

Report to the Plainfield Select Board

On the Town Garage

Submitted by the

Town Garage Study Group

August 15, 2016

Introduction

The Town Garage Study Group was convened by the Select Board in April of 2014 to study the existing Town Garage facility. The initial objective was to advise the Select Board on actions needed for maintenance and repair, including correction, of building code deficiencies. In addition, the group was to formulate a plan to implement any required work so that the building and site remain viable, providing a safe and efficient work environment for the next 30 to 40 years. The group was also directed to consider, and where appropriate, incorporate the concerns of the Plainfield Energy Committee (Appendix H), Conservation Commission, Planning Board and the Town Highway crew.

Group Participants

Jeff Albright (Planning Board), Brad Atwater (Zoning Board), Myra Ferguson (Conservation Commission), Bill Knight (Conservation Commission), Michael O'Leary (Chairman and Energy Committee), Mike Sutherland (Planning Board)

Activity

The Study Group met regularly over the past year and based its analysis on the assumption that the Town would continue to use the existing site and buildings for its maintenance operations. Study Group members made multiple site visits, reviewed past engineering studies and committee reports, and gathered information from engineers, contractors, vendors, DES employees and others. Almost immediately we discovered major questions about the design and construction of the main garage building such that the central question became "fix or replace?" Much of our subsequent effort has been directed to answering that question. Along the way there were opportunities to take immediate action on significant deficiencies that would be appropriate and/or necessary regardless of the eventual answer to the fix/replace question. So we have recommended a number of projects. Group members, in cooperation with Town employees, have overseen the installation of a new fueling station, a new well, septic system repairs, and a new floor-drain holding tank. What follows is a more complete presentation of our findings and recommendations.

Areas of Investigation

Site

Findings:

- Plainfield's highway maintenance complex is a four-acre parcel located at the intersection of Penniman and Stage roads on the site of a former gravel pit. (Appendix Q)
- It borders the Penniman wetland which sits on top of an aquifer that is one of the main water supplies for Plainfield.
- The site consists of two relatively flat plateaus separated by approximately seventeen feet in elevation.
- The two areas are connected by two access roads, providing on-site circulation and access to Penniman and Stage roads.

Recommendations for the Site:

1. Contract with Pathways Consulting to analyze the site and to develop a plan and budget that will allow the town to continue to use the site for its Highway Department activities without negatively impacting the Penniman wetland or the aquifer beneath it. (See Appendix N, Pathways proposal for site plan development)

Storm Water Run-off

Findings:

- By observation, storm water from the upper level of the site exits the site in four ways: along the road to the adjoining wetland at the northeast corner of the site; along the access road to the lower level on the east side of the site; along a grassed channel beside the access road to the lower level on the west side and through a culvert under Penniman Road onto adjoining property on the west side. That property is well-vegetated and shows no evidence of sedimentation from the run-off.
- By observation, the lower level of the maintenance site effectively forms a shallow depression which encourages infiltration.
- The south side of the lower level is bordered by a large berm. However, the berm has two breaks which could allow drainage toward the wetland.
- Adjoining land behind the buffer is relatively flat and well-vegetated.
- In the area near and behind the new well-head, there was obvious erosion on the bank resulting in sedimentation of a small area below. A small berm has been created to prevent further erosion. However, the area may need to be re-graded as a result of site evaluation related to storm-water runoff.

Recommendations concerning storm water run-off:

1. See Proposal for Managing Storm-water Runoff (Appendix N).
2. Hire an excavation contractor to make any changes needed as a result of Pathways new site plan

Utilities / Access

Findings:

- The site receives electric power from Eversource, via buried service, to a 200A distribution panel.
- The site receives potable water from a drilled well (new in 2016).
- Effluent / Waste water is processed via a septic tank and leach field located off the southern side of the building.
- The site has substantial vehicular access along the boundary with Stage road and sufficient access along Penniman road.

