

September 07 2022

File No. 33318

City of Victoria
#1 Centennial Square
Victoria BC V8W 1P6

Attention: Jack Hu
Engineering Department

**Re: 1039 – 1043 Meares
Sewage Impact Report**

This report will compare the sewage flow of the proposed development with the “highest use” development permitted under the existing zoning to recommend if sewage attenuation is required.

Background

JEA's client is proposing to rezone the above-noted property to facilitate a new 50 unit multi-family development.

The following compares the estimated sewer flows expected from the highest use under the existing zoning and the proposed development:

Existing Zoning

The existing R3-1 zoning will permit a 52-unit Rest Home (Class A) on the proposed development site. As per the calculations attached in appendix A, the estimated peak wet-weather flow under the existing zoning is expected to be 1.63 L/s.

Proposed Development

As per the attached calculations in appendix B, the estimated peak wet-weather flow for the proposed development is expected to be 0.93 L/s.

Summary

The peak sewage flow from the proposed development will be less than the sewage flow from a development under the highest use for the current zoning. Therefore, sewage attenuation is not proposed for the proposed development.

Yours truly,

J.E. Anderson and Associates

Ross Tuck, P.Eng
Principal

APPENDIX A

Existing Sewage flows

1039 – 1043 Meares Street

Sewage Impact Report Calculations

Existing Conditions

Given:

- Site Area = 1,352 m²
- Existing Zoning – R3-1 Multiple Dwelling

Assumptions:

- Use – Rest home Class A/B
 - Room size – 33 m² as per zoning
 - 1.25 patient per room
 - 1 staff per 2 patient
- Sewage flows
 - Patient – 475 L/person/day
 - Staff – 50 L/person/day
- FSR – 1.6 as per zoning
- Assume building is 80% efficient (20% hallways/stairs/etc.)

Calculations:

Gross Floor Area

$$= 1,352 \text{ m}^2 \times 1.6 \times 80\%$$

$$= \underline{\underline{1.730.56 \text{ m}^2}}$$

of units

$$= 1,730.56 \text{ m}^2 / 33 \text{ m}^2/\text{unit}$$

$$= 52.44 \text{ units}$$

of Patients / Staff

$$\text{Patients} = 52.44 \text{ units} \times 1.25 \frac{\text{patients}}{\text{unit}} = 65.55 \text{ patients}$$

$$\text{Staff} = 65.55 \text{ patients} \times \frac{1 \text{ staff}}{2 \text{ patients}} = 32.78 \text{ staff}$$

ADWF

$$\begin{aligned} &= (65.55 \text{ patients} \times 475 \text{ l/patients/day}) + (32.78 \times 50 \text{ l/staff/day}) \\ &= [(31,136.25) + (1,639)] \text{ l/day} \\ &= [32,775.25] \text{ l/day} \\ &= \underline{\underline{32,775 \text{ L/day}}} \end{aligned}$$

Convert to Population Equivalent

$$\begin{aligned} &= (32,775 \text{ l/day}) \div (225 \text{ l/cap/day}) \\ &= \underline{\underline{145.7 \text{ cap}}} \end{aligned}$$

Peaking Factor

$$\begin{aligned} &= 1 + \frac{14}{4 + \sqrt{\frac{\text{pop}}{1000}}} = 1 + \frac{14}{4 + \sqrt{\frac{145.7}{1000}}} = 1 + \frac{14}{4 + 0.3817} = 1 + \frac{14}{4.3817} = 1 + 3.195 \\ &= \underline{\underline{4.195}} \end{aligned}$$

I/I

$$\begin{aligned} &= 25,000 \text{ l/ha/day} \times 1,352 \text{ m}^2 \times \frac{\text{ha}}{1000 \text{ m}^2} \\ &= \underline{\underline{3,380 \text{ l/day}}} \end{aligned}$$

