



# Business Case

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## Fire Station & Joint Emergency Services Facility

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## 1. Need, Problem, or Opportunity

The Wainfleet Fire & Emergency Services operates from four stations, with administration offices located within the Town Hall.

Number	Location	Address	Personnel	Apparatus
Administration	Wainfleet	31940 Hwy 3	2	Car 1, Car 2
Station #1:	Winger	43178 Hwy. 3	8	Squad 1
Station #2:	Wainfleet	31907 Park St.	15	Engine 2, Rescue 2
Station #3:	Burnaby	11603 Lakeshore Rd.	14	Engine 3, Tanker 3
Station #4:	Schwoob	63959 Concession 6	8	Engine 4, Tanker 4

**Station 1- Winger:** Constructed in 1947 of a concrete base with brick walls and metal clad roof over a former tar and gravel roof. Winger has 1 single bay and operates one apparatus.

**Station 2- Wainfleet:** Connected to the library and community hall. The community hall is used as the training and meeting room by the Fire Department. The office is shared with the EMS service. Wainfleet has 2 single bays and operates two apparatus.

2012-2013 Council for the Twp. of Wainfleet resolved to have a consultant conduct a Fire Services study and prepare a Master Fire Plan with recommendations. With regards to Fire Station locations and staffing, the recommendation was to close and combine Station 1 and Station 2 in a new location near Chambers Corners at the municipality owned site on Highway #3. Also, that the future site for a new combination station would also house Fire, EMS and Police.

In 2015 a Building Assessment was completed with the following building recommendations:

### Fire Hall #1 - Winger (Figure 1)

- The building is old, appeared to be in poor to fair condition, and is approaching the end of its useful life.
- Repairs to the roofing, exterior walls, mechanical and electrical systems may be more costly than the building is worth.
- Review of the property for this building notes that the property lot size may be too small to house a replacement building and supporting service (septic system, etc) should this be an option. Adjacent property acquisition will be required or an alternate site selected.

### Fire Hall #2 – Wainfleet (Figure 2)

- Remove and Replace Siporex Roof Panels in Fire Station
- Replace Heating System and upgrade building control systems
- Provide CO/No2 detection and ventilation in Fire Station
- Upgrade Lighting
- Install Fire Alarm
- Replace Electrical Panels and upgrade electrical system where required.

In early 2019 Council approved the purchase of 2.6 acres to the west of the presently owned 2.4 acres, thus providing 5.0 acres for the potential Joint Emergency Services Facility. Preliminary discussions with Emergency Service Partners have been positive and may provide an opportunity to better serve the municipality.

## **2. Project Stakeholders**

Stakeholder	Reason for Involvement
Council	Project Approval
Finance	Financial Planning and Purchasing Support
Operations	Facility Management and Maintenance
Fire Services Personnel	Determine the requirements and needs
Architect/Engineers	Design & engineer site, structure and utilities.
Contractors	Construct and finish project as directed

## **3. Benefits & Risks**

### **3.1 Benefits**

- Presently Stations 1 & 2 do not meet the three requirements (One Triple Combination Pumper, One 1500 gal. Tanker, and 15 Firefighters – See *Figure 3*) as set by Fire Underwriters Survey, for Fire Station recognition. Combining Stations 1 & 2 in a central location will provide both, Wainfleet, Winger, as well as the northeast portion of the municipality with a recognized Fire Station, potentially reducing residential insurance premiums by approximately 5-10%. (See *Figure 4*)
- The municipality does not have a 24hour Ambulance stationed, however, a 12hour daytime Community Response Unit (CRU) provides initial patient care services in Wainfleet. This unit is stationed in Welland, and approximately more than 1 hour of the 12 hour shift is spent travelling. Further, during stand by time, the CRU is parked outside in all weather conditions and is left running, to ensure medical equipment does not freeze in the colder seasons.
- Under the Emergency Management and Civil Protections Act (EMCPA), all municipalities must have an Emergency Operations Centre (EOC). Currently, the Township of Wainfleet's EOC is located in the Council Chambers, which does not provide adequate space or communications capabilities. The proposed facility would include full Emergency Management capabilities as required for compliance to the EMCPA.
- Workplace Safety & Insurance Board (WSIB) has declared various cancers as a workplace illness under presumptive legislation, and therefore require the “Employer”, in this case the municipality, *“take every precaution reasonable in the circumstances for the protection of a worker (OHSA 25.2.h.)*.

