PRESERVATION TIMBER FRAMING, INC., P.O. BOX 28, BERWICK, MAINE 03901
Office: (207) 698-1695 Cell: (603) 781-5725 E-mail: arron@preservationtimberframing.com

Bowdoinham Old Town Hall

Existing Conditions Report

13 School Street, Bowdoinham, ME

Prepared for:
Nicole Briand
Town of Bowdoinham
Bowdoinham, ME

Prepared by:
Arron Sturgis, Jessica MilNeil
Preservation Timber Framing, Inc.
P.O. Box 28
Berwick, ME 03901

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ARCHITECTURAL DESCRIPTION

The Bowdoinham Old Town Hall was built in 1823, and turns 200 this year. The main body of the church consists of five bents, with a wide entrance bay projecting from the front, east gable, and topped with a tall, square tower and octagonal belfry. At some point in the early 20th century, a more traditional spire was replaced by the current onion dome form, and the belfry and dome were replaced entirely in 1996.

The building is striking from the road and an important waypoint for visitors. The central room is cheerful and inviting, with tall, double-hung windows and an elliptically-coved ceiling, the posts creating a rhythmic pattern of pilasters marching down the sides of the hall. The truss system is beautiful, and much of the joinery is still quite tight. The tower rests solidly upon bed timbers which cross the front gable, narthex wall, and third bent. (Intro Photos 1-11)

Both the main body of the church and the tower exhibit extensive timber frame repair. There is little that is traditional, or sympathetic to the original timber frame, and the repairs vary in their projected longevity. Overall, the tower repairs are sound, and do not require improvement. The repairs to the interior trusses in the attic are temporary stabilizations and will require permanent repairs.

Occupants have reported active leaks in the roof, although we were not able to observe wet patches upon visiting after a rain. The sheathing shows signs of leakage and water staining all over, and it is difficult to determine whether these are active or historic leaks. Regardless, there are open holes in certain areas of the cornice, and any reports of active leaks must be taken seriously.

The foundation is similarly failing. It appears that the first floor level has been repaired repeatedly, and unfortunately, the sills have rolled completely away from their intersecting floor girts. The granite foundation is rolling away from the wall in a number of places, and the town manager has noticed movement in the foundation over the past year. These are immediate concerns which will need to be addressed in the next five years, and a temporary stabilization of any active roof leaks should occur immediately.

The following sections will include a detailed description of the frame, with special attention given to those areas in need of repair. The annotated drawings will help the reader visualize the way the timber frame works, and the photo report will help them to understand its condition. The report will conclude with a prioritized list of repair recommendations.

End of Section

EXISTING CONDITIONS

Foundation and Grounds:

The church stands at the height of land, which is beneficial for drainage and evident in the dry dirt beneath the first floor. The foundation itself, however, is remarkably inconsistent. There are areas that are built with large capstones interspersed with assemblies that resemble a fieldstone foundation. All of the stone is mortared, which is usually evidence of later efforts to waterproof the foundation, but it appears that the smaller mortared stone sections are later as well. This non-uniform wall is not typical: usually, the fieldstone would be used as a footer, below grade, and dry-laid, without mortar. This would be topped with large capstones that fill the full height rising from grade to sill. The original foundation was likely built like this, although we do not think that much of the footer exists below grade. (Foundation Photos 1-7)

A number of factors are allowing the capstones to shift. The infill repairs mean that the capstones are no longer uniformly-loaded. The sills are not contiguous, and are no longer tied together across the building, which also affects their loading. We anticipate that there is not enough of a footer beneath grade, and that the unloaded capstones are heaving due to freeze-thaw cycling. Although the ground is dry beneath the undercarriage, there is a lot of water coming off the roof and not draining properly. Snow and moisture get trapped between the ramp and the south wall, and snow piles up against the foundation along the west and north sides. (Foundation Photos 8-9)

The foundation has suffered multiple generations of insufficient repair. The points of failure are diffuse, not concentrated in one area. The building should be lifted, and a new foundation installed. A concrete frost wall and footer can be installed below grade, and the capstones reused. It is possible to purchase additional capstones to fill the voids, or use concrete in place of capstones along the rear wall. Alternatively, the committee may consider the foundation to be a high repair priority but a low preservation priority. Given budget concerns, it may make sense to replace the capstones with a poured concrete foundation, and save the best preservation practices for other parts of the building.