PWWF

$$\begin{aligned} &= [4.195 (32,775) + 3,380] \text{ l/day} \\ &= [137,491.13 + 3,380] \text{ l/day} \\ &= 140,871.13 \text{ l/day} \\ &= \underline{\underline{140,871 \text{ l/day}}} = \underline{\underline{1.63 \text{ l/s}}} \end{aligned}$$

APPENDIX B

Proposed Sewage flows

1039 – 1043 Meares Street

Sewage Impact Report Calculations

Proposed Development

Given:

- Site Area = 1,352 m²
- Number of Units = 50
 - 1-2 Bedrooms = 50
 - 3 Bedrooms = 0

Assumptions:

- Capita per unit
 - 1-2 Bedrooms = 1.6
 - 3 Bedrooms = 2.6
- 225 L/cap/day

Calculations:

ADWF

$$\begin{aligned} &= [(50 \times 1.6) + (0 \times 2.6)] \text{cap} \times 225 \text{ l/cap/day} \\ &= [(80) + (0)] \text{cap} \times 225 \text{ l/cap/day} \\ &= [80] \text{cap} \times 225 \text{ l/cap/day} \\ &= \underline{\underline{18,000 \text{ L/day}}} \end{aligned}$$

Peaking Factor

$$\begin{aligned} &= 1 + \frac{14}{4 + \sqrt{\frac{\text{pop}}{1000}}} = 1 + \frac{14}{4 + \sqrt{\frac{80}{1000}}} = 1 + \frac{14}{4 + 0.2828} = 1 + \frac{14}{4.2828} = 1 + 3.269 \\ &= \underline{\underline{4.269}} \end{aligned}$$

I/I

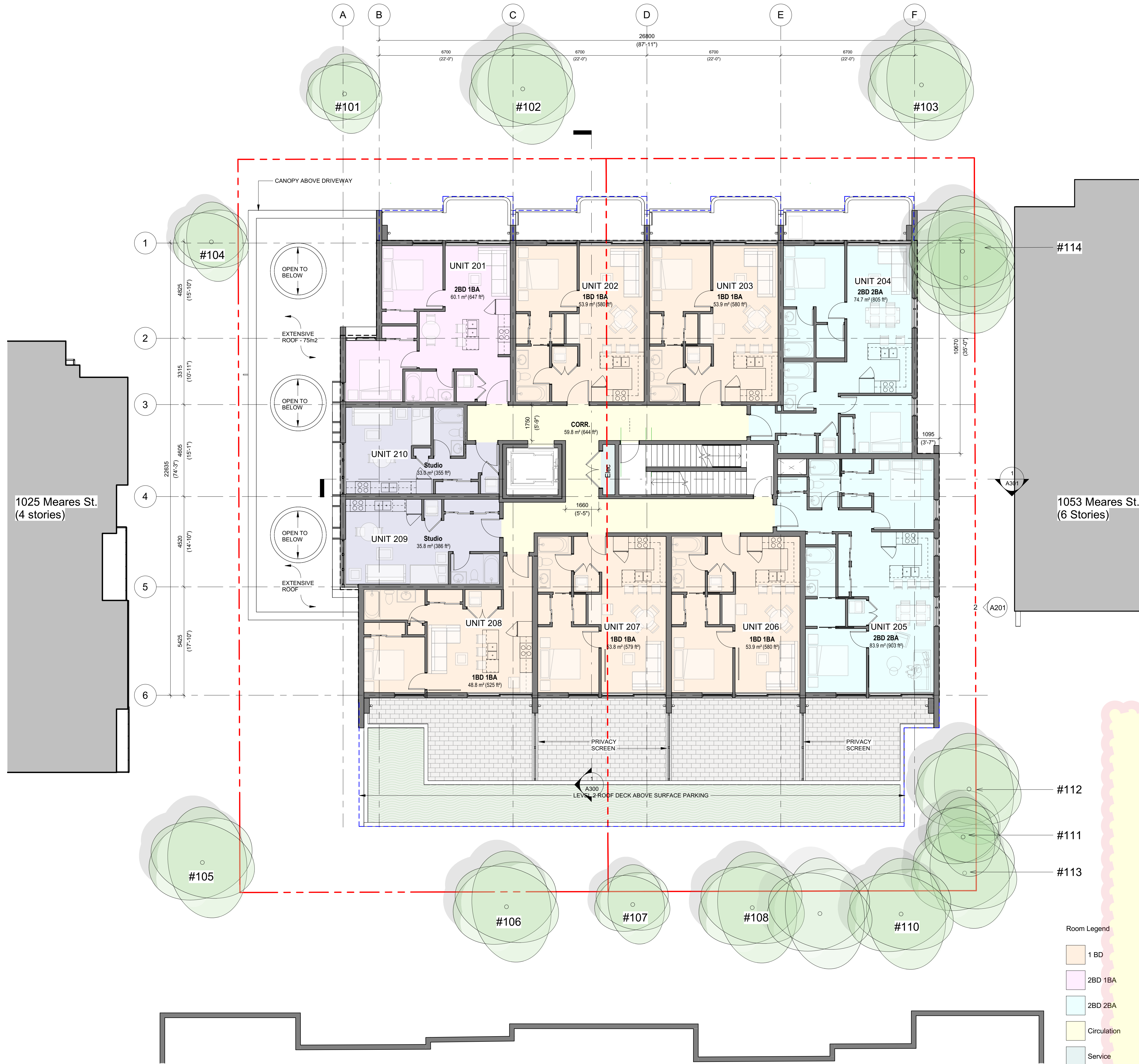
$$= 25,000 \text{ l/ha/day} \times 1,352 \text{ m}^2 \times \frac{\text{ha}}{1000 \text{ m}^2}$$
$$= \mathbf{3,380 \text{ l/day}}$$

