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Request for Decision



To: Peter de Verteuil, CAO **File No:** 3360-20-ZB-2022-01

Meeting Date: September 6, 2022 Submission Date: August 23, 2022

From: Kyle Young, Manager of Planning

Subject: Zoning Bylaw Amendment Application No. ZB-2022-01 for 1081 Canada Avenue

RECOMMENDATION:

That Council give first and second readings to "Zoning Bylaw Amendment Bylaw No. 3166.03, 2022";

And that Council withhold consideration of adoption of "Zoning Bylaw Amendment Bylaw No. 3166.03, 2022", subject to the following:

- 1. registration of a geotechnical covenant, including a save-harmless clause in favour of the City of Duncan, against the title of the subject property; and
- 2. dedication of a 1.02 m wide strip of land as road along the entire Canada Avenue frontage of the subject property.

BACKGROUND:

Subject Property

Civic Address: 1081 Canada Avenue (APPENDIX B)

Neighbourhood Downtown

Property Area: 0.10 ha 0.25 ac 1,000 m² 10,764 ft²

Zoning: Neighbourhood Commercial (NC) (APPENDIX C)

OCP Designation: Neighbourhood Commercial (new draft OCP)

Local Area Plan: N/A

Site Description: The property contains a three storey commercial building. The remainder

of the site includes paved accesses and parking areas, as well as

landscaped space. An air photo is included as **APPENDIX D**. Site photos

are included as APPENDIX E.

Site Context (North): City boundary, followed by the North Cowichan lift station

Site Context (East): Canada Avenue, followed by the ICF rail corridor

Site Context (South): Place of worship

Site Context (West): Steep bank, followed by a vacant parcel and single-unit dwellings

Proposal

A cover letter from the applicant – Cowichan Valley Women Against Violence Society (CWAV) – is attached as **APPENDIX F**. The applicant is proposing to use the building for CWAV's emergency transition house for women and female-identifying individuals who are unsheltered and are experiencing or are at risk of violence (i.e. a type of assisted living). This use generally includes office space, common areas, and sleeping units providing up to 24 beds for residents. Building plans showing the existing and proposed floor plans are included in **APPENDIX G**.

The NC zoning of the property only permits sleeping units above the first storey. Since the proposal is to use the first storey (i.e. lowest storey) of the building for sleeping units, the applicant is requesting an amendment to the zoning bylaw to rezone the subject property from the NC zone to the Community Services (CS) zone to permit sleeping units on any storey of the building, including the first storey. The proposed amendment bylaw is attached as **APPENDIX A**. The existing NC zone and proposed CS zone are attached as **APPENDICES H & I**, respectively.

Floodplain Hazard

In 2021, the Cowichan Valley Regional District released the *Updated Cowichan-Koksilah River Flood Mapping*. That mapping identified large areas of Duncan that are subject to a potential major flooding event if existing flood protection measures fail. The mapping identified that the subject property is within the floodplain hazard area and that the flood construction level (FCL) for the property is 10 m. The FCL is an elevation above which habitable space, including sleeping units, must be located in order to mitigate the potential damage caused by floodwaters. The elevation of the floor on the first storey of the building is 8.7 m, which means that the first storey elevation is 1.3 m below the FCL. This means that in the event of a major flood where the diking system fails, the first storey of the building on the subject property would likely be inundated by floodwaters. The updated floodplain mapping has not been incorporated in the City's floodplain management bylaw, so under normal circumstances this would not necessarily be considered in the development application and review process. However, since the applicant is requesting a zoning bylaw amendment, the floodplain hazard is a factor that Council can take into consideration in its decision on the proposed amendment bylaw.

ANALYSIS:

Official Community Plan

The Community designation in the City's new draft OCP provides the following policy guidance:

Policy 4.7.1 – While <u>community uses may be found in other designations</u>, existing and new Community designated lands will be the primary location for community uses in Duncan

Policy 4.7.6 – The City supports the inclusion of community uses into the downtown, neighbourhood nodes, and other mixed-use development areas.

The housing policies in the new draft OCP provide further guidance:

Policy 3.3.10 – The City supports the provision of emergency shelters, temporary housing, and support services for people who are homeless or are at-risk of becoming homeless.

Policy 3.3.11 – The City supports a wide distribution of affordable housing units or developments throughout the community, rather than concentration in one particular area of Duncan.

The new draft OCP supports the inclusion of community uses in all areas of Duncan and it has been the City's practice to allow CS zoning in different land use designations in the OCP. For example, the property immediately to the south of the subject property is zoned CS in the zoning bylaw in order to accommodate a place of worship, but it was designated 'Commercial' in the previous 2007 OCP. In staff's view, the proposal is consistent with the new draft OCP.

Land Use

From a land use management and planning perspective, staff do not anticipate any adverse community or neighbourhood impacts resulting from the proposed CS zoning on the subject property. The rezoning would result in a minor decrease in the commercial land availability within Duncan.

Floodplain Hazard

The applicant retained a geotechnical engineer to assess the flood risks associated with the property and the proposed use (see **APPENDIX J**). While the geotechnical engineer is unable to confirm the land is safe for the use intended (i.e. sleeping units on first storey below the FCL), the engineer did identify a number of measures that can be implemented to mitigate the impacts of the hazard, including:

- Provision of a warning system, including a high water level alarm and posting of egress procedures at entrances.
- Ensuring that all major fixed equipment (major electrical switchgear, furnaces, ventilation systems, and hot water tanks) integral to and necessary for the functioning of a building, pursuant to the BC Building Code, are located above the FCL.

The applicant has committed to meeting the recommendations of the geotechnical engineer, including registering a covenant on title with the geotechnical assessment and a save-harmless clause in favour of the City. Registration of the covenant would occur prior to adoption of the zoning amendment bylaw and all costs would be the responsibility of the applicant.