Poor drainage and splash-back may have caused the sills to rot and require replacement not long ago. Without fixing the drainage, the new sills are at risk. Proper perimeter drainage must be installed along with the new foundation, as it will protect both the foundation and the framing on top of it.

One additional note: The dirt below the floor framing is dry, but it is full of debris like broken bottles, crockery and cans. The access to the framing and heating ductwork is dangerous, and the debris must be removed. There may be an antiquarian in the community who has an interest in the historic trash pit. (Foundation Photo 10)

Undercarriage:

The undercarriage, or first floor framing, is ringed by heavy perimeter sills, approximately 10 x 11 in cross section. The floor plan is bisected longitudinally by two heavy summer beams of the same dimension. The summer beams are connected across the building by an interrupted belt of three heavy girts, and a series of log joists, parallel with the floor girts, varying around 5" in diameter and laid approximately 42" on center. This plane, containing the summer beams, floor girts, and log joists runs below an additional layer of floor framing, consisting of 4x5 sawn floor joists, laid about 30" on center. The smaller floor joists run longitudinally, from gable to gable, and are simply stacked over the first layer of floor framing. It would track that the first layer of framing is consistent with the building's use as a church, and the second layer was added when it was converted into a town hall. (Under Photos 1-12)

The summer beams are large, and beautifully hewn, and appear to be contiguous. The joinery between these large beams and the large intersecting floor girts was tight, and supported over a large boulder being used as a pier. The log joists are quite undersized for their span of almost 13'; they were sagging considerably, and propped up in places by short pieces of 2x8 kiln-dried lumber.

Due to the tight clearance and broken glass, we were only able to access the portion of the undercarriage directly inside the south door, in front of the stage. From this point we could observe that the perimeter sills had been replaced in short sections. These sections of sill appear to be much smaller than the original sills, and the intersecting girts and joists never connected. The sills, and the bottom of the wall, may also have spread considerably. We did not observe similar rot in the floor framing towards the interior of the building (that we could access), indicating that much of the sill rot was due to exterior splash-back.

Although we could not access all areas of the floor framing, we anticipate that the perimeter sills will need to be replaced in full. Short, disconnected sections of sill repair are not adequate for supporting the upper portions of the timber frame, the bottoms of the posts need to be tied to the rest of the floor framing, and point loaded directly to ground. The replacement of the foundation may provide an opportunity to make repairs to the rest of the floor framing. Additionally, the floor joists are not adequate for their span, and should be infilled with larger joists. It was reported that the hardwood strip flooring is too thin to be resurfaced again, and has reached the end of its useful life. This may provide an opportunity to remove the flooring in order to access the framing below. There is at least one additional layer of subfloor that would need to be removed, and more likely two layers. Given the historic significance of the building to the community, the layers of flooring should be removed carefully, in order to document any clues to its historic use, such as mortises for any former pews.

Tower Frame:

The tower is a relatively unadorned example of the Federal-era form, with a three-bay base that is deeply projected from the main front gable and topped with a shallow pediment. The square tower that rises above the pediment shares its front wall, but the rear tower wall is located a few feet behind the main front gable. The tower is quite tall, and looks that way because the exterior faces are not broken up by clock dials. There is a single window in the front wall of the tower, triangular in shape with the upper sides rounded like the top of a gothic arch. (Tower Photos 1-5)

In 1996, the belfry was completely replaced, and the tower frame below was extensively repaired. It appears that the bed timbers were rotted, along with two front posts, and the structural support for the belfry was moved to the tower roof. In this building, the tower was originally supported on two front posts that appear to have extended to the sills on the front foundation (Bent 1). The rear posts were supported on horizontal bed timbers, which span from the front gable wall (Bent 1) to the first interior truss (Bent 3). Bed timbers are one of the best ways to support the rear wall of the tower, because the load is shared amongst multiple, usually three, bents. These bed timbers were rotted and one of the severed ends can be seen beneath the rear tower posts today. Three bolted timber sisters have replaced each of the original bed timbers. An additional sleeper crosses the beds at the front wall, and two short stubs were installed beneath the rear tower posts, because their feet were likely rotted. (Tower Photos 6-12)

