



THE CORPORATION OF THE TOWN OF AMHERSTBURG

OFFICE OF THE CAO

MISSION STATEMENT: *Committed to delivering cost-effective and efficient services for the residents of the Town of Amherstburg with a view to improve and enhance their quality of life.*

Author's Name: B. Montone / H. Baillargeon	Report Date: August 9, 2022
Author's Phone: 519 736-6500 ext. 2241 /2128	Date to Council: August 15, 2022
Author's E-mail: b.montone@amherstburg.ca /h.baillargeon@amherstburg.ca	Resolution #:

To: Mayor and Members of Town Council

Subject: South Fire Station – Design and Funding Approvals

1. RECOMMENDATION:

It is recommended that:

- 1) The presentation from Masri O Architects regarding the design of a New-South Fire Station **BE RECEIVED**;
- 2) Council **APPROVE** the proposed South Fire Station floor plan, which contains a total of 1858.7111 square metres (20,007 sq. ft.) of operational space;
- 3) Council **APPROVE** the South Fire Station site plan which is situated on a parcel of land on the North East corner of the Libro Credit Union Centre property on County Road 18 (Pike Road) in proximity to the Meloche and Simcoe Road intersection;
- 4) Council **APPROVE** the issuance of debt for an amount not to exceed \$11,680,864, plus non-recoverable HST, for the construction of the Fire Station;
- 5) Council **DIRECT** Administration to include in the 2023 Operational Budget the cost to fund the \$11,680,864 Debenture;

- 6) Council **DIRECT** Administration to bring back to Council a by-law to address the borrowing and debenture required for this project;
- 7) The design for the gymnasium **BE RECEIVED**;
- 8) Funding for the gymnasium **BE DEFERRED** to the 2023 Capital Budget deliberations for Council to consider in concert with other priorities and initiatives of the Town, and,
- 9) Administration **BE DIRECTED** to work with Amherstburg Indoor Sports Association on potential funding strategies and grant opportunities to help reduce the overall operational and capital expenditure for the gymnasium or explore other options.

EXECUTIVE SUMMARY:

As outlined in the 2022 Capital Budget issue paper FIRE-006 Administration included both the new Fire Station and gymnasium in an RFP that was issued in April 2022 for the preparation of design and construction documents inclusive of contract administration.

Following Council Direction received on July 11, 2022, Masri O Inc. Architects was engaged to create a final design and cost estimates for the new Fire Station and to determine the viability of linking a gymnasium to the new Fire Station at the Libro Centre property.

Preliminary cost estimates prepared by Masri O Inc. Architects indicated the gymnasium portion of the project will cost approximately \$7,900,000.00. Although the addition of a gymnasium will be a tremendous asset to the community and would satisfy a number of requests from various user groups for programming of basketball, tennis, pickleball, badminton, volleyball as well as other indoor sports and special events there are other options Council could consider. Given the large preliminary estimates for this major capital investment, Administration recommends Council defer this portion of the project and consider it at the 2023 budget deliberations in concert with all other priorities of the Town. In addition, Administration could work with Amherstburg Indoor Sports Association to bring back a report that considers a number of other possible options.

Administration recommends the Fire Station design proceed without the gym and, following Council's approval of the New Fire Station design as presented (see attached-Masri O Inc. presentation), the Consultant will work with Administration to create a comprehensive set of construction documents for tendering purposes. Upon tender closing, a general contractor will be selected to construct the new Fire Station and a report will be brought back to Council for final consideration and approval.

2. BACKGROUND:

Administration, has been working on plans as directed by Council to construct a new consolidated South Fire Station on the Libro Credit Union Centre property, to replace and co-locate the existing (2) Fire Halls at Malden Centre and Sandwich Street South.

The 2020 Fire Master Plan identified the need following a station location study for the proper placement of the aging existing Fire Halls.

Amherstburg Fire Services provides fire and rescue services to the residents of Amherstburg making up a response population in excess of 23,000. The Fire Service experience's, on average approximately 500 calls per year and is comprised of a composite staff (5 fulltime and 60 volunteers, & 4 non-union staff). Fire apparatus consist of three (3) pumpers, two (2) pumper/tankers, one (1) 70ft ladder truck, three (3) Rescue/Support units.