The FCL is primarily intended to reduce flood risk to buildings and properties. In the case of a dwelling unit, elevating the unit above the FCL will help prevent damage to the structure and all belongings within the unit. The intended use of the subject property is sleeping units (i.e. bedrooms) rather than full dwelling units and each of the sleeping units is anticipated to contain one or more beds and space for a small number of personal belongings. In the event of a flood where the first storey becomes inundated by flood waters, it is anticipated that the beds and personal belongings could be relocated to the second or third storeys (which are above the FCL) as an interim, emergency measure. Furthermore, the rear portion of the property is above the FCL and could be used as an evacuation area.

Accommodating sleeping units below the FCL, particularly for vulnerable populations, is not ideal. In the case of new construction, all new sleeping units and dwelling units should be located above the FCL and staff are currently working on updates to the City's floodplain management bylaw to incorporate the 2021 floodplain mapping. In this case, given the specific nature of the use and the fact that the building exists, and provided that the recommendations in the geotechnical assessment are followed, staff are supportive of sleeping units on the first storey. It should be noted that if the applicant was not requesting a zoning bylaw amendment and if the existing zoning permitted the use, they would be entitled to use the first storey for sleeping units (below the FCL) because this property is not covered under the City's existing floodplain management bylaw.

Road Dedication

In its review of this application, staff identified that an additional 1.02 m of road dedication is required along the Canada Avenue frontage of the subject property to accommodate planned future road improvements (see **APPENDIX K**). As a minor community amenity contribution associated with this zoning bylaw amendment application, staff are recommending that the road dedication be secured as a condition of adoption of the zoning amendment bylaw. The applicant has advised that they are agreeable to this, provided that the City covers the cost of surveying and registration of the road dedication plan. Normally, all costs associated with community amenity contributions would be the full responsibility of the owner/applicant. However, given the nature of the proposed use, which is of significant community benefit, it is reasonable for the City to cover the surveying and registration costs. The City has a budget for this type of work (~\$3-4,000) and staff feel that this is an appropriate time to secure the additional road dedication.

Ministry of Transportation and Infrastructure

Since the property is within 800 m of a controlled access highway (Trans-Canada Highway), Ministry of Transportation and Infrastructure approval will be required prior to adoption of the zoning amendment bylaw. The Ministry has advised that it has no concerns with the proposed CS zone.

Public Hearing

In early 2022, the provincial government made a number of changes to the *Local Government Act*, including changes to the public hearing requirements that were intended to streamline the zoning bylaw amendment process. This is the first zoning bylaw amendment application the City is considering under the new legislation. Section 464(2) of the *Local Government Act* states the following:

- "A local government is not required to hold a public hearing on a proposed zoning bylaw if
- (a) an official community plan is in effect for the area that is the subject of the zoning bylaw, and
- (b) the bylaw is consistent with the official community plan."

However, a local government can still hold a public hearing if it wishes. When a public hearing is not being held, the local government is required to give notice similar to the notice it would give if it was a holding a public hearing. In order to not hold a public hearing with this application, however, the City would have needed to give notice prior to consideration of first and second readings.

Staff are currently preparing a new development application review procedures bylaw and public

hearing policy. Until that work is complete, staff recommend continuing to hold public hearings for zoning bylaw amendments.

For this application, a public hearing would be scheduled for November 21, 2022 (prior to the regularly scheduled Council meeting) unless Council wishes to hold a public hearing on a different date. November 21, 2022 is being selected as a public hearing date in order to create separation between the October 15, 2022 general local election and public input opportunities for development applications at Council meetings immediately before and after the election.

Discussion and Conclusion

In staff's view, the proposal is consistent with the current OCP and new draft OCP. The CS zone is suitable and appropriate for the subject property and is not anticipated to have any adverse community or neighbourhood impacts. While not ideal, staff are supportive of the placement of sleeping units below the FCL in this particular circumstance, subject to the registration of a geotechnical covenant on title and the proposed precautions.

IMPLICATIONS:

Financial: As noted earlier, the surveying and registration costs for the road dedication

plan would be covered by the City and are anticipated to be in the range of

\$3-4,000. The City has an existing budget for this work.

The subject property is currently classified as "Business & Other" for assessment and taxation purposes. If the property is rezoned to the CS zone and used for the intended assisted living use, the City would generate less

municipal tax revenues from the subject property.

Policy/Legislation: N/A

Strategic Priority: 9. Strong Community Connections and Safe, Healthy Community

Work with North Cowichan, Cowichan Tribes and others on supports for

homeless residents.

Sustainability: N/A

Communication: As noted, if Council gives first and second readings to the zoning amendment

bylaw, a public hearing would be scheduled for November 21, 2022. Notice would be sent to owners and occupiers within 60 m (200 ft) of the subject property and advertisements would be placed in two consecutive issues of

the newspaper.

Staffing Implications: N/A

ALTERNATE OPTIONS:

1. Council could choose not to give first and second readings to the proposed zoning amendment bylaw. If the property is not rezoned to the CS zone, use and development of the subject property would be restricted to the provisions of the NC zone, which means sleeping units would need to be restricted to the second and third storeys of the building. Motion for consideration:

<u>That</u> Council refuse to give first and second readings to "Zoning Bylaw Amendment Bylaw No. 3166.03, 2022".

2. Council could choose to introduce the bylaw by giving the bylaw first reading, amend the bylaw, then give second reading to the bylaw, as amended. Council could also impose other conditions to be met by the applicant prior to consideration of adoption of the bylaw. If Council chooses to amend the bylaw or impose additional conditions, staff would contact the applicant to determine if they wish to proceed with the application. Motion for consideration:

That Council give first reading to "Zoning Bylaw Amendment Bylaw No. 3166.03, 2022";

<u>That</u> Council amend "Zoning Bylaw Amendment Bylaw No. 3166.03, 2022" by [insert amendment];

<u>That</u> Council give second reading to "Zoning Bylaw Amendment Bylaw No. 3166.03, 2022", as amended;

And that Council withhold consideration of adoption of "Zoning Bylaw Amendment Bylaw No. 3166.03, 2022", subject to the following:

- registration of a geotechnical covenant, including a save-harmless clause in favour of the City
 of Duncan, against the title of the subject property; and
- 2. dedication of a 1.02 m wide strip of land as road along the entire Canada Avenue frontage of the subject property.