PWWF

$$= [4.269 (18,000) + 3,380] \text{ l/day}$$
$$= [76,842.0 + 3,380] \text{ l/day}$$
$$= 80,222.0 \text{ l/day}$$
$$= \mathbf{\underline{80,222 \text{ l/day} = 0.928 \text{ l/s}}}$$

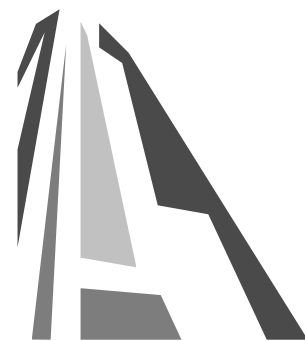
Appendix C

Architectural plans
Zoning Information
Nursing Home Information



Unit Mix		
Level	Name	Count
Ground Floor	LIVE/WORK	1
Ground Floor: 1		
Level 2	1BD 1BA	5
Level 2	2BD 1BA	1
Level 2	2BD 2BA	2
Level 2	Studio	2
Level 2: 10		
Level 3	1BD 1BA	5
Level 3	2BD 1BA	1
Level 3	2BD 2BA	2
Level 3	Studio	2
Level 3: 10		
Level 4	1BD 1BA	5
Level 4	2BD 1BA	1
Level 4	2BD 2BA	2
Level 4	Studio	2
Level 4: 10		
Level 5	1BD 1BA	5
Level 5	2BD 1BA	1
Level 5	2BD 2BA	2
Level 5	Studio	2
Level 5: 10		
Level 6	1BD 1BA	4
Level 6	2BD 1BA	4
Level 6	Studio	1
Level 6: 9		
Grand total: 50		

NO.	DESCRIPTION	DATE
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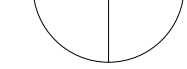


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Project
1039-1043 Meares Street

Jawl Residential Ltd.



