CITY OF NANAIMO
THE HARBOUR CITY

NOTICE OF PUBLIC HEARING

2010-OCT-07 at 7:00 pm

Notice is hereby given that a Public Hearing will be held on Thursday, **2010-OCT-07**, commencing at **1900 hours (7:00 pm)** in the **Shaw Auditorium, Vancouver Island Conference Centre, 80 Commercial Street, Nanaimo, BC** to consider proposed amendments to the City of Nanaimo "ZONING BYLAW 1993 NO. 4000."

1. BYLAW NO. 4000.485

Purpose: **To create a new Residential Corridor Zone (RM-12).**

Location(s): n/a

File No.: ZA1-33

This bylaw, if adopted, will create a new zone – Residential Corridor Zone (RM-12) – within *ZONING BYLAW 1993 NO.4000,* which would be applied on a site specific basis through rezoning to appropriate residential development within the Corridor designation.

2. BYLAW NO. 4000.486

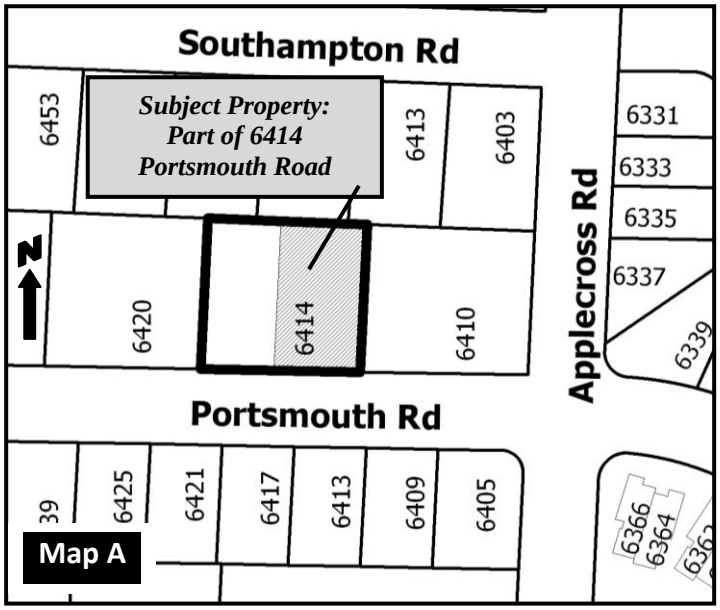
Purpose: **To permit the use of land for a multiple family residential development.**

Location(s): Part of 6414 Portsmouth Road

File No.: RA250

This bylaw, if adopted, will rezone part of the subject property from Single Family Residential Zone (RS-1) to Residential Corridor Zone (RM-12) in order to facilitate subdivision and construction of multi-family dwellings.

The subject property is legally described as part of LOT 65, DISTRICT LOT 28, WELLINGTON DISTRICT, PLAN 26689 and is shown on Map A.



3. BYLAW NO. 4000.487

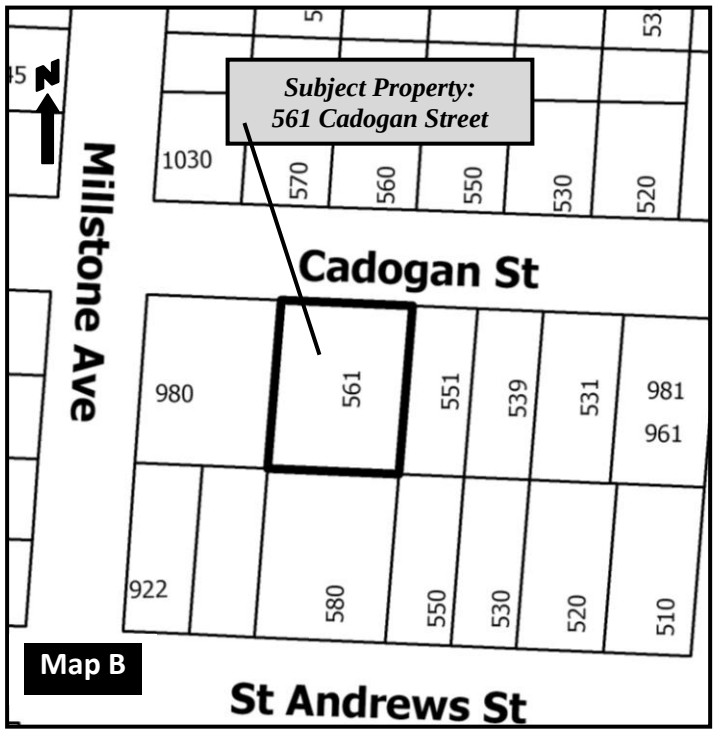
Purpose: **To permit the use of land for single family small lots to facilitate a two lot subdivision.**

Location(s): 561 Cadogan Street

File No.: RA251

This bylaw, if adopted, will rezone the subject property from Single Family Residential Zone (RS-1) to Single Family Residential Small Lot Zone (RS-6) in order to facilitate the creation of one additional lot.

The subject property is legally described as LOT 2, DISTRICT LOT 96-B AND 96-G, NANAIMO DISTRICT, PLAN 28853 and is shown on Map B.



This Notice is published in accordance with Section 892 of the Local Government Act.
Notice Given by the Manager of Legislative Services

4. BYLAW NO. 4000.491

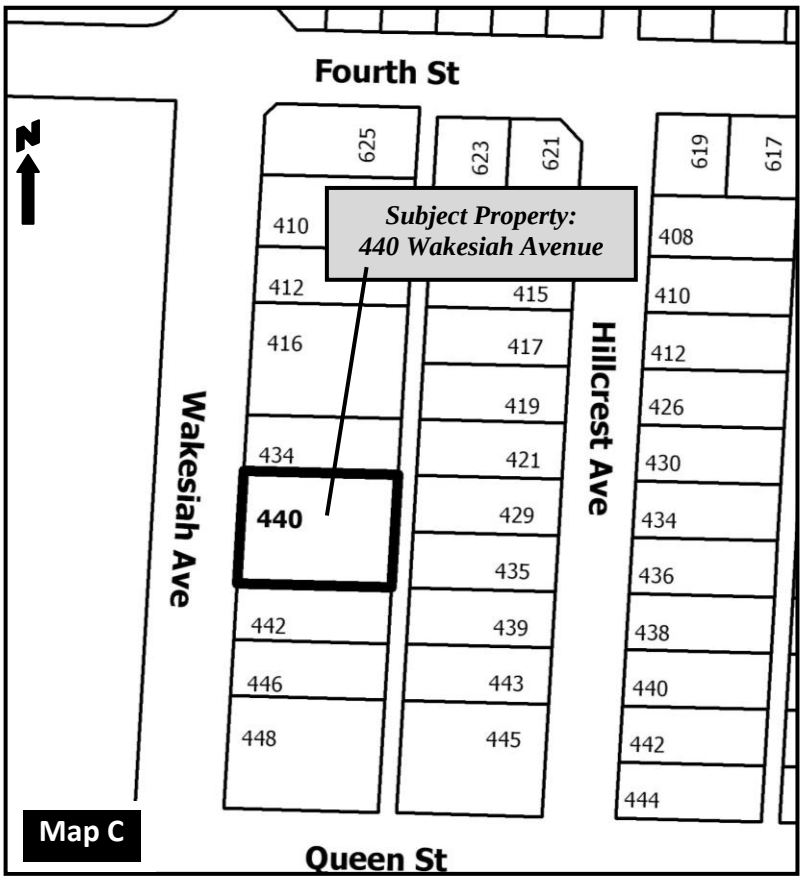
Purpose: **To permit the use of land for a student housing development.**

Location(s): 440 Wakesiah Avenue

File No.: RA242

This bylaw, if adopted, will rezone the subject property from Single Family Residential Zone (RS-1a) to Residential Corridor Zone (RM-12) and will allow for a site specific use of student housing.

The subject property is legally described as LOT 5, BLOCK 2, SECTION 1, NANAIMO DISTRICT, PLAN 1325 and LOT 6, BLOCK 2, SECTION 1, NANAIMO DISTRICT, PLAN 1325 and is shown on Map C.



5. BYLAW NO. 4000.399

Purpose: **To add requirements for the siting of heat pumps and central air conditioning units.**

Location(s): n/a

File No.: ZA1-76

This bylaw, if adopted, will add additional requirements for the siting of heat pumps and central air conditioning units.

PLEASE NOTE *full details of the above-noted bylaws are available at the City of Nanaimo, Community Safety and Development Division, located at 238 Franklyn Street.*

The above bylaws, relevant staff reports, and other background information may be inspected from 2010-SEP-24 to 2010-OCT-07, between 8:00 am and 4:30 pm, Monday through Friday, excluding statutory holidays, in the offices of the Community Safety and Development Division, 238 Franklyn Street, Nanaimo, BC.

All persons who believe their interest in property is affected by the proposed bylaws shall be afforded the opportunity to be heard in person, by a representative or by written submission, on the matters contained within Bylaws No. 4000.485, 4000.486, and 4000.487, 4000.491, and 4000.399 at the Public Hearing.

Please note the following:

Written submissions may be sent to the City of Nanaimo, Community Safety and Development Division, 455 Wallace Street, Nanaimo, BC, V9R 5J6.

Electronic submissions (email) should be sent to **public.hearing@nanaimo.ca,** or submitted online at **www.nanaimo.ca**. These submissions must be received no later than 4:00 pm, 2010-OCT-07, to ensure their availability to Council at the Public Hearing.

Following the close of a public hearing, no further submissions or comments from the public or interested persons can be accepted by members of City Council, as established by provincial case law. This is necessary to ensure a fair public hearing process and provide a reasonable opportunity for people to respond.

For more information, please contact the City of Nanaimo
Community Safety and Development Division
Phone: (250) 755-4429 ❖ Fax: (250) 755-4439 ❖ Website: www.nanaimo.ca
238 Franklyn Street, Nanaimo, BC

This Notice is published in accordance with Section 892 of the Local Government Act.
Notice Given by the Manager of Legislative Services

CITY OF NANAIMO

BYLAW NO. 4000.485

A BYLAW TO AMEND THE CITY OF NANAIMO “ZONING BYLAW 1993 NO. 4000”

WHEREAS the Council may zone land, by bylaw, pursuant to Sections 890, 891, 903 and 904 of the *Local Government Act*;

THEREFORE BE IT RESOLVED the Municipal Council of the City of Nanaimo, in open meeting assembled, ENACTS AS FOLLOWS:

1. This Bylaw may be cited as the “ZONING BYLAW AMENDMENT BYLAW 2010 NO. 4000.485”.

2. The City of Nanaimo “ZONING BYLAW 1993 NO. 4000" is hereby amended as follows:

   (1) By adding the following to the Table of Contents after “7.18 Comprehensive Development District Zone 6 (CD-6) ”:

   7.19 Residential Corridor Zone - (RM-12)

   (2) By adding the following to Subsection 3.1 after “Part 7 – Multiple Family Residential Zones, Comprehensive Development District Zone 6 (CD-6)”:

   Residential Corridor Zone (RM-12)

   (3) By adding the following after 7.18 Comprehensive Development District Zone 6 (CD-6):

   7.19 **Residential Corridor**
   This zone provides for residential, street-oriented, medium density development along or near major roads.

   7.19.1 **Permitted Uses**
   Artist Studio
   Bed and Breakfast
   Boarding and Lodging
   Daycare
   Live / Work
   Multiple Family Dwelling
   Personal Care Facility
   Seniors Housing
   Single Family Dwelling

   7.19.2 **Density**
   7.19.2.1 The maximum permitted floor area ratio is 0.75.

   7.19.3 **Lot Size**
   The minimum lot area shall not be less than 850 square metres.

7.19.4 **Yard Requirements**

7.19.4.1 A minimum front yard setback of 3.5 metres shall be required.

7.19.4.2 A maximum front yard setback of 6 metres shall be required.

7.19.4.3 A side yard of 1.5 metres shall be required on one side yard and 3 metres on the other. In the case of a corner lot, the side yard adjoining the flanking street shall not be less than 4.5 metres in depth.

7.19.4.4 A rear yard setback of 6 metres shall be required.

7.19.5 **Location of the Parking Area**

No parking shall be permitted between the front property line and the front face of a building.

7.19.6 **Size of Buildings**

7.19.6.1 The maximum lot coverage and height, as well as the minimum required height of a building, shall be as specified within the following table:

Lot Coverage	***Maximum Allowable Height***	***Minimum Required Height***
60%	14 metres	2 stories

7.19.7 **Height of Fences**

7.19.7.1 The height of a fence shall not exceed 1.2 metres in a front yard.

7.19.7.2 The height of a fence shall not exceed 1.8 metres in a side or rear yard.

(4) By adding the following to Subsection 14.12 Minimum Landscape Treatment Levels after RM2- RM10:

Subject Property Zoned	***Front Yard***	***Side Yard***	***Rear Yard***	***Storage / Landfill Refuse Receptacles***
RM-12	1	2	2	2

PASSED FIRST READING _____
PASSED SECOND READING_____
PUBLIC HEARING HELD _____
PASSED THIRD READING _____
MOT APPROVAL _____
ADOPTED _____

_____
M A Y O R

_____
DIRECTOR,
LEGISLATIVE SERVICES

CITY OF NANAIMO

BYLAW NO. 4000.486

A BYLAW TO AMEND THE CITY OF NANAIMO “ZONING BYLAW 1993 NO. 4000”

WHEREAS the Council may zone land, by bylaw, pursuant to Sections 890, 891, 903 and 904 of the *Local Government Act*;

THEREFORE BE IT RESOLVED the Municipal Council of the City of Nanaimo, in open meeting assembled, ENACTS AS FOLLOWS:

1. This Bylaw may be cited as the “ZONING AMENDMENT BYLAW 2010 NO. 4000.486”.

2. The City of Nanaimo “ZONING BYLAW 1993 NO. 4000" is hereby amended as follows:

   (1) By rezoning the lands legally described as part of LOT 65, DISTRICT LOT 28, WELLINGTON DISTRICT, PLAN 26689 from Single Family Residential Zone (RS-1) to Residential Corridor Zone (RM-12) as shown on the attached Schedule “A”.

