GATEWAY ENGINEERS

A FULL-SERVICE CIVIL ENGINEERING FIRM

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Whitehall Borough - Borough Building Assessment

100 Borough Park Drive, Pittsburgh, PA 15236
Allegheny County, Pennsylvania

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Whitehall Borough Council

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REPORT

FULL-SERVICE CIVIL ENGINEERING

Executive Summary

The purpose of this investigation was to assess the current conditions of the building and provide recommendations for required and advisable repairs and upgrades for the various building systems.

Overall, the buildings are in fair condition, but suffer from lack of routine maintenance and upgrades. The buildings are structurally sound overall. They require planned improvements related to the building envelope, life safety systems and accessibility. In terms of mechanical, electrical and plumbing systems, the buildings are in fair to poor condition. Mechanical and electrical systems are at the end of their useful life and due to the age of the equipment, repair may not be a feasible option when a piece of equipment stops functioning properly. There are significant additional considerations for the current maintenance, code compliance, and accessibility of the buildings.

Recommendations include, but are not limited to the following:

- Roof Replacement
- Storefront, window and door replacement
- Mechanical systems and equipment replacement and upgrades
- Electrical and lighting upgrades and replacement of equipment
- Replacement of plumbing system components
- Modifications to fire alarm systems
- Life safety improvements; fire rated construction, reconfiguring of doors, etc.
- Site improvements, site regrading, parking lot re-pavement and striping
- Addressing water infiltration issues
- Accessibility upgrades and renovations to all restrooms

An Engineer's Opinion of Probable Construction Cost is provided as an attachment to this report. We estimate a project of this scale will cost approximately $7.5 - $9.0 million dollars to complete. Please refer to the attachment for a breakdown of cost, and refer to the Electrical, HVAC and Plumbing estimates within the associated reports for further breakdown.

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Overview

The following is an analysis report of the conditions, accessibility and life safety of the Whitehall Borough Building, Library, and Police Station Building. The structure was assessed via a walkthrough and visual inspection of structural, accessibility, life safety, and general site conditions. The building was assessed from the interior, exterior, and immediate site surroundings. Assessments of the mechanical, electrical and plumbing systems of the facility were also conducted.

The purpose of this investigation was to assess the current conditions of the building and provide recommendations for required and advisable repairs and upgrades for the various building systems. The facility was assessed in accordance with the following codes, as adopted by the State of Pennsylvania:

- 2021 International Existing Building Code (IEBC)
- 2021 International Building Code (IBC), as referenced by the IEBC
- 2021 International Energy Conservation code, as referenced by the IEBC
- 2021 International Fire Code, and referenced NFPA Standards
- 2021 International Mechanical Code
- 2021 International Plumbing Code
- 2020 NFPA 70
- 2009 ANSI 1171.1 Accessibility Standards
- Allegheny County Plumbing Code

Items investigated structurally included wall stability and exterior elements. Accessibility items evaluated include parking, door hardware, thresholds and floor transitions, restrooms, accessible means of egress, and accessibility to primary function areas. Life safety elements assessed include fire alarm pull stations, smoke detection, strobes, exit signage, door ratings and smoke protection, overall means of egress. General conditions assessed included moisture infiltration issues, condensate or other spot moisture issues, age of the windows, roof and other architectural components, exposed exterior insulation and protection board on the exterior of the building. An analysis for mechanical, electrical and plumbing (MEP) disciplines is included as an attachment to this report.

Scale for Evaluation

The scale below has been used for evaluation in documenting the description of the building conditions.

Excellent	No repairs or modifications required.
Good	Minor cosmetic repairs recommended.
Fair	Cosmetic repairs or advisable upgrades/repairs required. *Item has exceeded its expected lifespan, but is functioning and replacement should be planned for the near term.*
Poor	Significant repairs required to extend life or continue function of structure.
Very Poor	Major repairs required to extend the service life of the building or to reinstate service. May indicate areas that are beyond repair.

Background Documents

The following drawings were supplied prior to the completion of this report:

- Addition and Alteration to the Whitehall Borough Building Library, dated 1997
- Borough Building and Maintenance Building for Borough of Whitehall, dated 1961
- Whitehall Municipal Building Entrance As-Builts, dated 2005
- Whitehall Police Station drawings, dated 1984

1. Visual Inspection – General Description

1.1 Building Description

Whitehall Public Library - Uppermost level of the complex

The original building was constructed in 1962, with an addition to the library in 1998. The primary use of the building is the Public Library, with supporting amenities, and an assembly space for the Borough. The library is accessed via a parking lot near the main entrance, with an auxiliary entrance directly into the assembly space. Another exit is present from the children's reading room on the side of the building. It is connected to the municipal area via (2) stairwells.

Whitehall Municipal Building - Middle level of the complex

Originally constructed in 1962, receiving an addition to the entrance in 2005. The primary use of this space is the administrative offices of the Borough, as well as the Whitehall Borough Council chambers and public meeting room. The municipal building space is accessed by a parking lot at the main entrance. It is connected to both the Library and the Police Station buildings via separate stairwells.

Whitehall Police Station Building - Lower level of the complex

This portion of the complex was constructed in approximately 1984. This building functions as the Whitehall Police Station, and is accessed by the public via a lower level parking lot adjacent to the entrance, with an auxiliary parking area for staff near the garage entrance. It is connected to the Municipal Building via stairwell.

1.2 Overall Site

Each building is accessed off Borough Park Drive, with independent driveways and parking lots.

The Public Library parking lot has three marked accessible parking spaces, but these do not appear to comply with the appropriate slopes in their present condition. A recent design effort was made to regrade this area to improve overall site drainage and waterproofing of the building, repair the damage to the permitting office, provide two accessible parking spaces, improve life safety of the egress route of the Library, and improve accessibility to the main and auxiliary entrances at the front of the building.

The Municipal Building is served by a parking lot with one marked accessible space which is striped and signed and appears to comply with accessibility standards. It is connected via stair to the upper lot.

At the lower level, the public parking lot for the Police Station has no marked accessible spaces, and includes spaces marked for officer use. This lot is non-compliant with accessibility standards in its current state. There is also a rear parking lot for employee use and access to the garage.

2. Facility Uses and Classifications

Occupancy classifications herein correspond with designations per the 2021 International Building Code. Occupancies included in the Public Library Building are Assembly (A-3) and Business (B). The municipal is a Business (B) occupancy, with the council room constituting an Assembly (A-3) occupancy. The police station building is a Business (B) occupancy.

3. Structural

3.1 Public Library Observations

The library level is constructed over the municipal building and appears to consist primarily of structural steel framing. Floor construction appears to be a cast concrete deck supported on bar joists. Roof construction could not be verified. Areas around skylights were constructed with structural steel tubing, but the majority was not visible. Much of the structural framing was concealed by architectural finishes, ceilings, and other building components, limiting the extent of visual observation. Based on the accessible and visible portions, the framing appears to be in good structural condition and performing as intended, with no significant corrosion, deterioration, excessive deflection, or connection deficiencies noted.

3.2 Municipal Building Observations

The municipal building middle level consists primarily of a cast-in-place concrete slab-on-grade and cast concrete foundation walls. The ceiling of the municipal building forms the floor of the library and is constructed with a cast concrete slab on bar joists. It appears that there are likely masonry bearing walls supporting the bar joists above. Due to the topography of the site, the western portion of the municipal building is entirely below grade with a cast concrete retaining wall integral to the building. The eastern portion of the municipal building level is above grade. Visibility of the structural components was limited in some areas by architectural finishes and other obstructions. Based on the portions that were accessible and visible, the lower level appears to be in fair structural condition. Minor cracking of a wall was noted in the recreational storage area, but no other significant cracking, displacement, settlement, deterioration, or other evidence of structural distress was noted.

3.3 Police Station Observations

The police station appears to be constructed primarily with non-load bearing exterior concrete masonry unit (CMU) walls and a steel-framed roof with a concrete roof deck. Due to the topography of the site, the southwestern portion of the police building is almost entirely below grade with a cast concrete retaining wall integral to the building. The eastern portion of the police building is above grade. Visibility of the structure was limited by interior and exterior finishes; however, no significant structural issues were noted in the accessible areas. Based on the accessible and visible portions, the framing appears to be in good structural condition and performing as intended, with no significant corrosion, deterioration, excessive deflection, or connection deficiencies noted.

During the site visit, it was reported that the police station may have originally been designed to accommodate a future second-floor addition. This could not be verified through the available drawings, documentation, or visual observations. The existing structure should not be assumed capable of supporting an additional story without a detailed structural evaluation of the walls, roof framing, foundations, and lateral-force-resisting system.

3.4 Public Library Recommendations

The upper level appears to be in generally sound structural condition, and no significant structural repairs are recommended based on the visible conditions. Routine maintenance and periodic monitoring should be continued. Any proposed change in use, occupancy, structural layout, or loading should be evaluated by a qualified structural engineer to confirm the capacity of the existing steel framing, open-web steel joists, connections, and supporting components.

3.5 Municipal Building Recommendations

The lower level appears to be in generally sound structural condition, and no significant structural repairs are recommended based on the visible conditions. Cracks noted in the existing concrete walls should be documented and periodically monitored for changes in width, length, displacement, or evidence of water infiltration. Any observed movement or worsening of the cracks should be evaluated.

3.6 Police Station Recommendations

The police station appears to be in generally sound structural condition, and no significant structural repairs are recommended based on the visible conditions. Routine maintenance and periodic monitoring should be continued. Any proposed change in use, occupancy, loading, or building configuration—including a potential second-floor addition—will require a detailed structural analysis to verify the capacity of the existing CMU bearing walls, roof framing, foundations, and lateral-force-resisting system. The structure should not be assumed capable of supporting a second floor without this evaluation.

4. Accessibility

For the purposes of report recommendations, the building would be assumed to undergo a Level 3 Alteration per the 2021 International Existing Building Code, in which the work area equals or exceeds fifty percent of the floor area. Recommendations made herein are made on the basis of compliance with this code pathway, along with compliance with ANSI 117.1 accessibility standards.

4.1 Public Library Observations

Site arrival point is via accessible striped parking spaces at the parking lot which do not appear to be compliant due to the provided slope and cross-slope. The ramp to the primary entrance vestibule is appropriately provided with railings due to its slope. The library entrance is on the left side of the main vestibule, with an egress pathway through the children's library area and out a side door that discharges onto a walkway. Main door and primary library entrance door have pairs of doors measuring at least 32 inches clear and have thresholds and door hardware, including push button door assistance, that appear to comply with accessibility requirements. The doors to the children's library are non-compliant in their current configuration (refer to life safety section). Primary entrance from the front of the building is considered to be the required accessible route to the primary function. Librarian desk allows for a side approach from the public side. Restrooms are shared with the building's assembly use community space. There are men's, women's, and a single user restroom provided on the same floor. Each bathroom is signed with tactile signage. Restrooms do not appear fully compliant with accessibility standards in their current state. The community space is accessed via the main vestibule, and provides adequate turn radius and approach space from each side of the doors. There are two sets of similar doors which have one active leaf a minimum of 32 inches wide with lever, and an additional leaf that is typically inactive and does not include lever hardware.

