Lake View Cemetery Bu	3.2									
Lake View Cemetery Bu	5.3	Poor	G2012 Asphalt- overlay 1"	95000	SF	$1.14	$108,300			
Lake View Cemetery Bu	5.3	Fair to Poor	G2023A Replace stone curbs	40	LF	$31.95	$1,278	$ 1,278		
Lake View Cemetery Bu	5.4	Poor	G2042 Replace stone retaining wall, mortar set	250	SF Fa	$75.25	$18,813	$ 18,813		
Lake View Cemetery Bu	5.5	Poor	G2041 Replace wrought iron fence 3' high	1133	LF	$28.50	$32,291	$ 32,291		
Lake View Cemetery Bu	6.6	Fair	B2031A Prepare and refinish 3'-0" wide steel door	2	EA	$493.00	$986		$ 986	
Lake View Cemetery Bu	6.6	Fair	B2031A Prepare and refinish solid core, painted, door	3	EA	$361.00	$1,083	$ 1,083		
Lake View Cemetery Bu	6.7	Poor	B1012 Porch Roof Deck and Structure Replacement	160	SF	$75.00	$12,000	$ 12,000		
Lake View Cemetery Bu	6.7	Fair to Poor	C2011A Replace wood steps	25	SF	$103.10	$2,578		$ 2,578	
Lake View Cemetery Bu	7.1	Fair	D3051 Window air-conditioner 12,000 Btuh	1	Each	$761.99	$762		$ 762	
Lake View Cemetery Building										
										$ 69,791

FACILITY CONDITION ASSESSMENT AND LEVEL I ENERGY AUDIT

CITY OF BURLINGTON
645 Pine Street
Burlington, Vermont 05401
Martha Keenan

FACILITY CONDITION ASSESSMENT AND LEVEL I ENERGY AUDIT of LAKEVIEW CEMETERY BUILDING

455 North Avenue
Burlington, Vermont 05401

PREPARED BY:

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EMG Project #: 110226.14R-014.294
Date of Report: November 11, 2014
On site Date: August 26, 2014 and August 29, 2014

Immediate Repairs Report
Lake View Cemetery Building
11/11/2014

Report Section	ID	Cost Description	Quantity	Unit	Unit Cost	Subtotal	Deficiency Repair Estimate *
3.2	290289	Measured ADA Study of Property	1	EA	$5,500.00	$5,500	**$5,500**
6.2	290296	Replace wood stud walls, 5/8" drywall, no insulation	140	SF	$7.72	$1,081	**$1,081**
6.3	290297	Roof flashing	320	LF	$3.25	$1,040	**$1,040**
Immediate Repairs Total							**$7,621**

* Location Factor (1.0) included in totals.

Replacement Reserves Report

Lake View Cemetery Building

11/11/2014

EMG

Report Section	Location Description	ID	Cost Description	Lifespan (EUL)	EAge	RUL	Quantity	Unit	Unit Cost	Subtotal	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	Deficiency Repair Estimate
3.2	Chapel and House/Office	290289	_0001 Measured ADA Study of Property	0	0	0	1	EA	$5,500.00	$5,500	$5,500																				**$5,500**
5.3	Flatwork throughout the cemetery	290290	G2012 Asphalt- overlay 1"	25	24	1	95000	SF	$1.14	$108,300		$108,300																			**$108,300**
5.3	Throughout the cemetery	290300	G2023A Replace stone curbs	25	24	1	40	LF	$31.95	$1,278		$1,278																			**$1,278**
5.4	Rear of House/Office	290292	G2042 Replace stone retaining wall, mortar set	50	49	1	250	SF Face	$75.25	$18,813		$18,813																			**$18,813**
5.5	Eastern fence	290293	G2041 Replace wrought iron fence 3' high	30	29	1	1133	LF	$28.50	$32,291		$32,291																			**$32,291**
6.1	House/Office	290295	A2022 Waterproof coating at basement wall	7	6	1	960	SF Face	$2.53	$2,429		$2,429							$2,429						$2,429					**$7,286**
6.1	Houses and Maintenance Building	290294	G2041 Masonry wall repairs and improvements	20	19	1	1150	SF Face	$10.84	$12,466		$12,466																			**$12,466**
6.2	House/Office Basement	290296	C1011 Replace wood stud walls, 5/8" drywall, no insulation	0	0	0	140	SF	$7.72	$1,081	$1,081																				**$1,081**
6.3	Maintenance building	290299	B2011 Wood siding replacement	25	24	1	60	SF	$19.56	$1,174		$1,174																			**$1,174**
6.3	Chimney	290298	B2011 Stone masonry wall up to 4 stories - joint repair/pointing	20	19	1	72	SF	$10.69	$770		$770																			**$770**
6.3	Off of the houses	290297	B3011 Roof flashing	0	0	0	320	LF	$3.25	$1,040	$1,040																				**$1,040**
6.3	Houses and Maintenance Building	290105	B3011 Slate roofing replacement, historic structure	50	49	1	32	SQ	$1,823.00	$58,336		$58,336																			**$58,336**
6.4	All buildings	290304	B2011 Caulking, expansion joints,1"x1/2", remove and replace	15	14	1	640	LF	$6.31	$4,038		$4,038															$4,038				**$8,077**
6.4	Houses, maintenance and storage building	290301	B2011 Wood siding replacement	25	24	1	1200	SF	$13.56	$16,272		$16,272																			**$16,272**
6.4	Houses, maintenance and storage building	290327	B2011 General painting cost per SF, minor prep work, single story bldg. (up to 15 feet)	10	9	1	4700	SF	$2.42	$11,374		$11,374										$11,374									**$22,748**
6.4	Houses, Chapel, maintenance and storage building -	290302	B3015 Wood trim replacement	25	24	1	640	LF	$12.85	$8,224		$8,224																			**$8,224**
6.5	House/Break room stairs	290308	G2035 Replace cast-in-place concrete stairs, no rails,including demo	25	24	1	16	LF Nosing	$30.38	$486		$486																			**$486**
6.6	Chapel Windows	290311	B2021 Historic wood window patch, repair and paint	15	10	5	12	Each	$238.87	$2,866						$2,866															**$2,866**
6.6	Houses and Maintenance Building	290310	B2021 Replace 3' x 2' Historic Wood Window	35	34	1	30	EA	$2,300.00	$69,000		$69,000																			**$69,000**
6.6	Chapel Windows	290312	B2021 Storm window replacement, 4' x 6'	20	15	5	12	EA	$168.74	$2,025						$2,025															**$2,025**
6.6	City Vault	290316	B2031A Prepare and refinish 3'-0" wide steel door	4	2	2	2	EA	$493.00	$986			$986				$986				$986				$986				$986		**$4,930**
6.6	Houses, Maintenance and Storage Building -	290313	B2031A Replace 3'-0" wide solid core, painted, door	40	35	5	6	EA	$990.00	$5,940						$5,940															**$5,940**
6.6	Chapel	290317	B2031A Prepare and refinish solid core, painted, door	4	3	1	3	EA	$361.00	$1,083		$1,083				$1,083				$1,083				$1,083				$1,083			**$5,415**
6.7	Front and side porches	290323	B1012 Porch Roof Deck and Structure Replacement	20	19	1	160	SF	$75.00	$12,000		$12,000																			**$12,000**
6.7	House/Office ramp	290320	B1014 ADA, replace H/C access ramp, 3' wide, railings both sides,including demo	25	18	7	30	LF	$662.00	$19,860								$19,860													**$19,860**
6.7	House/Office Stairs	290322	C2011A Replace wood steps	20	18	2	25	SF	$103.10	$2,578			$2,578																		**$2,578**
7.1	Chapel	297198	D2023 Water heater, tankless, on demand, natural gas, to 180,000 BTU - 9.5 GPM	15	11	4	1	EA	$2,069.00	$2,069					$2,069														$2,069	**$4,138**
7.1	House/Office basement	296267	D3041 Gas-fired furnace 90% efficiency, 80 to 100 MBH, no AC	25	20	5	1	EA	$2,957.00	$2,957						$2,957															**$2,957**
7.1	Maintenance Building	296896	D3041 Gas-fired furnace 175 to 200 MBH no AC	25	11	14	1	EA	$3,540.00	$3,540															$3,540						**$3,540**
7.1	House/Break Room	296894	D3041 Replace Unitary Space Heater, 25 to 50 MBH	20	11	9	1	EA	$1,350.00	$1,350										$1,350											**$1,350**
7.1	Office Area	296269	D3051 Window air-conditioner 12,000 Btuh	12	10	2	1	Each	$761.99	$762			$762												$762						**$1,524**
7.2	Basement	296268	D2023 Replace gas water heater, residential 40 gal	10	5	5	1	EA	$1,350.00	$1,350						$1,350										$1,350					**$2,700**
8.1	House	290326	C3024 Sand and refinish hardwood floor	10	5	5	3200	SF	$5.50	$17,600						$17,600										$17,600					**$35,200**
8.1	Houses	290325	C3024 Replace sheet vinyl	15	10	5	122	SY	$110.25	$13,451						$13,451															**$13,451**
8.1	House/Office and Chapel	290324	C3025 Replace carpet, standard commercial, medium traffic	8	4	4	333	SY	$59.90	$19,947					$19,947								$19,947								**$39,893**
9	Cemetery	297200	G2034 Replace yard fountain, large, outdoor with figures, concrete pool, pump	50	49	1	2	EA	$35,000.00	$70,000		$70,000																			**$70,000**
Totals, Unescalated											**$7,621**	**$428,333**	**$4,325**	**$0**	**$22,016**	**$47,272**	**$986**	**$19,860**	**$2,429**	**$2,433**	**$986**	**$11,374**	**$19,947**	**$1,083**	**$5,288**	**$21,379**	**$4,038**	**$1,083**	**$986**	**$2,069**	**$603,507**
Location Factor (1.00)											**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**
Totals, Escalated (3.0% inflation, compounded annually)											**$7,621**	**$441,183**	**$4,589**	**$0**	**$24,779**	**$54,801**	**$1,177**	**$24,425**	**$3,077**	**$3,175**	**$1,325**	**$15,744**	**$28,439**	**$1,590**	**$7,999**	**$33,307**	**$6,480**	**$1,790**	**$1,679**	**$3,628**	**$666,808**

