Mission Statement
In carrying out its mandate, Bowen Island Municipality will work towards conducting operations in a way that:
• Improves the economic, environmental and social well-being for present and future generations;
• Encourages and fosters community involvement;
• Enhances the small, friendly, caring character of the community;
• Maintains an open, accountable and effective operation; and
• Preserves and enhances the unique mix of natural ecosystems and green spaces that Bowen Island possesses.

NOTICE: That a Committee of the Whole meeting of Bowen Island Municipal Council will be held at Municipal Hall, 981 Artisan Lane on Monday, December 10, 2018 at 4:00 PM for the transaction of business listed below.

REVISED AGENDA
Committee of the Whole Meeting
Monday, December 10, 2018
(REVISED TO INCLUDE ON-TABLE ITEMS)

OPENING OF COMMITTEE OF THE WHOLE MEETING

1. APPROVAL OF AGENDA
   1.1 Introduction of Late Items

   Recommendation:
   That Council approve the agenda and Late Items agenda (if applicable) for the December 10, 2018 Committee of the Whole meeting.
### 2. BUSINESS ARISING FROM MINUTES

#### 2.1 Fire Hall and Emergency Operations Centre Update  
4:05 PM

- **a.** Councillor Alison Morse, Chair, Fire Hall Facilities Steering Committee re: Fire Hall and Emergency Operations Centre Project Briefing, dated December 3, 2018  
  
  - **i.** PowerPoint Presentation re: Fire Hall Facilities Steering Committee Update to Council, dated December 10, 2018  
  - **ii.** Johnston Davidson Architecture & Planning Inc., PowerPoint Presentation re: Bowen Island Fire Hall and Emergency Operations Centre, dated December 10, 2018  

- **b.** (50 min)

#### 2.2 Cove Bay Water Treatment Plant Update  
4:55 PM

- **a.** Bob Robinson, Manager of Public Works re: Cove Bay Water Treatment Plant Project Briefing, dated November 29, 2018  
  
  - **i.** Water Treatment Plant Conceptual Drawings  

- **b.** (20 min)

#### 3. ADJOURNMENT  
5:15 PM
BACKGROUND AND HISTORY OF THE PROJECT
This section condenses 16 years of study and work into a few pages to answer the questions: why do we need a new fire hall, why did we decide on two fire halls, how did we arrive at the decision to locate the main hall on lot 3 and the amount of dollars approved in the referendum.

1. A 2002 seismic study of the Grafton Road fire hall determined that the fire hall would fail in a low to moderate earthquake.
2. Johnston Davidson Architecture + Planning Inc. (JD) was engaged in 2008 to prepare a space needs analysis for a main fire hall and emergency command centre. The JD report indicated that the existing hall does not meet current post seismic standards or many Work Safe BC standards and the site itself is challenging. JD recommended that the new hall should be approximately 11,000 sq. ft. to accommodate 3 double drive through bays, a training room, radio room, adequate storage, work areas and day room. The report recommended that the best course of action would be to find a new site of approximately 1.25 to 1.5 acres to be able to provide truck turning area, volunteer parking, and training and build an appropriate building.
3. The Fire Underwriters Survey (FUS) prepared a report in 2007 that assessed Bowen’s firefighting for insurance grading purposes. That report recommended that for the long term Bowen should “Build a new station closer to the north (Snug Cove) and build an additional satellite hall to the south.” That report also recommended that a tanker pumper truck be acquired as many properties were on single wells and not served by water systems with storage and hydrants.
4. In 2008 Council approved finding a single site in a central location for a new fire hall and established the Fire Hall Facilities Steering Committee (FHFSC).
5. The single site did not materialize and growth was happening in the south and west sides of the island and the tanker truck was on order and needed a place to be housed. Council received a report from the Fire Chief and approved the construction of the satellite fire hall on Adams Road which was occupied in 2013.
6. The FHFSC then began the search for a site for the main hall close to Snug Cove with a reduced size of 1-1.25 acres as the new satellite hall has space for an outside training area. The FHFSC identified and walked all the lands of suitable size in the Snug Cove area. They identified three areas on the BIM owned Community Lands:
   • An area on Lot 2, northwest corner behind BICS,
   • An area on Lot 1 to the west of the creek
• An area on north end of Lot 3

7. A report was presented to council on January 27, 2014, and Council in a 4/2 vote chose the site on Lot 1.

8. The FHFSC proceeded to do a more detailed analysis of the Lot 1 site and determined given the geo tech report and the topography that the site preparation costs to prepare a site flat enough for the administration/EOC building, the apparatus bays and aprons, parking for volunteers and driveway access would be expensive (from $671,000 to $991,000). Another consideration is safety around BICS if volunteers were trying to get to the Lot 1 location or fire apparatus was trying to get to a call during the congested times when students were arriving for or leaving from school.

