



Our File: 2241-21014

July 14, 2023

City of Victoria 1 Centennial Square V8W 1P6

Attention: Jack Hu, Sewer & Stormwater Quality Technologist

822 CATHERINE STREET, VICTORIA, BC – SANITARY IMPACT ASSESSMENT REVIEW LETTER

Attached is the information compiled comparing estimated sanitary flows allowed under the existing zoning with estimated flows from a proposed development at 822 Catherine Street in Victoria, BC. We have summarized the information below:

Existing Scenario:

- 1. The existing zoning is R-2 Zone Two Family Dwelling District (see attached) and allows for many different uses including two family dwellings, accessory buildings, home occupation and public buildings such as hospitals.
 - a. The analysis assumed a hospital was located at 822 Catherine Street (see attached calculation sheet 2).
- 2. Total peak sanitary flow was estimated to be 1.28 L/s. This calculation is based on using the Harmon peaking factor.

Proposed Scenario:

- 3. Sanitary flow were calculated based on the proposed development:
 - a. Residential -5 x three bedroom units, 5 x two bedroom units, 15 x one bedroom units and 2 x studio units see attached calculation sheet 3
 - b. Commercial Unit 1 assumed restaurant space see attached calculation sheet 4
- 4. Total peak sanitary flow was estimated at 0.91 L/s. This calculation is based on using a combined Harmon peaking factor.

The calculations above indicate that the proposed development would not increase the sanitary load on the City system any more than what could be discharged from the site under the existing zoning.

It should be noted that the commercial unit usage is subject to change, however, the above noted calculation provides a general guideline of estimated sanitary flow based on the assumed use.

Please let me know if you have any questions on the above.

Sincerely, McElhanney Ltd.



PERMIT TO PRACTICE

McElhanney Ltd.

PERMIT NUMBER: 1003299 Engineers and Geoscientists of BC

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Enclosures:

Sheet 1 – Estimated Sanitary Flow Summary Sheet

Sheet 2 – Estimated Sanitary Flow (Existing – assumed Hospital)

Sheet 3 – Estimated Sanitary Flow (Proposed – Residential)

Sheet 4 – Estimated Sanitary Flow (Proposed – Commercial Unit 1)

City of Victoria – R-2 Zone – Two Family Dwelling District

5468796 Architecture Inc. drawing AG.0 dated July 14, 2023



Sheet 1 - Es	etimated 9	Sanitanul	Elow	Summary	Shoot
Sheet i - Es	sumateu c	oannary i	FIOW	Summary	Sneet

Project: 822 Catherine Street, Victoria, BC

Date: July 14, 2023

Client: Aryze Developments Inc. (as agent for and on behalf of Dimma Pacific Properties Ltd.)

McElhanney File #: 21-014 (4)

Existing Development (R-2 zoning):

Estimated allowable sanitary flows under current zoning

Total flow (see Sheet 2)

TOTAL FLOW 1.28 L/s

Proposed Development:

Estimated sanitary flow based on proposed development

Estimated residential flow (see Sheet 3) 0.79 L/s

Estimated commercial flow (see Sheet 4) 0.12 L/s

TOTAL FLOW 0.91 L/s

Sheet 2 - Estimated Sanitary Flow (Existing - assumed Hospital)

Project: 822 Catherine Street, Victoria, BC

Date: July 14, 2023

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Current zoning - R-2 - Two Family Dwelling District

-allows for two family dwelling, home occupation, public building and accessory buildings

-Public Buildings are non-commercial use of land, building and structures for art, cemetary, church, community centre, fire station, court of law, hospital, police station, recreation facility or school

-floor space ratio (max) = 0.5 to 1, although this does not apply to Public Buildings

For this analysis, we have assumed a Public Building (Hospital) was installed on the consolidated lot

Site area	1,003 sq.m.
Max floor area based on zoning*	251 sq.m.
Area per person**	10 sq.m.
Equivalent Population	25 capita
Per Capita Flow Rate	1,000 L/capita/day (capita = bed)
Average flow =	25,100 L/day
Average Daily Flow	25,100 L/day 0.291 L/s
Peaking Factor -Harmon	4.37
Potential Peak Flow =	1.27 L/s
Site Area = Approx. Hard Surface building area = Approx. area for infiltration (allows for infiltration over entire site) = Inflow and Infiltration (0.12 L/s/ha)***	1,003 sq.m. 0 sq.m. 1,003 0.012 L/s
Total Potential Flow = Potential Peak Flow + Inflow and Infiltration	1.28 L/s

^{*}Floor area not defined under zoning, assumed 25% of the surface area of the lot for the purposes of the calculation

Harmon Peaking Factor =

$$(\frac{14}{4+\sqrt{\frac{P}{1000}}}+1)$$

^{**}based on BC Building Code - Table 3.1.17.1 (Occupant Load - Care, treatmant and sleeping room areas)

^{***}based on MMCD Design Guideline Manual 2014 (Section 3.5 Infiltration - used old system requirement to provide factor of safety)

Sheet 3 - Estimated Sanitary Flow (Proposed - Residential)

Project: 822 Catherine Street, Victoria, BC

Date: July 14, 2023

Client: Aryze Developments Inc. (as agent for and on behalf of Dimma Pacific Properties Ltd.)

