SECTION 18 DEMOLITION DISPOSITION
PHYSICAL NEEDS ASSESSMENT (PNA)

MILDRED C. HAILEY APARTMENTS
30 BICKFORD STREET
JAMAICA PLAIN, MASSACHUSETTS 02130

D3G PROJECT NUMBER:

2020-002129

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EXECUTIVE PROPERTY DESCRIPTION

Property: Mildred C. Hailey Apartments
30 Bickford Street
Jamaica Plain, Massachusetts 02130

Site Description: Mildred C. Hailey Apartments, located at 30 Bickford Street, Jamaica Plain, Massachusetts consists of seven-hundred seventy-nine (779) multi-family and age-restricted dwelling units located within nine (9) high-rise towers and twenty (20) 3-story walk-up apartment buildings. The Buildings were constructed circa 1941, 1952 and 1964. According to D3G estimates and provided information, the property features a combined gross area of 957,295 square feet.

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1.0 EXECUTIVE SUMMARY

1.1 General Description

Project Name:	Mildred C. Hailey Apartments
Address:	30 Bickford Street Jamaica Plain, Massachusetts 02130
Property Type:	Age-Restricted & Multi-Family Apartments; Affordable
Date of Construction:	Circa 1941, 1952 and 1964
Building Size/Type:	Twenty-nine (29) Residential Buildings / Total Gross area = 957,295 SF
Number/Type of Units:	Seven-hundred seventy-nine (779) dwelling units

1.2 General Description and Summary

Mildred C. Hailey Apartments located at 30 Bickford Street, Jamaica Plain, Massachusetts consists of nine (9) high-rise towers and twenty (20) 3-story walk-up apartment buildings containing seven-hundred seventy-nine (779) multi-family and age-restricted dwelling units. These include one-hundred thirty-six (36) one-bedroom, two-hundred ninety-six (296) two-bedroom, two-hundred fifty-two (252) three-bedroom, seventy-one (71) four-bedroom, twenty-two (22) five-bedroom and two (2) six-bedroom dwelling units.

The buildings contain a combined gross area of 957,295 square feet according to D3G estimates. According to documentation provided by property management and tax records, the apartment buildings were constructed circa 1941, 1952 and 1964 (57 to 80 years old +/-). Site improvements include asphalt parking areas, sidewalks, children's playgrounds, fencing, and landscaping consisting of trees, grass, and shrubs throughout the site. The site improvements serve all buildings.

The apartment buildings feature full basements that contain mechanical equipment, constructed of concrete foundation walls, reinforced concrete frame, and light weight concrete floors. Exterior walls are surfaced with brick masonry. The interior walls and ceilings consist of a mix of painted concrete masonry units (CMU), plaster, and gypsum wallboard (GWB).

This Physical Needs Assessment (PNA) identified that the circa 1941, 1952 and 1964 residential structures are in poor physical condition and require significant rehabilitation and retrofit to render the structures viable for on-going safe and sanitary housing. Our PNA concluded that the level of repairs needed and/or functional obsolescence observed at the property warrants consideration for demolition and redevelopment, versus significant rehabilitation based upon the estimated cost of repairs for the immediate needs of the property.

2.0 PURPOSE AND SCOPE

2.1 Purpose

D3G was retained by the Boston Housing Authority (the Client), to conduct this Physical Needs Assessment (PNA) investigation in order to provide an objective, independent, professional opinion of the potential repair, rehabilitation and deferred maintenance associated with the subject property for an application pursuant to Notice PIH 2021-07 (HA), issued January 19, 2021. The demolition and disposition of public housing is authorized under Section 18 of the Housing Act of 1937, as amended. For the demolition of an entire development, the development must be determined to be obsolete as to physical condition, location, or other factors, making it unsuitable for housing purposes, and no reasonable program of modifications is cost-effective to return the public housing project or portion of the project to its useful life.

2.2 Scope

This PNA has been performed in accordance with ASTM E-2018-08 *Standard Guide for Property Condition Assessments: Baseline Property Condition Assessment Process*. This PNA is intended to provide an independent and detailed report of the current physical condition and future capital requirements for the subject property. This report includes a description of the overall condition of the building components and systems and conditions that may limit the Expected Useful Life (EUL) of the property and its systems. This report includes a discussion regarding functional obsolescence, significant deficiencies, deferred maintenance items, and material code violations at the subject property. The conclusions within this report are based upon a visual survey of the building and grounds, research of readily available documents, and conversations with people who have knowledge of the property. The assessment is based on interviews with management and local agencies, a review of available documents, and a visual examination of the property. The physical examination included a review of buildings, foundations, roofs, exterior/interior walls, mechanical systems, doors and windows, interior elements, and utilities.

This report is intended to provide information to assist with US Department of Housing and Urban Development (HUD) definitions for: (a) Demolition Review Criteria for Obsolescence; and (b) Demolition Review Criteria for Cost Ineffectiveness. If a PHA proposes demolition/disposition under 24 CFR section 970.15, the SAC application is to provide a detailed description of the project's physical obsolescence, including a description of rehabilitation and details of the project's obsolescence (e.g., other factors that have seriously affected the marketability, usefulness or management of the project), and/or supporting documentation that rehabilitation of the public housing is cost prohibitive. Deliverables for this study, to assist with an evaluation of the Subject Property, include:

- The performance of a field inspection of the Subject Property conducted by individuals trained in building engineering and construction practices and licensed by the Building Performance Institute (BPI).