In Bent 1, the front tower posts were replaced. The replacement posts were butt-cut, and rest upon the original posts with no scarf or lap joint to connect them. The north post repair is through-bolted to a substantial bolster (8x8) that spans the repair and picks up the intersecting tie beam. The south post repair is not similarly bolstered, and that joint should be thoroughly secured before the building is lifted or moved. When the posts were installed, the tenons on all the intersecting girts were severed, and both original and replacement girts were attached to the new posts using 3" angle iron for brackets. The angle iron is secured to the post with lag bolts, and these fasteners now carry the load of the girt, where there once was a pinned mortise and tenon. Additionally, the post replacements are 8" x 8", and the original tower posts were 9" x 10", leaving a significant gap between the end of the girt and the side of the post. There are a number of factors at play: although mortise and tenon connections are best, appropriate brackets can work for a period of time in a dry tower. These brackets must be appropriately-sized, and, most importantly, the fasteners must be the right size and number because support of the load relies upon the shear strength of the fasteners. One option may be to install longer wooden shear blocks beneath the ends of the girts (3" x 8" x 24"), to allow more room for fasteners. The shear blocks should be relieved into the face of the post to allow the timber to take the load directly. The gap between the end of girt and post should be filled, and the connection gusseted. Bracket repairs are more susceptible to rot, because ambient moisture can condense on the cold surface of the metal, and get trapped against the face of the wood, so keeping the tower dry and regularly inspected are imperative. (Tower Photos 13-15)

Not only did the builder make extensive changes to the tower frame, it appears that he raised the bottom of the belfry posts. Typically, belfry framing is telescoped deeply within the tower frame, 8'-15' below the tower plates, in order to withstand high wind loads. We would expect to find belfry bed timbers crossing the first ring of girts below the tower roof; instead, the belfry posts land on a cross hatch of timbers that sandwich the tower plates, similar to a traditional crab. Additionally, there were two long posts installed within the plane of Bent 2; the load path travels from tower plate level to the tie beam level. These additional posts attempt to transfer some of the belfry load to the studded narthex wall. They might be doing that. Given the location of the belfry posts, it is unclear what these two new posts are supporting. (Tower Photos 16-19)

The stack of timbers that form a new belfry crab sandwich the tower plates, and their connections are through-bolted. The belfry loads have now been transferred to the tower plates, but it is unclear whether the plates are connected to the posts with an adequate hold-down. Here, as elsewhere, the angle iron should be reinforced, a Simpson strap or similar off-the-shelf hold-down may suffice. (Tower Photos 20-27)

The belfry itself is dry and in good condition. The walls are conventionally framed with 2x4 and 2x6 studs, and sheathed in plywood. From historic photos, it appears that the exterior is a loyal reproduction. The crab supporting the dome is constructed from bolted 8x8s, but it is likely that the layout of timbers is an accurate imitation of the original timber-framed crab.

Overall, the tower repairs are not considered best practice, but they are functioning and do not need to be replaced. The gaps in joinery should be filled, and the angle iron should be replaced or aided with shear blocks. The post connections need to be adequately bolstered, and the tower plates adequately tied down. Lastly, the repairs need to be monitored annually, and documented in order to track any shifting or movement. (Tower Photos 28-31)

Trusses and Town Hall Bent Framing:

The ceiling of the main hall is supported by a particularly lovely and well-crafted king post truss system. The trusses in this building consist of the bottom chord, king post, two upper chords, two ascending braces (or struts), two descending braces, and two additional struts. The bottom chord, or tie beam, spans from eave to eave and supports the ceiling cove and ceiling joists, it works in tension, and prevents the eaves walls from spreading under the outward thrust of the rafters. The upper chord, or rafters, support the roof and the head of the king post. The king post hangs vertically from the apex of the upper chords and supports the bottom chord at the center of its span. The king post is in tension and it is imperative that the connection with the bottom chord is strong. The struts and ascending braces support the upper chords in the middle of their span. There are two sets of struts which help support the principal rafters, one pair rises from the king post and meets the rafter in the top third of its span. The second pair rises from the bottom chord (or tie

beam) and meets the rafter in the bottom third of its span. This second set is atypical, and loads the bottom chord with roof weight, but the ceiling cove ribs may be helping to transfer some of their roof load to the exterior posts. (Truss Photos 1-5)

