

Comox Valley Water Treatment Project

Project Background

Surface Water Treatment Objectives

Comox Valley Water Treatment Project



All similar & larger sized communities in BC

2+ forms of treatment



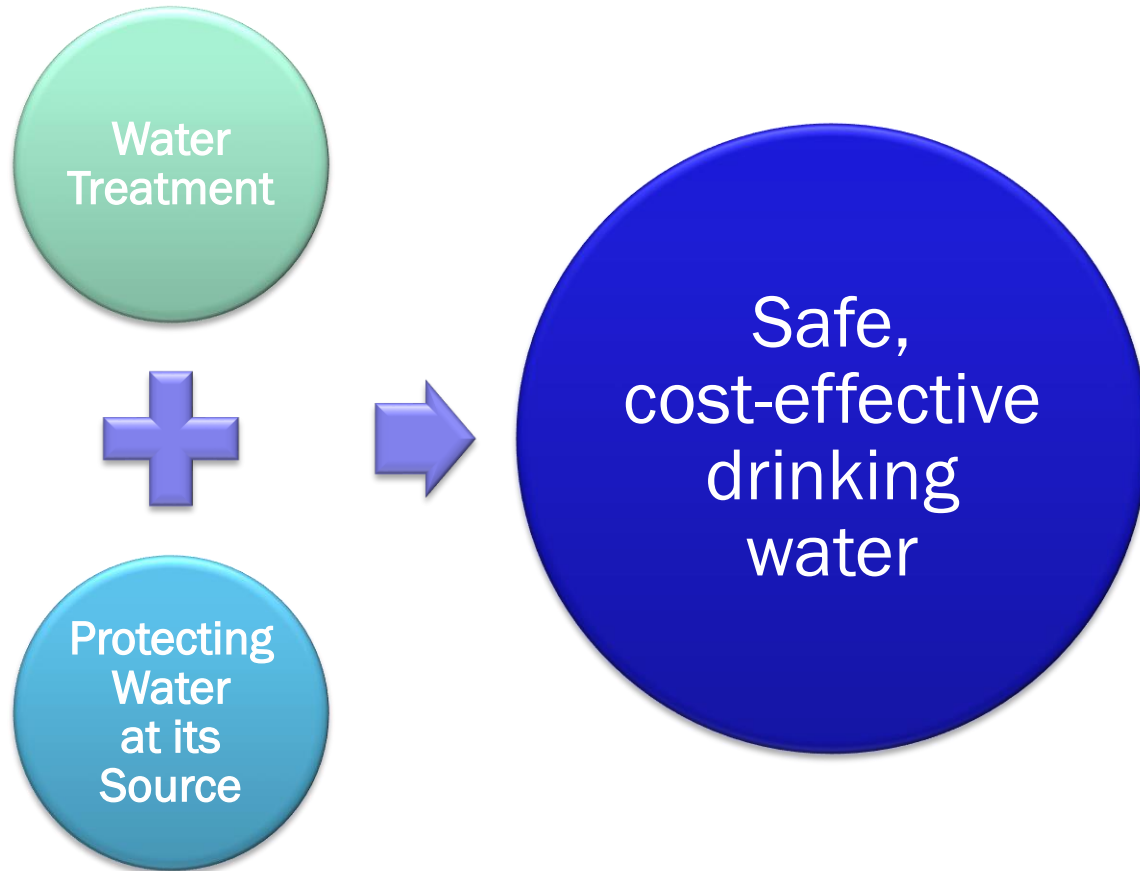
Regulations are consistent across BC, Canada, and developed world

Since 2012:

Parameter	Average annual # of Days out of compliance
Turbidity	24
2 treatment processes	365

*Focus has been on turbidity;
Yet, treatment out of compliance 365 days/year*

Two pronged approach



Protecting our Watershed

Comox Valley Water Treatment Project



Successful WPP Implementation...



...requires good relationships among watershed land owners and managers.