4.2 Municipal Building Observations

Primary entrance is through the main entry vestibule. The public areas are at the front of the building, with staff areas toward the back of the building. Public facing desking for the municipal departments does not comply with accessibility requirements for height. Municipal desk appears to provide room for a side approach, while the code enforcement office desking does not appear to have adequate accommodation for a forward or side approach. The lobby area provides space for municipal employees to come out to meet with constituents as needed, in order to provide a similar experience and accessible accommodation. The provided water fountain does not have a high-low arrangement. Men's, women's and single user restrooms are provided, but do not meet accessibility requirements in their current configuration. The staff break room and kitchen area is not accessible in its current configuration. The council room is part of an accessible route. Doors along the route do not appear to be fully compliant with accessibility requirements for clear floor area.

4.3 Police Station Observations

Public access to the police station is off the front parking lot, which does not provide accessible parking spots. The public entrance of the police station provides power assisted door openers, and thresholds that appear to be compliant. The lobby is not accessible in its current configuration. The public facing glass does not provide intercoms or other means of communication at an accessible height. The single user restroom off the public lobby does not meet accessibility

requirements in its current configuration. Provided tactile signage is mounted above appropriate height. Tactile signage was not provided at the vestibule exit doors. Staff are provided with a single user restroom and a men's restroom that is part of the locker room, with showers. There are no dedicated restrooms or locker room accommodations for women in the facility beyond the single user restroom. Provided restrooms and showers for staff were not fully accessible in their current configurations. The police station has steps throughout the floor, and up to the command center area. Clearances for turning and clear floor areas for doors would be difficult to achieve with the current floor plan configuration of the department, as there is no additional programmatic space to add the required women's facilities.

4.4 Public Library Recommendations

Update the men's, women's and single user restrooms to comply with accessibility standards and Allegheny County Plumbing Code fixture requirements, which results in an increase the number of fixtures required (refer to provided table at the end of this section). This would include work to physically reconfigure or enlarge restrooms, relocate and replace fixtures, partitions, restroom accessories, etc. Many restroom finishes appear to be in fair condition. We recommend a high-low drinking fountain and/or bottle filler be installed per accessibility requirements. As part of this report, we have recommended replacing the double doors to the children's library (refer to life safety section), and these doors shall be replaced with accessibility compliant thresholds, hardware, etc. as it is part of the primary function area. Refer to site section for additional site accessibility notes pertinent to this portion of the facility. A recent design effort was made to regrade the front of the building to improve overall site drainage and waterproofing of the building, repair the damage to the permitting office, provide two accessible parking spaces, improve life safety of the egress route of the Library, and improve accessibility to the main and auxiliary entrances at the front of the building. We recommend this scope of work be completed.

Library Building	Fixtures Provided	Fixtures Required
Men's WC	1	1
Men's Urinals	2	1
Women's WC	2	3
Lavatories (Total)	3	2
Drinking Fountain	1	1
Mop Sink	1	1

4.5 Municipal Building Recommendations

Update the men's, women's and single user restrooms to comply with accessibility standards and Allegheny County Plumbing Code. The current number of fixtures is compliant with Allegheny County Plumbing Code minimum requirements (refer to provided table at the end of this section). However, compliance with accessibility standards would likely require the existing single user restroom to be physically reconfigured or enlarged. This work would also include work to the fixtures, partitions, restroom accessories, etc. Many restroom finishes appear to be in fair condition. We recommend a high-low drinking fountain and/or bottle filler be installed per accessibility requirements. We also recommend bringing the staff break room and kitchen area into compliance with accessibility standards. Work tops, sinks, and appliances should be redesigned to be within appropriate reach ranges and heights, and should provide adequate front or side approaches to these areas. Reconfiguration work may be required to provide an adequate accessible route to the council room, which may entail relocating doors, reconfiguring walls, etc.

Municipal Building	Fixtures Provided	Fixtures Required
Men's WC	1	1
Men's Urinals	2	2
Women's WC	3	3
Lavatories (Total)	4	3
Drinking Fountain	1	1
Mop Sink	1	1

4.6 Police Station Recommendations

Recommendations include repair of the asphalt surface where required, re-striping the lot to provide two demarcated and signed accessible parking spaces, one of which to be van accessible. The single user restroom off the lobby should be updated to comply with accessibility requirements. This would include work to relocate and replace the fixtures, partitions, restroom accessories, etc. Many restroom finishes appear to be in fair condition. Adequate tactile signage, mounted at appropriate heights should be provided at the single user restroom and accessible exit doors. We recommend providing at least the minimum code required facilities for staff, including accessible shower, locker and restroom facilities. The current number of fixtures is compliant with Allegheny County Plumbing Code minimum requirements (refer to provided table at the end of this section). Staff common areas and corridors shall be accessible. Office or desking spaces shall have the ability to provide accessible accommodation. One accessible route shall be provided from a site arrival point to a minimum of one accessible holding or detention cell. Refer to site section for additional site accessibility notes pertinent to this portion of the facility.

Police Station	Fixtures Provided	Fixtures Required
Men's WC	1	1
Men's Urinals	1	1
Women's WC	1	1
Lavatories (Total)	2	2
Drinking Fountain	1	1
Mop Sink	1	1

5. Life Safety

All buildings are compliant as non-sprinklered, assumed to be Type IIB per the 2021 International Building Code. For the purposes of report recommendations, the building would be assumed to undergo a Level 3 Alteration per the 2021 International Existing Building Code, in which the work area equals or exceeds fifty percent of the floor area. Recommendations made herein are made on the basis of compliance with this code pathway.

5.1 Public Library Observations

Life safety devices observed include fire alarm pulls, strobes, illuminated exit signs, emergency lighting, smoke detectors and door panic hardware. Floor – ceiling construction could not be fully verified, and should be rated construction to separate occupancies A-3 and B (below); per applicable codes at the time of this report, the separation for non-sprinklered buildings is a two hour floor-ceiling assembly compliant with an approved UL assembly type. Stairwells are of non-combustible construction and have rated doors which shall be fully verified for their compliance. The doors to the children's library swing in the opposite direction of egress travel while providing an illuminated exit sign. The required number of exits, egress widths, and exit separation distance have been verified as compliant for the provided occupancies. The assembly space is provided with appropriate occupancy signage.

5.2 Municipal Building Observations

Life safety devices observed include fire alarm pulls, strobes, illuminated exit signs, emergency lighting, smoke detectors and door panic hardware. Floor – ceiling construction could not be fully verified, and should be rated construction to separate occupancies A-3 (above) and B; per applicable codes at the time of this report, the separation for non-sprinklered buildings is a two hour floor-ceiling assembly compliant with an approved UL assembly type. Separation between occupancies is not required between the municipal building and the police building, as they are both a non-sprinklered B occupancy.

Stairwells are of non-combustible construction and have rated doors which shall be fully verified for their compliance. Appropriate door hardware at fire doors including continuous hinges and gaskets, appear to be in adequate working condition throughout and shall be fully verified for compliance. Doors between the municipal building and floors above and below are controlled by keycard access at the stairwells. At the former council room, floor tiles were observed that have the potential to contain asbestos. The council room shall be classified as an A-3 occupancy, as IBC Section 303.1.2 does not apply to this space. Wall and floor-ceiling construction could not be fully verified, and should be rated construction to separate occupancies A-3 and B (adjacent and above); per applicable codes at the time of this report, the separation for non-sprinklered buildings is a two hour floor-ceiling assembly compliant with an approved UL assembly type. Doors to the business areas shall be rated a minimum of 90 minutes. There is one existing wooden door that is not rated into this room. There is no signage for the occupant load for this assembly space. The required number of exits, egress widths, and exit separation distance have been verified as compliant for the provided occupancies.

5.3 Police Station Observations

Life safety devices observed include fire alarm pulls, strobes, illuminated exit signs, emergency lighting, smoke detectors and door panic hardware. Separation between occupancies is not required between the municipal building and the police building, as they are both a non-sprinklered B occupancy. Doors between the police station and municipal building are controlled by keycard access at the stairwell. The required number of exits, egress widths, and exit separation distance have been verified as compliant for the provided occupancies.

5.4 Public Library Recommendations

We recommend the doors to the children's library are adjusted as soon as possible to swing in the direction of egress travel per the original building drawings, as this is an active life safety issue that could create a stacking effect in the case of an emergency. We recommend testing of all life safety devices (fire alarm pulls, strobes, illuminated exit signs, emergency lighting, smoke detectors, door panic hardware, etc.) by a qualified contractor or technician. We recommend replacement of any devices that are deteriorated, non-functional, or otherwise not installed up to current code requirements and industry best practices. We recommend ongoing testing of all smoke and carbon monoxide detectors. Type ABC fire extinguishers were present and shall continue to be checked and tagged appropriately.

5.5 Municipal Building Recommendations

We recommend testing of all life safety devices (fire alarm pulls, strobes, illuminated exit signs, emergency lighting, smoke detectors, door panic hardware, etc.) by a qualified contractor or technician. We recommend replacement of any devices that are deteriorated, non-functional, or otherwise not installed up to current code requirements and industry best practices. We recommend a qualified professional or manufacturer check all rated doors and hardware for any deteriorated gaskets, or any maintenance items. We recommend the borough verify that all doors with keycard access along egress routes are programmed to allow free egress. Prior to lifting or otherwise disturbing the floor tiles observed in the former council room, we recommend a sample be obtained and tested by a qualified professional for potential asbestos content. Smoke detectors to be installed in the meeting room, former council room, and kitchen. Fire alarm pull stations to be installed in the kitchen, and meeting room. Type ABC fire extinguishers shall be provided at accessory assembly areas (kitchen, council room, etc.) and within a 75 foot travel distance within the suite, mounted per applicable codes. Extinguishers shall be checked and tagged regularly. At the council room, provide rated wall, floor-ceiling assemblies and doors compliant with the outline provided in the observations section. Occupant load signage shall be posted in the council room in accordance with A-3 occupancy.

5.6 Police Station Recommendations

We recommend testing of all life safety devices (fire alarm pulls, strobes, illuminated exit signs, emergency lighting, smoke detectors, door panic hardware, etc.) by a qualified contractor or technician. We recommend replacement of any devices that are deteriorated, non-functional, or otherwise not installed up to current code requirements and industry best practices. We recommend the borough verify that all doors with keycard access along egress routes are programmed to allow free egress. The vestibule doors should be replaced, along with the missing glass storefront panel, and should have compliant panic hardware installed. The lobby space should have a fire alarm pull and strobe installed. The private office off the main lobby should be renovated for officer safety such that its entrance is from the secured area and the door from the lobby be removed. Doors accessible to the public should be of more secure construction with steel doors and welded frames. Type ABC fire extinguishers shall be provided at accessory assembly areas (kitchen, meeting room, etc.) and within a 75 foot travel distance within the suite, mounted per applicable codes. Extinguishers shall be checked and tagged regularly.

6 Building Envelope

For the purposes of report recommendations, the building would be assumed to undergo a Level 3 Alteration per the 2021 International Existing Building Code. Recommendations made herein are made on the basis of compliance with this code pathway.

6.1 Public Library Observations

Roofs appear to be in poor condition. Gutters and downspouts appear to be in fair to poor condition. Stone façade exhibits signs of water staining. Insulation and protective board were observed to be exposed. Windows are single-pane on the original portion of the building and dual-pane on the addition. Doors and storefront on the addition portion of the library appeared to be in fair condition with some weathered gasket and sealant conditions. Windows, doors and storefront on the original portion of the building appear to be in bad condition with broken seals, severe weathering of gaskets and sealant conditions observed. Facades appear to be in fair condition, with some maintenance and overall building cleaning required to extend the life of the building materials.