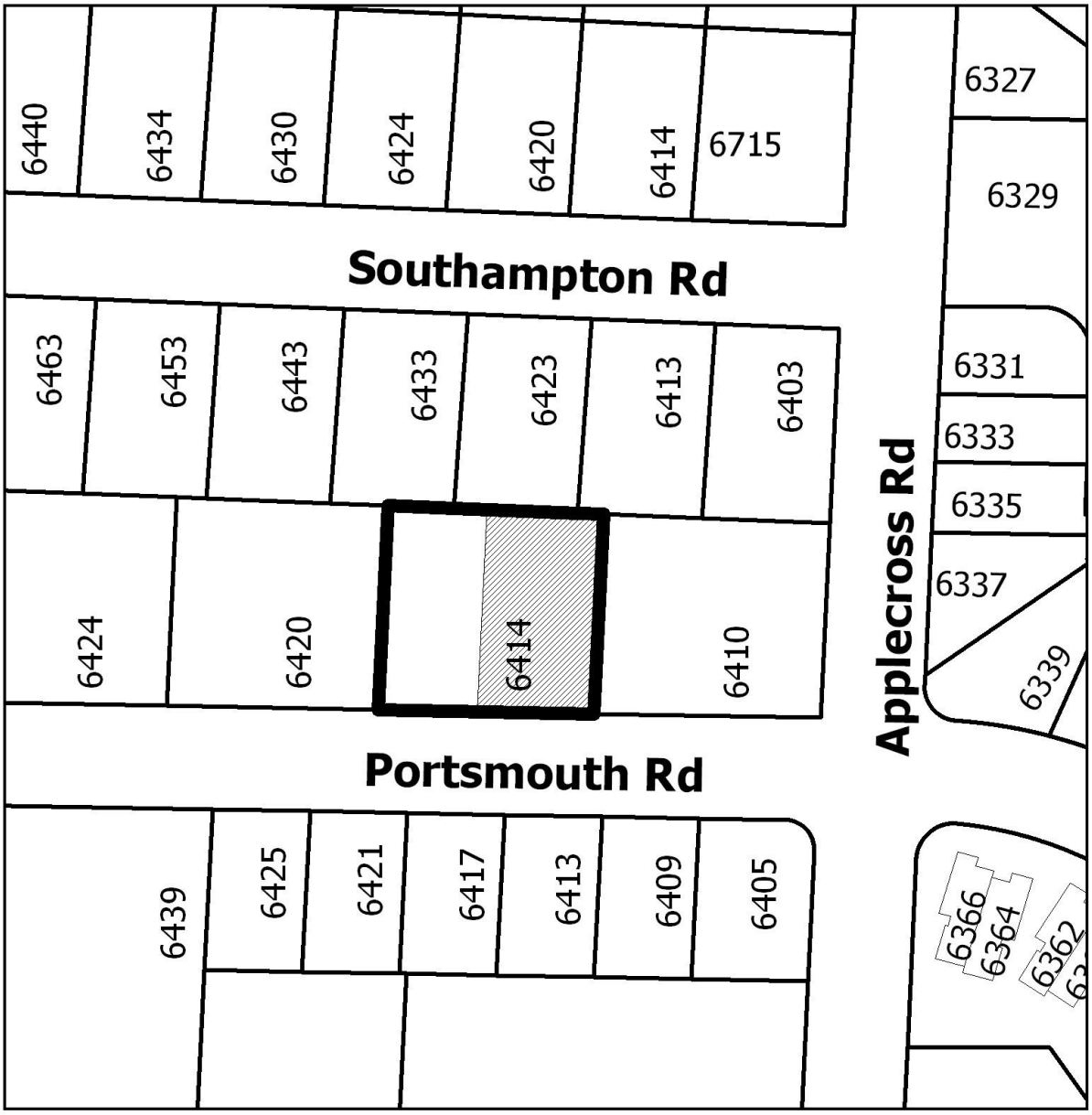
PASSED FIRST READING _____
PASSED SECOND READING _____
PUBLIC HEARING HELD _____
PASSED THIRD READING_____
COVENANT REGISTERED_____
MINISTRY OF TRANSPORTATION APPROVAL_____
ADOPTED_____

_____
M A Y O R

_____
DIRECTOR,
LEGISLATIVE SERVICES

File: RA000250
Address: Part of 6414 Portsmouth Road

SCHEDULE A



File: RA000250
Civic: 6414 Portsmouth Road

LOCATION PLAN

Subject Property

Portion to be Rezoned

FILE COPY

2010-SEP-07

STAFF REPORT

REPORT TO: A. TUCKER, DIRECTOR OF PLANNING,
COMMUNITY SAFETY & DEVELOPMENT

FROM: J. HOLM, MANAGER, PLANNING SECTION,
COMMUNITY SAFETY & DEVELOPMENT

RE: RA250 – PART OF 6414 PORTSMOUTH ROAD

STAFF'S RECOMMENDATION:

That Council:

1. receive the report pertaining to "ZONING AMENDMENT BYLAW 2010 NO. 4000.486", which is presented under the Bylaws section of the agenda; and
2. direct Staff to secure road dedication and community contribution prior to adoption of the bylaw should Council choose to support the bylaw at Third Reading.

planNANAIMO ADVISORY COMMITTEE (PNAC)

At its meeting of 2010-JUL-13, PNAC recommended that the application be approved as presented. Staff concurs with this finding and recommends that Council support the proposed rezoning.

EXECUTIVE SUMMARY:

The City of Nanaimo has received an application from Mr. Gur Minhas, on behalf of Ms. Rosaleen Sadhra, to rezone part of the subject property from Single Family Residential Zone (RS-1) to Residential Corridor Zone (RM-12) in order to facilitate subdivision of the lot and construction of multi-family dwellings. Staff supports the application and recommends that Council approve the proposed rezoning.

BACKGROUND:

Subject Property

The subject property is located on the north side of Portsmouth Road, approximately 45m west of the Applecross Road intersection (Attachment A). The total site is approximately 1,677m^2 (0.4 acres) in area, and is occupied by a single family dwelling. Portsmouth Road is classified as an industrial road within the city; and a variety of land uses and zoning surround the subject property. The total area subject to rezoning is 866m^2 (0.2 acres).

The north side of Portsmouth Road, as well as the lots abutting the site to the north, consists mainly of single family lots, with the exception of several duplex lots at the western end of Portsmouth Road. The Corridor designation stretches from the north side of Portsmouth Road to the south side of Dover Road.

The south side of Portsmouth Road contains a mix of zones, including Service Commercial, Public Institution, Light Industrial, Mixed Use Commercial, and Single Family Residential. The south side of Portsmouth Road is included in the Urban Node designation of the OCP.

Official Community Plan (OCP)

The Official Community Plan (OCP) contains the City's vision for the future. Sustainability is the guiding principle of the OCP, which is reflected in the social, environmental, and economic goals, objectives, and policies within the plan. The land use designations identified in the OCP are intended to support the plan's goal to 'build a more sustainable community'. According to Map '1' of the OCP, the subject property is located within a Corridor designation.

The Corridor designation supports increased residential densities and a mix of land uses. Residential densities of 50 to 150 units per hectare in two to six storey building forms shall be supported. Development in Corridors will address the interface between Corridors and Neighbourhoods. Design elements of building siting, height and massing (including stepped back upper floors) will be used to ensure a transition from the Corridor to the adjacent Neighbourhood scale. Corridor policy prohibits primary parking areas between the front face of a building and the street.

The proposed development results in a residential density of 56 units per hectare, which is considered to meet the intent of the Corridor designation.

Proposed Development

The applicant proposes to rezone the subject property from Single Family Residential Zone (RS-1) to Residential Corridor Zone (RM-12) in order to facilitate subdivision of the lot and construction of multi-family dwellings. The RM-12 Zone is a proposed new zone also on tonight's agenda as Bylaw 4000.485.

The existing house is to be subdivided from the parent parcel and zoning of that lot will remain RS-1, with an area of 767m^2 (8,256ft^2). The proposed new lot, with an area of 866m^2 (9,322ft^2), will contain five townhouse style dwelling units and is proposed to be rezoned to Residential Corridor Zone (RM-12). One triplex building will be located to the rear of the site and one duplex building will front on Portsmouth Road. The individual units are approximately 132m^2 (1,420ft^2) in area. Both buildings are proposed at three storeys in height. The proposed site plan is attached (Attachment B).

Each unit contains a single wide garage to accommodate one vehicle. As the garage doors are setback from the principle building façade, an additional parking space is provided in front of the garage under a partially covered area. The proposed on-site parking spaces are demonstrated on the site plan (Attachment B). In total, the development can provide 10 on-site parking spaces, which exceeds the requirement for 8 on-site spaces.

Conceptual elevations and floor plans for both the proposed triplex and duplex buildings are attached (Attachment C).

Proposed Residential Corridor Zone (RM-12)

The proposed Residential Corridor Zone, also on tonight's agenda, is a new zone to address development within the Corridor designation of the OCP. The proposed development would conform to the proposed RM-12 Zone with the exception of a portion of the development that would not meet the requirement for one of the side yards to have a 3m side yard setback.

The RM-12 Zone requires one side yard at a minimum of 1.5m, and the other side yard at a minimum of 3m. The purpose of the proposed 3m side yard setback requirement is to break up the rhythm of the street and to provide for access to the rear of the site, or behind the building.

The development contains two separate buildings. The duplex building fronting Portsmouth Road exceeds the 3m side yard requirement due to the vehicle access and driveway location; however, the triplex building is situated at the rear of the site and provides a 1.5m side yard setback on both sides of the building. Staff support a future variance for the proposed side yard of the rear triplex building as the intent of the regulation is being met with respect to breaking up the rhythm of the street and providing vehicle access and requiring parking behind the building, as opposed to between the front face of the building and the road.

Road Dedication

Portsmouth Road is designated an industrial road and requires approximately 1m of road dedication. Staff recommends, as a condition of rezoning, that road dedication be secured prior to consideration of final adoption.

Community Contribution

As outlined in Section 7.3 of the OCP, in exchange for value conferred on land through a rezoning, the applicant should provide a community contribution. In response to Council's policy, the applicant is proposing to contribute $5000 towards pedestrian and turning movement improvements to the Dickinson Road and Portsmouth Road intersection currently being considered by the City's Engineering group.

Staff support this proposal and recommend that Council direct Staff to secure the community contribution.

Respectfully submitted,

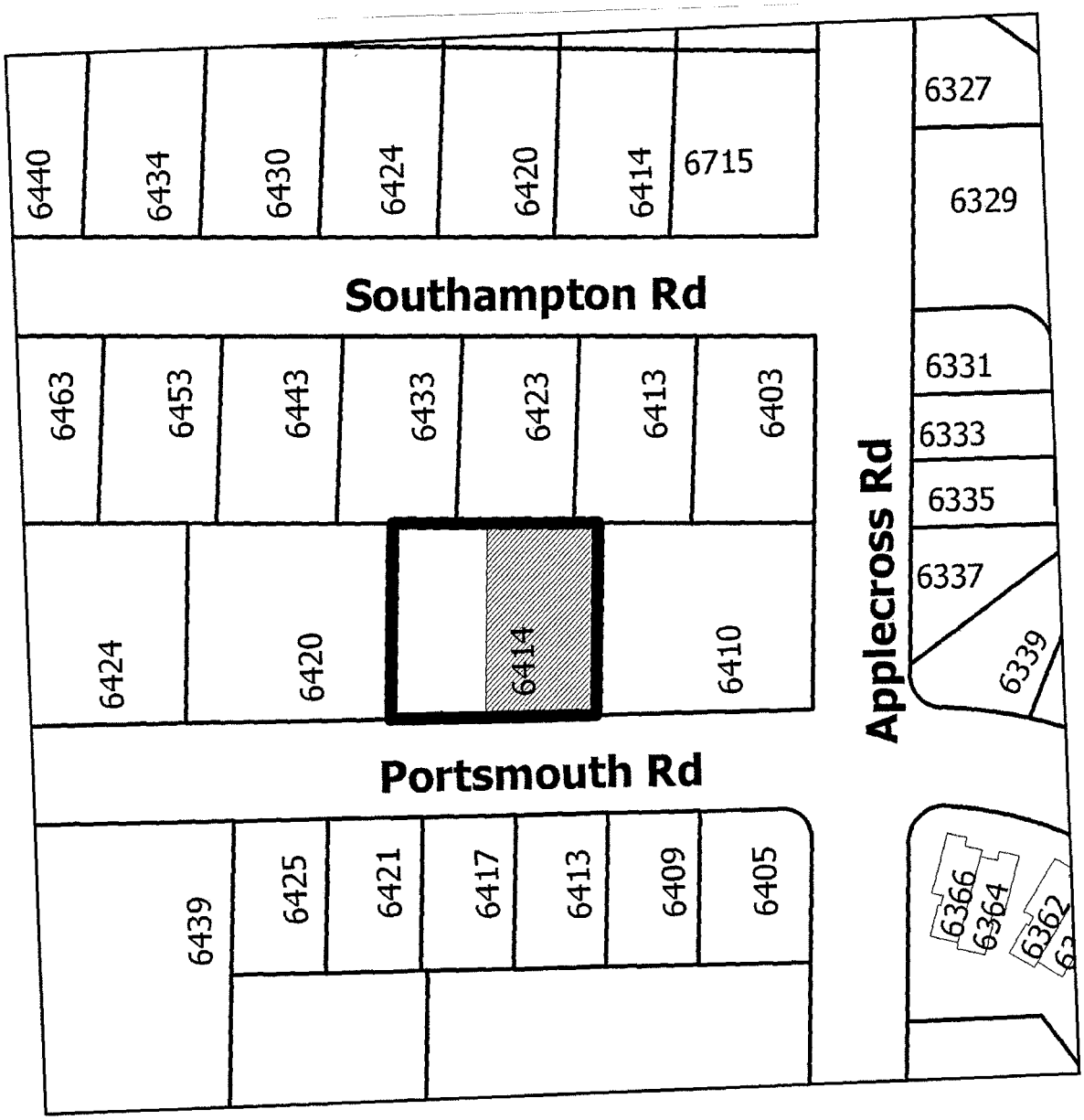
J. Holm
Manager, Planning Section
Community Safety & Development