WPP priorities:

- Understanding the watershed
- Restoring/protecting natural function of watershed ecosystems
- Emergency preparedness
- Educating the public about the importance of this resource



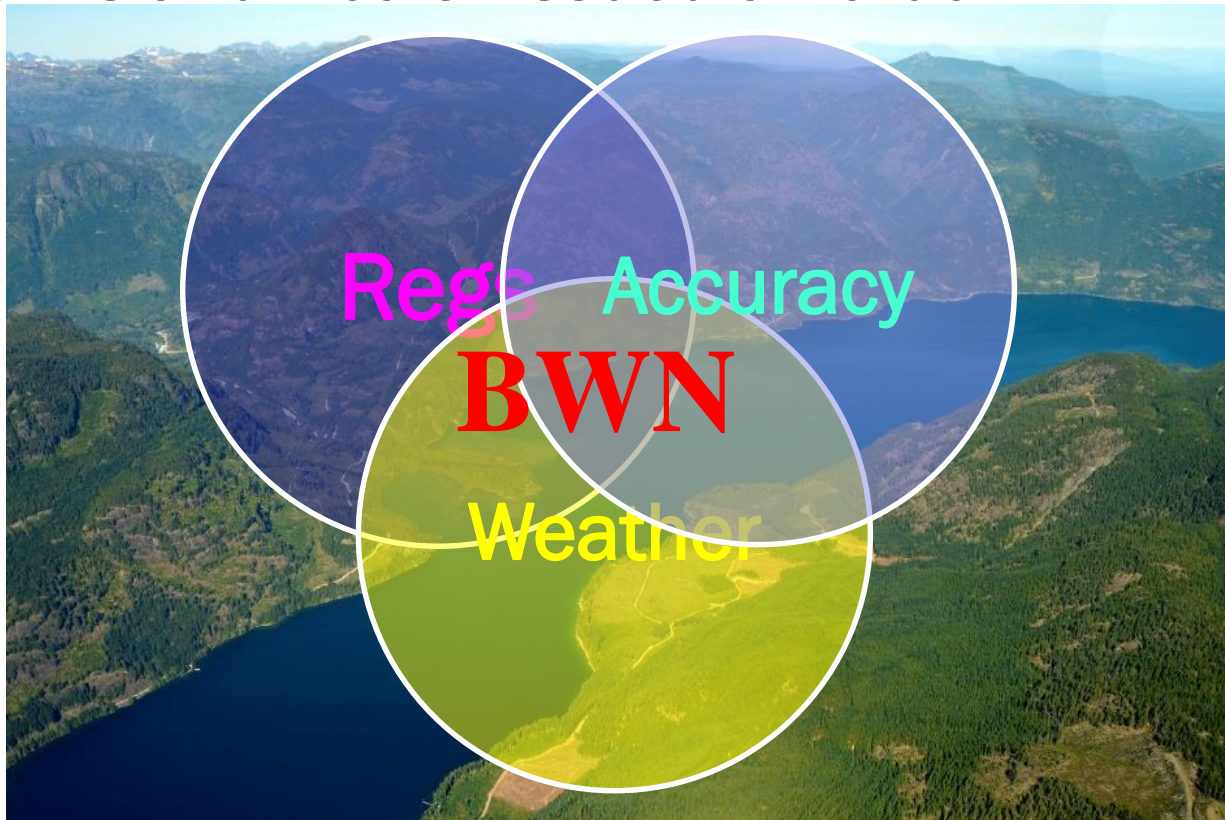
Watershed & Water Quality History

Comox Valley Water Treatment Project



Long history of water quality issues

- Water quality concerns go back to before 2005 when Island Health issued an order



Winter storms are getting worse

- Record high water levels in the Lake
- Flooding in the valley becoming more regular
- Consistent with climate model projections
- Significant current impact, future uncertainty



Beech
Creek



Cruikshank
River



Perseverance
Creek



Sediment source studies:

- Multiple sources of high loading
- Studies underway to determine relative effect of sediment on BWN (particle size, proximity to outlet)

Perseverance Creek Spillway

- A major turbidity source; other tributaries also contribute significant turbidity
- Village of Cumberland is working to address this issue
- Fixing P. Creek
 - is still important for reducing infrastructure life cycle costs
 - will not bring back deferral



Criteria for filtration deferral...

Parameter	Provincial Criteria	CVRD 2012-2014
Turbidity	<1 NTU 95% of days	<1 NTU 93% of days

...Not quite met even when deferral was originally granted in 2013.