- Access to residential units was attempted, to include all vacant and down units. All exterior areas and common/mechanical areas of each building are accessed.
- The interviewing of tenants and staff regarding the condition of the apartment complex, common areas, and known physical/equipment deficiencies.
- Interviews with local officials regarding zoning and code compliance at the property, and receipt of zoning/building code certification.
- The preparation and submittal of a written report containing information specific to: observations, obsolescence, interpretations, and estimated costs of repairs.
- Discussion of items of Obsolescence; and basis for findings of Obsolescence.
- Completion of a rehabilitation estimate using CSI 16 Division format. The rehabilitation cost-estimate includes only work-items necessary to address the project's immediate needs (up to three years). Rehabilitation cost-estimate includes only work-items necessary to return the project to an average quality. Rehabilitation cost-estimate includes only necessary repair costs (e.g., with the exception of air conditioners, no new items such as on-site improvements other than those required by local ordinances, washer/dryer hook-ups, garbage disposals, porches). Cost estimation was performed using 2018 2nd quarter R.S. Means data.
- Evaluation of cost-effectiveness of rehabilitation in comparison to the project's total development cost (TDC) on form HUD-52860-B. HUD generally considers modifications not to be cost-effective if costs exceed 62.5% for elevator structures and 57.14% for other types of structures.
- The reporting of findings in a format acceptable by the Client.

3.0 SYSTEM DESCRIPTION AND OBSERVATIONS

3.1 Overall General Description

Project Name:	Mildred C. Hailey Apartments
Address:	30 Bickford Street Jamaica Plain, Massachusetts 02130
Property Type:	Age-Restricted & Multi-Family Apartments; Affordable
Date of Construction:	Circa 1941, 1952 and 1964
Building Size/Type:	Twenty-nine (29) Residential Buildings / Total Gross area = 957,295 SF
Number/Type of Units:	Seven-hundred seventy-nine (779) dwelling units

Unit Types	Rentable Area (ft2)	Number of Units	Total Rentable Area (ft2)
1 BR / 1 BA	522	136	70,992
2 BR / 1 BA	815	296	241,240
3 BR / 1 BA	1,053	252	265,356
4 BR / 2 BA	1,156	71	82,076
5 BR / 2 BA	1,280	22	28,160
6 BR / 2 BA	1,360	2	2,700
	Total:	**779**	**690,524**

3.1.1 Remaining Useful Life (RUL)

The buildings at the subject property were constructed circa 1941, 1952 and 1964 (57 to 80 years old +/-), with few modernizations or rehabilitations. Marshall and Swift valuation service provide a published Economic Life of masonry buildings at 50 years. The structures have experienced accelerated aging due to water intrusion and deferred maintenance and therefore, have exceeded their economic life requiring significant rehabilitation and modernization.

3.1.2 Observations of Obsolescence

3.1.2.1 Building Code Obsolescence

The subject property was constructed circa 1941, 1952 and 1964. Future significant rehabilitation* will require compliance with the following applicable model codes:

- *2018 International Building Code*
- *2018 International Existing Building Code*
- *2018 International Energy Conservation Code*
- *2018 International Mechanical Code*
- *2020 National Electrical Code NFPA 70*
- *CMR Massachusetts Uniform State Plumbing Code*

Significant Rehabilitation - Any repair, reconstruction, rehabilitation, addition or improvement of a building or structure, the cost of which equals or exceeds 50 percent of the market value of the structure before the improvement or repair is started requires compliance with all current codes.

3.1.2.2 Physical / Original Design Obsolescence

The existing structures and building systems present significant issues relative to rehabilitation. The following conditions were observed relative to functional obsolescence:

Structural Deficiencies:

1. The subject property does not feature any fully accessible handicapped accessible units. Reconfiguration of 5% or thirty-nine (39) dwelling units to be fully handicapped accessible would require structural modifications which would result in a reduction of dwelling units and/or leasable square footage.
2. Rehabilitation of the aged structures would require environmental remediation requirements relative to hazardous building materials (asbestos, lead and mold).
3. Due to the nature of original construction, a significant number of electrical raceways and plumbing piping are exposed, and surface-mounted on the face of the walls and ceilings. Appropriate construction at the time of significant rehabilitation would require either furring-out interior walls or construction of bulkheads/enclosures to conceal all piping and raceways.
4. The dwelling units feature minimal insulation, if any. Significant rehabilitation would require the installation of wall cavities in select for the installation of insulation reducing the amount of livable/leasable space within the units.
5. The sanitary waste lines are reported to be original cast iron piping that is in poor condition and has exceeded its useful life. Complete replacement is required.
6. The current domestic water supply system is in poor condition and incurs frequent leaks. It has exceeded its useful life and complete replacement is required.
7. The electrical system has exceeded its useful life with aging and deteriorating service and meter equipment requiring replacement. The dwelling units feature deteriorated electrical panels that are installed over top of the kitchen ranges. Significant rehabilitation and replacement of the electrical panels will require relocation in select instances in order to comply with current codes.
8. The replacement of the existing hydronic heating system would precipitate the construction of new building chases (ground to roof) which would result in a reduction of unit sizes.
9. Rehabilitation and retrofit of the existing structures would most likely result in a reduction of net leasable square footage, resulting in a reduction of the number of units and possibly unit count and bedrooms.

