

RE: PROPOSED RESIDENTIAL BULK STANDARDS

MUNICIPAL MANAGER'S RECOMMENDATION:

1. THAT the recommendations of the Director Planning & Building Inspection be adopted.

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TO: MUNICIPAL MANAGER 1987 MARCH 11
FROM: DIRECTOR PLANNING & BUILDING INSPECTION OUR FILE: 02.240
SUBJECT: PROPOSED RESIDENTIAL BULK STANDARDS
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RECOMMENDATIONS:

1. THAT the Municipal Solicitor be authorized to prepare an Amendment Bylaw to the Burnaby Zoning Bylaw to effect the text amendments referred to in Section 2.0 of this report, and that the Bylaw be advanced for First Reading on 1987 March 23.
2. THAT the Bylaw be advanced to a Public Hearing to be held 1987 April 14 at 7:30 p.m.

R E P O R T

- 1.0 In recent months, Council has given considerable attention to the issues revolving around the excessive building bulk that is being developed in increasing degrees and with increasing frequency in our neighbourhoods, and on the impacts that such development has on the community. Numerous submissions from the public have been received, and several staff reports have been presented on the subject, dating from 1985 October 28. As a result of Council's consideration, it has been concluded that it is necessary and appropriate to amend various sections of the Zoning Bylaw to provide effective standards and prevent excessive, obtrusive single-family development.
- 2.0 Recommendations have been advanced by staff in this regard, and are primarily contained in the following report items, which are reproduced and attached for reference:
 - Attachment #1: Item 11, Manager's Report #68, 1985 October 28 (proposed amendments are summarized in Section "F", Page 15).
 - Attachment #2: Item 7, Manager's Report #9, 1987 February 09 (proposed amendments are summarized in Section 4.3, Page 4).Inasmuch as the recommendations of those reports are incorporated in the present recommendations, it is not necessary to bring back the referred Items 11 and 7.

In the course of further discussion and consideration, revisions have been proposed to two elements of the proposed regulations:

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- 2.1 A minor adjustment should be considered for the proposed definition of "Coverage" (which appears on page 16, Attachment #1). In recognition of the fact that "balconies" are excluded from lot coverage, and that the bulk manifest by projecting sundecks that are not covered and are not enclosed beneath is relatively insignificant, it appears to be appropriate to allow the exclusion of sundecks as well.

Accordingly, it is proposed that the following change be incorporated in the proposed regulations:

- (a) in the definition of "Coverage", following the words "uncovered swimming pools;" add the words "and uncovered sundecks provided the space beneath is not enclosed;"
- (b) in the definition of "Sundeck", following the words "wall of a building" add the words "which is accessible from the interior space of the building, and may be used as the covering for a carport, and which except for a guard rail, is not enclosed."
- 2.2 An exception to the R9 coverage provisions may be warranted in the special case of small lots (33 feet in width or less) having R9 zoning where they are proximate to R5-zoned properties of similar dimension. The exception would allow a small R9 lot to experience the same coverage as an equivalent R5 lot, provided at least one similar R5-zoned lot of record with a width of 33 feet or less exists within the block front. The purpose of such an exception is to provide equity by offering the same lot coverage opportunity to the R9 lot in instances where there is a nearby R5 small lot, while still maintaining the principle of somewhat lower density for R9 lots in general.

To effect this it is proposed that a further section be introduced in the proposed bylaw, following the Development Density provision in the R9 District schedule (which appears on Page 4, Attachment #2), to state the exception:

"...Provided that for an R9 lot having a width of 10.06 m (33 feet) or less, when located in a block front in which an R5 lot of record also having a width of 10.06 m (33 feet) or less exists, the development density shall not exceed

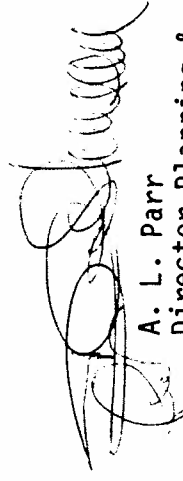
50% lot coverage for a lot occupied by a single-storey building,

33-1/3% lot coverage for a lot occupied by a one-and-a-half storey building,

25% lot coverage for a lot occupied by a two-storey building,

20% lot coverage for a lot occupied by a two-and-one-half storey building."

- 3.0 It would be appropriate at this time to request that the Municipal Solicitor now draft the proposed text amendments in Bylaw form, for the Bylaw to be brought forward for First Reading on 1987 March 23, and for the amendments to be advanced to a Public Hearing on Tuesday, 1987 April 14, at 7:30 p.m.



A. L. Parr
Director Planning &
Building Inspection

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RE: RESIDENTIAL BULK STANDARDS FOR SINGLE FAMILY DWELLINGS
 (Item No. 3 e, Correspondence & Petitions, 1985 October 15)

ATTACHMENT #1

MUNICIPAL MANAGER'S RECOMMENDATION:

1. THAT the recommendation of the Director Planning & Building Inspection be adopted.

* * * * *

TO: MUNICIPAL MANAGER 1985 October 17

FROM: DIRECTOR PLANNING & BUILDING INSPECTION Our File: 02.240

SUBJECT: RESIDENTIAL BULK STANDARDS FOR SINGLE FAMILY DWELLINGS

RECOMMENDATION:

1. THAT the Council receive the report of the Planning & Building Inspection Department and authorize the preparation of a by-law by the Municipal Solicitor to permit the introduction of the proposed text amendments, as outlined in Section "F", into the Burnaby Zoning By-law, and that these amendments be advanced to a Public Hearing on 1985 December 17 at 19:30h.

SUMMARY:

A growing number of complaints concerning the construction of what appear to be excessively large single family dwellings that are clearly out of scale with adjacent residences has prompted the Council to request the Planning and Building Inspection Department to review the situation and to come forward with a report containing measures designed to reduce the impact of large residential structures on their surroundings.

As a part of the review process, existing bulk regulations and standards are examined, together with recent examples of single family house developments in each of the residential zoning district categories. Building bulk controls for single family dwellings in a number of other Municipalities are then reviewed and compared with those which currently apply in Burnaby.

This is followed by an examination of various building bulk control measures with a view to developing standards that would be designed to inhibit the future development of excessively large single family dwellings, while maintaining the basic format of our current regulations. From this analysis, certain changes are proposed, together with an explanation of their intent. The major changes being proposed include revised coverage regulations to include all buildings on the lot, a change in the way building heights are measured and a moderate reduction in building heights and the redefining of "half-storey", "basement", "cellar" and certain other bulk related items.

Finally, the resulting proposed Zoning By-law amendments are advanced for the consideration of Council.

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R E P O R T

A. BACKGROUND

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There have, over the past two years or so, been an increasing number of complaints concerning what were felt to be the excessive bulk of certain single family dwellings in various residential areas of the Municipality. Some of these were due to building heights and the resulting obstruction of views, although most involved the sheer size of dwellings and their incompatibility with existing surrounding residences. Periodic concerns have also been expressed about the size of houses being constructed under the R9 regulations.

The most recent complaints involving individual dwellings included houses at 161 North Glynde Avenue, 5370 Gilpin Street, 5524 Union Street, 3570 Kalyk Avenue and 7080 Gray Avenue. It is interesting to note, however, that in none of these cases were the existing zoning regulations violated. As an example, the house at 3570 Kalyk Avenue, located in an R5 zoned area, has a total floor area of approximately 6,700 square feet compared with floor areas in a 1,000 to 1,200 square foot range in the surrounding dwellings. The coverage and height of the building (39.37% and 32 feet respectively) are within the permitted district standards.

This particular development prompted a report to the Council (1984 August 07) which was received for information purposes. In the report, however, it was indicated that a number of proposals would be brought forward in the future for Council's consideration. These would have the objective of more effectively controlling the size and bulk of single family dwellings in residential areas.

This was followed by the undertaking of a comprehensive program of research into the building bulk problem which resulted in the development of a variety of proposals that were examined and discussed by the Planning staff, plus a series of meetings with Building Division personnel.

B. EXISTING BULK REGULATIONS AND DEVELOPMENT EXAMPLES

The term, "bulk" is defined in the Zoning By-law as "the size and location of buildings and structures in relation to the lot. Bulk regulations include maximum height of a building, maximum lot area and width, minimum front, side and rear yards and maximum lot coverage and floor area".