Sheet Name
FLOOR PLAN - LEVELS
2-5

Date
April 27, 2022

Scale
1 : 100

Project #
2124

Revision

Sheet #
A121

2022-05-09 4:13:09 PM

BC LAND SURVEYORS SITE PLAN OF:

Civic: 1043 and 1039 Meares Street

Legal Lots 1570 and 1571,
Victoria City

Parcel Identifier: 009-396-721 (Lot 1570)
009-396-730 (Lot 1571)
in the City of Victoria

LEGEND

Elevations are geodetic and referenced
to the CVD28BC datum.

#.## + - denotes - existing elevation

UPL - denotes - utility pole w/ light

Tree diameters are in centimetres.

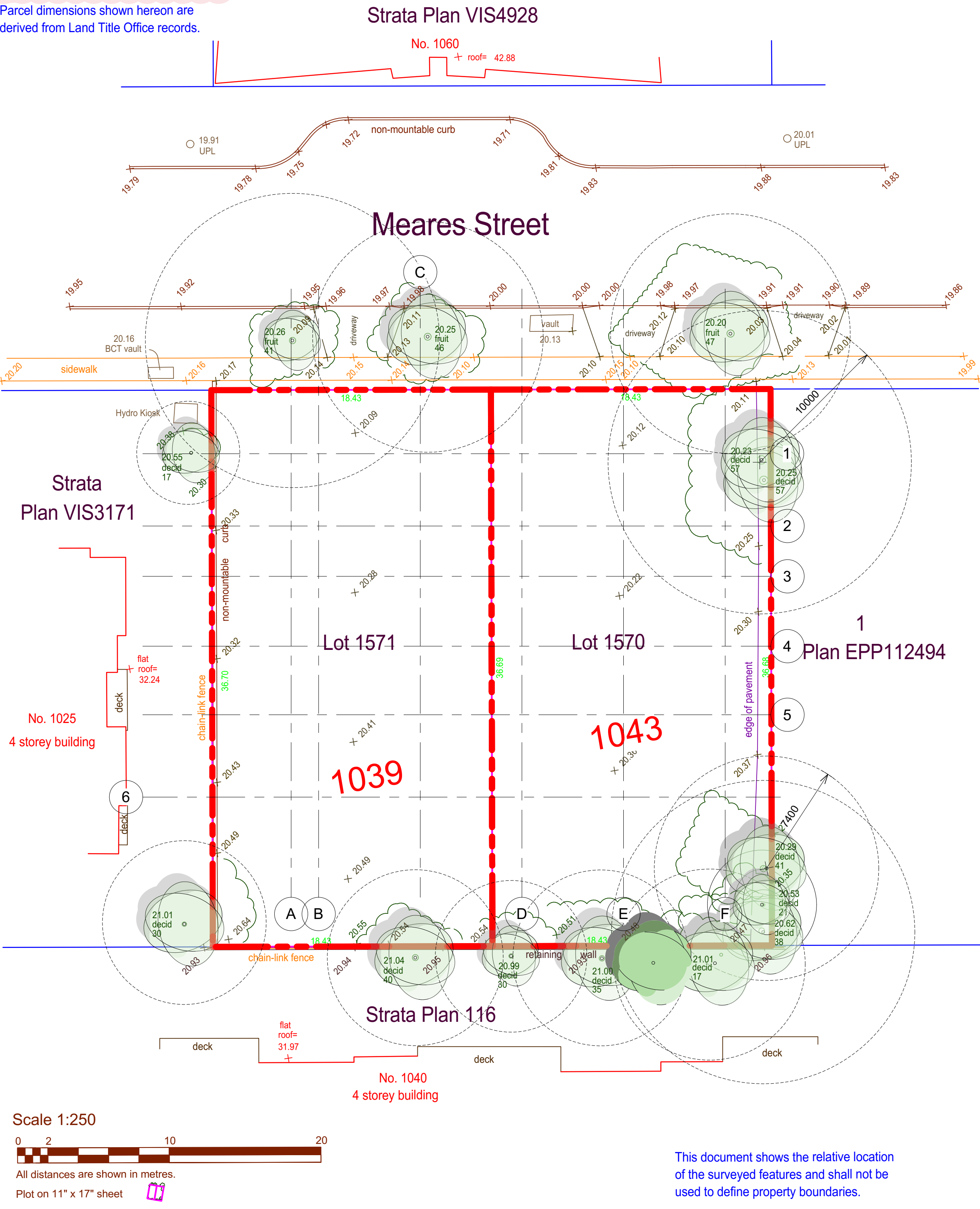
Total Area = 1352 m2

Setbacks are derived from field survey.

Parcel dimensions shown hereon are
derived from Land Title Office records.

Date February 07, 2022
File 13660-9

POWELL & ASSOCIATES
BC Land Surveyors
250-2950 Douglas Street
Victoria, BC V8T 4N4
phone (250) 382-8855



1039 MEARES ST

Parcels (Folio based)
Folio: 03208006
Legal Type: LAND
Lot: 1571
Actual Use (BCA): PARKING-LOT ONLY
PAVED OR GRAV
Zoning: R3-1
Site Area: 672m²

1043 MEARES ST

Parcels (Folio based)
Folio: 03208007
Legal Type: LAND
Lot: 1570
Actual Use (BCA): PARKING-LOT ONLY
PAVED OR GRAV
Zoning: R3-1
Site Area: 672m²

NO.	DESCRIPTION	DATE
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Project 1039-1043 Meares Street		
Jawl Residential Ltd.		
Sheet Name SURVEY		
Date April 27, 2022		
Scale 1 : 200	Project # 2124	
	Revision 	
	Sheet # A101	

DRAFT

PART 3.3 - R3-1 and R3-2 ZONE, MULTIPLE DWELLING DISTRICT

Permitted Uses	1	<p>The following uses are permitted:</p> <ul style="list-style-type: none"> (a) <u>single family dwellings</u> and customary <u>accessory uses</u> including <u>home occupations</u> and <u>accessory buildings</u> as permitted in the case of such dwellings by the