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**Re: Bay Port Village Residential Subdivision
Fire Department Access Requirements
DHE Project number: 19-2213-02FC**

INTRODUCTION

David Hine Engineering Inc. (DHE) was retained by Kaitlin Corporation to review the need for two fire department access routes to the Bay Port Village Residential Subdivision.

It is understood that the Town of Midland has commented that additional fire department access should be made a criteria of any subdivision approvals and draft plan conditions.

PROVIDED INFORMATION

DHE was provided with the following information:

- Plan 51M-953, approved on April 15, 2010 by Wesley Crown, Director of Planning;
- Draft Plan of Subdivision drawing prepared by MHBC Planning, Urban Design & Landscape Architecture and dated December 17, 2018;
- Bayport Boulevard Traffic Impact Study for Lanarose Midland Ltd, prepared by JD Northcote Engineering Inc. and dated December 13, 2018;
- Excerpt from Kaitlin Subdivision Agreement for Phase 1 of the Bay Port Village Residential Subdivision (Page 17, not dated); and,
- JD Northcote Engineering Inc. May 8, 2019 letter and Traffic Impact Study Addendum.

DHE also accessed Google Maps to understand the current status of the construction along with general location of subdivision within the municipality and proximity to fire services.

SITE DESCRIPTION

Bayport Boulevard connects to the east side of Harbourview Drive. Bayport Boulevard is 20 m wide and essentially runs east and north east from Harbourview Drive for approximately 1100 m. The boulevard follows the contours of the waterfront. Bayport dead ends with an approximate 42 m wide cul de sac.

The Town of Midland approved the Phase 1 subdivision plan (51M-953) on April 15th, 2010.

Drummond Drive is a small road near the north east end of Bayport Boulevard that runs approximately 50 m from Bayport Boulevard and currently dead ends at the edge of the development. The purpose for this short road is to facilitate a future road connection to Fuller Avenue through a draft approved plan of subdivision on the abutting property to the north of the proposed plan.

UNDERSTANDING OF ISSUE

DHE understands the issue as follows:

1. A Developer received approval for the development in 2010 from the Town of Midland. The development included residential buildings on both sides of Bayport Boulevard and at the east end of Bayport Boulevard.
2. A Developer is beginning the process of developing what would represent the second phase of this development. This development has the following characteristics:
 - a. 42 separate blocks,
 - b. Street A connects to Bayport Boulevard in three locations:
 - i. at the west end of Street A (at Block 1),
 - ii. at the east end of Street A (at Block 27/28), and
 - iii. at the midpoint of Street A by Street B between Blocks 21 and 22/37.
 - c. Street A is approximately 18 m wide.
3. The subdivision agreement for the Phase 1 lands (Section 9.3.9.) indicates that the Developer provide sprinkler protection for the dwelling units on lots 29 to 60 inclusive (to NFPA Standard 13D “Standard for the Installation of Sprinkler Systems in One and Two family dwellings and Manufactured Homes”) if the Town did not accept:
 - a. a public road connection link from Street B through to Fuller Avenue through the adjacent Subdivision File NO. MD-T-001, or
 - b. has not accepted a Temporary Secondary Emergency Road access to a design and standard acceptable to the Town in the same location.

DHE was retained to review the legislative requirements for fire department access to the proposed subdivision, and to assess if a second access road into Bayport Boulevard is required. It is noted that sprinklering of the residential properties (Lots 29 to 60 on Plan 51M-953) was undertaken as part of construction within Phase 1 of this development.

APPLICATION OF THE ONTARIO FIRE CODE

The Ontario Fire Code (OFC) does not dictate how a fire department vehicle access a building other than by a street. A street is defined as follows:

Street means any highway, road, boulevard, square or other improved thoroughfare 9 m or more in width that has been dedicated or deeded for public use and is accessible to fire department vehicles and equipment.

The OFC generally is a life safety maintenance document for buildings, uses and processes.

APPLICATION OF THE ONTARIO BUILDING CODE

The Ontario Building Code (OBC) governs the construction of buildings. The OBC does regulate the street access and fire route access to buildings.

For large buildings or those with unique occupancies, the OBC governs the number of streets a building must face, however this relates only to the perimeter of a building.

For smaller buildings, not more than 3 storeys and not more than 600 m², the OBC requires that the following:

9.10.20.(1) Access for fire department equipment shall be provided to each *building* by means of a *street*, private roadway or yard.

(2) Where access to a *building* as required in Sentence (1) is provided by means of a roadway or yard, the design and location of such roadway or yard shall take into account connection with public thoroughfares, weight of firefighting equipment, width of roadway, radius of curves, overhead clearance, location of fire hydrants, location of fire department connections and vehicular parking.