In 2020 Council was presented with a Fire Master Plan. The plan indicated that Amherstburg Fire had 3 stations significantly deteriorated. The plan recommended 2 options be considered to address the situation. In August of 2021 a consolidation of fire stations for response was directed. This would require two (2) new fire stations be constructed in the optimal locations. The Master Plan proposed a single location for the consolidation of Stations #1 and #3 at the Libro property site and replacement of Station #2 in a smaller building in the same location, in the future.

The design being presented for the South Station includes stakeholder engagement feedback and consultation with contracted architectural/engineering expertise for current fire station planning and design standards. The proposed design will correct and address several shortcomings of the existing two Stations. The existing locations are essentially operating over capacity with numerous spatial constraints. Spatial challenges include the following:

- Clean/dirty separation requirements are not met
- Apparatus Bays: due to space constraints are not wide enough to safely circulate between apparatus and/or open and close equipment doors and service compartments
- Ready Room & Gear Storage (no dedicated space)
- Decontamination Room (no dedicated space)
- Showers and change space (limited dedicated space)
- Locker/storage racks (no dedicated gear storage rooms)
- Administrative space (training rooms, all inclusive staff space for Fire Prevention, Training Officer, Chief/Deputy Chief, community education/engagement)
- EOC/Multipurpose space (currently temporarily) located off site at the Nexen Building)
- Accessibility requirements are not met in either location
- Limited parking
- No day training due to shared facility space

Other operational challenges and considerations by location are listed below and would require significant capital dollars to remedy in facilities beyond their useful life;

Station #1

- No backup power on site
- Rain and snow comes in through the bay doors and from under
- Significant uneven pavement on both the front and rear aprons

- Roof is in significant dis-repair, water regularly runs down the walls
- Floor drains do not have an oil separator allowing all contaminants to go straight to the storm drain
- No accommodations space available to move the Full Time firefighters to the more appropriate station (most calls)
- Shared use of training room eliminated opportunities for firefighters to train during day time hours
- No confidentiality for the Assistant Deputy Chief when dealing with customers due to office space being built into the staff lunch room
- No proper decontamination facilities on site for use by firefighters post-response
- Lack of proper corporate maintenance of the station has left many features deteriorating or in disrepair
- Lack of parking options for firefighters responding to the fire hall during town hall working hours and evening council and committee meetings
- No outdoor training space for firefighters
- If we remain in the same location and deployment, there is not enough space to accommodate the increased number of volunteer firefighters required to adequately protect the urban core

Station #2

- Roof leaks and is in such poor condition that contractors refuse to walk on it
- 2 of 3 of the bays cannot accommodate newer larger apparatus
- Smaller bays require backup into the building versus a safe drive through bay
- Older boiler system needs updating
- Multiple structural flaws, like being able to see outside through an internal wall, continue to develop due to structures age and block separation
- Multiple areas of flashing loosely hanging on to the building
- Areas around the floor drains are deteriorating and breaking away
- Lack of storage space within and outdoor storage container in rear yard is rusting and items stored are being damaged due to humidity
- Limited backup power on site
- If we remain in the same building, there is not enough space to accommodate the increased number of firefighters required to adequately protect the suburban response area

Station #3

- Accessibility issues include accessing doors and appropriate bathrooms
- No showers on site
- No proper decontamination facilities on site for use by firefighters post-fires
- Hall will not accommodate new apparatus required in the future
- Limited space inside for drill indoors during poor weather
- Inadequate space in bays to park vehicles safely around other personnel
- No air management system on site
- Upgrading a single hall would cause the need to upgrade all exhaust capture systems due to age
- No backup power on site

- Roof is in significant disrepair
- Cracks in front wall
- Uneven pavement on the front apron
- Inadequate storage space on site

A Fire Station serves as the heart of the fire service for the community, as does the station, the equipment and facilities contained therein, so does the pulse, the morale and the performance of the persons making use of these facilities.