Under the Zoning By-law regulations, allowable maximum building heights are governed both by the number of storeys and a specified measurement. The purpose of this is to prevent the provision of more than 2-1/2 storeys within the height limitation or, alternatively, to have storeys of excessive height if there were not a height limit specified.

A variety of minimum lot areas and lot widths are provided under the existing single family residential regulations in order to satisfy a wide range of demands and preferences for residential development sites. Prescribed front, side and rear yard setbacks are intended to provide open space on each lot, to ensure sufficient separation between buildings on adjoining properties and the provision of light and air to each residential building site. These setbacks define the building envelope within which the principal building may be located.

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Yard setback requirements along with maximum height limits establish a volume control. When combined with a maximum lot coverage standard, they establish a constant ratio between the volume of buildings, the allowable floor area and the area of land involved.

The existing bulk regulations for single family dwellings are set out in the following table.

REGULATION	R1	R2	R3	R4	R5	R9
Building Height	32 ft.	-	-	-	-	-
Lot Area	9600 sq.ft.	7200 sq.ft.	6000 sq.ft.	7200 sq.ft.	6000 sq.ft.	3600 sq.ft.
Lot Width	80 ft.	60 ft.	50 ft.	60 ft.	50 ft.	30 ft.
Lot Coverage	30%	35%	40%	40%	40%	35%
Front Yard	30 ft.	25 ft.	20 ft.	25 ft.	20 ft.	20 ft.
Side Yards	8 ft. for least side yard & 18 ft. total	5 ft. for least side yard & 12 ft. total	5 ft.	5 ft. for least side yard & 12 ft. total	5 ft.	10% of lot width with minimum of 3 ft

The height limit of 32 feet and 2-1/2 storeys applies to single family dwellings in all of the six residential districts. Minimum lot areas range from a high of 9,600 square feet in R1 Districts to 6,000 square feet in the R5 zone to a low of 3,600 square feet in the R9 category, which came into effect in 1980 December 01. Maximum lot coverage extends over a range of from 30 percent in the R1 District to 40 percent in the R3, R4 and R5 zones. Front, side and rear yard setbacks vary in relation to the prescribed minimum required lot areas in the six zoning categories.

A compilation of "typical single family dwelling floor areas" has been prepared by the Building Division. This information, which provides examples of recent single family dwelling developments in each of the zoning district categories is shown in the table which follows:

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TYPICAL SINGLE-FAMILY DWELLING FLOOR AREAS

Zone	Lot Size	Lot Area	Lot Cov.	Gross Floor Area	F.A.R.	Res. Type
R-1	126.44' x 120' x 66' x 96.04'	12,175	22.7%	1st Flr. 1990 2nd Flr. 590 G.F.A. <u>2580</u>	0.212	1-1/2 storey on crawl space.
R-1	90' x 107.82' x 99.13' x 100'	9,776	14.9%	Unfin. 2nd 1343 G.F.A. <u>1343</u>	0.137	2 storey - slab on grade.
R-1	81.59' x 130'	10,607	22.7%	1st 1408 2nd 1632 G.F.A. <u>3040</u>	0.287	2 storey - partial first
R-2	54' x 120' x 54.66' x 120'	6,520	16.7%	1st 763 2nd 1092 <u>1855</u>	0.285	2 storey - partial first.
R-2	60.70' x 141.83' x 60.70' x 141.76'	10,209	18.4%	Cellar 1593 1st 1593 2nd 1106 <u>4292</u>	0.420	2 storey - on cellar.
R-2	63.62' x 115.48' 63.71' x 111.81'	7,230	30.4%	Cellar 533 1st 1757 2nd 930 <u>3220</u>	0.445	2 storey on crawl space.
R-3	55' x 165'	9,075	17.1%	1st 1011 2nd 1551 <u>2562</u>	0.282	2 storey
R-3	62.87' x 147.45' x 50' x 164'	8,588	19.0%	1st 1646 2nd 1646 <u>3292</u>	0.383	2 storey
R-3	45' x 120'	5,400	32.4%	Unfin. 1st 1748 2nd 1235 <u>2983</u>	0.552	2 storey on cellar
R-4	47' x 92.67' x 100' x 119.67'	8,496	16.2%	Cellar 81 1st 1179 2nd 903 <u>2163</u>	0.255	2 storey on cellar
R-4	63.39' x 124.65' 60.33' x 137.64'	10,068	17.1%	Cellar 34 1st 1718 2nd 1401 <u>3153</u>	0.313	2 storey on cellar

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TYPICAL SINGLE-FAMILY DWELLING FLOOR AREA

Zone	Lot Size	Lot Area	Lot Cov.	Gross Floor Area	F.A.R.	Res. Type
R-4	54.95' x 137.96'	7,580	35.0%	1st 2205 2nd 2205 <u>4410</u>	0.582	2 storey
R-5	60' x 89'	6,230	38.1%	1st 1676 2nd 912 <u>2588</u>	0.415	2 storey
R-5	62.04' x 145.62' x62.04' x 145.26'	9,023	15.2%	1st 143 2nd 1375 <u>1518</u>	0.168	2 storey
R-5	60.5' x 148.5'	8,984	22.3%	1st 288 2nd 1604 <u>1892</u>	0.211	2 storey
R-9	37' x 120.7'	4,466	31.9%	Cellar 236 1st 1426 2nd 1108 <u>2769</u>	0.620	2 storey on cellar
R-9	33' x 124.035' x33.01' x 124.02'	4,093	35.0%	1st 991 2nd 1431 <u>2422</u>	0.592	2 storey on crawl space
R-9	33' x 120.69'	3,983	35.0%	1st 1393 2nd 1371 1/2 1008 <u>3772</u>	0.947	2-1/2 storey

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An examination of the table reveals that, in most cases the lot coverages and resulting floor areas seem quite moderate, particularly in comparison with the examples cited under Section "A" of this report where the property at 3570 Kalyk Avenue has a coverage of 39.37% and a total floor area of approximately 6700 square feet. In the table, the largest floor area in relation to the area of the lots were attained in the R9 category. In these particular examples, the amount of floor area ranged from 59.2% to 94.7% of the lot area.

These are very high ratios, which are more typical of apartment densities than those usually associated with single family residential developments. In two of the R9 examples, lot coverage reached the maximum of 35 percent. In all of the other districts, lot coverages were below the maximum allowable amount.

One way of reducing bulk in single family dwellings, would be to have the existing lot coverage limits apply to all buildings on the lots, thus meeting the intent of the Zoning By-law regulations. This is also typical of the method used in other jurisdictions. However, the practice has been to apply the coverage only to the principal building, while detached accessory buildings are limited to an additional 10%.

C. COMPARATIVE BUILDING BULK CONTROLS IN OTHER MUNICIPALITIES

Building heights and maximum attainable lot coverage are the two controls which have the greatest impact on building bulk. The current regulations governing these in Burnaby are set out along with those in a number of other Municipalities for comparative purposes.

In Burnaby, the maximum allowable building height for single family dwellings, which applies in all of the residential districts, is 32 feet or 2-1/2 storeys. The maximum coverage figures are as follows:

R1.....30%
R2 and R9.....35%
R3, R4 & R5.....40%

As noted in the preceding section of this report these figures have been applied only to the principal building. An additional allowable coverage of 10% of the lot area has been used for accessory buildings. This would provide an overall possible coverage ratio of 40% in R1 Districts, 45% in R2 and R9 zones and 50% in the R3, R4 and R5 categories.

Height and coverage regulations for single family dwellings in a number of other jurisdictions are outlined, for comparative purposes, in the following table:

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MUNICIPALITY	MAXIMUM BUILDING HEIGHTS	MAXIMUM LOT COVERAGE REGULATIONS
Coquitlam	30 ft. (2-1/2 storeys)	40% for all buildings on the lot in 5 Residential Districts
Delta	32 ft. (2-1/2 storeys)	R1-30%) R2-35%) For all buildings on R3-40%) the lot
Langley City	32 ft. (2-1/2 storeys)	R1-33%) R2-33%) For all buildings on R3-40%) the lot
New Westminster	RS1-25 ft. RS2-30 ft.	40% for principal buildings, plus F.A.R. of 0.6 for all buildings on the lot in 2 Residential Districts
North Vancouver District	30 ft. (2-1/2 storeys)	40% for all buildings on the lot in 5 Residential Districts
Richmond	35 ft. (2-1/2 storeys)	40% for all buildings on the lot in 2 Residential Districts
Vancouver	35 ft. (2-1/2 storeys)	45% for all buildings on the lot in 4 Residential Districts plus F.A.R. of 0.6 for all buildings on the lot
West Vancouver	25 ft. (2 storeys)	40% for all buildings on the lot in 6 Residential Districts
Calgary	30 ft. (2-1/2 storeys)	RS1-30%) RS2-35%) For all buildings on RS3-35%) the lot RS4-40%)
Edmonton	32 ft. (2-1/2 storeys)	RF1/RF2/RF3-40% (28% principal building and 12% accessory buildings RPL - 45% (35% principal building and 10% accessory buildings)

It is noted that in almost all cases, the permitted coverage figures include all buildings on the lot, both principal and accessory. The maximum building heights in these jurisdictions range from 25 feet to 32 feet for single family dwellings.