6.2 Municipal Building Observations

Roofs appear to be in poor condition. Gutters and downspouts appear to be in fair to poor condition. Gutter off the left side of the entry addition was previously observed to be streaming water at the corner. Interior walls in the permitting office exhibit signs of water infiltration and potential efflorescence of the below-grade concrete. Windows appear to be in bad condition at window well conditions. At above grade conditions, windows doors and storefront appear to be in fair to bad condition. Broken seals and deteriorated gaskets and sealant conditions were observed. The façade shared with the public library is in bad condition due to moisture infiltration. The retaining wall and exterior stair to the library is in bad condition, with flaking parge coat, steps cracked or deteriorated, cracking at the wall, and broken lights. Above ground facades exhibit some water staining and appear to be in fair condition, with some maintenance and overall building cleaning required to extend the life of the building materials.

6.3 Police Station Observations

The front entry of the building includes a plaza which appears to be in good condition. The raised planters also appear to be in good condition. The entry vestibule requires repairs, as a glazing panel was observed to be missing, and replacement doors were temporary in nature. Windows, doors and storefronts otherwise are in good condition on the primary building. The roof over the primary police station was observed to have been patched and repaired, and was in fair condition overall. The rear garage addition is in good condition overall. At the rear garage, the overhead door and its track, as well as the swing door exhibited signs of rust and deterioration. The façade in this area also appeared to have difficulty fully drying out between weather events.

6.4 Public Library Recommendations

We recommend roof replacements for all areas of the building. Gutters and downspouts should be replaced at the same time as the roof. We recommend replacement of all windows, doors and storefronts on the original building to prolong the life of the building. The building materials used on the addition completed in 1998 may be nearing the end of their warranty or useful lifespan, and we recommend replacing these as needed. The front façade, and other areas below-grade, especially where the insulation and protection board is exposed should have those materials replaced, and those walls checked for additional necessary waterproofing strategies; drains, membranes or fluid applied waterproofing systems, etc. We also recommend the overall building envelope be re-insulated, as the batt insulation is likely beyond its useful life and performance properties. We recommend all facades be cleaned, all seals between building materials be replaced, and that all joints in the stone façade be tuckpointed as required.

6.5 Municipal Building Recommendations

We recommend roof replacements for all areas of the building. Gutters and downspouts should be replaced at the same time as the roof. We recommend replacement of all windows, doors and storefronts on the original building to prolong the life of the building. All areas below-grade should be evaluated for additional necessary waterproofing strategies; drains, membranes or fluid applied waterproofing systems, etc. We also recommend the overall building envelope be re-insulated, as the batt insulation is likely beyond its useful life and performance properties. We recommend all facades be cleaned, all seals between building materials be replaced, and that metal panels or spandrel panels be replaced as required. The exterior stair and adjacent retaining wall should be repaired, a new parge coat applied, new lighting installed, steps repaired and coated with a UV-stable outdoor non-slip coating to prevent slip and fall incidents. The work that was designed and bid as part of the water inflation remediation that included work to improve the building envelope and accessibility issues at the municipal building should be completed.

6.6 Police Station Recommendations

We recommend replacement of all windows, doors and storefronts on the building to prolong the life of the building, including the front vestibule and the rear garage areas. Glazing in this area should be security type. The rear of the building is built into the hillside and should be monitored for additional necessary waterproofing strategies; drains, membranes or fluid applied waterproofing systems, etc. We recommend the overall building envelope be re-insulated, as the batt insulation is likely beyond its useful life and performance properties. We recommend all facades be cleaned, all seals between building materials be replaced, and that the building's coating and all joints in the façade be repaired as required. We recommend roof replacements for all areas of the building as a low priority item. Gutters and downspouts should be replaced at the same time as the roof. As part of the roof replacement, the existing lighting on the roof parapet should be removed and roofed over and railing should be installed to prevent non-maintenance personnel from entering the roof.

7 Site

7.1 Site Observations

The upper lot at the library, and the lower lot at the police station lack compliant accessible parking. The upper lot appears to have been patched and repaired. It currently is sloped such that it drives watershed toward the building and relies on storm drains to pick up surface water. The storm drain at the left side of the front of the library is not fine graded such that water can be effectively captured. See building envelope notes for notes on the exterior stair. The rear lot at the police station lacks a drain at the overhead door, and the lot itself slopes toward the building.

7.2 Site Recommendations

All driveways and lots are recommended to be re-paved. Sidewalks should undergo maintenance and repairs as required. The upper lot at the library should be re-graded to provide compliant accessible parking, and to slope grade away from the building to mitigate the building's moisture infiltration issues. Additional drainage and waterproofing strategies would also help in deterring water from entering the building. The area around the storm drain at the left side of the library should be graded such that water and snow runoff can be directed into the drain. See building envelope notes for notes on the exterior stair. The rear lot of the police station should have a linear drain installed at the overhead door, and the lot should be re-graded such that the surface slopes away from the building.

8. Summary of Report Recommendations

8.1 Public Library Next Steps

- Site work includes:
  - Regrade to slope water away from building
  - Repave drive and lot, restripe lot, accessible parking signage, wheel stops
  - Install foundation drainage, site drainage
  - Site improvements such as railings, etc.
  - Regrade at landscape area storm drain
  - Sidewalk maintenance and repair as needed
- Building Envelope work includes:
  - Roof, gutter and downspout replacement
  - Replacement of storefront systems
  - Install waterproofing
  - Install insulation at foundation and exterior
  - Replace batt insulation
  - Façade cleaning
- Electrical work includes:
  - Replace panelboard
  - Provide arc flash hazard warning labels
  - Replace battery-backed emergency/egress units and exit signs
  - Replace light fixtures, upgrade controls
- HVAC work applicable to both the Public Library and Municipal Building includes:
  - New boilers, vent, pump and controls
  - Install piping insulation
  - Replace chiller, pumps and exchanger
  - Replace unit ventilators
  - Replace fin-tube heating
  - Replace exhaust fans
  - Insulate ductwork, replace grilles
  - Replace or modify controls
- HVAC work includes:
  - Replace rooftop units
  - Replace split system air handlers
  - Replace electric wall heaters

- Plumbing work is applicable to both the Public Library and Municipal Building including:
    - New backflow assembly, insulate piping
    - Replace underground sanitary piping
    - Replace water heater and pump
    - Replace fixtures, trim, add mixing valves and insulation
    - Replace faucets, add mixing valves
    - Replace water cooler / drinking fountain
    - Verify roof drain operation
- Minor alterations to fire alarm system
- Interior work includes:
    - Complete renovation of restrooms, reconfiguration of existing facilities to add required plumbing counts or construction of an accessible single user restroom
    - Replace double doors to children's library
    - Ongoing testing, and replacement as necessary, of elements related to life safety such as emergency lighting, exit signs, strobes, smoke and carbon monoxide detectors, fire extinguishers, fire alarm system components, etc.

8.2 Municipal Building Next Steps

- Site work includes:
    - Repave drive and lot, restripe lot
    - Sidewalk maintenance and repair as needed
    - Concrete stair extension per new grading, stair coating, stair and wall concrete repairs, replacement step lighting, railings, etc.
- Building Envelope work includes:
    - Roof, gutter and downspout replacement
    - Replacement of storefront systems
    - Replacement of windows at window well
    - Install waterproofing, including window well
    - Install insulation at foundation and exterior
    - Replace batt insulation
    - Façade cleaning
- Electrical work includes:
    - Replace service distribution board
    - Replace diesel generator and automatic transfer switches
    - Replace branch panelboards
    - Provide arc flash hazard warning labels
    - Replace light fixtures, upgrade controls
- HVAC Work applicable to both the Public Library and Municipal Building includes:
    - New boilers, vent, pump and controls
    - Install piping insulation
    - Replace chiller, pumps and exchanger
    - Replace unit ventilators
    - Replace fin-tube heating
    - Replace exhaust fans
    - Insulate ductwork, replace grilles
    - Replace or modify controls
- HVAC work includes:
    - Replace indoor air handlers
    - Replace split system air handler
    - Replace ductless mini split
    - Replace hot water convectors
    - Provide outside air to equipment and spaces via windows or mechanical ventilation
- Plumbing work is applicable to both the Public Library and Municipal Building including:
    - New backflow assembly, insulate piping
    - Replace underground sanitary piping
    - Replace water heater and pump
    - Replace fixtures, trim, add mixing valves and insulation
    - Replace faucets, add mixing valves
    - Replace water cooler / drinking fountain
    - Verify roof drain operation
- Structural work: document and monitor cracks in existing concrete at recreational storage area
- Minor alterations to the fire alarm system: pull stations to be installed in kitchen and current meeting room

- Interior work includes:
  - Verify existing wall, floor-ceiling assemblies to qualify separation of A-3, B occupancies
  - Post occupancy load of current council room
  - Complete renovation of restrooms, reconfiguration of existing facilities to provide accessible single user restroom
  - Provide accessible route to current council room, may require door relocations or reconfiguring of space
  - Renovate staff kitchen and break area to comply with accessible standards
  - At doors requiring ratings, confirm rating, condition of gaskets, etc.
  - Confirm free egress function at stairwell doors with keycard access
  - Sample and test flooring material at former council room / future offices for asbestos
  - Renovation of the former council room to provide office space
  - Install smoke detectors in current meeting room, kitchen, and former meeting room.
  - Type ABC fire extinguisher to be installed in kitchen and current meeting room
  - Ongoing testing, and replacement as necessary, of elements related to life safety such as emergency lighting, exit signs, strobes, smoke and carbon monoxide detectors, fire extinguishers, fire alarm system components, etc.

8.3 Police Station Next Steps

- Site work includes:
  - Repave front drive and lot, restripe lot to include accessible parking and signage
  - Regrade rear lot to slope away from building
  - Repave rear drive and lot, restripe lot
  - Install linear drain at overhead door, tie in
  - Sidewalk maintenance and repair as needed
- Building Envelope work includes:
  - Roof, gutter and downspout replacement, removal of parapet lighting
  - Install perimeter railing at roof
  - Replacement of storefront systems with security glazing
  - Replace entry storefront with security glazing
  - Replace overhead door
  - Replace exterior doors
  - Replace batt insulation
  - Façade cleaning
- Electrical work includes:
  - Replace panelboard
  - Replace ATS and FPE emergency/egress panelboard
  - Provide arc flash hazard warning labels
  - Replace light fixtures and upgrade lighting controls
- HVAC work includes:
  - Replace electric unit heater
  - Replace evidence room exhaust fan
- Plumbing work includes:
  - Verify or install new backflow assembly
  - Replace restroom fixtures, trim, mixing valves and insulation
  - Replace faucet and mixing valve at records room
  - Verify roof drain operation
- Minor alterations to fire alarm system
- Interior work includes:
  - Reconfiguration of existing facilities to provide accessible single user restroom for women, women’s locker room
  - Renovation of single user restroom in lobby
  - Confirm or provide accessible means of communication at lobby
  - Provide tactile signage at restrooms, exits

- Staff common areas and corridors shall be accessible; steps are non-compliant and should be renovated to be ramps
- A minimum of one detention cell shall be renovated to be accessible, and shall be located on an accessible route
- Confirm free egress function at stairwell doors with keycard access
- Install panic hardware on egress doors
- Provide type ABC fire extinguishers in kitchen area and meeting room
- For officer safety, relocate the entrance to the private office such that it is accessed only from the secured area.
- Ongoing testing, and replacement as necessary, of elements related to life safety such as emergency lighting, exit signs, strobes, smoke and carbon monoxide detectors, fire extinguishers, fire alarm system components, etc.