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CERTIFICATION

The City of Burlington, Vermont retained EMG to perform this Facility Condition Assessment and Level I Energy Audit in connection with its Lakeview Cemetery, 455 North Avenue, Burlington, Vermont, the "Property". It is our understanding that the primary interest of The City of Burlington, Vermont is to locate and evaluate materials and building system defects that might significantly affect the value of the property and to determine if the present Property has conditions that will have a significant impact on its continued operations.

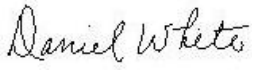
The conclusions and recommendations presented in this report are based on the brief review of the plans and records made available to our Project Manager(s) during the site visit, interviews of available property management personnel and maintenance contractors familiar with the Property, appropriate inquiry of municipal authorities, our Project Manager's walk-through observations during the site visit, and our experience with similar properties.

No testing, exploratory probing, dismantling or operating of equipment or in depth studies were performed unless specifically required under Section 2 of this report. This assessment did not include engineering calculations to determine the adequacy of the Property's original design or existing systems. Although walk-through observations were performed, not all areas were observed (See Section 4.2 for areas observed). There may be defects in the Property, which were in areas not observed or readily accessible, may not have been visible, or were not disclosed by management personnel when questioned. The report describes property conditions at the time that the observations and research were conducted.

Any reuse or distribution of this report without such consent shall be at The City of Burlington, Vermont and the recipient's sole risk, without liability to EMG.

Prepared by: Scott Lattimer, PE, Project Manager

Cheyenne Irby, AIA assoc., Project Manager

Reviewed by: 

Daniel White
Report Reviewer for
Brett Byers, Senior Engineering Consultant
bbyers@emgcorp.com 800.733.0660 x6701

1. EXECUTIVE SUMMARY

1.1. PROPERTY INFORMATION AND GENERAL PHYSICAL CONDITION

The property information is summarized in the table below. More detailed descriptions may be found in the various sections of the report and in the Appendices.

Property Information		
Address:	455 North Avenue, Burlington, Chittenden County, Vermont 05401	
Year constructed:	Louisa Howard Chapel	1882
	House – Office	1872
	House – Break room	1872
	City Vault	1869
	Maintenance Building	1872
	Interment Storage Building	1990s
Current owner of property:	City of Burlington Vermont	
Management Point of Contact:	City of Burlington, Martha Keenan, Capital Improvement Program Manager 802.540.0701 phone	
Property type:	Cemetery	
Site area:	50 Acres	
Gross floor area:	9,063 Total Buildings Square Feet	
Number of buildings:	6	
Number of stories:	Louisa Howard Chapel	1
	House – Office	2 with basement
	House – Break room	1
	City Vault	1
	Maintenance Building	2 with attic
	Interment Storage Building	1
Parking type and number of spaces:	Unspecified open areas adjacent to buildings	
Building construction:	Louisa Howard Chapel	Structural masonry
	House – Office	Conventional wood frame structure with raised floor.
	House – Break room	Conventional wood frame structure with raised floor
	City Vault	Cast concrete

Property Information		
	Maintenance Building	Conventional wood frame structure with raised floor
	Interment Storage Building	Manufactured steel framed structure
Roof construction:	Louisa Howard Chapel	Slate
	House – Office	Slate
	House – Break room	Asphalt Shingle
	City Vault	Subterranean
	Maintenance Building	Slate
	Interment Storage Building	Metal
Exterior Finishes:	Louisa Howard Chapel	Masonry
	House – Office	Painted wood siding and trim
	House – Break room	Painted wood siding and trim
	City Vault	Masonry
	Maintenance Building	Painted wood siding and trim
	Interment Storage Building	Painted wood siding and trim
Heating and/or Air-conditioning:	House – Office : Gas furnaces	
Fire and Life/Safety:	Hydrants, smoke detectors, alarms, and extinguishers	
Dates of visit:	8.26.2014 and 8.29.2014	
Point of Contact (POC):	Martha Keenan	
Assessment and Report Prepared by:	Scott Lattimer and Cheyenne Irby	
Reviewed by:	Daniel White Report Reviewer for Brett Byers Senior Engineering Consultant bbyers@emgcorp.com 800.733.0660 x6701	

Generally, the property appears to have been constructed within industry standards in force at the time of construction. The property appears to have been maintained since it was first occupied and is in fair to poor overall condition.

According to property management personnel, the property has not had a capital improvement expenditure program over the past three years.

Summary of Significant Issues:

Moisture infiltration into the masonry foundation walls of the House/Office

Main fence leaning and heaving out of the ground

House/Office exterior porch unsafe

Exterior wood finishes are deteriorated

Summary of Energy Audit:

EMG has conducted an Energy Audit on the Lakeview Cemetery. The study included a review of the building's construction features, historical energy and water consumption and costs, review of the building envelope, HVAC equipment, heat distribution systems, lighting, and the building's operational and maintenance practices.

EMG has identified 7 Energy Conservation Measures (ECMs) for this property. The savings for each measure are calculated using standard engineering methods followed in the industry, and detailed calculations for ECM are provided in Appendix H for reference. A 10% discount in energy savings was applied to account for the interactive effects amongst the ECMs. In addition to the consideration of the interactive effects, EMG has applied a 15% contingency to the implementation costs to account for potential cost overruns during the implementation of the ECMs.

Summary of Financial Information for Recommended Energy Conservation Measures

Item	Estimate
Total Projected Initial ECM Investment	$ 12,618 *(In Current Dollars)*
Estimated Annual Cost Savings Related to ECMs	$2,710 *(In Current Dollars)*
Net Effective ECM Payback	4.66 years
Estimated Annual Energy Savings	110%
Estimated Annual Cost Savings	111%

1.2. SPECIAL ISSUES AND FOLLOW-UP RECOMMENDATIONS

As part of the FCA, a limited assessment of accessible areas of the buildings was performed to determine the presence of mold, conditions conducive to mold growth, and/or evidence of moisture. Property personnel were interviewed concerning any known or suspected mold, elevated relative humidity, water intrusion, or mildew-like odors. Sampling is not a part of this assessment.

There are no visual indications of the presence of mold growth, conditions conducive to mold growth, or evidence of moisture in representative readily accessible areas of the property.

The following issues should be considered:

- Verify that all warranties are transferable.
- Verify that any alterations, installations, or other improvements since the project was first constructed and occupied have been properly permitted and approved by municipal agencies.
- Verify that no defective materials or equipment are used at the property.

Copies of the documents listed below should be obtained:

- All roof, equipment and system warranties/guarantees and transfers. Manufacturers often levy a warranty transfer fee and require that the equipment or system be in pristine condition in order to provide such transfers. This requirement often necessitates upgrades, repairs, or servicing.
- All available site and building construction drawings and specifications.

- All government documents such as Certificates of Occupancy, permits, zoning variances, easements, tax receipts, and other pertinent records.

1.3. OPINIONS OF PROBABLE COST

Cost estimates are attached at the front of this report (following the cover page).

These estimates are based on Invoice or Bid Document/s provided either by the Owner/facility and construction costs developed by construction resources such as *R.S. Means* and *Marshall & Swift,* EMG's experience with past costs for similar properties, city cost indexes, and assumptions regarding future economic conditions.