Design Deficiencies:

1. Rehabilitation of the buildings would require 100% vacancy/relocation. Due to requirements for major mechanical, electrical, and plumbing system and piping replacements, occupied rehabilitation would be unmanageable.
2. Rehabilitation of the structures would include environmental remediation requirements relative to hazardous building materials (asbestos, lead and mold).
3. The subject property does not feature any fully accessible handicapped accessible units. Reconfiguration of 5% or thirty-nine (39) dwelling units to be fully UFAS compliant and the installation of audio/visual alarm notification for the hearing and visually impaired in 2% or sixteen (16) of the dwelling units is required.

4. Due to the nature of original construction, the majority of electrical raceways and plumbing piping is exposed surface mounted. Future modifications would require the same, whereas appropriate construction would include either furring-out interior walls or construction of bulkheads/enclosures around exposed piping.
5. Lack of defensible space related to building layout / orientation: Large old growth trees, vast swaths of open space between buildings, lack of frontage on public streets, varying topography contribute to blind corners, expanses of indefensible space, and dark vegetated edges at select areas of the property.
6. The subject property does not currently feature any fully compliant handicapped accessible units. Site grading and the installation/reconfiguration of walkways would be required from the handicapped dwelling units to provide accessible routes to all site amenities including playgrounds.
7. Concrete that is cracked, crumbling, spalling, heaving or settling, or may be a safety issue requiring repair or replacement.
8. The dwelling units feature minimal insulation, if any. The replacement of exterior doors and installation of insulation is recommended.
9. The dwelling units do not feature central air conditioning. Additionally, the condensate from the window-mounted units runs down the outside of the buildings staining and causing deterioration the brick exterior.
10. The majority of dwelling unit bedroom and closet sizes are small in comparison with modern-day construction, and many closets are not enclosed with doors. Increasing the size of the bedrooms is not feasible due to the type of construction and overall size of the dwelling units.
11. The dwelling unit bathrooms sizes are small in comparison with modern-day construction and do not provide reasonable maneuvering space due to the placement of fixtures within the small spaces. However, increasing the size of the bathrooms is not feasible due to the type of construction and overall size of the dwelling units.

3.1.2.3 Cost Obsolescence

Our PNA concluded that the level of repairs needed and/or functional obsolescence observed at the property warrants consideration for demolition and redevelopment, versus significant rehabilitation based upon the estimated cost of repairs for the immediate needs of the property. Note, the estimated construction costs do not include such things as site amenities for increased marketability. A comparison of the Total Development Cost (TDC) to the estimated 16-Division construction/rehabilitation cost resulted in a ratio of **73.03%** for the high-rise elevator buildings, and **77.85%** for the walk-up residential unit buildings. A detailed rehabilitation cost estimate representing the immediate needs of the property is included in Appendix B.

3.2 Site Improvements

3.2.1 Topography

The topography of the property varies slightly. The site has been graded to provide as much positive drainage away from the structures as possible. Storm water drainage consists of surface percolation from limited landscaped areas, and via sheet (water) flow over impervious surfaces to the municipal storm sewer.

3.2.2 Storm Water Drainage

Evidence of the ponding of water and splash back at the base of the exterior walls and foundations, and negative drainage towards the structures was observed and reported throughout the property. Storm water drainage consists of surface percolation from limited landscaped areas, and via sheet (water) flow over impervious surfaces to an underground storm water drainage system that connects to the municipal storm sewer.

The property's underground storm drainage system is reportedly in poor physical condition, and due to its age, further evaluation by a licensed civil engineer is recommended. Evaluation and repair are not included in the rehabilitation cost obsolescence determination in accordance with the Section 18 Demolition/Disposition guidelines.

3.2.3 Ingress, Egress and Community Connectivity

The property features multiple points of vehicular ingress and egress, consisting of asphalt drive lanes that are in poor condition. Pedestrian ingress and egress to the site is provided via sidewalks connecting each building throughout the property. The sidewalks throughout the site are connected to the municipal streets where public sidewalks are present.

3.2.4 Paving, Curbing and Parking

The property features asphalt driveways and parking areas with concrete curbing. Pedestrian ingress and egress to the site is provided via concrete walkways connecting the buildings to the parking lots. Replacement of the asphalt driveways, concrete curbing, and parking areas is considered integral to the functioning of the property, however, is not included in the proposed rehabilitation cost estimate in accordance with the Section 18 Demolition/Disposition guidelines.

3.2.5 Flatwork

The site features concrete walkways, which vary in width from approximately thirty-inches (32") to thirty-six inches (36") wide that were observed in generally poor physical condition. Replacement of the of concrete walkways, however, is not included in the rehabilitation cost obsolescence determination in accordance with the Section 18 Demolition/Disposition guidelines. An estimate of the cost to repair or replace has been prepared and is included in Appendix B.

3.2.6 Landscaping and Appurtenances

3.2.6.1 Signage

The property features building-mounted signs. The buildings and dwelling units feature small plaques identifying the building and unit numbers. The installation of new building and unit identification signage is recommended to aid emergency responders and has been included in the proposed rehabilitation cost estimate.

3.2.6.2 Fencing

The subject property features a mix of wrought iron and chain link fencing throughout the property that was observed in generally poor physical condition. The installation of additional fencing to provide increased site security is recommended, however, is not included in the rehabilitation cost obsolescence determination in accordance with the Section 18 Demolition/Disposition guidelines.

3.2.6.3 Retaining Walls

The subject property does not feature any retaining walls.

3.2.6.4 Refuse Collection

Each building features a trash chute accessible from each floor that directs waste to an industrial trash compactor located on the ground floor. The trash collection system and was observed in poor physical condition. The replacement of the existing compactors and trash chutes, installation of handicapped accessible waste chute openings and doors on each floor, and the installation of a ventilation system in the trash collection area is recommended and has been included in the proposed rehabilitation cost estimate.