A. Tucker
Director of Planning
Community Safety & Development

DS/pm/hd
Council: 2010-SEP-13
Prospero: RA250

Ted Swabey, General Manager
Community Safety & Development

ATTACHMENT A

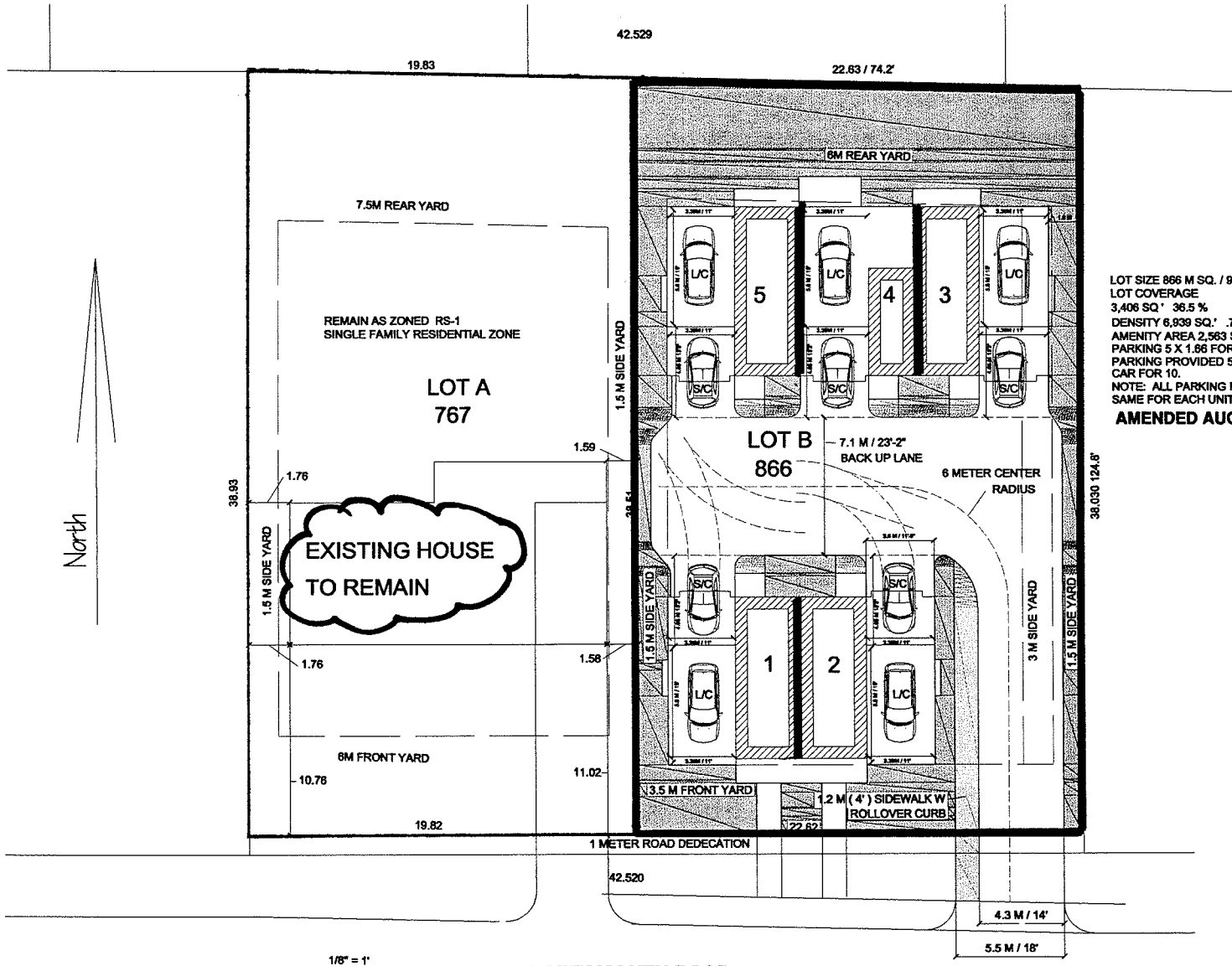


File: RA000250
Civic: 6414 Portsmouth Road

LOCATION PLAN

Subject Property

Portion to be Rezoned



LOT SIZE 866 M SQ. / 9,322 SQ.'
LOT COVERAGE
3,406 SQ ' 36.5 %
DENSITY 6,939 SQ.' .744
AMENITY AREA 2,563 SQ.' / 238.1 M SQ. 26%
PARKING 5 X 1.66 FOR 8 REQUIRED
PARKING PROVIDED 5 LARGE CAR & 5 SMALL CAR FOR 10.
NOTE: ALL PARKING MODULES ARE THE SAME FOR EACH UNIT

AMENDED AUG 2010

PORTSMOUTH ROAD SUBDIVISION

Address: 6414 PORTSMOUTH ROAD, NANAIMO, BC CANADA

Folio: 08056.238
Plan: 26689
Size: 139.00 130.00
WIDTH/DEPTH
Legal Description: LOT 65, DISTRICT LOT 28, WELLINGTON DISTRICT, PLAN 26689

Zoning RS-1
SINGLE FAMILY RESIDENTIAL ZONE

REZONE TO- 1____ LOT - 2 RS-1 LOT

NOTES	DATE	PAGE NOTE	REVISIONS

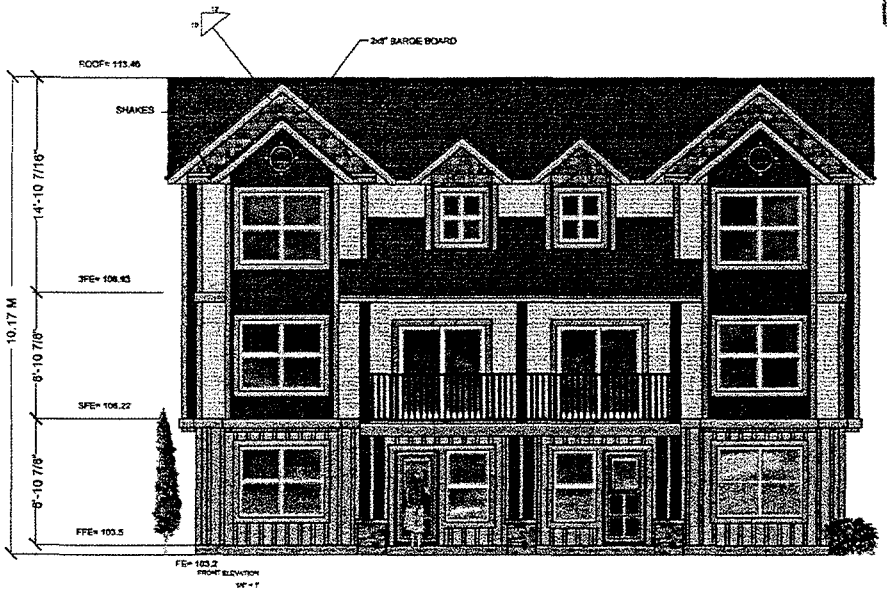
BY design
Mark Garrett
PROJECT DESIGNER
4870 Fillinger Cres. Nanaimo, B.C., V9V 1J1
(250) 760-1027 Bus. (250) 802-1027 Cell
email-garrettbydesign@yahoo.com

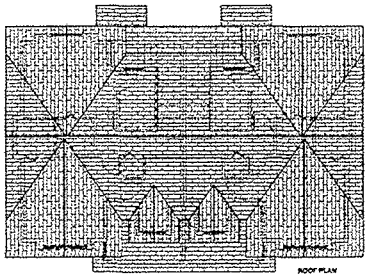
DRAWN BY: MARK GARRETT
DATE: MAY 2010
SCALE: 1/8" = 1'

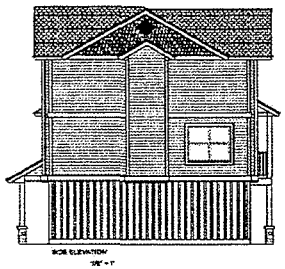
PROJECT NO. | DRAWING NO.

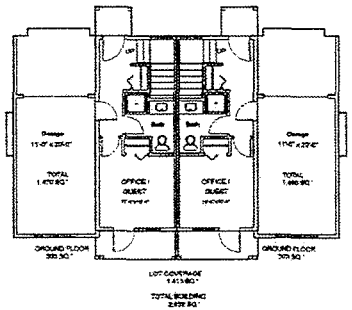
SITE PLAN

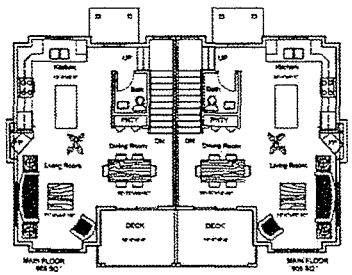
ATTACHMENT B

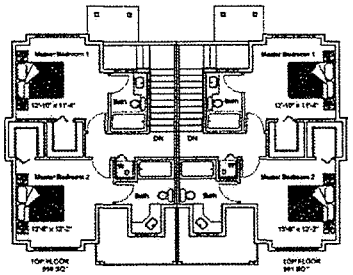












PORTSMOUTH ROAD SUBDIVISION

Address: 6414 PORTSMOUTH ROAD, NANAIMO, BC CANADA

Folio: 08056.238
Plan: 26689
Size: 139.00 130.00
WIDTH/DEPTH
Legal Description: LOT 65, DISTRICT LOT 28, WELLINGTON DISTRICT, PLAN 26689

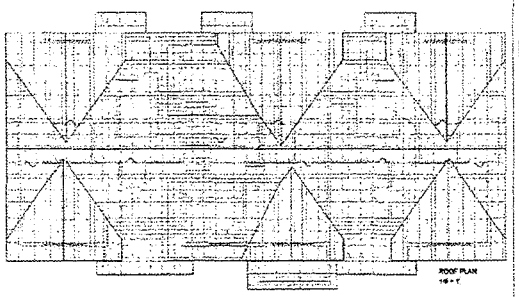
Zoning RS-1
SINGLE FAMILY RESIDENTIAL ZONE

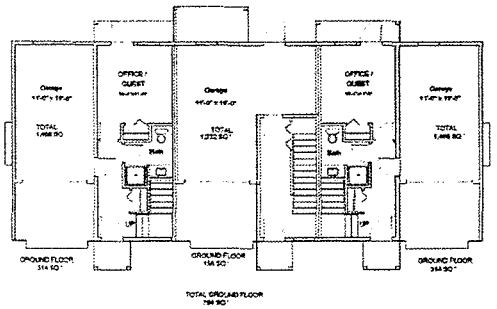
REZONE TO- 1 RM-2 LOT - 1 RS-1 L(

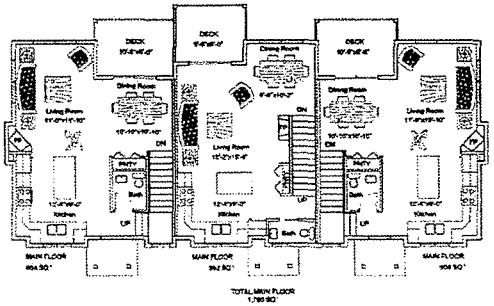
BY design
Mark Garrett
PROJECT DESIGNER
4970 Fillinger Cres. Nanaimo, B.C., V9V 1J1
(250) 760-1027 Bus. (250) 802-1027 Cell
email-garrettbydesign@yahoo.com

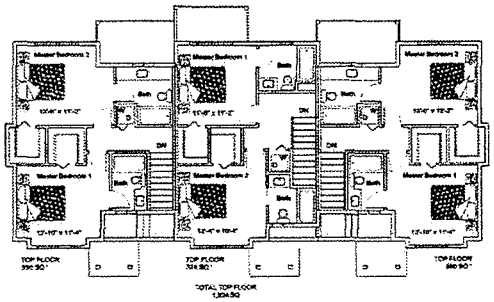
DUPLEX

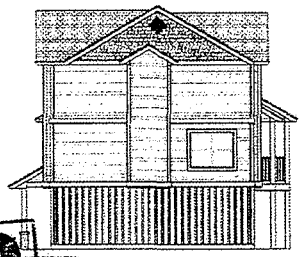
ATTACHMENT C (1 OF 2)











PORTSMOUTH ROAD SUBDIVISION

Address: 6414 PORTSMOUTH ROAD, NANAIMO, BC CANADA

Folio: 08056.238
Plan: 26689
Size: 139.00 130.00
WIDTH/DEPTH
Legal Description: LOT 65, DISTRICT LOT 28, WELLINGTON DISTRICT, PLAN 26689

Zoning RS-1
SINGLE FAMILY RESIDENTIAL ZON

REZONE TO- 1 RM-2 LOT - 1 RS-1 L

BY design
Mark Garrett
PROJECT DESIGNER
4970 Fillinger Cres. Nanaimo, B.C., V9V 1J1
(250) 760-1027 Bus. (250) 802-1027 Cell
email-garrettbydesign@yahoo.com

TRIPLEX

ATTACHMENT C (2 OF 2)

CITY OF NANAIMO

BYLAW NO. 4000.487

A BYLAW TO AMEND THE CITY OF NANAIMO “ZONING BYLAW 1993 NO. 4000”

WHEREAS the Council may zone land, by bylaw, pursuant to Sections 890, 891, 903 and 904 of the *Local Government Act*;

THEREFORE BE IT RESOLVED the Municipal Council of the City of Nanaimo, in open meeting assembled, ENACTS AS FOLLOWS:

1. This Bylaw may be cited as the “ZONING AMENDMENT BYLAW 2010 NO. 4000.487”.

2. The City of Nanaimo “ZONING BYLAW 1993 NO. 4000" is hereby amended as follows:

   (1) By rezoning the lands legally described as LOT 2, DISTRICT LOT 96-B, NANAIMO DISTRICT, PLAN 28853 (561 Cadogan Street) from Single Family Residential Zone (RS-1a) to Single Family Residential Small Lot Zone (RS-6) as shown on the attached Schedule “A”.

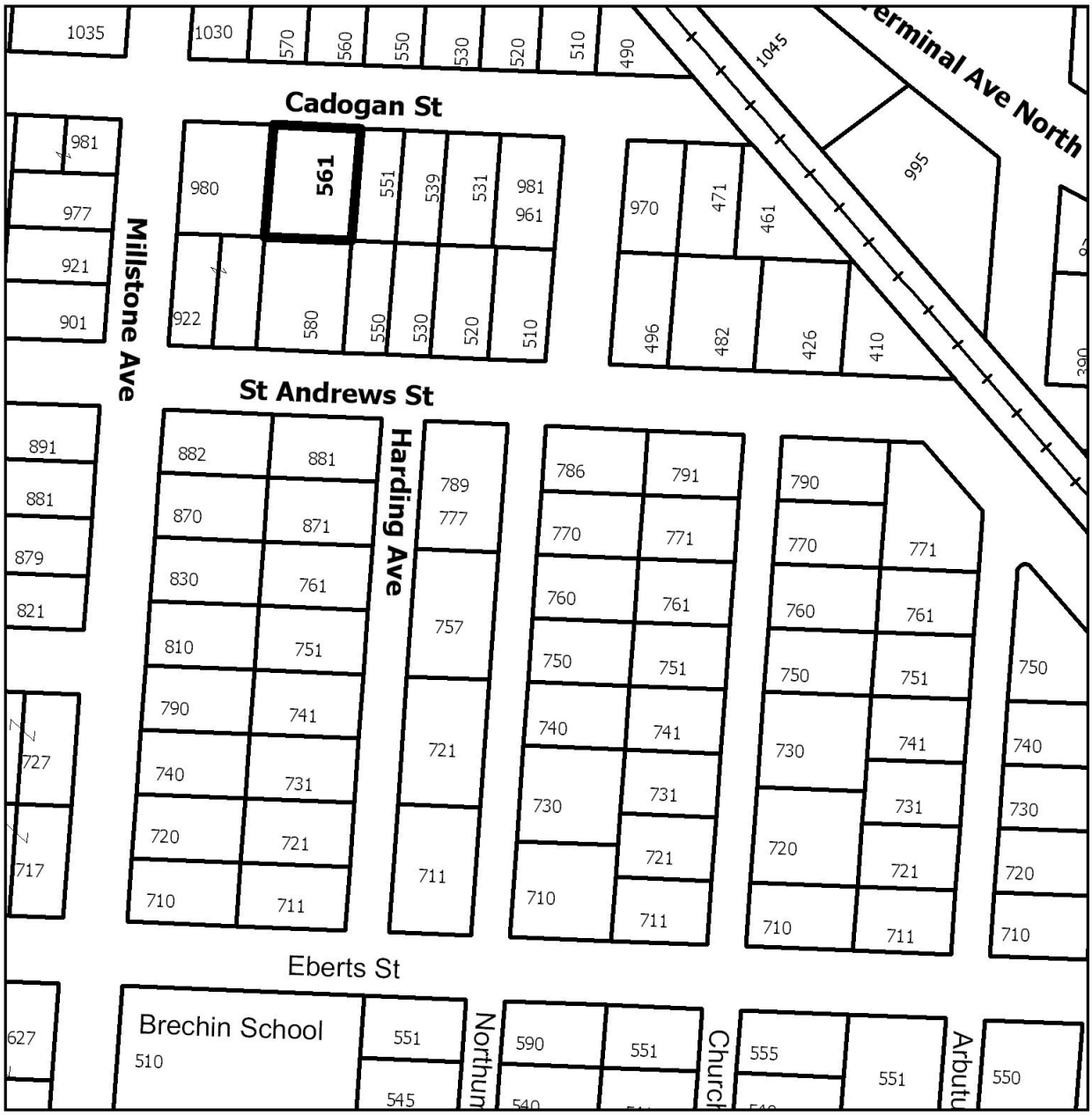
PASSED FIRST READING _____
PASSED SECOND READING _____
PUBLIC HEARING HELD _____
PASSED THIRD READING_____
COVENANT REGISTERED_____
ADOPTED_____

_____
M A Y O R

_____
DIRECTOR,
LEGISLATIVE SERVICES

File: RA000251
Address: 561 Cadogan Street

ATTACHMENT A



File: RA000251
Civic: 561 Cadogan Street

Subject Property

LOCATION PLAN

2010-SEP-03

STAFF REPORT

REPORT TO: A. TUCKER, DIRECTOR OF PLANNING,
COMMUNITY SAFETY & DEVELOPMENT

FROM: J. HOLM, MANAGER, PLANNING SECTION,
COMMUNITY SAFETY & DEVELOPMENT

RE: RA251 – 561 CADOGAN STREET

STAFF'S RECOMMENDATION:

That Council:

1. receive the report pertaining to "ZONING AMENDMENT BYLAW 2010 NO. 4000.487", which is presented under the Bylaws section of the agenda; and
2. direct Staff to secure community contribution prior to adoption of the bylaw should Council choose to support the bylaw at Third Reading.