9. In July 2015, the FHFSC reported to Council and asked that Council consider Lot 3 as the site for the fire hall and approve funds for further investigation of the site. That work was done and in October 2015, the FHFSC made a further report to Council and Council unanimously passed resolution #15-304: That Council approve the new main fire hall and emergency operations centre on approximately one acre of land at the North end of Lot 3 of the Community Lands; and That Council direct staff to draft a bylaw to amend the Official Community Plan, Map schedules C and C1A to accommodate a fire hall, emergency operations centre and ambulance station; and That Council direct staff to draft a bylaw to amend the Land Use Bylaw so that the zoning for Lot 3 of the Community Lands will match the OCP and allow for institutional buildings and to allow for a fire hall and emergency operations centre and an ambulance station; and That Council approve the Fire Hall Facilities Steering Committee proceeding with the issuance of an RFP for a project manager; and That the Committee work with the Financial Advisory Committee regarding this proposal.

10. In 2016, the process for the rezoning of Lot 3 began, an RFP for a project manager was issued, and Liberty Contract Management Ltd was engaged. Concept drawings for footprint and location were prepared to support the rezoning process. The rezoning process involved public open houses, website information, and a public hearing.

11. Bylaws 422 and 425 were finally adopted on January 23, 2017, which enabled the fire hall and EOC to be constructed on Lot 3.

12. During the rezoning process, the FHFSC continued to work with the project manager to refine the concept and develop cost estimates to construct a fire hall and emergency operations centre on Lot 3.

13. In February 2017, the process to borrow the money to construct the new fire hall and emergency operations centre began. This process included a borrowing bylaw, obtaining approval of the Inspector of Municipalities, a borrowing referendum and a full public process including a dedicated section on the website. The referendum question asked the voters to approve borrowing up to $3,000,000. That $3,000,000 amount was calculated on the basis of building on Lot 3.

14. The referendum was held on August 19, 2017, with the voters approving the borrowing bylaw. The Inspector of Municipalities gave final approval to the borrowing on June 14th, 2017.

15. In December of 2017, Council was provided with a status report and notice that the building site for the fire hall and EOC on Lot 3 would be cleared in January 2018, prior to nesting season. The area to be cleared was flagged, the library septic field was identified, MV was
contacted, BIM’s Manager of Parks and Environment consulted and a Council site visit conducted as well as notices in the island page and specific notices hand delivered to the nearby properties. The building site was cleared in January 2018.

16. An Expression of Interest was issued in the spring of 2018 followed by a Request for Proposal and on July 9, 2018 council approved engaging Johnston Davidson Architecture and Planning Inc. for the supply of architectural services and to act as Prime Consultant at a fee not to exceed $299,055 plus disbursements

17. Around that same time Council approved uses for other parts of Lot 3, being the medical centre and the BIRCH housing project and at the June 25 Council meeting passed a resolution directing staff to work with the FHSC, the Bowen Medical Centre Foundation and other proponents re Lot 3 (BIRCH) along with their architects and consultants to do coordinated planning for lot 3. Kim Johnston, Fire Chief Ian Thompson, Deputy Chief Aaron Hanen and Councillor Morse attended the first meeting where the needs for the fire hall and EOC for: building footprint, aprons, access, parking, lot size and frontage were discussed. Further meetings were held with the other proponents and as the reports from the planning consultant presented to the September 24 and October 9, 2018 indicate the area for the fire hall and access and egress was established on the north end of Lot 3 with 200ft of frontage along the edge of the Miller road right of way.

WHERE ARE WE AT NOW?

Kim Johnston and John Bothello of Johnston Davidson Architecture and Planning Inc. (JD) met with the FHSC (Councillor Morse, Mayor Ander, Brian Biddlecombe, Bill Hayes, Cro Lucas, CAO Kathy Lalonde and Fire Chief Ian Thompson and staff resources, Deputy Chief Aaron Hanen, Emergency Program Coordinator Jen McGowan, and Chief Financial Officer Raj Hayre) on July 25, 2018. A subcommittee (Fire Chief, Deputy Chief, Emergency Program Coordinator, Councillor Morse and CFO) continued to meet with JD to refine the concept plans and a full meeting of the FHSC was held on November 30, 2018 to review work to date. JD is working with electrical, mechanical and civil engineers. The fire hall and EOC will need to serve the community for at least the next 50 years and thus room for expansion, future uses has been contemplated. The fire hall and EOC is being designed with the knowledge that we are an island community and thus cannot rely on the needed apparatus arriving in a timely manner from an adjacent hall or a neighbouring community as happens with the communities located on the mainland. The fire dept is staffed with volunteers not fulltime fire fighters which brings different requirements as well.