provisions of the R1-B Zone, Single Family Dwelling District (Part 1.2) subject to the regulations applicable to that Zone; but excluding conversions. (b) <u>two family dwellings</u> and <u>accessory buildings</u> and <u>home occupations</u> as permitted in the case of such dwellings by the provisions of the R-2 Zone, Two Family Dwelling District (Part 2.1), ~ subject to the regulations applicable to that Zone; but excluding conversions. (c) college fraternity buildings; (d) subject to the regulations contained in the R-2 Zone, Two Family Dwelling District (Part 2.1), <u>churches</u>, <u>public buildings</u>, public schools, private schools, <u>hospitals</u>; (e) <u>rest homes - Class A and rest homes - Class B, which rest homes shall for the purposes of this Part be deemed to be multiple dwellings to the intent that the regulations contained in this Part and expressed to apply only to buildings, and land used or intended to be used as and for multiple dwellings or as and for multiple dwelling accessory uses shall apply to rest homes as aforesaid as if the same were, in fact, and by definition multiple dwellings; provided however that off-street parking shall be provided therefor as required by the provisions of Schedule "C" in the case of community care facilities generally.</u> (f) <u>Multiple dwellings</u> and <u>multiple dwelling accessory uses</u>. (g) Not more than 2 <u>garage sales</u> in any year.
Size and Height Restrictions	2	<p>No <u>dwelling unit</u> in a <u>multiple dwelling</u> shall have a floor <u>area</u> of less than 33m² reckoned exclusively of the width or thickness of the exterior walls of the <u>dwelling unit</u> and of the floor <u>area</u> or <u>areas</u> of any and all <u>balconies</u>.</p>