The proposed facility would provide firefighters the facilities to properly decontaminate their gear (Specialized “Extractors”/Commercial Washing Machine) and themselves (Showers and Decontamination rooms) following exposures to potentially toxic and carcinogenic environments.

The proposed facility would also provide adequate space and isolation for the safe and sanitary use of SCBA Breathing Air Refilling Station, as per the “Respiratory Protection Program” as required by the MOL.

- The Province of Ontario has adopted the National Fire Protection Association (NFPA) standards with regards to Firefighter training, Personal Protective Equipment, Apparatus (Fire Truck) specifications, Equipment requirements, Fire Department operation and deployment, and firefighter health and safety. NFPA 1720 Standard for the Organization and Deployment of Fire Suppression Operations, Emergency Medical Operations and Special Operations to the Public by Volunteer Fire Departments recommends Volunteer Fire Departments should be capable of responding to calls with 6 firefighters within 14 minutes, 80% of the time. By combining and relocating Stations 1 & 2, response criteria will be either maintained or improved to meet the minimum standard. (See *Figure 5*)

### 3.2 Risk

- In 2016 the Ministry of Labour (MOL) conducted a workplace safety inspection, whereby, concerns regarding appropriate facilities was reviewed and documented. The inspector did not issue orders against the Township at the time due to the proposed Fire Station project. Any further delay in the project could result in the MOL conducting another round of inspections and issuing orders as required. (OHSA 25.2.h)
- The Community Hall attached to Station 2 (Wainfleet) is not in compliance with the *Provincial Accessibility for Ontarians with Disabilities Act, 2005*, and does not have the space to accommodate the requirements. The proposal of moving the Station 2 to a new facility would grant the Municipality the space required to bring the Community Hall into compliance with the AODA. If Station 2 is not replaced or moved, the Community Hall could be forced to close by 2021.
- Delay in any capital project will invariably result in higher construction costs in the future. Any further increases, may make the project unaffordable, and may force the Municipality to reduce the levels of service that can be offered or delivered. Historical construction costs have risen from approximately \$85-\$100 per square foot in 1995 to \$190-300 per square foot in 2005 and again, \$310-400 per square foot in 2015. (See *Figure 6 for historical construction cost data*)
- Both, Stations 1 & 2 cannot fit any larger apparatus than what is currently housed. Following the Apparatus replacement schedule, the Municipality is required to purchase an Engine in 2019 and an Engine in 2023. Without the facilities to house the new apparatus, WFES will be forced to operate equipment beyond the 20 year service life, resulting in increased equipment maintenance/repair costs. Also, reducing our insurance grading which would increase personal insurance premiums (See *Figure 7*).  
Aging apparatus and equipment also contradicts OHSA 25.2.a & b  
*An employer shall ensure that,*  
*(a) the equipment, materials and protective devices as prescribed are provided;*  
*(b) the equipment, materials and protective devices provided by the employer are maintained in good condition.*

## **4. Resource Estimates and Alternatives**

### **Option 1-**

Proceed with engagement of Emergency Service Partners, Site preparations, Engineering Studies, Zoning and Official Plan Amendments, and develop an RFP for Architectural Design and Engineer services.

<b>Description</b>	<b>Estimate</b>
Purchase property	\$450,000.00
Survey	\$ 2,000.00
Topographical	\$ 2,500.00
Geotechnical Survey	\$ 10,000.00
Traffic Impact Study	\$ 10,000.00
Hydrological Study for well/Potable Water engineering	\$ 20,000.00
Storm Water/Floor Drain Water Management	\$ 20,000.00
Drainage Engineering	\$ 10,000.00
Tree Removal	\$ 3,000.00
Fire Pond - Water Source	\$ 7,000.00
Barn Renovation	\$ 30,000.00
Demolition of House	\$ 10,000.00
Temporary Electrical work	\$ 3,000.00
Training area Prep	\$ 10,000.00
Signage	\$ 2,000.00
RFP for Design Architect & Engineer (Estimated 8% of project costs)	\$360,000.00
<b>Total Estimated Capital Project Cost for 2019</b>	<b>\$850,000.00</b>

