

# Bristol Firehouse Design Committee Final Report



Prepared By  
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This is the final report of the Bristol Fire Facility Design Committee. The committee has worked hard to approve a design that takes into consideration the many ideas and concerns raised by the Pacheco Ross Fire Facility Study of 2008, the previous site selection committee, and the many community members including firefighters that have contributed to this process.

The committee began meeting on February 26<sup>th</sup> and has met several times as a committee and in smaller work groups. The depth of experience and willingness to work hard with the design team found in committee members; Diane Cushman, Dan Heath, Matt Lathrop, Ed Hanson, Terry Farr, Brett LaRose, and Brian Fox has been a true gift to the people of Bristol.

This process has united many individuals and groups with different views of a fire facility. It would not have gone so well without the support of Town Administrator Therese Kirby and the Select Board, Town Clerk Jen Myers, and Administrative Assistant Pam Corria.

As this proposal makes its way to the Select board and ultimately the people of Bristol, this report has been prepared to recap the need for a new fire facility and give some details as to why the committee has approved this particular facility.

This facility honors the tradition of the Bristol Fire Department and will meet the needs of the department for years to come.

It is a legacy building designed to bring pride to the community, welcome people to Bristol, and built with materials that will allow it to stand up to years of use.

The building has been designed to meet all codes and standards, built to reduce and maintenance and energy costs, it also provides additional municipal meeting space if needed.

This report also includes possibilities for the current fire facility located at 32 North Street. Please take a few minutes to read the additional details that follow

Respectfully Submitted,

Elizabeth Herrmann and William Elwell  
Co- Chairs Bristol Fire Facility Design Committee

### **What is a fire facility?**

Here in Bristol the fire facilities are town owned municipal buildings that house the fire department. Having the department housed in multiple buildings has presented challenges for years. While fire trucks and equipment are an important part of any fire department. Fire fighters are the most important resource the department has. While the new fire facility will hold fire trucks, it is really in this space that firefighters are trained on a regular basis for the work they do, it is a place they gather and respond from, it is a place where both the equipment and the firefighters are cared for and get ready for the next alarm. It is a building where business is conducted, monthly meals are shared, and the public visits to learn about fire prevention and the history of the fire department. Designing a facility that will provide a safe, healthy, and effective work environment for firefighters to work is the ultimate goal of this project. It is the hope of this committee that this building will not only meet the needs listed above, but will also carry on the proud traditions of the Bristol Fire Department and further support the recruitment and retention of professional volunteers that will protect the community for generations to come.

It is also important to mention that this is a municipal building; this design will create a new space that could be used as an additional meeting space for other public gatherings should the town find it necessary. In addition there is future space for the addition of a Police Facility if the town chooses too.

### **The Need:**

The Child's Engineering Report that was completed in November 2014 revealed major structural problems with the 1897 fire house located at 32 North Street. Following recommendations from the engineer the two fire trucks housed in this building were relocated to reduce the weight load in the building. Concerns with the stability of the second floor mean department trainings meetings, and other business can no longer be held in this space. The department officers are forced to schedule meetings in other spaces in Town. The American Legion is the primary meeting location. Meeting offsite creates many challenges and requires several more layers of planning for department meetings and trainings. The town did partition off a small space for an office in this building but it does not meet the administrative needs of the department.

This report is the not the first time that building concerns or deficiencies have been noted. In preparation for the 2013 bond vote that failed many tours were given and much discussion had at the community level. The conversation about the failing fire station began in 2004 when Retired Chief Mark Bouvier began an internal process involving a group of firefighters and community members to look at the future needs of the fire department and the possible replacement of the fire station. This

work resulted in the 2008 Pacheco Ross Study this study identified necessary spaces in the future fire station and identified some future sights. The report also, “that the current building lacks size and space for apparatus and all department operations.

The lack of space creates safety concerns for firefighters preparing to respond to close to apparatus. The 1897 station is too close to the road. Building code issues include lack of proper egress, poor air quality from diesel fumes; the building does not meet current Americans with Disability Act guidelines.” Certainly the report does not reflect all of the health and safety concerns found at the current fire facility. The building is not up to current electrical or fire safety codes. In addition it does not mention how poor the building measures up in the area of energy efficiency.”