EXECUTIVE SUMMARY:

The City of Nanaimo has received an application from Ms. Joy Bremner to rezone the subject property from Single Family Residential Zone (RS-1a) to Single Family Residential Small Lot Zone (RS-6) in order to facilitate subdivision of the lot. Staff supports the application and recommends that Council approve the proposed rezoning.

BACKGROUND:

Subject Property

The subject property is located on the south side of Cadogan Street, approximately 30m east from Millstone Avenue (Attachment A). The site is 962m^2 (0.2 acres) in area and is currently occupied by a single family dwelling. The surrounding area is largely a single family neighbourhood; however, two duplex sites are located within 90m of the subject property. The subject property has easy access to the E&N trail and is approximately 200m from the Terminal Park commercial centre.

Official Community Plan (OCP)

According to Map '1' of the OCP, the subject property is located within a Neighbourhood designation. Development in Neighbourhoods is to be characterized by a mix of low density residential uses and may include detached and semi-detached dwelling units, secondary suites, special needs housing, mobile homes, duplexes, triplexes, quadruplexes and townhouses. Residential densities from 10 to 50 units per hectare, in two to four storey building forms, are supported in Neighbourhoods. The proposed development results in a density of 20 units per hectare. Staff is of the opinion that the proposed rezoning complies with the intent of the OCP.

Proposed Development

The applicant proposes to rezone the subject property from Single Family Residential Zone (RS-1a) to Single Family Residential Small Lot Zone (RS-6) in order to facilitate subdivision of the lot. The proposed subdivision will create two RS-6 lots. The existing house will remain on one lot and a new lot will be created. The lot with the existing house is proposed to be 542m^2 and the new lot is proposed to be 421m^2. The minimum lot area required under the RS-6 zone is 325m^2; therefore, each of the proposed lots exceeds the lot area requirements. The proposed site plan is attached (Attachment B).

The proposed development results in the creation of one new lot and therefore one additional house on the street. As the overall streetscape is not considered to be affected by the addition of one new house, and the proposed new lot exceeds the minimum lot area, no design features are recommended to be secured through this rezoning.

Community Contribution

As outlined in Section 7.3 of the OCP, in exchange for value conferred on land through a rezoning, the applicant should provide a community contribution. In response to Council's policy, the applicant is proposing a $1000 monetary contribution towards parks in the Townsite area.

Staff support this proposal and recommend that Council direct Staff to secure the community contribution.

Respectfully submitted,

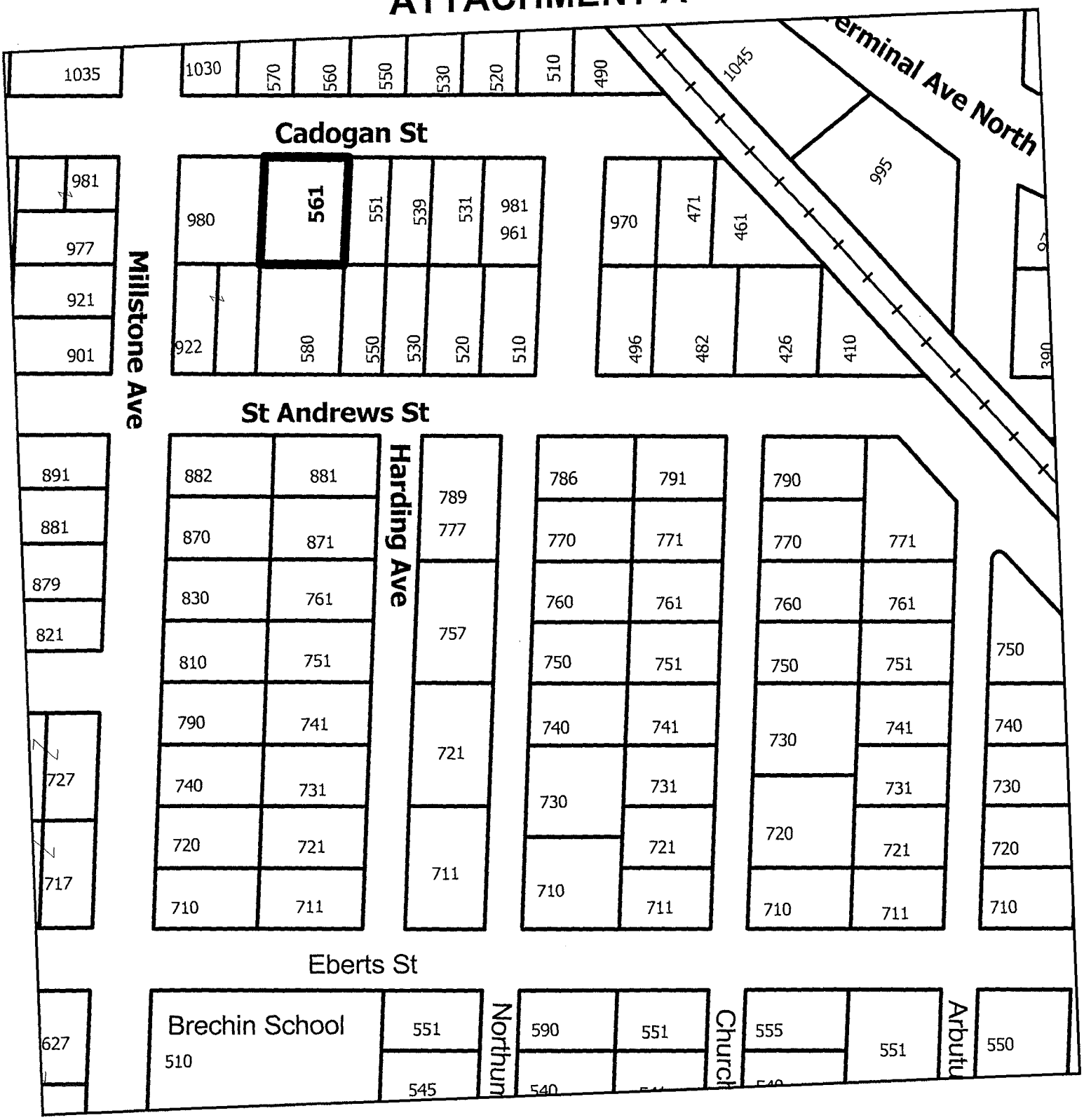
J. Holm
Manager, Planning Section
Community Safety & Development

A. Tucker
Director of Planning
Community Safety & Development

SH/pm
Council: 2010-SEP-13
Prospero: RA251

Ted Swabey, General Manager
Community Safety & Development

ATTACHMENT A

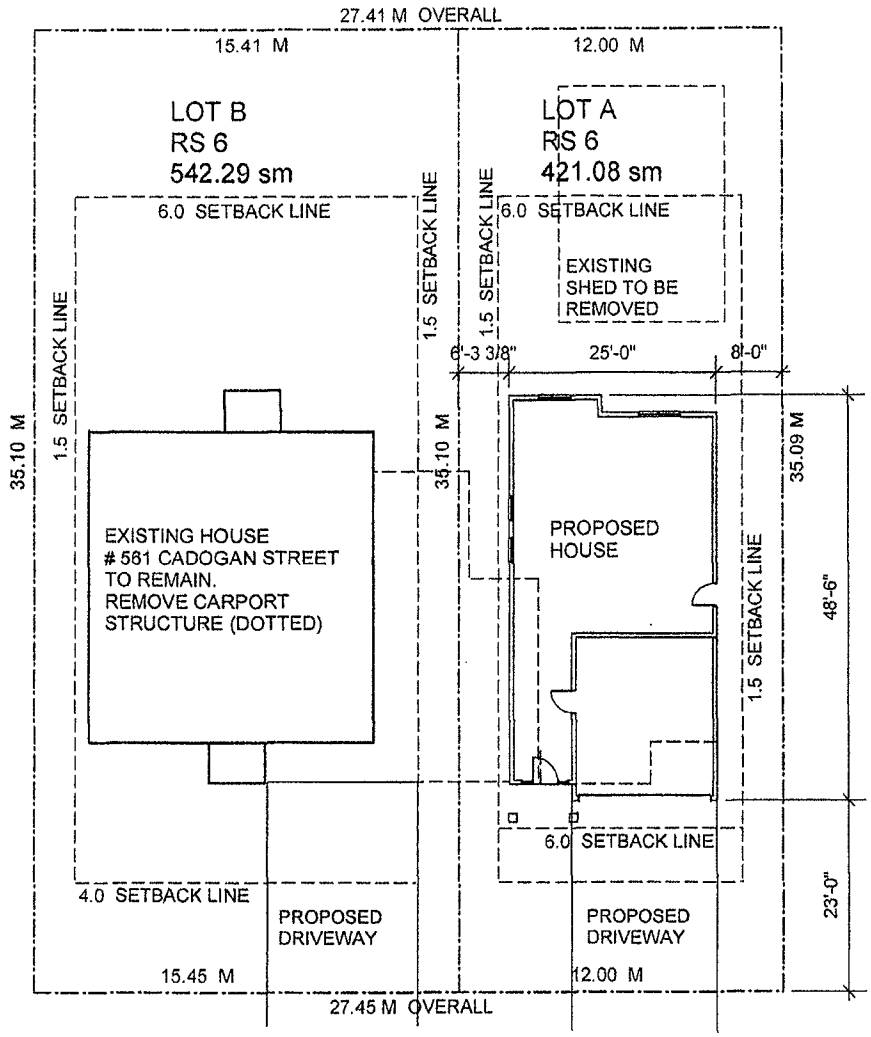


File: RA000251
Civic: 561 Cadogan Street

Subject Property

LOCATION PLAN

ATTACHMENT B



CADOGAN STREET

SITEPLAN

SCALE 1/16" = 1'-0"

LOT A SITE STATS

LEGAL: LOT 2

LOT AREA:	421.08 SM
LOT COVERAGE:	28 %
FAR:	.45
BUILDING AREA:	
LOWER	865 SF + 370 SF GARAGE
MAIN	1170 SF
TOTAL	2035 SF
COVERED DECKS	32 SF

SITE STATS FOR LOT B

CIVIC: 561 CADOGAN STREET

LOT AREA:	542.29 SM
LOT COVERAGE:	23 %
FAR:	.22
EXISTING BUILDING AREA:	
MAIN	1295 SF
COVERED DECKS	40 SF

CITY OF NANAIMO

BYLAW NO. 4000.491

A BYLAW TO AMEND THE CITY OF NANAIMO "ZONING BYLAW 1993 NO. 4000"

WHEREAS the Council may zone land, by bylaw, pursuant to Sections 890, 891, 903 and 904 of the *Local Government Act*;

THEREFORE BE IT RESOLVED the Municipal Council of the City of Nanaimo, in open meeting assembled, ENACTS AS FOLLOWS:

1. This Bylaw may be cited as the "ZONING AMENDMENT BYLAW 2010 NO. 4000.491".

2. The City of Nanaimo "ZONING BYLAW 1993 NO. 4000" is hereby amended as follows:

   (1) By adding the definition of "Student Housing" in Section 4.1 as follows:

   "STUDENT HOUSING – means a residential facility which provides sleeping units or dwelling units to full or part time post secondary students who are enrolled in a Ministry of Advanced Education and Labour Market Development designated college, university, or trade school located within the City of Nanaimo."

   (2) By adding the following to section 7.19.1 – Permitted Uses:

   "Student Housing, on lands legally described as LOT 5, BLOCK 2, SECTION 1, NANAIMO DISTRICT, PLAN 1325 and LOT 6, BLOCK 2, SECTION 1, NANAIMO DISTRICT, PLAN 1325 (440 Wakesiah Avenue).

   (3) By adding the following after section 7.19.1 and renumbering subsequent sections accordingly:

   7.19.2 **Conditions of Use**
   Where a student housing use exists on a lot, such use shall require a housing agreement.

   (4) By adding subsection 7.19.3.2 as follows:

   Notwithstanding Subsection 7.19.2.1, the maximum floor area ratio shall not exceed 1.0 for land legally described as LOT 5, BLOCK 2, SECTION 1, NANAIMO DISTRICT, PLAN 1325 and LOT 6, BLOCK 2, SECTION 1, NANAIMO DISTRICT, PLAN 1325 (440 Wakesiah Avenue).

   (5) By rezoning the lands legally described as LOT 5, BLOCK 2, SECTION 1, NANAIMO DISTRICT, PLAN 1325 and LOT 6, BLOCK 2, SECTION 1, NANAIMO DISTRICT, PLAN 1325 (440 Wakesiah Avenue) from Single Family Residential Zone (RS-1) to Residential Corridor Zone (RM-12) as shown on the attached Schedule "A".

