

MAYOR & COUNCIL Planning Department

Site Alteration Bylaw & Hazardous Areas DPA Work Plan

September 28, 2020

BOWEN ISLAND
Municipality

Directive

OCP Objectives

Obj. 5: To identify steep slope areas and closely regulate any development within these areas.

Obj. 6: To protect people, property, and the natural environment from the consequence of development within naturally hazardous areas of the island.

Obj. 8: To encourage environmentally benign development.

Obj. 22: To encourage forest cover maintenance and diversity of forest stages in order to maintain high water quality, stability and quality of soils, stability and diversity of plant and animal habitats, visual quality of the island, and as a means of identifying the overall health of the island's terrestrial systems.

Island Plan 2019

STRATEGIC COMMITMENT B - RESILIENCE

Priority B1

Strengthen our infrastructure and ecosystems through municipal actions

What is contemplated, exactly

Embed Conservation Development Principles in municipal planning.
Continue to develop our Climate Action Program. Draft a Site Alteration Bylaw.

3. For the Site Alteration Bylaw:

- a) review topographical mapping
- b) review similar bylaws in other communities
- c) present completed research and recommendations to Council
- d) draft bylaw

COW recommendation “That Council direct staff to develop a work plan for bylaws to address development in hazardous areas and in site alteration that can potentially exacerbate risks to people and the environment.”

(RES#20-073, Feb 3, 2020)

Aim

To produce a coordinated set of bylaws:

1. Hazardous Areas Development Permit Area (DPA)

- mitigate vulnerability of people or the environment to hazards that can be exacerbated by development
- within predefined hazardous areas