Opinions of probable costs should only be construed as preliminary, order of magnitude budgets. Actual costs most probably will vary from the consultant's opinions of probable costs depending on such matters as type and design of suggested remedy, quality of materials and installation, manufacturer and type of equipment or system selected, field conditions, whether a physical deficiency is repaired or replaced in whole, phasing of the work (if applicable), quality of contractor, quality of project management exercised, market conditions, and whether competitive pricing is solicited, etc. ASTM E2018-08 recognizes that certain opinions of probable costs cannot be developed within the scope of this guide without further study. Opinions of probable cost for further study should be included in the PCR.

1.3.1. Methodology

Physical Needs Assessment:

Based upon site observations, research, and judgment, along with referencing Expected Useful Life (EUL) tables from various industry sources, EMG opines as to when a system or component will most probably necessitate replacement. Accurate historical replacement records, if provided, are typically the best source of information. Exposure to the elements, initial quality and installation, extent of use, the quality and amount of preventive maintenance exercised, etc., are all factors that impact the effective age of a system or component. As a result, a system or component may have an effective age that is greater or less than its actual chronological age. The Remaining Useful Life (RUL) of a component or system equals the EUL less its effective age. Projections of Remaining Useful Life (RUL) are based on continued use of the Property similar to the reported past use. Significant changes in tenants and/or usage may affect the service life of some systems or components.

Where quantities could not be derived from an actual take-off, lump sum costs or allowances are used. Estimated costs are based on professional judgment and the probable or actual extent of the observed defect, inclusive of the cost to design, procure, construct and manage the corrections.

The evaluation period identified in this report is defined as 20 years.

The physical condition of building component to be repaired is typically defined as being in one of five categories: Priority One through Five. For the purposes of this report, the following definitions are used:

Priority One - These items are to be addressed as Immediate. Items in this category require immediate action and include corrective measures to:

1. Correct life safety and/or code hazards
2. Repair item permitting water leaks into the building or structure
3. Repair mold or mildew conditions
4. Down unit repairs
5. Further study investigations

Priority Two - These items are to be addressed within the next 1 year. Items in this category require corrective measures to:

1. Return a system to normal operation
2. Stop deterioration to other systems
3. Stop accelerated deterioration
4. Replace items that have reached or exceeded their useful service life
5. ADA/UFAS deficiencies

Priority Three - These items are to be addressed within the next 2-3 years. Items in this category, if not corrected expeditiously, will become critical in the next several years. Items in this category include corrective measures to:

1. Stop intermittent interruptions
2. Correct rapid deterioration
3. Replace items that will reach or exceed their useful service life
4. Correct functionality and/or aesthetic issues that are not critical

Priority Four - These items are to be addressed within the next 3-5 years. Items in this category include conditions requiring appropriate attention to preclude predictable deterioration or potential downtime and the associated damage or higher costs if deferred further.

Priority Five - These items are to be addressed within 6-20 years. Items in this category represent a sensible improvement to the existing conditions. These are not required for the most basic function of the facility; however, Priority 5 projects will improve overall usability and/or reduce long-term maintenance costs.

Energy Audit:

All the ECMs are broken into two major categories:

1. **No/Low Cost Recommendations**: No/Low cost is defined as any project with initial investment of less than $1000
2. **Capital Cost Recommendations**: Capital cost defined as any project with initial investment greater than $1000

EMG screens ECMs based on the payback criteria.

Simple Payback Period –The number of years required for the cumulative value of energy or water cost savings less future non-fuel or non-water costs to equal the investment costs of the building energy or water system, without consideration of discount rates. ECMs with a payback period greater than the Expected Useful Life (EUL) of the project are not typically recommended, as the cost of the project will not be recovered during the lifespan of the equipment. These ECMs are recommended for implementation during future system replacement. At that time, replacement may be evaluated based on the premium cost of installing energy efficient equipment.

$$Simple\ Payback = \frac{Initial\ Cost}{Annual\ Savings}$$

1.3.2. Immediate Repairs and Short Term Costs

Immediate repairs are opinions of probable costs that require immediate action as a result of: (1) material existing or potential unsafe conditions, (2) material building or fire code violations, or (3) conditions that, if not addressed, have the potential to result in, or contribute to, critical element or system failure within one year or will most probably result in a significant escalation of its remedial cost.

Short term costs are opinions of probable costs to remedy physical deficiencies, such as deferred maintenance, that may not warrant immediate attention, but that require repairs or replacements, which should be undertaken on a priority basis in addition to routine preventive maintenance. Opinions of probable costs may include costs for testing, exploratory probing, and further analysis should this be deemed warranted by the consultant. The performance of such additional services is beyond the FCA scope of work. Generally, the time frame for such repairs is within one to two years. Short Term costs are included in the Replacement Reserves Report.

1.3.3. Replacement Reserves

Replacement Reserves are for recurring probable expenditures, which are not classified as operation or maintenance expenses. The replacement reserves should be budgeted for in advance on an annual basis. Replacement Reserves are reasonably predictable both in terms of frequency and cost. However, Replacement Reserves may also include components or systems that have an indeterminable life but, nonetheless, have a potential for failure within an estimated time period.

Replacement Reserves exclude systems or components that are estimated to expire after the reserve term and are not considered material to the structural and mechanical integrity of the subject property. Furthermore, systems and components that are not deemed to have a material effect on the use of the Property are also excluded. Costs that are caused by acts of God, accidents, or other occurrences that are typically covered by insurance, rather than reserved for, are also excluded.

Replacement costs are solicited from ownership/property management, EMG's discussions with service companies, manufacturers' representatives, and previous experience in preparing such schedules for other similar facilities. Costs for work performed by the ownership's or property management's maintenance staff are also considered.

EMG's reserve methodology involves identification and quantification of those systems or components requiring capital reserve funds within the assessment period. The assessment period is defined as the effective age plus the reserve term. Additional information concerning system's or component's respective replacement costs (in today's dollars), typical expected useful lives, and remaining useful lives were estimated so that a funding schedule could be prepared. The Replacement Reserves Schedule presupposes that all required remedial work has been performed or that monies for remediation have been budgeted for items defined in the Immediate Repairs Report.

2. PURPOSE AND SCOPE

2.1. PURPOSE

EMG was retained by the client to render an opinion as to the Property's current general physical condition on the day of the site visit.

Based on the observations, interviews and document review outlined below, this report identifies significant deferred maintenance issues, existing deficiencies, and material code violations of record at municipal offices that affect the Property's use. Opinions are rendered as to its structural integrity, building system condition and the Property's overall condition. The report also notes building systems or components that have realized or exceeded their typical expected useful lives.

The physical condition of building components is typically defined as being in one of three categories: Good, Fair, and Poor. For the purposes of this report, the following definitions are used:

Good	=	Satisfactory as-is. Requires only routine maintenance during the assessment period. Repair or replacement may be required due to a system's estimated useful life.
Fair	=	Satisfactory as-is. Repair or replacement is required due to current physical condition and/or estimated remaining useful life.
Poor	=	Immediate repair, replacement, or significant maintenance is required.

2.2. SCOPE

The standard scope of the Facility Condition Assessment includes the following:

- Visit the Property to evaluate the general condition of the building and site improvements, review available construction documents in order to familiarize ourselves with, and be able to comment on, the in-place construction systems, life safety, mechanical, electrical, and plumbing systems, and the general built environment.
- Identify those components that are exhibiting deferred maintenance issues and provide cost estimates for Immediate, Short Term, and Replacement Reserves based on observed conditions, maintenance history and industry standard useful life estimates. This will include the review of documented capital improvements completed within the last five-year period and work currently contracted for, if applicable.
- Provide a full description of the Property with descriptions of in-place systems and commentary on observed conditions.
- Provide a general statement of the subject Property's compliance to National Building Code Accessibility standards. This will not constitute a full survey, but will help identify exposure to issues and the need for further review.
- Perform a limited assessment of accessible areas of the building(s) for the presence of mold, conditions conducive to mold growth, and/or evidence of moisture. EMG will also interview Project personnel regarding the presence of any known or suspected mold, elevated relative humidity, water intrusion, or mildew-like odors. Potentially affected areas will be photographed. Sampling will not be considered in routine assessments.
- List the current utility service providers.

- Review maintenance records and procedures with the in-place maintenance personnel.
- Observe a representative sample of the interior tenant spaces/units, including vacant spaces/units, in order to gain a clear understanding of the property's overall condition. Other areas to be observed include the exterior of the property, the roofs, interior common areas, and mechanical, electrical and elevator equipment rooms.
- Appropriate inquiries of municipal officials regarding the existence of pending unresolved building or fire code violations on file, and a determination of the current zoning category, flood hazard area, and seismic zone for the Property.
- Provide recommendations for additional studies, if required, with related budgetary information.
- Tenant responsibility for maintenance, repair or replacement of finishes, fixtures, or equipment is not addressed by this scope of services.
- Provide an Executive Summary at the beginning of this report with cost estimates as a quick, user-friendly summary of the Property's condition and the assigned costs by category. These costs are tied to the report sections where reference to the issues are clearly defined and expanded.