**The site:** The proposed site is on West Street, on the lot that has been occupied by Nelson Memorials. This site was chosen by the Select board because it became available for purchase and would not require purchasing occupied homes that would need to be torn down and the possibilities of working with Developer Kevin Harper to build the new facility. It is also important to note this site was the third favorite site of the Site selection committee, which preceded the design team. This committee vetted thirty- three sites including those listed in the Pacheco Ross facility study. During this selection process the committee worked closely with the Bristol Planning Commission to be sure that potential sites could be used for a facility with the current town plan. This site may have been number one had it been more readily available. The site certainly rose to number one on the list when it was learned the top two sites were not available. It is also worth mentioning that the site is not far from 74 and 76 West Street which were the number four choice on the Pacheco Ross Study seven years ago. The design process revealed the potential lot for the facility would be 2.7 acres including space for a future police facility. The Pacheco Ross Study suggested at least two acres would be needed for a joint facility, so the site size is comparable to the previous study. Another advantage is the potential it holds for the future

**The design process:** Every design process has its strengths. This one was found in the depth of experience of those appointed to the design committee and their relationship with a gifted design team put together by Kevin Harper. The design team included Cushman Design Group of Stowe, Naylor and Breen Construction from Brandon, Alan Huizenga a local engineer. Matt Sharpe from Efficiency Vermont also offered insight into building the most energy efficient building possible while carefully considering the cost implications. In addition Naylor and Breen consulted with other sub contractors while making decisions and estimating costs.

Both members of the building committee and the design team brought experiences with using and building multiple fire facilities.

The building committee presented the design team with a detailed program analysis of the fire department. This report identified how the department operates when responding to and returning from calls, meeting nights, trainings and other times.

It was decided that a two-story building would make the best use of the lot and probably be the most cost effective way to move forward.

Throughout the process the need to be fiscally responsible and keep the cost down was important. There had to be a balance between the future needs and desires of the department, the look of a building that would welcome people to Bristol and the community for the next 100 years, and the cost to the taxpayers of Bristol, which includes those on the committee. The design team was very good at listening to all of the ideas and concerns and addressing them in creative ways. Conceptual drawings led to schematic drawings and ultimately to the schematic, which includes a price tag that has been approved by the committee and is being presented to the Select board with this report.

**The design:** This building is not just any fire facility but one that has been uniquely designed to meet the current and future needs of the Bristol Fire Department for years to come. The previous site selection committee held public hearings, which produced thirty-one criteria that were used to evaluate the potential fire facility sites. These criteria included the desire for a legacy fire building that the community could be proud of and might meet the needs of the community and fire department for the next 100 years.

This building will not only house all of the departments apparatus and operations in one place but will also provide a safer and healthier work environment for firefighters and the people of Bristol who enter this place. The building will be accessible to people with disabilities and incorporates the history of the Bristol Fire Department into its design.

The shape of the lot did define some of the buildings layout. This 11,010 square foot building is a little smaller than the 13,025square foot building outlined in the Pacheco Ross Study. In fact the square footage was reduced during the design process once property setbacks became known. The design does meet the specific needs defined by the Pacheco Ross Study. While square footage has been reduced a little, the impact to operations will be minimal due to the creative and efficient use of the space.

**Building Location:** The location of the building on the lot has been discussed at great length. The building is strategically placed with both safety and efficiency in mind. Emergency personnel will enter via a one-way access drive. This drive will allow for the most direct route to the

building when responding to a call while keeping personal vehicles away from exiting apparatus. Primary parking for responders is located on the west side of the building near a door that will quickly lead to a gear room to get ready. Care has been taken to be sure that firefighters do not have to cross a driveway or road in order to get from their vehicle to the building. The building is located as far to the east of the corner at the top of Stony Hill as possible. This is to maintain the safest line of sight possible. The town will add warning signs and lights to make this area safer as well. Apparatus will exit the building onto a road that will be built by the town and then enter traffic on West Street to help with the management of traffic if the property behind the station is developed. Apparatus will return to the station and in many cases be able to drive into the station rather than backing in. There will be additional parking for firefighters and the public at the rear of the station; this area is specifically designed to keep the public as far from exiting apparatus as possible. The public will enter the building through a door that is near this area and will not be able to freely enter the apparatus bays.

**Exterior Notes:** The new building design captures some of the history of the Bristol Fire Department by crowning the building with a bell tower that will house the historic bell from the current facility. The station has several triple glazed windows and glass apparatus bay doors to allow for maximum energy efficiency and make maximum use of natural light to reduce lighting costs. The windows and doors combined with the various styles of masonry panels will provide an exterior that is aesthetically pleasing and will not look like a traditional garage. The creative use of vertical and horizontal panels works to keep installation costs down and reduce future maintenance costs.

**Apparatus Bays:** The three eighty foot drive thru bays will house the departments six apparatus and are large enough to allow for the future replacement of these trucks. While the size of this was reduced there is adequate room to safely move between the trucks and efficiently work to get them back in service following calls. The bays will be equipped with necessary electrical and air connections to keep each piece of equipment ready to respond. There will be connections both fill up and wash apparatus after calls.

