



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	Report Date: April 17, 2023
Author's Phone: 519 736-6500 ext. 2241	Date to Council: April 24, 2023
Author's E-mail: bmontone@amherstburg.ca	Resolution #:

To: Mayor and Members of Town Council

Subject: South Fire Station – Consolidated Build verses Renovation Options

1. **RECOMMENDATION:**

It is recommended that:

- 1) The presentation from the Fire Chief regarding the Build versus Renovation options of existing Fire Stations **BE RECEIVED**;
- 2) Council **APPROVE** one of the options under consideration proposed;
- 3) Council **APPROVE** the issuance of debt for the estimated amount for the option chosen, plus a suitable percentage for contingency costs, and for the construction, including temporary on-site engineering supervision positions and non-recoverable HST;
- 4) Council **DIRECT** Administration to include in the 2024 and future Operational Budgets the cost to fund the Debenture; and,
- 5) Provided the tender results are within the approved budget of the option chosen, Council **DELEGATE AUTHORITY** to the Chief Administration Officer and Clerk to sign a long-term (up to 30yr) debenture to fund the construction, subject to financial approval of the Chief Financial Officer, or designate.

2. EXECUTIVE SUMMARY:

As outlined in the 2022 Capital Budget issue paper FIRE-006 Administration included both a new Fire Station with EOC and gymnasium in an RFP 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 was unreasonable. Council accepted the administrative recommendation that the Fire Station design proceed without the gym and, following Council's approval of the New Fire Station design as was presented see attached-Masri O Inc. presentation (Attachment #3), the Consultant will work with Administration to create a comprehensive set of construction documents for tendering purposes. Upon tender closing, a general contractor be selected to construct the new Fire Station and a report will be brought back to Council for final consideration and approval of the construction contractor.

Following a presentation from Masri O Inc. Architects on August 15, 2022 the project was referred to the "soon to be" elected new Council for further consideration. Discussions at the Council Meeting included;

- How do we get the estimated cost down?
- Are there any extras that can be eliminated from the design?
- What would the costs be to renovate the existing stations to deal with the shortcomings and defer the expenditure of new facilities for the future?

Masri O Inc. Architects has conducted a Fire Station Development Options & Cost Analysis Report, (Attachment #1) and a revised Cost Estimation Summary and Design drawings (Attachment #2) to address these questions

This report and attachments familiarize the new Municipal Council with the Fire Master Plan information and recommendations. It reviews the Deployment Options report presented in August of 2021 (Attachment #4) and sets out new scenario options for council's consideration.

Scenario A) Continue with a Three (3) Fire Station deployment model including additional staff and resources outlined in the 2021 report (attachment #4). Provide new direction and Funding to renovate the three existing stations based on conditions reported in the Masri O Fire Stations development options report (Attachment #1) informed by the Facilities condition report from JS HELD ULC (Attachment #5, #6 #7) and issues, identified in the report from the fire chief in his August 15, 2022 report (attachment #8).

Scenario B) is to move forward with the consolidation option directed by the previous council and approve the revised design presented, for a consolidated South Fire Station from the administration report of August 15, 2022. (Attachment 8) This option includes a future replacement, of the North Station on Middle Side Road, with a much smaller version of the existing station.

Scenario C) Construct a New Consolidated Station at the Libro Centre Property as in Scenario B creating a South Fire Station and Renovate Station #2 on Middle Side Road as a North Fire Station.

3. 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 23,500. The Fire Service experiences on average approximately 400 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) Support units.

In 2020 Council was presented with a Fire- Master Plan-Update. The plan indicated that Amherstburg Fire had three stations significantly deteriorated, and not in the optimal locations. The plan recommended 2 options be considered to address the situation. In August of 2021 (Attachment # 4) a consolidation of Fire Stations for response was directed by Council. This would require two (2) new Fire Stations be constructed in the optimal locations. The report 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 (to be known as the North Station) in the same location, in the future.

The design 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 Stations. The existing locations are essentially operating beyond capacity with numerous constraints in all locations.

In June 2021, the Town of Amherstburg authorized J. S. HELD to conduct a condition assessment of all municipal facilities. (See Attachments 5,6,7) This included the three current Fire Stations. The facilities Conditions Assessment confirmed the poor condition of existing stations as outlined in the Fire Master Plan, the Options Report presented in August of 2021 and in the most recent report on August 15, 2022. Challenges include but are not limited to the following:

- Clean/dirty separation requirements outlined in Sec. 21 Guidance notes from the OHSA 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 in two of the locations;
- Ready Room & Gear Storage (no dedicated space);
- Decontamination Room (no dedicated space);

- Showers and change space (no appropriate 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 any location;
- Limited parking; and,
- No day training due to shared facility space at Station 1.