3.2.6.5 Site Lighting

Exterior lighting at the property is provided via pole-mounted utility-maintained lighting fixtures as well as building-mounted lighting fixtures. The building-mounted lighting fixtures were observed in generally poor physical condition, and the number of fixtures is limited. Replacement of the existing light fixtures and installation of additional light fixtures is recommended to improve site safety and security has been included in the proposed rehabilitation cost estimate.

3.2.6.6 Landscaping, Lawn, and Irrigation

Landscaping consists of trees, shrubs, and grasses surrounding the apartment buildings. The existing landscaping was observed in generally fair condition. The installation of topsoil and fine grading of areas disturbed during construction adjacent to the building is recommended and has been included in the proposed rehabilitation cost estimate.

3.2.7 Recreational Facilities

The property features a children's playground that was observed in poor physical condition. Replacement of the playground and installation of soft playground surfaces is recommended, however, is not included in the rehabilitation cost obsolescence determination in accordance with the Section 18 Demolition/Disposition guidelines.

3.2.8 Utilities

3.2.8.1 Water

Service	Utility Provider	Responsible Party
Water Provider	Boston Water and Sewer Commission	Dwelling Unit: Owner
		Common Area: Owner

3.2.8.2 Electricity

Service	Utility Provider	Responsible Party
Electricity Provider	Eversource	Dwelling Unit: Tenant
		Common Area: Owner

3.2.8.3 Natural Gas

Service	Utility Provider	Responsible Party
Natural Gas Provider	National Grid	Dwelling Unit: Tenant
		Common Area: Owner

3.2.8.4 Sanitary Sewer

Service	Utility Provider	Responsible Party
Sanitary Sewer Provider	Boston Water and Sewer Commission	Dwelling Unit: Owner
		Common Area: Owner

3.2.8.5 Special Utility Systems

3.2.8.5.1 Site Security Systems

The apartment buildings feature a limited video surveillance system and fencing in select areas. The installation of additional video surveillance and fencing is recommended to control site access, however, is not included in the rehabilitation cost obsolescence determination in accordance with the Section 18 Demolition/Disposition guidelines.

3.2.8.5.2 Other Utility Systems

The subject property does not feature any other utility systems.

3.3 Structural Frame and Building Envelope

3.3.1 Foundation

The foundation construction of the buildings consists of reinforced concrete perimeter wall and interior footings with concrete foundation walls and reinforced concrete column pads. The building foundations were observed in overall fair condition; however, extensive water infiltration of the foundation walls was observed into the basements. Excavation and damp proofing of the foundation walls is recommended and has been included in the proposed rehabilitation cost estimate.

3.3.2 Building Frame

The superstructure of the buildings consists of reinforced concrete columns and beams supporting the reinforced concrete floors and roof slab. The superstructure of the buildings appeared to be in generally fair physical condition; however, cracks were observed throughout the exterior façade of the buildings. Further evaluation by a licensed structural engineer is recommended. Evaluation and repair, in addition to the above repairs, if required, are not included in the proposed rehabilitation cost estimate in accordance with the Section 18 Demolition/Disposition guidelines.

Additionally, severe mold and moisture issues were observed throughout the units caused by exterior water infiltration and window-mounted and through-wall AC units. Remediation of mold and mildew from the building frame, as well as replacement of any moisture damaged framing at the time of rehabilitation is recommended.

3.3.3 Building Envelope and Façade

3.3.3.1 Sidewall Systems (Exterior Walls, Fascia, Soffit and Trim)

The exterior wall assemblies are constructed of a mix of concrete masonry units and conventional wood framing, surfaced with solid brick masonry. The exterior brick masonry was observed in generally poor physical condition, with deterioration of the masonry mortar joints observed. Replacement of approximately 10% of the brick masonry, raking and re-pointing of all mortar joints, and resealing of the brick masonry façade is recommended and has been included in the proposed rehabilitation cost estimate.

3.3.3.2 Fenestration System – Windows

The apartment buildings feature a mix of aluminum and vinyl-framed window assemblies that were observed in poor to fair condition. Approximately 50% of the windows have been replaced since 2007, however, significant evidence of water intrusion and water damaged finishes was observed along many of the windowsills, jambs, and heads. Replacement of approximately 50% of the windows is recommended and has been included in the proposed rehabilitation cost estimate.

3.3.3.3 Fenestration System – Doors

The exterior doors at the property consist of a mix of aluminum storefront assemblies (single and double configuration), and single hollow core metal assemblies. The majority of entry doors were observed in poor physical condition. Replacement of all exterior doors is recommended and has been included in the proposed rehabilitation cost estimate.

3.3.3.4 Insulation

Thermal barrier insulation was identified to be insufficient per modern energy efficiency building standards. The brick masonry exterior walls provide thermal mass; however, likely do not feature any other insulation. Full compliance with current energy codes will be difficult to achieve based upon the thermal mass of the structures; however, installation of energy-code compliant insulation upon rehabilitation is recommended and has been included in the proposed rehabilitation cost estimate.

3.3.4 Roofing

The buildings feature flat roofs surfaced with membrane roofing. The roofing is reportedly of varying ages. Approximately 50% of the roofing membrane has reportedly been replaced since 2007 and was observed in generally fair physical condition. Roof leaks have been reported and water staining at the ceilings was observed throughout many of the inspected units. Removal and replacement of approximately 50% of the roof membrane is recommended and has been included in the proposed rehabilitation cost estimate.