Attachments

HVAC / Plumbing Equipment Evaluation

Electrical Systems Due Diligence Report

Engineer’s Opinion of Probable Construction Cost

HVAC/PLUMBING EQUIPMENT EVALUATION

At

Borough of Whitehall/Police Buildings
100 Borough Park Drive
PIttsburgh, PA 15236

Prepared By:

Olander Engineering, Inc.
227 East Main Street
Carnegie, PA 15106

August 13, 2026

Prepared For:

The Gateway Engineers, Inc.
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I. OBJECTIVE

Olander Engineering, Inc. was contracted by The Gateway Engineers, Inc. to perform an HVAC/Plumbing evaluation of the two-story Borough Building and single-story Police Building to determine the condition of the existing equipment serving the building as well as code compliance.

Jeffrey Olander, an engineer representing Olander Engineering, Inc., was on site Friday June 19, 2026 to conduct a walk-through of the various areas within the buildings.

The evaluation identifies specific building equipment, and details the findings and recommendations based upon the existing conditions noted during the walk-through. The equipment recommendations are based upon current condition, operation/ functionality, service life and code compliance. The systems are rated as Poor (requiring immediate action), Fair (functional, but requiring action), Good (future action possible), and Excellent (no action required).

The 2023 ASHRAE Applications Handbook was referenced to determine the estimated service life of the reviewed equipment.

The following was not included as part of the scope of work for this evaluation:

1. Complete Code review.
2. Systems and equipment appurtenances.
3. Design or calculations.

II. OVERVIEW

The Borough complex was constructed in the mid 1960's with the current library added in 1997. The two-story borough building is comprised of administrative spaces, public library and a community room. The single-story police building is comprised of typical law enforcement spaces constructed around 1984.

Limited documentation was available at the time of the report preparation. The existing equipment varies in condition, with some of the equipment having exceeded, reached or near the end of the limits of their expected service life. It is reported that most of the equipment is operational and showing normal signs of wear, with some equipment expected to remain in service for another 5-15 years, while others may require replacement in the near future.

III. BOROUGH BUILDING

HVAC

H-1 Heating hot water boilers (3) located in the mechanical room serve the lower and upper level unit ventilators, air handlers, fin-tube radiation, and cabinet heaters throughout. The three (3) boilers are Slant Fin Model GG-300, each with a 300 MBH input/240 MBH output capacity. The boiler installation dates are estimated to have been from the original construction in the 1960's. The boilers are operational and in fair condition. The mechanical room is provided with an emergency shutdown switch outside one doorway of the mechanical room.

The heating hot water boilers with an estimated service life of 25 years have reached the limits of their service life, and though operational, should be replaced as necessary based upon operation.

Per IMC 2021 Section 1004.1 and ASME CSD-1 2024, a manual emergency shutdown switch should be located just outside the boiler room door to shut-off fuel supply to all appliances in the boiler room when activated.

H-2 The heating hot water system is a closed loop system consisting of an air separator, expansion tank and the inline centrifugal pump located in the mechanical room serving the boilers and building heating system. The pump is a Bell & Gossett, Series 60, 90 gpm @ 48' TDH, installed in 2002. The pump has been replaced as required throughout the years, but currently is operational and in good condition.

The inline heating hot water pump has an estimated service life of 10 years with expected normal maintenance and parts replacement. Having reached the limits of it's service life, and though operational, should be replaced as necessary based upon operation.

H-3 The existing atmospheric hot water boilers require combustion air for operation. There appears to be an existing combustion air duct system provided in the mechanical room, but the size and operation cannot be verified.

Combustion air shall be verified to comply with free area requirement per IFGC 2021, Section 304.6.

H-4 Heating hot water supply and return piping throughout the building is steel/copper to the various heating elements. Piping is generally from the original construction with various sections, valves and fittings having been modified as required over time. Exposed piping is insulated, while the concealed pipe insulation could not be verified.

The overall condition of the piping is fair to good, and with the much of the piping in non-accessible locations, action should be taken as operation necessitates.

For system efficiency and per IECC 2021, Section C403.12.3 code requirements, all piping should be insulated.

H-5 An Air-Cooled Chiller, located at grade, provides chilled water indirectly to a plate and frame exchanger for chilled water supply and return to the upper and lower level unit ventilators and lower level air handling units.

The air-cooled chiller is a Technical Systems Model 30AOLD26, 30 ton unit, manufactured in 2004, utilizing R-22 refrigerant. The chiller unit is operational and in fair condition.

The air-cooled chiller has an estimated service life of 20-25 years, has reached the limits of its service life, and though operational, should be replaced as necessary based upon operation.

This unit utilizes R-22 refrigerant as its cooling medium. R-22 was phased out in 2020, and is only available with hard to come by re-claimed sources.

H-6 The chilled water system located in the lower level rear mechanical room is a closed loop system consisting of a plate and frame exchanger, expansion tank and inline centrifugal pumps. The plate and frame exchanger manufacturer and model are unknown. The chiller and system chilled water pumps are Bell & Gossett model unknown, inline centrifugal pumps. The exchanger and pumps were installed with the chiller in 2004, are operational and in good condition. The pumps have been replaced as required throughout the years.

The inline chilled water pumps have an estimated service life of 10 years, and having reached the limits of their service life, and though operational, should be replaced as necessary based upon operation.

The plate and frame exchanger has an estimated service life of 10-20 years, and having reached the limits of its' service life, and though operational, should be replaced as necessary based upon operation.

H-7 Chilled water supply and return piping throughout the building is steel/copper to the various cooling elements. Piping is from the 2004 installation and in good condition. Chilled water piping is insulated with elastomeric type insulation and in good condition.

The overall condition of the piping is good and requires no immediate action.

H-8 There are two (2) Rooftop HVAC Units, serving the upper floor library.

Lennox GSC16-060-120, 5-ton dx cooling unit, with 120 MBH natural gas heat, manufactured in 1997, utilizing R-22 refrigerant. The rooftop unit is operational and in fair condition.

Lennox LGA120SH, 10-ton dx cooling unit, with natural gas heat, manufactured in 1997, utilizing R-22 refrigerant. The rooftop unit is operational and in fair condition.

The rooftop units with an estimated service life of 15 years have exceeded the limits of their service life and should be replaced as necessary based upon operation.

These units utilizes R-22 refrigerant as their cooling medium. R-22 was phased out in 2020, and is only available with hard to come by re-claimed sources.

H-9 A Carrier 38AUDA120, 10-ton rooftop condensing unit serving the upper level, manufactured in 2014, utilizing R-410A refrigerant is operational and in fair to good condition. The associated indoor air handler could not be verified but is assumed to have been installed at the same time.

The split system air handler with an estimated service life of 15 years has not reached its' estimated service life, and though expected to require normal maintenance and parts replacement, requires no immediate action.

H-10 Two (2) Indoor Air Handlers – serving the lower level Board Room and unknown area, are located in the lower level rear mechanical room. The air handlers are unknown manufacturer and model, with chilled water cooling, hot water heating, supply and return ductwork. The air handlers are estimated to have been installed in 2004, are operational and in fair condition.

The indoor air handlers, with an estimated service life of 15 years have exceeded the limits of their service life and should be replaced as necessary based upon operation.

H-11 An Indoor Split System Air Handler serving the lower level rear office spaces is a Carrier 40CH848, dx cooling, hot water heating, supply and return ductwork, with an associated Carrier 38EH048 outdoor condensing unit. The split system was installed in 1987 utilizing R-22 refrigerant. The split system is operational and in fair condition.

The split system air handler, with an estimated service life of 15 years has exceeded the limits of its' service life and should be replaced as necessary based upon operation.

These units utilizes R-22 refrigerant as their cooling medium. R-22 was phased out in 2020, and is only available with hard to come by re-claimed sources.

H-12 There are two (2) additional split system air handlers assumed to be serving the upper level Library. Neither indoor air handler could be verified, but one condensing unit is a Trane Model TTA120, 10 ton, installed in 2014 utilizing R-22 refrigerant. The other condensing unit is an Intercity Model AD060 HD, 5 ton, installed in 1993 utilizing R-22 refrigerant. The split systems both appear operational and in fair to good condition.

The Intercity split system air handler, with an estimated service life of 15 years has exceeded the limits of its' service life and should be replaced as necessary based upon operation.

The Trane split system air handler with an estimated service life of 15 years has not reached its' estimated service life, but due to utilizing R-22 should be replaced.

These units utilize R-22 refrigerant as their cooling medium. R-22 was phased out in 2020, and is only available with hard to come by re-claimed sources.

H-13 Various areas on the upper and lower levels are equipped with unit ventilators (10) (chilled water and hot water heating). Outside air is introduced into the unit ventilators via wall louvers and relief air is through door louvers into the corridors. The unit ventilators are manufactured by Trane with an estimated installation date of 2004. The UV's are operational and in fair condition.

The unit ventilators, with an estimated service life of 15-20 years have exceeded the limits of their service life and should be replaced as necessary based upon operation.

H-14 The council room is served by two (2) ductless Mini Split Heat Pump Systems, wall mounted units, with associated outdoor air-cooled heat pump units mounted at grade.

The older indoor wall mounted evaporator unit is a Mitsubishi Model PK30EK, 2.5 ton, with corresponding air-cooled heat pump Mitsubishi Mr. Slim, installed in 2010, utilizing R-22 refrigerant, is operational and in fair condition.

The more recent indoor wall mounted evaporator unit is a Mitsubishi Model PKA-A30, 2.5 ton, with corresponding air-cooled heat pump Mitsubishi Model PUZ-A30, installed in 2020, utilizing R-410A refrigerant, is operational and in good condition.

The ductless mini-split systems have an estimated service life of 15 years. The mini-split system from 2010 has reached the limits of its service life, and though operational, and requiring regular maintenance, should be replaced as necessary based upon operation. The newer split system requires no action.

H-15 Finned-tube heaters are located on the perimeter walls throughout the lower and upper levels for heating. The equipment is estimated to be from the original installation. The finned-tube heaters are reported to be operational, in fair condition, and the controls are unknown.

The heating equipment is estimated to have exceeded the limits of their service life of 20-30 years, and should be replaced as necessary based upon operation.

IECC 2021, Section C403.4 requires the supply of heating and cooling to each zone be controlled by individual thermostatic controls capable to responding to temperature within the zone.

H-16 Electric Wall Heaters (2) are located on the upper level entry, with the manufacturer and model unknown. The heaters are operational, in fair to good condition installed in 1997.

The electric wall heaters with an estimated service life of 15 years have exceeded the limits of their service life, and should be replaced as necessary based upon operation.

H-17 Convectors, supplied with heating hot water, are located in the lower level entries and corridors. The manufacturer and model of the hot water convectors is unknown, but estimated to have been installed with the original building in the 1960's. The convectors are assumed to be operational and in fair condition.

The hot water convectors have exceeded their estimated service life of 20-25 years, and though operational with expected normal maintenance and parts replacement, should be replaced as necessary based upon operation.

H-18 The majority of the restrooms and janitors closets on the upper and lower levels are provided with exhaust ventilation. The exhaust is generally ceiling type exhaust fans with termination unknown. The exhaust fan manufacturers and models are unknown, and installed at various times. The fans appear to be operational and in fair condition.