Other operational challenges and considerations by location are listed below and would require significant capital dollars to remedy in facilities beyond their useful life and may not even be possible;

Station 1

- No backup power on site;
- Rain and snow come in through the bay doors;
- Roof is in significant disrepair, 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 Town staff lunch room no privacy walls;
- 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 causing the public and staff to be obstructed in the parking area until firefighters return;
- 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; and,
- Numerous Accessibility Issues.

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/higher apparatus;
- Smaller bays require backup into the building versus a safe drive through bay;
- Older boiler system needs replacement;
- Multiple structural flaws, like being able to see outside through an internal wall, continue to develop due to structure's 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 (no heat, no cooling, no Breathing Air compressor);
- Limited decontamination facilities on site for use by firefighters post-fires;
- Footings in NW corner have deteriorated and may not support weight;
- 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;
- No Ladies Showers only 1 Male Shower for 22 FF; and,
- Numerous Accessibility Issues.

Station 3

- Accessibility issues include accessing doors and insufficient number of bathrooms;
- No female nor male showers on site no available space to add;
- Significant limitations to septic system;
- No proper decontamination facilities on site for use by firefighters post-fires;
- Station Bays will not accommodate new apparatus Length and Height required;
- 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; and,
- Insufficient storage space on site.

The current Station 2 and 3 buildings are approaching 60 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 at both Station 3 and 2 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.

Provisions have been made to accommodate all firefighting apparatus assigned at this time, but do not allow for 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 required for living and training accommodations for the career firefighters staff at the station and/or for Volunteer Firefighter 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/emergencies. 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 firefighters, apparatus, and equipment in a rational way for maximum use of 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.

4. DISCUSSION:

As outlined in the 2022 Capital Budget issue paper FIRE-006 Administration was directed to include 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, EOC 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 would 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, Administration recommended Council defer this portion of the project and consider it in future budget deliberations in concert with other priorities of the Town.

Since the existing Fire Station's dates of construction, there have been numerous changes in the design and mandatory 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 1 and 3 in a single location.

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 on scene and 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, and 14 % higher will die as a result, than the general population.

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 15 recognized cancers. As a result, Presumptive Legislation exists to compensate them at the municipality’s expense.

During the years 2015-2022 14 WSIB claims have been submitted from past firefighters or their families under the presumptive legislation – 12 have been approved, 1 was denied and 1 is pending a decision. The municipality is responsible for 100% of these costs plus 30% administration fees charged by the WSIB.

The major objectives of this design project focused on the health and wellness of firefighters, technology, and infrastructure layout and deployment 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 efficient and effective space saving layout.

Emergency Operations Center (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. The current proposed design creates a multi purpose space for both the training needs of the station and as an Emergency Operations Centre, when required.

Moving forward with the Design

As per Council's direction in August 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 has 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 and Exterior Signage

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

Over the past number of months, 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 of 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. Any perceived extras have not been included.

The attached design is the result of the additional 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 re-present to Council the schematic design for consideration and approval. This final spatial layout is a spatial estimate of 17,943.5 sq. ft.

As seen in the chart below, the proposed design of the consolidated station will be 20% less in size requirement should a decision be considered to renovate existing facilities. This in turn will require less in operating costs and facilities maintenance.

Location	Current space	Required upgrade	Total
Station 1	7,140 sq. ft.	6,175, sq. ft	13,315 sq. ft.
Station 3	3,286 sq. ft.	5,829 sq. ft.	9,115 sq. ft.
Consolidated reno			22,430 sq. ft.
Consolidated New station	0	0	17,943.5 sq. ft.

This proposed Fire Station floorplan is based on current design standards and best practices in the areas of fire suppression, training, prevention, emergency operation center (EOC) shared functionality, administration and lessons learned in firefighter health and safety. The team has re-evaluated our needs and the Table below illustrates the features of each current station and the result of a consolidated facility

Feature	Existing at Current Stations		New Station Proposed	Difference
	Station 1	Station 3		
Fire Chief office	1	0	1	same
Deputy Chief office	1	0	1	same
Asst. Deputy Chief	1	0	1	same
Administration	1	0	1	same
Training Officer	1	1	1	1 less office
Training Room	1	1	1	1 less c/w EOC
Kitchen	1	1	1	1 less
Women's Bathroom/shower	1 1/2 FF	0 0/1 FF	5 Genderless bathrooms and shower rooms	New Ratio: 1/6 FF
Men's Bathroom/shower	2 1/10 FF	1 1/20 FF		
Apparatus Bays	3 double drive thru bays (6 veh.)	3 single non drive thru bays (3 veh.)	4 double drive thru bays (8 veh.)	1 less bay 1 less vehicle
Workshop	1	1	1	1 less
Fill Compressor	1	1	1	1 less
Bunker gear room	0	0	1	1 room
Extractor room	1	0	1	same
Decontamination	0	0	1	1 for cancer reduction

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. They 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.