3.4 Mechanical and Electrical Systems

3.4.1 Plumbing Systems

3.4.1.1 Supply and Waste Piping

The main water supply to the buildings originates at water meter vaults located near the front of each building. Visually accessible domestic water piping is constructed of a mix of galvanized and copper piping, fittings, couplings, and joints. Where visible, domestic water piping is not insulated. A significant amount of the plumbing piping is surface-mounted and was observed to be in poor physical condition. Replacement of all domestic water supply piping within the apartment buildings is recommended and has been included in the proposed rehabilitation cost estimate.

Sewer connections at the property consist of cast iron mains and galvanized branch lines connected to the municipal sewer system. Based upon observations, reported site conditions, and age of the system, replacement of all sewer lines, vents, stacks, and connections within the residential buildings is recommended and has been included in the proposed rehabilitation cost estimate.

3.4.1.2 Domestic Hot Water (DHW) System

Domestic hot water (DHW) is supplied via central natural gas-fired water boilers located in basement boiler plants throughout the property. The majority of the hot water piping is not insulated within the individual dwelling unit living spaces and may contribute to significant energy losses.

The boilers are of varying ages and condition; however, the hydronic piping is mostly original to the date of construction and has exceeded its useful life. Replacement of the boilers and hydronic supply piping is recommended and has been included in the proposed rehabilitation cost estimate.

3.4.1.3 Fixtures

Kitchen fixtures include stainless steel sinks and chrome faucets. The bathrooms feature vanity-mounted sinks, floor-mounted water closets, and steel tubs with ceramic tile surrounds that were observed in generally poor physical condition. Replacement of the wall-mounted sinks and faucets, steel tubs, tub controls, floor-mounted water closets, and ceramic tile surrounds. Is recommended and has been included in the proposed rehabilitation cost estimate.

3.4.2 Heating Systems

The dwelling units are supplied heating via central natural gas-fired water boilers located in basement boiler plants and rooms throughout the property. Heating water is circulated through black-iron piping to the hydronic radiators within the dwelling units. Many of the manual shut-off valves reportedly do not work in most instances. Because of the inability to reduce the flow of hot water through the radiators, reportedly many tenants open their windows during the heating season to relieve the warm air. The hydronic radiators are mostly original and failure due to rusted, dust-clogged, and/or cracked fins, as well as the integrity of the gaskets between fins becoming compromised over time is imminent. The majority of the heating water piping is not insulated within the individual dwelling unit living spaces and may contribute to significant energy losses.

The systems within the basement boiler plants are of varying age and were observed in poor to fair physical condition and are expensive to maintain and operate. Replacement of the hydronic heating system is recommended and has been included in the proposed rehabilitation cost estimate.

3.4.3 Air Conditioning and Ventilation

3.4.3.1 Cooling Systems

The dwelling units are not provided conditioned air. Installation of air conditioning is recommended to improve indoor air quality, however, is not included in the proposed rehabilitation cost estimate in accordance with the Section 18 Demolition/Disposition guidelines.

3.4.3.2 Ventilation Systems

The dwelling unit bathrooms feature operable windows; however, do not feature ceiling-mounted exhaust fans. Select dwelling units feature exterior vented range hoods, but most of the dwelling unit kitchens feature recirculating range hoods. Installation of exterior venting range hoods in the dwelling unit kitchens, and installation of exterior venting exhaust fans in the dwelling unit bathrooms to prevent mold and mildew is recommended and has been included in the proposed rehabilitation cost estimate.

3.4.4 Electrical Systems

3.4.4.1 Electrical Service and Metering

The buildings receive electrical power from pad-mounted transformers. Electrical service to each dwelling unit consists of 120/240V, 3 wire service with 60 to 100 amps provided. The electrical service and metering equipment were observed in deteriorating condition and have exceeded their useful life. Replacement of the electrical service and metering equipment is recommended and has been included in the rehabilitation cost estimate.

3.4.4.2 Electrical Distribution

Each dwelling unit features a small surface-mounted electrical breaker panel. Electrical service to each dwelling unit consists of 120/240V, 3 wire service with 60 to 100 amps provided. It is reported by the property management, and from limited visual access, that the electrical branch wiring at the complex is copper. Aluminum branch wiring was not observed. The majority of kitchens and bathrooms were observed without proper Ground Fault Circuit Interrupt (GFCI) protection. Replacement of the electrical panels to accommodate the required upgrades at the time of rehabilitation, and installation of code compliant GFCI protected outlets in the kitchens and bathrooms is required and has been included in the proposed rehabilitation cost estimate.

3.4.4.3 Lighting Systems

Interior lighting throughout the dwelling units is provided via incandescent and fluorescent lighting fixtures. It could not be determined if lighting was sufficient, as the inspection was performed during the day; however, based upon the number of fixtures at the property and tenant and management interviews, lighting is presumed to be adequate. Replacement and upgrade of all dwelling unit lighting fixtures with high efficiency fixtures and bulbs is recommended and has been included in the proposed rehabilitation cost estimate.

3.4.4.4 Emergency Power Provisions

The subject property does not feature any emergency power provisions.

3.5 Vertical Transportation

3.5.1 Conveyance Systems

The mid-rise apartment buildings feature elevators that were observed in poor condition, with regular entrapments reported. Replacement of the elevators and upgrade to current codes is recommended and has been in the proposed rehabilitation cost estimate. The elevators should have a minimum capacity of 2500-lbs and be able to accept a gurney with appropriate pricing included as part of the proposed rehabilitation cost estimate.