The exhaust fans should be replaced as necessary based upon operation. The restrooms that do not contain exhaust fans should have fans installed sized per IMC 2021, Section 403.3.

H-19 There are two (2) sidewall exhaust fans in the lower level board room that the function is unknown. The manufacturer, model and installation date are unknown as is the operation.

The exhaust fans appear to have been installed originally for exhaust purposes of the originally space usage, but may not be required, verify.

H-20 Per International Mechanical Code (IMC) 2021, 401.2; every occupied space is required to be ventilated by natural or mechanical means. Though natural ventilation is an option in the rooms, it is not practical or likely, that the windows will be opened to provide the required ventilation during colder weather. Typically, outside air is introduced via the ventilation systems serving the building.

There are various occupied spaces generally on the lower level that cannot be verified to have outside air introduced.

All occupiable spaces should be provided with outside air meeting the requirements of the International Mechanical Code (IMC) 2021, Section 403.

H-21 The majority of the rooms within the building are provided with both supply and return duct systems via the rooftop units or air handlers and with wall or ceiling grilles/diffusers providing the distribution into and from the various spaces.

The ductwork is concealed throughout, with no means of verifying condition or insulation. Many of the grilles/diffusers appear to be dated or showing signs of wear.

For system efficiency and per IECC 2021, Section C403.11.1 code requirements, all ductwork should be insulated as required.

Grilles and diffusers throughout the building should be replaced as necessary based upon condition.

H-22 The operation and control of each piece of equipment could not be verified during our visit, but estimated to be controlled via stand-alone controls installed during system install.

The controls for each HVAC system appear to be from original installation of equipment served and should be upgraded as necessary based upon operation.

HVAC ESTIMATED CONSTRUCTION COSTS

Item	Description	Total Cost ($)
H-1/H-2/H-3	New high efficiency boilers, direct vent, new pumps, controls.	$160,000.00
H-4	Install piping insulation (200lf)	$10,000.00
H-5	Replace 30 ton air cooled chiller	$80,000.00
H-6	Replace chilled water pumps (2) and exchanger.	$40,000.00
H-7	No action required.	$0.00
H-8	Replace two (2) rooftop units (5 and 10 ton)	$60,000.00
H-9	No action required.	$0.00

H-10	Replace two (2) indoor air handlers (~10 ton)	$60,000.00
H-11	Replace split system air handler (4 ton)	$20,000.00
H-12	Replace two (2) split system air handlers (5 and 10 ton)	$60,000.00
H-13	Replace unit ventilators (10).	$180,000.00
H-14	Replace one (1) ductless mini split system (2.5 tons)	$30,000.00
H-15	Replace finned-tube heating (400lf)	$100,000.00
H-16	Replace electric wall heaters (2).	$4,000.00
H-17	Replace hot water convectors (4).	$8,000.00
H-18	Replace exhaust fans (8)	$8,000.00
H-19	No action required.	$0.00
H-20	Provide outside air to equipment or spaces.	$20,000.00
H-21	Insulate ductwork and replace grilles	$40,000.00
H-22	Replace or modify controls for systems and equipment.	$20,000.00
Total Estimated HVAC Costs		$900,000.00

PLUMBING

P-1 The copper domestic water service enters the police building garage with a 2-1/2" service routed up to the borough building. A meter set and backflow preventer assembly for the service could not be confirmed.

The domestic water is distributed throughout the building via copper piping. Much of the domestic water piping is not accessible, but appears to be in good condition. The domestic water piping in the Mechanical Room and other exposed areas is not completely insulated, and it is expected that the much of the remainder of the piping that is concealed is not insulated.

The existing domestic water service, 75 gpm estimated, is functional and providing water supply to the buildings' estimated 75 gpm load requirement. The domestic water services should be provided with a meter set and backflow assembly, as required by IPC 2021, Section 608.

IPC 2021, Section 607.5, requires domestic water piping to be insulated per IECC 2021, Section C404.4.

It is anticipated that additional fixture expansion beyond that which is existing within the building would require an increase in the domestic water supply to the building.

P-2 The buildings' overall sanitary system piping generally consists of cast iron soil pipe or PVC plastic pipe, and is estimated to be in poor condition, with much of the above grade piping to be non-accessible. Sanitary and vent piping is provided for the various plumbing fixtures located throughout the building. Vent piping extends from various fixtures and penetrates the roof via vent stacks. The building has been noted to have been experiencing sanitary backups that have required attention.

Due to the sanitary issues within the building, the recommendation is for the buildings' overall underground drainage system to be replaced.

P-3 The natural gas meter set is located at the north side of the police building exterior where a steel 2-1/2" gas line is routed to the Borough Building. The natural gas system serves the; heating hot water boilers (3), domestic water heater, and rooftop units. The natural gas system piping is in good condition.

The piping and accessories appear to be in good condition, gas capacity (1,100 MBH) is sufficient for existing equipment (1,200 MBH) and requires no immediate action. Any

anticipated equipment load increase beyond existing would necessitate an increase in natural gas supply pipe size or pressure.

P-4 Domestic hot water for the building is provided by a Rheem Model 22V40SF, natural gas 36 MBH input, 40-gallon storage type water heater. The hot water system includes a circulating pump of unknown model and year and an expansion tank. The water heater was installed in 2012 and is in fair condition.

The hot water heater has an expected service life of 10-15 years, has exceeded its expected service life, and though operational, should be replaced as necessary based upon operation.

The recirculating pump is operational but appears to have exceeded its expected service life and should be replaced as necessary based upon operation.

P-5 Restrooms within the building are equipped with vitreous china floor-mounted water closets, wall-mounted urinals, and wall mounted lavatories. The majority of the faucets and flushometers are manual type, with a few sensor type present. The majority of the fixtures appear to be from the original construction and generally are in fair to good condition. The exposed piping is not insulated and mixing valves are not installed.

The plumbing fixtures, valves and faucets have exceeded their service life, are not ADA compliant, not of the water conserving type, are in fair condition, and should be replaced as required.

The lavatores' piping is not insulated or are equipped with mixing valves as required by IPC 2021, Section 607.

P-6 Various rooms are provided with lay-in stainless steel single bowl sinks with manual faucets. The majority of the fixtures are from the original construction and generally are in fair to good condition.

The existing sinks in the various rooms throughout the building appear operational and would recommend replacing the existing faucets and water supplies at each sink with current equipment.

The sinks are not provided with individual mixing valves as required by IPC 2021, Section 607. The valves and faucets should be replaced as required.

P-7 The janitors closet located in the building is equipped with a mop sink and service faucets with vacuum breakers. The mop sink and accessories are in fair condition.

The mop basin is operational and should be maintained as necessary for operation.

P-8 A single level water cooler is present in the upper level corridor. The water cooler, an Elkay, model unknown, appears to have been installed during the original construction and is generally in fair to good condition.

Drinking fountains should be provided as required per IPC 2021, Section 410, with the required quantity and dual height ADA water coolers.

P-9 The buildings' flat roof area is provided with primary roof drain for storm drainage. Access to the roof could not verify the functioning of the roof drain.

The roof drain operation should be verified to ensure proper drainage.

PLUMBING ESTIMATED CONSTRUCTION COSTS

Item	Description	Total Cost ($)
P-1	Verify or install new backflow assembly, insulate required piping.	$10,000.00
P-2	Replace underground sanitary piping.	$110,000.00
P-3	No action required.	$0.00
P-4	Replace domestic gas fired water heater and pump	$12,000.00
P-5	Replace fixtures and trim, install mixing valves/insulation (~18).	$65,000.00
P-6	Replace faucets add mixing valves (~6).	$6,000.00
P-7	No action required.	$0.00
P-8	Replace water cooler.	$8,000.00
P-9	Verify roof drain operation.	$1,000.00
Total Estimated Plumbing Costs		$212,000.00

FIRE PROTECTION

FP-1 **The building is not equipped with a fire protection sprinkler system.**

FIRE PROTECTION ESTIMATED CONSTRUCTION COSTS

Item	Description	Total Cost ($)
FP-1	No action required.	$0.00
Total Estimated Fire Protection Costs		$0.00

IV. POLICE BUILDING

HVAC

H-1 The police building HVAC system is comprised of a building wide VRF split system providing the cooling and heating that was installed in 2014-15. The system is made up of an outdoor unit and individual evaporators throughout the occupied spaces.

The outdoor unit is located on the roof, is a Mitsubishi Model PURY-HP96, 8 ton unit, utilizing R-410A refrigerant, installed in 2014, is operational and in good condition.

The indoor units (~12) are located throughout the building, are Mitsubishi Model PLFY ceiling cassette units and PKFY wall mount units, utilizing R-410A refrigerant, installed in 2014 and 2015, are operational and in good condition.

The VRF and ductless mini-split units have an estimated service life of 15 years. The entire VRF and mini-split systems have not reached the limits of their service life, and though expected to require normal maintenance and parts replacement, require no immediate action.

H-2 The VRF HVAC system is supplemented with two (2) ERV units providing the code required outside air to each occupied space as well as the required exhaust ventilation. The units are located in the penthouse on the roof.

ERV 1 is a RenewAire Model EV200, with outside air and exhaust air insulated ductwork to building exterior, and duct electric heater. The unit was installed in 2014, is operational and in good condition.

ERV 2 is a RenewAire Model EV450IN, with outside air and exhaust air insulated ductwork to building exterior, and duct electric heater. The unit was installed in 2015, is operational and in good condition.

The ERV units have an estimated service life of 15-20 years. The ERV's have not reached the limits of their service life, and though expected to require normal maintenance and parts replacement, require no immediate action.

H-3 The rear storage room is equipped with an electric unit heater. The unit heater manufacturer and model are unknown, with an estimated installation date of 1984. The unit heater is operational and in fair condition.

The electric unit heater with an estimated service life of 15 years has exceeded the limits of its' service life, and should be replaced as necessary based upon operation.

H-4 The garage is equipped with an electric unit heater. The unit heater manufacturer and model are unknown, but was recently replaced with an estimated installation date of 2024. The unit heater is operational and in good condition.

The electric unit heater has not reached its' estimated service life of 15 years, and though expected to require normal maintenance and parts replacement, requires no immediate action.

H-5 The Evidence Room is provided with an exhaust fan as required by occupancy standards discharging independently to the building exterior. The manufacturer and model of the exhaust fan is unknown with the installation date estimated at 1984. The fan is operational and in fair condition.

The exhaust fan has an estimated service life of 15 years and has exceeded the limits of its' service life, and should be replaced as necessary based upon operation.

HVAC ESTIMATED CONSTRUCTION COSTS

Item	Description	Total Cost ($)
H-1	No action required.	$0.00
H-2	No action required.	$0.00
H-3	Replace electric unit heater	$6,000.00
H-4	No action required.	$0.00
H-5	Replace evidence room exhaust fan.	$8,000.00
Total Estimated HVAC Costs		$14,000.00

PLUMBING

P-1 The copper domestic water service enters the police building garage with a 2" entrance serving the police building. A meter set and backflow preventer assembly for the service could not be confirmed.

The domestic water is distributed throughout the building via copper piping. Much of the domestic water piping is not accessible, but appears to be in good condition. The domestic water piping in the Mechanical Room and other exposed areas is not completely insulated, and it is expected that the much of the remainder of the piping that is concealed is in similar condition.