APPENDICES:

APPENDIX A Zoning Amendment Bylaw No. 3166.03, 2022

APPENDIX B Location Map

APPENDIX C Zoning Map

APPENDIX D Air Photo

APPENDIX E Site Photos

APPENDIX F Cover Letter

APPENDIX G Building Plans

APPENDIX H Neighbourhood Commercial Zone

APPENDIX I Community Service Zone

APPENDIX J Geotechnical Assessment

APPENDIX K Road Dedication Plan

APPENDIX A

CITY OF DUNCAN

BYLAW NO 3166.03, 2022

A BYLAW TO AMEND THE CITY OF DUNCAN ZONING BYLAW NO. 3166, 2017

The Council of the City of Duncan enacts as follows:

1. CITATION

1.1 This Bylaw may be cited as "Zoning Bylaw Amendment Bylaw No. 3166.03, 2022".

2. AMENDMENT

2.1 The "City of Duncan Zoning Bylaw No. 3166, 2017" is hereby amended in Schedule A by reclassifying LOT 1, SECTION 19, RANGE 6, QUAMICHAN DISTRICT, PLAN 29979 (1081 Canada Avenue, PID: 001-327-399) from "Neighbourhood Commercial Zone" to "Community Service Zone".

PASSED FIRST READING

PASSED SECOND READING

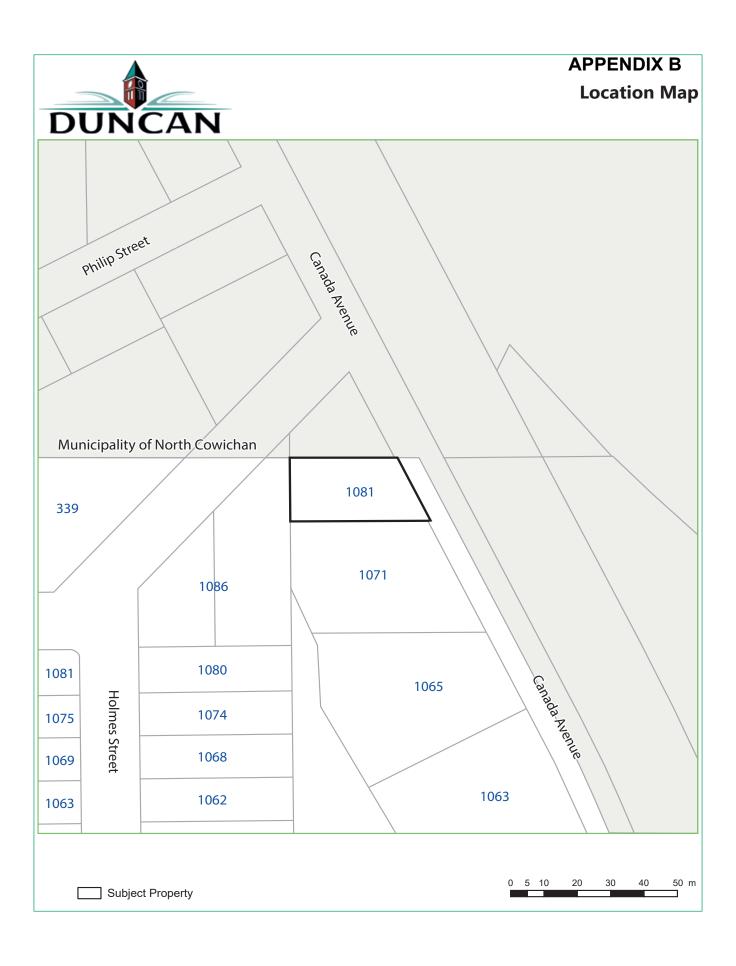
PUBLIC NOTICE GIVEN IN ACCORDANCE WITH THE LOCAL GOVERNMENT ACT

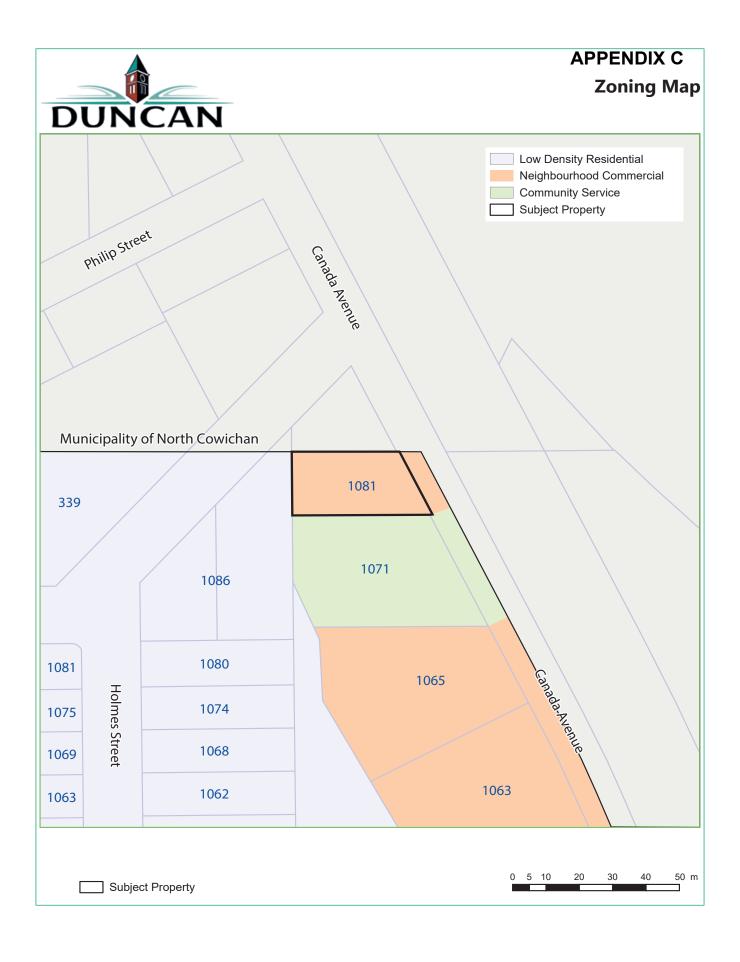
PUBLIC HEARING

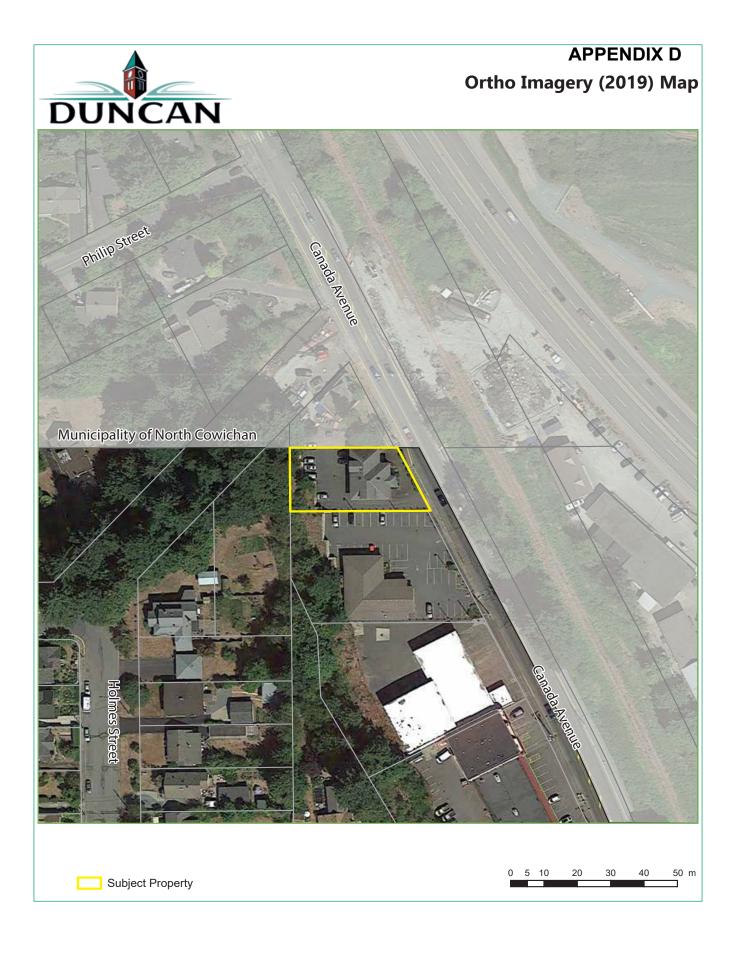
PASSED THIRD READING

APPROVED BY THE MINISTRY OF TRANSPORTATION AND INFRASTRUCTURE
ADOPTED

	<u> </u>
Michelle Staples,	Paige MacWilliam,
Mayor	Director of Corporate Services







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APPENDIX E





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APPENDIX F



Cover Letter June 24, 2022

RE: Charlotte's Place - 1081 Canada Avenue

Cowichan Women Against Violence Society

Zoning Amendment Request: That the zoning for the first floor of 1081 Canada Ave, Duncan BC, be amended to allow for habitation of residents of *Charlotte's Place*, CWAV's emergency transition house for women and female-identifying individuals who are unsheltered and are experiencing or are at risk of violence.

Intro to project:

- CWAV has over 40 years in the community with a strong reputation for providing services that meet community needs.
- Charlotte's Place is a transition house run by CWAV, which provides low barrier services to
 vulnerable single women. Resident women access support services with the goal of being able to
 succeed in supportive housing.
- From our first home at the concession stand, to our Covid mandated tenting site, to our current home at 222 Cowichan Way, the Duncan community has rallied around Charlotte's Place and assured its survival with their incredible support.