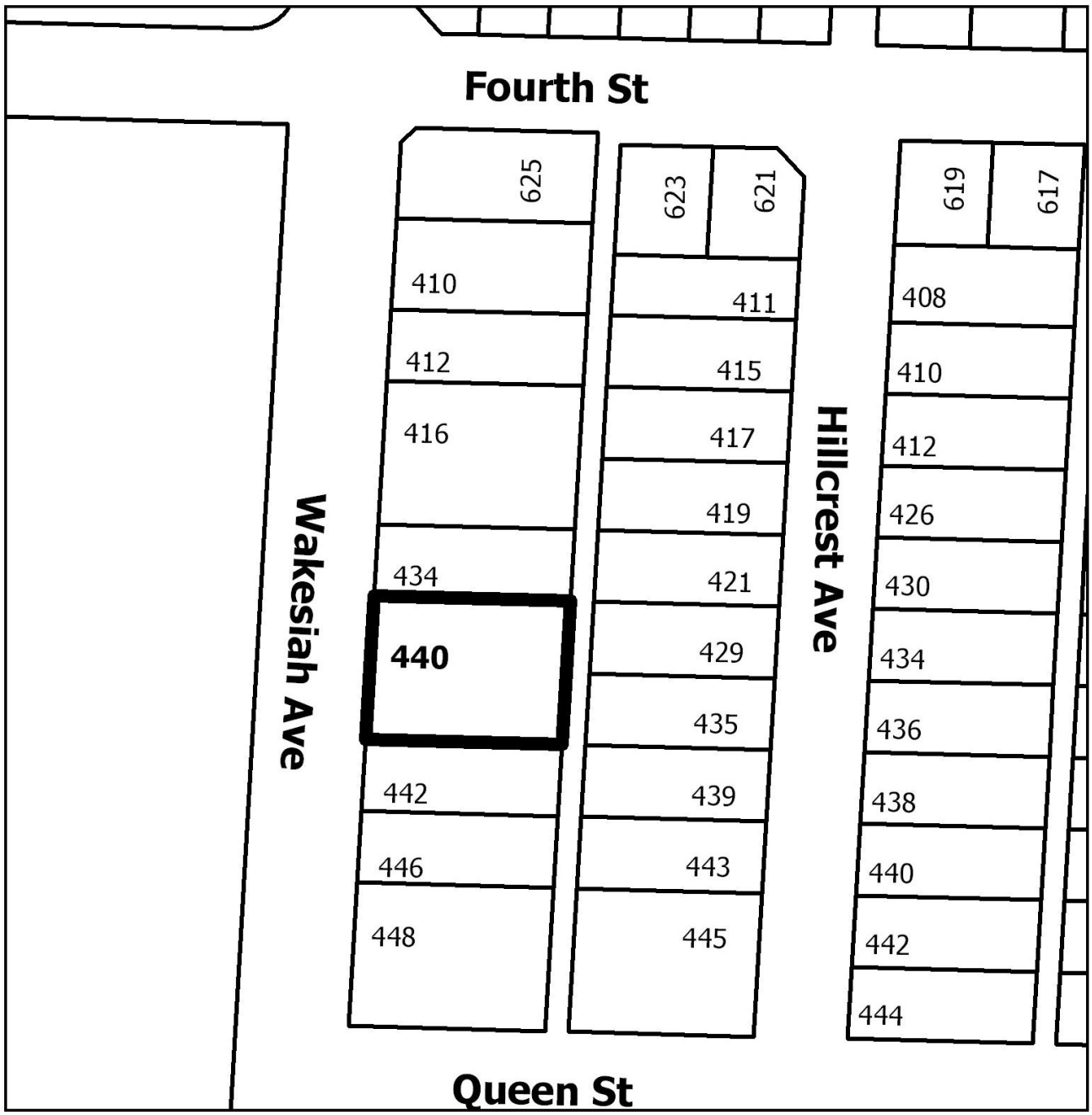
PASSED FIRST READING _____
PASSED SECOND READING _____
PUBLIC HEARING HELD _____
PASSED THIRD READING_____
COVENANT REGISTERED_____
MINISTRY OF TRANSPORTATION APPROVAL_____
ADOPTED_____

M A Y O R

DIRECTOR,

LEGISLATIVE SERVICES

SCHEDULE A



Subject Property

File: RA000242
Civic: 440 Wakesiah Avenue

LOCATION PLAN

FILE COPY

2010-SEP-07

STAFF REPORT

REPORT TO: A. TUCKER, DIRECTOR OF PLANNING,
COMMUNITY SAFETY & DEVELOPMENT

FROM: J. HOLM, MANAGER, PLANNING SECTION,
COMMUNITY SAFETY & DEVELOPMENT

RE: RA242 – 440 WAKESIAH AVENUE

STAFF'S RECOMMENDATION:

That Council:

1. receive the report pertaining to "ZONING AMENDMENT BYLAW 2010 NO. 4000.491", which is presented under the Bylaws section of the agenda;
2. direct Staff to secure road dedication and lot consolidation; and
3. direct Staff to register a covenant to secure design of frontage works, restrict the number of sleeping units (beds), interior design review, rain water pre-development flows, and the community contribution prior to adoption of the bylaw should Council choose to support the bylaw at Third Reading.

planNANAIMO ADVISORY COMMITTEE (PNAC):

At its meeting of 2010-JUN-15, PNAC recommended that the application be approved in principle. PNAC also requested a zone for 'student housing' be presented to PNAC prior to the application proceeding to Council. The draft zone was provided at the subsequent meeting held 2010-JUL-13.

EXECUTIVE SUMMARY:

The City of Nanaimo has received an application from Maureen Pilcher & Associates, on behalf of Great West Developments Ltd., to rezone the subject property from Single Family Residential Zone (RS-1a) to Residential Corridor Zone (RM-12), in order to allow a student housing development. Staff supports the application and recommends that Council approve the proposed rezoning.

BACKGROUND:

Subject Property

The subject property is located on the east side of Wakesiah Avenue, approximately 100 m south of the Fourth Street intersection; the site is across the street from the Vancouver Island University (VIU) campus (Attachment A). The site is approximately 1,279 m^2 (0.3 acres) in area, and is occupied by a single family dwelling. Wakesiah Avenue is classified as a 'major collector' within the city.

Abutting the subject property to the east, north, and south are single family lots; and west across the street is the VIU campus. Approximately 80 m north is a duplex-zoned site and 70 m south are two commercially zoned properties that both contain a gas station and convenience store, and a take-out pizza restaurant is located on one of the properties.

Other uses in the surrounding area include Nanaimo District Secondary School, Nanaimo Aquatic Centre, Nanaimo Ice Centre, Serauxmen Stadium and Serauxmen Sports Fields. The University Village Shopping Centre is approximately 700 m from the subject property. The Hawthorne mixed-use development, on the corner of Third Street and Wakesiah Avenue, is approximately 1 km north of the subject property.

Official Community Plan (OCP)

The Official Community Plan (OCP) contains the City's vision for the future. Sustainability is the guiding principle of the OCP, which is reflected in the social, environmental, and economic goals, objectives, and policies within the plan. The land use designations identified in the OCP are intended to support the plan's goal to 'build a more sustainable community'. According to Map 1 of the OCP, the subject property is located within a Corridor designation. It is intended that each corridor will build on the unique characteristics of the surrounding urban nodes and neighbourhoods, and will contain an individualized mix of uses and services.

The Corridor designation contains policies that support development characterized by a mix of residential, commercial, professional, and service uses, with residential development at medium to high level densities. Residential densities of 50 to 150 units per hectare in two to six storey building forms shall be supported. Primary parking areas between the front face of the buildings and the street in corridors is not permitted. Sidewalk and landscaping design will enhance pedestrian and vehicle separation.

The Plan supports the development of corridors with a broad social mix and access to adequate housing at all income levels. The Plan supports the development of projects with innovative and affordable tenure forms; and encourages the development of affordable housing through rezoning, density bonusing, and public / private / non-profit partnerships.

Staff OCP Comments

The density ranges within the OCP serve as a guide for future land use decisions; the ranges are; therefore, flexible and often require Staff interpretation when a project does not clearly fall within a specified range. The OCP density ranges are not based on micro-sized units; therefore, it is difficult to compare the proposed development to the residential densities outlined within the Corridor designation. The proposed units range from approximately 19 m^2 (213.2 ft^2) to 38 m^2 (417.5 ft^2), which is approximately a third of the size of a typical multi-family unit. If the proposed development was contemplated as a typical multi-family development, it would likely be in the range of 68 units per hectare. However, as the units are much smaller, as noted above, the density equates to 203 units per hectare. Staff is supportive of the proposed density as it is considered to meet the intent of the Corridor designation. The proposal is also considered to meet other policies and objectives of the OCP.

The building mass and site organization are also important characteristics of corridor development. The proposed development has a building height of three storeys, primary parking is contained behind the building and vehicle access is from the laneway as opposed to Wakesiah Avenue, which is classified as a major collector road. As such, the proposed building form and site organization is in keeping with the policies of the OCP, which would be encouraged for any development within the Corridor designation.

Currently, there are no examples of private student housing developments within the City of Nanaimo. Staff considers the proposed development an innovative approach to providing housing for students that is affordable and accessible with the university campus, surrounding amenities, and adequate transit options within walking distance of the subject property. As corridors are to develop based on their unique characteristics, the student housing concept builds on the character of the area as a university precinct. Student housing would contribute to a mix of housing options as well as creating a broad social mix in the area, which is encouraged in the OCP.

Overall, Staff considers the proposed development to meet the intent of the OCP.

Proposed Development

The applicant proposes to rezone the subject property from Single Family Residential Zone (RS-1a) to a proposed new zone, Residential Corridor Zone (RM-12), in order to allow for the site specific use of student housing.

The proposed student housing development includes 13 one-bedroom units and 12 two-bedroom units, for a total of 25 units. The units range in size from 19 m^2 (213.2 ft^2) to 38 m^2 (417.5 ft^2). Each unit is self contained, including a private bathroom and kitchenette. There are a total of 37 beds provided within the building.

Each floor of the proposed building provides a multi-purpose room, laundry facilities, and outdoor amenity space. The multi-purpose room would contain a full kitchen. The three storey building has a height of 12.67 m (41.5 ft) and a total floor area of approximately 1,337.5 m^2 (14,396.5 ft^2).

The proposed site plan and floor plans are attached (Attachment B) as well as the conceptual elevations (Attachment C).

Unit Size

As noted above, the proposed units are approximately a third of the size of a typical multi-family unit. Part of the rationale for allowing these small units of 19 m^2 (213.2 ft^2) is the proximity to the university; these unit sizes may not be appropriate in all areas of the city. To ensure optimal efficient functionality of the small living spaces, Staff recommends that a Registered Interior Designer (RID) of the Interior Designers of Canada be required to review and evaluate the proposed unit floor plans at the development permit stage. This requirement should be secured via covenant.

Student Housing Definition

As 'student housing' is a new use within the Zoning Bylaw, a definition will be included in the proposed bylaw associated with this rezoning application (Bylaw No.4000.491). The definition of 'student housing' is "*a residential facility which provides sleeping units or dwelling units to full or part time post secondary students who are enrolled in a Ministry of Advanced Education and Labour Market Development designated college, university, or trade school located within the City of Nanaimo.*"

Vehicle Access & On-Site Parking

Within corridors, vehicle parking is prohibited between the street and the front face of a building. The proposed development will contain all parking behind the building and vehicle access will only be available from the rear laneway. The site plan demonstrates a total of 15 on-site parking spaces.

The "DEVELOPMENT PARKING REGULATIONS BYLAW 2005 NO.7013" does not contain a parking ratio for student housing.

However, the attached table (Attachment D) summarizes different parking ratios that exist for several university campuses, and includes parking policies from other municipalities. Examples have been included from within British Columbia, but also include other locations, both nationally and internationally. The table demonstrates that there is no consistent ratio with respect to student housing, which is likely due to the contextual setting of each campus and municipality being different. Factors that would impact student housing parking requirements would include accessibility to public transit, bike lanes, bike storage facilities, walkability, and proximity to campus and other amenities. In addition, a city's population and culture would influence the approach to parking requirements for a student housing use.

As the applicant is proposing 37 beds and 15 car spaces, the parking ratio is 0.41 spaces per bed. The proposed ratio at 0.41 is the same as what is found at the on-campus residence for Vancouver Island University (VIU), which contains 160 parking spaces and 386 beds. In determining a suitable parking ratio for the proposed off-campus student housing development, Staff was not supportive of a ratio that was less than what is currently encountered at VIU. Originally, the applicant was proposing a ratio of 0.34 spaces per bed; in order to meet the 0.41 ratio, the applicant reduced the proposal by 1 bed and added two additional parking stalls.

Staff acknowledges that the proposed ratio has not been demonstrated in any other location within the city, with the exception of the VIU campus. However, Staff is willing to support the proposed development and the proposed parking ratio of 0.41 for several reasons. The site is located across the street to the university, which allows for easy pedestrian access to the campus. Several bus routes are available on the university campus, as well as within the neighbourhood. The development will provide for bicycle storage, which can be an alternative to car ownership; recreational and commercial amenities are available within a walkable distance. The applicant has provided a table summarizing distances to amenities in the area (Attachment E).

Proposed Residential Corridor Zone (RM-12)

The proposed Residential Corridor Zone, also on tonight's agenda as Bylaw No.4000.485, is a new zone to address residential development within the Corridor designation of the OCP. The proposed zone provides for residential, street oriented, medium density development along or near major roads.

Site Specific Use

Please note, the proposed student housing use is not listed within the permitted uses of the proposed RM-12 zone, as Staff recommends that the use of 'student housing' be determined on a site specific basis. Therefore, this application and proposed bylaw (4000.491) to rezone the subject property includes a site specific amendment to the RM-12 zone to allow for student housing, subject to a housing agreement.

Density

The Zoning Bylaw re-write process contemplates a Residential Corridor Zone with a range of densities from 0.75 Floor Area Ratio (FAR) to 1.25 FAR. As such, the Residential Corridor Zone currently being proposed through Bylaw No. 4000.485 (also on tonight's agenda) is consistent with this approach and has a base density of 0.75 FAR, which is a conservative approach to corridor density. However, increased density, that is consistent with the policies of the Corridor designation, would be considered on a site specific basis. As such, the proposed bylaw (4000.491) to rezone the subject property includes a site specific amendment to the RM-12 zone to allow for a density of 1.0.

Number of Beds
Staff recommends, as a condition of rezoning, that a covenant restrict the number of sleeping units (beds) for student housing to 37, as proposed by the applicant.

Road Dedication
Staff recommends, as a condition of rezoning, that road dedication be required to be provided prior to consideration of final adoption of the bylaw. Approximately 1.5 m fronting Wakesiah Avenue and 1 m fronting the rear laneway will be required to be dedicated for road purposes.

Frontage Works
As this is a corridor development, Staff recommends that a lay-by and street trees be included in the design of the frontage works for Wakesiah Avenue. The boulevard should be an urban standard with pavers instead of grass, and with trees in tree grates. The proposed frontage works would contribute to setting a character for the university precinct. A lay-by or parking pocket, fronting the subject property would allow for two to three parking stalls. The lay-by parking would be available to the public on a short-term basis, and could accommodate drop-off / pick-up and visitors to the student housing development. The proposed frontage works are shown on the site plan (Attachment B).

Staff recommends that the conceptual frontage works including a lay-by and street trees be covenanted, with technical details to be determined through detailed design review at Design Stage Acceptance (DSA).

Housing Agreement
A condition of use within the RM-12 zone will require a Housing Agreement for any student housing use. The Housing Agreement will be required to be registered at the Victoria Land Title Office prior to issuance of a development permit for the student housing project. The terms of the agreement will include, but are not limited to:

- the use of the building will be restricted to student housing, and cannot be converted to any other form of lodging;
- definition of 'Student'; only a bona fide student will be permitted to reside in the building;
- a live-in manager or caretaker will be required;
- maintenance of onsite parking spaces;
- parking spaces to be used by residents only;
- monitoring and reporting of parking supply and demand for a period after building occupancy;
- maintenance of onsite bicycle storage facilities; and
- development and maintenance of a Management Plan for the operations of the facility.