2.3. PERSONNEL INTERVIEWED

The following personnel from the facility and government agencies were interviewed in the process of conducting the FCA:

Name and Title	Organization	Phone Number
Martha Keenan Capital Improvement Program Manager	City of Burlington	802.540.0701
Sybil Thomas Burlington Code Enforcement Department	Burlington Code Enforcement Office	802.863.0442
Nic Anderson Planning and Zoning Clerk	Burlington Planning Department	802.865.7188
Meghan Sweeney Administrative Assistant	Burlington Fire Department	802.865.5387

The FCA was performed without the assistance of an On site Point of Contact (POC). A pre-survey questionnaire was not completed for this site visit.

2.4. DOCUMENTATION REVIEWED

Prior to the FCA, relevant documentation was requested that could aid in the knowledge of the subject property's physical improvements, extent and type of use, and/or assist in identifying material discrepancies between reported information and observed conditions. The review of submitted documents does not include comment on the accuracy of such documents or their preparation, methodology, or protocol. The Documentation Request Form is provided in Appendix E.

Although Appendix E provides a summary of the documents requested or obtained, the following list provides more specific details about some of the documents that were reviewed or obtained during the site visit.

- No additional documents were reviewed.

2.5. PRE-SURVEY QUESTIONNAIRE

A Pre-Survey Questionnaire was sent to the POC prior to the site visit. The site visit was completed without the assistance of a POC. There was no contact present to complete the questionnaire.

2.6. WEATHER CONDITIONS

8.26.2014: Clear, with temperatures in the 80s (°F) and light winds.

8.29.2014: Clear, with temperatures in the 80s (°F) and light winds.

3. CODE INFORMATION AND ACCESSIBILITY

3.1. CODE INFORMATION, FLOOD ZONE AND SEISMIC ZONE

According to Sybil Thomas of the Burlington Code Enforcement Department, there are no outstanding building code violations on file. The Building Department does not have an annual inspection program. They only inspect new construction, work that requires a building permit, and citizen complaints. A copy of the original Certificates of Occupancy were requested but were not available.

Based on a review of the zoning classification information at the Burlington Planning and Zoning Department, the property is located within zone HD, Medium-density Residential, zoning district and appears to be a conforming use.

According to Meghan Sweeney of the Burlington Fire Department, there are no major outstanding fire code violations on file. The most recent inspection was conducted by the Fire Department was within the current year.

According to information obtained from the appraisal, the property is not located in a flood hazard zone. FEMA flood map 50007C0119D of July 18, 2011 classifies the site to be in Zone X, defined as areas outside the 500-year flood plain with less than 0.2% annual probability of flooding. Annual Probability of Flooding of Less than one percent.

According to the 2010 National Building Code of Canada interpolated seismic hazard values; the property is located in a relatively low risk area for damaging ground motion. Refer to Appendix C for results of the NBCC calculations.

According to the 1997 Uniform Building Code Seismic Zone Map of the United States, the property is located in Seismic Zone 2A, defined as an area of low to moderate probability of damaging ground motion.

According to the Wind Zone Map, published by the Federal Emergency Management Agency (FEMA), the property is located in Zone II and is not located in a Hurricane-Susceptible Region or Special Wind Region.

3.2. ADA ACCESSIBILITY

Generally, Title III of the Americans with Disabilities Act (ADA) prohibits discrimination by entities to access and use of "areas of public accommodations" and "commercial facilities" on the basis of disability. Regardless of its age, these areas and facilities must be maintained and operated to comply with the Americans with Disabilities Act Accessibility Guidelines (ADAAG).

Buildings completed and occupied after January 26, 1992 are required to comply fully with the ADAAG. Existing facilities constructed prior to this date are held to the lesser standard of compliance to the extent allowed by structural feasibility and the financial resources available. As an alternative, a reasonable accommodation pertaining to the deficiency must be made.

During the FCA, a limited visual observation for ADA accessibility compliance was conducted. The scope of the visual observation was limited to those areas set forth in *EMG's Abbreviated Accessibility Checklist* provided in Appendix D of this report. It is understood by the Client that the limited observations described herein does not comprise a full ADA Compliance Survey, and that such a survey is beyond the scope of EMG's undertaking. Only a representative sample of areas was observed and, other than as shown on the Abbreviated Accessibility Checklist, actual measurements were not taken to verify compliance. The scope of the visual observation did not include any areas within tenant spaces.

At the cemetery property, only the first floor of the House/Office offers public accommodation. The general public does not interact with most of the services offered at this facility.

The facility generally appears to be accessible as stated within the defined priorities of Title III of the Americans with Disabilities Act.

A full ADA Compliance Survey may reveal some aspects of the property that are not in compliance.

4. EXISTING BUILDING ASSESSMENT

4.1. TENANT UNIT TYPES

All buildings are occupied by the Lakeview Cemetery administrational and operational use.

4.2. TENANT UNITS OBSERVED

Most of the arena was observed in order to gain a clear understanding of the property's overall condition. Other areas accessed included the exterior of the property and the roofs from ground level.

5. SITE IMPROVEMENTS

5.1. UTILITIES

The following table identifies the utility suppliers and the condition and adequacy of the services.

Site Utilities		
Utility	**Supplier**	**Condition & Adequacy**
Sanitary sewer	City of Burlington	Good
Storm sewer	City of Burlington	Good
Domestic water	City of Burlington	Good
Electric service	Burlington Electric Department Green Mountain Power	Good
Natural gas service	Vermont Gas Systems	Good

Observations/Comments:

- The utilities appear to be adequate for the property. There are no unique, On site utility systems such as emergency electrical generators, septic systems, water or waste water treatment plants, or propane gas tanks.

5.2. PARKING, PAVING, AND SIDEWALKS

The main entrance drive is located along North Avenue on the northeast side of the property. The parking areas drive aisles, and service drives are paved with asphaltic concrete, gravel and packed earth. The entrance driveway aprons are paved with asphaltic concrete.

There are no formally marked parking spaces. Open areas adjacent to buildings are used for parking. The open area adjacent to the building used for administration purposes does have a sign indicating that the area closest to the building is a handicapped-accessible parking area.

There are no sidewalks throughout the cemetery. But there is a short paved area in front of the Chapel that is finished in natural cut stone.

The curbs at the northern and southern ends of the cemetery are constructed of extruded asphalt, granite and concrete. These are placed at the edge of the pavement. The pavement edges throughout the rest of the cemetery do not have curbing. Surface runoff is directed to landscaped areas, which border the paved areas.

Observations/Comments:

- The property does not have a dedicated paving repair and maintenance contractor. On site personnel maintain the paving and flatwork or a contractor is retained when required.
- The asphalt pavement is in fair to poor condition. There are signs of cracking, pot holes, unevenness, variation of materials and surface deterioration. The flatwork throughout the cemetery will require an overlay during the assessment period. The cost of this work is included in the Replacement Reserves Report.
- The drive aisles throughout the facility are a combination of paved and unpaved. It is recommended that the remainder of the unpaved areas be surfaced finished similar to the majority of the property. The cost of this work will be included with the sites flat work.
- The curbs throughout the property are in fair to poor condition. Some curbing is damaged and will require repair during the assessment period. The cost of this work is included in the Replacement Reserves Report.

5.3. DRAINAGE SYSTEMS AND EROSION CONTROL

Storm water from the roofs, landscaped areas, and paved areas flows across the surface into the adjacent public street and at the bottom of the hill along the bike path that runs along Lake Champlain.

Observations/Comments:

- There is no evidence of storm water runoff from adjacent properties. The storm water system appears to provide adequate runoff capacity. There is no evidence of major ponding or erosion.

5.4. TOPOGRAPHY AND LANDSCAPING

The property slopes down from the northeast side of the property to the southwest property line.

The landscaping consists of trees, shrubs, and grasses. Flower beds are located throughout the site.

Landscaped areas are irrigated as needed by above ground devices or hand.

Surrounding areas include Burlington High School to the north, Burlington College to the south, residential and marsh land to the east and Lake Champlain to the west.

Stone masonry retaining walls are located at grade changes behind the Administration House and adjacent to the City Vault.

Observations/Comments:

- The topography and adjacent uses do not appear to present conditions detrimental to the property.
- The landscape materials are in good condition and will require routine maintenance during the assessment period.

- The retaining wall behind the Administration House is in poor condition. A large portion of the wall has collapsed and the earth behind the wall is slowly eroding away, threatening the integrity of the house. The wall will require repair during the assessment period. The cost of this work is included in the Replacement Reserves Report.

5.5. GENERAL SITE IMPROVEMENTS

Property identification is provided by a monument sign in the middle of the main entrance roundabout.

Site lighting is not provided throughout the cemetery. The public street on the north border of the property is equipped with metal light pole standards

Exterior building illumination is provided by light fixtures surface-mounted on the exterior walls.

A perimeter fence is located along the property line of the cemetery. The fence along the north, west and southern borders are constructed of chain link with metal posts. The fence along the eastern border is constructed of iron with iron posts and a set of masonry gate pillars.