McElhanney File #: 21-014 (4)

Estimated Residential flow

Total units*	27	
TOTAL RESIDENTIAL UNITS	27	
Persons per unit**	2.44	Estimated
Equivalent Population	66	capita
Per Capita Flow Rate***	240	L/capita/day
Average flow =	15,792	L/day
Average Daily Flow	15,792	•
	0.183	
Peaking Factor		
-Harmon (residential only)	4.29	
-namon (residential only)	4.29	
Combined Peaking Factor		
-Harmon (combined residential and commercial)	4.25	
3341	20	
Potential Peak Flow (based on combined peaking factor) =	0.78	L/s
,		-

1,003 sq.m.

1,003

0.012 L/s

0.79 L/s

0 sq.m.

Total Potential Flow = Potential Peak Flow + Inflow and Infiltration

Harmon Peaking Factor =
$$(\frac{14}{4 + \sqrt{\frac{P}{1000}}} + 1)$$

People per unit calculation:

Site Area =

Approx. Hard Surface building area =

Inflow and Infiltration (0.12 L/s/ha)****

Approx. area for infiltration (allows for entire site infiltration) =

	Units	Cap/unit	Capita
Number of 4 bedroom units	0	4.5	0
Number of 3 bedroom units	5	3.75	18.75
Number of 2 bedroom units	5	3	15
Number of 1 bedroom units	15	2	30
Number of studio units	2	1	2
TOTAL	27		65.75
Therefore Persons per unit =	total capita	/total units =	2 44

^{*}based on information provided by 5468796 Architecture Inc. dated July 14, 2023

^{**}based on Ministry of Health Sewerage System Standard Practice Manual (Table II-9 - Per Capita Daily Design Flow for Residences) - see table below

^{***}based on MMCD Design Guideline Manual 2014 (Section 3.2 Per Capita Flow, dry weather)

^{****}based on MMCD Design Guideline Manual 2014 (Section 3.5 Infiltration - used old system requirement to provide factor of safety)

Sheet 6 - Estimated Sanitary Flow (Proposed - Commercial Unit 2)

Project: 822 Catherine Street, Victoria, BC

Date: July 14, 2023

Client: Aryze Developments Inc. (as agent for and on behalf of Dimma Pacific Properties Ltd.)

McElhanney File #: 21-014 (4)

Estimated Commercial flow (actual use unknown, assumed RESTAURANT USE)

Commercial Space*

910 sq.ft.
85 sq.m.

Average floor space per person** =

3 sq.m

Average Person = Avg Floor Space for Seats

Average floor space per person
= 28 people

Average Sanitary Discharge per person*** = 90 L/cap/day

Total Allowable Sanitary Discharge for site = Avg Sanitary Discharge per person x No of People

= 2,520 L/day 0.03 L/s

Peaking Factor

-Harmon (this commercial only) 4.36

Combined Peaking Factor

-Harmon (combined residential and both commercial) 4.25

Potential Peak Flow (based on combined peaking factor) = 0.12 L/s

Site Area = 0 sq.m.

Approx. Hard Surface building area = 0 sq.m.

Approx. area for infiltration = 0

Inflow and Infiltration (0.12 L/s/ha)****

0.000 L/s //flow accounted for in Residential

Total Potential Flow = Potential Peak Flow + Inflow and Infiltration**** 0.12 L/s

Harmon Peaking Factor = $(\frac{14}{4 + \sqrt{\frac{P}{1000}}} + 1)$

^{*}based on information provided by 5468796 Architecture Inc. dated July 14, 2023

^{**}includes allowance for structure and common space

^{***}Per Capita Flow rate based on Ministry of Health Sewerage System Standard Practice Manual (Restaurant, full service, per seat)

^{****}No additional infiltration as infiltration is accounted for in the residential flow sheet