3.5.2 Stairways

The apartment buildings feature interior stairways. The stairways are constructed of metal concrete filled pans with metal stringers and handrails within CMU stairwells. The stairwells in the walk-up buildings were observed in poor physical condition. Replacement of the stairwell assemblies and installation of code compliant handrails is recommended and an estimate for the replacement has been included in the proposed rehabilitation cost estimate.

3.6 NFPA – Life Safety Systems

3.6.1 Sprinklers and Standpipes

The high-rise buildings feature a fire suppression system with sprinkler heads located in the common areas and dwelling units. The walk-up buildings do not feature a fire suppression system. Replacement of the fire suppression system in the high-rise buildings, and installation of a fire suppression system in the walk-up buildings, is recommended and has been included in the proposed rehabilitation cost estimate.

3.6.2 Alarm Systems

The dwelling units contain hard-wired smoke detectors located within the immediate vicinity of the sleeping areas; however, select units were observed without smoke detectors in the bedrooms. Per HUD MAP Guidelines; according to Life Safety Code (NFPA 101), paragraph 31.3.4.5.1, smoke alarms must be installed outside every sleeping area in the immediate vicinity of the bedrooms and on all levels of the dwelling unit, including basements. In addition to the NFPA requirements, the regulation in 24 CFR 200.76 requires that smoke detectors must also be installed inside each sleeping area.

3.6.3 Other Life Safety/Emergency Systems

The high-rise apartment buildings feature an emergency call system with surface-mounted pull-cord stations installed in each bathroom and sleeping are. The system was observed in poor physical condition. Replacement of the emergency call system is recommended and has been included in the proposed rehabilitation cost estimate.

3.7 Interior Elements

3.7.1 Interior Dwelling Units

3.7.1.1 Interior Finishes (Walls, Floors, and Soft Surfaces)

Interior finishes were observed in generally poor physical condition. Interior walls and ceilings of the dwelling units consist primarily of painted plaster walls and ceilings. Floor coverings within the dwelling units consist of a mix of vinyl composite tile (VCT), wood, and ceramic tile flooring. There is significant evidence of water intrusion and water damaged finishes. Removal and replacement of all plaster, flooring, and all hazardous material content is recommended. Additionally, the installation of furring strips and gypsum wallboard is recommended to conceal the new mechanical, electrical, and plumbing systems and has been included in the proposed rehabilitation cost estimate.

It should be noted that evidence of pests including insects and rodents were observed throughout the property. Upon completion of the proposed rehabilitation, it is presumed that a majority of the pest and rodent concerns should be alleviated; however, monthly inspection and treatment of the property by a licensed pest contractor is recommended to mitigate the possibility of repeat infestation.

3.7.1.2 Appliances

The dwelling unit kitchens feature natural-gas ranges and refrigerators. The appliances were observed in generally poor physical condition. Replacement of all dwelling unit appliances at the time of rehabilitation is recommended, however, is not included in the proposed rehabilitation cost estimate in accordance with the Section 18 Demolition/Disposition guidelines.

3.7.1.3 Casework and Cabinets

Kitchen cabinetry consists of wood base and suspended wall cabinets, some of which are original to the dates of construction. The base cabinets are surfaced with plastic laminate countertops. Visually inspected cabinets, hardware and countertops were observed in poor condition with wear and damage observed throughout. Replacement of all dwelling unit kitchen cabinets and countertops is recommended and has been included in the proposed rehabilitation cost estimate.

3.7.1.4 Other Interior Elements

Dwelling unit entry doors consist of wood fire-rated assemblies. Interior and closet doors consist of hollow wood assemblies. Doors at the property were observed in generally poor physical condition. Replacement of all dwelling unit entry doors and interior doors is recommended and has been included in the proposed rehabilitation cost estimate.

3.7.2 Common Areas

3.7.2.1 Hallways

The apartment buildings feature enclosed common hallways with a mix of painted plaster and ceramic tile walls, painted plaster and concrete ceilings, and VCT and unfinished concrete flooring. Replacement or refurbishment of all common is recommended and has been included in the proposed rehabilitation cost estimate.

3.7.2.2 Common Amenity Space

The residential apartment buildings feature community rooms and meeting spaces throughout. Refurbishment of all common amenity spaces is recommended and has been included in the proposed rehabilitation cost estimate.

3.7.2.3 Storage Areas

The property does not feature dedicated storage areas available for the residents outside of the dwelling units. The property does feature areas for the storage of maintenance items and equipment throughout.

3.7.2.4 Office / Management Areas

The property features leasing and administrative offices. The finishes in the office / leasing / management offices were observed in generally fair physical condition. Refurbishment of the management offices is recommended and has been included in the proposed rehabilitation cost estimate.

4.0 ADDITIONAL CONSIDERATIONS

4.1 Code and Regulatory Compliance

The site and all public areas were screened for compliance with the following applicable codes and regulations.

State Code: The current building code adoption for Massachusetts is the 2015 International Building Code with MA modifications.

Energy Code: The current energy code for Massachusetts is the 2018 International Energy Conservation Code with Local Amendment.

Multifamily Related: The following multifamily housing related codes and standards apply to the property:

- Americans with Disability Act (ADA Code of 1991)
- Life Safety Code, National Fire Protection Association (NFPA)
- Uniform Federal Accessibility Standards (UFAS)
- Minimum Property Standards (MPS), HUD Handbook 4910.1

4.1.1 Building Codes

4.1.1.1 NFPA – Life Safety Codes

Due to the age of the buildings, D3G cannot confirm the existence of fire-rated construction (vertically and horizontally) between each unit at the property. Additionally, select buildings do not feature sprinklers and standpipes. Replacement and installation of the fire suppression system is recommended and has been included in the proposed rehabilitation cost estimate.