Observations/Comments:

- The property and tenant identification signs are in good condition. Routine maintenance will be required during the assessment period.
- The exterior site and building light fixtures are in fair condition. Routine maintenance will be required during the assessment period.
- The chain link site fencing is in fair condition and will require routine maintenance during the assessment period.
- The iron fencing on the eastern border is in poor condition. The fencing is heavily bent in many areas as well as leaning and heaving along its entire length. Numerous repairs and structural additions have been added to remedy the irregularity of the fencing. The repairs were not effective and has caused to the fences to heave an increasing amount more. An inspection was done during the site visit and structural inadequacy was found in the fencing overall.

  The iron fencing comes in segment pieces. Each segment is pushed into the ground with each segment being fastened to the next. One of the segments was pulled out of the ground for inspection. It was found the fence posts do not extend 30 inches below the ground surface. The posts are at an inadequate length or have rusted to a degree they didn't offer enough structural rigidity. The importance of having your fence posts extend into the ground up to 30 inches is because that is below the frost line. If a post is within the frost line and not below, the freezing and thawing of the ground will slowing push and heave the post out of the ground causing the entire fence to lean.

  The additional reinforcements welded to the fence lines have only caused the fences to lean even more. The reinforcements as well were not sunk into the ground up to 30 inches. Because of this the reinforcements installed to help the leaning fence actually gave additional force to continually push the fence out of alignment.

The entire fencing along the eastern border will require replacement with posts that sink into the ground up to 30 inches to avoid any future heaving and leaning. The cost of this work is included in the Replacement Reserves Report.

6. BUILDING ARCHITECTURAL AND STRUCTURAL SYSTEMS

6.1. FOUNDATIONS

Louisa Howard Chapel - Based on structures of similar size, configuration, and geographic location, it is assumed that, the foundations consist of reinforced concrete slabs-on-grade with integral perimeter footings, interior footings, and column pad footings bearing directly on the soil.

House/Office - The house has load-bearing masonry perimeter retaining walls.

House/Break Room - The house has load-bearing masonry perimeter retaining walls.

City Vault - Based on structures of similar size, configuration, and geographic location, it is assumed that, the foundations consist of reinforced concrete slabs-on-grade with integral perimeter footings, interior footings, and column pad footings bearing directly on the soil.

Maintenance Building - The house has load-bearing masonry perimeter retaining walls.

Interment Storage Building - Based on structures of similar size, configuration, and geographic location, it is assumed that, the foundations consist of reinforced concrete slabs-on-grade with integral perimeter footings, interior footings, and column pad footings bearing directly on the soil.

Observations/Comments:

- **Chapel, City Vault, and Interment Storage Building -** The foundations and footings could not be directly observed during the site visit. There is no evidence of movement that would indicate excessive settlement.
- **Houses and Maintenance Building -** The masonry foundation walls are in fair to poor condition. There are localized areas of crumbling stones and deteriorating mortar. To maintain the integrity of the foundation and overall structure the masonry foundations will require repair. The cost of this work is included in the Replacement Reserves Report.
- **House/Office –** The masonry foundation walls show evidence of water and moisture infiltration. Some of the water infiltration has deteriorated the interior walls in the basement. The foundation walls will require water proofing to mediate the water infiltration. The cost of this work is included in the Replacement Reserves Report.

6.2. SUPERSTRUCTURE

Louisa Howard Chapel – The building has structural masonry walls with masonry buttresses on the exterior. The roof structure is constructed of barrel vault wood trusses sheathed with wood planks.

House – Office - The building is a conventional wood-framed structure and has wood stud-framed exterior and interior bearing walls, which support the upper floor and roof diaphragms. The upper floors are constructed with wood joists and are sheathed with wood planks. The floors are topped with wood planks. The roof diaphragms are constructed of wood rafters and are sheathed with wood planks.

House – Break Room - The building is a conventional wood-framed structure and has wood stud-framed exterior and interior bearing walls, which support the upper floor and roof diaphragms. The upper floors are constructed with wood joists and are sheathed with wood planks. The floors are topped with wood planks. The roof diaphragms are constructed of wood rafters and are sheathed with wood planks.

City Vault – The vault is a subterranean post and lentil concrete and masonry structure buried underneath packed earth.

Maintenance Building - The building is a conventional wood-framed structure and has wood stud-framed exterior and interior bearing walls, which support the upper floor and roof diaphragms. The upper floors are constructed with wood joists and are sheathed with wood planks. The floors are topped with wood planks. The roof diaphragms are constructed of wood rafters and are sheathed with wood planks.

Interment Storage Building – The building is a pre-manufactured steel framed structure.

Observations/Comments:

- The superstructures are exposed in some locations, which allows for limited observation. Walls and floors appear to be plumb, level, and stable. There are no significant signs of deflection or movement.
- **House/Office -** There is isolated evidence of wood framing deterioration due to moisture infiltration. Some of the wood elements in the basement will require replacement during the assessment period. The cost of this work is included in the Replacement Reserves Report.

6.3. ROOFING

Louisa Howard Chapel – The primary roof is classified as an open gabled system. The roofs are finished with slate shingles over tar-saturated paper. The roofs have sheet metal flashing elements. The roofs are insulated with fiberglass batts.

The roof drains over the eaves to paved and landscaped areas.

The chimney is a brick structure with metal flashing.

There is no attic

House/Office - The primary roof is classified as an open gabled and valley system. The roofs are finished with slate shingles over tar-saturated paper. The roofs have sheet metal flashing elements. The roofs are insulated with fiberglass batts.

The roofs drain over the eaves to paved and landscaped areas.

The chimney is a brick structure with metal flashing.

The roof structures are exposed. The attic is ventilated by eave vents. Attic access is provided by a scuttle hole in the ceiling.

House/Break Room - The primary roof is classified as an open gabled system. The roofs are finished with asphalt shingles over asphalt -saturated paper. The roofs have sheet metal flashing elements. The roofs are insulated with fiberglass batts.

The roofs drain over the eaves to paved and landscaped areas.

The chimney is a brick structure with metal flashing.

The roof structures are exposed. The attic is ventilated by eave vents. Attic access is provided by a scuttle hole in the ceiling.

City Vault – The city vault is a subterranean structured topped with packed earth and finished in landscaping.

There is no attic.

Maintenance Building - The primary roof is classified as an open gabled system. The roof is finished with slate shingles over tar-saturated paper. The roof has sheet metal flashing elements. The roof is not insulated.

The roofs drain over the eaves to paved and landscaped areas.

The chimney has collapsed and has been removed.

The roof structures are exposed. The attic is ventilated by eave vents. Attic access is provided by a stair way from the first floor.

Interment Storage Building – The primary roof is classified as an open gabled system. The roof is finished with a standing seam metal. The roof has sheet metal flashing elements. The roof is insulated with fiberglass batts.

The roof drains over the eaves to paved and landscaped areas.

There is no attic.

Observations/Comments:

- The property does not have a dedicated roof repair and maintenance contractor. On site personnel maintain the roofs or a contractor is retained when required.
- The roof finishes vary in age. The Chapel is the most recent roof renovation being completed in 1992. The remaining roofs range in age from 20 to 60 years.
- **Chapel and Interment Storage Building -** The roofs are in good to fair condition and will require routine maintenance during the assessment period.
- **Houses and Maintenance Building -** The roofs are in poor condition. Many of the slate shingles are cracked, broken and are hanging off the roof. Based on their estimated Remaining Useful Life (RUL) and current condition, the roofs will require replacement during the assessment period. The cost of this work is included in the Replacement Reserves Report.
- **Chapel and Interment Storage Building -** There is no evidence of active roof leaks.
- **Houses and Maintenance Building -** There is evidence of active roof leaks.
- There is no evidence of roof deck or insulation deterioration. The roof substrate and insulation should be inspected during any future roof repair or replacement work.
- There is no evidence of fire retardant treated plywood (FRT).
- The roof flashings are in fair to poor condition and most will require routine maintenance during the assessment period. There are localized areas at the houses where the flashings will require replacement. The cost of this work is included in the Replacement Reserves Report.
- The roof vents are in fair condition and will require routine maintenance during the assessment period.
- The chimneys at the houses are in poor condition. The brick mortar is deteriorating. The chimney will require repair during the assessment period. The cost of this work is included in the Replacement Reserves Report.
- The Maintenance building's chimney has collapse and it has been removed. The area where the chimney once was is exposed and left open to the environment. To maintain the integrity of the building, the exposed areas must be finished and flashed to seal it from the elements. The cost of this work is included in the Replacement Reserves Report.

6.4. EXTERIOR WALLS

Louisa Howard Chapel – The exterior walls are finished with natural cut stone. The soffits are concealed and are finished in painted wood. Portions of the exterior walls are accented with wood trim and natural cut stone.