#### Advantages

- i. The site is the geographical center of the Township located on a major intersection that will improve the response time coverage to the northeast of the Township
- ii. The site provides an excellent location to support existing Stations 3 and 4.
- iii. The residential location of the volunteers is within an acceptable distance from Chambers Corners.
- iv. Additional space for Fire accommodations would also include the vehicle at Station 1 and the addition of a third Tanker Vehicle that is needed for the Superior Tanker Shuttle option.
- v. The buildings and life risks to be covered remain within the ideal 8 kilometer range from all the stations.
- vi. Station 2 could be utilized as either additional Library space, or for the Seniors Club which is currently using the Arena.
- vii. Station 1 could be declared surplus and sold or donated to the Fire Fighters Association.

#### Disadvantage

- i. The financial costs of constructing a new station. (Estimated @ \$4,500,000.00)

**Option 2-**

Close Station 1, renovate and place an addition on Station 2, upgrade the entire structure up to Post Disaster rating, and potentially close the Community Hall.

**Advantages**

- i. The site is owned by the municipality.
- ii. Space for other municipal approved functions could be relocated to the building.
- iii. Space for the EMS vehicle could be provided.
- iv. Additional space for Fire accommodations as well as for the vehicle at Station 1 and a third Tanker Vehicle that is needed for the Superior Tanker Shuttle option.

**Disadvantages**

- i. Closing Station 1 without moving Station 2 closer will be perceived as reducing the level of protection to Winger and some areas of Highway 3.
- ii. The cost of construction of an additional building on the limited area of the side lot.
- iii. Planning restrictions regarding setbacks and lot coverage could limit the size of the building expansion. Causing the space required to bring the Community Hall into compliance with the AODA to not be achieved and may result in closure of the Community Hall.

**Option 3-**

Reduce the Level of Service provided, Do Not conduct any building or facility works, delay the purchase of any further apparatus and continue to operate facilities, vehicles and equipment in non-compliance with the OHSA and AODA.

## **APPENDICES**

### **Appendix A-** 2018 Wainfleet - Fire Underwriters Survey Report

**Figure 1- Winger Fire Hall**

#### **STATION 1**

Station 1 is a single bay station constructed in 1947 of a concrete base with brick walls and metal clad roof over a former tar and gravel roof. This is a very basic building with no accommodations for the volunteers. The main door size of 10 feet by 12 feet makes the building unsuitable to contain any full size Pumper or Tanker. The Building was built originally to keep the one operational fire truck out of the elements.