Lot Consolidation
The existing house straddles two legal lots; therefore, as a condition of rezoning, Staff recommends that lot consolidation be required prior to consideration of final adoption of the bylaw.

Rain Water Management
Staff recommends that a covenant be required as a condition of rezoning to restrict post-development flows from the site to pre-development levels and patterns. The applicant would be required to consider rain water management at the development permit stage as this could impact the landscaping and surface materials.

Community Contribution

As outlined in Section 7.3 of the OCP, in exchange for value conferred on land through a rezoning, the applicant should provide a community contribution. In response to Council's policy, the applicant is proposing a monetary contribution of $7500 towards the City of Nanaimo Affordable Housing Legacy Fund. The contribution equates to $300 per unit, which aligns with a typical multi-family development contribution of $1000 per unit, considering the size of the proposed units are approximately a third of the size of a standard multi-family unit.

The applicant has also requested that the works and services along the site frontage be considered as a partial community contribution due to the enhancement of the sidewalk to include incorporation of the lay-by for additional parking and street trees; which go beyond the typical road standard.

Staff support this proposal and recommend that Council direct Staff to secure the community contribution.

Respectfully submitted,

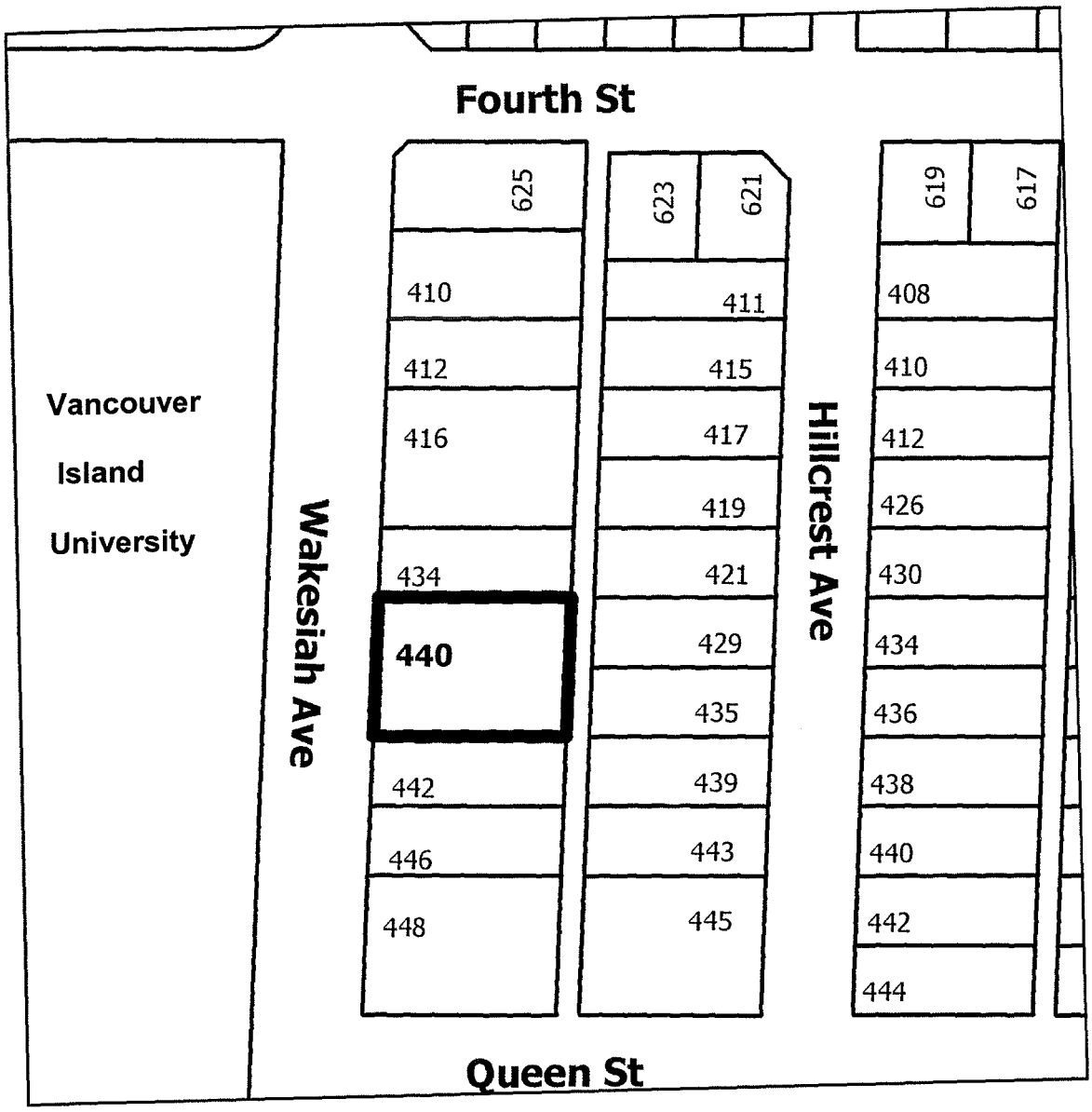
J. Holm
Manager, Current Planning
Community Safety & Development

A. Tucker
Director of Planning
Community Safety & Development

DS/pm/hd
Council: 2010-SEP-13
Prospero: RA242

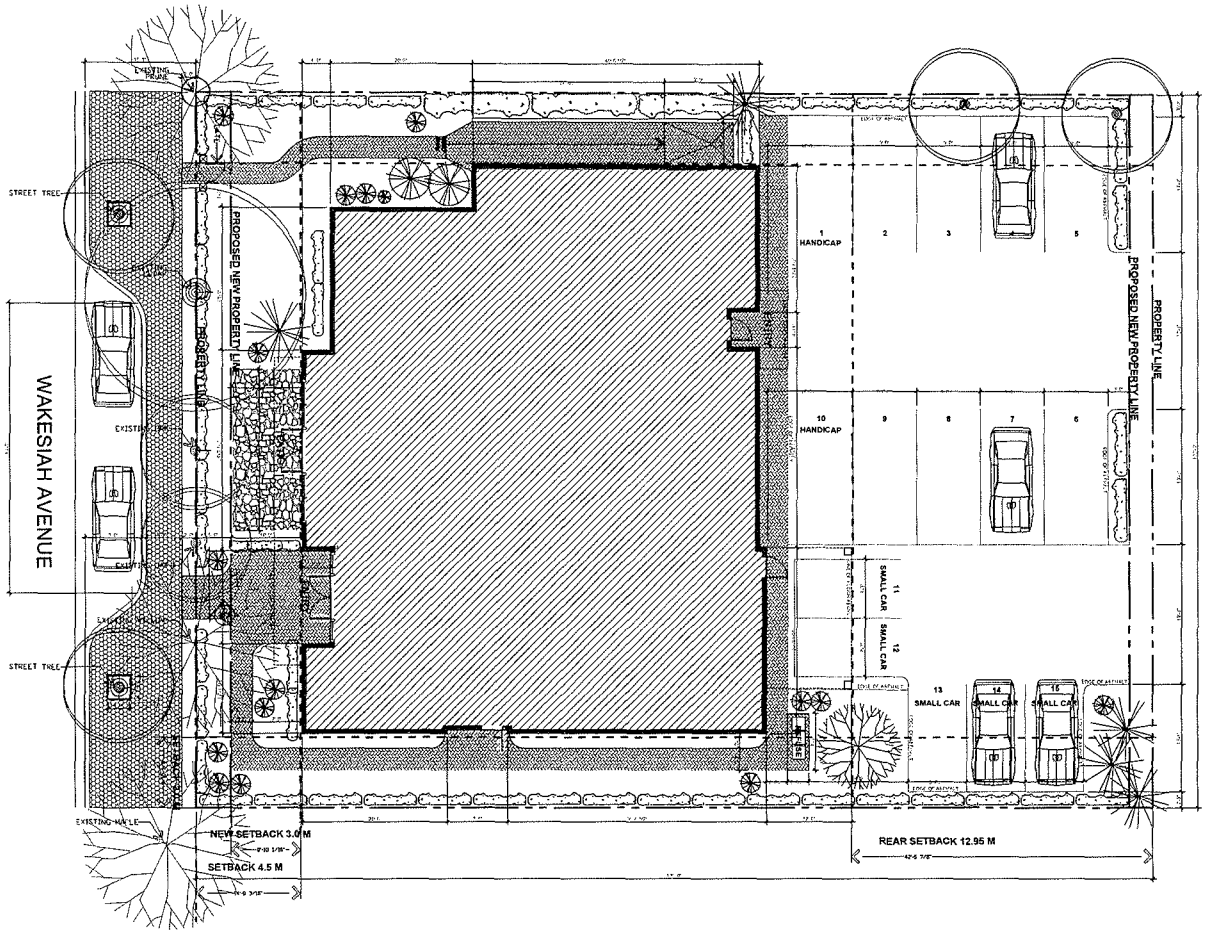
Ted Swabey, General Manager
Community Safety & Development

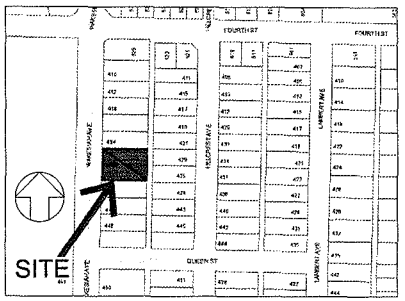
ATTACHMENT A



File: RA000242
Civic: 440 Wakesiah Avenue

LOCATION PLAN





CIVIC ADDRESS:
440 WAKESIAH AVENUE, NANAIMO, BC

LEGAL ADDRESS:
LOT 5 AND 6, BLOCK 2, SECTION 1, NANAIMO DISTRICT,
PLAN 1325
FOLIO 17251.000
PID 002167093 & 002167085

EXISTING ZONING: RS-1A

project data

BASEMENT 777.9 SQ.FT. 72.27m2
LEVEL 1 5169.4 SQ.FT. 480.25m2 8 units (12 beds)
LEVEL 2 4670.4 SQ.FT. 433.89m2 9 units (13 beds)
LEVEL 3 4088.2 SQ.FT. 379.81m2 8 units (12 beds)

TOTAL 25 units (37 beds)

TOTAL FLOOR AREA 14,396.5 SQ.FT. 1337.5m2

SITE AREA	13,767 SQ.FT.	1279m2	
BUILDING COVERAGE	5868.9 SQ.FT.	545.24m2	42.43%
OUTSIDE AMENITY AREA	1347.48 SQ.FT.	125.185m2	
INSIDE AMENITY AREA	1658.17 SQ.FT. X 2 = 3316.34	308.1m2	

FAR = (Total Floor Area - (Inside Amenity Area X 2))/Site Area
(14,396.5-3316.34)/13,767 = 0.8

SETBACKS:	FRONT SETBACK	14.76 FT.	4.5m
	LEFT SIDE SETBACK	9.84 FT.	3m
	RIGHT SIDE SETBACK	9.84 FT.	3m
	BACK SETBACK	42.49 FT.	12.95m

BUILDING HEIGHT: 41.5 FT. 12.67m

PARKING: 9 REGULAR PARKING SPACES
5 SMALL CAR PARKING SPACES
1 HANDICAP PARKING SPACE
TOTAL 15 PARKING SPACES

ATTACHMENT B (1 OF 4)

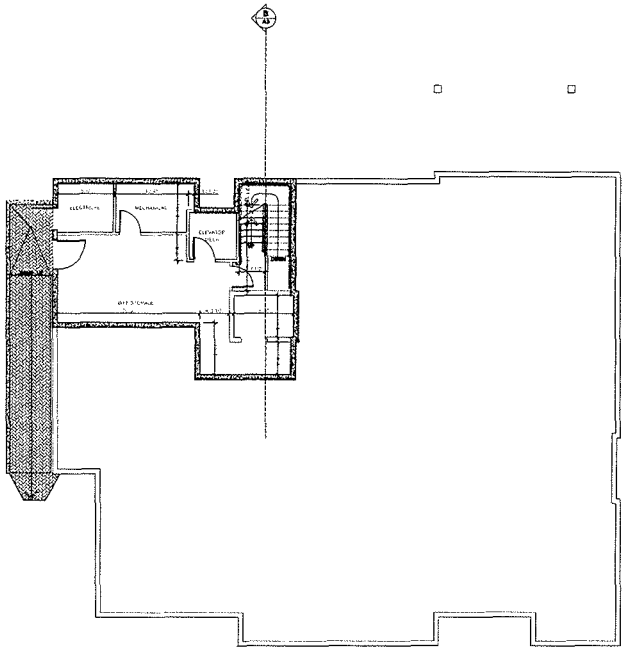
ian a. niamath architect

440 Wakesiah Student Housing

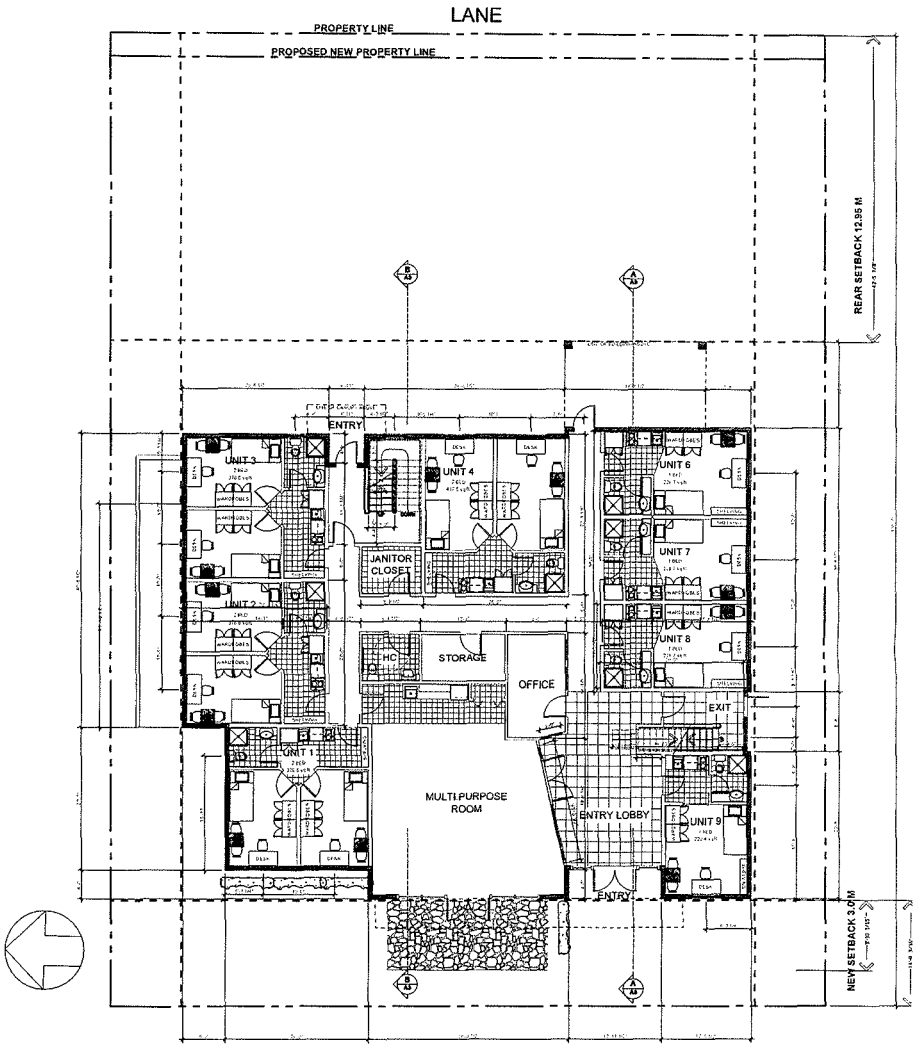
sept. 1, 2010
scale: 1/8" = 1'

A1

site and landscaping plan & project data



BELOW GRADE LEVEL FLOOR PLAN
777.9 SQ.FT.