The current buildings are approaching 58 years of age, and do not meet the needs of a modern fire service preparing for 2030 and beyond. In fact, the current vehicle bays will not accommodate modern truck chassis sizes and as a result, significant building renovations are required before any additional vehicles are replaced, as new vehicles will not fit into the bays.

Station #1 in Former Amherstburg village was built as part of the Municipal Complex (Town Hall) in 1993. It is approaching 30 years old and has begun to show its age. Additionally, the Fire Station training area, kitchen and other administrative areas have in recent years been converted to a shared space with Town Hall operations limiting the Fire Departments use to primarily outside normal business hours.

Provisions have been made to accommodate all firefighting apparatus assigned as well as to allow flexibility of operations, allowing apparatus to be assigned from one station to another as the development of areas proceeds or deployment changes are necessary. In addition, space is provided for living and training accommodations for the career fire fighters manning the station and/or for Volunteer Fire Fighter use in order to accommodate limited availability of staff to perform required duties and activities.

The location and physical design of fire stations, and their successful ongoing management, are prime determinants of a community's ability to respond to fires. Having the right type and number of fire stations, located in the right places enables the policy makers and appointed managers of a jurisdiction to house fire fighters, apparatus, and equipment in a rational way for maximum use of resources. Doing this successfully may be a key test of managerial ability (both inside and outside the fire department) in a local government setting increasingly more marked by competition for scarce resources.

Fire stations are a major capital expenditure and municipal improvement. The buildings are in use for many years. The size of the station should be compatible, not only with the present requirements, but for the future maximum anticipated number of personnel, apparatus and equipment.

3. DISCUSSION:

As outlined in the 2022 Capital Budget issue paper FIRE-006 Administration included both the New Fire Station, EOC facilities and a gymnasium in an RFP that was issued in April 2022 for the preparation of design and construction documents inclusive of contract administration.

Following Council Direction received on July 11, 2022, Masri O Inc. Architects was engaged to create a final design and cost estimates for the new Fire Station and to determine the viability of linking a gymnasium to the New Fire Station at the Libro Centre property.

Preliminary cost estimates prepared by Masri O Inc. Architects indicate the gymnasium portion of the project will cost approximately \$7,900,000. Although the addition of a gymnasium will be a tremendous asset to the community and would satisfy a number of requests from various user groups for programming of basketball, tennis, pickleball, badminton, volleyball as well as other indoor sports and special events there are other options Council could consider. Given the large capital investment preliminary estimates indicate Administration recommends Council defer this portion of the project and consider it at the 2023 budget deliberations in concert with other priorities of the Town. In addition, Administration could work with Amherstburg Indoor Sports Association to bring back a report that considers a number of other possible options.

Since the existing Fire Station's dates of construction, there have been numerous changes in the design and requirements for fire stations. The National Fire Protection Association (NFPA) has developed health and safety standards that have resulted in a different approach to fire hall design. Most notably, all areas associated with equipment required for emergency response are now considered contaminated space, referred to as the "dirty" zone or "hot" zone.

Fire Services strive to isolate the "dirty" zones from the "clean" spaces, (e.g. support spaces, administrative areas, living quarters, kitchen, and fitness areas). Masri O Inc. Architects was engaged to work with administration to design a modern, standards compliant Headquarters Fire Station, which would consolidate Stations # 3 and #1 in once location. (See attached Masri O Inc. presentation deck)

In order to improve air quality and contain toxins entering the station, it is standard practice to isolate duty gear in a dedicated room to contain the equipment's off gassing and include an area for decontamination. Since the apparatus bays of the current fire halls do not allow for the isolation of contaminated gear, and the bays act as a circulation route from one "clean" zone to another, the current buildings configuration cannot meet this design requirement.

Decontamination

While firefighters currently follow decontamination procedures after a call, the current systems and infrastructure in place do not fully prevent the transfer of contaminants from dirty surfaces to supposed clean surfaces and areas.