Floor drains are strategically placed under each vehicle to minimize water being on the floor and creating slippery conditions, The walls are covered with a water resistant fiber board to minimize the impact of water on the sheetrock. Propane fired radiant strips heat the space and are controlled separately from the rest of the building. Air scrubbers will protect firefighters from vehicle exhaust in accordance to current standards. The mezzanine on the west wall of the bay area is for storage and to allow ladders to be set up inside for training.

There is a smaller fourth bay attached to this space that serves three purposes. It will house the Fire Companies 1936 Fire engine and antique hose cart as well as some other historic items. This will help keep the departments history from being lost in the move to a new space. It will allow for the history to be proudly shared with the community and serve as an inspiration to newer firefighters. The space could also be used for other purposes should the needs of the department change. During the design process the size of this space was reduced a garage door eliminated and other changes made to keep costs down. The estimated cost of this space is \$32,000. It is important to note that the space including its windows is a creative way to break up the large east-facing wall of the building.

**Firefighter workspace:** The gear room is open to the apparatus bay allowing firefighters to safely don personal protective clothing and quickly board apparatus when there is a call. A special washer and dryer that are needed clean contaminants from gear and protect the health of responders is nearby. The gear room is near the firefighter showers and locker room. This will allow firefighters to clean up and change clothes rather than carrying dangerous chemicals and cancer causing carcinogens to their homes and exposing their families to potential health risks. There is also a room for caring for breathing apparatus that is located nearby to facilitate quickly getting equipment in service after a call.

**Office Space:** There is a chief's office where day-to-day operations can be handled. There is also another office with two workstations that will be shared by multiple officers to assist with these operations. This is to save on space and reduce building costs. A neighboring small conference room will allow various work groups to meet when needed. These spaces are located on the first floor after considering the needs of officers to interact with firefighters and the public on a regular basis. They are also separated from the public parts of the building to provide privacy during large incidents.

**Bathrooms:** All bathrooms will comply with the American Disabilities Act as required and be strategically located throughout the building after considering the ways the building is used.

**Storage space:** The building committee worked with the design committee to create, as much storage space as possible. The necessary spaces were carefully discussed and care has been taken to make the most efficient use of the building possible.

**Lobby Area:** The public will enter the building on the south side of the building. People will be able to access the firefighter offices, work areas and the bay area when accompanied by firefighters. Once inside the building all people will be able to freely access the second floor via the stairway or elevator. This space will also display some historic parts of the departments history

**Second Floor:** Upstairs there will be a large room that will be able to handle about 65 people for trainings, seminars, and regular department meals. This space will also serve as a staging area where firefighters and other emergency response agencies can meet when responding to large or long-term incidents like search and rescues. The room will be set up with necessary audiovisual equipment and there will be storage for chairs and tables. This space could be used for other public gatherings should the town find it necessary. The kitchen will be for firefighters to cook monthly dinners and provide meals at other department functions including long-term incidents. The kitchen is not intended for public functions, as this would require additional licensing by the state. Firefighters will also have a day room that will provide a place for them to rest and even sleep on cots during long-term incidents like ice storms and floods. The space could also be used in the distant future to provide sleeping quarters if the Town ever had to hire full time staff for fire protection. While there is no need for this type of staffing now, these considerations are necessary if this building is to potentially house the department for one hundred years. The space will also provide a place to hold informal debriefings after fire calls. This space has a window that overlooks the bays to remain aware of things that are going on in the apparatus bays.

The storage room also has a window that overlooks the bay. This is in case the town should decide to purchase a couple of pieces of exercise equipment. The physical fitness of firefighters is important given the number of cardiac deaths. However the plan for addressing these needs is not clear at this time. It should be noted that given the size of the room it should not be considered a gym.

**Training Capabilities:** There is a second stairway that will be used by firefighters. This stairway is below the bell tower and will provide a second emergency egress to the second floor. This space will be constructed of durable materials that will provide a space for the department to train. The committee has worked hard to incorporate as many training features into the building as possible. However many of the great ideas that were discussed could not be included after considering the cost of additional space.

**Mechanical Systems:** The design team working with Efficiency Vermont has made strategic decisions regarding the placement of additional

insulation and limiting air infiltration. This coupled with the use of heat pumps has eliminated the need for a boiler. This not only eliminates the need for this expensive item but will reduce long term energy and maintenance costs as well.

The electrical systems have been carefully designed for the facility keeping energy costs in mind. Everything will meet current codes and keep firefighters safer for this same reason. Water and Septic systems will also be up to code and be much more effective, eliminating the need to some times use a portable bathroom in the winter. The new facility will include state of the art sprinkler and alarm systems, and have a generator that powers the building when power goes off. This will allow the building to remain ready for firefighters to use at all times. This will mean that firefighters no longer need to get up in the middle of the night to start a generator when the power goes out.