WAKESIAH AVENUE

8 UNITS (12 BEDS)
GROUND LEVEL FLOOR PLAN
4660 SQ.FT.

ATTACHMENT B (2 OF 4)

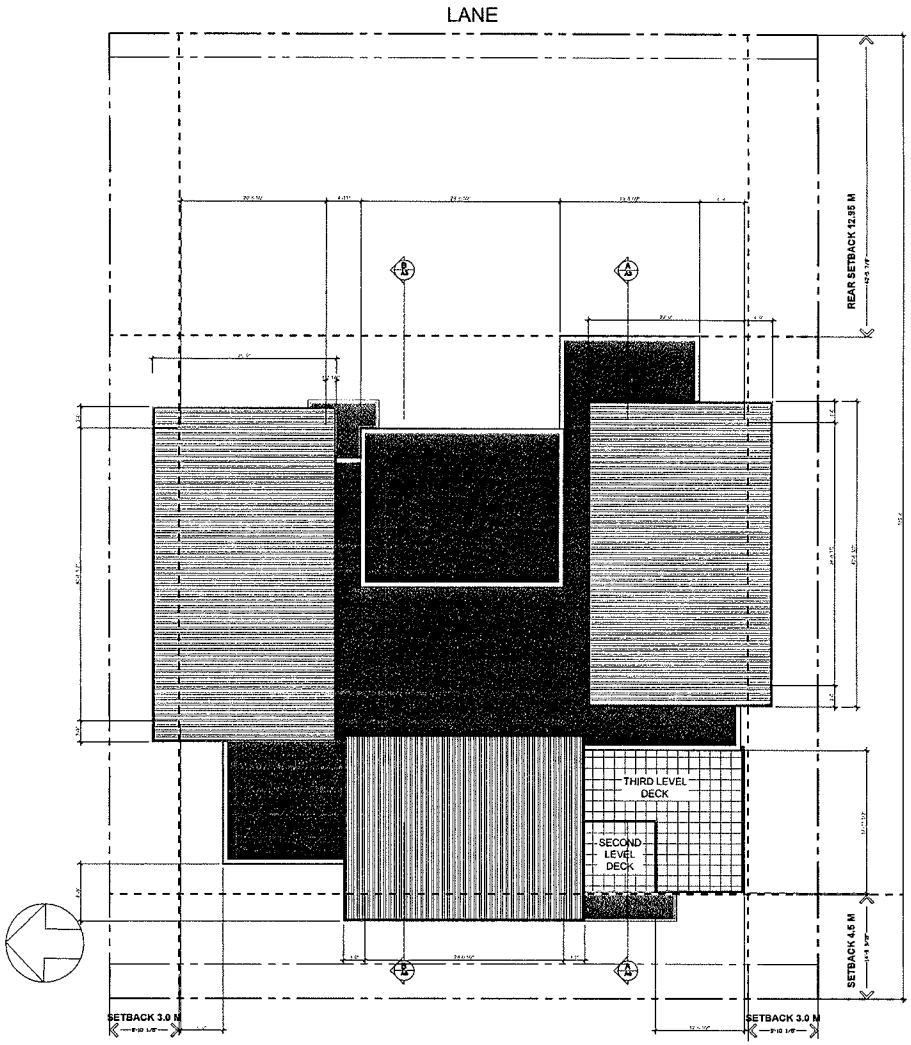
ian a. niamath architect

440 Wakesiah Student Housing

aug. 03, 2010
scale: 1/8" = 1'

A2

first level floor plan



ROOF PLAN

SITE COVERAGE 5868.9 SQ.FT. 42.43%

ATTACHMENT B (4 OF 4)

ian a. niamath architect

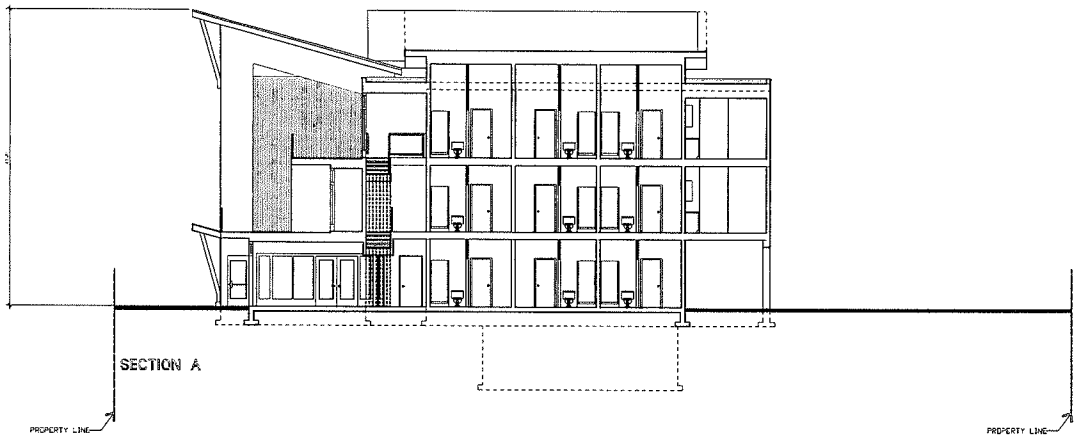
440 Wakesiah Student Housing

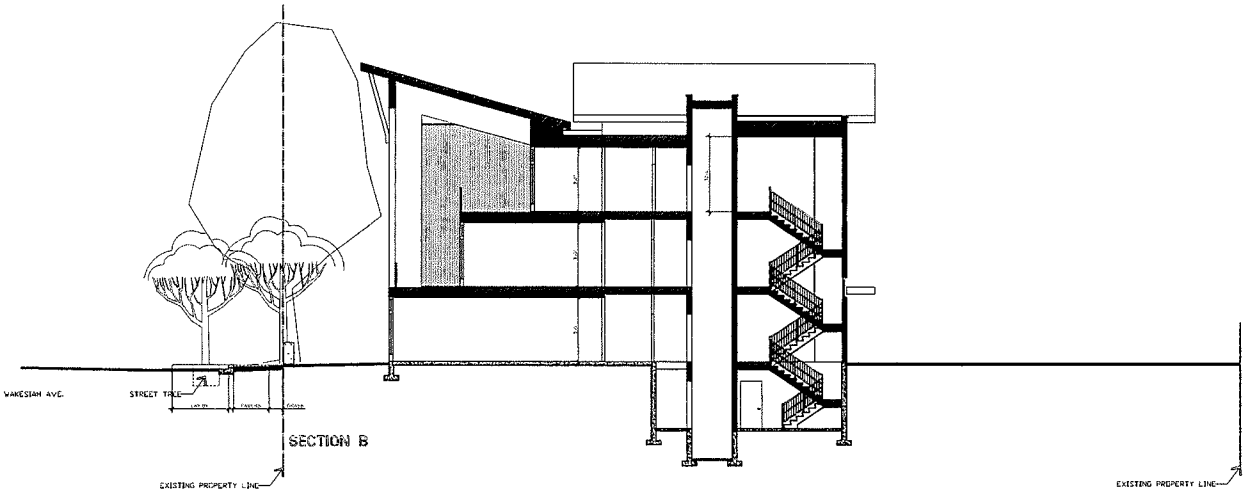
sept. 1, 2010

scale: 1/8" = 1'

A4

third level floor plan





ATTACHMENT C (2 OF 2)

ian a. niamath architect

440 Wakesiah Student Housing

sept. 1, 2010
scale: 1/8" = 1'

A6

sections

ATTACHMENT E

Walkability of the Neighbourhood surrounding 440 Wakesiah Avenue

Grocery Stores	**Distance in Kilometres**	**Distance in Miles**
College Grocery	0.08 kms	0.04 miles
Quality Foods (University Village)	0.71 kms	0.44 miles
Tin Tin Market	0.85 kms	0.52 miles
Fairview Corner Store	01.1 kms	0.68 miles
Thrifty Foods (Port Place Mall)	2.02 kms	1.25 miles
Restaurants		
Bada Bing Pizza	0.04 kms	0.02 miles
Yangs Cuisine	0.29 kms	0.18 miles
Sharkey's Express (NAC)	00.6 kms	0.37 miles
Gateway to India	0.85 kms	0.52 miles
Coffee Shops		
Sharkey's Express (NAC)	00.6 kms	0.37 miles
Starbuck's Coffee (University Village)	0.71 kms	0.44 miles
Bocca Café	1.61 kms	0.37 miles
Thirsty Camel	2.01 kms	1.24 miles
Drug Stores		
Shoppers Drug Mart (University Village)	0.71 kms	0.44 miles
Central Drugs	1.81 kms	1.12 miles
London Drugs (Port Place Mall)	2.02 kms	1.25 miles
Bookstores		
Well Read Books	1.96 kms	1.21 miles
Christian Book Store	2.87 kms	1.78 miles
Miscellaneous		
Vancouver Island Library (Downtown)	1.98 kms	1.23 miles
Nanaimo Aquatic Centre	0.56 kms	0.34 miles
Nanaimo Ice Centre	0.58 kms	0.36 miles
Downtown – Commercial Street	2.02 kms	1.25 miles

CITY OF NANAIMO

BYLAW NO. 4000.399

A BYLAW TO AMEND THE CITY OF NANAIMO "ZONING BYLAW 1993 NO. 4000"

WHEREAS the Council may zone land, by bylaw, pursuant to Sections 890, 891 and 903 of the *Local Government Act*;

THEREFORE BE IT RESOLVED the Municipal Council of the City of Nanaimo, in open meeting assembled, ENACTS AS FOLLOWS:

1. This Bylaw may be cited as the "ZONING BYLAW AMENDMENT BYLAW 2006 NO. 4000.399".

2. The City of Nanaimo "ZONING BYLAW 1993 NO. 4000" is hereby amended as follows:

   (1) By deleting the following conditions for Air Conditioners / Heat Pumps from Subsection 5.4.1. (projections into yards):

Feature	Permitted in a required yard setback			Conditions
	Front	Side	Rear	
Air Conditioners / Heat Pumps	No	Yes	Yes	None

   (2) By adding Subsection 5.5.8. as the following:

   Heat pumps and central air conditioning units must be located to the rear of a principal building and shall not be closer than 4.5 metres (14.7 feet) from the side lot lines or 3.0 metres (9.8 feet) from the rear property line.

3. "ZONING BYLAW AMENDMENT BYLAW 2006 NO. 4000.394" is hereby repealed.

PASSED FIRST AND SECOND READINGS 2006-AUG-14
PUBLIC HEARING HELD 2006-SEP-07
RECONSIDERED AT SECOND READING _____
PASSED THIRD READING _____.
APPROVED BY MINISTRY OF TRANSPORTATION _____.
ADOPTED _____.

File: 3900 30 ZA1 76
G:\DEVPLAN\FILES\ADMIN\BYLAWS\Bylaw 4000\4000.300 to 4000.399\4000.399.doc

FILE COPY

2010-JUL-08

STAFF REPORT

REPORT TO: E.C. SWABEY, GENERAL MANAGER,
COMMUNITY SAFETY & DEVELOPMENT

FROM: A. TUCKER, DIRECTOR OF PLANNING, COMMUNITY SAFETY & DEVELOPMENT

RE: HEAT PUMPS

STAFF'S RECOMMENDATION:

That Council receive the report pertaining to reconsideration of "ZONING AMENDMENT BYLAW 2006 NO. 4000.399" at Second Reading requiring heat pumps and central air conditioning units to be located at the rear of a principal building and no closer than 4.5 meters (14.7 feet) from side lot lines or 3 meters (9.8 feet) from the rear property line, which is presented under the Bylaws section of the agenda.

EXECUTIVE SUMMARY:

The issue of noise from heat pumps in the City of Nanaimo was brought to Staff and Council attention through complaints in 2006. Without regulations regarding the placement of heat pumps, installers were not required to consider the implications the installation might have with respect to noise pollution, occasionally resulting in an installation that was disruptive to the neighbours.

Council responded to the complaints by having Staff prepare an amendment to the Zoning Bylaw that would regulate their placement. Due to an administrative error that bylaw is deemed to be invalid. A second zoning amendment bylaw was prepared and went to a Public Hearing. However, on 2006-SEP-11 when the zoning amendment was returned for Council consideration of Third Reading, Council referred the matter back to Staff to investigate the issue of sound measurement.

Staff has researched the matter and consulted with local industry professionals, other local governments, the City solicitor and an acoustical engineering firm.

A considerable amount of time has elapsed since this issue was first considered by Council. The purpose of this report is to put the matter of siting heat pumps before Council for further consideration. If Council is in support of the recommendation a second Public Hearing will be held to seek public input.

BACKGROUND:

On 2006-MAR-20, Council considered a report on noise from heat pumps as a result of complaints regarding three heat pumps in the Stephenson Point neighbourhood.

Council, at its regular meeting of 2006-MAY-29, received a further report regarding noise abatement options for heat pumps. At that meeting, Council directed Staff to prepare a zoning amendment that would regulate the siting of these units. "ZONING AMENDMENT BYLAW 2006 NO. 4000.394" was subsequently given First and Second Readings on 2006-JUN-12, sent to Public Hearing and the Ministry of Transportation (MoT) for approval, and was adopted on 2006-JUL-24.

However, due to an administrative error, an earlier draft of the bylaw was inadvertently placed on the 2006-JUL-24 Council agenda, resulting in the adoption of a bylaw that differed from the bylaw that had received First and Second Readings and went to Public Hearing. As such, Staff does not consider Bylaw No. 4000.394 to be valid and presented a new zoning amendment bylaw for consideration.

Council, at its meeting of 2006-AUG-14, passed First and Second Readings of "ZONING AMENDMENT BYLAW 2006 NO. 4000.399", which was subsequently sent to Public Hearing 2006-SEP-07 and to the MoT for approval. At its meeting of 2006-SEP-11, Council referred Bylaw No. 4000.399 back to Staff to investigate the issue of sound measurement for heat pumps.

Staff have since completed an extensive review of sound measurement and changes to heat pump design (Schedule A). Staff have concluded that, in response to changes in provincial and federal regulations, newer heat pump models are quieter than previous models. Industry representatives, who were consulted as part of this review, acknowledge that the quietest models tend to be the more expensive ones but that customers, through correct model selection and proper installation, are seeking to minimize the noise heat pumps make for their own enjoyment and that of their neighbours.

Staff does not support the introduction of a Noise Bylaw to address this issue. Wakefield Acoustics Ltd. of Victoria, BC has pointed out the numerous difficulties and complications with sound measurement, for example:

- Does the bylaw refer to peak sound levels or average?
- Does the sound level need to occur for a particular period of time?
- Where is the measurement taken from?
- How do you consider ambient sound levels?