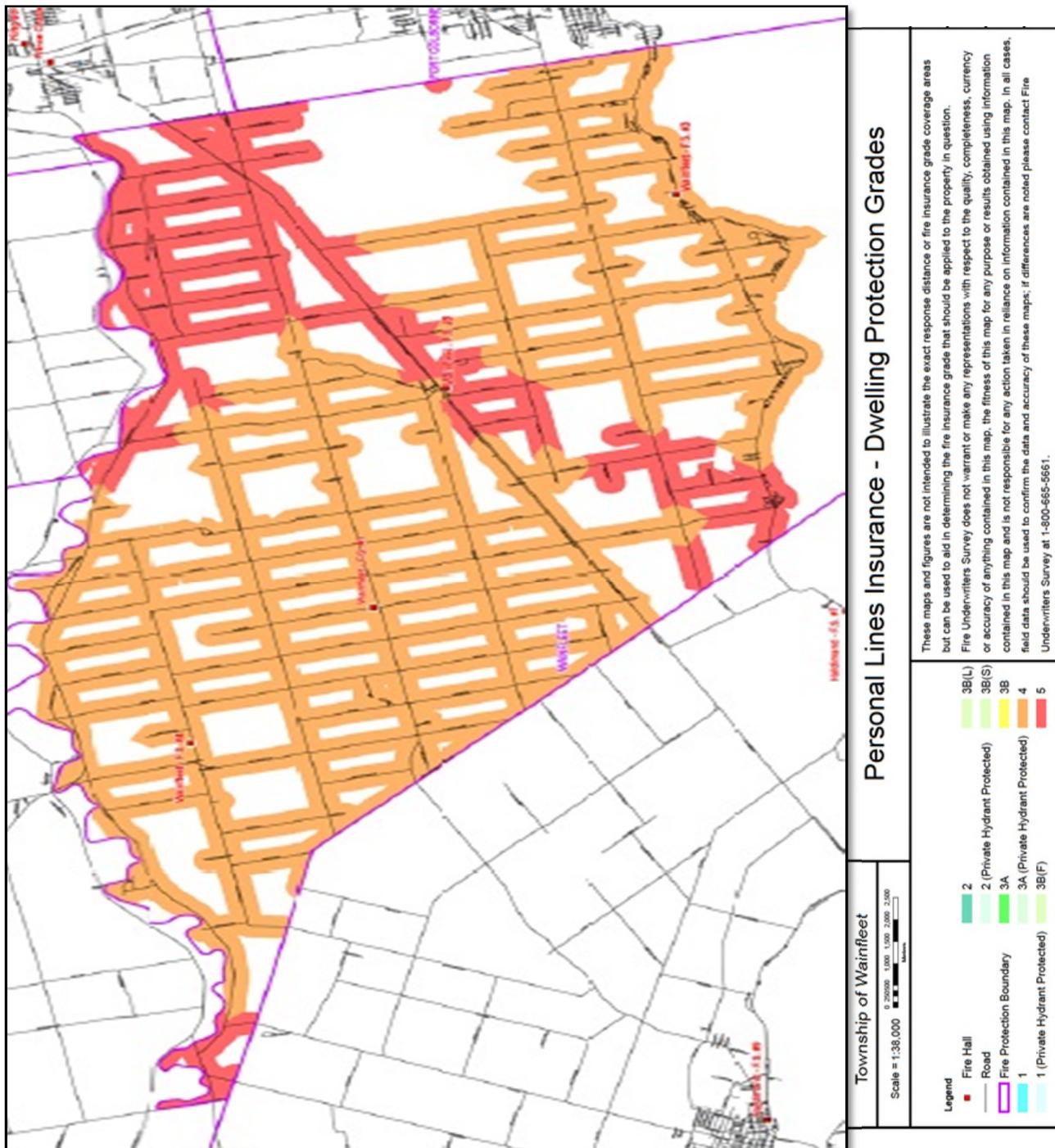
**Figure 2- Wainfleet Fire Hall****Station 2**