4.1.1.2 Local / State Building Code

The current building code for Massachusetts is the 2018 International Building Code with MA modifications.

4.1.2 Accessibility Regulations

4.1.2.1 Americans with Disabilities Act (ADA)

The subject property was constructed circa 1941, 1952 and 1964. The site and public areas were screened for compliance with the ADA Code of 2010, Title III, Public Accommodations and Commercial Facilities. The ADA requires that physical barriers in existing facilities be removed, if removal is readily achievable. Any alteration to a public accommodation undertaken after January 26, 1992, shall be made so as to ensure, to the maximum extent feasible, the altered portions of the facility are readily accessible to and usable by individuals with disabilities, including individuals who use wheelchairs. Alterations include, but are not limited to, remodeling, renovations, rehabilitation, reconstruction, historic restoration, changes or rearrangement in the plan configuration of walls and full-height partitions. Normal maintenance, re-roofing, painting or wallpapering, asbestos removal, or changes to mechanical and electrical systems are not alterations unless they affect the usability of the building or facility. The subject property is currently utilized for residential dwelling and is not intended for public use.

The property requires select UFAS and ADAAG modifications to the common areas including modifications to the common area restrooms, offices, laundry room and community kitchen. Costs associated with these modifications have been included in the proposed rehabilitation cost estimate.

4.1.2.2 Fair Housing Act (FHA)

The buildings were constructed circa 1941, 1952 and 1964 and therefore are not subject to the requirements of the Fair Housing Act, which requires residential buildings constructed after March 13, 1991, or permitted after June 15, 1990, be designed and constructed in compliance with the Act.

4.1.2.3 Section 504 / Uniform Federal Accessibility Standards (UFAS)

The UFAS was published in the Federal Register on August 7, 1984 (49 FR 31528). HUD adopted the UFAS in 24 CFR (Code of Federal Regulations) part 40, effective October 4, 1984. Effective as of July 11, 1988, the design, construction, or alteration of buildings in conformance with sections 3-8 of the UFAS shall be deemed to comply with the requirements of 24 C.F.R. Sections 8.21, 8.22, 8.23, and 8.25. If the design of a facility was commenced before July 11, 1988, the provisions shall be followed to the maximum extent practicable, as determined by the Department.

The buildings were constructed circa 1941, 1952 and 1964 and features project-based assistance. Therefore, the property is subject to the requirements of Section 504 of the Rehabilitation Act of 1973, which states that 5% or thirty-nine (39) of the dwelling units must be handicapped accessible and that 2% or sixteen (16) of the dwelling units are required to have audio/visual smoke alarms. Currently, the property does not feature any *fully* compliant handicapped accessible units. Reconfiguration of 5% or thirty-nine (39) of the dwelling units to be fully UFAS compliant is required and has been included in the proposed rehabilitation cost estimate.

4.1.3 Seismic Design Considerations

According to HUD standards, project applications for rehabilitation and refinance must comply with the relevant standards published by the American Society of Civil Engineers (ASCE) – ASCE 41-13 Seismic Evaluation and Retrofit of Existing Buildings, unless the buildings are considered exempt. Based on the Design Earthquake Spectral Response Acceleration Parameters and building characteristics, a seismic evaluation is not required.

4.2 Environmental Considerations

4.2.1 Fuel Storage Tanks

The subject property currently utilizes a mix of electricity and natural gas for power, cooking, heating, and hot water. No visual evidence of USTs (fill ports/vent pipes) or ASTs was observed during the subject property inspection.

4.2.2 Lead Based Paint (LBP)

The residential apartment buildings were constructed in 1941, 1952 and 1964, prior to the 1978 ban on lead-based paint (LBP). Therefore, LBP is suspected to be present on interior and exterior painted components. At the time of D3G's site inspection, the painted components were observed to be in poor to fair condition with multiple areas of deteriorated, peeling and flaking paint. Components identified as containing lead in any concentration are required be handled in accordance with 29 CFR 1926.62, the OSHA "Lead Exposure in Construction" Standard (OSHA does not define LBP). All generated debris containing lead-based paint is to be appropriately disposed of in accordance with applicable EPA RCRA requirements. Complete removal and disposal of all LBP is required at the time of significant rehabilitation and has been included in the proposed rehabilitation cost estimate.

4.2.3 Asbestos-Containing Material (ACM)

The residential apartment buildings were constructed in 1941, 1952 and 1964, during a time of asbestos-containing material (ACM) usage; therefore, ACMs are suspected to be present at the subject property. Presumed asbestos-containing materials (PACMs) at the subject property may include but are not limited to piping insulation and associated wrap, wall and ceiling materials, flooring materials and associated mastics, kitchen sink undercoating, caulking, and roofing materials. However, the facility has not been inspected by an appropriately licensed and/or certified asbestos inspector. Complete removal and disposal of all ACM's is required at the time of significant rehabilitation and has been included in the proposed rehabilitation cost estimate.

4.2.4 Mold and Mildew

Mold and mildew were reported and observed in the majority of dwelling units throughout the property. Upon completion of the proposed rehabilitation scope of work, any mold/mildew will have been remediated and removed. Additionally, the installation of additional mechanical ventilation and replacement of the windows should mitigate any additional mold/mildew growth. Complete removal and remediation of all mold is required at the time of rehabilitation and has been included in the proposed rehabilitation cost estimate.

