Laura Dainard
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Town of Whitchurch-Stouffville
111 Sandiford Drive
Stouffville ON
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January 10, 2022

RE: OPA21.008, ZBA21.008, and SPA21.31
6461-6587 Main Street Stacked Townhouse Development Proposal

Dear Ms. Dainard,

I have had a chance to do an initial review of the applicant's Storm Water Management Report and Traffic Impact Study that was submitted for the proposed development and I have a number of questions and observations that I would like to offer to the Town.

Section 1 – Floodplain, Storm Water Management

Stouffville Creek Floodplain

The proposed development site is located is a "low lying area" that can be best described as a drainage basin since it is surrounded by lands of higher elevations. This localized "low lying area" has a single point of storm water drainage which is the large open ditch located at the rear of 6441 Main Street which drains into a 48" storm sewer that runs southerly through Memorial Park. This 48" storm sewer connects into the 54" Trunk Storm Sewer that runs along Thicketwood Blvd that connects into a larger a 72" storm sewer that continues south-westerly through Memorial park and outlets at the Storm Outfall located near the park bandstand into a tributary of Stouffville Creek.

Can the Town confirm that our understanding of the storm sewer system of the area is correct?

Can the Town confirm the elevation of the storm invert at the Storm Outfall in Memorial Park?

Can the Town confirm if the area of the storm outfall is within the designated TRCA flood plain for Stouffville Creek?

The elevation of the invert of the storm outfall has been estimated to be approximately 261.1 m. The inlet of the 48" storm sewer on the north side of Memorial Park, where the site drains into, has an invert of 263.4 m, which is a difference of only 2 m in elevation. If the storm outfall is in fact located with the TRCA Regional Storm Floodplain, what would be the elevation of the surface of the flood waters at the storm outfall location during a 100-year or Regional Storm event? If that elevation exceeds the height of the invert at the ditch inlet preventing any stormwater from draining

from the “low lying area” into the 48” Memorial Park storm sewer, what would be the likely outcome with respect to potential flooding on the site?

Storm Event Design Parameters Used in Applicant’s SWM Report

The storm discharge analysis identified in the applicant’s report only addresses a 2-year storm event which I understand to mean that there is a 50% probability of such an event occurring in any given year. For this design condition, the applicant’s storm water management consultant has indicated that with a new storm sewer connection from the site to the 54” trunk storm sewer on Thicketwood Blvd that the 54” storm sewer would operate at 65% capacity. The applicant has not done any analysis that incorporates the storm discharge from the existing 48” storm sewer that runs from the storm inlet on the north side of memorial park and connects into the 54” Thicketwood trunk sewer. The 48” storm and 54” storm sewers combine into a larger a 72” storm sewer that we believe eventually drains into Stouffville Creek.

The applicant has not done any flow capacity analysis on the downstream 72” section of the storm sewer.

Rainfall Watershed Located North of Main Street

My understanding is that a large portion of the watershed located immediately north of Main Street that extends from the area of Lehman’s Pond down to Main Street, drains in a southerly direction towards Main Street through a combination of existing creeks and underground storm sewers. One of these creeks is located along the rear property line between Park Drive and Tindale Street. Based on our cursory review it appears that a portion of this watershed is draining into a catch basin on Main Street in front of Card’s Appliance Store.

Can the Town please confirm the proportion of the north watershed that drains directly into the storm sewer system on Main Street?

Storm Sewer located north of Main Street

My understanding is that the 375 mm storm sewer on Main Street may also drain into the large open ditch at runs through 6441 Main Street and which eventually drains into the inlet in Memorial park.

Can the Town confirm the location of the drainage outlet of the 375 mm storm sewer that runs along on Main St between Church street and Stouffer St?

None of this had been identified in the applicant’s SWM report.

What Could Potentially Happen During a Regional Storm Event

Since the existing storm sewer system is identified to be at 65% capacity during a 2-Year design event, the existing storm sewer system is likely only designed to accommodate a 2 to 5-year storm event.

Can the Town identify the storm event that would result in the existing storm sewer system being fully utilized at 100% capacity?