Deep Water Intake (DWI)

- pays for itself over asset lifecycle
- ensures water supply during drought years
- minimizes risk of contamination
- provides infrastructure independence

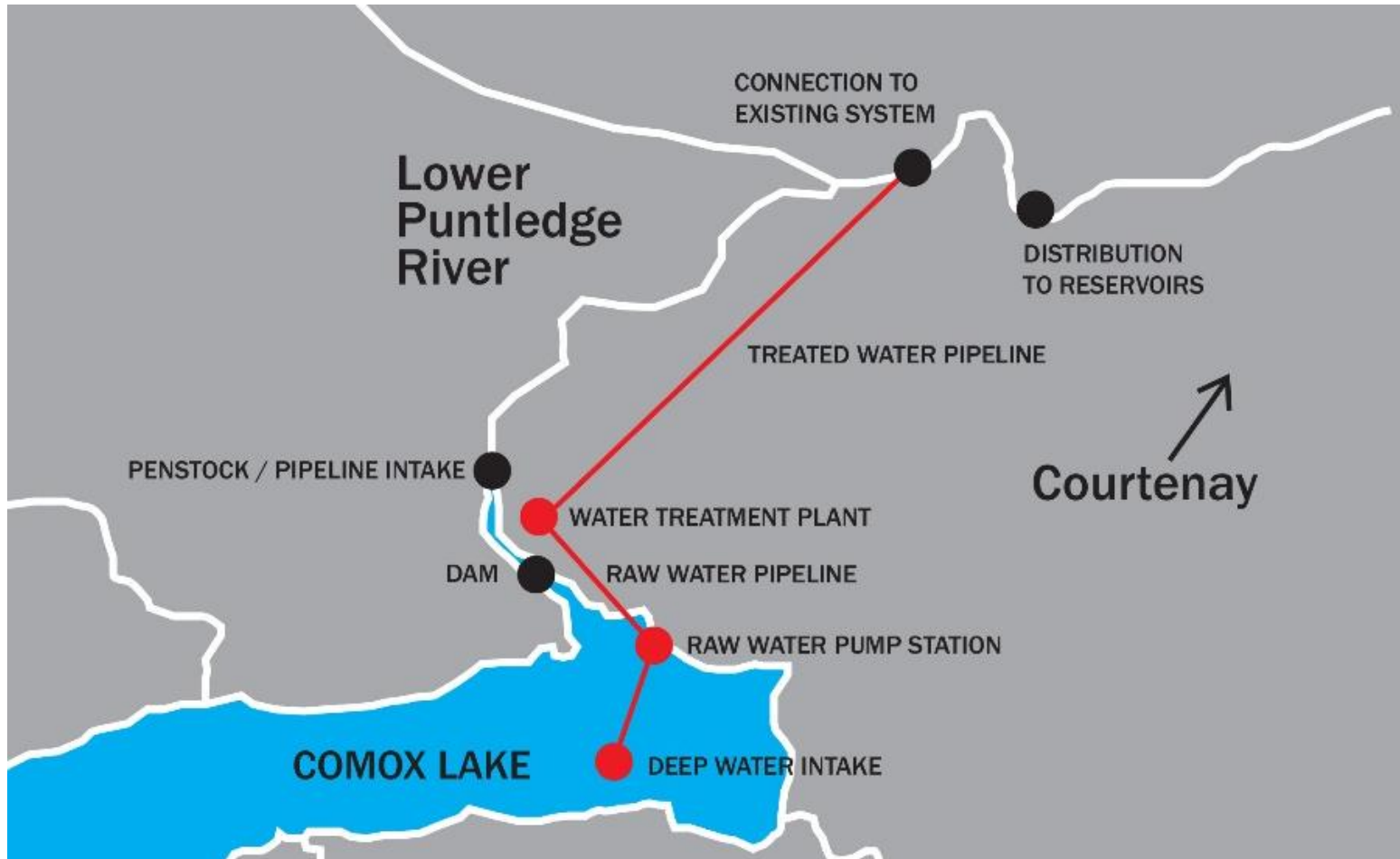


Questions?