- With zero community complaints at any of our sites, Charlotte's Place has proven to be a
 reliable, professional and effective service that consistently balances the needs of some of our
 community's most vulnerable members, with the needs of the greater community.

Community Need and Support:

- In the past year, we have provided transitional housing to approximately 35 women, and served
 another 50 on an ongoing basis in outreach services at our door. The outreach service numbers
 show that the need is far greater than we have had capacity to address. With the building at
 1081 Canada Ave, and the full use of the first floor, we will be able to double the current number
 of women we serve (from 12 to 24 beds).
- Charlotte's Place is a crucial step in the process of one of our most vulnerable sectors of our community finding lasting, sustainable housing. At Charlotte's Place, chronically unhoused women will stay on average 60 100 days. Some may stay longer, and some may return several times. Residents will stabilize, receive support from counselling, poverty law advocacy, and health professionals, and have access to employment and tenancy support to be successful in second-stage or supportive housing. Charlotte's Place provides hope for breaking the cycle that keeps these individuals in high-risk living situations.
- Only 6 short months ago there was no money for this capital purchase. The community rallied to support Charlotte's Place and CWAV was able to raise over 1.3 million dollars to make this dream

246 Evans Street, Duncan, BC, V9L 1P8 (250) 748-7000 www.cwav.org Email: cwav@cwav.org

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a reality. The amount raised in such a short time illustrates the drive and desire in our community to see Charlotte's Place in a secure, forever home.

- We have worked closely with many local and provincial stakeholders to find successful strategies
 in housing our community's most vulnerable population. The success of this project has not only
 the power of CWAV behind it but also that of Cowichan Housing Association, Cowichan
 Community Health Network, Cowichan Mental Health Association, the Duncan Community
 Action Team (CAT Peers), Providence Village Housing Society, BC Housing, and the United Way.
- CWAV has ongoing operational funding from BC Housing to help ensure success from the outset of operations.