Recommendations concerning Utilities / Access:

1. No further recommendations at present.

Fueling Station

Findings:

- The (then) existing, underground fuel storage tank needed to be removed per DES guidelines.
- The Town took advantage of a State incentive program to remove and replace the fuel tank
- The primary need is for on-site storage of diesel fuel
- Study Group members and Town employees worked cooperatively to locate, design and install a concrete pad and the above-ground tank.

Recommendations concerning the fueling station:

1. Complete the installation of a spill apron in accordance with DES requirements. (Appendix F)
2. Provide spill kits and employee training to insure that future spills are managed in accord with DES regulations/recommendations. (Appendix G)
3. Monitor use to evaluate the need for bollards, flagging or other protective measures.

Septic System

Findings:

- There was no record that the existing septic tank had been pumped since installation in 1974.
- Examination by scope showed that the existing tank was full and the line was plugged.
- Further examination showed that the line from the tank to the leach field was improperly installed and had a bow in it which prevented the system from working properly. Repairs are scheduled to replace the pipe from the tank to the distribution box, replace the distribution box, and to then clean the pipes in the field past there.

Recommendations for Septic System:

1. The septic tank should be pumped at regular intervals in accordance with the original septic plan to insure proper operation. (Appendix P)
2. The area above the septic tank and field should be kept clear to permit servicing of the system. To prevent future damage, committee recommends that the area be seeded to create a mowable surface and that it not be used for storage or vehicular traffic.

Floor Drain System

Findings:

- The existing floor drain system is not compliant with NH Department of Environmental Service (DES) standards.
- The current system drains into a stone-based dry-well topped with half of a pre-cast tank which is open at the bottom.

- Harper Environmental of Bridgewater, VT, is testing effluent samples taken from the existing system. Their results will determine the likely extent of contaminated soils and the appropriate process to remedy the site.

Recommendations concerning the floor drain system:

1. Remove the existing tank / receptacle. *
2. Remove and process any contaminated soil in accordance with DES regulations. *
3. An approved holding tank to receive effluent from the floor drains has been installed.
4. Use 'oil socks' to separate oil/gas from water in the tank and allow the water to be disposed at a reduced cost.
5. Have the tank pumped as needed to remain compliant with DES regulations.
6. Install bollards or fencing, as needed, to protect the tank access ports.
7. Keep the area clear above and around the tank system.

*A detailed report (Appendix L), including project design by Pathways (Appendix M), has been presented to the Select Board. Contractors have been identified to complete this work.

Salt / Brine Storage

Findings:

- The road salt/brine operation is not compliant with DES Best Management Practices (BMP's) (see DES doc WD-DWGB-22-30). (Appendix E)
- The road salt operation has some compliant aspects and the Town could make improvements, but it would be difficult and expensive to bring the entire operation into compliance. (probably a new larger structure would be required)
- Road salt could be a problem with the wetland/aquifer, and the only way to know if the Town has a current problem would be to test the surface water (for wetland) and drill one or more monitoring wells to test subsurface waters (for the aquifer).
- Determining the accuracy/relevance of testing results could be complicated by other possible sources of contaminants (road run-off, old dump, other).
- The brine operation is also non-compliant with NH-DES requirements.
- Because brine is a liquid and is stored in large plastic tanks, currently stored outside, it represents a greater potential hazard to the wetland/aquifer and a greater liability to the town.
- There is information available from DES, The Salt Institute, etc. to help us improve our handling of salt and brine.

Recommendations concerning Salt / Brine storage:

1. The long term goal should be to make our salt / brine operations consistent with DES BMP's.
2. Give priority to making the brine operation completely compliant.
3. Consider surface water testing of immediately adjacent wetland.
4. Consider drilling two monitoring wells (re-purpose the old well if possible and add one near southern border - lower yard) for on-going monitoring of Highway Department activity impact on aquifer. (Salt and other contaminants).

