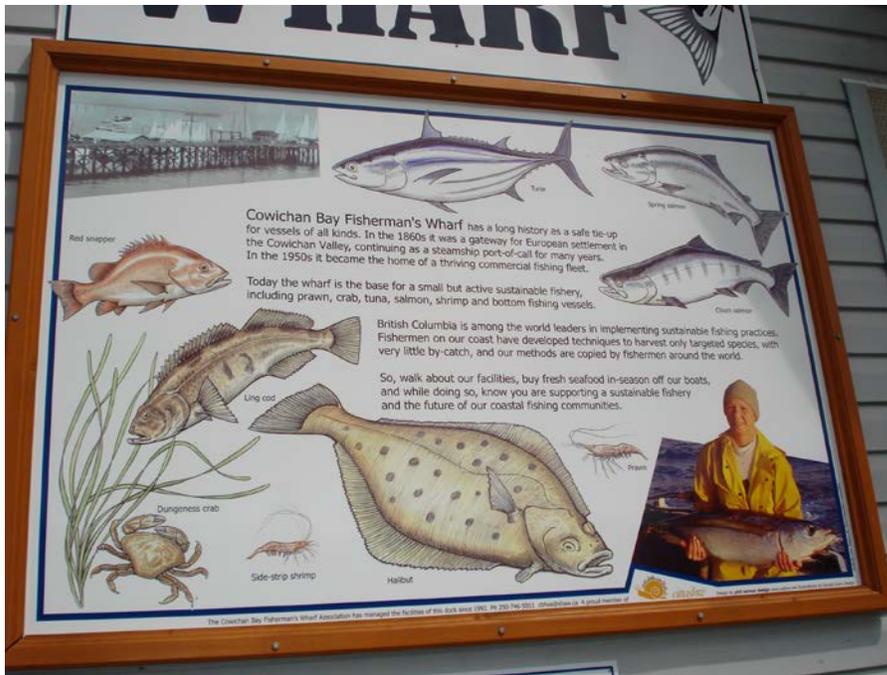
In October a total of five new 9' x 25' float modules were launched by forklift at the Cherry Point site and towed to the breakwater in Cowichan Bay with the work boat. All five float modules were then assembled to create the 125' float extension. Bullrails, sideboards and decking would be installed later as well.



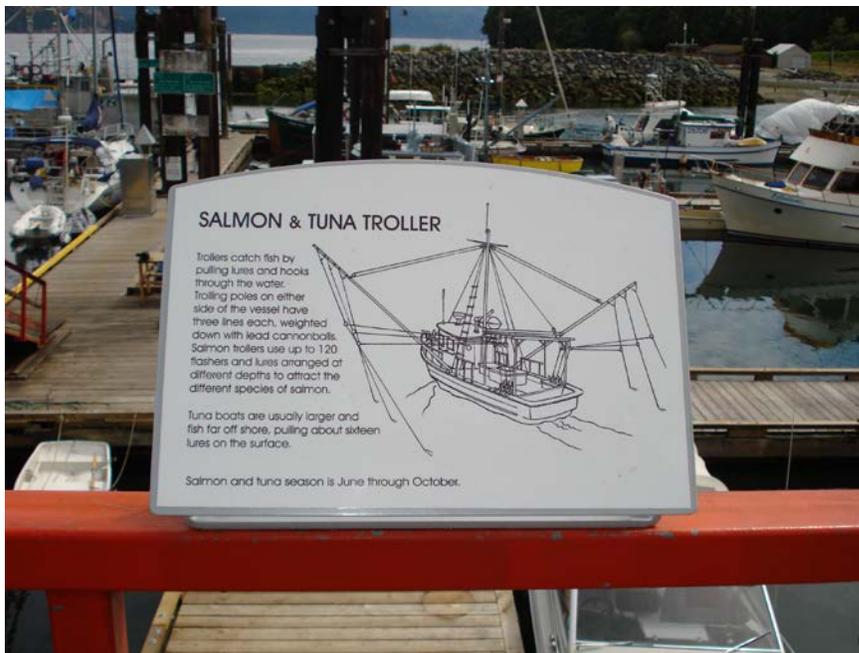
In November the five new 12' x 25' float modules were assembled at the breakwater to create a new 125' x 12' float finger. All bolts and nuts were retightened once assembled. A total of 260' of new bullrails were installed on the 125' x 12' float finger. This float was now ready for installation. A total of 260' of new bullrails were installed on the 125' x 9' float finger as well. This float was also ready for installation.