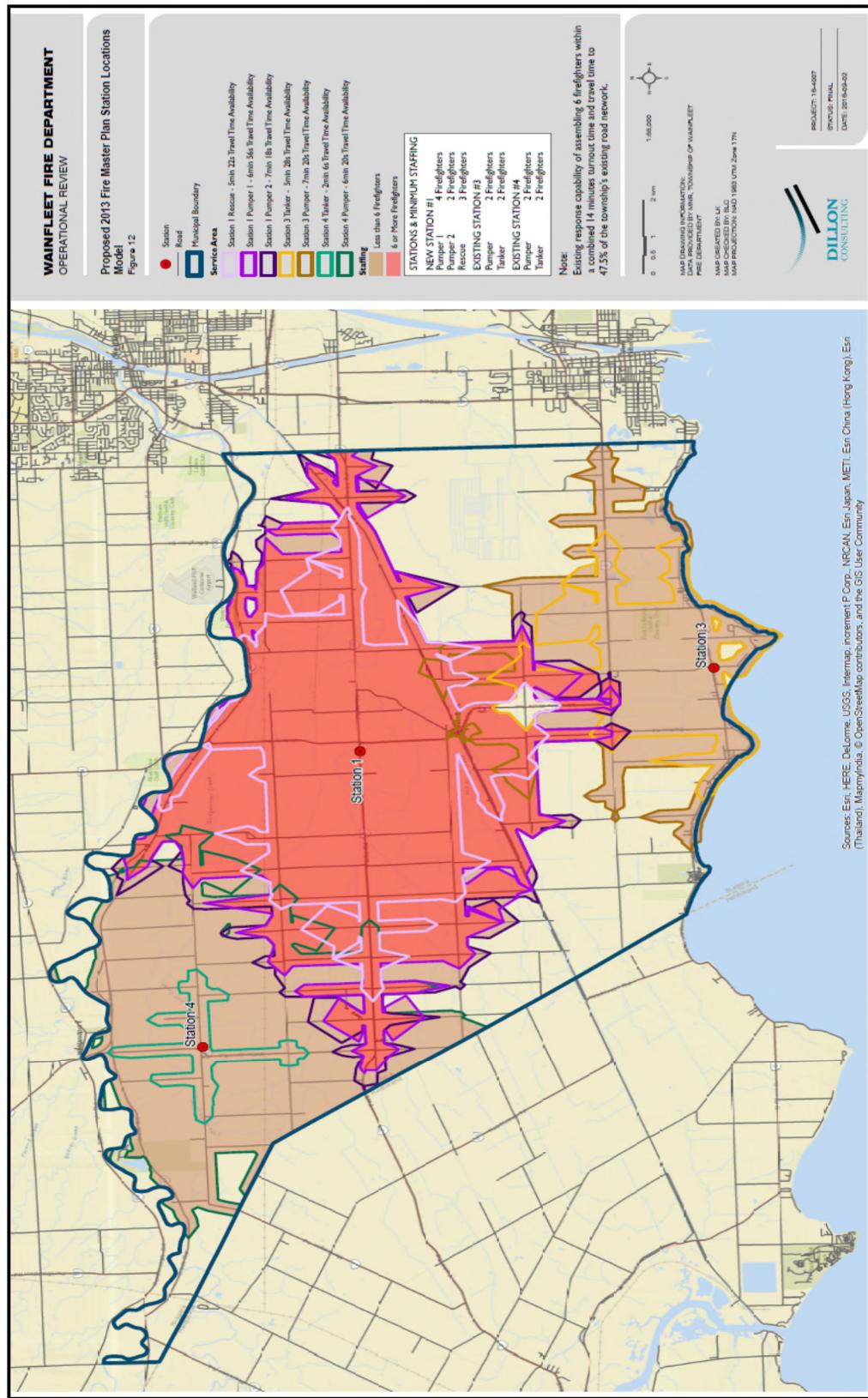
Station 2 is a two bay station connected to a library and community hall. The community hall is used as the training and meeting room by the Fire Department. There is limited office and storage space. The office is shared with the EMS service.



**Figure 3- Fire Underwriter Survey – Fire Station Requirements**

Dwelling Protection Grade Summary of Basic Requirements per Fire Station <sup>i</sup>				
DWELLING PROTECTION GRADE	WATER WORKS SYSTEM	EQUIPMENT	FIRE DEPARTMENT	CORRELATION WITH PPFC <sup>ii</sup>
			FIREFIGHTERS <sup>iii</sup>	Public Fire Protection Classification
1	Water supply system designed in accordance with Fire Underwriters Survey standard "Water Supply for Public Fire Protection" with a relative classification of 5 or better	Response from within 8 km by road of a triple combination pumper	Minimum Response: -On-duty: 3 career fire fighters, plus -Off-duty: fire chief or other officer	Water Supply and Fire Department must grade PPFC Relative Class 5 or better
2	Water supply system designed in accordance with Fire Underwriters Survey standard "Water Supply for Public Fire Protection" with a relative classification of 6 or better	Response from within 8 km by road of a triple combination pumper	Minimum Response: -On-duty: 1 career fire fighters, plus -On-call: 15 auxiliary fire fighters	Water Supply and Fire Department must grade PPFC Relative Class 6 or better
3A	Water supply system designed in accordance with, and meeting the minimum requirements of Fire Underwriters Survey standard "Water Supply for Public Fire Protection"	Response from within 8 km by road of a triple combination pumper	15 auxiliary fire fighters	No Public Fire Protection Classification required
3B	Not required – however fire department must have adequate equipment, training and access to approved water supplies to deliver standard shuttle service in accordance with NFPA 1142, Standard on Water Supplies for Suburban and Rural Fire Fighting <sup>4</sup>	2 units required. Triple combination pumper <u>plus</u> a mobile water supply with a combined water carrying capacity of not less than 6,820 L (1,500 G)	15 auxiliary fire fighters	No Public Fire Protection Classification required
4	Not required – however fire department must have adequate equipment, training and access to approved water supplies to deliver shuttle service in accordance with NFPA 1142, Standard on Water Supplies for Suburban and Rural Fire Fighting	2 units required. Triple combination pumper <u>plus</u> a mobile water supply with a combined water carrying capacity of not less than 6,820 L (1,500 G)	15 auxiliary fire fighters	No Public Fire Protection Classification required
5	Unprotected communities or communities not qualifying for Grades 1, 2, 3A, 3B, or 4 above	Unprotected communities or communities not qualifying for Grades 1, 2, 3A, 3B, or 4 above	Unprotected communities or communities not qualifying for Grades 1, 2, 3A, 3B, or 4 above	No Public Fire Protection Classification required