PART 2.1 - R-2 ZONE, TWO FAMILY DWELLING DISTRICT

2.1.1 Permitted Uses

- a. Two family dwelling subject to the regulations in this Part
- b. Uses permitted in the R1-B Zone, Single Family Dwelling District, subject to the regulations set out in Part 1.2 of the Zoning Regulation Bylaw
- c. Home occupation subject to the regulations in Schedule "D"
- d. Accessory buildings subject to the regulations in Schedule "F"
- e. Public building
- f. Garage sales limited to no more than 2 in any year
- g. Commercial exhibits existing prior to January 1, 2011
- h. notwithstanding paragraphs a. through g., the only uses permitted on a <u>panhandle lot</u> created by way of subdivision after July 10, 2009, are the uses described in paragraphs b., c. (subject to the regulations in Schedule "D"), d. and f., which uses are subject to the regulations in Schedule "H"
- i. notwithstanding paragraphs a. through h., the only use permitted on a <u>lot</u> with a <u>site area</u> less than 230m² or with an average <u>lot</u> width less than 7.5m is a <u>private garage</u>

2.1.2 Site Area, Lot Width

a.	Site area	(minimum)	555r	m^2
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b. <u>Site area</u> for each <u>dwelling unit</u> (minimum) 277.5m²

c. Lot width (minimum average) 15m

d. Panhandle lot Subject to the regulations in Schedule "H"

2.1.3 Floor Area of the Principal Building

a.	Floor space ratio	(maximum)	0.5 to 1
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b. Floor area per dwelling unit (minimum) 46m²

c. Floor <u>area</u>, for the first and second storeys 280m² combined (maximum)

d. Floor <u>area</u>, of all floor levels combined 380m² (maximum)

e. <u>Public buildings</u> Not applicable

(Amended Bylaw 15-001 adopted March 26, 2015) and (Amended Bylaw 17-050 adopted June 8, 2017)

Words that are underlined see definitions in Schedule "A" of the Zoning Regulation Bylaw

PART 2.1 - R-2 ZONE, TWO FAMILY DWELLING DISTRICT

2.1.4 Height, Storeys, Roof Decks

a. <u>Two family dwelling building</u> (maximum) 7.6m in <u>height</u> and 2 <u>storeys</u> if the <u>building</u> does

not have a basement

7.6m in height and 1½ storeys if the building has

a basement

b. Public building (maximum) 11m in height or the width of the lot whichever is

lesser and 2¹/₂ storeys

c. Roof deck Not permitted

2.1.5 Setbacks and Projections

a. <u>Front yard setback</u> (minimum) The except for the following maximum projections set to the following maximum project

into the setback:

• steps and <u>porch</u> (maximum)

• bay windows (maximum)

The lesser of 7.5m and the average of the actual <u>setbacks</u> of the <u>buildings</u> on the <u>lots</u> abutting the sides of the lot

3.5m

0.6m

4.5m

b. Rear yard setback (minimum) 10.7m or 35% of <u>lot depth</u> whichever is greater

c. <u>Side yard setbacks</u> from interior <u>lot lines</u>

(minimum)

1.5m or 10% of the lot width whichever is greater

3.0m for one side yard when the lot is not

serviced by a rear lane

d. Combined <u>side yard</u> <u>setbacks</u> (minimum)

e. <u>Side yard setbacks</u> on a flanking <u>street</u> for a

<u>corner lot</u> (minimum)

3.5m or 10% of the lot width whichever is greater

f. Eave projections into <u>setbacks</u> (maximum) 0.75m

2.1.6 Site Coverage, Open Site Space, Parking

a. <u>Site coverage</u> (maximum) 40%

b. Open site space (minimum) 30% of the area of the lot and 33% of the rear

<u>yard</u>

c. Parking Subject to the regulations in Schedule "C"

2.1.7 Outdoor Features

a. The <u>setbacks</u> set out in section 1.1.5 apply to <u>outdoor features</u>, as though they are <u>buildings</u>

b. <u>Outdoor features</u> may not exceed a height of 3.5m from <u>natural grade</u> or <u>finished grade</u>, whichever is lower

(Amended Bylaw 15-001 adopted March 26, 2015) and (Amended Bylaw 17-050 adopted June 8, 2017)

Words that are underlined see definitions in Schedule "A" of the Zoning Regulation Bylaw