D. BULK CONTROL CONSIDERATIONS

It is considered desirable that a conservative approach be used in preparing revisions to the bulk regulations of single family dwellings. The making of wholesale changes that would have a massive impact on existing development would not be acceptable and, in any case, are not considered necessary. The main thrust should, therefore, be aimed at preventing the future development of massive, out-of-scale single family dwellings and to reduce view obstruction pro-

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blems in residential areas. It is also desirable that the basic format of the regulations remain intact. For this reason, the approach to the building bulk problem should continue to be based primarily on lot coverage, rather than introducing a completely new measure such as floor area ratio which could create developmental, as well as, administrative problems.

The current bulk regulations for single family dwellings have been examined with the objective of improving their clarity, thus reducing the likelihood of misinterpretation and the possibility of the manipulation of the regulations. With this in view, it is considered that certain "key" definitions which relate, directly or indirectly, to bulk should be revised.

The term "coverage" should be redefined to overcome the problems created by the outward extensions from buildings above the height of the lowest storey and to provide a clearer statement of what is included and what is excluded from this form of bulk control. While the retention of the existing lot coverage ratios in residential districts is proposed, it is felt that the policy of applying these to only the principal building should be changed to include all buildings on the lot. The current 10% allowable figure for accessory buildings would become a part of the overall coverage ratio. By making the maximum coverage in each district a composite of the principal building and the accessory buildings' percentages, the overall bulk of buildings and structures on the lot would be reduced to more reasonable proportions.

Some rewording of the current provisions is considered necessary to make it clear that where a garage, carport or other accessory building or structure is attached to the principal building they should be regarded as a part of the principal building for regulatory purposes. It is also considered desirable that detached enclosed parking structures and garages, which are presently exempted from the coverage regulations, be included along with other detached accessory buildings and structures.

Building heights and the way in which they are measured are important elements in developing an approach to the control of bulk. A moderate reduction in building heights would, for example, tend to reduce view obstruction problems and, to some extent, the bulk of buildings. The limiting of a half storey to 50 percent of the gross floor area of the storey immediately below would overcome the problem of a half storey becoming, in effect, almost a full additional storey. Such a measure would also decrease principal building bulk in the case of 2-1/2 storey houses. The redefining of the terms "finished grade" and "building height" should be considered in order to minimize the manipulation of grade levels and to simplify the way in which building heights are measured.

The development of revised definitions for "basement" and "cellar" will be necessary to comply with the new National Building Code minimum height requirement of 2.3m (7.5 feet). In the case of a cellar, this should be designed to overcome the problems created by false ceilings, which tend to increase the height of a building above grade, and to clarify that a cellar is not a storey. There has, in the past, been some uncertainty about the use of cellars, particularly in terms of their possible habitation. In order to overcome this problem, regulations should be developed that will spell out specifically what cannot be located in a cellar in the form of living accommodation.

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Building Division staff, who deal directly with the application of the Zoning By-law regulations where single family dwellings are involved, have suggested a number of areas where clarification is felt to be needed. These include the redefining of the term "balcony" to clarify its meaning more precisely and to differentiate it from "sundeck", a review of the regulations governing the various features included as exceptions to the building height requirements in order to protect residential districts from the intrusion of incompatible structures and from misinterpretations of the regulations (e.g. scenery lofts, observation towers). These two features have actually been proposed as additions to single family dwellings, which would have increased their bulk.

E. PROPOSED CHANGES AND THE REASONS FOR THEM

The items which are being proposed for amendment fall into three broad categories. These include:

1. Bulk regulations and related provisions which have a bearing on the bulk of buildings and structures.
2. Items where the clarification of an existing regulation is considered necessary in order to avoid possible misinterpretation.
3. New items considered necessary to meet certain needs or requirements and "housekeeping" items where earlier proposed changes to the regulations have not yet been included in the Zoning By-law.

1. Bulk Regulations and Related Provisions

This section of the report sets forth the various bulk regulations and related provisions proposed for amendment, the applicable existing by-law regulations, the recommended changes and the justification for them. This material is presented in the table that follows:

Item
Definition of
"Basement"
 "BASEMENT" means that portion of a building between two floor levels which is partly underground, but which has at least one half of its height from finished floor to finished ceiling above average adjacent finished grade as determined by the Building Inspector. The height measured between floor and ceiling surfaces shall be not less than 1900mm (6.23 ft.).

Item
Definition of
"Cellar"
 "CELLAR" means that portion of a building between the two floor levels which is partly or wholly underground and which has more than one half of its height, from finished floor to finished ceiling, below average adjacent finished grade as determined by the Building Inspector. The height measured between floor and ceiling surfaces shall be not less than 1900mm (6.23 ft.). No dwelling or housekeeping unit shall be permitted in a cellar.

Item
Definition of
"Coverage"
 "COVERAGE" means the combined area covered by all buildings or structures on the lot, or any projecting portions thereof, measured at the height of the lowest storey above grade, excluding:
 (1) Balconies, bay windows, belt courses, canopies and sun shades, cornices, eaves and gutters, fire escapes, sills, steps, open and enclosed terraces at grade and similar projections.
 (2) Covered or underground parking areas which are not in or beneath any part of a principal building, or those parking areas which become part of a principal building by reason of its attachment thereto.

Item
Intent of Changes
 To overcome the problems created by false ceilings, to meet the National Building Code minimum height requirements and to correspond with the definition of "storey".
 To overcome the problems created by false ceilings, to meet National Building Code minimum height requirements, and to clarify that a cellar is not a storey.
 To overcome the problems created by the outward extensions from buildings above the height of the lowest storey and to ensure that all accessory buildings are included as a part of the total coverage of the lot.

Proposed Changes
 (a) The deletion of "to finished ceiling" and replacement by: "to finished floor next above it".
 (b) The revision of the height measurement to 2.3m (7.5 ft.).
 (c) The addition of the following sentence to this definition: "For purposes of determining building height a basement shall be considered as a storey".

(a) The deletion of "to finished ceiling" and replacement by: "to finished floor next above it".
 (b) The revision of the height measurement to 2.3m (7.5 ft.).
 (c) The deletion of the last sentence and its replacement by: "A cellar shall not be considered as a storey"

The deletion of the opening sentence of this definition and its replacement by: "COVERAGE means the combined area covered by all buildings and structures on the lot expressed as a percentage of the lot area, measured as the area of the projection of the outline of the buildings and structures onto a horizontal plane, excluding: (1) Add chimneys and uncovered swimming pools to clause (1). (2) Change clause (2) to include only: "Open and uncovered parking areas and underground parking areas."