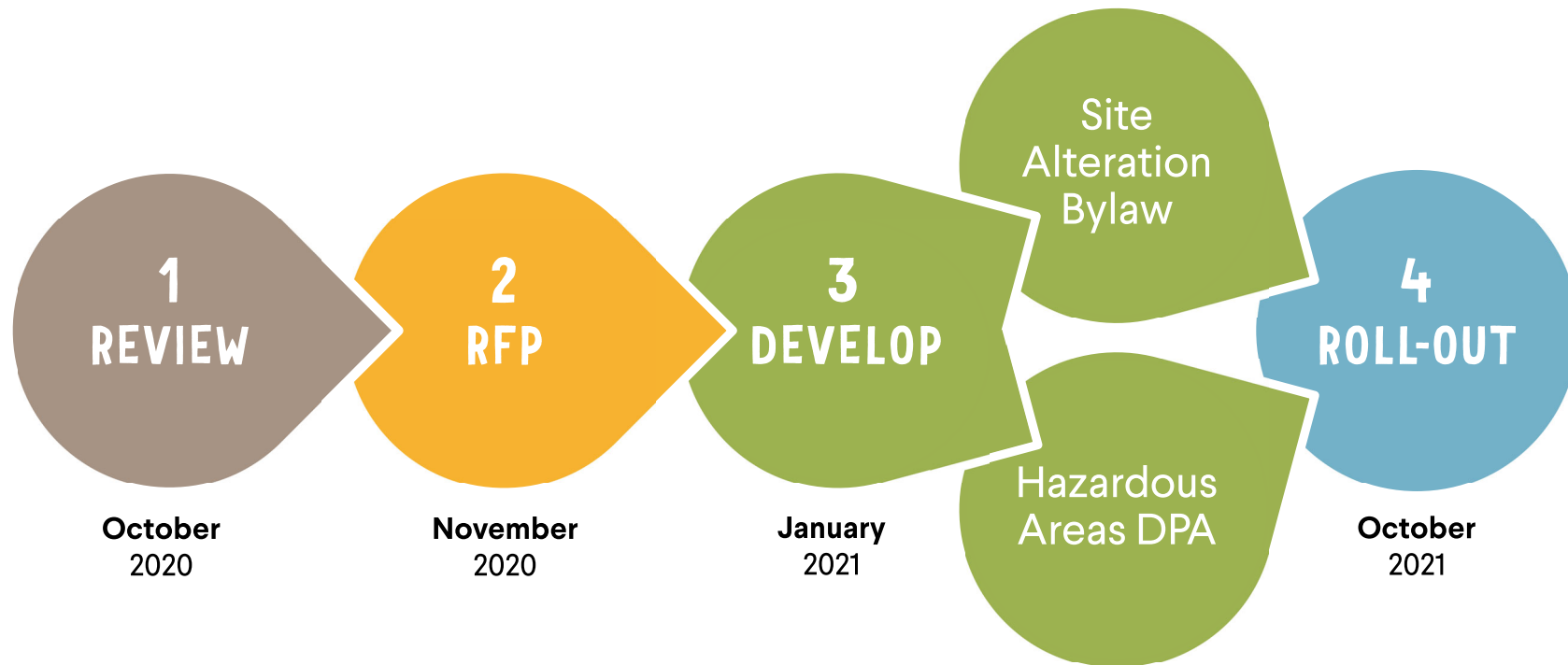
2. Site Alteration Bylaw

- mitigate damage as a result of particular actions such as blasting, soil disturbance, and clearing
- triggered by the magnitude of such works, generally measured in volume of disturbed materials or area of land

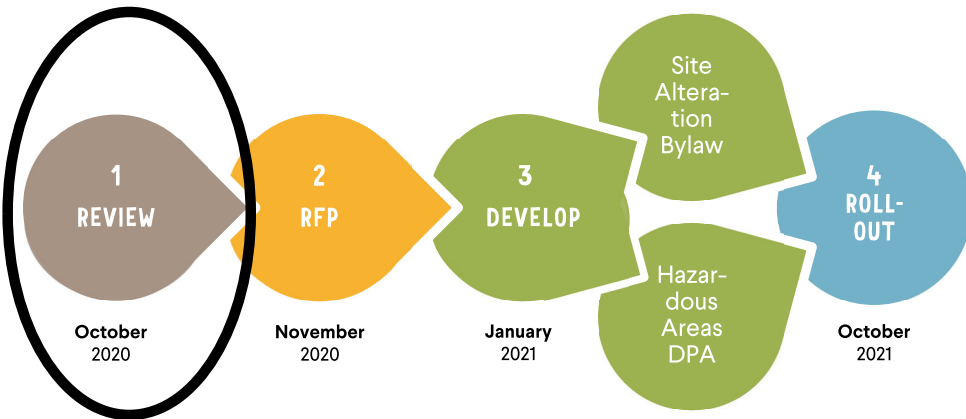
...that together adequately address the risks to people and environment posed by large scale* development and site preparation activities.

*Note these are intended not to impede everyday work, only larger scale activities.

Proposed Work Plan

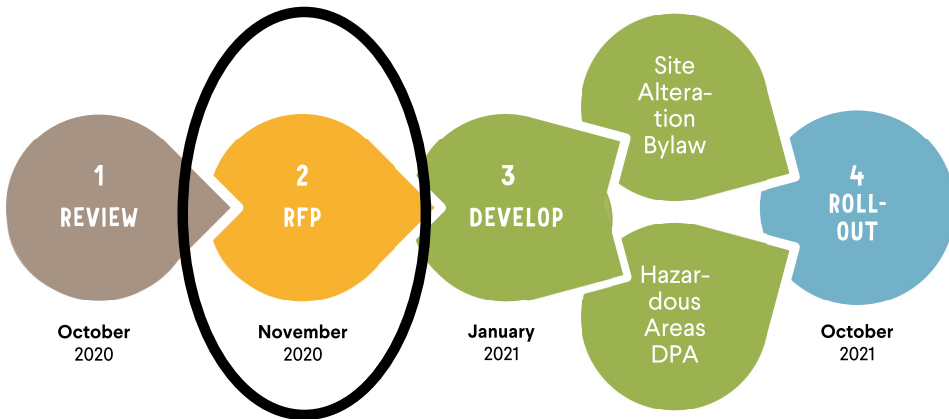


Proposed Work Plan



1) REVIEW Review comparable bylaws and related local regulations. Determine best practices and confirm required information.