LANDSCAPE BIOPHILIA

Solin Neufeld | Principal Architect E: colin@5468796.ca

Pablo Batista | Architect E: pablo@5468796.ca



PROJECT STATS	

AFURMAI UN			
DESCRIPTION	LOT C. IDD 22865411, BLIDCK N, SEC	LOTIC, IDD 2085541, BLDCK N, SECTEN 31, ESOLIMALI CISTRICT, PLAN 549	576
ADDRESS	822 CATHERINE STREET, MCTORIA BC	8	
9	CUBRGINT (R-2, TWO FAMILY DWELLING)	PROPOSED (CR-3C, COMMERCIAL RESIDENTIAL [CATHERINE ST]]	822 CATHERINE 334 LANGFORD PROJECT STATS
REA (m)			1,012.9
S FLOOR AREA (m)			1,810,23
S SPACE RATIO	0.5	1001	181
:0VERAGE 1%3			72.6%
SITE SPACE (%)			22,2%
VOE GRADE			28,51
INS HEIGHT	TWO-TAMES POWELLING. 7-Am. 2 STORERS P DWELLING DOES NOT HAVE BASEMENT. 1.5 IF IT DOES	0.0000000	500
	PUBLIC BUILDING. [non-commercial] 11m 0R THE MOTH 0F THE LOT IMMEREMER IS LESSERI AND 2.5 STORIEYS	Momen Solderin	251000000000000000000000000000000000000
UCKS			
FRONT	7.5m	3.0m (FRST STORER); 4.0m (UPPER STORERS)	3.0 m AT GROUND FLOOR 0.6m AT 2ND AND 3RD FLOOR
ols	1,5m 0R 10% 0E LOT DEPTH	ADJACENT TO RESIDENTIAL: 1/4 BUILDING HEIGHT OR 25m (WHICHEVER IS ORGATER).	NO
	INTERCEDENT SOURCE IN	ADJACENT TO NON-RESIDENTIAL: 2 cm OR DREATER, ON ZEND.	
COMBINED SIDE WRD	- 15m	N/A	NUK
DE YARD, CORNER LOT (FLANKING ST)	3.5m DR 10% DF LOT MIDTH [MHDHEVER IS GREATER]	NA	3 Tm LAT LLANGFORD STI. 3 Pm EAT BELLA STI
REAR	10.7m OR 35% OF LOT DEPTH [WHICHEVER IS GREATER]	4.00	2.4m AT GROUND

SHEEF FLOORING SHEEF

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TIMES	AREA INS	UNIT COUNT	TOTAL AREA (M/)
AMERICAL UNIT	92		g
CHILDRE			
	12		R
	æ		R
EDGOOMUNIT			
	27	10	210
	59	,	180
	23	,	318
EDROOM UNIT			
	10	,	24
	747	,	942
EDROOMUNIT			
	82	8	410
TF.		R	
AL REVIXALE AREA			1,664
7 a.c	A CONTRACTOR		

14.07.2023 PB CN / PB 14.07.2023

CORDOMUNIT	st.	1,95	
DROOMUNIT		152	
DROOMUNIT	5	175	
AL	U.	100%	
E DATA			
	ANEA [m]	AREA [sqit]	
11:00	0	0	
11. 01	530.03	5,921	
51.02	624.3	02279	
6.00	624.3	6720	
E. 04	11,08	125	
AL GROSS FLOOR AREA	1,810,23	19,035	
LEING FOOTPRINT	729.75	7,855	
DUJRED VEH CULAR PARKING			
	UNIT COUNT	RATE	
DENTAL			
UNIT < 45 M	2	0.2 STALLS / UNIT	
UNIT 45-70 HP	=	DESTALLS/UNIT	
swor < sixn		G 75 STALLS / UNIT	
108		D.1 STALLS / UNIT	
AMERICAL.			

COMMERCIAL			
RESTAURANT	85 ml	1.0 ST4LLS / 20m²	
TOTAL REGULAED			
TOTAL PROPOSED			
REQUIRED BIKE PARKING			
	UNITCOUNT	RATE	REGURE
LONG TERM			
:H2> 1N0	-	1.057M,15/UNIT	
UNIT -> 45 HF	R	LZS STALLS / UNIT	
RESTAURANT	88 m²	N.O STALLS / 400m?	
TOTAL REQUIRED			
TOTAL PROPOSED			eapripul 107
SHORT TERM			
RESIDENTIAL	22	D.I STALLS / UNIT	2
RESTAURANT	85 mi	1,0 STALLS / 100m²	
TOTAL REGURED			
WAY DESCRIPTION			

				_						_					_				_			
10 XX	SZ	25)								ARCHITECTURE INC	266 MCDERMOT AVE	Winnipeg MB R3B 058	F: 204, 480,8874	822 CATHERINE STREET	+ 30% ANGEORD STREET		VICTORIA BC		GENERAL NOTES Project 0646 Sheet	AG.0	
9			,	- 21	12	REQUIRED STALLS		1	102	1	8		40 Encludes 3 cargo bisel		2.7		7		22			
0.1 STALLS / UNIT			1.0 ST4LLS / 20m7			RATE		1.0 STALLS / UNIT	L25 STALLS / UNIT	1,0 STALLS / 400m?					0.1574.LS/UNIT	1,0 STALLS / 100m²						
							ĺ															