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<p><u>Item</u></p>	<p><u>Existing Regulations</u></p>	<p><u>Proposed Changes</u></p>	<p><u>Intent of Changes</u></p>
<p>Definition of "Floor Area Ratio"</p>	<p>"FLOOR AREA RATIO" means the figure obtained when the Gross Floor Area of all buildings on a lot is divided by the area of the lot, except that for the following shall not be included as floor area for the purpose of computing floor area ratio: (1) Any portion of a storey used for parking purposes, unless such parking is a principal use. (2) Any portion of a storey used for laundry purposes unless such laundry is a principal use. (3) Any portion of a basement or cellar containing heating, laundry, recreational or storage facilities, but excluding areas used for habitable accommodation, and necessary access to (4) Architectural features which are permitted as projections into required yards in Section 6.12 of this Bylaw. (5) Swimming pools and open sun decks. (6) Any portion of a penthouse containing elevator or ventilating machinery.</p>	<p>(a) The addition of the following to Clause (1): "Open parking areas and underground parking areas". (b) The deletion of Clause (2) and its replacement by: "Areas within the building used exclusively for communal laundry facilities."</p>	<p>To simplify and clarify these provisions, and to ensure their conformity with related amendment proposals.</p>
<p>Definition of "Grade or Grade Level Finished"</p>	<p>"GRADE OR GRADE LEVEL" means the finished ground level at the centre of the exposed wall of a building.</p>	<p>The deletion of this definition and its replacement by: "GRADE or GRADE LEVEL, FINISHED means the finished ground level adjacent to the exposed wall of a building, with no adjustment having been made to increase the existing ground level higher than the adjoining properties, except for minor slope equalization as approved by the Building Inspector."</p>	<p>To minimize the manipulation of grade levels and to tie in with the proposed revision to the "Height of Buildings" definition.</p>

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Intent of Changes			<div style="border: 1px solid black; padding: 5px; margin-bottom: 5px;"> ITEM MANAGER'S REPORT NO. 11 COUNCIL MEETING 85/10/28 68 </div> <div style="border: 1px solid black; padding: 5px; margin-bottom: 5px;"> ITEM MANAGER'S REPORT NO. 7 COUNCIL MEETING 87/02/09 9 </div> <div style="border: 1px solid black; padding: 5px;"> ITEM MANAGER'S REPORT NO. 4 COUNCIL MEETING 87/03/16 19 </div>
<p>To simplify the present cumbersome and somewhat complicated definition, as well as to reduce building bulk.</p> <p>The second part of the definition is intended to allow for a two car garage with a sloped roof that will meet height measurement requirements.</p>	<p>The deletion of this definition and its replacement by:</p> <p>"HEIGHT OF BUILDINGS" means the vertical distance measured from the average elevation of the finished grade of the lot along the front of the building to the highest point of the structure, subject to the applicable exceptions included in Section 6.4 of this By-law. Where no front yard setback is required, such height shall be measured from the curb level. The height of an accessory building which is depressed into the adjacent grade may be measured from the calculated average finished grade, around all sides of the building, excluding a side which may be used for vehicular entrance."</p>	<p>To remove the ambiguity of the present definition and to decrease principal building bulk in the case of 2-1/2 storey houses.</p>	<p>120</p>
<p>Item</p>	<p>"HEIGHT OF BUILDINGS" means the vertical distance from the curb level to the highest point of the roof surface if a flat roof, the deck line of a mansard roof and to the mean height level between the eaves and ridge of a gable, hip or gambrel roof. When a building is situated on ground above the curb level, such height shall be measured from the average elevation of the finished grade of the lot along the front of the building. On through lots, 40m (131.23 ft.) or less in depth, the height of a building may be measured from the curb level on either street. On through lots more than 40m (131.23 ft.) in depth, the height regulations and basis of height measurements for the street permitting the greater height shall apply for a depth of not more than 40m (131.23 ft.) from that street.</p>	<p>"STOREY, HALF" means a storey under a gable, hip or gambrel roof, the wall plates of which on at least two opposite exterior walls are not more than 600mm (1.97 ft.) above the floor of such storey.</p>	
<p>Definition of "Height of Buildings"</p>	<p>The deletion of this definition and its replacement by:</p> <p>"STOREY, HALF" means a storey under a gable, hip, gambrel or shed roof, the gross floor area of which is not more than 50 percent of the gross floor area of storey immediately below and includes roof decks.</p>	<p>Definition of "Storey, Half"</p>	

Item	Existing Regulations	Proposed Changes	Intent of Changes
<p>The inclusion of "attached" accessory buildings as part of the principal building.</p> <p>6.6(1)(b) (Accessory Buildings and Uses - General) "Where an accessory building or structure is attached to the principal building, it is to be considered a part of the principal building and shall comply in all respects with the requirements of the By-law applicable to the principal building."</p>	<p>(Height of Single Family Dwellings in R1, R2, R3, R4, R5 and R9 Districts). "The height of a building shall not exceed 9.8m (32.12 ft.) nor 2-1/2 storeys."</p>	<p>The deletion of these height regulations and their replacement by: "The height of a building shall not exceed 9.0m (29.53 ft.) nor 2-1/2 storeys."</p>	<p>To reduce view obstruction problems and, to some extent, the bulk of buildings.</p>
<p>The deletion of "where an accessory building or structure is attached to the principal building," and its replacement by: "Where a garage or carport or other accessory building is attached to the principal building,"</p>	<p>(Lot Coverage in R1, R2, R3, R4, R5 and R9 Districts). "The maximum coverage shall be 30 percent of the lot area in the R1 District, 35 percent in the R2 and R9 Districts, and 40 percent in the R3, R4 and R5 Districts.</p>	<p>The deletion of these lot coverage regulations and their replacement in each District by: "The total combined area covered by buildings, including the principal building and all detached accessory buildings, shall not exceed _____ percent of the lot area."</p>	<p>To retain the existing coverage figures but have them apply to all buildings. To give recognition to the intent of the Zoning By-law regulations with respect to coverage and to maintain building bulk at a reasonable scale.</p>

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This is felt to be a fairly conservative approach for dealing with the bulk of single family dwellings. However, the results of these and other measures should restrict the construction of excessively large dwellings, while continuing to provide ample flexibility in the development of residential buildings.

2. Clarification of Existing Regulations

A number of changes to certain existing regulations are being proposed for clarification in order to avoid ambiguity in terminology or possible misinterpretation. In some instances, this has already occurred and given rise to problems in the past. The changes that are proposed in this category are as follows:

- 1) To emphasize the distinction between the terms "shall", which is mandatory and "may", which is permissive, as used in the Zoning By-law. This distinction would be made in the opening statement to the Definitions section of the By-law (Section 3).
- 2) A revised definition of "balcony" is being proposed to clarify the meaning of the term and to differentiate it from "sundeck".
- 3) Section 6.4 of the Zoning By-law lists the various structures or structural parts which are not subject to the building height requirements. Certain revisions are proposed with the objective of protecting residential districts from the intrusion of incompatible structures or from future misinterpretations of the regulations.
- 4) The deletion of the existing Section 6.9 (Living Accommodation in Basements) is being proposed to give recognition to a basement as a storey and an integral part of the habitable area of a dwelling unit. Its replacement by a proposed regulation that would clarify what may not be located in a cellar in terms of accommodation (i.e. dwelling units and housekeeping units excluded as under the existing regulations).
- 5) Section 6.11 of the Zoning By-law permits the conversion of single family dwellings in R4 and R5 Districts that were constructed on or before 1971 January 01 to two-family occupancy. An amendment is considered necessary in this case to prevent a situation where the original single family dwelling is replaced at a later date by a new dwelling and to ensure that such new dwelling is not eligible for the two-family unit conversion.
- 6) Section 6.12 of the Zoning By-law spells out the regulations governing projections into required front, side or rear yards. Certain changes are being proposed to clarify and control such features as bay windows, sundecks and underground parking structures.

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3. New Regulations and "Housekeeping" Items

The following proposals are included in this category.

- 1) The addition to the Zoning By-law of definitions for "bay window", "sundeck" and "terrace" in order to clarify the meaning of these architectural features which have not been covered previously, plus a definition for "underground parking".
- 2) The updating of the in-law suite definition to recognize that in-law suites are permitted in tenant-occupied as well as owner-occupied dwellings.
- 3) A change in the permitted height of an accessory building (Section 6.6) from 3.5m (11.48 feet) to 3.7m (12.13 feet) to allow a person to construct a two-car garage under the proposed height regulations.

F. PROPOSED ZONING BY-LAW AMENDMENTS

The following amendments are proposed to the regulations of the Burbary Zoning By-law:

1. Opening Statement - Section 3: Definitions

The addition of the following sentence at the beginning of the opening statement to Section 3:

"For the purposes of this By-law, the word "SHALL" is mandatory, the word "MAY" is permissive. In this By-law unless the context otherwise requires:

2. Definition of "Balcony"

The deletion of the existing definition in Section 3 and its replacement by:

"BALCONY means a cantilevered deck that projects from the wall of a building and which, except for a guard rail, is not enclosed."

3. Definition of "Basement"

The amendment of the definition in Section 3 to read as follows:

"BASEMENT means that portion of a building between two floor levels, which is partly underground but which has at least one half of its height, from its finished floor to the finished floor next above it, above average adjacent finished grade as determined by the Building Inspector. The height measured between floor and ceiling surfaces shall be not less than 2.3m (7.5 feet). For purposes of determining building height, a basement shall be considered as a storey."