House/Office - The exterior walls are finished with painted wood siding and wood trim. The soffits are concealed and are finished in painted wood. Portions of the exterior walls are accented with Victorian detail painted wood trim.

House/Break room - The exterior walls are finished with painted wood siding and wood trim. The soffits are concealed and are finished in painted wood.

City Vault – The exterior walls are finished with natural cut stone.

Maintenance Building - The exterior walls are finished with painted wood siding and wood trim. The soffits are concealed and are finished in painted wood.

Interment Storage Building – The exterior walls are finished with painted wood siding and wood trim. The soffits are exposed.

Building sealants (caulking) are located between dissimilar materials, at joints, and around window and door openings.

Observations/Comments:

- **Houses, Maintenance and Storage Building -** The exterior finishes are in fair to poor condition. There are localized areas of deteriorated wood siding and trim. The wood siding and trim will require replacement during the assessment period. Painting and patching will be required during the assessment period. The cost of this work is included in the Replacement Reserves Report.
- **Chapel –** The chapel shows evidence of deteriorated wood trim. The wood trim will require replacement and repainting during the assessment period. The cost of this work is included in the Replacement Reserves Report.
- **Chapel –** The masonry walls will require pressure washing during the assessment period due to excessive soiling. The cost of this work is included in the Replacement Reserves Report.
- The sealants of all the structures were observed to be inflexible, cracked, and in poor condition and will require replacement during the assessment period. The cost of this work is included in the Replacement Reserves Report.

6.5. EXTERIOR AND INTERIOR STAIRS

The exterior stairs in the cemetery are constructed of reinforced concrete. The handrails and balusters are constructed of metal. The balusters are constructed of metal and have wood handrails.

House/Office – The interior stairs on the main level are constructed of wood and have carpeted risers and treads. The handrails are wood and are mounted to the wall.

The interior stairs to the basement are constructed of unfinished wood risers and treads. The handrails are wood and are mounted to the wall.

House/Break Room – The exterior steps are constructed of cast in place concrete.

Maintenance Building - The interior stairs to the attic are constructed of unfinished wood risers and treads. The handrails are wood and are mounted to the wall.

Observations/Comments:

- The cemetery exterior stairs, balusters, and handrails are in good condition and will require routine maintenance during the assessment period.
- The interior stairs at the other buildings are in fair condition and will require routine maintenance during the assessment period. The carpet on the House/Office stairs will require replacement. The costs for replacement are included in the finish replacements in section 8.1.
- The exterior steps at the House/Break Room are in poor condition. The concrete steps are deteriorated and will require replacement during the assessment period. The cost of this work is included in the Replacement Reserves Report.

6.6. EXTERIOR WINDOWS AND DOORS

Louisa Howard Chapel – The windows are historical gothic arched fixed stained glass with an exterior acrylic protective panel.

The doors are historical solid wood set in wood frames. The doors have cylindrical locksets with knob handle hardware.

House/Office - The windows are wood-framed, single-glazed, double-hung units.

The doors are residential grade painted metal and wood doors set in wooden frames. The doors had the main entrance have cylindrical locksets with lever handle hardware. The other exterior doors have knob handle hardware.

The upper portions of the doors have inset glazing.

House/Break Room - The windows are wood-framed, single-glazed, double-hung units.

The doors are residential grade painted metal set in wood frames. The doors have cylindrical locksets with knob handle hardware.

City Vault – The building does not have any windows.

The door is a historical iron clad unit set in a metal frame. The doors have cylindrical locksets with knob handle hardware.

Maintenance Building - The windows are wood-framed, single-glazed, double-hung units.

The doors are residential grade wood set in wooden frames. The doors have cylindrical locksets with knob handle hardware.

The upper portions of the doors have inset glazing.

There are a total of three overhead doors. There are two doors on the main level of the building and one in the basement of the building. The overhead doors are flush-paneled metal doors and are equipped with mechanical and automatic openers.

Interment Storage Building – The building does not have any windows.

The door is a residential grade wooden door set in wood frames. The door has cylindrical locksets with knob handle hardware.

One overhead door is located on the south end of the building. The overhead door is flush-paneled metal and equipped with mechanical openers.

Observations/Comments:

- **Houses and Maintenance Building –** The windows are in poor condition. The wood frames of many are deteriorated and localized frames are missing their glass insets. The windows no longer rest tightly in their sills thus allowing moisture to enter the interior spaces. The Chapel is on the National Register of Historical Places; however, the other buildings are designated as such. The Cemetery itself is historical thus implying the fact that the buildings may need to be coordinated with historical outlines and regulations. In case of the lather all the windows should be replaced with historic units. The cost of this work is included in the Replacement Reserves Report.
- **Chapel –** The windows in the chapel are historical stained glass and in good to fair condition. The acrylic panels (storm windows) on the exterior of the stained glass are in poor condition. The historical windows will require restoration and the acrylic panels will require replacement during the assessment period. The cost of this work is included in the Replacement Reserves Report.
- **Houses, Maintenance and Storage Building -** The exterior doors and door hardware are in fair to poor condition and will require replacement during the assessment period. The cost of this work is included in the Replacement Reserves Report.
- **Chapel and City Vault -** The exterior doors and door hardware are historical and are in fair condition and will restoration during the assessment period. The cost of this work is included in the Replacement Reserves Report.
- **Maintenance and Storage Building -** The overhead doors are in fair condition and will require replacement during the assessment period. The exterior doors and door hardware are in fair to poor condition and will require replacement during the assessment period. The cost of this work is included in the Replacement Reserves Report.

6.7. PATIO, TERRACE, AND BALCONY

House/Office – The house has three wood porches. The front porch is enclosed and accessed via wood stairs and an assemble ramp. The porch is finished with exterior carpet and wood panels.

The side porch is finished in painted wood planks and has wood steps.

An additional side porch is constructed of pressured treated wood. The porch is accessed via wood steps. The porch and stairs have wood handrails and balusters.

Observations/Comments:

- The front porch is in fair to poor condition. The stairs and ramps are deteriorated in localized areas and will require replacement during the assessment period. The cost of this work is included in the Replacement Reserves Report.
- The walls and floor of the enclosed front porch are in poor condition. There are signs of deterioration, leaning, bowing and defection. The walls and floor will require repair during the assessment period. The cost of this work is included in the Replacement Reserves Report.
- The side porch is in fair condition and will require repainting during the assessment period. The work will be included with the exterior repainting in section 6.4.
- The side porch that is constructed with pressure treated wood is in poor condition. The porch is also unsafe; when walking on the stairs and porch it leans and oscillates in place. Due to its unstable condition the stairs should not be used and replaced immediately. The cost of this work is included in the Replacement Reserves Report.

6.8. COMMON AREAS, ENTRANCES, AND CORRIDORS

See section 8.1 for interior finishes.

7. BUILDING MECHANICAL AND PLUMBING SYSTEMS

7.1. BUILDING HEATING, VENTILATING, AND AIR-CONDITIONING (HVAC)

House/Office: Heating is provided in the common areas by a gas-fired residential furnace. A window air conditioner provides cooling to the office area.

Air distribution is provided to supply air registers by ducts located in the basement. Return air grilles are located in each space. The heating and cooling system are controlled by local thermostats.

The restrooms and kitchen are ventilated by mechanical exhaust fans.

House/Break Room – Heating is provided by a suspended gas unit heater.

Maintenance Building – Heating is provided by a forced air suspended gas furnace. Air distribution is provided to supply air registers exposed in the ceilings. The heating is controlled by a local thermostat.

Chapel – Heating is provided by a closed loop radiant hot water coil system. Hot water is provided by a Rinnai continuous flow, tankless, gas water heater.

Observations/Comments:

- The property does not have a dedicated HVAC repair and maintenance contractor. On site personnel maintain the HVAC equipment or a contractor is retained when required.
- Records of the installation, maintenance, upgrades, and replacement of the HVAC equipment have not been maintained since the property was first occupied.
- The HVAC equipment varies in age. HVAC equipment is reportedly replaced on an "as-needed" basis.
- The House/Office common area HVAC equipment appears to be in fair condition. Based on its estimated Remaining Useful Life (RUL), the gas-fired furnace will require replacement during the assessment period. The cost of this work is included in the Replacement Reserves Report.
- The House/Office window air conditioner appears to be in fair condition. Based on its estimated Remaining Useful Life (RUL), the units will require replacement during the assessment period. The cost of this work is included in the Replacement Reserves Report.
- The mechanical ventilation system and equipment appear to be in fair condition and will require routine maintenance during the assessment period. Equipment or component replacements can be performed as part of the property management's routine maintenance program.
- The out building furnace, unit heater, and tankless gas water heater are in good condition, but will require replacement during the term due to estimated Remaining Useful life. Costs are provided in the Replacement Reserves for replacements.

7.2. BUILDING PLUMBING AND DOMESTIC HOT WATER

House/Office: The plumbing systems include the incoming water service, the cold water piping system, and the sanitary sewer and vent system. The risers and the horizontal distribution piping are copper. The soil and vent systems are PVC and cast iron.