The joinery at the top of the king post and rafter heels is tight in Bent 3. In this building, the principal rafter is connected to the bottom chord with a mortise and tenon joint, which is double-pinned. The double-pinning makes this a very strong joint, and the rafter heel connection is unusually tight in this building. The marriage marks on the bottoms of the Bent 3 principal rafters consist of four vertical tick marks, which indicate (along with the other marriage marks), that the bents were originally numbered from back to front. The connection between the bottom of the king and the bottom chord is gusseted, and should be reinforced with a stirrup. Unfortunately, there is a pest hole at the north end of the bottom chord which is concerning, and will likely require a repair. We are optimistic that this will be a face fix, where the outer surface of the timber is replaced. (Truss Photos 6-11)

The truss in Bent 4 is badly damaged and has received extensive repairs. The bottom chord is rotted away directly beneath the king post, likely due to a longtime roof leak. The remaining timber has been sandwiched between two thick 2x10 sisters, and these are connected to the tops of the rafters by four long, angled gussets. Additionally, the remaining bottom chord is supported by two cables that hang from the rafters. Fortunately, the joinery at the top of the king post and at the rafter heels appear tight, although we recommend the installation of a mechanical tension connector, like a bolted strap or stirrup. These repairs reflect a good understanding of the trusses function, but are inadequate to support the span of the bottom chord and the rest of the ceiling in the long term. The center of the tie beam should be replaced with a new section of timber, of the same species and dimension, and connected to the existing ends of the bottom chord using a self-supporting timber scarf joint secured with bolted shear plates. (Truss Photos 12-19)

The bottom chord in Bent 5 is similarly damaged, but not to the same degree. The center of the chord has dropped away from the king post and is showing signs of rot. We recommend further investigation of the tie beam to determine the extent of damage, but anticipate the same repair will be necessary as in Bent 4. The rafter, or upper chord, on the south side also exhibits a lot of water damage. There is water staining throughout the roof sheathing and roof framing, and the damage can be hidden in canyons that run down the center of the timber covered by sheathing. The extent of water staining on this rafter indicates that the damage here may be more extensive. The Bent 5 post and brace on this side also show a lot of water damage; the brace will need to be replaced and the post repaired at the intersection with the brace. (Truss Photos 20-24)

Bent 6 is the rear gable end. It is supported by a studded wall and contains a triangular window with curved edges, similar to the one found in the front tower wall, which is boarded over. Overall, the wall has suffered the same water damage observed elsewhere in the roof, but the framing appears to have been largely spared. The north rafter, however, shows more water staining than elsewhere, and

we anticipate that there is some hidden damage similar to Bent 5. Additionally, the rear cornice, on the North eave, is open with light shining into the attic. (Truss Photos 25-30)

Roof Framing:

The roof frame is composed of principal rafters, or upper chords, connected by horizontal principal purlins, which in turn support a series of smaller common rafters. It is an extremely strong roof system, made more rugged by the ascending and descending wind braces that connect each purlin to the adjacent principal rafter. Unfortunately, the roof sheathing exhibits years of water damage. It is unlikely the water staining results solely from leaking in the most recent roof, but the current roof covering is visibly worn out and in need of replacement. (Roof Photos 1-3)

In the rear bays, from Bents 4-6, the framing appears to have suffered the most. A few of the common purlins have broken and been sistered. Three of the principal purlins show enough damage that they will likely need to be replaced once the roof is off. A third may need repair, or may need to be replaced. (Roof Photos 4-7)

Exterior:

The exterior of the meetinghouse has been maintained over the years with many layers of paint. Early layers of paint contain lead and many of the clapboards have deteriorated over time. The fate of the exterior siding depends upon how the building will be insulated. Currently the siding needs about 40% replacement along with an extensive scraping and repainting. Dry scraping using elbow grease is the best way to prepare the early and sound clapboards for new paint and new life. Full containment of lead paint chips is federally required. We do not recommend a full scale replacement of clapboards or insulation from the exterior because both the clapboards and the trim are authentic. Much of the trim is likely original and remains viable. (Intro Photos 1-5)

The front entry is little used but authentic in location and hosts a mediocre raised entry deck from the exterior. Exterior trim, including window treatments and corner boards, appear to be early and largely intact. Each window has an original pediment top. The cornice is adorned with modillions that appear to be original. These trim details should be retained. The tower also has trim details emulating the rest of the building, but they are unlikely to be original given the new framing behind them.