Let's assume for the purpose of the following scenario that the Thicketwood Sewer will reach 100% capacity during a 10-year storm. When the storm sewers are completely full, excess rain water that can't be accommodated by the storm sewer system must be conveyed to the natural watercourses by overland drainage, which in a developed area would be the road surfaces, recreation paths, and parkland on its way to discharge into the existing natural watercourses. You will see actual flooding and water flowing along the road surfaces between the curbs during such an event which is not uncommon in the Thicketwood area. If the storm event is significant enough, water will flow over the curbs as it is flowing through the watershed. In this theoretical 10-year storm event, Thicketwood Blvd would be flooded, the storm sewer would not be able to accommodate any additional discharge from the storm inlet on the north side of memorial park, and as a result, storm discharge from the site would have nowhere to drain to. In addition, this overland flow condition would likely result in a significant amount of overland storm water flowing into the low-lying area from Main Street and the watershed located to the north of the site. A scenario could potentially exist where overland water flow would enter the site from the main entrance on Main Street and flow downward into the underground parking lot and completely flood the underground parking structure, in addition to flooding of the adjacent lands in the low-lying area.

If the low-lying area where the site is located could be potentially flooded during a 10-year storm event, what would happen during a 100-year storm event, or a Hurricane Hazel storm event?

The storm water management issues on this site were reviewed with a colleague of one of the concerned residents, who is currently in a high-level management position with one of the conservation authorities in the GTA and is an expert in their field. After reviewing the relevant information pertaining to the site, this individual provided the opinion that the low-lying area where the site is located appears to be at risk of serious flooding during a significant storm event and should be designated floodplain in the interest of Public Safety.

It is also important to recognize that with Climate Change the "100-year storm event" has increased in probability. We cannot predict the future but the reality is we may begin to experience 100-Year storm events every 10 years as climate change worsens, as has been witnessed within the City of Toronto over the past 10 years where numerous Regional Storm events have resulted in the flooding of roadways, underground parking facilities, subways, basements, and businesses.

My key question to the Town is what would happen with regards to storm water drainage and potential flooding on the site during a Regional Storm Event when the 48" storm sewer that drains the site is backed up and can not drain any storm water from the site?

Technical Feasibility of Draining the Proposed MHCB5 from their site to the Thicketwood Sewer

Has the Town verified that the required storm sewer invert at proposed MHCB5 can be placed sufficiently low enough in the proposed manhole in order to permit the storm sewer to connect

into the 54" Thicketwood Sewer while achieving the minimum slope requirements for gravity water flow.

Section 2 – Traffic, Parking and Pedestrian Safety

Traffic Concerns

We have several concerns regarding the traffic report as submitted by the Developer, and these concerns are outlined in a more detailed and technical letter that will be sent to Town staff, Mayor Iain Lovatt, and Councillor Sherban. Of greatest concern is the background traffic growth assumptions used in the report. The applicant's consultant relied on a 2% growth per annum background traffic growth assumption. A Background Growth rate assumption is not uncommon to use to estimate future background traffic growth in a traffic study when future developments in surrounding areas are unknown and you need to acknowledge that background traffic will continue to grow in the next ten years. The applicant's consultant has acknowledged that the two lots on the north side of Main street are going to develop, and have included traffic estimates from those land uses, but that is as far as they went.

A review of planned development in the area on the Town's development mapping website reveal there are a number of developments located east of the site that are going to be built out by 2028, which is the design horizon used in the traffic report. Most of these developments do not appear to have been addressed within their Traffic Report. The Stateview Homes townhouse development on Main Street east of 10th Line, the developments on 10th line south of Hoover Park, the redevelopment of the Stouffville Flea Market lands, and the all of the planned development around Lincolnville were not directly considered in developing the future background growth forecasts of Traffic. We estimate that these sites make up between 4200-4700 dwelling units, and we believe a significant number of trips will be generated from these development locations that will utilize Main Street either as a commuter route to the west, north-west, and south-west or to access the businesses in the commercial core area.

Their 2% background growth assumption is greatly underestimating traffic growth. A 2% assumption equates to an increase of only 158 vehicles per hour during the PM Peak hour by year 2028. If you include all the planned development that is occurring on the east end of town and assume that say 30% of the traffic generated from these future developments located along 10th line could potentially use Main street, this could result in additional future background traffic of anywhere from 700 to 800 vehicles in the PM Peak Hour.