Comox Valley Water Treatment Project

Project Implementation

Proposed System



Revised Timeline

2017-2019



Design Phase 2

Early 2019



Grant Funding Announcements

Late 2019



Construction Begins

2021



New System in Operation



Potential Special Treasury Allocation – accelerate project completion to 2020

Capital Cost Estimate

- Revised Schedule
- Revised cost
\$110.6 million
- Class B estimate
- 20% contingency

Item Description	2017 IDR Direct Filtration
Raw Water Intake and Marine Pipeline	
Pump Station	\$5.155
Water Treatment	\$5.472
Site Works	
Buildings (Operations)	\$4.142
Pre-Treatment/Coagulation	\$4.727
Flocculation	\$1.186
Filtration	\$1.120
Backwash Equalization	\$12.100
Backwash Treatment	\$1.351
Residuals	\$3.008
Primary Disinfection (UV)	\$1.809
Residual Disinfection (Chlorine)	\$1.840
Clearwell	\$0.263
Pipelines	\$6.523
Raw Water Pipeline	
Treated Water Pipeline	\$5.458
Tie-In	\$14.930
Sewer / CIP Waste	\$0.450
	\$0.030

Funding Model

Average annual increase of \$86/household

Construction 2019-2021

\$55.3 M

Grants (50%)

+

\$29 M

Borrowing (26.2%)

+

\$26.3 M

Reserves (23.8%)

=

**Revised Total Estimated Cost:
\$110.6 M***

* Revised Capital Cost Estimate is far more detailed than previous estimate: Class B estimate, with contingency of 20%

Public Assent Process

Proposed for March 2018

- \$29 million – in line with 50% grant funding
- \$86 / household / year

What if?

Public assent failure?

- Damage grant funding application
- Stall project – reassess strategy

Public assent success, grant failure?

- Stall project
- Rationale for not aiming too high on assent process

Why Act Now

- Deadline: September 2019
- Grant funding
- Island Health enforcement
 - Fines - \$200k / day
 - Halting development and existing system upgrades
 - Permanent Boil Water Advisory or Notice

~~DEVELOPMENT
PERMIT~~



Alternative Approval Process (AAP)

Why an AAP rather than referendum?

Critical and
mandated

Referendum
challenges

Full
population
eligibility

Impact of
non-action

Legitimate
&
Democratic

Interim Measure – Temporary UV Installation

- Feasible and cost effective
 - \$400k for UV reactors
 - \$600k for retrofit and install
 - 8 week lead time for reactors
- Significantly reduce Boil Water Notices
- Collaboration with Island Health: grants, penalties