Windows on the meetinghouse have been maintained well and appear to contain early or original sash. Continued maintenance is recommended. These windows define the meetinghouse. One window on the north has been removed to darken the stage. One window on the south has been removed to allow for an entry vestibule and bathroom. The vestibule and the ramp were added much later, and the ramp traps water against the building. The removal of the ramp and entry is necessary to repair the sills and can be redesigned for access and utility.

There are no windows at all on the back gable of the meetinghouse. This is likely the result of the added stage at the rear of the building. An egress door and stairway have been added to the rear gable.

Interior:

The interior of the meetinghouse retains a great deal of original fabric including plaster and trim. It has been significantly altered over time including the addition of a stage, new narthex wall and floor. Interior paint colors are not original. The floor has been replaced in its entirety with added shims and joists to bolster the original undercarriage. Access to the undercarriage is only through this floor level. The stage is a later addition to the meetinghouse. Infrastructure under the stage including a partial concrete pour and a furnace room is haphazard and dysfunctional and will require redesign. Access to infrastructure is inadequate. (Intro Photos 6-11)

There does not appear to be any insulation in the wall cavities between the plaster walls and the exterior sheathing. Wiring and plumbing are substandard and do not meet modern building codes. Should the building be brought up to public access code compliance, it will be necessary to open up sections of the interior walls for insulation and infrastructure. It will be necessary to settle on an end-use plan before determining whether insulation should be installed from the interior or exterior.

Conclusion:

As the first multi-denominational church building in Bowdoinham, and later, as the city's secular town hall, the Bowdoinham Old Town Hall has made important contributions to Bowdoinham's history and sense of place. The main hall continues to be a beautiful, welcoming, light-filled space with a lot of life and function left to give. There are ample opportunities for its adaptive reuse as a space for the community to come together. The foundation needs to be replaced, along with the perimeter sills and repairs to the floors. The roof also needs to be replaced, and repairs made to the roof framing and interior trusses. The extensive repairs to the tower are working currently, and require a few minor additions to make them more long-lasting. The scope of repair is a heavy lift, but not insurmountable, and the building is well worth the effort.

End of Section

REPAIR RECOMMENDATIONS AND COST ESTIMATES

The following recommendations for repair and cost estimates are based on projects we have completed of similar size and scope. Actual costs will vary according to your needs and final scope of work. The timeline of your project also impacts costs at the time of construction.

Foundation and Grounds: $310,000.00

- Sitework and Drainage: $100,000.00
- Building lift: $80,000.00
- Concrete below grade: $70,000.00
- Capstones above grade with mortar: $60,000.00 (recycle existing and infill with new)

The foundation of the meetinghouse consists of a mixture of cap stone and fieldstone on a minimal base largely resting on ledge. The foundation has shifted over time with the freeze-thaw cycle and it appears that some repairs have been made over the years with minimal success. In order to fully repair the foundation, the building will be lifted on steel and cribbing and the existing stones will be temporarily removed to allow for concrete footers and stem walls to be installed below grade and pinned to the existing ledge. The capstones can be pinned to the solid concrete foundation and the meetinghouse will then be lowered onto the foundation. A building mover will be necessary to perform this work. A stone mason can collaborate with a concrete contractor to safely place the stones back in their original locations. Excavation for this work will encompass a clearing of debris from under the church and an excavation of organic soils to expose the totality of the ledge beneath this building. Where possible the foundation will be dug below the frost line. Where the ledge extends beyond frost, the foundation can be formed, pinned and poured directly to solid ledge.