The Fire Management Team took a human-centered approach which included communication with full time and volunteer firefighters as was possible to understand their behaviors and experiences. Firefighters face hazards not only during active firefighting on the call but continue to do so post active duty and suffer from long-term health impacts, such as a higher cancer rates of about 9% higher than an average person. After an active firefighting event, toxic contents such as Acrolein, Benzene, Hydrogen Cyanide, Carbon Monoxide and others are attached to the equipment, firefighter's PPE, and firetrucks. Firefighters are at risk of touching or inhaling these toxic contents during the process of handling, transporting, and cleaning the equipment,

thus causing potential health issues. Firefighters are prone to 13 recognized cancers. As a result, Presumptive Legislation exists to compensate them. The major objectives of this project focused on the health and wellness of firefighters, technology, and infrastructure layout improvements that should be implemented in the short term and to inform the design of the new fire station.

The new South Fire Station has been designed to deliver an environment that is safe and with the intention of isolating contaminants in “dirty” decontaminated areas and minimizing their spread to “clean” living areas. This goal includes improved storage solutions, infrastructure technology, and an effective layout.

EOC

An Emergency Operations Center (EOC) is a complex facility that serves as a nerve center during both small emergencies and large disasters. The Current EOC is Located at 90 Thomas Road and Lacks many of the considerations necessary for a fully functional EOC.

There are five primary considerations for the design of an Emergency Operations Center:

- Survivability
- Redundancy
- Communications
- Flexibility and Open Architecture
- Security

These design considerations are important in the design of the South Fire Station as directed by Council.

Survivability

It is critical that our EOC remains operational during an emergency. If you must relocate your operations to another facility without the same capacity and technology as your EOC, it can put our response operation at a severe disadvantage, and fighting to regain control of an event.

Redundancy

Redundancy is closely allied with survivability. Our facility survivability is linked to the number of redundant systems that support it. The challenge is that when designing, the facility, redundancy was valued.

Communications

The EOC exists to gain and maintain situational awareness and to coordinate the use of resources to restore operations and to recover from the impact of a disaster. To do this requires multiple communications systems. Having communications system redundancy is extremely important. Hard line phones, cellular communications, satellite phones, and multiple radio systems are all necessary to ensure continuous operations and linkage with the rest of the world. A functioning Television system can help us obtain and

maintain situational awareness. An EOC has cable television, backed up by a satellite system and then an antenna on the roof if the other higher technology systems fail.

Flexibility and Open Architecture

What are the new technology systems that will be employed in the next 20-40 years? If we are building a new facility that includes an EOC, flexibility is one of the things that must be considered. Design flexibility for scalable operations and also for new technology and mission requirements.

Many times EOCs are not dedicated spaces, as is the case with this facility, but serve as conference or training rooms during non-emergency times. Wide hallways allow for the movement of people quickly and efficiently. It also allows the natural ad hoc meetings to occur as people walk through the building without blocking the operations of the facility as a whole.

Security

Layered levels of security are always a good route to take. Access control in the form of card readers, fencing, gates, security checkpoints and biometric devices might be appropriate. Cameras are cost effective measures for access control and as a deterrent to surveillance operations against the facility. EOCs are not primary targets for terror, but they make excellent secondary targets for follow-up attacks, since they are activated and full of people responding to a situation.

The New Layout also incorporates the needs of an Emergency Operations Centre and the training room will efficiently operate as both a regular training space and accommodate the needs and considerations for accessibility, technology and use requirements of the Municipal Emergency Operations Centre.

Moving forward with the Design

As per Council's direction in July 2022, Administration has been working diligently with Masri O Architecture Inc. who specialize in the design of Municipal and Regional Fire, EMS, and Police facilities. The South Fire Station Architectural contract includes all necessary sub-consulting services to plan, coordinate and produce all the necessary tender documents, inclusive of, contract preparation and administration to successfully build the new station at the Libro Credit Union Centre property.