Well

Findings:

- Employees used bottled water for drinking because water from the existing well was not considered safe.
- Testing by NH Division of Public Health Services confirmed that the existing well was contaminated with coliform and was not potable. (Appendix T)
- A new well was located and drilled in 2016 to provide potable water for the maintenance facility. (Appendix R)
- New well water was tested by Northeast Environmental Labs on 3/24/16 and is suitable for consumption and other uses. (Appendix S)

Recommendations concerning the well:

1. Establish a schedule and test the well water annually to verify that the water is safe for employee use.
2. Protect the well-head with bollards (or similar) to prevent damage from vehicles or equipment.

Garage building

Findings:

- The roof structure does not meet current snow-or wind load standards. (Appendix I)
- The building envelope does not meet current wind-load standards. (Appendix J)
- The roof covering is reaching its expected life span and should be replaced.
- The existing siding is showing degradation, needs to be repaired, and will soon need to be replaced.
- The exterior lighting is not dark-sky compliant.
- The windows are single pane, have rotted sills and need to be replaced.
- The sill plates are not pressure treated and not properly fastened to the foundation.
- Ground radar did not show adequate footings. However, upon visual inspection, the footings exist and are adequate.
- The concrete stem wall and floor were tested by M&W Soils and found to be adequate (Appendix K)
- Existing Heating provided by oil fired boiler (main garage space) and electric resistance strip heat (break room, office, and bath).
- There is no mechanical cooling in the building.
- There is no second means of egress from the second floor office/break room space.

- Some activities occurring within the same building envelope drive up risk/safety, code compliance issues. (Break room/office and garage)
- It is likely that energy costs are artificially low because of the lack of proper ventilation.

Recommendations concerning the garage building:

1. Cost estimates for major items are provided in Appendix B and Appendix C.
2. Meet with Engineering Ventures to review their proposal and our conceptual plan for repairing the building envelope to meet wind-load standards to confirm the accuracy of our cost estimates.
3. For comparison, research the cost of replacing the current structure with a building of similar size. (Appendix D)

Work environment / building interior

Note: While examination of the 'work environment' was not part of the original charge to this committee, examination of the structure and site has resulted in numerous discussions surrounding this topic.

Findings:

- Existing mechanical ventilation is provided by manually operated spot ventilators (bath, shop area).
- There is no automatic ventilation system to remove exhaust and other contaminants from the work environment, especially during the winter months when the doors are closed.
- Staff appears to use fans / doors when needed for more noxious activities (welding, grinding, painting, etc.) Otherwise, fans are off and doors closed.
- It is likely that air quality throughout the building is poor due to the presence of multiple sources of contaminants in and around the building and the lack of automatic ventilation.
- OSHA standards require environmental controls to protect worker health and safety.
- Evaluate, and modify as needed, our safe handling procedures for hazardous substances and our compliance with OSHA's Hazard Communication Standard (MSDS sheets).
- Site examination by Primex indicated a number of safety concerns. (Appendix O)
- Interior lighting may not be adequate for an efficient work environment. The overhead lighting was replaced in 2007 and provides adequate ambient light. However, the need for task lighting should be evaluated.

Recommendations concerning Work Environment / Building Interior:

1. Select Board should direct the Safety committee, or other group, to examine work environment issues, including OSHA and NH State Department of Labor requirements, to ensure we are providing a safe, efficient, and compliant work environment for our town employees.
2. Select board should direct the Town Administrator to work with the Road Agent to:

- a. Create/implement improved procedures for tool and part storage and disposal of old/un-used parts to reduce clutter, increase safety and improve workspace efficiency.
- b. Evaluate the need for activity-specific task lighting.
- c. Evaluate the need for additional employee training.

Unresolved issues

The following issues have recently developed or are outside the scope of this committee. However, the group feels that they deserve further study by the Select Board or a future committee.

