EMERGENCY IMPACTS DUE TO DEEP BAY DEVELOPMENT – Rev. B
Baynes Sound Investment

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EMERGENCY IMPACTS DUE TO DEEP BAY DEVELOPMENT

INTRODUCTION
The Regional District of Nanaimo (RDN) has requested that the impacts to emergency services and known hazards be identified due to the increase in population and structures associated with the Baynes Sound Investment development in Deep Bay.

The Oceanside RCMP, Deep Bay Improvement District (Administration and Fire Department), BC Ambulance, Parksville and Qualicum Beach Fire Departments, Arrowsmith Search and Rescue, and RDN Emergency Coordinator were contacted to determine the impacts based on historical data for the area. Additional data was collected from the RDN website including the Neighbourhood Emergency Preparedness guide, Hazard Vulnerability Risk Analysis 2009 Update, and the Deep Bay Community Wildfire Protection Plan and Fire Hazard Map.

DEVELOPMENT STATISTICS
The development is proposed to have 386 residential units and 292 RV pads. Of the 386 residential units 220 are single family lots, 120 are multi-family units, and 46 units are for seniors housing. The nature of the seniors housing has not been determined at this stage. The seniors housing could range from independent living (i.e. 55+ building) with no support services to independent living with support (common dining room, 24hr front desk, etc.) to complex care / assisted living (with 24hr medical care). Supported independent living and complex care facilities are typically owned and run by an organization. Examples include Retirement Concepts (The Gardens at Qualicum), Berwick (Berwick on the Lake in Nanaimo), and Vancouver Island Health Authority. Residents in independent living are typically more able bodied and active than those in complex care.

Based on the 2011 Census for RDN Area H there was an average of 2.1 people per dwelling therefore the total potential additional population in Deep Bay could be 1,424 (plus 22 commercial lots). The 2011 population in RDN Area H was 3,509. The development will therefore increase the population (at peak periods) by approximately 41%.

EMERGENCY SERVICE LOCATIONS
The Deep Bay Fire Department is a volunteer fire department with the fire hall located on Mountainview Road (off of Gainsberg Road). The fire hall is located within 1.5km of the access to the development off Island Highway.

The closest BC Ambulance station is Station 173 (Bowser) located on Lions Way in Qualicum Bay. This station is approximately 10km from the site. The RCMP detachment is located on the Island...
Highway in Parksville approximately 35km southeast of the site. The SAR (Arrowsmith Search and Rescue) Hall is in Qualicum Beach and is also approximately 35km from the site.

**EMERGENCY SERVICE CALLS**

Contact was made with the RCMP Oceanside, Qualicum Beach Fire Department, Parksville Fire Department, Deep Bay Improvement District, and BC Ambulance to obtain statistics on existing emergency calls in Deep Bay and to seniors housing in the region.

Two independent living seniors housing complexes were identified in Parksville that are a similar size as proposed in Deep Bay (48 and 50 units). Four seniors housing complexes were identified in Qualicum Beach. These complexes ranged from a 33 unit independent seniors complex to a 205 unit that is a mixture of independent living, complex care, and assisted living units.

**Fire**

The Parksville Fire department has made 17 calls to the two seniors independent living complexes since 2004. This is an average of less than two (2) calls per year and 0.02 calls per unit per year on average. These calls are a mixture of false fire alarms and medical calls (when ambulance is unavailable).

The Qualicum Beach Fire department has made 183 calls since 2008 to the 373 seniors units in the community (mixture of independent and complex care.) This averages to 0.098 calls per year per unit. The calls are a mixture of false alarms, medical calls, etc.

Based on the statistics from the Parksville and Qualicum Beach Fire departments it is expected that the seniors housing in the Deep Bay development will generate between 1 and 5 additional fire department calls per year. The number of calls will depend on the type of seniors housing (independent versus complex care).

In Deep Bay, for the seven-year period from 2006 and 2012, there were a total of 643 calls which is an average of 92 calls per year or 0.026 calls per person in Area H. These calls range from fire calls, motor vehicle incidents, first responder calls, and miscellaneous calls. Fire and first responder calls account for 49% of the fire departments calls. Based on the average calls per person and the projected additional population the number of additional calls for the Fire Department are estimated at 35 (residential and RV) and up to five (5) more for the seniors for a total of 40 additional calls. The impact on the fire department requires input from the Fire Department since they understand best their needs and requirements. A request has been submitted to the Deep Bay Fire Department (through Deep Bay
EMERGENCY IMPACTS DUE TO DEEP BAY DEVELOPMENT

Improvement District) for information on anticipated impacts (e.g. additional volunteer requirements, equipment and infrastructure needs, etc.), however, it is not available at the time of this report.

**BC Ambulance**

A request for statistics from BC Ambulance for the seniors housing in Parksville/Qualicum and existing Deep Bay calls has been submitted to BC Ambulance through their Freedom of Information process.

Since the data from BC Ambulance may take up to 30 days to be received the following seniors housing complexes were contacted for their estimates on the average number of ambulance calls to their facility per month. The number of ambulance calls is also very dependent on the type of seniors housing.