Intersection at Simcoe and Meloche

As per our direction for the RFP the intersection at Simcoe and Meloche was included. Cost estimates projected at approximately \$389,000 for lights and Pedestrian 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.

5. 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 are uncertain as outlined in several strategic documents already approved by Council or under consideration. They include the Asset Management Plan, Libro Secondary Plan, our accessibility legislation compliance considerations. The future of Town Hall, The Municipal Emergency Response Plan, the 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 deployment options, 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.

Further delay in direction may necessitate investment in improvements and repairs at the current Fire Stations, the value of which may not be fully realized if a decision to replace the Fire Stations is then made at a later date. We anticipated that construction costs will continue to escalate making the project options even more expensive in future years.

6. FINANCIAL MATTERS:

The estimated cost for this project is \$9,801,500, plus non-recoverable HST, plus on-site engineering cost, and is in addition to the \$414,300 already approved by Council for the work completed to date and which is required for the next steps to issue and evaluate tenders.

Based on the Consultant's original bid document, Masri O estimated a need for Full-time Field/Site review by an Engineer for the duration of Construction. The Cost was

estimated to be \$300,000. We have elected to remove that cost from the Construction estimate and have it in Recommendation 3. Authorization for administration to create two temporary part-time, On-site engineering supervision positions, with a total cost of \$150,000 representing a 50% savings.

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 fully 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, 15, 20 or 30 years and corresponding rates based on current I/O. As Administration is recommending the 30 year-term, additional interest rate of 5.5% are included for the 30-year term to provide a sense of impact if rates increase. An estimate of \$10,000,000 was used for these projections.

	15 years	20 years	30 years
Current I/O rate	4.38%	4.54%	4.61%
Debt Servicing (estimation)	905,436	755,827	609,119
Estimated at 5.5%			671,295

The Town's remaining debt servicing available in 2023 for tax rate based expenditures is \$5,341,857. Using the highest estimated debt servicing amount of \$671,295 would leave \$4,670,562 for additional debt servicing. Given the significant difference in the debt servicing amounts based on the various terms, Administration is recommending up to the 30-year debenture. This debt repayment is not currently funded and will fall onto the tax base in the 2024 Operating Budget. Administration will work to reduce this impact through a review and analysis of the lifecycle funding.

7. **CONSULTATIONS:**

Director of Facilities
Finance Department
Asset Management Team
Fire Team

8. **CONCLUSION:**

In conclusion, Administration recommends the **Scenario B** Consolidated Fire Station design proceed. Should Council wish to proceed, 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 approval and determination of appropriate contingency funding.



Bruce Montone
Fire Chief

Attachments

Attachment #1 - Fire Station Development Options & Cost report

Attachment # 2 - revised Cost Estimation and Design drawings

Attachment # 3 - August 2022 1st Masri O Inc. presentation

Attachment # 4 - Deployment Options report presented in August of 2021

Attachment # 5, 6, 7 - Facilities condition report Station # 1,2,3 from JS HELD ULC

Attachment # 8 - Issues, identified in report from the Fire Chief August 15, 2022 report

Attachment # 9 - Design and Funding Council Presentation

Report Approval Details

Document Title:	South Fire Station – Consolidated Build verses Renovation Options.docx
Attachments:	<ul style="list-style-type: none">- Attachment 1 AmherstburgCostComparisonReport-20230418-UpdatedperRevCostEst.pdf- Attachment 2 AmherstburgFS-L-20230418-UpdatedCostSummary-signed.pdf- Attachment 3 August 2022 Original Masri O presentation.pdf- Attachment 4 August 2021 FD Deployment -Fire Station Options.pdf- Attachment 5 Town Hall Fire Station 1.pdf- Attachment 6 Fire Station 2.pdf- Attachment 7 Fire Station 3.pdf- Attachment 8 Aug15 2022 Design and Funding report.pdf- Attachment 9 April 2023 design and funding council presentation.pdf
Final Approval Date:	Apr 19, 2023

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



Tracy Prince



Valerie Critchley



Kevin Fox