Undercarriage: $282,600.00

- Removal of existing floor coverings: $37,000.00
- Replacement of Sills and undercarriage beams as needed: $153,600.00
- New sub-floor and new finish floor: $92,000.00

Much of the undercarriage is inaccessible because of its close proximity to grade and ledge. Where accessible, the framing is deteriorated and most of the undercarriage will require repairs. Perimeter sills are heavy timbers and should uniformly load the foundation. Where the sills have rotted over time, the capstones have easily shifted. The perimeter sills have been replaced, but with narrow timbers that do not engage the interior framing. New perimeter sills will be required. It is essential for the timber frame above to lock into a solid undercarriage. In this way the frame becomes stable and the perimeter sills adequately prevent outward thrust of the frame.

Many repairs were made to the undercarriage over time. Joists, joist spacers and sister joists have all been introduced into the undercarriage to flatten the first floor. It appears that access for these repairs was accomplished through the removal of the existing flooring. The careful removal of the first floor finished floor and the wide pine subfloor beneath it is the only way to properly repair and replace the rotten undercarriage beams and joists. The floor can be carefully and temporarily removed to access the undercarriage beams once the building is down on a solid foundation. This work is extensive but necessary to ensure the first floor framing meets public access code requirements.

Tower Frame: $52,000.00

The Tower Frame has been largely rebuilt over time. Repairs were made here using modern materials with little joinery. The repairs function adequately and it appears that this work addressed the bulk of the rot that was present. Some of this new work requires adjustment to make the repairs more effective and long lasting. Gaps need infill blocks. The angle iron brackets should be reinforced with shear blocks, and the tower plates need to be tied down to the posts. Access to these spaces is from above the Narthex.

- Bent 1: Bolstering of existing repairs: $22,000.00
- Bent 2: Bolstering existing repairs and additions of shear blocks: $30,000.00

Trusses and Bent Framing: $148,600.00

The roof trusses beyond the tower area all need some attention. Some more than others. Bents 1 and 2 are repaired in the tower frame number above. Bents 3 to 6 make up the roof of the town hall and each needs repair. Access to these areas requires structural staging and the removal of areas of the ceiling to get to the rotten areas of the bottom chords.

- Structural Staging: $66,000.00
  This is predominantly from the interior but some exterior staging will be needed to access truss chord ends.

- Bent 3: $14,600.00
  A semi-structural face fix will be done to repair the end of the bottom chord where it meets the rafter chord. A steel stirrup should be installed to hold the bottom chord to the king post.

- Bent 4: $26,000.00
  A tie beam/bottom chord repair will be necessary where the bottom chord meets the king post at the center of the truss. This repair will utilize the same species and size of timber to recreate joinery that has rotten away. A steel stirrup should be installed to hold the bottom

chord repair to the king post. The south rafter will also need to be repaired. This will be a dutchman repair as large as necessary to rid the rafter of rotten wood. If the rafter is rotted for more than 50% of its mass, the rafter should be replaced in kind.

- Bent 5: $23,000.00
  Bent 5 needs repairs similar to Bent 4. The damage here seems less severe but the repair is similar in scope. The scale of the repair is driven by the extent of rot found in both tie beam and principal rafter.

- Bent 6: $19,000.00
  Bent 6's north rafter shows extensive water damage and will require either a face fix dutchman repair, or a full replacement.

Roof Framing: $220,000.00

The roof framing is covered by a layer of horizontal sheathing that has decayed over time. Areas of this sheathing will be removed for access to the timber framed roof system and once repairs are completed another layer of sheathing will be installed over the original to ensure longevity of a new roof covering.

- Bay 1: $24,000.00
  This bay contains the rear two columns of the tower. Localized water damage where flashings have failed include areas of the roof sheathing and the common rafters adjacent to Bent 2 truss. These rafters can be strengthened by sister rafters fastened to them. If they are rotten they will be replaced in kind. New roof sheathing is necessary in this area.

- Bay 2: $12,000.00
  Bay 2 is doing relatively well as it is not close to the tower and the roof covering leaks less here. An inspection of the roof sheathing will be necessary prior to replacing the roof covering. A new layer of roof boards is necessary over the entire roof.