The existing domestic water service, 50 gpm estimated, is functional and providing water supply to the buildings' estimated 45 gpm load requirement. The domestic water services should be provided with a meter set and backflow assembly, as required by IPC 2021, Section 608.

IPC 2021, Section 607.5, requires domestic water piping to be insulated per IECC 2021, Section C404.4.

It is anticipated that additional fixture expansion beyond that which is existing within the building would require an increase in the domestic water supply to the building.

P-2 The buildings' overall sanitary system piping generally consists of cast iron soil pipe or PVC plastic pipe, and is estimated to be in good condition, with much of the above grade piping to be non-accessible. Sanitary and vent piping is provided for the various plumbing fixtures located throughout the building. Vent piping extends from various fixtures and penetrates the roof via vent stacks.

The sanitary drainage system is reported to be in good condition and requires no immediate action.

P-3 Domestic hot water for the building is provided by a AO Smith Model ENT50 130, electric 4.5 KW, 50-gallon storage type water heater. The hot water system includes a circulating pump of unknown model and year and an expansion tank. The water heater and system was installed in 2025 and is in excellent condition.

The domestic hot water system is operational and was recently installed and requires no immediate action.

P-4 Restrooms and locker room within the building are equipped with vitreous china floor-mounted water closets (flush valve and tank type), wall-mounted urinals, wall mounted lavatories, and shower basin. The majority of the faucets and flushometers are manual type, with a few sensor type present. The majority of the fixtures appear to be from the original construction in 1984 and generally are in fair to good condition. The exposed piping is not insulated and mixing valves are not installed.

The plumbing fixtures, valves and faucets have exceeded their service life, are not ADA compliant, not of the water conserving type, are in fair condition, and should be replaced as required.

The lavatores' piping is not insulated or are equipped with mixing valves as required by IPC 2021, Section 607.

P-5 The Records Room is provided with lay-in stainless steel single bowl sinks with manual faucet. The fixture is from the original construction and generally is in fair condition.

The existing sinks is operational and would recommend replacing the existing faucets and water supplies to the sink with current equipment.

The sinks are not provided with individual mixing valves as required by IPC 2021, Section 607. The valves and faucets should be replaced as required.

P-6 The janitors closet located in the building is equipped with a mop sink and service faucets with vacuum breakers. The mop sink and accessories are in fair condition.

The mop basin is operational and should be maintained as necessary for operation.

P-7 The buildings' flat roof area is provided with primary roof drains for storm drainage. The functionality of the roof drains could not be verified.

The roof drain operation should be verified to ensure proper drainage.

PLUMBING ESTIMATED CONSTRUCTION COSTS

Item	Description	Total Cost ($)
P-1	Verify or install new backflow assembly.	$10,000.00
P-2	No action required.	$0.00
P-3	No action required.	$0.00
P-4	Replace fixtures and trim, install mixing valves/insulation (~14).	$50,000.00
P-5	Replace faucet add mixing valve.	$2,000.00
P-6	No action required.	$0.00
P-7	Verify roof drain operation.	$2,000.00
Total Estimated Plumbing Costs		$64,000.00

FIRE PROTECTION

FP-1 **The building is not equipped with a fire protection sprinkler system.**

FIRE PROTECTION ESTIMATED CONSTRUCTION COSTS

Item	Description	Total Cost ($)
FP-1	No action required.	$0.00
Total Estimated Fire Protection Costs		$0.00

Whitehall Borough Public Facilities

100 Borough Park Dr, Pittsburgh, PA 15236

Electrical Systems Due Diligence Report

SDG Project # 26032

Prepared for

Whitehall Borough

100 Borough Park Dr,
Pittsburgh, PA 15236

Prepared by

Sulosky Design Group, LLC

830 Wildcat Way
Latrobe, PA 15650

10 August 2026

INTRODUCTION

Gateway Engineers had requested the services of Sulosky Design Group, LLC to perform field verification and analysis of the existing electrical systems for Whitehall Borough's facilities located at 100 Borough Park Drive in Pittsburgh, Pennsylvania.

The purpose of this report is to provide an evaluation of the existing electrical power and lighting systems to identify their condition and safety. Visual, non-invasive observations of these systems were made on a field visit to the buildings on Friday June 19, 2026.

The scope of this report is limited to existing critical items and major components only and is based upon the application of professional judgment to certain facts with resultant subjective interpretations. Professional judgments expressed herein are based upon visual examination of existing conditions only and on the facts available within the limits of the existing data and scope of work. No invasive investigations, destructive investigations, or testing procedures were performed. In addition, no samples were taken, and no inspection relating to the identification of asbestos containing materials or any other hazardous material has been provided; nor was the operation of the existing equipment to determine the exact condition of service conducted. Any statements included herein regarding the operational condition of electrical equipment are based solely upon visual observation. Some elements of the existing systems may not have been observed due to physical limitations or work scope and will not be accounted for in this report.

Sulosky Design Group, LLC provides opinions of probable costs based on available information, professional experience, and qualifications. However, we do not control labor, materials, equipment, services by others, contractor pricing methods, competitive bidding, or market conditions. Therefore, we cannot guarantee that proposals, bids, or actual costs will match the cost estimates in this report.

The following codes are used as guidance in preparing this report. References to code related issues are derived from the following list.

ELECTRICAL CODES AND STANDARDS

- NFPA 70 (National Electric Code) – 2020
- NFPA 72 - 2019
- NFPA 101
- American Disabilities Act (ADA)
- International Building Code - 2021
- Codes, Rules, and Regulations of the Commonwealth of Pennsylvania
- Underwriters Laboratories
- National Electrical Manufacturers Association (NEMA)
- International Electrical Testing Agency (NETA)
- ASTM/ANSI Standards

Code Building - Overview, Recommendations, and Opinions of Probable Cost

Power System - Utility Service

The existing utility power system consists of a 120/208V, 3-phase, 4-wire, 800A, underground service, assumed to be fed via parallel sets of #500 KCMIL insulated 600V copper conductors. The service terminates in an 800A rated fusible-switch distribution board manufactured by Westinghouse circa 1987, located in the building electrical room.

The existing service panelboard appears to be in acceptable physical condition, with no visible signs of damage or oxidation. Typically, electrical distribution equipment has a lifespan of 30-50 years depending on maintenance. Due to the age of this unit, replacement should be considered. In addition, it appears the panel has no additional physical bus capacity to provide power for any future equipment or renovations. The latest 12-months of electrical utility bills have been evaluated per the National Electric Code Section 220 Article 87 (NEC 220.87), and the peak demand was determined to be approximately 68.9kW (191.25 amps), which is 23.91% of the system's total ampacity. During the field visit, it was also noticed that no maximum available fault current value label is visible.

- Recommendation "E-1": replace the existing 800A Westinghouse service distribution board with a new 120/208V, 3-phase, 4-wire, 800A service-entrance rated distribution board. Replacement is recommended due to the age of the existing equipment, limited future capacity, and the potential difficulty of obtaining replacement parts for the existing equipment. This work will require a coordinated utility shutdown, modification of the existing CT cabinet and meter, removal of the existing distribution board, installation of the new service equipment, reconnection of existing feeders, field labels for arc flash and fault current, and grounding/bonding modifications as required. The probable cost for this work is estimated to be $75,000

Power System – Emergency/Egress

The existing emergency power system consists of a diesel-fired Cummins emergency generator, Model DGFA-4963299, rated 150kW/187.5kVA standby, 120/208V, 3-phase, 4-wire. The generator is approximately 25 years old and serves three existing transfer switches; two existing 225A automatic transfer switches, which feed two existing 225A emergency panelboards in the Code Building, and one 100A automatic transfer switch that feeds a 100A emergency panelboard in the Police Department.

The existing generator appears to be in serviceable but aged physical condition; emergency/standby generators typically have a lifespan of approximately 20-30 years depending on maintenance, operating conditions, fuel system condition, annual exercising, and runtime. Due to the age of this unit, replacement should be considered. In addition, the existing automatic transfer switches should be replaced to match the requirements of the new generator system. The existing emergency panelboards appear to be relatively new and may be suitable to remain, provided they are verified to be in acceptable condition and properly rated for the new equipment.

- Recommendation "E-2": replace the existing diesel-fired Cummins emergency generator with a new 150kW, 120/208V, 3-phase, 4-wire diesel generator, or nearest standard size as required based on final load verification. Replace the two existing 225A automatic transfer switches with new 225A automatic transfer switches compatible with the new generator system. The existing 225A emergency panelboards may remain and be reconnected to the new automatic transfer

switches. This work will require removal of the existing generator and automatic transfer switches, installation of the new generator and transfer switches, reconnection of existing emergency feeders, fuel system modifications as required, control wiring modifications as required, generator start-up/testing, field labels for arc flash and fault current, and grounding/bonding modifications as required. The probable cost for this work is estimated to be $250,000.

Power System – Panelboards

The existing branch power distribution system consists of multiple branch circuit panelboards located throughout the building electrical and boiler room areas, serving general building loads, mechanical equipment, and emergency/egress loads. The existing panelboards vary in age, manufacturer, condition, and available spare capacity. Some existing panelboards appear to have been manufactured by The Cleveland Switchboard Co., which is obsolete equipment. Other panelboards appear to have been added or modified over the life of the building.

The existing branch panelboards appear to be a mix of fair to poor physical condition overall, with several panels showing visible signs of age, wear, outdated construction, poor labeling, and limited spare capacity. Due to the age and observed condition of some existing branch panelboards, replacement should be considered. Existing newer panelboards that are in acceptable condition may be suitable to remain, provided they are verified to be properly rated, code compliant, and have adequate spare capacity for future use.

- Recommendation “E-3”: replace the existing older branch panelboards with new panelboards as required to match the existing loads served. Existing panelboards recently installed may remain where they are confirmed to be in acceptable condition. Replacement work should include removal of obsolete panelboards, installation of new panelboards, reconnection of existing branch circuits/feeders, new typed panel schedules, circuit tracing/identification as required, field labels for arc flash, and grounding/bonding modifications as required. The probable cost for this work is estimated to be $80,000, depending on the final number of panelboards replaced and the amount of circuit tracing/rework required.

Fire Alarm System

Although the existing fire alarm system and egress lighting were not included as part of this report, a brief visual observation was performed while on site. The existing fire alarm system consists of a Silent Knight by Honeywell IntelliKnight Model 5808 fire alarm control panel with associated manual pull stations, notification appliances, and related system devices throughout the building. At the time of observation, the fire alarm control panel indicated “all systems normal”; however, the system programming, initiating device coverage, notification appliance coverage, battery capacity, circuit integrity, and overall code compliance were not evaluated as part of this report.

The existing fire alarm devices vary in age and condition, and some devices appear to be older and surface-mounted. Further investigation should be performed by a qualified fire alarm contractor to verify the condition of the existing system, review the latest inspection/testing reports, confirm system programmability and logic, and determine if any upgrades are required.

Lighting and Control Systems

The existing interior and exterior lighting systems consists of a mixture of newer LED lighting and older lamp-style fixtures throughout the building. Several areas appear to have been upgraded to LED lighting; however, other areas still contain older fixture types. The existing lighting appears to vary in age, condition, efficiency, and uniformity depending on the area served.

The existing interior lighting controls observed on site appear to be primarily line-voltage switching only. Automatic lighting controls, occupancy/vacancy sensors, daylight-responsive controls, and automatic shutoff controls were not observed in several areas and do not appear to comply with current IECC Section C405 requirements. Exterior lighting controls were not observed during the review due to the inability to positively identify the associated control devices and circuits.