Why 1081 Canada Ave:

- The location is ideal in that it is far enough away from the downtown core to provide relief to
 downtown business owners, and yet still central to community services. There are no adjacent
 residential neighbours, no schools in close proximity, and no clear markers that would indicate
 community pushback or friction.
- We have searched diligently for the right property, and there are simply no better options to be
 had in our current challenging real estate market. Our current rental location is only a temporary
 solution, and there is no possibility of making it a long-term home.
- With the capacity of this building to transitionally house up to 24 women, our program model and operational funding from BC Housing are secure.

Why Housing on the First Floor:

- Better accessibility. There is a door at the front entrance that does not require any stair usage
 and is wheelchair accessible. There is an existing accessible bathroom on this floor and we have
 building plans that include an accessible shower.
- Best use of space. With the current layout and design, it is the most efficient and best use of space, and allows the building to house a greater number of women in need. There are 11 separate rooms on the floor with space for 13 beds.
- The current layout of the first floor facilitates dignity, privacy and personal agency, paving the way to successful placements in second stage or supportive housing.

Steps to Mitigating Flood Risk:

- The Charlotte's Place program has a 24/7 double staffing model, which means that there are always two staff present and awake to address the needs and safety of all residents at all times.
- In the case of flooding, residents would be immediately evacuated to a place of refuge. The two
 upper floors of the building are the first stage of refuge.

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In the case of longer term flooding impacts, as of the new year (2023), CWAV will be managing
the supportive housing project on White Road which has 5 accessible units, plus 11 additional
units for our client group. White Road would be our first choice for longer-term refuge for
residents of Charlotte's Place.

Flood Risk vs. Community Need - Risk Assessment:

- We understand that the zoning amendment decision is based greatly on weighing the potential of risk. Based on our 45 years of experience in the field of caring, advocating, and working for the rights of our community's most vulnerable and marginalized members, we believe that the risks of putting these women back on the street or in dangerous domestic environments outweighs the risks of flooding at the property. The damage to the individuals impacted, as well as the community, would be tremendous.
- If flooding were to occur on the ground floor, CWAV has options already in place to allow for the
 residents to remain housed and cared for as we assess any damage and make necessary repairs.