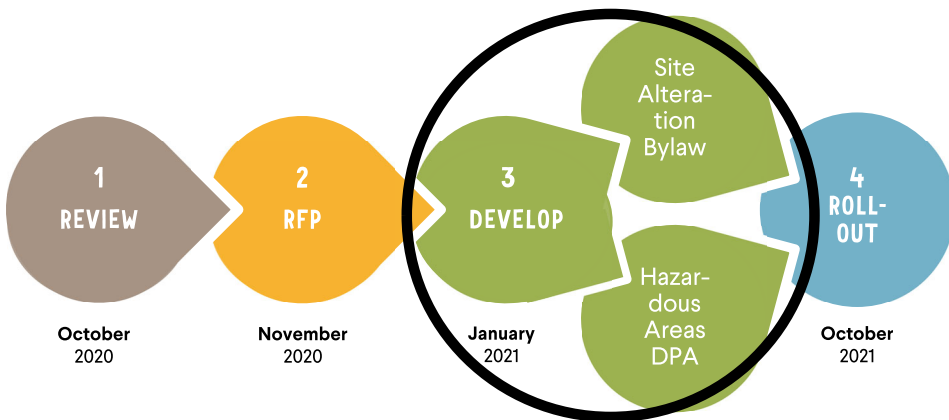
Proposed Work Plan



2) RFP Select consultants or student-work program

- a) Geotechnical specialist to review proposed Site Alteration Bylaw, analyze spatial data, identify appropriate DP Areas and draft a Terms of Reference document for geotechnical assessment reports. A base Scenario and two alternates for this are described in section E.
- b) Forester to advise us regarding the impact of clearcut and other vegetation clearing activities on slope stability and risks to water systems
 - i) Drainage assessment would tell us the setbacks for a given stream
 - ii) Provision of spatial polygons with risk levels and recommendations for each, that we would then combine in GIS.
 - iii) We would provide a polygon indicating areas of interest to be assessed

Proposed Work Plan



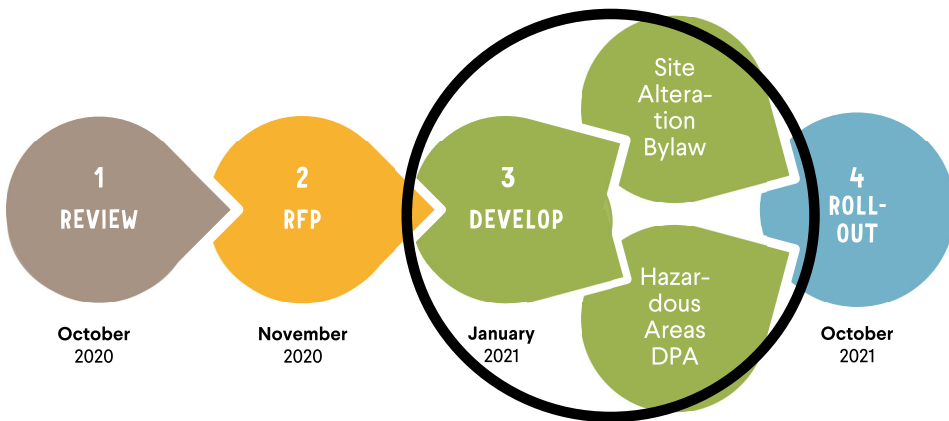
3) DEVELOP

Bylaws independently and adopt them as they become ready

Site Alteration Bylaw

- Establish site alteration activities that present increased risk to water contamination, groundwater lowering, ground instability, soil runoff, drought or other hazards.
- Define the trigger for application of the bylaw that captures large scale development while not impeding everyday work by locals
- Draft bylaw document
- Define an enforcement mechanism with appropriate scale to ensure compliance even in the face of economic incentives to disregard the bylaw
- Conduct public engagement online, such as through the Citizenlab website
- Present results of engagement and draft bylaw to Council and relevant committees
- Adjust bylaw as directed according to feedback from the public engagement
- Present adjusted bylaw for adoption