The OBC simply requires the building to be accessible by a street. Unlike the larger buildings, the fire route is not required to be within a specific distance of a building. This provision is used for small buildings constructed on island or those served by narrow private lanes.

RESIDENTIAL SPRINKLERS

There is no provision in the OBC to sprinkler small buildings. For larger buildings or those with unique occupancies, the OBC may require sprinklers. Often sprinkler protection is selected for the larger buildings as there are numerous design benefits.

Sprinklers can result in significantly reduced fire and smoke damage to a property. At the time of construction, residential sprinkler installation costs are approximately \$1.35 per ft² according to the Home Fire Sprinkler Coalition of Canada.

However, the OBC and the National Building Code of Canada does not require sprinkler protection in small buildings.

DISCUSSION

Neither the OBC nor the OFC regulate the number of streets that must access a subdivision. It appears to be a subjective evaluation without legislative governance. The following must be considered:

1. Response Distance

The Midland Fire Department (MFD) hall is located at 550 Bayshore Drive. From the hall to the existing residences on Bayport Boulevard is approximately 2.8 km. This distance is approximately ½ the travel distance to the furthest reaches of the municipality of Midland.

2. Existing Residential Buildings

The existing homes on Bayport Boulevard are further than any of the new residential blocks, yet these homes are neither sprinklered nor provided with 2 access points. The request by the MFD seems inconsistent with the existing residences.

3. MFD Capabilities

According to the municipal website (<https://www.midland.ca/townhall/dpt/fire>), “the Midland Fire Department is a composite fire department that consists of a Fire Chief, a Deputy Fire Chief, a Fire Prevention Officer, a Training Officer, 10 Career Firefighters, 20 Volunteer Firefighters, and an Executive Assistant”.

This level staffing level is based on a 24 hour per day, 365 day per year operation serving a population that is approximately 16,500 people. It is anticipated that the population increases during the summer months. With increased population there will be an increased need for fire/emergency response services.

MFD is part of the Simcoe County Mutual Aid Association and would be able to access additional firefighting resources if necessary, through their Mutual Aid Association or through any Automatic Aid agreements with neighbouring municipalities. This would be defined in the mutual aid agreement.

Typically fire departments provide various levels of service depending on community needs and budgets based on a service level bylaw. Most larger fire departments self-evaluate in accordance with NFPA 1710 “Standard for the Organization and Deployment of Fire Suppression Operations, Emergency Medical Operations, and Special Operations to the Public by Career Fire Departments”. Based on this evaluation, the fire department may change the service levels provided to the public. The level of service provided is stated in the Fire Department Establishing and Regulating bylaw which was unavailable on the website.

Fires in sprinklered buildings are generally easier to extinguish than a nonsprinklered building. It appears that the sprinklered units within Phase 1 may be an acknowledgement of the limitations of the MFD.

4. Fire Department Access to Site

The site is only accessed via Harbourview Drive to Bayport Boulevard. However, Harbourview Drive is the only way to access the site from Midland unless Penetanguishene Road is used. This is a 7 km detour.

This is an existing condition.

The provision of a second street does not enhance access to this general area.

5. Island Residential and commercial Buildings

The proposed new residential buildings are significantly better off with respect to fire department access than the dwelling units on Present Island, Quarry Island, Roberts Island etc. The island dwelling units have no fire department access, yet, even in these cases, the municipality does not require them to be sprinklered.

6. Response Times

The response time to the property is within the expected timelines for the initial fire department attack. Assembling enough voluntary staff to provide an aggressive interior attack may take significant time as the volunteers need to get to the fire. The addition of an extension of Drummond Drive to connect with Fuller Road or a temporary emergency access would not significantly impact response times.

7. Managing Expectations

The municipality can require that all new development be sprinklered through a bylaw that is applicable to all dwelling units, not just on a specific development. This bylaw can be used to limit the expansion of the fire department as the municipality grows.

CONCLUSION

The Province has not addressed the methodology of site access and because it is not legislated, a municipality should not be considering creating consistency through a bylaw. Also, while the option of sprinkler protection may provide limited assistance, it does not replace the need for the provision of fire services. While sprinklering does have a place as an alternative solution to strict compliance to the OBC, it does not replace the benefit of highly skilled and trained firefighters responding to a fire.

There is no legislation that addresses the design methodology of fire department access to subdivisions. In this area, there are many existing homes that are neither sprinklered nor serviced by 2 roads. In other municipalities, there are also dwelling units on islands that do not have any emergency services. The provision of a second street is a subjective request not founded on any legislation.

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