The water meters are located in vaults adjacent to the public streets.

Domestic hot water is supplied by one 40-gallon gas-fired water heater. The water heater is located in the basement.

The common area restrooms have residential-grade fixtures and accessories including water closets and lavatories.

Observations/Comments:

- The plumbing systems appear to be well maintained and in fair condition. The water pressure appears to be adequate. The plumbing systems will require routine maintenance during the assessment period.
- There is no evidence that the property uses polybutylene piping for the domestic water distribution system.
- The pressure and quantity of hot water appear to be adequate.
- The water heater appears to be in fair condition. Based on its estimated Remaining Useful Life (RUL), the water heater will require replacement during the assessment period. The cost of this work is included in the Replacement Reserves Report.
- The accessories and fixtures in the common area restroom are in fair condition and will require routine maintenance during the assessment period.

7.3. BUILDING GAS DISTRIBUTION

House/Office: Gas service is supplied from the gas main on the adjacent public street. The gas meter and regulator are located along the exterior walls of the building. The gas distribution piping within the building is malleable steel (black iron).

Observations/Comments:

- The pressure and quantity of gas appear to be adequate.
- The gas meter and regulator appear to be in good condition and will require routine maintenance during the assessment period.
- Only limited observation of the gas distribution piping can be made due to hidden conditions. The gas piping appears to be in good condition.

7.4. BUILDING ELECTRICAL

House/Office: The electrical supply lines run overhead to pole-mounted transformers, which feed exterior-mounted electrical meters.

The main electrical service size is 100 amps, 120/240 volt single-phase three-wire alternating current (AC). The electrical wiring is copper, installed in non-metallic sheathed cable.

Observations/Comments:

- The On site electrical systems up to the meter are owned and maintained by the respective utility company.
- The electrical service and capacity appear to be adequate for the property's demands.
- The switchgear, circuit breaker panels, and electrical meters appear to be in fair condition and will require routine maintenance during the assessment period.

7.5. BUILDING ELEVATORS AND CONVEYING SYSTEMS

There are no elevators or conveying systems.

7.6. FIRE PROTECTION AND SECURITY SYSTEMS

House/Office: The fire protection system consists of fire extinguishers and smoke detectors. Fire extinguishers are located throughout the common areas. Battery-operated smoke detectors are located throughout the common areas. The nearest fire hydrants are located along the public streets bordering the property.

Observations/Comments:

- Smoke detector replacement is considered to be routine maintenance.

8. INTERIOR SPACES

8.1. INTERIOR FINISHES

The following table generally describes the interior finishes in tenant units:

Louisa Howard Chapel			
Common Area	**Floors**	**Walls**	**Ceilings**
Chapel	Carpet	Painted plaster and painted wood wainscots	Painted wood paneling
Backroom	Painted wood	Painted plaster and painted wood wainscots	Painted wood paneling
House/Office			
Common Area	**Floors**	**Walls**	**Ceilings**
Office area	Carpet	Painted drywall	Painted drywall
Kitchen	Sheet vinyl	Painted drywall	Painted drywall
Bathroom	Sheet vinyl	Painted drywall	Painted drywall
Conference Room	Carpet	Painted drywall	Painted drywall
Front Enclosed Porch	Carpet and wood panel sheets	Painted wood siding	Stained wood planks
Upstairs bedrooms	Finished wood	Wallpaper	Painted plaster
City Vault			
Common Area	**Floors**	**Walls**	**Ceilings**
Inner Chamber	Unfinished concrete	Unfinished concrete	Unfinished concrete
House/Break room			
Common Area	**Floors**	**Walls**	**Ceilings**
Main room	Sheet vinyl	Painted wood planks	Painted plywood
Restroom	Sheet vinyl	Painted plaster	Painted plaster
Maintenance Building			
Common Area	**Floors**	**Walls**	**Ceilings**
Main room	Plywood	Wood planks	Plywood

Louisa Howard Chapel			
Common Area	**Floors**	**Walls**	**Ceilings**
Attic	Plywood	Wood planks	Unfinished ceiling
Interment Storage Building			
Common Area	**Floors**	**Walls**	**Ceilings**
Main room	Unfinished concrete	Unfinished wall	Unfinished ceiling

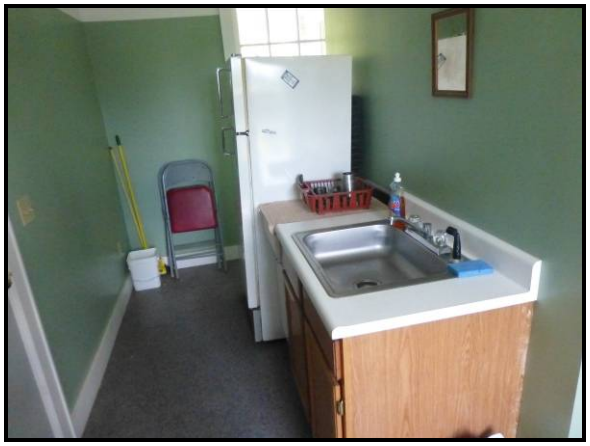
The interior doors of the chapel and houses are painted wood set in wood frames. The interior doors have cylindrical locksets with knob handle hardware.

Observations/Comments:

- The interior finishes are in fair condition. Based on its estimated Remaining Useful Life (RUL), the common area flooring finishes will require replacement/refinished during the assessment period. The cost of this work is included in the Replacement Reserves Report. Interior painting and wall finish replacement will also be required during the assessment period. The cost of this work is also included in the Replacement Reserves Report.
- The interior doors and door hardware are in fair condition and will require routine maintenance during the assessment period.

8.2. KITCHEN EQUIPMENT

The house/office is equipped with a kitchenette area adjacent to the office. The kitchenette consists of a refrigerator and base cabinet with sink.



Observations/Comments:

- The refrigerator and cabinet are in fair condition. The cost of replacements are insignificant and should be considered routine maintenance.

8.3. HVAC

Not applicable. See Section 7.1. for descriptions and comments regarding the HVAC systems.

8.4. PLUMBING

Not applicable. See Section 7 for descriptions and comments regarding the building plumbing systems.

8.5. ELECTRICAL

Not applicable. See Section 7 for descriptions and comments regarding the building electrical systems.

9. OTHER STRUCTURES

The cemetery has a gazebo that is constructed of wood. The structure is natural timber logs topped with a cedar plank roof. The interior of the gazebo has a wood bench integrated into the structure of the gazebo. The entire structure rests on a packed earth.

There are two fountains in the cemetery that are no longer functioning. The base of the fountains is constructed of masonry and the fountains are cast iron.

Observations/Comments:

- The gazebo is in good condition and will require routine maintenance during the assessment period.
- There are two fountains in the cemetery that are no longer functioning. The masonry bases are crumbling and deteriorated. The cast iron fountains have been disassembled and are lying in the maintenance area. The fountains will require repair and refurbishing to restore them to their original state. The cost of this work is included in the Replacement Reserves Report.

10. ENERGY AUDIT - PURPOSE AND SCOPE

The purpose of this Energy Audit is to provide the City of Burlington with a baseline of energy usage, the relative energy efficiency of the facility, and specific recommendations for Energy Conservation Measures. Information obtained from these analyses may be used to support a future application to an Energy Conservation Program, Federal and Utility grants towards energy conservation, as well as support performance contracting.

The approach taken in this energy audit began with a benchmarking analysis of the building and associated building systems by:

1) Developing an energy baseline that becomes the basis for the energy savings plan and cost savings plan.

2) Gathering utility data for each building and benchmarking against models by square footage, by facility use and type of structure.

The energy audit consisted of an on site visual assessment to determine current conditions, itemize the energy consuming equipment (i.e. Boilers, split system cooling, DHW equipment); review lighting systems both exterior and interior; and review efficiency of all such equipment. The study also included interviews and consultation with operational and maintenance personnel.

11. FACILITY OVERVIEW AND EXISTING CONDITIONS

11.1. BUILDING OCCUPANCY

Typically, 6 - 50 people occupy the facility during normal operating hours. After hours occupants include approximately 0 people.

Facility Occupancy (avg. people/day)	6
Standard Operating Hours/day	8
Maintenance/ Staff Hours/day	8

Summary of Facility Operating Hours

	Hours Open to the Public	Hours Open to Employees
Monday-Friday	7am-3:30pm	7am-3:30pm
Saturday	Closed	Closed
Sunday	Closed	Closed

11.2. BUILDING ENVELOPE

The building envelope consists of the exterior shell, made up of the walls, windows, roof, and floor. The envelope provides building integrity and separates the exterior from the interior conditioned space.

Foundation:

Louisa Howard Chapel - Based on structures of similar size, configuration, and geographic location, it is assumed that, the foundations consist of reinforced concrete slabs-on-grade with integral perimeter footings, interior footings, and column pad footings bearing directly on the soil.