- 3 No building shall exceed 18.5 m in height, provided that where in a multiple dwelling the area of the lowest floor thereof does not have a site coverage in excess of 40% of the site coverage of the multiple dwelling, the multiple dwelling may have a maximum height of 22 m, and provided further that where the highest storey thereof is
- (a) neither used nor intended to be used except in common by all of the occupiers of the multiple dwelling as and for an observation lounge, general recreational or entertainment area or other similar purpose or for the housing of machinery or equipment having to do with the elevator, ventilation, plumbing or heating systems of the multiple dwelling or for all or any such purposes or otherwise with the common use and enjoyment of the multiple dwelling by all occupiers thereof, and
 - (b) would not, but for this proviso, increase the height of the multiple dwelling by more than 6.1 m, and
 - (c) has not a floor area in excess of 40% of the site coverage of the multiple dwelling, then such highest storey shall not be taken into account in calculating the height of the multiple dwelling.

Site Coverage

- 4 (1) Subject to the provisions of this section, the site coverage of a multiple dwelling shall not exceed the percentage determined by reference to the number of storeys comprised in such multiple dwellings as follows:

Storeys	Maximum Site Coverage
1	30%
2	30%
3	30%
4	30%
5	24%
6 or more	20%

- (2) Where all motor vehicle parking for any multiple dwelling as required by Schedule C is provided in an enclosed parking space, the maximum site coverage of a multiple dwelling shall be determined as follows:

Amended March 14, 2019
Bylaw 19-001

Storeys	Maximum Site Coverage
1	40%
2	40%
3	40%
4	40%
5	32%
6 or more	30%

Density

- 5 (1) Subject to the provisions of this section, the floor space ratio of any multiple dwelling shall not exceed the ratio to be determined by reference to the number of storeys comprised in such multiple dwelling as follows:

Storeys	Floor Space Ratio
1	0.3 to 1
2	0.6 to 1
3	0.9 to 1
4	1.2 to 1
5	1.2 to 1
6 or more	1.2 to 1

- (2) Where all motor vehicle parking for any multiple dwelling as required by Schedule C is provided in an enclosed parking space, the maximum floor space ratio of a multiple dwelling shall be determined as follows:

Amended March 14, 2019
Bylaw 19-001

Storeys	Floor Space Ratio
1	0.4 to 1
2	0.8 to 1
3	1.2 to 1
4	1.6 to 1
5	1.6 to 1
6 or more	1.6 to 1

Open Site Space	6	(1) Subject to the provisions of this section, at least 30% of the <u>area</u> of the <u>lot</u> upon which a <u>multiple dwelling</u> is erected or used shall be <u>open site space</u> .
		(2) Where all motor vehicle parking for any <u>multiple dwelling</u> as required by Schedule C is provided in an <u>enclosed parking space</u> , at least 60% of the <u>lot area</u> shall be <u>open site space</u> , including in such <u>open site space</u> the space, if any, reasonably required to provide driveways for direct vehicular access to the parking.
	7	Where all motor vehicle parking for any <u>multiple dwelling</u> as required by Schedule C is provided in an <u>enclosed parking space</u> , any roof deck shall be deemed to be <u>open site space</u> .
Limitation on Buildings	8	Not more than one <u>building</u> of any kind used or intended to be used for the purpose of providing one or more <u>dwelling units</u> shall be erected, used or maintained on one <u>lot</u> .
Minimum Site Area	9	No <u>multiple dwelling</u> shall be erected, used or maintained on a <u>lot</u> having an <u>area</u> of less than 920m ² , nor shall any <u>multiple dwelling</u> or other building or structure be erected, used or maintained on more than one <u>lot</u> .
Setback	10	No <u>multiple dwelling</u> or part thereof that is not wholly below finished ground level, except roof projections, entrance canopies, <u>steps</u> and <u>balconies</u> shall be nearer to the <u>street boundary</u> of a <u>lot</u> upon which the <u>multiple dwelling</u> stands than a horizontal distance to be determined as follows by reference to the number of <u>storeys</u> comprised in the <u>multiple dwelling</u> situate on the <u>lot</u> , that is to say:

Storeys	Distance
1	7.5m
2	7.5m
3	9.0m
4	10.5m
5	12.0
6 or more	13.5

provided that where a variation in the plane of a street wall is prescribed by Section 20, the average setback of such street wall shall comply with the provisions of this Section and a minimum setback shall in all cases be 7.5m.