**Figure 4- Fire Underwriters Survey- 2018 Dwelling Protection Grading**

**Figure 5- 2016 Dillon Report- 3 Station Model meeting NFPA 1720**

**Figure 6- Historical Fire Station Construction Cost Analysis conducted by Thomas Brown Architects, November 2016**

THOMASBROWN ARCHITECTS		Fire Station Costs 1995 - 2016		
Project	Year	Total Size (sq.ft.)	Total Cost (\$)	Cost \$/sq.ft.
Kincardine Fire Headquarters	1995	9,500	799,054.00	84.11
Whitby Fire Headquarters	1995	24,000	2,228,386.93	92.85
Stoney Creek Fire Stations 2 & 4	1995	14,100	1,299,880.00	92.81
Mississauga Fire Station 118	1996	7,700	766,747.10	99.58
Markham Fire Station 96	1996	9,000	1,080,040.18	120.00
Scarborough Fire Station 08	1998	7,100	697,436.00	98.23
Scarborough Fire Station 01	1998	9,100	1,136,999.46	125.15
Mississauga Fire Station 119	1998/1999	7,850	895,000.00	114.01
Mississauga Fire Station 117	1998/1999	7,500	811,125.00	108.11
Richmond Hill Fire Station 04	1999	6,650	817,500.00	123.12
Richmond Hill Fire Station 05	Mar 2000	9,750	1,302,750.32	133.62
Township of King Fire Station 34	Aug 2000	7,500	1,090,037.30	144.76
Toronto Fire Station/Sheppard	Nov 2000	17,000	3,130,000.00	184.00
Whitby Fire Station 06	Mar 2001	8,400	1,285,710.28	153.06
Holland Landing Fire Station 34	Feb 2002	8,885	1,380,224.00	155.34
Markham Fire Station 92	Apr 2003	15,400	2,909,351.55	189.00
Whitby Fire Station 03	Jun 2003	8,400	1,586,000.00	189.00
Courtice Fire Station	May 2004	9,950	1,975,000.00	198.50
Markham Fire Station 98	Sept 2004	10,000	2,497,000.00	249.70
Guelph East End Fire Station	Dec 2004	9,050	1,968,430.00	218.00
West Brant Fire Ambulance Station	Mar 2005	10,370	2,033,000.00	196.05
<b>Aurora Fire Station 44</b>	<b>July 2005</b>	<b>8,167</b>	<b>1,800,000.00</b>	<b>220.40</b>
Whitby Fire Station 01 - Brooklin	Sept 2005	8,400	1,986,500.00	236.49
Oshawa Fire Station No.05	Sept 2005	17,170	4,448,370.00	259.00
City of Toronto Fire Station 116	Mar 2006	11,770	2,873,000.00	244.10
Georgetown Fire/EMS Station*	Mar 2008	16,000	4,261,600.00	*266.35
Georgetown Fire Headquarters *	Mar 2008	13,600	3,931,300.00	*289.07
Whitchurch -Stouffville Fire/EMS	Sept 2008	18,800	5,508,400.00	293.00
<b>Markham Fire Station 93*</b>	<b>April 2009</b>	<b>10,000</b>	<b>2,998,000.00</b>	<b>*299.80</b>
Brampton Station 205 (add'ns &alt's)	May 2009	4,935	1,320,290.00	267.54
Guelph Fire/Police/EMS Station*	May 2009	36,000	9,092,229.00	*252.56
Brampton Station 212*	Aug 2009	11,040	3,253,572.00	*294.70
Mississauga Fire/Peel Region EMS	Oct 2009	37,750	10,200,000.00	270.20
Brampton Live Fire Training Structure	Jun 2010	6,277	2,194,300.00	342.41
<b>Markham Fire Station 99*</b>	<b>Nov 2010</b>	<b>10,839</b>	<b>3,278,000.00</b>	<b>*302.43</b>
<b>Richmond Hill Station 8-6*</b>	<b>July 2011</b>	<b>8,934</b>	<b>2,773,910.00</b>	<b>*310.49</b>
City of Toronto Fire Station 141	Aug 2011	11,535	4,350,000.00	377.11
City of Toronto Fire Station 221	July 2012	11,915	4,474,200.00	375.51
City of Toronto Fire Station 135	Oct 2013	15,000	5,741,500.00	382.77