<table>
<thead>
<tr>
<th>Seniors Housing</th>
<th>Type</th>
<th>Units</th>
<th>Estimated Ambulance Calls per month*</th>
<th>Average per unit per month</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hawthorne Place</td>
<td>Independent</td>
<td>33</td>
<td>1 mostly, but up to 3</td>
<td>0.03 to 0.09</td>
</tr>
<tr>
<td>Eagle Park</td>
<td>Complex</td>
<td>75</td>
<td>1 to 2</td>
<td>0.01 to 0.03</td>
</tr>
<tr>
<td>Qualicum Manor</td>
<td>Complex</td>
<td>60</td>
<td>Less than 5</td>
<td>0.08</td>
</tr>
<tr>
<td>Woodgrove Manor</td>
<td>Complex</td>
<td>41</td>
<td>2 to 5</td>
<td>0.05 to 0.12</td>
</tr>
<tr>
<td>Qualicum Gardens</td>
<td>mixed</td>
<td>205</td>
<td>Could be up to 40</td>
<td>0.20</td>
</tr>
</tbody>
</table>

*based on phone conversations with staff during the last week of August 2013

The number of ambulance calls ranges from 0.01 to 0.2 per unit per month. Based on these figures the number of calls to the seniors portion of the development could range from 1 to 9 per month depending on the type of facility. It is expected that the number of ambulance calls would be around 3 per month or 36 per year. A request for information on how BC Ambulance determines the need for additional labour or equipment based on a development has been made to BC Ambulance; however, the data is not available at this time.

**RCMP**

RCMP Oceanside will only release the statistics on existing policing calls for Deep Bay to the RDN. A request for the data has been submitted by RDN’s Emergency Coordinator for this information. (A request was made to Jani Drew of the RDN on Sept 12, 2013 to collect this information from the RCMP.) A request to the RCMP, through the RDN, will have to be made to determine if this development impacts their staffing needs.
Arrowsmith Search and Rescue

Arrowsmith Search and Rescue estimates that they undertake 20-30 searches per year. These searches range from inland water and rope/terrain rescues to lost individuals (whether on trails or wandering senior). Arrowsmith Search and Rescue did not have a breakdown on the percentage of searches that are from lost/wandering seniors; however the RDN estimated that it could be as high as 60% of all searches. Based on 60% of the 20-30 searches per year the number due to seniors could be as high as 18 per year for a seniors population (over 65) of 14,405. (Arrowsmith Search and Rescue population based on RDN Areas E, F, G, H plus Qualicum Beach and Parksville.) Therefore there is approximately 0.0012 senior searches per year in the Arrowsmith area. Based on adding 46 seniors units (up to 97 seniors) this would add 0.12 searches per year or 1 search every 8-9 years.

One of the biggest issues with seniors housing (depending on the type of facility) is residents wandering off and getting disoriented. To help minimize lost residents and to reduce the time needed on by emergency services / search and rescue, Arrowsmith Search and Rescue has partnered with Project Lifesafar. The program has clients (who must enroll in the program) wear a wrist-watch transmitter that can be tracked. The developer should ensure that the owner/operator of the seniors complex is aware of this program and encourage them to market it as part of the complex. Due to the low number of expected calls due to this development it is not expected that additional labour and equipment is needed by SAR. To confirm whether or not this is the case, SAR was contacted on September 18 to gain their opinion on whether there may be any increase in resource needs (e.g. volunteers, labour, equipment, etc.) due to the Deep Bay development; a response was not received at the time of this report.

RDN Emergency Program Services

The RDN maintains an Emergency Plan for the region. The RDN Emergency Program Services include providing emergency bulletins and alerts to the public as well as important information on how to be winter prepared, how to be personally prepared, how to become an emergency program volunteer, and how to implement a Neighbourhood Emergency Preparedness Program. Once at least 10 residents in the new neighbourhood are interested in creating a Neighbourhood Emergency Preparedness program the RDN may be requested to provide a free workshop to the neighbourhood. Since the site has various types of residents and housing the RDN may have to provide multiple workshops for this development. The Deep Bay Community Wildfire Protection Plan may also be required to be updated (the fire hazards map) once the site is developed due to the change in vegetation on the site. This development could add valuable additional emergency program volunteers. Note that RDN staff has indicated that the emergency plan will not require updating because of this development.
COMMUNITY VULNERABILITY TO KNOWN HAZARDS

The following hazards have been identified as high in RDN:

- Earthquake
- Interface fires
- Pandemic
- Floods
- Human disease

Many of the items that are required to be prepared for known hazards (wildfire, interface fire, hazardous spills, earthquake) are the responsibility of the individual, strata (multi-family), or operator (seniors) and are a challenge for a developer to ensure happens. However, there are some elements that the developer can build into the development to support future individuals in being prepared for known hazards.