- Recommendation "E-4": replace the remaining older lamp-style fixtures with new LED lighting fixtures and upgrade the existing lighting controls to comply with IECC Section C405 where required. New controls should include automatic shutoff, occupancy/vacancy sensing, manual local control, daylight-responsive controls where applicable, and exterior lighting control where applicable. This work will require removal of existing older fixtures as required, installation of new LED fixtures, installation of new lighting control devices, control wiring/modifications as required, circuiting modifications as required, and testing/commissioning of the lighting control system. The probable cost for this work is estimated to be $60,000, depending on the final quantity of fixtures and controls replaced.

Miscellaneous

It was noted that arc flash hazard warning labels are not provided on most electrical equipment. OSHA standard 29 CFR 1910.132(d)(1) states: "The employer shall assess the workplace to determine if hazards are present, or are likely to be present, which necessitate the use of personal protective equipment (PPE)." This is also a requirement of the National Electric Code and the Electrical Safety in the Workplace (NFPA 70E).

- Recommendation "E-5": provide arc-flash hazard warning labels warning qualified persons of potential electric arc flash hazards on all electrical equipment in accordance with NEC 110.16 and NEC 110.21.(B). The probable cost for this work is estimated to be $4,000.

Library - Overview, Recommendations, and Opinions of Probable Cost

Power System - Utility Service

The existing library power system is served from a 200A fusible switch located in the Code Building distribution panel. The feeder appears to serve the library electrical distribution equipment and associated branch circuit panelboards. Based on the observed conditions, the library appears to be a separately fed portion of the overall building electrical distribution system rather than a separate utility service.

Power System – Emergency/Egress

The existing emergency/egress lighting system appears to consist of battery-backed emergency lighting units and battery exit signs. No generator-powered emergency lighting system was observed for the library area.

The existing emergency/egress lighting units and exit signs appear to be original to the 1997 renovation and are therefore beyond the typical service life for battery-backed emergency lighting equipment. Battery-backed emergency lighting equipment should be tested regularly to verify proper operation under loss of normal power; however, emergency battery operation, illumination levels, and full path-of-egress coverage were not tested as part of this report. Due to the age of the existing units, replacement should be considered.

- Recommendation "E-6": replace the existing battery-backed emergency/egress lighting units and exit signs serving the library with new LED battery-backed emergency lighting units and LED exit signage. Replacement is recommended due to the apparent age of the existing equipment and the likelihood that the units are original to the 1997 renovation. This work will require removal of the existing emergency lighting units and exit signs as required, installation of new battery-backed emergency/egress units, circuiting modifications as required, and testing of emergency operation. The probable cost for this work is estimated to be $20,000.

Power System – Panelboards

The existing branch power distribution system appears to consist of two branch circuit panelboards served from the 200A fusible switch located in the Code Building distribution panel. The observed panelboards include a Cutler-Hammer Pow-R-Line C, 120/208V, 3-phase, 4-wire, 225A panelboard manufactured in 1998, and an older Cleveland Switchboard Co. panelboard.

The existing Cutler-Hammer panelboard appears to be in acceptable physical condition and may be suitable to remain. The existing Cleveland Switchboard Co. panelboard appears to be older/obsolete equipment and should be considered for replacement due to age, limited support/replacement part availability, outdated construction, and the difficulty of making future modifications.

- Recommendation "E-7": replace the existing older Cleveland Switchboard Co. panelboard with a new panelboard matching the existing voltage, phase, ampacity, and loads served. The existing Cutler-Hammer panelboard may remain. Replacement work should include removal of the obsolete panelboard, installation of the new panelboard, reconnection of existing branch circuits/feeders, new typed panel schedule, circuit tracing/identification as required, field labels

for arc flash, and grounding/bonding modifications as required. The probable cost for this work is estimated to be $12,500.

Fire Alarm System

The existing fire alarm system appears to be an extension of the existing Code Building fire alarm system. No separate fire alarm control panel or dedicated library fire alarm control equipment was observed. Fire alarm devices within the library appear to be connected to the existing building fire alarm control panel serving the facility.

Lighting and Control Systems

The existing lighting system appears to consist of lighting fixtures and controls that are generally original to the 1997 renovation. The existing lighting appears to vary by area, with older fixture types still present throughout the library. The lighting fixtures appear to be in fair physical condition; however, they are dated and likely less efficient than current LED lighting systems.

The existing lighting controls observed on site appear to be primarily line-voltage switching only. Automatic lighting controls, occupancy/vacancy sensors, daylight-responsive controls, and automatic shutoff controls were not observed in several areas and do not appear to comply with current IECC Section C405 requirements. Due to the apparent age of the lighting system and controls, replacement should be considered as part of any future renovation work.

- Recommendation “E-8”: replace the existing library lighting fixtures with new LED lighting fixtures and upgrade the existing lighting controls to comply with IECC Section C405 where required. New controls should include automatic shutoff, occupancy/vacancy sensing, manual local control, daylight-responsive controls where applicable, and exterior lighting control where applicable. This work will require removal of existing lighting fixtures as required, installation of new LED fixtures, installation of new lighting control devices, control wiring/modifications as required, circuiting modifications as required, and testing/commissioning of the lighting control system. The probable cost for this work is estimated to be $75,000, depending on the final quantity of fixtures and controls replaced.

Miscellaneous

It was noted that arc flash hazard warning labels are not provided on most electrical equipment. OSHA standard 29 CFR 1910.132(d)(1) states: “The employer shall assess the workplace to determine if hazards are present, or are likely to be present, which necessitate the use of personal protective equipment (PPE).” This is also a requirement of the National Electric Code and the Electrical Safety in the Workplace (NFPA 70E).

- Recommendation “E-9”: provide arc-flash hazard warning labels warning qualified persons of potential electric arc flash hazards on all electrical equipment in accordance with NEC 110.16 and NEC 110.21.(B). The probable cost for this work is estimated to be $4,000.

Police Department - Overview, Recommendations, and Opinions of Probable Cost

Power System - Utility Service

The existing Police Department utility power system appears to consist of a 120/208V, 3-phase, 4-wire, 400A service. The service terminates in a 400A rated Federal Pacific Electric ("FPE") panelboard, manufactured in 1984. The Police Department appears to have a dedicated utility service; however, the associated utility meter was not able to be field located during the site observation and should be verified.

The existing service panelboard is antiquated equipment at over 40 years old. Typically, electrical distribution equipment has a lifespan of 30-50 years depending on maintenance. In addition, FPE equipment is no longer in production, and replacement parts, fusible switch components, and listed modifications may be difficult or impractical to obtain. Due to the age of the equipment, obsolete manufacturer, difficulty obtaining replacement parts, and importance of the Police Department loads served, replacement should be strongly considered. The latest 12-months of electrical utility bills have been evaluated per NEC 220.87, and the peak demand was determined to be approximately 27.8kW (77.17 amps), which is 19.29% of the system's total ampacity. During the field visit, it was also noticed that no maximum available fault current value label is visible.

- Recommendation "E-10": replace the existing 400A Federal Pacific Electric / FPE service panelboard with a new 120/208V, 3-phase, 4-wire, 400A service-entrance rated distribution board or panelboard. Replacement is recommended due to the age of the existing equipment, the obsolete manufacturer, and the difficulty of obtaining replacement parts or performing future modifications. This work will require verification of the existing service configuration and utility metering, a coordinated utility shutdown, removal of the existing FPE service equipment, installation of the new service equipment, reconnection of existing feeders, field labels for arc flash and fault current, and grounding/bonding modifications as required. The probable cost for this work is estimated to be $60,000.

Power System – Emergency/Egress

The existing Police Department emergency/egress power system appears to be served from the existing 150kW diesel generator associated with the Code Building emergency power system. The Police Department has a dedicated automatic transfer switch, which appears to serve emergency/egress loads within the Police Department area. No battery-backed emergency lighting units were observed; therefore, the emergency/egress lighting appears to be generator-backed through the existing transfer switch.

The existing automatic transfer switch is a Kohler "Fast Response" unit and appears to be in serviceable but aged condition. Automatic transfer switches typically have a lifespan of approximately 20-30 years depending on maintenance, operating conditions, exercising, and number of transfer operations. Due to the age of the existing generator system and transfer equipment, replacement of this transfer switch should be included with the generator replacement work described for the Code Building. The existing emergency/egress panelboards appear to be FPE equipment, which is antiquated and no longer in production. Due to the difficulty obtaining replacement parts, and the importance of the Police Department emergency/egress loads served, replacement should be considered.

- Recommendation “E-11”: replace the existing Police Department automatic transfer switch with a new automatic transfer switch compatible with the new generator system. Replace the existing FPE emergency/egress panelboard with new panelboard matching the existing voltage, phase, ampacity, and loads served. This work will require removal of the existing transfer switch and FPE panelboard, installation of the new transfer switch and panelboard, reconnection of existing normal/emergency feeders and branch circuits, generator control wiring modifications as required, start-up/testing, field labels for arc flash, and grounding/bonding modifications as required. The probable cost for this work is estimated to be $60,000, assuming the generator replacement cost is carried under the Code Building scope.

Power System – Panelboards

The existing Police Department branch power distribution system consists of a single branch circuit panelboard serving general building loads. The observed panelboard is a GE Industrial Systems A-Series panelboard rated 208Y/120V, 3-phase, 4-wire, 225A.

The existing branch panelboard appears to be in acceptable physical condition and appears to be newer than much of the other electrical distribution equipment observed throughout the facility. No visible signs of significant damage, oxidation, or deterioration were observed. Based on the observed condition, replacement of this panelboard is not required at this time.

Fire Alarm System

The existing fire alarm system serving the Police Department, should one exist, was not readily observed during the site visit. No separate fire alarm control panel or dedicated Police Department fire alarm control equipment was observed. Based on the existing facility arrangement, the Police Department fire alarm devices may be connected to the existing Code Building fire alarm control panel serving the overall facility; however, this could was not verified.

Lighting and Control Systems

The existing interior and exterior lighting systems consists of a mixture of newer LED lighting and older lamp-style fixtures throughout the building. Several areas appear to have been upgraded to LED lighting; however, other areas still contain older fixture types. The existing lighting appears to vary in age, condition, efficiency, and uniformity depending on the area served.

The existing interior lighting controls observed on site appear to be primarily line-voltage switching only. Automatic lighting controls, occupancy/vacancy sensors, daylight-responsive controls, and automatic shutoff controls were not observed in several areas and do not appear to comply with current IECC Section C405 requirements. Final compliance should be verified based on the currently adopted energy code and the final scope of any renovation work. Exterior lighting controls could not be verified during the site observation due to the inability to positively identify the associated control devices and circuits.

- Recommendation “E-12”: replace the remaining older lamp-style fixtures with new LED lighting fixtures and upgrade the existing lighting controls to comply with IECC Section C405 where required. New controls should include automatic shutoff, occupancy/vacancy sensing, manual local control, daylight-responsive controls where applicable, and exterior lighting control where

applicable. This work will require removal of existing older fixtures as required, installation of new LED fixtures, installation of new lighting control devices, control wiring/modifications as required, circuiting modifications as required, and testing/commissioning of the lighting control system. The probable cost for this work is estimated to be $40,000, depending on the final quantity of fixtures and controls replaced.