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4. Definition of "Bay Window"

The addition of the following definition to Section 3:

"BAY WINDOW means a projection from the wall of a building which contains a window and which is wholly above the level of the adjacent floor surface, but which does not result in any projection of the floor structure of the room."

5. Definition of "Cellar"

The amendment of the definition in Section 3 to read as follows:

"CELLAR means that portion of a building between two floor levels which is partly or wholly underground and which has more than one half of its height, from its finished floor to the finished floor next above it, below average adjacent finished grade as determined by the Building Inspector. The height measured between floor and ceiling surfaces shall not be less than 2.3m (7.5 feet). A cellar shall not be considered as a storey."

6. Definition of "Coverage"

The amendment of the definition in Section 3 to read as follows:

"COVERAGE means the combined area covered by all buildings and structures on the lot, expressed as a percentage of the lot area, measured as the area of the projection of the outline of the buildings and structures onto a horizontal plane, excluding:

- (1) Belt courses, cornices, eaves, gutters, sills or other similar ornamental features; bay windows, balconies and chimneys; canopies and sun shades; fire escapes, steps, terraces and uncovered swimming pools;
- (2) Open and uncovered parking areas and underground parking areas."

7. Definition of "Floor Area Ratio"

The deletion of Clauses (1) and (2) and their replacement by:

- "(1) Open parking areas, underground parking areas and any portion of a storey used for parking purposes, unless such parking is a principal use.
- (2) Areas within a building used exclusively for communal laundry facilities."

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8. Definition of "Grade or Grade Level, Finished"
The deletion of the existing definition in Section 3 and its replacement by:
"GRADE OR GRADE LEVEL, FINISHED means the finished ground level adjacent to the exposed wall of a building, with no adjustment having been made to increase the existing ground level higher than the adjoining properties, except for minor slope equalization as approved by the Building Inspector."
9. Definition of "Height of Buildings"
The deletion of the existing definition in Section 3 and its replacement by:
"HEIGHT OF BUILDINGS means the vertical distance measured from the average elevation of the finished grade of the lot along the front of the building, to the highest point of the structure, subject to the applicable exceptions included in Section 6.4 of this By-law. Where no front yard setback is required, such height shall be measured from the curb level. The height of an accessory building which is depressed into the adjacent grade may be measured from the calculated average finished grade, around all sides of the building, excluding a side which may be used for vehicular entrance."
10. Definition of "In-Law Suite"
The deletion of the existing definition in Section 3 and its replacement by:
"IN-LAW SUITE means one or more habitable rooms used for living and sleeping purposes by the parents, grandparents, sons or daughters (including their spouses and dependent children) of the owner-occupier or tenant-occupier of the dwelling."
11. Definition of "Parking, Underground"
The addition of the following definition to section 3:
"PARKING, UNDERGROUND means an area where parking spaces are provided either entirely beneath a principal building or underground where the roof of the underground parking area is not more than 800mm (2.62 feet) above the finished grade of the lot."
12. Definition of "Storey, Half"
The deletion of the existing definition of Section 3 and its replacement by:
"STOREY, HALF means a storey under a gable, hip, gambrel or shed roof, the gross floor area of which is not more than 50 percent of the gross floor area of the storey immediately below, and includes roofed decks."

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13. Definition of "Sundeck"

The addition of the following definition to Section 3:

"SUNDECK means a deck other than a cantilevered deck that projects from the wall of a building and which, except for a guard rail, is not enclosed."

14. Definition of "Terrace"

The addition of the following definition to Section 3:

"TERRACE means a relatively level paved, planted or constructed area, or areas, which are not more than 600mm (1.97 feet) above the adjacent finished grade of the lot."

15. Building and Structure Height Exceptions

The amendment of Section 6.4 (Height of Buildings and Structures) to change the existing Clause (2) to Clause (3) and to create two new Clauses (1) and (2) to read as follows:

"(1) Except in R Districts, the following types of structures or structural parts shall not be subject to the building height requirements of this By-law: church spires, belfries, domes, monuments, fire and hose towers, observation towers, stadiums, monitors, theatre scenery lofts, cooling towers, drive-in theatre projection screens, elevator and ventilating machinery and penthouses, provided that no such structure shall cover more than 20 percent of the lot or, if located on a building, not more than 10 percent of the roof area of the building."

"(2) In all districts, including R Districts, the following types of structures or structural parts shall not be subject to the building height requirements of this By-law: aerials, electrical service masts, television and radio antennae, chimneys, flues, flagpoles, vents, transmission towers and water tanks, provided that no such structure shall cover more than 20 percent of the lot or, if located on a building, not more than 10 percent of the roof area of the building."

16. Attachment of Accessory Buildings and Structures to the Principal Building

The amendment of Clause (1)(b) of Section 6.6 (Accessory Buildings and Uses) to read as follows:

"Where a garage or carport or other accessory building or structure is attached to the principal building, it is to be considered a part of the principal building and shall comply in all respects with the requirements of this By-law applicable to the principal building."

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17. Height of Accessory Buildings in Residential Districts

The amendment of Clause (2)(a) of Section 6.6 (Accessory Buildings and Uses) to read as follows:

"An accessory building shall not exceed 3.7m (12.13 feet) in height nor one storey."

18. Height of Accessory Buildings in Non-Residential Districts

The amendment of Clause (3)(c) of Section 6.6 (Accessory Buildings and Uses) to read as follows:

"An accessory building shall not exceed 3.7m (12.13 feet) in height if it is located in a required rear yard."

19. The Regulation of Basements and Cellars

The deletion of the existing Section 6.9 (Living Accommodation in Basements) and its replacement by:

"6.9 Living Accommodation in Cellars:

- (1) No dwelling unit, housekeeping unit or kitchen shall be permitted in a cellar."

20. Conversions from Single to Two-Family Occupancy

The amendment of Clause (1)(b) of Section 6.11 (Lot Area and Width) to read as follows:

"The lot area and width requirements in R4 and R5 Districts may be reduced to permit the structural modification, alteration or remodelling of an existing single family dwelling to create two dwelling units, in accordance with the following conditions:

- (i) Where a lot is occupied by a single family dwelling that was erected on the lot on or before 1971 January 01 and,
- (ii) Where such single family dwelling is located on a lot in an R4 District with an area of not less than 670m² (7,212.06 sq. ft.) and a width of not less than 18.5m (60.70 feet) or, where such single family dwelling is located on a lot in an R5 District with an area of not less than 500m² (5,382.13 sq. ft.) and a width of not less than 13.5m (44.29 feet), and
- (iii) subject to the provisions of Section 6.5 (Conversion of Buildings) of this By-law."

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21. Projections into Required Yards

The amendment of Clause (1), sub-clauses (b), (c), (d), (g) and (j) of Section 6.12 (Yards) to read as follows:

"(1) Projections into Required Yards:

The following features may project into a required front, side or rear yard:

- (a) Steps or stairs,
- (b) Belt courses, cornices, eaves, gutters, sills, chimneys, or other similar features, provided that such projections do not exceed 900mm (2.95 feet), nor 600mm (1.97 feet) in the case of a side yard of less than 1.5m (4.92 feet) in width.
- (c) Bay windows, provided that such projections do not exceed 900mm (2.95 feet), nor 600mm (1.97 feet) in the case of a side yard of less than 1.5m (4.92 feet) in width and that the total length of such window or windows shall not exceed 50 percent of the length of the wall of the room from which such window or windows project.
- (d) Balconies, canopies, sunshades, open porches, verandas and sundecks, provided that such projections do not exceed 1.2m (3.94 feet), nor 50 percent of the width of a required side yard.

- (g) An uncovered swimming pool, provided that such pool shall not be constructed within any required front yard nor nearer than 3.0m (9.84 feet) to any property line. Such pools shall be located within a fenced yard or be surrounded by a fence, subject to the requirements of the National Building Code for guard rails or equivalent landscape features.

- (j) Underground parking structures, subject to suitable landscaping or architectural treatment and proper maintenance, except that where such structures extend above the surface of the finished grade, their horizontal projection shall not exceed 3.0m (9.84 feet) in the case of a required front yard."

22. Height of Buildings in the R1 District

The deletion of Section 101.2 (Height of Buildings) and its replacement by:

"The height of a building shall not exceed 9.0m (29.53 feet) nor 2-1/2 storeys."