Respectfully submitted,

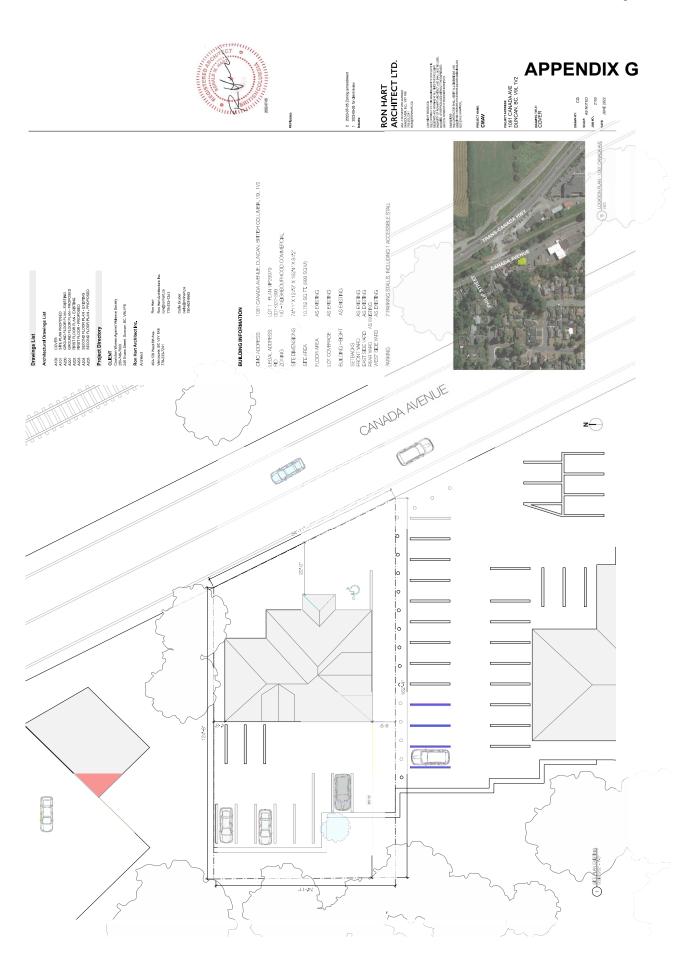


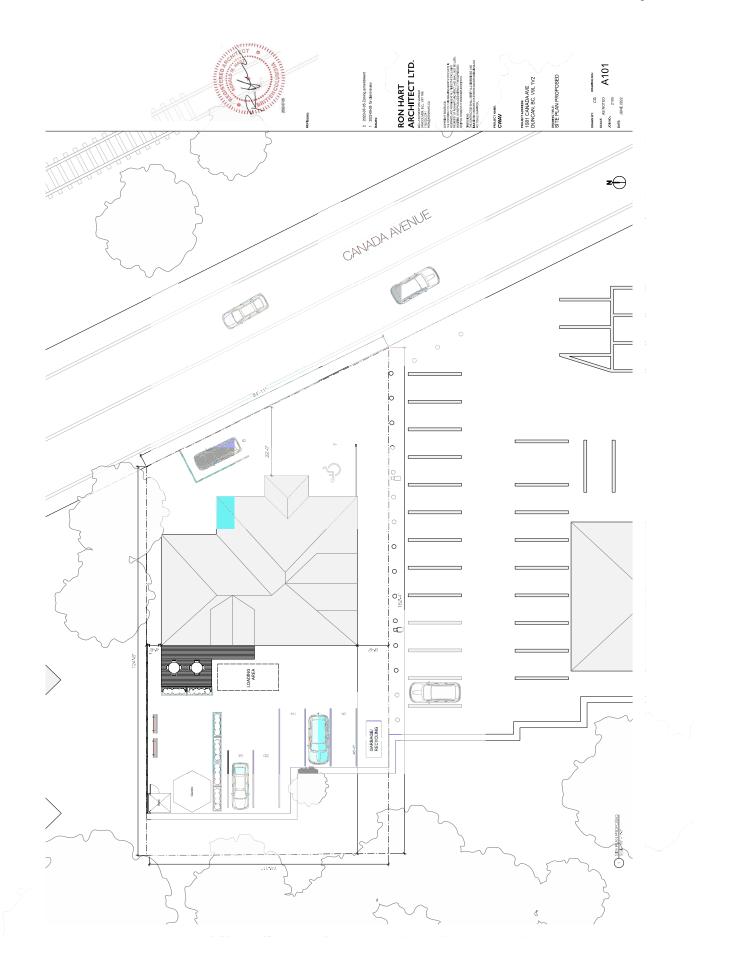
Jan Bate, Executive Director

Cowichan Women Against Violence Society

exec.dir@cwav.org

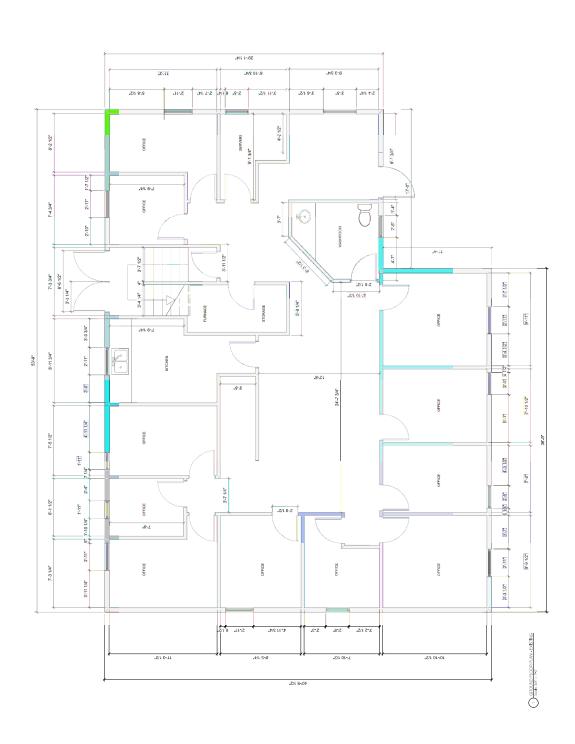
Cell: 1-250-508-4670 Office: 250-748-7000





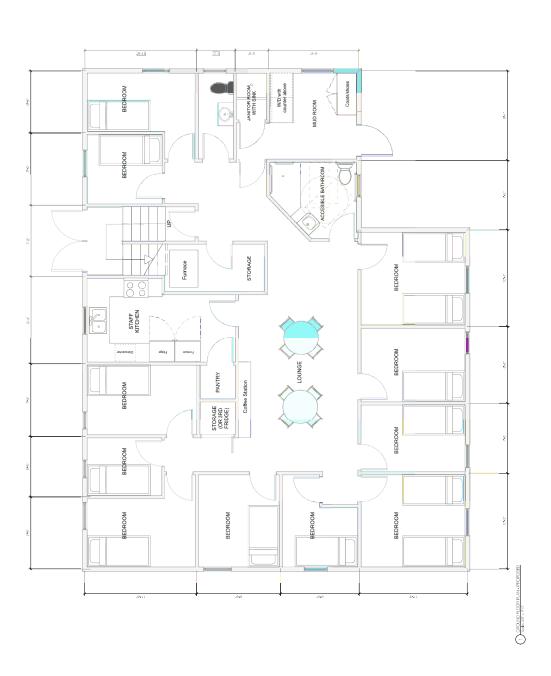
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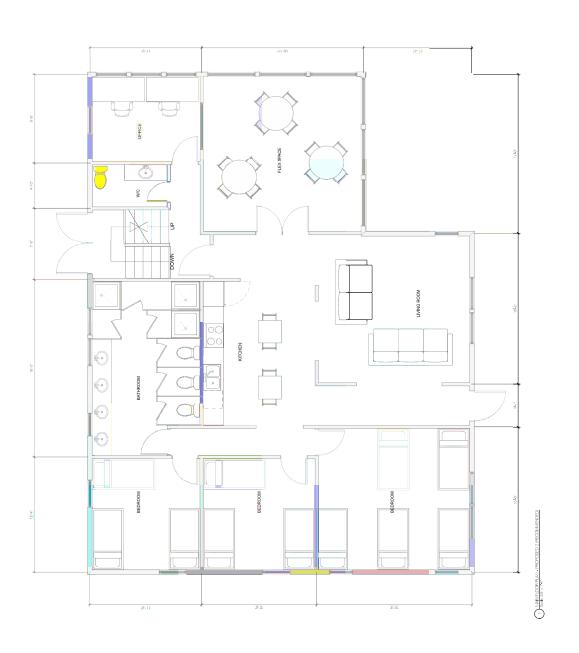
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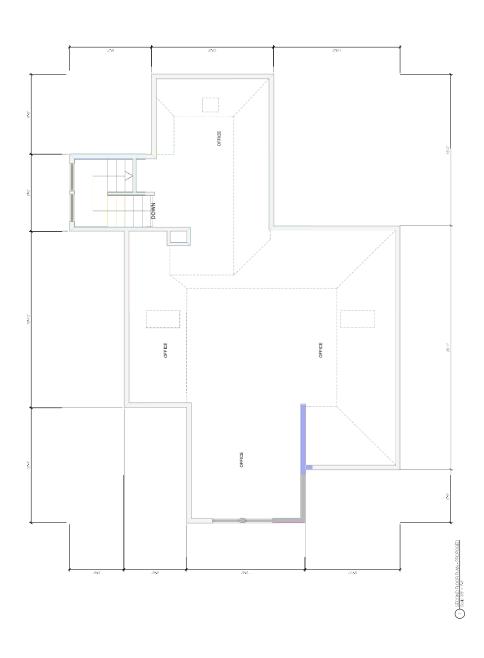
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APPENDIX H

COMMERCIAL ZONES

Neighbourhood Commercial Zone NC

5.6 Intent

5.6.1 The intent of the Neighbourhood Commercial (NC) *zone* is to permit a range of commercial and *residential uses* that are intended to contribute to a vibrant neighbourhood with street-oriented *buildings*, and infrastructure and facilities focused on active transportation.