The following are general elements that should be incorporated into this development:

- Provide each single family lot with a plan showing utility shut offs
- Provide a designated first aid station / assembly point in the RV Park / Common Building
- Provide initial first aid supplies for station
- Identify alternative water sources (firefighting) on site and post in first aid station area
- Consider providing basic firefighting equipment (rooftop access ladder, shovel, rake, large water barrel, and 10-L pail ) and search and rescue pack in first aid station
- Ensure all ramps designed on site can withstand shaking from an earthquake
- Distribution of FireSmart pamphlets to new residents and all RV users
- Consider installing a Fire Danger sign in or near the access to the RV park

Seniors Needs

Since the type and operator of the seniors housing is unknown at this time there is the potential for a wide range of needs for the seniors from limited support to full support during an emergency.

The operator of the seniors building should have an emergency plan in place to ensure that the amount of support required during various emergencies are identified. This plan would include when to shelter in-place, when and who need to be evacuated (i.e. who are prioritized), what number of staff is required during an emergency, what are staff roles during an emergency, if common dining facilities ensuring at least a three day supply of food, and that the building is supplied with plug in security lights.
**Shelter in Place**

Some emergencies may involve the need for people to stay right where they are. Sheltering in place requires individuals to go into their home or nearest building as quickly as possible. For the RV residents this may mean their RV or the common building depending on the type of hazard. For the seniors complex this will mean staying within their building and potentially taking in neighbours.

The owner/operator of the seniors housing should have a shelter in place plan to ensure that all openings are sealed, all vents are turned off, and individuals are away from windows and stairwells during a shelter in place event.

**Wildfires**

The proposed development is within the Deep Bay Fire Protection Area. The portion of the site located north of the railway is rated as a high fire hazard while the portion of the development south of the railway is rated extreme. The extreme area has a high percentage of tree and vegetation cover compared to the high area to the north. The majority of Deep Bay that is developed as residential housing has a low fire hazard. It can be expected that, once developed, the site will have a lower fire hazard than existing; however, the site will still border onto low density, highly forested areas to the west and south that may pose a fire hazard.

The addition of the development and the additional access roads will provide improved fire and emergency service access to the site and the adjacent neighbourhoods to the east. The reduction in trees and vegetation in the area will also reduce the potential fuel sources on the site. To further help mitigate the fire hazard due to the development, the following will be considered and incorporated where possible by the developer:

- Vegetation Management – Establish and maintain FireSmart fuel modified areas around interface structures and key resources
- Structural Design and Construction – Work to design homes and buildings on site to help mitigate the interface fire hazard i.e., through the use of non-combustible roof covering assemblies and fire-resistant siding materials.
- Provide an emergency fire plan to the Deep Bay Fire Chief during the construction portion of the development. A key element will be during land clearing and disposal of debris/trees.
- Ensure that servicing requirements for water and fire protection are met.
- Consider installing fire hydrants during the initial stages of construction to improve fire protection in the area.
• Ensure RV Park owner/operator is familiar with BC Wildfire Act (SBC2004) – including sections on forest fire protection and campfire restrictions.

CONCLUSIONS
Any increase in population will have an impact on emergency services. The seniors housing will have a higher impact on fire and ambulance service than non-seniors housing / RV park; however the type of seniors housing will have a significant impact on the demand on emergency services. A complex care facility with more elderly / sick residents will increase demand more than an independent living facility. It is expected overall there will be up to a 43% increase in fire calls due to the additional population and approximately 36 additional ambulance calls due to seniors. It is expected that there will be a limited increase in Arrowsmith Search and Rescue services based on historical statistics.

The developer should encourage the seniors housing owner/operator to market the Project Lifesaver program as well as to prepare an emergency hazards and shelter in place plan. The developer should ensure that all ramps are designed to withstand shaking from an earthquake.

The developer will also provide a designated first aid station / assembly point in the RV Park / Common Building, provide the initial first aid supplies for the station, identify the location of any alternative water sources, provide basic firefighting equipment and a search and rescue pack. For the RV Park the developer will distribute FireSmart pamphlets and consider installing a Fire Danger sign in or near the access to the RV park. The RV Park owner/operator will be made aware of the BC Wildfire Act (SBC2004) – including sections on forest fire protection and campfire restrictions.

Shelter in place locations may include the RV common building, any multifamily building, and the seniors complex.

It can be expected that, once developed, the site will have a lower fire hazard than it currently does, however the site will still border onto low density, highly forested areas to the west and south that are a fire hazard. The addition of the development and the additional access roads will provide improved fire and emergency service access to the site and the adjacent neighbourhoods to the east. The reduction in trees and vegetation in the area will also reduce the potential fuel sources on the site. To further help mitigate the fire hazard, the project will consider vegetation management and structural design and construction materials.

The developer will also provide an emergency fire plan to the Deep Bay Fire Chief during the construction portion of the development and ensure that servicing requirements for water and fire...
EMERGENCY IMPACTS DUE TO DEEP BAY DEVELOPMENT

Protection are met. The developer should consider installing fire hydrants during the initial stages of construction to improve fire protection in the area.