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- 23. Lot Coverage in the R1 District
The deletion of Section 101.4 (Lot Coverage) and its replacement by:
"The total combined area covered by buildings, including the principal building and all detached accessory buildings, shall not exceed 30 percent of the lot area."
- 24. Height of Buildings in the R2 District
The deletion of Section 102.2 (Height of Buildings) and its replacement by:
"The height of a building shall not exceed 9.0m (29.53 feet) nor 2-1/2 storeys."
- 25. Lot Coverage in the R2 District
The deletion of Section 102.4 (Lot Coverage) and its replacement by:
"The total combined area covered by buildings, including the principal building and all detached accessory buildings, shall not exceed 35 percent of the lot area."
- 26. Height of Buildings in the R3 District
The deletion of section 103.2 (Height of Buildings) and its replacement by:
"The height of a building shall not exceed 9.0m (29.53 feet) nor 2-1/2 storeys."
- 27. Lot Coverage in the R3 District
The deletion of Section 103.4 (Lot Coverage) and its replacement by:
"The total combined area covered by buildings, including the principal building and all detached accessory buildings, shall not exceed 40 percent of the lot area."
- 28. The Height of Buildings in the R4 District
The deletion of Clause (1) of Section 104.2 (Single Family Dwellings) and its replacement by:
"The height of a single family dwelling shall not exceed 9.0m (29.53 feet) nor 2-1/2 storeys."
- 29. Lot Coverage in the R4 District
The deletion of Section 104.4 (Lot Coverage) and its replacement by:
"The total combined area covered by buildings, including the principal building and all detached accessory buildings, shall not exceed 40 percent of the lot area."

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30. Height of Buildings in the R5 District

The deletion of Clause (1) of Section 105.2 (Single family Dwellings) and its replacement by:

"The height of a single family dwelling shall not exceed 9.0m (29.53 feet) nor 2-1/2 storeys."

31. Lot Coverage in the R5 District

The deletion of Section 105.4 (Lot Coverage) and its replacement by:

"The total combined area covered by buildings, including the principal building and all detached accessory buildings, shall not exceed 40 percent of the lot area."

32. Height of Buildings in the R9 District

The deletion of Section 109.2 (Height of Buildings) and its replacement by:

"The height of a building shall not exceed 9.0m (29.53 feet) nor 2-1/2 storeys."

33. Lot Coverage in the R9 District

The deletion of Section 109.4 (Lot Coverage) and its replacement by:

"The total combined area covered by buildings, including the principal building and all detached accessory buildings, shall not exceed 35 percent of the lot area."



A.L. Parr
DIRECTOR PLANNING &
BUILDING INSPECTION

RBC/mcb

cc: Chief Building Inspector
Municipal Solicitor
Municipal Clerk
Assistant Director - Current Planning
Assistant Director - Long Range Planning & Research

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RE: RESIDENTIAL BULK STANDARDS FOR SINGLE FAMILY DWELLINGS

ATTACHMENT #2

MUNICIPAL MANAGER'S RECOMMENDATION:

1. THAT the recommendations of the Director Planning & Building Inspection be adopted.

* * * * *

TO: MUNICIPAL MANAGER 1987 FEBRUARY 02

FROM: DIRECTOR PLANNING & BUILDING INSPECTION OUR FILE: 02.240

SUBJECT: RESIDENTIAL BULK STANDARDS - FOR SINGLE FAMILY DWELLINGS

=====

RECOMMENDATIONS:

1. THAT a coverage/height ratio density control to regulate residential building bulk be introduced in the single- and two-family zoning districts by amending the Burnaby Zoning Bylaw, as outlined in Section 4.3 of this report.
2. THAT the Proposed Zoning Bylaw Amendments contained in Section F of the report received by Council 1985 October 28 (Item 11, Manager's Report No.68) be brought forward for further consideration and approval.
3. THAT the Municipal Solicitor be authorized to prepare the necessary text amendments, to be the subject of a further report to Council, prior to initiation of a formal Amending Bylaw and submission to a Public Hearing.

R E P O R T

1.0 SUMMARY

Over recent years there has been an increasing awareness of the impact of excessively large dwellings which are constructed in established residential neighbourhoods, and this has become a matter of concern not only to Council and staff, but to large numbers of citizens as well.

While the number of instances of truly massive houses is still small, their number and frequency in new construction has been increasing as part of a general trend, and the potential for such developments under Burnaby's prevailing bylaws has been a cause for concern and led to consideration by the Housing Committee of methods to place reasonable and realistic limits on building bulk.

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This report follows up on the previous deliberations of the Committee of Council on the 1985 October 28 report and recommendations on this topic, and particularly addresses the advisability of adding a Floor Area Ratio-type of control mechanism to enable the Bylaw to directly relate permissible building area to lot size.

The report concludes by recommending a variation on the traditional F.A.R. formula for application to the single- and two-family residential districts which offers greater simplicity and ease of administration than a Floor Area Ratio normally affords.

If Council concurs in the recommended course of action, the next step will be to prepare the necessary amending text, and return the matter to Council for advancement of a Bylaw Amendment to a Public Hearing.

2.0 BACKGROUND

2.1 In response to a growing number of complaints concerning the construction of excessively large new single-family dwellings, Council in 1985 requested that staff review the situation and bring forward a report recommending measures to reduce the impact of large residential structures on their surroundings. A comprehensive report was submitted on 1985 October 28, (copy attached), containing recommendations for a variety of Bylaw amendments to assist in preventing the most extreme excesses in future development.

2.2 The October 1985 report was referred to the Housing Committee which met several times, including sessions in which the Council sat as a Committee-of-the-Whole to discuss the proposals. Emerging from these discussions, it was suggested to staff at a September 1986 meeting that the implementation of a Floor Area Ratio in the Residential Districts would effect a control that is proportionate to the area of the lot containing a dwelling, thereby reflecting a balance between building bulk and the open space surrounding it, and providing greater flexibility and equity for homeowners than the imposition of an upper limit for floor area. Staff were asked to report back on this subject.

2.3 Additionally, since that time further expressions of concern have been registered by the public about the continuing tendency for excessively large new developments to produce adverse impacts on established or redeveloping neighbourhoods, by reason of inappropriate scale and form, view or sunlight obstruction, creation of overlooking situations that compromise the privacy of established outdoor spaces on neighbouring properties, etc. Coupled with these objections to the physical consequences of excessive bulk has been the issue of such houses encouraging the creation of illegal suites, sometimes by virtue of design but in any event by reason of their sheer physical volume and possibly by reason of the perceived necessity for extra revenue to offset the owner's cost of borrowing to purchase such large dwellings.

2.4 On 1987 January 05, in response to public concerns about excessive building bulk and specifically in response to a report submitted in connection with an 8,024 square foot dwelling proposed for an 8,448.7 square foot lot on the south slope, Council adopted a resolution directing staff to prepare amendments to the Zoning Bylaw to control the bulk of buildings that may be constructed in the single- and two-family zoning districts. (It should be noted that the 8,024 square feet of finished floor area in this instance would have included 5,412.5 square feet on the main and upper floors, producing a Floor Area Ratio of 0.64).

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- 2.5 This report responds to the Housing Committee's request concerning the use of a Floor Area Ratio-type bulk control and the issues related to building volume (bulk); it does not attempt to deal in a comprehensive way with the subject of illegal suites, which is a separate topic being studied at a regional level and which is yet to be considered in detail by Burnaby Council. However, it is our view that the establishment of a building bulk regulation based on Floor Area Ratio, when accompanied by the measures described in the 1985 October 28 report, will be of major assistance in gaining control over the creation of new illegal suites in new construction.

3.0 ALTERNATIVE APPROACHES TO THE CONTROL OF BUILDING BULK

- 3.1 The initial report on this subject (1985 October 28) proposes a number of measures designed to place reasonable limits on building volume through height controls and redefinition of lot coverage.
- 3.2 Other methods of control that have been considered include setting an absolute upper limit for the gross floor area of dwelling units, and the use of a comparative, "averaging" formula to regulate the scale of new development by reference to existing adjacent buildings.
- The former alternative would entail the establishment by bylaw of a maximum permitted floor area for a single-family dwelling in the various zones. This approach is not recommended due to obvious variations in legitimate space requirements dependent on family size, special needs and economic factors, and the fact that such a "ceiling" approach would not recognize the offsetting effect of adjacent open space on perceived bulk, in the case of a dwelling situated on a large lot.