Additionally, the installation of additional mechanical ventilation, waterproofing of the exterior façade, and the replacement of the windows at the time of rehabilitation should mitigate any additional mold/mildew growth.

4.2.5 FEMA Flood Plains and Hazards

According to FEMA Flood Insurance Rate Map (FIRM) #25025C-0078G, dated September 5, 2009, the subject property is located in Zone X, designated as an area outside the 100 and 500-year flood zones and the flood potential for the subject property is minimal.

4.2.6 Other Environmental Conditions

Besides general functional obsolescence, the buildings observed in generally poor physical condition with advanced capital needs, including systemic mold and moisture damage presenting health and safety risks. Therefore, we believe the capital needs and systemic mold and moisture intrusion problems deem rehabilitation of this site cost ineffective.

5.0 DOCUMENT REVIEWS AND INTERVIEWS

5.1 Document Review

The investigation of the subject property required that select documents be reviewed to obtained site specific information. As part of the audit desk review, the following documentation was obtained and reviewed:

a. Site specific information provided for review:
    i. Tax Maps
    ii. Site Plan
    iii. Limited construction drawings

5.2 Site Interviews and Questionnaires

The scope of a Physical Condition Assessment requires that persons familiar with the property be interviewed, including a minimum of one of the following: property manager, maintenance director/staff, owner/owner representative, and other designated stakeholders as determined by the project team. In addition, D3G has standardized a Property Questionnaire and Utility Data form and is required to be completed by the owner or owner representative.

Please be advised, D3G makes an effort to discuss housing concerns and comfort levels with building tenants; however, as a respect to privacy, resident and occupant names are not recorded. Interviews during the inspection process with representative tenants which identify any adverse conditions or occupant comfort concerns are addressed within the recommended repairs and rehabilitations.

6.0 QUALIFICATIONS

Dominion Due Diligence Group (D3G) was established in 1994 and has grown to a national full-service Environmental and Engineering real estate due diligence firm featuring over 125 employees. D3G focuses on affordable housing, elderly care facilities and historical rehabilitations, with our 3rd party reporting used for HUD-FHA, USDA-RD, Fannie Mae, Freddie Mac, and LIHTC transactions. D3G has worked with every HUD office in the country and is a premier provider of Green Capital Needs Assessments (GPCA and GRPCA) to the Office of Affordable Housing Preservation (OAHP) at HUD, under both the M2M program and the ARRA stimulus bill. A staff resume of the Needs Assessor performing this evaluation has been provided in Appendix H. D3G's senior staff are trained, accredited and licensed in the following fields of building science investigations:

- Engineering (Professional Engineer)
- Architectural (Licensed Architect, ICC Plans Examiner)
- Sustainability (LEED-AP, RESNET, BPI-Multifamily)
- Environmental (CSP, EP, CHMM, CEI)

7.0 LIMITING CONDITIONS

This report has been prepared for and can be relied upon by the Client and the United States Department of Housing and Urban Development (HUD). This report was prepared in accordance with generally accepted industry standards of practice for building inspection services, as detailed in Section 2.2 Scope. No other warranty, either expressed or implied, is made. This report is not to be reproduced, either in whole or in part, without written consent from the preparer.

The statements in this report are professional opinions about the present condition of the subject property. They are based upon visual evidence available during the inspection of reasonably accessible areas at the subject property. We did not remove any surface materials, perform any destructive testing, or move any furnishings. The study is not an exhaustive technical evaluation. Such an evaluation would entail a significantly larger scope of work than was determined for this project. Accordingly, we cannot comment on the condition of systems that we could not see, such as buried structures and utilities, nor are we responsible for conditions that could not be seen or were not within the scope of our services at the time of inspection. We did not undertake activities that would completely assess the stability of the building or the underlying foundation soil since this effort would require excavation and destructive testing. Likewise, this is not a seismic assessment, nor do we make any conclusions or comments regarding wood destroying organisms/insects. Our on-site observations pertain only to specific locations at specific times on specific dates. Our observations and conclusions do not reflect variations in conditions that may exist, in unexplored areas of the site, or at times other than those represented by our observations.

8.0 CERTIFICATION

The Needs Assessor certifies that the data presented in this report is representative of site conditions observed during our inspection. We understand that this report will be used by The Client to document to the U.S. Department of Housing and Urban Development the current physical condition and needs of the property. The Needs Assessor certifies that the review was in accordance with the HUD requirements applicable on the date of the Review and that we have no financial interest or family relationship with the officers, directors, stockholders or partners of the Borrower, the general contractor, any subcontractors, the buyer or seller of the proposed property or engage in any business that might present a conflict of interest.

Scott Byerly
Construction Inspector — Signature

Shawn Hughes
Special Application Center Specialist — Signature

Mike Ferguson, P.E.
President — Signature

Warning: Title 18 U.S.C. 1001, provides in part that whoever knowingly and willfully makes or uses a document containing any false, fictitious, or fraudulent statement or entry, in any manner in the jurisdiction of any department of agency of the United States, shall be fined not more than $ 10,000 or imprisoned for not more than five years or both.

9.0 APPENDICIES

Appendix A: HUD Form 52860-B, Total Development Cost Addendum

Appendix B: Rehabilitation Cost Estimate / Year 1 Immediate Needs

Appendix C: Color Site Photographs

Appendix D: Site Maps

Appendix E: Site Specific Information

Appendix F: Staff Resumes and Certifications