Staffing levels in Bylaw Services would likely have to increase in response to additional calls for service for noise complaints, although the number of complaints currently received regarding heat pumps is relatively low (less than 5 per year). Complaints would likely increase in response to bylaw enactment. Staff would also have to purchase and maintain specialized equipment and receive training in order to properly gather evidence and administer the bylaw, including how to defend any enforcement action in a court of law, as it could be expected that a number of offenders would challenge the subjectiveness of noise measurement and regulations.

The City's solicitors are of the opinion that the courts are usually relatively tolerant of noises created by what is perceived to be ordinary daily activity. It is unlikely a Noise Bylaw could be used to enforce noise created by a heat pump which is being operated in accordance with specifications applicable to the heat pump unless, for some reason, the noise being created was so excessive as to be a radical departure from the level of noise generally created by this type of equipment.

Staff has spoken to two local governments that have adopted Noise Bylaws. The City of Victoria has maximum decibel levels specified in their Noise Bylaw; however, heat pump noise has been below bylaw levels, thus enforcement has not been required. Burnaby has a Noise Bylaw similar to Victoria but has limited complaints raised over heat pumps. Kelowna, Kamloops and Prince George Noise Bylaws were also examined, but do not contain any regulations pertaining to heat pumps.

The preferred option is to restrict the siting of heat pumps by amending the Zoning Bylaw. The proposed bylaw would prohibit heat pumps from front and side yards. Heat pumps (and central air conditioning units) would be restricted to the rear of the principal building and not closer than 4.5 meters (14.7 feet) from side lot lines and 3.0 meters (9.8 feet) from the rear property line.

This option would not deal with existing heat pumps as it would only affect future installations. Existing heat pumps would become 'grand-fathered' and, therefore, exempt.

Respectfully submitted,

A. Tucker
Director of Planning
Community Safety & Development

E.C. Swabey
General Manager
Community Safety & Development

AT/pm/hd
Council: 2010-JUL-12
Prospero: G:\DEVPLAN\FILES\LEGIS\3900\30\ZA107\2010Jul12 Cncl Rpt Heat Pumps.docx

Schedule A – Heat Pumps & Measuring Sound

What is a decibel?

The decibel (dB) is widely known as a measure of sound pressure level. The decibel (dB), used to measure sound level, is a logarithmic unit which describes a ratio. The definition of the logarithm of a number "a" (to base 10) is $10^{\log a} = a$. In other words, the log of the number "a" is the power to which you must raise 10 to get the number "a".

When the decibel is used to give the sound level for a single sound rather than a ratio, then a reference level must be chosen. For sound intensity, the reference level (for air) is usually chosen as 20 micropascals, or 0.02 mPa. (This is very low: it is 2 ten billionths of an atmosphere. Nevertheless, this is about the limit of sensitivity of the human ear, in its most sensitive range of frequency.)

How does sound level depend on distance from the source?

A source that emits radiation equally in all directions is called isotropic. Consider an isolated source of sound, far from any reflecting surfaces -- perhaps a bird singing high in the air. Imagine a sphere with radius r, centred on the source. The source outputs a total power P, continuously. This sound power spreads out and is passing through the surface of the sphere. If the source is isotropic, the intensity I is the same everywhere on this surface, by definition. The intensity I is defined as the power per unit area. The surface area of the sphere is $4\pi r^2$, so the power (in our example, the sound power) passing through each square metre of surface is, by definition: $I = P/4\pi r^2$.

So we see that, for an isotropic source, intensity is inversely proportional to the square of the distance away from the source: $I_2/I_1 = r_1^2/r_2^2$.

But intensity is proportional to the square of the sound pressure, so we could equally write:
$p_2/p_1 = r_1/r_2$.

So, if we double the distance, we reduce the sound pressure by a factor of 2 and the intensity by a factor of 4: in other words, we reduce the sound level by 6 dB. If we increase r by a factor of 10, we decrease the level by 20 dB, etc.

It is important to note, however, that many sources are not isotropic, especially if the wavelength is smaller than, or of a size comparable with the source. Further, reflections are often quite important, especially if the ground is nearby, or if you are indoors.

Not all sound pressures are equally loud.

This is because the human ear does not respond equally to all frequencies: we are much more sensitive to sounds in the frequency range about 1 kHz to 4 kHz (1000 to 4000 vibrations per second) than to very low or high frequency sounds. For this reason, sound meters are usually fitted with a filter whose response to frequency is a bit like that of the human ear. The readings are still different from loudness, however, because the filter does not respond in quite the same way as the ear.

The ear is capable of hearing a very large range of sounds: the ratio of the sound pressure that causes permanent damage from short exposure to the limit that (undamaged) ears can hear is more than a million. To deal with such a range, logarithmic units are useful: the log of a million is 6, so this ratio represents a difference of 120 dB. Psychologists also say that our sense of hearing is roughly logarithmic. In other words, they think that you have to increase the sound intensity by the same factor to have the same increase in loudness. Experimentally it has been found that a 10 dB increase in sound level corresponds approximately to a perceived doubling of loudness.

How loud is loud?

On the decibel scale, the smallest audible sound (near total silence) is 0 dB. A sound 10 times more powerful is 10 dB. A sound 100 times more powerful than near total silence is 20 dB. A sound 1,000 times more powerful than near total silence is 30 dB. How loud is an aircraft? A train? A person singing? A dog barking? A power tool? The answers to these questions vary considerably. We all know from experience that distance affects the intensity of sound -- if you are far away, the power is greatly diminished. It also depends strongly upon whether you are indoors or not, whether there is reverberation, how strong the particular source is and what its spectrum is. To give values, without being very specific about the conditions, would be somewhat misleading.

That being said, the following is a list of some common sounds and their decibel ratings taken while standing near the sound:

1. Near total silence – 0 dB
2. A whisper – 15 dB
3. Quiet office or Library – 40 dB
4. Refrigerator – 50 dB
5. Coffee Percolator – 55 dB
6. Normal conversation – 60 dB
7. Television Audio or Freeway Traffic – 70 dB
8. Whistling Kettle or Manual Machine – 80 dB
9. Hand Saw – 85 dB
10. A lawnmower or truck – 90 dB
11. Electric Drill – 95 dB
12. Snowmobile – 100 dB
13. Snow Blower – 105 dB
14. A car horn – 110 dB
15. A rock concert or a jet engine - 120 dB
16. A gunshot or firecracker - 140 dB

Heat Pumps

All heat pumps produce noise. They all have a powerful fan, which directs outside air to ensure that all the coils are cooled. In addition to this noise, there is also the noise of the compressor itself and the noise of the refrigerant gas circulating.

A local air conditioning technologist, Dave Harwood, conducted a survey of sound levels from local heat pump installations and found that at a distance of 5 feet, the readings ranged from 68 dB to 76 dB. This means that some of the heat pumps presently installed here in Nanaimo are about ten times as loud as others.

While there are currently no industry standards governing allowable noise levels produced by heat pumps, manufacturers usually publish this information in their product literature. The ratings are given in bels. The bel ratings increase as the heat pumps get louder.

Canada Mortgage and Housing Corporation (CMHC) has issued a research report, *Study of the Noise Generated by Heat Pumps*, following a research project on the noise generated by heat pumps. The objectives of the study were to analyze the noise pollution mode of the most commonly used heat pumps in residential areas; study the possibility of a simple noise reduction device to confine the noise produced by this type of residential utility; to verify to what extent this device had to be adapted to each of the various machines; and finally, to ensure that the selected device would not reduce the thermal capacities of the pumps.

The report concluded as follows:

> "The noise levels produced vary depending on the power of the pumps, their technology, when they were manufactured, their degree of wear and tear, and how they are placed around the residences.
>
> "Avoid placing the pumps near neighbouring windows or near reflecting surfaces such as a wall or hard-packed soil which can aggravate the noise situation. Nevertheless, regardless of the situation, it is always possible build a noise attenuation device around heat pumps.
>
> "An effective muffling device must be installed as close as possible to the casing of the heat pump and include appropriate mufflers for the pump's air intake and exhaust points, in addition to an insulated central envelope. Unfortunately, one device cannot be designed to fit all pumps; it has to be designed and built in accordance with the dimensions and characteristics of each particular heat pump model. If necessary, this device can be supplemented by coating the closest wall with an absorbent material to control sound reflection.
>
> "A well designed muffler will not affect the thermal performance of the heat pumps. It is possible that thermal performance may be enhanced due to better air flow separation at the intake and exhaust points. For a robust model in thick galvanized steel, the cost of a noise muffler may vary between $400.00 and $600.00. This should not be considered exorbitant when this device can ensure the tranquillity of your neighbourhood."

The CMHC study measured noise levels of 80 heat pumps in Quebec City at a distance of one meter from each unit and found them to range from 52.5 to 70.6 dB. The study also found that when equipped with mufflers, a reduction in noise levels of 11 dB to in excess of 16dB was observed, bringing the noise levels between those of a quiet office or library (40 dB) and normal conversation (60 dB).

There are a number of things that contribute to how noisy an individual heat pump may be. These include the type of heat pump, where it is located, the matching of the heat pump and fan coil, duct sizing and refrigerant charge.

Although the location of the heat pump significantly impacts how "noisy" it is perceived to be, it is difficult to minimize noise simply by legislating placement as individual situations differ dramatically. Thought should be given to locating a heat pump away from windows and decks of neighbouring buildings, but of course every situation has its own idiosyncrasies; different structures and site characteristics reflect sound more than others. Certain sites can also 'tolerate' a higher level of noise given their surroundings. The only way to truly limit the noise produced is to have the right heat pump installed by the right individual.

Several things contribute to ensuring the right heat pump is selected and correctly installed. It is very important to install the correct size of heat pump for the building it will service. If the unit is not sized correctly, the heat pump will either not run long enough, creating undue noise relating to frequent starting and stopping, or run too long, also creating undue noise. The correct size and design of the air distribution system will also influence the amount of noise produced. Correctly placing the thermostat so that it does not register "false loads" also aids in ensuring the heat pump functions properly and produces as little noise as possible. Proper sizing and layout of the refrigeration pipes will limit compressor noise as well as "wear and tear" on the heat pump itself. Finally, a competent installer will take all of the above noted items into consideration as well as perform such seemingly minor things as changing the vacuum oil after each installation, which can reduce noise.

Times Are Changing

Older, noisier and less efficient heat pumps are slowly being phased out. More than 95 percent of commercial and residential air conditioning units and more than 50 percent of commercial refrigeration equipment in Canada operate on Hydrochlorofluorocarbon (HCFC) refrigerants (primarily R-22). HCFCs are a controlled substance under the Canadian Environmental Protection Act, 1999, and its Ozone-depleting Substances Regulations, 1998, because of their ozone-depleting potential.

Under the terms of the Montreal Protocol, an international treaty to protect the earth's ozone layer and phase-out the production and importation of ozone-depleting substances, the production and consumption of HCFCs will be phased out in developed countries over the coming years. By 2010-JAN-01, 65 percent of HCFC refrigerants currently imported into and manufactured in Canada on an annual basis will be eliminated from the supply chain and no HCFC-22 (R-22) equipment will be manufactured in or imported into Canada. By 2030 no HCFCs will be imported into or manufactured in Canada. The refrigerant used to replace R-22 is known as R-410A.

R-410A is not a CFC or an HCFC. It is called an HFC, or hydrofluorocarbon, and is made of hydrogen, fluorine, and carbon atoms. Because it has no chlorine, it won't interact with the ozone layer once it breaks down. R-410A air conditioning and heat pumps are today's "state of the art" systems, and utilize the most current technology available for efficient and reliable operation, making them more reliable than R-22 systems.

R-410A offers some wonderful advantages, but it required the manufacturers of air conditioners to redesign their products to take advantage of the properties of the refrigerant. A refrigerant works because it captures the heat from one place, and then releases it somewhere else. R-410A captures heat and then releases it better than R-22 did, so manufacturers have found that they need fewer refrigerants in an R-410A system than in one that used R-22. Because there is less refrigerant, they need less copper tubing, and often can use a smaller compressor.

The heart of every air conditioner or heat pump is the compressor. Since newer systems are specifically designed to use R-410A refrigerant which can absorb and release heat more efficiently than R-22 could, the compressors run cooler than R-22 systems, reducing the risk of burnout due to overheating.

All air-conditioning systems use an oil that circulates through the inside of the system to keep all of the parts well lubricated. R-22 air conditioners use an oil known as "mineral oil" that has been used for decades. R-410A air conditioners use newer synthetic lubricants that are usually more soluble with the R-410A than the old mineral oils are with the older R-22 refrigerants. This means the synthetic lubricants and R-410A can mix and circulate more efficiently to keep the compressor and other moving parts lubricated, reducing wear and extending their life. Also, just as many new cars use synthetic oils because they are less likely to break down under high stress and heat, the new synthetic oils used in R-410A air conditioners are less likely to break down under extreme conditions.

Some products using R-410A have experienced a side benefit: a higher seasonal energy efficiency ratio (SEER) by as much as one full point. SEER is the efficiency measure for central air conditioners and heat pumps. The higher the SEER number, the more efficient the unit and the lower the operating costs. 12 is the minimum SEER permitted as of 2006.

Some units have a SEER of up to 17 or 18. Each increase in the SEER by one reduces cooling costs by about 10 percent. Improving energy efficiency reduces greenhouse gases and helps slow climate change. As reported on National Resource Canada's Office of Energy Efficiency's website, technicians must be certified and trained to install and service R-410A.

Efficiency
At 10°C, the coefficient of performance (COP) of air-source heat pumps is typically about 3.3. This means that 3.3 kilowatt hours (kWh) of heat are transferred for every kWh of electricity supplied to the heat pump. At -8.3°C, the COP is typically 2.3. The COP decreases with temperature because it is more difficult to extract heat from cooler air. However, the heat pump compares favorably with electric resistance (baseboard) heating (COP of 1.0) even when the temperature falls to -15°C.

Energy Savings
Heating costs may be reduced by up to 50 percent by converting from an electric furnace to an all-electric air-source heat pump. More advanced designs of air-sourced heat pumps con provide domestic water heating. Water heating can be provided with high efficiency in this way, reducing water heating bills by 25 to 50 percent.

Options
The preferred option is to restrict the siting of heat pumps by amending the Zoning Bylaw. This option alone would not deal with existing heat pumps as it would only affect future installations while existing heat pumps would become 'grand-fathered' and therefore exempt.

Existing Heat Pumps
There are several things that can be done to mitigate the sound produced by existing, problematic heat pumps. The unit could be mounted on a noise-absorbing base. Shrubs or some other obstruction could be placed between the offending heat pump and the neighbour. Perforated insulation panels can be installed adjacent to the heat pump to help absorb the sound. Mufflers are available for installation on the discharge line from the heat pump, which can be installed on existing systems to help limit the sound, produced. Compressor blankets are also available to wrap around the compressor and dampen the sound they produce.

Respectfully submitted,

_____

J. D. Kinch
Manager, Building Inspections
Community Safety & Development

JK/AT/pm
G:Devplan/Files/Legis/3900/30/ZA1-07/Measuring Sound – Heat Pumps - Schedule A.docx
Council: 2010-JUL-12