Balcony Enclosures

Repealed.

- 11 No entrance canopy or steps forming part of a multiple dwelling and no part of such canopy or steps or of both shall be nearer ~ to any street than a horizontal distance of 4.5m.
- 12 No multiple dwelling or part thereof that is not wholly below finished ground level except roof projections, entrance canopies or steps shall be nearer to any internal boundary of the lot upon which the multiple dwelling stands than a horizontal distance equal to one-half the height of the multiple dwelling or a horizontal distance of 3 m, whichever shall be the greater.
- 13 No entrance canopy or steps forming part of the multiple dwelling and no part of them or of either of them shall be nearer to any internal boundary than a horizontal distance of 3 m.

Surface Parking

- 14 No part of the surface parking space or spaces on a lot upon which a multiple dwelling stands except that portion or those portions thereof used or intended to be used exclusively for the movement of motor vehicles shall be nearer to the street boundary of the lot than the horizontal distance determined \ pursuant to Section 10 as the least distance from the street boundary at which multiple dwellings may be erected, maintained or used.
- 15 No part of any surface parking space that is not used exclusively for the movement of motor vehicles shall be nearer to any part of any dwelling unit within a multiple dwelling on the same lot than a horizontal distance of 6 m, provided that where a parking screen wall is erected and maintained between the multiple dwelling and the surface parking space the aforementioned horizontal distance may be 2.4 m.
- 16 No building not being a multiple dwelling or integral part thereof and used or intended to be used for the provision of surface parking space shall exceed 3.5m in height.
- 17 No car shelter shall be nearer to any street or part of any street than a horizontal distance of 7.5 m.

Apartments Between Parallel Streets	18	Notwithstanding anything to the contrary contained in any other section of this schedule, no <u>building</u> containing a <u>multiple dwelling</u> and situate on a site between two more or less parallel <u>streets</u> , whether or not either or both of the <u>streets</u> are commonly known as a lane, shall be nearer than 7.5 m from either <u>street</u> , and no such <u>multiple dwelling</u> shall be used unless both sides, facing a <u>street</u> are, along their entire length, except to the extent reasonably necessary for vehicular ingress and egress, and for a width of not less than 7.5 m, provided with landscaping, including evergreen hedges, having a <u>height</u> or not less than 1 m, which shall be maintained in a healthy condition, as screens from the <u>street</u> .
Setback of Site From Street Centreline	19	No <u>multiple dwelling</u> shall be erected used or maintained on a <u>lot</u> of which any <u>boundary</u> is at any point thereon less than 7.5 m horizontally distant from the <u>centreline</u> of any <u>street</u> having a <u>boundary</u> in common with the <u>lot</u> .
Horizontal Distance of Street Wall On One Plane	20	No <u>multiple dwelling</u> or part thereof shall be erected, used or maintained if it has a <u>street wall</u> extending continuously on one plane for a horizontal distance in excess of 61m. Where such <u>street wall</u> consists of two or more planes extending for an aggregate horizontal distance in excess of 61m, any one such plane shall be set back at least 1.5m from any adjacent plane.
Balcony Projections Into Rear and Side Yard Spaces	21(1)	Any <u>balcony</u> facing a <u>street</u> , dedicated park or established cemetery and any <u>balcony</u> constructed prior to April 30, 1986 are exempt from <u>setback</u> requirements.
	(2)	A <u>balcony</u> shall not project into a driveway or parking space unless at least 2.5m of clearance is provided between the pavement surface and the <u>balcony</u> .
Balcony Enclosures	22	Any <u>balcony</u> may be partially or totally enclosed where the appearance and design of the enclosure is similar in colour, glazing and material for each elevation of a <u>building</u> .
	23	The provisions of Section 4, 5, 6, 10, 12 and 18 do not apply to the enclosure of any <u>balcony</u> constructed prior to April 30, 1986.