Project Design: Phase 2

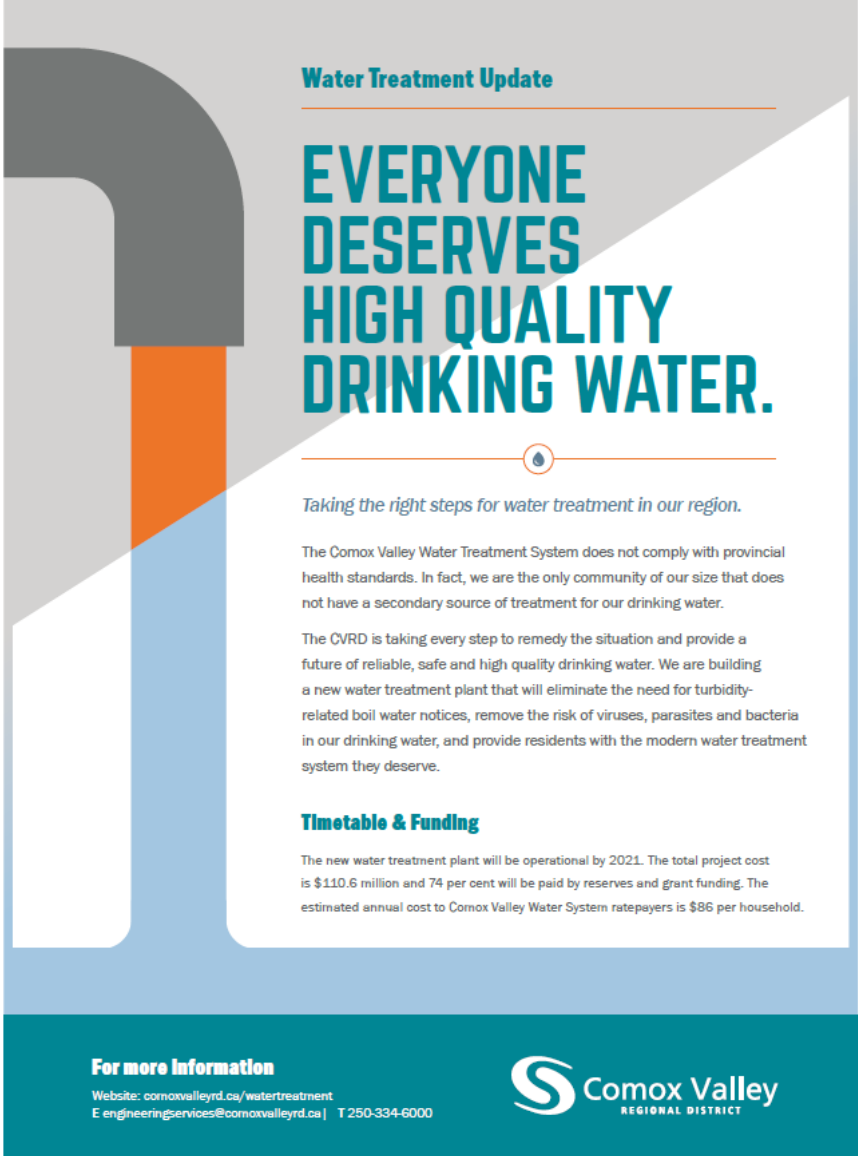
- ✓ Phase 1 completed: Indicative Design Report



- Phase 2 (Nov 2017 – July 2019)
- Both phases: 83% funded through CWWF
 - Accrued and forecast cost: under budget

Communications

- Vital for project success
- Public Assent process
- Project duration
- Grant funded

A flyer titled "Water Treatment Update" with a large graphic of a pipe on the left. The main headline reads "EVERYONE DESERVES HIGH QUALITY DRINKING WATER." Below this is a sub-headline "Taking the right steps for water treatment in our region." followed by two paragraphs of text explaining the current water quality issues and the planned new treatment plant. A section titled "Timetable & Funding" provides details on the project's completion date and costs. The footer includes contact information and the Comox Valley Regional District logo.

Water Treatment Update

EVERYONE DESERVES HIGH QUALITY DRINKING WATER.

Taking the right steps for water treatment in our region.


The Comox Valley Water Treatment System does not comply with provincial health standards. In fact, we are the only community of our size that does not have a secondary source of treatment for our drinking water.

The CVRD is taking every step to remedy the situation and provide a future of reliable, safe and high quality drinking water. We are building a new water treatment plant that will eliminate the need for turbidity-related boil water notices, remove the risk of viruses, parasites and bacteria in our drinking water, and provide residents with the modern water treatment system they deserve.

Timetable & Funding

The new water treatment plant will be operational by 2021. The total project cost is \$110.6 million and 74 per cent will be paid by reserves and grant funding. The estimated annual cost to Comox Valley Water System ratepayers is \$86 per household.

For more information
Website: comoxvalleyrd.ca/watertreatment
E engineering@comoxvalleyrd.ca | T 250-334-6000

 **Comox Valley**
REGIONAL DISTRICT

Land Acquisition



Questions

Comox Valley Water Treatment Project

Recommendations from the
Chief Administrative Officer

Recommendation 1 - Summary

Endorse Project Plan

- Scope of infrastructure
- Revised timeline, completion mid-2021
- Capital cost estimate = \$110.6 million
- Funding model
 - Maximize grant funding
 - Public assent for borrowing in line with 50% funding

Recommendation 1

Endorse Project Plan

Recommendation 1: THAT the Comox Valley Water Treatment Project implementation strategy as noted in the staff report dated September 28, 2017 is fully endorsed including:

1. The scope of the infrastructure, which includes a deep water intake, raw water pump station, raw water pipeline, water treatment plant, and treated water pipeline;
2. The revised schedule, specifically to obtain public assent in March 2018 and complete project in mid-2021;
3. The revised capital cost estimate of \$110.6 million; and
4. The funding model and proposed future grant applications, aiming to maximise grant funding and only borrow funds in line with a minimum of 50 per cent grant funding.