The Fire Station design team consisted of the following professional disciplines:

- Architect;
- Mechanical Engineer;
- Electrical Engineer;
- Structural Engineer;
- Civil Engineer;
- Landscape Architect;
- Corporate Green Building Standard Facilitator;
- Energy Modeling Consultant
- Cost Consultant / Quantity Surveyor;
- Building Envelope Specialist;

- Fire Protection Engineer
- Fire Alarm, IT infrastructure, Security Consultants
- Building Automation Consultant;
- Interior & Exterior Signage

Phase 1 - Schematic Design Phase- Including but not limited to:

Over the past number of weeks, the Fire team and Administration has been working with the consulting team to develop a plan that meets all fire operational requirements for the long-term future with an overview to potential future growth if and when necessary. The clear focus of the overall team is that this new fire station be a sustainable infrastructure project that will be planned and developed to meet the needs of the community for the next fifty to sixty (50-60) years and beyond.

The following design is the result of the ongoing analysis of the data, fire service requirements, budget considerations; developing the form, size, scale, character, and appearance of the Project; preparing preliminary design drawings and spatial relationship diagrams based on approved program and any special requirements, covering all professional disciplines; estimating construction cost; updating schedules; presenting schematic design proposals.

The team is now in a position to present to Council the schematic design for consideration and approval. This final spatial layout is a spatial estimate of 20,007 sq. ft. which is approx. 3,000 sq. feet less than in current use.

This proposed fire station floorplan is based on current design standards and best practices in the areas of fire suppression, training, prevention, emergency operation centre (EOC) functionality, administration and lessons learned in firefighter health and safety.

Fire Hall - General Requirements

1. Response (callback) Firefighter parking to be located as close as possible to the entrance into Bunker Gear Room
2. Internal PA system throughout facility for paging
3. Dispatch Radio Speakers positioned throughout facility – Designated speakers to have volume control on wall
4. Dispatch Speakers and lighting system like Phoenix G2 system.
5. Design shall include as much natural light penetration into building as possible
6. Concrete apron pad in front of all apparatus doors, front, and rear
7. Aprons and driveways shall be able to accommodate weight loads of all apparatus
8. Exterior lighting to be included to cover rear parking grounds
9. Traditional Fire Station esthetics blended with Town of Amherstburg Streetscapes Theme

10. One hydrant to be located on property to assist in training activities
11. Various facility lighting to include switch and timers (motion)

Fire and Rescue

Fire and Rescue Services are amongst the most important and technically sophisticated services a Municipality provides for its residents. The Fire Stations, which support delivery of these services, are required to keep pace with the growth of residential communities. And more often than not they become cornerstones in those communities as well, collecting food, goods, and toys for community drives, providing space for community events, conducting fire prevention education and training and providing shelter, facilities and essential services in times of emergency.

Fire Stations are more than a “house with a big garage”, today their underlying structure is designed and constructed to meet post-disaster requirements as defined in the more recent Ontario Building Code, and utilize durable materials and assemblies to support a long service life of up to 60 years. With their low to no occupancy and 24/7 operations. Fire stations are ideal facilities to achieve and demonstrate self-sufficiency.

Telecommunications Project and Funding

Fire management has worked to identify potential funding streams that would support the digital infrastructure needed for the EOC to be located in the new Fire Station. The following funding streams were identified and are currently being explored to support the overall cost of the telecommunications cost within the new fire station:

- (a) CRTC Broadband Fund - \$750 million over 5 years
- (b) CIRA (Canadian Internet Registration Authority) Community Investment Program (Up to \$1.25 million per year in \$250k/\$100k grants)
- (c) Government of Canada Universal Broadband Fund (UBF) - (6 billion over 10 yrs.)
- (d) Province of Ontario ICON Fund - (4billion over 4 yrs.)
- (e) PIA/PSBN Accelerator Program (Being set up) - P3 Accelerator Fund - (\$28B over 7 yrs.)

The Town will be making application based on varying requirements and annual deadlines during the design and ongoing construction phase timeframes of the new Fire Station development.

Intersection at Simcoe and Meloche

It should be noted that as per the direction for the RFP the intersection at Simcoe and Meloche was include. Cost estimates were received and projected at approximately \$389,000 for lights and signals only. Further costs will be associated with design and construction drawings, based on further dialogue with the County. These costs are unknown at this time and as such this work is not included in the recommendation.