- Bay 3: $52,000.00
  Here we find a rotten principal purlin on the north pitch of the roof. It will need to be replaced in kind. This requires the removal of the roof covering, roof sheathing, and the temporary removal of common rafters. A new principal purlin can be installed using free tenons to re-engage with the principal rafter chords. It appears that the common rafters are ok here but a closer inspection of the common rafters once the sheathing is removed will confirm their condition.

- Bay 4: $72,000.00
  Damage is visible in both principal purlin and common rafters in this bay. The gable principal rafter is also likely in need of some repair. At least one of the common rafters in each pitch will need to be replaced in-kind.

- Roof Covering: $60,000.00
  A roof covering for the meetinghouse can be asphalt shingles or standing seam roof. These two types of roof coverings are appropriate for the building and standing seam lasts longer but is a higher initial investment. An asphalt roof can be done easily by many local contractors.

Exterior: $216,700.00

The building retains many of its original exterior features. Decorative modillions, original window sash, trim, and many viable original clapboards all should be saved. The following tasks need to be completed to maintain and retain the building exterior.

Exterior Scraping and Painting: $95,000.00

- Exterior of Bell Tower including shutters: $35,000.00
- Body of Town Hall: 60,000.00

Window restoration and reproduction: $81,700.00

- Scrape and paint all window sash and trim: $21,000.00
- Reglaze exterior of sash glass: $42,200.00
- Create two new windows for the back Gable: $11,000.00
- Install exterior low visibility aluminum storm windows: $7,500.00 (10 units)

New accessible entry and ramp: $40,000.00

- Rebuild ADA code compliant access ramp to rear of building.

Interior: $209,500.00

The building interior has many early features and a great deal of change has occurred over time. The best, least invasive method to upgrade this structure is to be done from the interior spaces. Insulation can be installed in wall cavities by selectively and minimally opening up existing plaster walls. Upgrades in electrical for safety and code compliance is also through existing wall cavities

behind the plaster. A wholesale gutting of interior walls for this access is neither required or desired. The plaster can be fixed using in kind methods and materials once the infrastructure is in place.

The existing floor will need to be removed to repair the undercarriage and place the building on a proper foundation. It was reported that this flooring has reached the end of its refinishable life anyways.

The vaulted ceiling, the tin ceiling covering should be retained and maintained with new paint and minor repairs to ensure cohesion and adhesion to the plaster ceiling above it.

- Blown in Cellulose Insulation: $17,500.00
- Interior Plaster Repairs: $19,000.00
- Interior Painting: $18,000.00
- Subfloor and finish floor: (See undercarriage numbers above)
- Electrical upgrades: $44,000.00 (contingency determined by code requirement)
- Plumbing upgrades: $33,000.00 (contingency determined by code requirements)
- Heating and Cooling: $78,000.00 (contingency determined by code requirements)
  (Infrastructure numbers can vary greatly and are dependent upon desired use)

Summary of Estimates:

The following recommendations for repair and cost estimates are based on projects we have completed of similar size and scope. Actual costs will vary according to your needs and final scope of work. The timeline of your project also impacts costs at the time of construction.

Task	**Cost**
Foundation & Grounds	$310,000
Undercarriage	$282,600
Tower Frame	$52,000
Trusses & Bent Framing	$148,600
Roof Framing	$220,000
Exterior	$216,700
Interior	$209,500
Total	**$1,439,400.00**

CONCLUSION:

Almost every aspect of the Bowdoinham Town Hall is in need of considerable attention. The building requires significant structural repair and a new foundation and undercarriage is needed. The exterior is authentic and in need of maintenance including new paint and roof. Interior upgrades include important insulation and updated infrastructure and plaster repair and new paint.

Every effort made to update and maintain the town hall is worthy given the importance of the structure and its potential use for townsfolk and the general public. This building contains the legacy of your ancestors and serves an important purpose for your local community. Costs are directly the result of deferred maintenance over time. The future use of the town hall may remain uncertain but its demise is imminent without action.

Respectfully Submitted,

Arron J Sturgis, President
Jessica MilNeil, Assessor, Writer & Draftsperson
Preservation Timber Framing, Inc.
www.prepservationtimberframing.com

Accompanying Documents:
- Photo Documentation Report
- Existing Conditions Drawings