Recommendation 2 - Summary

Pursue Advanced Funding

- Grant award expected early 2019
- Project schedule delay waiting for grants
- Potential for earlier funding/completion
- Pursue all funding opportunities available to potentially accelerate project schedule

Recommendation 2

Pursue Advanced Funding

Recommendation 2: THAT the Comox Valley Water Committee pursue all opportunities available to them in order to receive funding in advance of the next round of infrastructure grants to accelerate the project schedule, including authority for directors and staff to meet with Ministers and Treasury Board members to achieve this goal.

Recommendation 3 - Summary

Temporary UV Installation

- Approve detail design and procurement
 - \$380k for UV reactors (reusable)
 - \$600k for retrofit and install
 - NTU limit raised
 - Reduce BWNs
 - Grants more likely
 - Penalties avoided
 - Install this spring



Recommendation 3

Temporary UV Installation

Recommendation 3: THAT with regard to the installation of temporary ultraviolet (UV) treatment at the Comox Valley Water System Chlorination Station:

1. Subject to the completion of the open procurement process for the supply of UV reactors and associated equipment, a contract be awarded up to a maximum amount not to exceed \$400,000 excluding applicable taxes at the November 7, 2017 CVRD Board meeting; and
2. The Board approve proceeding with detailed design, procurement of construction services, and installation.

Recommendation 4 - Summary

Borrowing Approval

- Approval to borrow \$29 million
- Public assent scheduled for March 2018
- Borrowing in line with 50% grant funding
- Staff recommendation supports AAP
- Public health issue
- Mandated by reg's
- Penalties: development
- Voter turnout vs broad public opinion
- Legitimate & democratic
- Leaves door open for referendum
- Open to entire Comox Valley incl. Hornby, etc.

Recommendation 4 - Borrowing Approval

Recommendation 4: THAT with regard to the related maximum borrowing requirements of \$29 million:

1. A loan authorization bylaw be submitted to the electors for approval by way of the alternative approval process to be conducted for the Comox Valley Water System service area being the Town of Comox, City of Courtenay, Electoral Area A (Baynes Sound / Denman-Hornby Islands), Electoral Area B and Electoral Area C;
2. The following be presented to the Comox Valley Regional District Board of Directors at its November 7, 2017 meeting:
 - A loan authorization bylaw for three readings;
 - The notice to electors for approval;
 - The elector response form for alternative approval process for approval;

Recommendation 4 - Borrowing Approval (cont.)

Recommendation 4: THAT with regard to the related maximum borrowing requirements of \$29 million:

3. The deadline for receiving the elector response forms be set at 4:30 pm on Friday, March 16, 2018; and
4. The total number of electors within the service area to which the alternative approval process applies is determined to be 47,845 of which ten per cent or 4,785 must submit elector response forms to prevent the Comox Valley Regional District from adopting the Comox Valley water treatment plant loan authorization bylaw without first obtaining the assent of the electors by way of referendum.

Recommendation 5 - Summary

Communications Consultant

- Contract award to Zinc Strategies for \$92,325 for one 1 year contract
- Approval to award subsequent years, up to 5 years, not to exceed \$350,000
- Effective communication and community engagement is critical for project success
- Vital for public assent success – Board reinforced need through AAP for Civic Centre

Recommendation 5

Communications Consultant

Recommendation 5: THAT with regard to the contract award for Capital Projects Communications Consultant:

1. As a result of a competitive process, the contract for the communications consultant for water capital projects for year one be awarded to Zinc Strategies Inc. in the amount of \$92,325 excluding GST and disbursements;
2. Subsequent years work be awarded to Zinc Strategies Inc. at the Comox Valley Regional District's discretion for a total overall cost not to exceed \$350,000 excluding GST and disbursements for water and wastewater capital projects over five years;
3. The Chair and Corporate Legislative Officer be authorized to execute the contract;