5.7 Permitted Uses

5.7.1 The uses permitted in the NC zone are as follows:

Principal Uses	Accessory Uses	Conditions of Use
Assisted Living Residential Facility* Community Use Community Care Facility* Commercial Daycare Cultural Use Craft Beverage Production Dog Grooming Dwelling, Multi-Unit* Education Facility Financial Institution Funeral Service Facility Mobile Food Vending Indoor Recreation Facilities Office Parking Facility Public Market Repair Service, Automotive Repair Service, General Retail & Personal Service Restaurant Social Service Tourist Accommodation	Home-Based Business in a Multi-Unit Dwelling Dwelling, Accessory	* Multi-Unit Dwellings are permitted above the first storey * Dwelling units or sleeping units in an Assisted Living Residential Facility or Community Care Facility are permitted above the first storey * Uses on the first storey of a building with an Assisted Living Residential Facility, Community Care Facility or Multi-Unit Dwelling must provide service to persons off-site, not only to owners or occupiers of the building.

^{*}Conditions of use apply

5.8 Development Regulations

5.8.1 Development in the NC zone is subject to the following:

Development Criteria	Regulations
Maximum Parcel Coverage	70%
Minimum Floor Area Ratio	0.5:1

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COMMERCIAL ZONES

Maximum Floor Area Ratio		Base Density	Bonus Density I	Bonus Density II
Davidania	4 Cuitouio	1.9:1	2.1:1	2.4:1
Amenities Required for Bonus Density I		Regulations A density bonus of up to 0.2 above the base density is permitted if the developer enters a housing agreement with the City, to require that a minimum of 30% of the dwelling units in the entire development are rental units or affordable housing units.		
A density bonus of up to 0.5 above the base density is permitted if at least one of the following conditions at (i) The developer enters a housing agreement with to require that a minimum of 75% of the dwelling of the entire development are rental units or affordable housing units; (ii) 100 percent of the required parking spaces for the entire development are located underground or with parking structure incorporated into the design of the building; or (iii) The entire development achieves or exceeds Brancolumbia Energy Step Code Level 3 energy efficient requirements.		onditions are met: ement with the City he dwelling units in or affordable spaces for the bround or within a design of the exceeds British hergy efficiency		
Outdoor Store	age	Outdoor storage areas must be screened from <i>highways</i> in accordance with section 3.23.		
Principal Bui	lding	Regulations		
Maximum He	ight:	14 m (4 habitable storeys)		
Minimum Hei	ght:	2 habitable storeys		
	Front	4 m		
Minimum	Rear	0 m, except where a minimum rear parcel		itial <i>zone</i> , the
Parcel Line Setback	Side, Interior	0 m on one side, 4 m abuts land with resid parcel line setback is	ential zoning, the mir	
	Side, Exterior	4 m		
Maximum	Front	6 m		
Parcel Line Setback Side, Exterior		6 m		
Accessory Buildings and Structures		Regulations		
Maximum He	ight	5 m		
Minimum	Front	8 m		
Parcel Line Setback Rear		0 m, except where a the minimum rear pa		9

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COMMERCIAL ZONES

Side, Interior	1.2 m, except where a <i>parcel</i> abuts land with residential zoning, the minimum <i>interior side parcel line setback</i> is 5 m.
Side, Exterior	1.2 m

5.9 Subdivision Regulations

5.9.1 *Subdivision* in the NC *zone* is subject to the following:

Subdivision Criteria	Regulations
Minimum <i>Parcel</i> Area	600 m ²
Minimum Parcel Frontage	15 m

5.10 Site Specific Uses

5.10.1 The following *uses* shall be permitted on a site-specific basis only:

Site-specific Uses	Location
Automotive Fueling Station	1006 Government Street – Lot A, Section 19, Range 5,
Automotive Fueling Station	Quamichan District, Plan VIP 54586
Automotive Fueling Station	1007 Canada Avenue – Lot 2, Section 19, Range 6,
and Car Wash	Quamichan District, Plan VIP 6745 (except Plan 22556)

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APPENDIX I

COMMUNITY SERVICES ZONES

PART 6 – COMMUNITY USE ZONES

Community Service Zone



6.1 Intent

6.1.1 The intent of the Community Services (CS) *zone* is to permit a variety of *institutional* uses and community-oriented uses.

6.2 Permitted Uses

6.2.1 The uses permitted in the CS zone are as follows:

Principal Uses	Accessory Uses
Assisted Living Residential Facility	Dwelling, Accessory
Community Use	Restaurant
Cultural Use	Retail
Commercial Daycare	Office
Community Care Facility	Mobile Food Vending
Education Facility	
Fish Hatchery	
Hospital	
Institutional Use	
Indoor Recreation Facilities	
Outdoor Recreation	
Treatment Centre	

6.3 Development Regulations

6.3.1 Development in the CS zone is subject to the following:

Development	Criteria	Regulations
Maximum Parc	el Coverage	40%
Maximum Dens	sity	1 accessory dwelling unit per parcel
Principal Build	ling	Regulations
Maximum Heig	ht	14 m (4 storeys) for Principal Buildings
Minimum	Front	5 m
Parcel Line	Rear	3 m
Setback	Side, Interior	3 m
	Side, Exterior	5 m
Accessory Buil	dings and Structures	Regulations
Maximum Heig	ht	5 m
Minimum	Front	5 m
Parcel Line	Rear	1.2 m
Setback	Side, Interior	1.2 m

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COMMUNITY SERVICES ZONES

Side, Exterior	5 m

6.4 Subdivision Regulations

6.4.1 *Subdivision* in the CS *zone* is subject to the following:

Subdivision Criteria	Regulations
Minimum Parcel Area	600 m ²
Minimum Parcel Frontage	15 m