Kim Johnston will present the drawings and site plan on December 10.

HOW IS THIS PROJECT BEING FUNDED?

The project is being funded by the Fire Hall Building Reserve Fund and borrowing of up to $3,000,000. The funds are being borrowed from the Municipal Finance Authority (MFA). Initially they will be drawn from temporary borrowing (construction loan) so the funds will only be borrowed as they are needed. Once the construction is complete the temporary borrowing (construction loan) will be converted to long term debt with MFA. The long term debt will be in the form of a 30 year bond, not a mortgage.
NEXT STEPS & TIMELINE TO COMPLETION
The next steps are:
- Preparation of the working drawings and related cost estimates
- Preparation of tender documents
- Issue tender for construction
- Award tender
- Apply for and obtain building permit
- Build fire hall and EOC
- Move in

COUNCIL DECISION POINTS
For preparation of working drawings, ideally on Dec 10 otherwise Jan 14
For preparation and issue of Tender Documents
For application for building permit
For award of Contract to construct

Attachments and References:
1. Related to points 8 and 9
   a) FHFSC Report to Council July 2015
   b) Lidar map of lot 1
   c) Geo technical report for Lot 1
2. Site plan and drawings for building on lot 3

SUBMITTED BY: _______________________________ 
Councillor Alison Morse
Fire Hall Facilities
Steering Committee
Update to Council

December 10, 2018
History

1969 two bay hall built on present site
1977 two additional bays with second floor added
2002 seismic study report determined facility would fail in an earthquake and also confirmed hall inadequate from a general use perspective
2007 EOI issued for firm to conduct space needs analysis for a replacement hall
February 2008 engaged Johnston Davidson Architecture + Planning Inc. (JDA)
July 2008 JDA reported to Council decision made to build a new hall
JDA advised that a site for a hall of the size required to meet the space needs of a single fire hall for Bowen Island should be in the order of 1.25 acres (55,000 SF) to 1.5 acres (65,300SF) with a depth to the street of 50 meters to provide suitable building layout, apron, on site parking, and training area
Site Selection

2007 Fire Underwriters Survey Report recommendations:

- Expand bay spaces to accommodate all apparatus in an appropriate building
- Need to provide adequate space for apparatus placement, training and administration
- Expand the existing hall in present location which would mean acquiring additional property which would continue to serve the core area (Snug Cove) adequately

OR

- Build new station closer to north (the Cove area) and build an additional satellite hall to the south

The council decision in 2008 was to try to find a site near the existing one and build one new hall
Satellite Hall

Options for an adequate site near the existing hall did not materialize

Growth was occurring in the south and west side of the island

A tanker pumper truck, as recommended in the FUS report, was being acquired which needed to be housed

The decision was made to build the satellite hall
2013/2014

FHFC set out to find site for new main hall

FHFS Committee reviewed the JDA report and the updated FUS report

The committee identified and visited several potential sites

A set of criteria for ranking the sites was developed and the three sites were short listed

Further analysis was undertaken on three sites and a report was presented to council on January 27, 2014 on the three potential sites

Lot 2, northwest corner behind BICS
Lot 1
Lot 3
Council chose Lot 1 so site investigation done

An area in the northwest corner of the lot east of creek identified as the potential building site
Setbacks from the creek identified by Alan Whitehead
Test pits (4) done
Topographical maps for slope reviewed
A geotechnical overview report received
  • recommended that all soft soils be removed down to dense native sub soil
  • the excavation for the building will be up to 3 to 4 metres in depth and will be excavated and slope cut”

Very preliminary costing done for the removal of the organic soil and construction of foundation walls
July 2015 report to Council

- Given the challenges with lot 1, the expense to create the flat site ranging from $671,000 to $991,000, the FHFSC looked again at lot 2, and lot 3.

- Lot 2 was expensive to access from Miller Rd and we do not own the land needed to access from Mt Gardner.”

- Lot 3 is basically flat so very little site prep would be required, has road access and in sewer and water districts.”