The latter alternative would involve a site-specific determination of the type, scale, and/or siting of adjacent existing houses, and would restrict new development by reference to the average height, size, setbacks, etc. of those existing improvements. This approach also is not recommended, for reasons related to both the cost and complexity of such a procedure and also to the dubious merit of dictating the design of new buildings by such narrow references to existing and possibly inappropriate (in today's terms) historic development.

- 3.3 In accordance with the request directed to staff by the Housing Committee, staff have reviewed the Floor Area Ratio type of mechanism.

In summary, it is concluded that there are considerable arguments to support its use, including the direct proportionality it offers with respect to site size, the inherent flexibility it offers relative to massing design options, and that it is an arithmetically-determined, non-subjective measure of bulk.

The determination of FAR for a given building, especially one of unusual or complex shape, can be time consuming and could involve the necessity of producing detailed floor plans that might not otherwise in some instances be required for permit purposes. This impacts on the cost and time involved for an applicant to prepare his submission for permits and also on the staff time and cost involved for the Municipality to process the application. Moreover, the Floor Area Ratio is not strictly a complete determinant of building bulk, as a building's volume is also dependent on height, the depth to which its basement or cellar is sunk into grade, the roof form selected, etc.

Notwithstanding, the Floor Area Ratio is a most common and generally dependable method of relating building size to site size in some proportionate way.

(A further but more theoretical method would be by way of purely volumetric measurement: the cubic volume of space enclosed by the building relative to the lot size. This method is the "purest" in terms of proportionality, but it clearly would be too complex to administer to warrant serious consideration.)

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3.4 A variation on traditional Floor Area Ratio is put forward for consideration as a simpler but nonetheless effective means of relating building area to lot area as a function of storey height. This method would regulate density by relating the maximum LOT COVERAGE permitted to the HEIGHT of the building, expressed in storeys. Put another way, it is possible to express the density produced by a building as the product of the "footprint" area times the number of storeys, and then to relate this to the lot area on a proportional basis.

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The result of this calculation is a step function that approximates the effect of a Floor Area ratio - indeed for a building of a given number of storeys, an "equivalent Floor Area Ratio" is expressed by multiplying the height in storeys by the lot coverage.

As an example, a two-storey building covering 25% of its site would be treated as equivalent to a single-storey building covering 50% of the site, just as it would under a traditional Floor Area Ratio calculation.

The advantage of this method is that it requires only a calculation of lot coverage (already required by the present bylaw), rather than a detailed calculation of the Gross Floor Area of all the floors in the building.

4.0 PROPOSED "EQUIVALENT FLOOR AREA RATIO"

4.1 At the present time, the various Residential Districts permit single-family dwellings up to 2-1/2 storeys in height which may occupy up to 30% to 40% of their lot area. This translates into the equivalent of a maximum Floor Area Ratio of 0.75 to 1.00, which is in the range of Medium Density Apartment District (RM2-RM4) density and accounts for the widespread perception of excessive density when dwellings are built up to or approaching the maximum limits.

4.2 To bring maximum single-family development density into line with the rest of the spectrum of housing forms, and to preserve the relatively open, spacious feeling characteristic of Burnaby's neighbourhoods while maintaining a suitably generous allowable building space volume for reasonable development, it is recommended that values of 0.45 and 0.50 are appropriate. As displayed on the accompanying sketch (Figure 1 attached), a reasonable continuum of increasing Floor Area Ratios is obtained, extending from the R9 (compact single-family housing) District to the RM5 High Density Multiple Family District. In comparing these values with the maximum FAR for the apartment districts, it is worth noting that the permitted Floor Area Ratios for the apartment zones include bonuses for certain features including underground parking, whereas the basic FAR for the RM1 District without underground parking is also 0.45.

4.3 Using the approach described in Section 3.4 above, the equivalent of a 0.45 Floor Area Ratio for the R9 District "Compact Single-Family Housing on Small Lots" can be expressed as follows:

Development Density

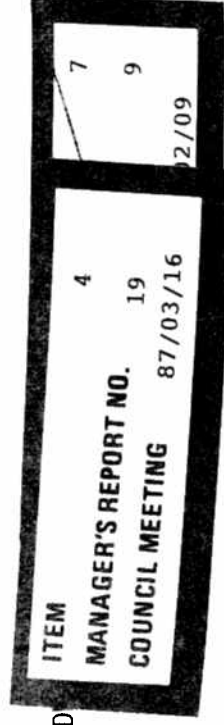
The permitted density in the R9 District shall not exceed:

45% lot coverage for a lot occupied by a single-storey building,

30% lot coverage for a lot occupied by a one-and-a-half storey building,

22.5% lot coverage for a lot occupied by a two-storey building, and

18% lot coverage for a lot occupied by a two-and-one-half storey building.



Similarly, the equivalent of a 0.50 Floor Area Ratio for the R1, R2, R3, R4 and R5 Districts can be expressed thus:

Development Density

The permitted density shall not exceed:

50% lot coverage for a lot occupied by a single-storey building,

33-1/3% lot coverage for a lot occupied by a one-and-a-half storey building,

25% lot coverage for a lot occupied by a two-storey building, and

20% lot coverage for a lot occupied by a two-and-one-half storey building.

4.4 To gain an impression of the amount of floor space that can be developed under a variety of different building configurations in each of the Residential single-family districts under this proposal, the attached Table I displays the development potential for a nominal minimum-sized lot in each of the zones. These examples assume single, one-and-a-half, two-, and two-and-one-half storey houses, each of which may in addition have a cellar as defined in the bylaw. We believe the figures illustrate that the proposal results in a reasonable scale of building that should satisfy most families' legitimate requirements in the respective zones. Because development potential is proportionate to lot area, a building program requiring more floor area for any reason would require a larger piece of property, thereby enabling construction of a larger dwelling while preserving basic compatibility with the intended intensity of development for the zone.

4.5 Council's attention is drawn to the relatively high site coverage (45%, 50%) indicated for single-storey buildings under the proposal. These figures are considerably greater than presently permitted in the respective Districts; however, it should be noted that:

- a) The effect of greater coverage is to some extent offset by the intended low form of the building mass, and
- b) In some instances, for minimum-sized lots in the R1, R2 and R4 Districts, the yard setback requirements of the existing bylaw will govern the maximum lot coverage possible for single-storey buildings limiting it to some lower level more in keeping with prevailing maximum coverages in the neighbourhood. The extent of the restriction imposed by the setback controls is dependent on lot configuration and dimensions.

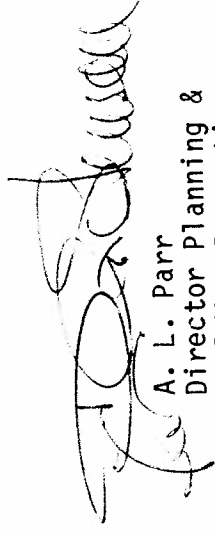
4.6 It should also be noted that the proposal to apply a development control of this type, while preventing the most extreme cases of overdevelopment which might occur under present bylaws, will not of itself produce improvements in design relative to respecting established neighbourhood character, matters of compatible architectural style, or "neighbourliness" in terms of responding to siting conditions, view corridors, private areas on adjacent lots, window overlook situations or other such site-specific considerations. In the absence of any adopted set of design guidelines for neighbourhoods, reliance can only be placed on the architect or designer to take such matters into account and produce appropriate designs.

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5.0 CONCLUSIONS

5.1 The introduction of a bulk control that relates the extent of building possible on a lot to the size of the property is an appropriate way to assist in regulating density in the residential neighbourhoods. With an appropriate Floor Area Ratio (0.45 for small-lot compact housing zones and 0.50 for other districts) a realistic and reasonable amount of accommodation can be produced to meet virtually all families' legitimate space requirements, while respecting the need for a balance with open space in the neighbourhoods. Combined with the necessary improvements in Zoning Bylaw provisions as recommended in the former bulk standards report, the mechanism outlined in Section 4.3 of this report will result in elimination of the kinds of overbuilding that have been experienced in the past, and that can occur at any time under the prevailing bylaw. In addition, the introduction of this Floor Area Ratio-type control will assist in reducing the incidence of illegal suite construction in new single-family dwellings, especially on small lots.

5.2 For these reasons, it is recommended that amendments to the text of the Zoning Bylaw be drafted reflecting the conclusions of this report and the 1985 October bulk standards report, for submission to a Public Hearing in the near future. Staff will work with the Municipal Solicitor toward preparation of the necessary Amending Bylaw, and submission of a report recommending a date for the Public Hearing.