1. The acquisition of the Ferry Hill Site provides an opportunity to examine and redesign the storage of materials and equipment, division of maintenance operations, and efficient use of the current maintenance facility. As an example, it could be used for seasonal equipment storage to reduce overcrowding in the current garage.
2. The skill sets needed to make the maintenance workforce more efficient should be examined.
 - a. Should the town hire a full-time mechanic to maintain town equipment?
 - b. Is training in the use of specific equipment needed?
 - c. Should leadership/management skills training be provided?
3. A long-term plan for the maintenance of town-owned buildings should be developed.
4. The functional adequacy of the existing town garage space should be evaluated for both current and future use.
5. Providing a code-compliant, controlled ventilation system is essential if the Town is going continue to use this building. Material cost estimates are provided in Appendix A - design costs are not included.
6. However, In the context of designing proper ventilation, the heating system will necessarily be re-evaluated and likely will be re-designed and replaced. (Appendix B)

Conclusion

The PTGSG study has revealed that the site, pending further investigation, and with some modifications, can likely continue to serve as the base of town highway operations with reasonable effectiveness and without undue negative impact on the neighborhood or natural resources.

Study of the main garage building has revealed that it is not code compliant in many important areas. If we attempt to continue to use the building as-is we would be breaking the law, risking the health and safety of our employees, and exposing the Town to significant liability.

The challenge for the Town, and the question which has directed much of this group's effort, was to determine whether it is better to fix the building we have or build a new facility.

The Town could choose to only repair broken or damaged parts of the building, and not attempt to modify the structure or make it code compliant. This group has collected information on these items and they will total approximately \$56,166 over the next 3-5 years. This strategy would leave the community with a 33 year-old building that was in arguably good condition, with newly replaced siding and roofing. but several significant latent defects would remain (weak roof, walls vulnerable to wind shear, energy inefficient, poor air quality, etc.) The functional utility would remain the same. The expected operating costs would remain

much the same. The expected maintenance would be that of a building 33 years into its expected life. Deciding not to correct known deficiencies may place Town employees and equipment at risk and would represent an on-going liability to the Town.

The Town could choose to make the building safe for employees and reduce liability by bringing it up to applicable building and life safety codes. This group has collected considerable information on specific work items and identified additional items that would require further engineering / design to meet this goal. Following this approach would leave the Town with a building in good repair, in compliance with codes, safer for our employees and equipment. In spite of reductions in energy cost from the improvements made to meet energy code, expected operating costs would likely increase because of the ventilation required.

There are some items that would be very expensive to repair for the benefit they achieve. Expected maintenance would remain that of a building 33 years into its life. We have already identified \$102,974.00 to date and know that additional design/implementation work for HVAC could easily cost in excess of \$81,500.00 yielding a total cost of \$261,764.00 or more to execute this strategy. In addition, contingency and contractor's overhead and profit will bring the total to well over \$300K. (Appendix B.)

The third approach would be to design and build a new facility. A new facility would be safe for our employees, code compliant, and energy efficient. Building new would provide the opportunity to create a building more suited to current and future needs. The expected operating cost might decrease, in spite of ventilation costs, because of the opportunity to make the entire building more energy efficient. The expected maintenance cost for a new building would be lower. Without a specific design, we have collected general square-foot-cost information for similar facilities built within our region which suggests that construction costs for a new facility could range from \$65-\$120/sf. With this broad range, it would be very important to thoroughly understand our needs before committing to this approach.

After substantial investigation and consideration of many alternatives, informed by and in consultation with outside design professionals, it is the consensus of this group that the Town will likely find it preferable to follow the third strategy and should therefore prepare to transition to a new facility within the next 5 years. Because either the "Major repair" or "Build new" approaches involve significant investment, it is clear that we should study our existing functions to see if they are well supported by our existing facilities and whether there are significant benefits to be gained from new configurations or procedures. Understanding our present and future needs will lend confidence to our final decision.

Next steps:

1. Accept the findings of this group and assign responsibility for implementing the recommendation to the proper group or individuals.
2. Form a committee or hire a consultant, or both, to follow proper design process with the goal of constructing a new structure (or structures) to meet the needs of the Highway department within the next 5 years.
3. Prepare a warrant article for Town Meeting to begin accumulating the necessary funding.