

Wong, Tamarra

From: David Garner s.22(1) Personal and Confidential
Sent: Tuesday, July 09, 2019 9:17 AM
To: Public Hearing
Subject: Tuesday, July 9, 2019, Agenda Item 6b. REZONING: 1008 West 47th Avenue and 6335-6363 Oak Street

Dear Councillors,

It is difficult to understand why the City of Vancouver thinks that ground oriented family housing (aka row houses) along Oak St would be ideal for young families to raise children, given that Oak is a major transportation corridor with more than 50,000 AADT (Average Annual Daily Traffic), which is about 1/3 *more* than on Clark Drive at the air quality monitoring station at E11th Ave, albeit with a smaller proportion of heavy vehicles.

Given this plan, are there ways to reduce residents' exposure to Traffic Related Air Pollution (TRAP) and Noise Pollution (TRNP), other than by eliminating the vehicular traffic, which is unlikely to happen any time soon on Oak St? The answer is "yes, to some extent, by optimizing the development built form".

There are two realms to consider:

- (1) *indoor* living areas, and
- (2) *outdoor* living areas, such as children's play areas, townhouse courtyards, patios etc.

It is well established how to build *indoor* living areas that are tight enough to keep out both TRAP and TRNP, except for the problem of ventilation. The guidelines for RM-8AN promotes "natural" ventilation, typically open windows on opposite walls or open skylights, which will admit both noise and air pollution. It happens that Oak St traffic follows an extreme commuter pattern: from about 7 am to 7 pm, the traffic averages 3,000 - 3,500 vehicles per hour (vph) which is about 1 vehicle per second, on average, whereas from about 11 pm to 5 am, the average traffic volume drops by about a factor of 10, at which time passive ventilation is possibly more viable. But ventilation remains both a potential noise and air quality problem.

Outdoor living areas are best shielded from both TRAP and TRNP by using buildings as barriers, creating a quieter, better air quality side separated from the noisy, poorer air quality side facing Oak St. The optimal shape for the barrier building is often U or L shaped as can be seen on many new developments on Cambie St., with the height on the arterial typically 1-2 stories higher than the shielded row houses lining the lane, in the case of courtyard row houses.

RM-8AN zoning is remarkably flexible, but it should be asked if it would benefit from some "tweaks" when applied to Oak St with its exceptionally high traffic volumes, more than double that of the RM-8AN zone at the 700-800 block of w King Edward, for example.

A key design feature of row houses observed in RM-8AN is the "front yard" which is primarily for aesthetics (landscaping) and pedestrian access (largely theoretical on Oak St). Otherwise, such "front yards" facing Oak St have no other use and outdoor space allocated to them is lost to the useable courtyard and rear yards. Although RM-8AN appears to give the Director of Planning (DoP) discretion to reduce the front yard to

12 ft, it may make sense to allow even further reductions to optimize useable outdoor space in some cases on Oak.

Similarly, RM-8AN appears to give the DoP discretion to increase height of row houses along the lane to 2.5 stories (the same as allowed for RS-1, with DoP discretion) and for those along Oak St (the TRAP and TRNP barrier buildings) to 3 stories. Barrier buildings of 3 - 4.5 stories would be superior from the TRAP/TRNP perspective.

Such change in height limits would likely result in a modest increase in FSR above the current RM-8AN maximum of 1.2. For reference, the recently completed row house developments on Oak between w46th Ave and w37 Ave at FSR 1.0 typically created 1 living unit per 1,300 SF of land, or about 3 living units per ~4,000 SF of land, which is currently allowed on standard 4,000 SF lots in RS-1 zones. This is more like "phantom" than "gentle" densification. The current RS-8AN will probably create about 35% more living units per unit of land, partly because the row houses are to be smaller and the FSR is higher than previous Oak St row house projects.

It is counterintuitive that increased density can result in lower exposure to TRAP and TRNP, but the key is exploiting the details of the built form. Properly designed higher density along very busy arterials like Oak St should reduce the exposure to TRAP and TRNP by residents of both the new projects and the existing RS-1 zones behind.

Conclusion: Council might consider asking for a review of RM-8AN rules applied to Oak St, and similar very busy arterials, to determine if some tweaks would provide significant benefit to residents. Although RM-8AN on large sites such as this on Oak St calls for 100% row houses, hybrids that combine row houses with other forms might better optimize the land use and minimize pollution exposure.

Thank you.

Sincerely,
Dave Garner

for references:

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