Note: For parking requirements, see Schedule "C".

Schedule A – DEFINITIONS

"Rear Lot Line"



"Rear Yard"



"Residential Floor Area"

"Residential Rental Tenure"

Residential Tenancy Act

"Restaurant"

"Rest home - Class A"

Schedule A – DEFINITIONS

"Rest home - Class B"

"Rest home - Class C"

"Roof deck"

"Roomer"

"Rooming House"

Care Facilities Licensing Act

Community

"Secondary Suite"

the British Columbia Building Code

"Self-contained Dwelling Unit"

"Semi-attached Dwelling"

"Senior Citizens' Residence"

"Service Station"

Hospital / Nursing Home Option.

Background

- The following is a summary of assumptions associated with a nursing home zoning.

Assumptions / Given

- a nursing home is a private hospital as defined in the "Hospital Act", [Part 2].
- a nursing home has a daily flow of 475 L/day as per the sewerage system standard practice manual version 3. assuming 1 patient per room
- assume nursing homes use 55 g per rooms (see attached)
- assume each patient room is 20 sqm (215 sq ft)
- assume 1 staff per 6 patients per 8 hrs
∴ 1 staff per 2 patients per day.

Table III- 11. Non-residential Average Daily Flow Rate guide

DESCRIPTION	UNIT (PER)	AVERAGE FLOW (L/DAY PER UNIT)	AVERAGE DAY BOD (GRAMS/DAY PER UNIT) AND NOTES
Industrial, commercial (domestic and food service waste only)			Risk of wax strippers and cleaning chemicals, risk of cold water and high ammonia
Office/factory without cafeteria	person	50 to 75	30
Office/factory without cafeteria and with showers	person	75 to 125	35
Office/factory with cafeteria	person	100	38
Open site (e.g. quarry) without canteen	person	60	25
Full time day staff (staff figures apply to all applications)	person	50 to 75	38
4 hour shift day staff (staff figures apply to all applications)	person	45	25
Dental or medical office	practitioner	1000	(risk of antibiotics and drugs)
Beauty salon (without staff)	Seat	1000	(risk of chemicals and hair)
Store, washroom flow only	square metre	5	
Shopping center, per toilet room	toilet room	1700	380
Shopping center, per parking space	parking space	10	
Accommodation			Risk of wax strippers and cleaning chemicals
Hotel or motel, bed and breakfast, per guest, except for luxury hotels	person	200	90
	bedroom unit	250 to 400	180
Housekeeping unit, no meals	bedroom unit	450	130
Guest bedrooms only, no meals	person	80	50
Non-residential conference guest or day camp, including meals	person	60	25
Resident staff	person	170	60
Cabin resort	person	225	90 (risk of high strength wastes from food service)
Residential or work camps, flush toilets, no meals	person	140	90
Residential or work camps, flush toilets and meals	person	225	90 (risk of high strength wastes from food service)
Residential camps, no flush toilets	person	60	
Dormitory bunkhouse	person	140	90
Nursing Home or retirement home	person	475	110 (risk of antibiotics and drugs)
Laundromat (e.g. in apartment building)	machine	1200 to 2400	260 to 530

Table III- 11. Non-residential Average Daily Flow Rate guide

DESCRIPTION	UNIT (PER)	AVERAGE FLOW (L/DAY PER UNIT)	AVERAGE DAY BOD (GRAMS/DAY PER UNIT) AND NOTES
Industrial, commercial (domestic and food service waste only)			Risk of wax strippers and cleaning chemicals, risk of cold water and high ammonia
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