*Leed Designed	as Brown Architects Inc.	November
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Project	Year	Total Size (sq.ft.)	Total Cost (\$)	Cost \$/sq.ft.
Canfield Fire Station	Nov 2013	5,200	1,200,000.00	230.77
Queensville Fire Station 2-8	Jan 2014	9,880	2,588,680.00	262.00
Mount Albert Fire Station 2-6	May 2014	8,180	2,265,265.00	277.00
<b>Oshawa Fire Station 6</b>	<b>Jun 2015</b>	<b>10,800</b>	<b>3,376,000.00</b>	<b>312.60</b>
Vaughan Fire 7-3 / York EMS Station	Aug 2015	13,880	5,896,696.00	*424.83
Cambridge Fire Station No. 6	Jun 2016	9,150	3,627,000.00	396.39

**Figure 7- Fire Underwriters Survey – Service Schedule for Fire Apparatus****Table 1 Service Schedule for Fire Apparatus For Fire Insurance Grading Purposes**

Apparatus Age	Major Cities <sup>3</sup>	Medium Sized Cities <sup>4</sup>	Small Communities <sup>5</sup> and Rural Centres
0 – 15 Years	First Line Duty	First Line Duty	First Line Duty
16 – 20 Years	Reserve	2 <sup>nd</sup> Line Duty	First Line Duty
20 – 25 Years <sup>1</sup>	No Credit in Grading	No Credit in Grading or Reserve <sup>2</sup>	No Credit in Grading or 2 <sup>nd</sup> Line Duty <sup>2</sup>
26 – 29 Years <sup>1</sup>	No Credit in Grading	No Credit in Grading or Reserve <sup>2</sup>	No Credit in Grading or Reserve <sup>2</sup>
30 Years +	No Credit in Grading	No Credit in Grading	No Credit in Grading

<sup>1</sup> All listed fire apparatus 20 years of age and older are required to be service tested by recognized testing agency on an annual basis to be eligible for grading recognition. (NFPA 1071)

<sup>2</sup> Exceptions to age status may be considered in a small to medium sized communities and rural centres conditionally, when apparatus condition is acceptable and apparatus successfully passes required testing.

<sup>3</sup> Major Cities are defined as an incorporated or unincorporated community that has:

- a populated area (or multiple areas) with a density of at least 400 people per square kilometre; AND
- a total population of 100,000 or greater.

<sup>4</sup> Medium Communities are defined as an incorporated or unincorporated community that has:

- a populated area (or multiple areas) with a density of at least 200 people per square kilometre; AND/OR
- a total population of 1,000 or greater.

<sup>5</sup> Small Communities are defined as an incorporated or unincorporated community that has:

- no populated areas with densities that exceed 200 people per square kilometre; AND
- does not have a total population in excess of 1,000.