A. L. Parr
Director Planning &
Building Inspection

ALP

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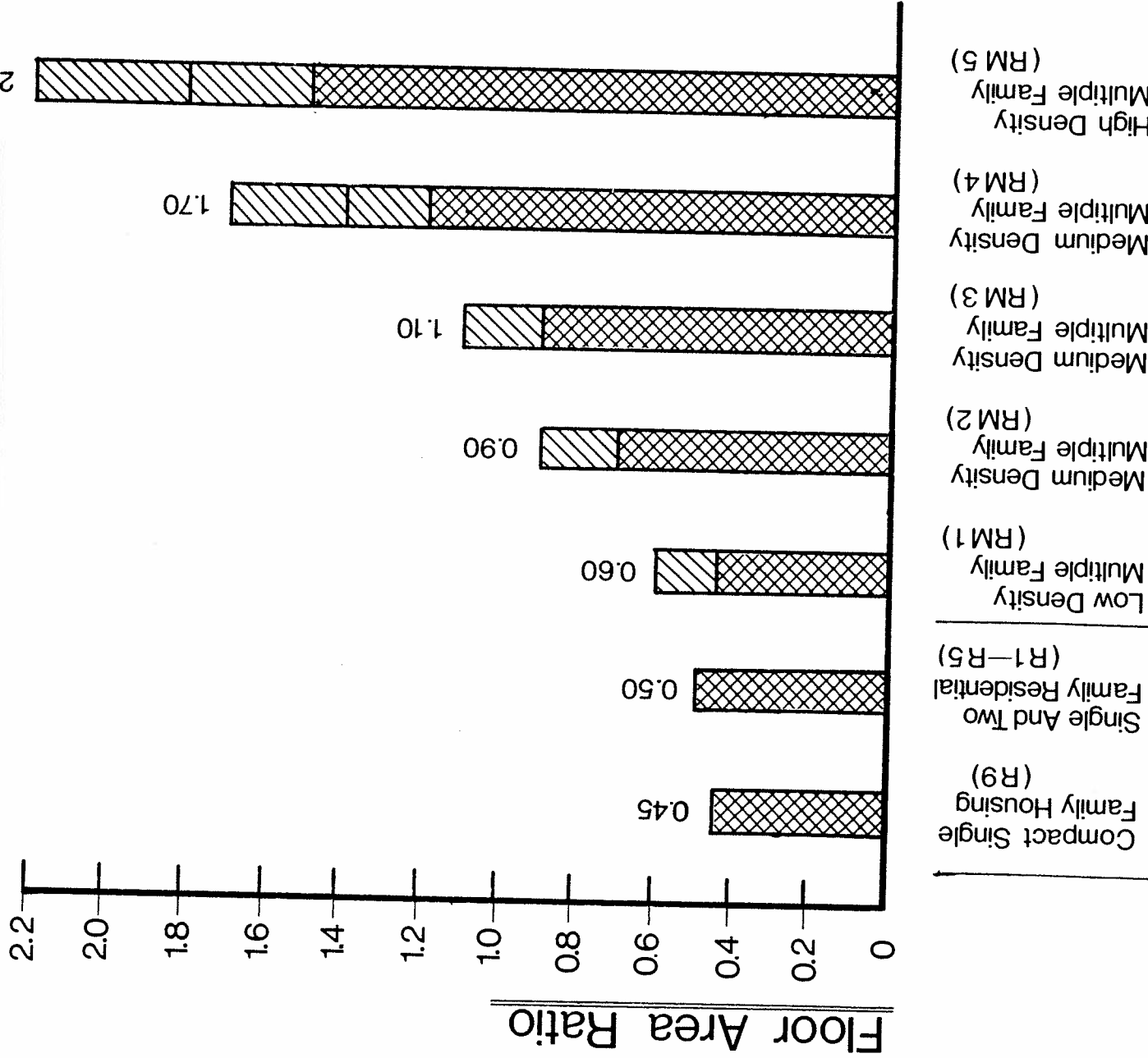
Attachments

cc: Chief Building Inspector

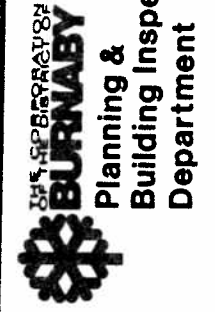
Municipal Solicitor

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"Equivalent Floor Area Ratios"
 PROPOSED



Date
 Jan. 1987

Scale

Drawn By

 Bonus F.A.R.
 Basic F.A.R.

Floor Area Ratios Residential Districts

TABLE I
ALTERNATIVE PERMITTED BUILDING CONFIGURATIONS - EXAMPLES

ZONE	NOMINAL LOT AREA	PROPOSAL F.A.R. EQUIVALENT	GROSS FLOOR AREA	(CELLAR PERMITTED)	(CELLAR PERMITTED)	(CELLAR PERMITTED)	(CELLAR PERMITTED)	(CELLAR PERMITTED)
R1	9600 SQ.FT.	0.50	4800 SQ.FT.	50% COVERAGE	4800 SQ.FT. THEORETICAL	3200 SQ.FT.	33-1/3% COVERAGE	25% COVERAGE
					(SETBACKS GOVERN APPROX.)*	+ 1600 SQ.FT.		+ 2400 SQ.FT.
						4800 SQ.FT.		1920 SQ.FT.
						+ 960 SQ.FT.		4800 SQ.FT.
R2	7200 SQ.FT.	0.50	3600 SQ.FT.	50% COVERAGE	3600 SQ.FT. THEORETICAL	2400 SQ.FT.	33-1/3% COVERAGE	25% COVERAGE
					(SETBACKS GOVERN APPROX.)*	+ 1200 SQ.FT.		+ 1800 SQ.FT.
						3600 SQ.FT.		1440 SQ.FT.
						+ 1400 SQ.FT.		1440 SQ.FT.
						+ 720 SQ.FT.		3600 SQ.FT.
R3	6000 SQ.FT.	0.50	3000 SQ.FT.	50% COVERAGE	3000 SQ.FT.	2000 SQ.FT.	33-1/3% COVERAGE	25% COVERAGE
						+ 1000 SQ.FT.		+ 1500 SQ.FT.
						3000 SQ.FT.		1200 SQ.FT.
						+ 600 SQ.FT.		3000 SQ.FT.
R4	7200 SQ.FT.	0.50	3600 SQ.FT.	50% COVERAGE	3600 SQ.FT. THEORETICAL	2400 SQ.FT.	33-1/3% COVERAGE	25% COVERAGE
					(SETBACKS GOVERN APPROX.)*	+ 1200 SQ.FT.		+ 1800 SQ.FT.
						3600 SQ.FT.		1440 SQ.FT.
						+ 1440 SQ.FT.		1440 SQ.FT.
						+ 720 SQ.FT.		3600 SQ.FT.
R5	6000 SQ.FT.	0.50	3000 SQ.FT.	50% COVERAGE	3000 SQ.FT.	2000 SQ.FT.	33-1/3% COVERAGE	25% COVERAGE
						+ 1000 SQ.FT.		+ 1500 SQ.FT.
						3000 SQ.FT.		1200 SQ.FT.
						+ 600 SQ.FT.		3000 SQ.FT.
R9	4300 SQ.FT. (i.e. BASED ON R4 AREA)	0.45	1935 SQ.FT.	45% COVERAGE	1290 SQ.FT.	645 SQ.FT.	30% COVERAGE	22.5% COVERAGE
						+ 645 SQ.FT.		+ 967 SQ.FT.
						1290 SQ.FT.		774 SQ.FT.
						+ 774 SQ.FT.		774 SQ.FT.
						+ 387 SQ.FT.		1935 SQ.FT.
R9	3600 SQ.FT. (i.e. BASED ON R5 AREA)	0.45	1620 SQ.FT.	45% COVERAGE	1080 SQ.FT.	540 SQ.FT.	30% COVERAGE	22.5% COVERAGE
						+ 540 SQ.FT.		+ 810 SQ.FT.
						1080 SQ.FT.		648 SQ.FT.
						+ 648 SQ.FT.		648 SQ.FT.
						+ 324 SQ.FT.		1620 SQ.FT.

*NOTE: Where setbacks govern, permitted coverage will vary, dependent on lot shape and dimensions; value indicated is for rectangular shape and nominal 120 foot lot depth.

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