- Council approved site 3 as a location for the new Fire Hall and authorized the committee to spend up to $10,000 from the Fire Hall building fund for site analysis.
2015 to now

• Geo tech report confirmed a good location
• Council gave final approval to locating on site 3
• Project manager engaged and concepts developed
• Cost to build on lot 3 identified for $ for borrowing approval
• Referendum held and borrowing approved
• Site for building cleared
• Johnston Davidson engaged as architect and prime consultant
• North end of lot 3, 200 ft of road frontage confirmed through planning consultant process with the medical clinic and BIRCH
What do we plan to build

• A post disaster building
• A facility that will serve us for 50 + years
• Ability to expand as needs arise
• Appropriate space for administrative functions
• A facility that can be used for a fire hall and an emergency operations centre
• Appropriate space for indoor training, classroom style or otherwise for fire fighters, for ESS courses, for emergency operations courses
• Space for ESS meetings, Emergency Management Committee meetings, Bears training
site plan

26 parking spaces
second floor plan
building
usage
training
building usage e.o.c.
questions
To: Mayor Ander and Members of Council  
From: Bob Robinson, Manager of Public Works & Walt Bayless, Project Manager WSP. 
Date: November 29, 2018  
Meeting Date: December 10, 2018 

Re: Capital Project Briefing: Cove Bay Water Treatment Plant 

BACKGROUND AND HISTORY OF THE PROJECT

The Cove Bay water system does not meet the requirements for multi-barrier drinking water treatment outlined in the BC Surface Water Treatment Objectives. The Municipality has also received formal communication from the Vancouver Coastal Health Authority indicating that the existing system is vulnerable to pathogen contamination and does not meet the watershed protection requirements.

Following water quality characterization studies and treatment option analysis reports, a recommendation for a ceramic ultrafiltration membrane treatment system with a high solids contact tank was provided by WSP. The system is suitable to remove organic materials, provide pathogen and virus treatment and turbidity reduction within a very small footprint and with negligible liquid wastes as the community has limited capacity in the wastewater treatment disposal system. A pilot test was conducted in the fall of 2017 to confirm water treatment performance. Other treatment options, such as slow sand filtration and dissolved air flotation were reviewed and found to either not provide the necessary organics reduction, have too large a footprint for the available land, or require additional capital costs to address the increased load on the wastewater plant due to filter backwash waste.

Two properties were reviewed for the water treatment plant, the lot on Grafton Lake Road across from Artisan Lane and the Municipal work yard. Neither lot was considered ideal for the water treatment plant due to limited space, excessive slopes and an elevation below the existing Grafton Lake water supply system pressure.

Around 2016 an additional lot became available as part of the proposed subdivision development on the west side of Grafton Lake. During 2018, due diligence was completed to evaluate the suitability of the property for a water treatment plant, including primary treatment process design, survey, geotechnical exploration and environmental reviews. Negotiations were conducted with the developer and an agreement was reached in the fall of 2018 for the property transfer.

WHERE ARE WE AT NOW?
To advance the project, detailed engineering is required to produce a construction package, which includes detailed construction drawings, equipment specifications and a contract document. Once the construction package is prepared contractors can be engaged to provide tender prices for the project construction.

The basis for the grant application budget is a 2016 estimate. An updated cost estimate was prepared in early 2018 and noted a 10% increase in the project budget. Further refinement of the budget is required over the following months to incorporate changes in global market material pricing specifically associated with supply of the steel products used in the water plant, including the building, piping and reservoirs. In addition, further cost escalation is anticipated from the recently announced LNG projects that will soon put pressure on the BC labour market.

**HOW IS THIS PROJECT BEING FUNDED?**

The project is funded through the BC New Build Canada Fund – Small Communities Fund in the amount of $3,890,367 which is 2/3 of the grant award value of $5,835,550. The Province of BC and the Government of Canada will each provide up to $1,945,018. The Bowen Island Municipality is required to provide the remaining funding required to complete the project.

**NEXT STEPS & TIMELINE TO COMPLETION**

The preferred construction period for the water treatment plant is the summer of 2019 and it is anticipated that it will require a twelve to sixteen-month construction period to build. Once the facility is constructed, a start-up and commissioning period will follow. To meet this schedule detailed engineering and permitting should be initiated in December 2018.

**COUNCIL DECISION POINTS**

Over the next 2 to 6 months, the following steps will be required:

1. Authorize the detailed engineering design in order to advance the preparation of the construction package.
2. Authorize the borrowing of funds to finance the Municipal portion of the construction costs,
3. Authorize the pre-purchase of the major water treatment equipment and the reservoirs,
4. Authorize the procurement of a General Contractor to complete the construction of the water treatment plant and integration of the pre-purchased equipment and the remaining contractor supplied equipment,
5. Authorize the construction engineering services associated with site inspections, contract administration, start-up and commissioning, and
6. Authorize the expenditure for cleaning the water distribution system prior to starting the supply of clean drinking water.

**Attachments and References:**