Proposed Work Plan



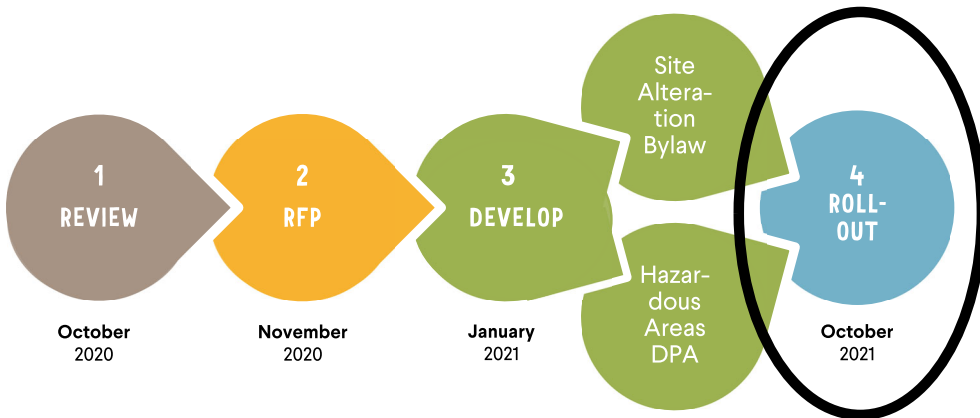
3) DEVELOP

Bylaws independently and adopt them as they become ready

Hazardous Areas DPA

- a) Gather spatial data (see section F for more information).
- b) Establish areas of high vulnerability to any of the following hazards: earthquake, fire, rockfall, treefall, landslide, erosion and runoff,
- c) Define the trigger for application of the DP that captures large scale development while not impeding everyday work by locals
- d) Determine the permit application process
 - (1) Generate the necessary permit forms and checklists
 - (2) Define the review process
 - (3) Define enforcement procedures and mitigation requirements
- e) Draft the bylaw document
- f) Draft the Geotechnical Assessment Report Terms of Reference (ToR)
- g) Conduct public engagement online, summarize the results of such engagement, and adjust bylaw accordingly
- h) Provide a map of the DP Area
- i) Amend the OCP to include the DP Area
- j) Adopt new bylaw

Proposed Work Plan



- a) Website, newspaper, and social media announcements
- b) Provision of educational materials, such as handouts

4) ROLL-OUT Communicate the new bylaws such that the public is properly notified prior to enforcement

Note that Roll-out will likely be staggered due to OCP amendment needs for the DPA but not the Site Alteration Bylaw.

Budget

Base Scenario

graduate student-work program fulfills geotechnical needs

STEP	Staff (hrs)		Incidentals (\$)		
	Mgr	Team	Description	Units	Total
1.0 REVIEW	2	12			
2.0 RFP	3	15			
3.0 DEVELOP			Forester	15 hrs	\$1,000
Site Alteration Bylaw	6	30			
Hazardous Areas DPA	4	30	Student-work program	250 hrs	\$7,500
4.0 ROLL-OUT	10	40	Print materials		\$300
BASE SCENARIO TOTAL	25	127			\$8,800

Student-work program examples:

- i) UBC's [Sustainability Scholars](#) which provides a graduate student with relevant expertise and guidance from professors
 - costs \$6,125 for 250 hours from May to August of 2021
- ii) [MITACS Accelerate Internship](#) program, which lasts a minimum of 4 months and covers half the costs of a student's labor.
 - costs \$7,500 for 4 months

Alternate 1

hire a geotechnical firm for the analysis and to provide recommendations

STEP	Staff (hrs)		Incidentals (\$)		
	Mgr	Team	Description	Units	Total
1.0 REVIEW	2	12			
2.0 RFP	3	15			
3.0 DEVELOP			Forester	15 hrs	\$1,000
Site Alteration Bylaw	6	30			
Hazardous Areas DPA	2	12	Geotechnical analysis	100 hrs	\$20,000
			Geotechnical field work	150 hrs	\$30,000
4.0 ROLL-OUT	10	40	Print materials		\$300
ALTERNATE 1 TOTAL	23	109			\$51,300

Alternate 2

complete as much of the analysis in-house as possible, seeking consulting only for guidance and review.

STEP	Staff (hrs)		Incidentals (\$)		
	Mgr	Team	Description	Units	Total
1.0 REVIEW	2	12			
2.0 RFP	3	15			
3.0 DEVELOP			Forester	15 hrs	\$1,000
Site Alteration Bylaw	6	30			
Hazardous Areas DPA	15	150-300	Geotechnical consulting as needed	50 hrs	\$10,000
4.0 ROLL-OUT	10	40	Print materials		\$300
ALTERNATE 2 TOTAL	36	247-397			\$11,300

RECOMMENDATION

That Council approve
the Site Alteration Bylaw
and Hazardous Areas DP Area Work Plan
as presented.