**Furnishings:** The furnishings for the new facility will not be included in the bond nor have an impact on taxes. There is a developing plan to fund the necessary furnishings such as lockers, office and kitchen equipment as well as other items with private contributions and other fundraising. There are a couple of experienced people in the community willing to lead this effort. Private- public partnerships like this, point to growing public support of the project and have always played significant role of funding the work of the Bristol Fire Department.

**Building Cost:** The building design cost of \$2,840,067 was presented to the committee at the May 19<sup>th</sup> committee meeting. The estimate was reviewed and ultimately approved at the May 26<sup>th</sup> meeting. The committee agrees that this price does reflect the legacy building that will meet the needs of the community of Bristol, it provides a safe, healthy, and effective working environment for the fire department that will last for generations to come, and is a facility that seeks to keep energy, maintenance, and operating costs down. Ultimately this design has been developed by years of research, hard work and public comment. It is defined not only by the needs of the community but by local, state and national codes that must be complied with in order to build the facility. The Select board did hire Barden Inspection and Consulting Services Inc. to review the project costs as well. There was less than a 1.8% difference in the estimates of Barden and the developers. Tom Barden's comments were an assurance that potential high cost items had not been overlooked, and that the people of Bristol were not paying excessive amounts of money for any parts of the project.

**Land purchase:** The committee was informed that the cost of the land was going to be \$350,000. It was explained that in order to make this project possible the Town would purchase 9.03 acres. In the end a portion of the property may be sold and the funds used to reduce the cost of the project.

**Tax Implications:** Town Administrator Therese Kirby informed the committee that the estimated tax impact on a potential 3.19 million dollar bond would be as follows:

\$100,000 Home	\$79.30/year	\$1.53/week	\$0.22 /day
\$150,000 Home	\$118.95/ year	\$2.29/week	\$0.33 /day
\$200,000 Home	\$158.60/ year	\$3.05 /week	\$0.43 /day
\$250,000 Home	\$198.25/year	\$3.81 /week	\$0.54 /day

**Items still to be considered by Select board for final design:**

The high windows above the apparatus bay boors could be eliminated for a \$8,000 savings. Eliminating the same high windows on the east elevation could also save an additional \$4,000. If the windows are removed the architect will make adjustments to the siding design to accommodate the change.

The committee asked about the cost of epoxy paint on the apparatus bay walls above the water resistant fiberboard. This would cost an additional \$1,600. It was agreed that this may be a good idea due to the water spray in the area. It may also help with durability and the ease of cleaning.

The contractor added that painting the ceiling with epoxy paint would cost an additional \$3,600 if that were desired.

There was a question by a committee member about using exposed steel trusses and a metal deck, rather than the proposed wooden trusses with sheetrock. The contractor advises this would take some redesign by the architect but is confident in saying this would be a significant increase in cost. The steel trusses and deck are often used in an apparatus bay, this allows the mechanical systems to be put between the beams for additional space above apparatus and in this case the mezzanine. The Select Board may want to explore this option as final construction plans are prepared to get a better idea regarding the structural and cost implications.

### **The future of the 1897 Firehouse located at 32 North Street**

This building has served the community for 118 years. The discussion over its future was filled with nostalgic thoughts, great memories, and the need to be practical. It is the committees understanding that the tax payers of Bristol will ultimately decide the future of this property. On May 12<sup>th</sup> the committee outlined possibilities for the future station.

The options included:

1. Sale with caveats (i.e. exterior must be restored to its original design)
2. Sell without any caveats (as a building lot to get it back onto the grand list, but would have to limit it to 3 bedroom if that is what type of septic can be put in)
3. Obtain grant monies (from a private source) to keep and refurbish the historical building, but would need to put it on a time frame.
4. Dismantle the building and sell both the land and building separately
5. Dismantle the building (and sell it) and keep the lot for future use.

The committee was then asked to consider reducing the number of options being presented. On May 26<sup>th</sup> the discussion was reopened. It was noted that making the leap from a list of possibilities to a more defined recommendation was a challenge and may require more research than the committee would be able to do.

The committee ultimately voted to recommend the town sells the 1897 Station and property with no caveats. It was noted that if there was private interest in restoring the building it could be purchased to do so.

This recommendation was made based on the construction experience of committee members and the experience of many with the buildings condition. It was also stated there was no known need for additional town owned property.

It is important to note, this recommendation is not based on any detailed cost analysis. Nor does it involve any public forum or survey to gain the consensus of the community, but it is certainly influenced by some public opinions that are out there. If this recommendation were accepted and voted on it would ultimately be the voters who decide whether to sell or not.