What percentage of site traffic from the proposed site would the Town consider reasonable to be assigned to Main Street as future background traffic growth in 2028?

There is also a concern with the site trip distribution assumptions used in the assignment of PM Peak hour site trips. The applicant's traffic consultant appears to be under assigning site trips to and from the West during the PM peak hour which decreases the westbound left turn demand out of the site. The site trip assignment for the PM Peak Hour in the applicants traffic report shows that only 30% of site traffic going to and coming from the west on Main Street from direction of

Park Drive and the majority of site traffic is going to and coming from the east on Main Street from the direction of 10th Line which is not a reasonable assumption.

What directional split to the west and to the east in and out of the applicant's proposed site entrance does the Town feel is appropriate to use for the site traffic assignment?

Another significant issue is that the traffic report doesn't address traffic operations on the busiest part of Main Street, which is where there is the highest degree of existing traffic delays during the PM peak that is already backing up and causing traffic infiltration issues for the residential area located south of Main street. As it is, the traffic study looked at traffic patterns only as far west as the intersection of Main Street and Park Drive.

How is the Town able to review and comment on the traffic impacts on Main Street associated with the proposed development when the busiest part of Main Street has not been included in the study area of the traffic study?

Equitable Allocation of Available Road Capacity on Main Street

Capacity allocation is a concept that is usually used for assessing feasibility of permitting developments based on available watermain, sanitary sewer and storm sewer capacity. The same allocation concept for this proposed site is very relevant in the case of traffic capacity given the limited capacity available on Main Street in the Downtown Core.

Allowing this developer to build more than two times the density that the requested RN4 zoning would allow will also result in more than two times the amount of site traffic generation than would be generated by this site if development is kept within the RN4 zoning allowances. Given that there is a finite amount of available road capacity on Main Street to accommodate additional development related traffic growth, if this developer is allowed to "Take" more than his fair share of available road capacity allocation that could preclude the approval of a future redevelopment of an adjacent site that is proposed for redevelopment within the allowable zoning. This just doesn't seem to be an equitable way to allocate the limited available road capacity

Parking

In terms of parking, the consultant is implying that there is an abundance of available on-road parking supply in the vicinity of the site, which they document in Table 14 of their report. They state that Main Street, Pine street, Park Drive, Thicketwood Blvd, Tindale Rd, and Maytree Avenue have "no restrictive signage" with respect to parking, and as a result are available for use by visitors to the applicant's development. This information in the applicant's traffic report is misleading because the Town's 3-Hour maximum parking bylaw applies to all roads that are not signed with respect to parking.

Furthermore, it is unfair to permit a developer to overbuild and rely on on-street parking on adjacent roads. The on-street parking supply on neighbouring roads are meant to accommodate visitor parking demands for the residents who reside on these roads. Increased parking on these neighbouring roads may result in vehicles having to park on both sides of the road, thereby not

providing enough useable roadway with for safe two-way vehicular travel and emergency access and should therefore be discouraged. The applicant's consultant has also identified the Memorial Park parking lot as available for use for their visitor parking. The parking supply in the parking lots at Memorial Park were built with taxpayer dollars and are there to serve the needs of the broader community, support downtown businesses, and facilitate sporting and community events that are held in Memorial Park. The parking supply in these public lots should not be used to allow developers to avoid meeting their on-site parking supply obligations. If a development can't physically fit its parking obligations on site, this typically means that more units are being proposed that the site can reasonably handle based on allowable zoning.

PEDESTRIAN SAFETY

There are increased safety concerns for pedestrians. You will have the cars being generated by 106 residences coming out of a single driveway, crossing a well-used pedestrian sidewalk in a school zone. How is pedestrian safety being addressed? Does it meet the towns' initiative for "vision zero"?

In summary, these are some of my storm water management and traffic concerns related to the development proposal. I would appreciate a formal response from the Town to each of my questions and I trust that my comments will be submitted to the applicant's consultants as well as to the Town's Peer Review consultant J.D. Barnes for their review and comment. I look forward to hearing back from the Town on my concerns.

Sincerely Yours,

Mick Oliveira, P.Eng.

Cc:

Dwayne Tapp, Director of Development Services
Brian Kavanagh, Director of Engineering
Mayor Iain Lovatt
Councillor Sue Sherban