In December severe cold weather froze up the fresh water lines on the floats and caused significant damage to the entire system. The crew worked for two weeks repairing underwater waterlines, valves, connectors, plugs and brass taps on the main dock. Whole sections of damaged plumbing were removed and replaced with new plastic pipes. They framed a new mount for the shut off valves and controls for the system at the head of the dock. New decking was installed over the new plumbed area.

The MHSD work crew completed their 32 week program on January 9, 2010. Two of the crew and site supervisor were hired by the harbour to continue on to complete their work on the project. A meeting was held with SCH engineers to determine the most appropriate method of securing the new floats. This was the most challenging aspect of the project. It was finally decided that due to the extreme depth of water and unknown bottom conditions that we would install the new floats with anchors rather than pilings. A professional marine consultant (Ted Appleton) was hired to design and install the anchoring system.



The new anchoring system also required that the floats be installed at a different angle than previously and the necessary adjustments were made to the float fingers to accommodate. There were some delays in securing the necessary anchoring materials and delays in getting the divers and anchors in place. The crew was working sporadically as required on a daily basis throughout this period. By the end of May the floats were anchored into place by Pacific Industrial Marine with the necessary brackets anchors and lines and were ready for completion. In order to accommodate the needed space for the new floats, the floating breakwater anchors were moved seaward and reset.



The crew worked for the first two weeks in June completing the installation of fresh water lines, decking and sideboards. Work was completed by June 22, 2010 on the two new float fingers. In July professional electricians Houle Electric were contracted to install electrical two new 30 amp electrical kiosks, wiring and lights to the new floats. Immediately upon completion, visiting vessels started taking advantage of the new moorage space.



### **Completion of Project Objectives**

All the objectives of the Cowichan Bay Harbour Improvement and Expansion Project have been met. Due to the hard work and commitment of the site supervisor and crew a significantly greater amount of work was completed on this project than originally planned. Over 12,000 square feet of cedar decking, 2,500 linear feet of bullrails and sideboards were replaced. Piling wells, cross ties and underwater beams were replaced as required. A total of 420 feet of new floats were also built and assembled. This included one float section of 9' x 110' and one of 12' x 110' and two 9' x 100' new float sections built and installed. With the addition of the second phase of the project and the increased funding, the scope of the project was increased significantly from the original proposal.

### **Employment**

A total of nine different employees and one site supervisor were employed fulltime for a total of 80 man months of employment. A further 15 man months of employment were generated outside of the HRDC project and a further 3 man months of engineering,

electrical and diving employment was contracted. Including administration and accounting over 106 man months of employment was directly generated through the two construction phases of this project. One full time employee was also hired by the harbour to help meet the new demand for the increase in use to the harbour. While not directly quantifiable at this time an expected increase in employment in existing businesses due to the increase in marine visitor to the region is also anticipated in the coming years. As well as these impressive employment figures, skill enhancement in the operation of power saws, power tools, air and electric as well as a wide variety of hand tools was provided to nine participants over the period of the project. Work experience in carpentry, float construction, reading blueprints and construction work was provided to each participant.

### **Economic Development**

The increase in the number of visiting vessels mooring at Cowichan Bay since the completion of the project has brought new business to the region. While it's a bit early to quantify these benefits, the increased moorage fees paid to the harbour alone are significant. The increased moorage space has expanded the annual Prawn Festival and increased local direct fish sales to public. New signage has also attracted more foot traffic to the facility adding to the uniqueness of visiting Cowichan Bay. Exact economic development figures will be available in the coming years that will demonstrate the positive economic outcomes of the project.

### **Final Comments**

The Cowichan Bay Harbour Improvement and Expansion Project was completed on time and on budget. All objectives of the project have been met to date and all future economic benefits derived from the project will continue to be monitored over the next few years. Through the addition of the second phase of the project, adding a significant increase in the new moorage space, greater economic benefits will be realized to the community than originally stated. This increase in scope would not have been possible without the generous support of the Island Economic Trust. On behalf of the Cowichan Bay Fisherman's Wharf Association we would like to thank ICET for their generosity and professionalism in funding and administrating this exciting project.