APPENDIX J



RYZUK GEOTECHNICAL

Engineering & Materials Testing

6-40 Cadillac Ave, Victoria, BC, V8Z 1T2 Tel: 250-475-3131 E-mail: mail@ryzuk.com

www.ryzuk.com

June 28, 2022 File No: 11205-1

Cowichan Women Against Violence Society 246 Evans Street Duncan, BC V9L 1P8

By E-mail: exec.dir@cwav.org

Re: Proposed Renovations

1081 Canada Ave - Duncan, BC

As requested, we have completed a desktop review of the flooding conditions at the referenced site relative to the existing three-storey building. We understand you are contemplating purchase of the property and would use the existing building as the Cowichan Women Against Violence Society (CWAV) headquarters. We understand that if purchased, the building would require to be rezoned to allow for residential use, and you would be completing proposed renovations which will allow for temporary accommodations with sleeping space in the partial basement level of the building. The following letter summarizes our findings and associated recommendations relating to flood hazard at the subject property. Note that our scope of work does not encompass assessment of geohazard associated with slope or retaining wall instability, foundation settlement, or seismic considerations and liquefaction potential. Our work in this regard has been carried out in accordance with the previously accepted Terms of Engagement.

The roughly 900 m² site is located in the north extents of the City of Duncan. The lot is bounded by Canada Ave to the east, a District of North Cowichan pump station to the north, a similar commercial building to the south, and a moderate to steep east-facing slope on the west with a single family residential lot at the crest. A northeast-southwest aligned ravine is located to the northwest of the site which terminates at the pump station.

The site hosts an existing three-storey commercial building located near the centre of the lot, with a drive aisle to the south of the building and parking in both the front and rear. An approximately 4.5 m high lock block retaining wall is present along the toe of the west slope. The property is minimally vegetated with landscaped beds along the front of the building and no notable trees.

As part of our work, we have reviewed the Northwest Hydraulic Consultants (NHC)'s recent Cowichan-Koksilah Floodplain Mapping Project (Job Number 3004940). Based on the NHC

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June 28, 2022

200 Year Flood Plain Map, dated October 14, 2021, the site has a designated Flood Construction Level (FCL) of 10.0 m (CGVD2013 datum). Further, the west half of the lot is mapped outside of the flood plain. We understand based on correspondence with Polaris Land Surveying Inc. (Polaris) that the basement floor elevation of the building is 8.70 m (CGVD2013 datum). As such, the basement is 1.3 m below the designated FCL and would be subject to hazard associated with floodwater inundation during a 200 year design flood event. The upper floors are above the FCL.

While a site-specific comprehensive assessment of the flood risk has not be undertaken as part of our work, it is worth noting that a series of flood dikes are present along the Cowichan River channel. The suitability/adequacy of these dikes cannot be confirmed, and therefore cannot be relied upon per the Professional Practice Guidelines for Legislated Flood Assessments in BC.

The site is located at the edge of the flood plain and is anticipated to have adequate advanced warning prior to floodwaters reaching the property. Temporary refuge is anticipated to be available within the rear parking area, with evacuation to be completed at a later time via vehicle, boat, or helicopter, depending on actual flood water elevation, if required in the event that the flood waters are slow to recede. We understand that the City is accepting of the lack of egress off the property under this condition, with consideration that the surrounding public roadways and access will also be inundated.

Based on the above, we consider the upper two floors of the building are safe from geohazard associated with the design flood event and that safe egress to the rear parking area would be achievable and reasonable. However, it should be understood that without mitigative measures in place, any areas below the FCL and not suitably tanked will be below water during a significant flooding event.

Authorization for the use of the basement for residential occupancy is the responsibility of the City. If such is permitted, we recommend suitable measures should be employed to provide warning to occupants during an extreme flooding event, including but not limited to installation of a high water level alarm and clear posting of egress procedures at entrances. Further, we recommend that all major fixed equipment including major electrical switchgear, furnaces, ventilation systems and hot water tanks that are integral to and necessary for the functioning of a building according to the BC Building Code are located above the FCL (or suitably tanked).

If the risk of floodwater inundation into the basement is not acceptable to the City, mitigative measures (i.e. flood barrier) would be required to ensure the safety and egress of occupants within the basement level, should it be desired to use for residential occupancy.

A suitably designed flood barrier would be required to isolate the building from ingress of overland flood water. The top of the barrier should be located at or above 10.0 m elevation.

However, highly permeable sand and gravel is anticipated to be underlying the site, and seepage through the subsurface would likely occur over time. A cutoff wall would need to extend substantially deep below grade, or otherwise a pump system should be employed to maintain a locally low groundwater level within the area encased by the barrier.

Given the site area constraints, we envision such a barrier would consist of a cast-in-place concrete wall, which would require to be designed by a qualified structural engineer in conjunction with a geotechnical professional. The wall would generally be located within the east half of the lot, tapering in height as the ground elevation rises towards the rear parking area. Alternatively, a soil berm may be constructed of low permeability soil (i.e. silt or clay) although we expect such would severely impact the use of the exterior areas of the site. A driven sheet pile wall may also be considered, or the building could be lifted to bring the basement level above the FCL.

It is likely that the City will require a "Safe for the Use Intended" statement as part of the review and permitting process. We consider the upper two levels to be safe for the intended use, that being residential occupancy. However, it is our opinion that the basement level as it currently sits does not meet this criterion with respect to flood hazard, although safeguards could be installed to reduce the risk to occupants. If the City requires, we have provided options for consideration regarding implementation of mitigative measures to alleviate the hazard associated with floodwater inundation into the basement which we would be pleased to further discuss with you. Our assessment considers a design flood event with a 1 in 200 year return period.

We trust the preceding is suitable for your purposes at present. Please don't hesitate to contact our office if we can be of further assistance.

Yours truly,

cc:

Ryzuk Geotechnical PTPN: 1002996

Teressa Gierc, P.Eng. Intermediate Engineer

Andrew Jackson, P.Geo., P.L.Eng.

Lead Geoscientist / Engineering Licensee

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Association of Professional

Limited Licence

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APPENDIX K