Miscellaneous

It was noted that arc flash hazard warning labels are not provided on most electrical equipment. OSHA standard 29 CFR 1910.132(d)(1) states: "The employer shall assess the workplace to determine if hazards are present, or are likely to be present, which necessitate the use of personal protective equipment (PPE)." This is also a requirement of the National Electric Code and the Electrical Safety in the Workplace (NFPA 70E).

- Recommendation "E-13": provide arc-flash hazard warning labels warning qualified persons of potential electric arc flash hazards on all electrical equipment in accordance with NEC 110.16 and NEC 110.21.(B). The probable cost for this work is estimated to be $4,000.

ELECTRICAL ESTIMATED CONSTRUCTION COSTS

Item	Building	Description	Estimated Cost
E-1	Code Building	Replace existing 800A Westinghouse service distribution board	$75,000
E-2	Code Building	Replace existing 150kW diesel generator and automatic transfer switches	$250,000
E-3	Code Building	Replace older branch panelboards as required	$80,000
E-4	Code Building	Replace older lighting fixtures and upgrade lighting controls	$60,000
E-5	Code Building	Provide arc flash hazard warning labels	$4,000
E-6	Library	Replace battery-backed emergency/egress units and exit signs	$20,000
E-7	Library	Replace existing older Cleveland Switchboard Co. panelboard	$12,500
E-8	Library	Replace lighting fixtures and upgrade lighting controls	$75,000
E-9	Library	Provide arc flash hazard warning labels	$4,000
E-10	Police Department	Replace existing 400A FPE service panelboard	$60,000
E-11	Police Department	Replace existing ATS and FPE emergency/egress panelboard	$60,000
E-12	Police Department	Replace older lighting fixtures and upgrade lighting controls	$40,000
E-13	Police Department	Provide arc flash hazard warning labels	$4,000
		Total Estimated Electrical Construction Cost	***$744,500***

GATEWAY ENGINEERS

Date: 8/14/2026
Project: Whitehall Borough Building
Job No: C-9702-0023

WHITEHALL BOROUGH BUILDING

OPINION OF PROBABLE COST

Item No.	Item	Unit	Unit Price	Quantity	Total
1	General Conditions, Mobilization, Insurance, Testing, Bonding, Warranties, Layout, Project Management (12% Allowance)	Allow.	$ 699,657.00	1	$ 699,657
Roofing					
2	Roofing Demolition / Disposal	S.F.	$ 4.00	21,000	$ 84,000
3A	Roofing - Standing Seam	S.F.	$ 32.00	14,800	$ 473,600
3B	Roofing - Membrane (Library)	S.F.	$ 22.00	1,200	$ 26,400
3C	Roofing - Membrane (Police)	S.F.	$ 22.00	5,000	$ 110,000
4	Insulation - Roof	S.F.	$ 10.00	21,000	$ 210,000
5	Roof Drain Replacement	EA.	$ 1,500.00	4	$ 6,000
5	Fascia, Gutters and Downspouts	L.F.	$ 40.00	1,100	$ 44,000
Exterior					
6	Insulation - Cavity	S.F.	$ 5.00	13,500	$ 67,500
7	Insulation - Foundation / Below-Grade Walls	L.F.	$ 12.00	400	$ 4,800
8	Foundation Waterproofing & Drainage	L.S.	$ 275,000.00	1	$ 275,000
9A	Storefront Replacement - (Entrance System) - Library	L.S.	$ 105,000.00	1	$ 105,000
9B	Storefront Replacement - (Entrance System) - Municipal Building	L.S.	$ 90,000.00	1	$ 90,000
9C	Storefront Replacement - (Entrance System) - Police Station	L.S.	$ 40,500.00	1	$ 40,500
10A	Storefront Replacement - (Window-Only System) - Library and Municipal Building	S.F.	$ 125.00	4,350	$ 543,750
10B	Storefront Replacement - (Window-Only System) - Police Station	S.F.	$ 125.00	400	$ 50,000
11	Windows - Muncipal Building	EA.	$ 4,000.00	3	$ 12,000
12	Exterior Doors	EA.	$ 7,500.00	2	$ 15,000
13	Overhead Door	EA.	$ 18,000.00	1	$ 18,000
14	Masonry Joint Repointing	L.F.	$ 15.00	250	$ 3,750
15	Exterior Façade Joint Replacement	L.F.	$ 17.50	2,000	$ 35,000
16	Façade Cleaning	S.F.	$ 3.00	22,225	$ 66,675
Interior					
17A	Restroom Accessibility Upgrades and Fixture Replacements - Men's and Women's	Allow.	$ 125,000.00	4	$ 500,000
17B	Restroom Accessibility Upgrades and Fixture Replacements - Single User	Allow.	$ 15,000.00	4	$ 60,000
18	Miscellaneous Life Safety and Accessibility Upgrades	Allow.	$ 25,000.00	1	$ 25,000
19	Doors and Hardware	L.S.	$ 18,000.00	1	$ 18,000
20	Municipal Building Interior Renovations - Council Room Conversion to Offices	S.F.	$ 120.00	600	$ 72,000
	Continued Next Page				
Site					
21A	Site Improvements - Library (Per Separate Study)	L.S.	$ 200,000.00	1	$ 200,000
21B	Site Improvements - Muncipal Building	L.S.	$ 20,000.00	1	$ 20,000
21C	Site Improvements - Police Station	L.S.	$ 85,000.00	1	$ 85,000

GATEWAY ENGINEERS

Date: 8/14/2026
Project: Whitehall Borough Building
Job No: C-9702-0023

WHITEHALL BOROUGH BUILDING

OPINION OF PROBABLE COST

Item No.	Item	Unit	Unit Price	Quantity	Total
22A	Regrading - Library	S.Y.	$ 100.00	300	$ 30,000
22B	Regrading - Police Station	S.Y.	$ 100.00	250	$ 25,000
23A	Parking Lot Repaving and Striping - Library	S.Y.	$ 100.00	3,000	$ 300,000
23B	Parking Lot Repaving and Striping - Municipal Building	S.Y.	$ 100.00	850	$ 85,000
23C	Parking Lot Repaving and Striping - Police Station	S.Y.	$ 100.00	1,150	$ 115,000
Utilities					
24	Plumbing (see breakdown in report)	L.S.	$ 276,000.00	1	$ 276,000
25	HVAC (see breakdown in report)	L.S.	$ 914,000.00	1	$ 914,000
26	Electrical & Lighting (see breakdown in report)	L.S.	$ 744,500.00	1	$ 744,500
27	Adjustments to Fire Alarm System(s)	Allow.	$ 80,000.00	1	$ 80,000
				Subtotal	**$ 6,530,132**
				Design and Construction Inspection	$ 816,267
				20% Contingency	$ 1,306,026
				Total Opinion of Construction Cost	$ 8,652,425

Note: 1) Estimate is based on 2026 costs and does not account for inflation.
2) Estimates are merely opinion based on past experience and are not projections of current market conditions

GATEWAY ENGINEERS

Date: 8/14/2026
Project: Whitehall Borough Building
Job No: C-9702-0023

WHITEHALL BOROUGH BUILDING

OPINION OF PROBABLE SCHEDULE

Phasing Approach		Urgent Repairs, Life Safety, Accessibility	Urgent Equipment, Life Safety Items	Roofs, Roof Drains	MEP Upgrades, Restrooms	Windows Storefront and Doors	Repaving, MEP, Restrooms, PD Roof
	Priority	**Year 1**	**Year 2**	**Year 3**	**Year 4**	**Year 5**	**Year 6**
General Conditions, Mobilization, Insurance, Testing, Bonding, Warranties, Layout, Project Management (12% Allowance)		$ 120,036.00	$ 114,360.00	$ 84,180.00	$ 105,960.00	$ 143,061.00	$ 132,060.00
Roofing							
Roofing Demolition / Disposal	High / Low		$ 64,000.00				$ 20,000.00
Roofing - Standing Seam	High		$ 473,600.00				
Roofing - Membrane (Library)	High		$ 26,400.00				
Roofing - Membrane (Police)	Low						$ 110,000.00
Insulation - Roof	High / Low		$ 160,000.00				$ 50,000.00
Roof Drain Replacement	Low						$ 6,000.00
Fascia, Gutters and Downspouts	High		$ 44,000.00				
Exterior							
Insulation - Cavity	Low						$ 67,500.00
Insulation - Foundation / Below-Grade Walls	High	$ 4,800.00					
Foundation Waterproofing & Drainage	High	$ 275,000.00					
Storefront Replacement - (Entrance System) - Library	Low					$ 105,000.00	
Storefront Replacement - (Entrance System) - Municipal Building	Low					$ 90,000.00	
Storefront Replacement - (Entrance System) - Police Station	High	$ 40,500.00					
Storefront Replacement - (Window-Only System) - Library and Municipal Building	Low					$ 543,750.00	
Storefront Replacement - (Window-Only System) - Police Station	Low					$ 50,000.00	
Windows - Muncipal Building	Low					$ 12,000.00	
Exterior Doors	Low					$ 15,000.00	
Overhead Door	Low					$ 18,000.00	
Masonry Joint Repointing	Low					$ 3,750.00	
Exterior Façade Joint Replacement	Low					$ 35,000.00	
Façade Cleaning	Low					$ 66,675.00	
Interior							
Restroom Accessibility Upgrades and Fixture Replacements - Men's and Women's	Low				$ 250,000.00		$ 250,000.00
Restroom Accessibility Upgrades and Fixture Replacements - Single User	Low				$ 30,000.00		$ 30,000.00
Miscellaneous Life Safety and Accessibility Upgrades	Medium		$ 25,000.00				
Doors and Hardware	High	$ 18,000.00					
Municipal Building Interior Renovations - Council Room Conversion to Offices	Low						$ 72,000.00
Site							
Site Improvements - Library (Per Separate Design)	High	$ 200,000.00					
Site Improvements - Muncipal Building	High	$ 20,000.00					
Site Improvements - Police Station	Low						$ 85,000.00
Regrading - Library	Low	$ 30,000.00					
Regrading - Police Station	Low						$ 25,000.00
Parking Lot Repaving and Striping - Library	Low	$ 300,000.00					
Parking Lot Repaving and Striping - Municipal Building	Low						$ 85,000.00
Parking Lot Repaving and Striping - Police Station	Low						$ 115,000.00
Utilities							
Plumbing (see breakdown in report)	Med/Low			$ 65,000.00	$ 143,000.00	$ 3,000.00	$ 65,000.00
HVAC (see breakdown in report)	Hi/Med/Low	$ 20,000.00	$ 160,000.00	$ 314,000.00	$ 300,000.00		$ 120,000.00
Electrical & Lighting (see breakdown in report)	High/Low	$ 12,000.00		$ 322,500.00	$ 160,000.00	$ 250,000.00	
Adjustments to Fire Alarm System(s)	High	$ 80,000.00					
Subtotal		**$ 1,120,336**	**$ 1,067,360**	**$ 785,680**	**$ 988,960**	**$ 1,335,236**	**$ 1,232,560**
Design and Construction Inspection		$ 140,042	$ 133,420	$ 98,210	$ 123,620	$ 166,905	$ 154,070
20% Contingency		$ 224,067	$ 213,472	$ 157,136	$ 197,792	$ 267,047	$ 246,512
Total Opinion of Construction Cost		**$ 1,484,445**	**$ 1,414,252**	**$ 1,041,026**	**$ 1,310,372**	**$ 1,769,188**	**$ 1,633,142**

PRELIMINARY