4. RISK ANALYSIS:

There are many risk considerations for Council to be aware of, as they consider approval of the design and funding. This decision will affect the future completion of outstanding recommendations contained in the Fire Master Plan, and several corporate initiatives.

Most importantly it should be noted that there is a further cascading impact to several other corporate decisions that hang in the balance outlined in several strategic documents already approved by Council or under consideration. They include the Asset Management Plan, Libro Secondary Plan, and accessibility legislation compliance considerations. The Municipal Emergency Response Plan, the pending Facility Needs & Condition Assessment of all Town facilities, and the future financial planning strategy for the Town. Balancing competing priorities is a challenge for Council to consider however, a decision on the design & funding presented in this report is paramount, in order for other programs to move forward.

Other existing operational challenges and considerations by location exist including significant capital improvements needed at the current fire stations. The pending facilities conditions assessment report the will be brought to Council in the near future will further highlight the condition and needs of the stations once completed.

Further delay in direction may necessitate investment in improvements and repairs at the current fire stations, the value of which many not be fully realized if a decision to replace the fire stations is then made at a later date. It is anticipated that construction costs will continue to escalate making the project even more expensive in future years. Moving forward with the design and construction of the new Fire Station as outlined in this report will help mitigate these risks.

5. FINANCIAL MATTERS:

The estimated cost for this project is \$11,680,864, plus non-recoverable HST and is in addition to the \$250,000 already approved by Council for the work completed to date and required for next steps to issue and evaluate tenders.

Given the Bank of Canada's current strategy is to slow inflation by increasing interest rates, the actual interest rate we can expect at the time of debenture is not known. In order to provide some level of clarity on what the annual debt repayment amount could be Administration has put together the table below.

The table outlines various terms for the debt, 10, 20 or 30 years and corresponding rates based on current I/O. As Administration is recommending the 30 year-term, additional interest rates of 4.5% and 5.5% are included for the 30-year term to provide a sense of impact if rates increase. The estimate cost of \$11,680,864 plus non-recoverable HST was used for these projections.

	10 years	20 years	30 years
Current I/O rate	3.80%	4.05%	4.17%
Debt Servicing (estimation)	\$1,409,089	\$855,054	\$684,568
Estimated at 4.5%			\$711,848
Estimated at 5.5%			\$ 797,693

The Town's debt servicing limit, based on 15% aggregate limit, is \$3,525,934. In using the highest estimated debt servicing amount of \$797,693, it would leave \$2,728,241 in addition debt servicing. Given the significant difference in the debt servicing amounts based on the various terms Administration is recommending the 30-year debenture. Notwithstanding this recommendation, the debt could be reviewed in the future should there be a need to consider paying it off sooner.

6. CONSULTATIONS:

Manager of Facilities
Finance Department
Asset Management Team
Parks Department
Fire Team

7. CONCLUSION:

In conclusion, Administration recommends the Fire Station design proceed with the omission of the gymnasium which should be considered in the 2023 Capital Budget deliberations along with a number of other major projects. Should Council wish to proceed with the design of the New Fire Station as presented in this report the Consultant will work with Administration to create a comprehensive set of construction documents suitable for tender. Upon tender closing, a general contractor will be selected to construct the new Fire Station, a report will be brought back to Council for final consideration and approval.

Appendices

- A- Cost Estimate Summary
- B- Site plan – Fire Station & Gymnasium
- C- Site plan – Fire Station
- D- Fire Station Floor Plan
- E- Fire Station Elevations
- F- Presentation- Masri O Inc.



Bruce Montone
Fire Chief



Heidi Baillargeon
Director of Parks, Facilities, Recreation and Culture

h/b

Report Approval Details

Document Title:	South Fire Station – Design and Funding Approvals.docx
Attachments:	
Final Approval Date:	Aug 10, 2022

This report and all of its attachments were approved and signed as outlined below:



Tracy Prince

No Signature - Task assigned to Valerie Critchley was completed by workflow administrator Tammy Fowkes

Valerie Critchley

No Signature found

Melissa Osborne