House/Office - The house has load-bearing masonry perimeter retaining walls.

House/Break room - The house has load-bearing masonry perimeter retaining walls.

City Vault - Based on structures of similar size, configuration, and geographic location, it is assumed that, the foundations consist of reinforced concrete slabs-on-grade with integral perimeter footings, interior footings, and column pad footings bearing directly on the soil.

Maintenance Building - The house has load-bearing masonry perimeter retaining walls.

Interment Storage Building - Based on structures of similar size, configuration, and geographic location, it is assumed that, the foundations consist of reinforced concrete slabs-on-grade with integral perimeter footings, interior footings, and column pad footings bearing directly on the soil.

Structure:

Louisa Howard Chapel – The building has structural masonry walls with masonry buttress on the exterior of the building. The roof structure is constructed of barrel vault wooden trusses sheathed in wooden planks.

House – Office - The building is a conventional wood-framed structure and has wood stud-framed exterior and interior bearing walls, which support the upper floor and roof diaphragms. The upper floors are constructed with wood joists and are sheathed with wood planks. The floors are topped with wood planks. The roof diaphragms are constructed of wood rafters and are sheathed with wood planks.

House – Break Room - The building is a conventional wood-framed structure and has wood stud-framed exterior and interior bearing walls, which support the upper floor and roof diaphragms. The upper floors are constructed with wood joists and are sheathed with wood planks. The floors are topped with wood planks. The roof diaphragms are constructed of wood rafters and are sheathed with wood planks.

City Vault – The vault is a subterranean post and lentil concrete and masonry structure buried underneath packed earth.

Maintenance Building - The building is a conventional wood-framed structure and has wood stud-framed exterior and interior bearing walls, which support the upper floor and roof diaphragms. The upper floors are constructed with wood joists and are sheathed with wood planks. The floors are topped with wood planks. The roof diaphragms are constructed of wood rafters and are sheathed with wood planks.

Interment Storage Building – The building is a pre-manufactured steel framed structure.

Exterior Walls:

Louisa Howard Chapel – The exterior walls are finished with natural cut stone. The soffits are concealed and are finished in painted wood. Portions of the exterior walls are accented with wood trim and natural cut stone.

House/Office - The exterior walls are finished with painted wood siding and wood trim. The soffits are concealed and are finished in painted wood. Portions of the exterior walls are accented with Victorian detail painted wood trim.

House/Break Room - The exterior walls are finished with painted wood siding and wood trim. The soffits are concealed and are finished in painted wood. Portions of the exterior walls are accented with painted wood trim.

City Vault – The exterior walls are finished with natural cut stone.

Maintenance Building - The exterior walls are finished with painted wood siding and wood trim. The soffits are concealed and are finished in painted wood. Portions of the exterior walls are accented with wood trim.

Interment Storage Building – The exterior walls are finished with painted wood siding and wood trim. The soffits are exposed.

Building sealants (caulking) are located between dissimilar materials, at joints, and around window and door openings.

Roof:

Louisa Howard Chapel – The primary roof is classified as an open gabled roof. The roofs are finished with slate shingles over tar-saturated paper. The roofs have sheet metal flashing elements. The roofs are insulated with fiberglass batts.

The roofs drain over the eaves to paved and landscaped areas.

The chimney is a brick structure with metal flashing.

There is no attic

House/Office - The primary roof is classified as an open gabled and valley roof. The roofs are finished with slate shingles over tar-saturated paper. The roofs have sheet metal flashing elements. The roofs are insulated with fiberglass batts.

The roofs drain over the eaves to paved and landscaped areas.

The chimney is a brick structure with metal flashing.

The roof structures are exposed. The attic is ventilated by eave vents. Attic access is provided by a scuttle hole in the ceiling.

House/Break Room - The primary roof is classified as an open gabled roof. The roofs are finished with asphalt shingles over asphalt -saturated paper. The roofs have sheet metal flashing elements. The roofs are insulated with fiberglass batts.

The roofs drain over the eaves to paved and landscaped areas.

The chimney is a brick structure with metal flashing.

The roof structures are exposed. The attic is ventilated by eave vents. Attic access is provided by a scuttle hole in the ceiling.

City Vault – The city vault is a subterranean structured topped with packed earth and finished in landscaping.

There is no attic.

Maintenance Building - The primary roof is classified as an open gabled roof. The roofs are finished with slate shingles over tar-saturated paper. The roofs have sheet metal flashing elements. The roof is not insulated.

The roofs drain over the eaves to paved and landscaped areas.

The chimney has collapsed and has been removed.

The roof structures are exposed. The attic is ventilated by eave vents. Attic access is provided by a stair way from the first floor.

Windows/Doors:

Louisa Howard Chapel – The windows are historical gothic arched fixed stained glass windows with an exterior acrylic protective panel.

The doors are historical solid wooden doors set in wooden frames. The doors have cylindrical locksets with knob handle hardware.

House/Office - The windows are wood-framed, single-glazed, double-hung units.

The doors are residential grade painted metal and wood doors set in wooden frames. The doors had the main entrance have cylindrical locksets with lever handle hardware. The other exterior doors have knob handle hardware.

The upper portions of the doors have inset glazing.

House/Break Room - The windows are wood-framed, single-glazed, double-hung units.

The doors are residential grade painted metal set in wooden frames. The doors have cylindrical locksets with knob handle hardware.

City Vault – The building does not have any windows.

The door is a historical iron clad doors set in a metal frame. The doors have cylindrical locksets with knob handle hardware.

Maintenance Building - The windows are wood-framed, single-glazed, double-hung units.

The doors are residential grade wooden doors set in wooden frames. The doors have cylindrical locksets with knob handle hardware.

The upper portions of the doors have inset glazing.

There are a total of 3 overhead doors. There are 2 doors on the main level of the building and 1 in the basement of the building. The overhead doors are flush-paneled metal doors and are equipped with mechanical and automatic openers.

Interment Storage Building – The building does not have any windows.

The door is a residential grade wooden door set in wooden frames. The door has cylindrical locksets with knob handle hardware.

A total of 1 overhead door is located on the south end of the building. The overhead door is a flush-paneled metal door and is equipped with mechanical openers.

11.3. BUILDING HEATING, VENTILATION AND AIR-CONDITIONING (HVAC)

Heating:

The facility is heated by a central Natural gas-fired forced air furnaces. The furnace has a rated input capacity of 150,000 BTUH and is located in the basement.

Cooling:

The facility doesn't have a central cooling system. The office area is cooled by a window air conditioner.

Air Distribution:

Heating is provided in the common areas by a gas-fired furnace. Air distribution is provided to supply air registers by ducts located in the basement. Return air grilles are located in each space. The heating and cooling system is controlled by a local thermostat.

Space Ventilation:

The bathroom and kitchen are ventilated by mechanical exhaust fans.

11.4. BUILDING LIGHTING

Space Lighting:

Light fixtures throughout the building are residential grade and a combination of florescent and incandescent lighting.

Lighting Controls:

The facility does not have any automatic lighting controls on internal light fixtures**.**

Exterior Lighting:

Property-owned wood light poles provide site lighting. The poles are spaced along the drive aisles throughout the property.

Surface-mounted light fixtures on the exterior walls provide the exterior building with site illumination.

Exterior lighting remains on from dusk to dawn.

11.5. BUILDING ELEVATORS AND CONVEYING SYSTEMS

Not applicable. There are no elevators or conveying systems.

11.6. BUILDING DOMESTIC WATER

The water meters are located in vaults adjacent to the public streets.

One gas-fired water heater supplies the domestic hot water. The water heater has a rated input capacity of 40,000 BTUH and is located in the basement.

The common area restrooms have residential-grade fixtures and accessories, including water closets and lavatories. The toilets consist of water closets. The typical flush volume was 3.5 GPF. The lavatories are equipped with aerators rated at 2.5 GPM. The lavatories are operated by manual.

11.7. BUILDING NATURAL GAS AND ELECTRICITY

Natural Gas:

The building is connected to the natural gas utility (Vermont Gas). The gas main on the adjacent public street supplies the natural gas service. The gas meter and regulator is located along the exterior walls of the building. The gas distribution piping within the building is malleable steel (black iron).

The facility is individually metered for natural gas. There are a total of one natural gas meters at the property.

Electricity:

The main electrical service size is 100 amps, 120/240-volt, single-phase, three-wire alternating current (AC). The electrical wiring is copper, installed in non-metallic sheathed cable.

The facility is individually metered for electricity. There are a total of one electric meters at the property.

12. ENERGY CONSERVATION MEASURES

EMG has identified 7 Energy Conservation Measures (ECMs) for this property.

List of Recommended Energy Conservation Measures For Lakeview Cemetery Office

ECM #	Description of ECM	Projected Initial Investment	Estimated Annual Energy Savings		Estimated Annual Water Savings	Estimated Cost Savings	Estimated Annual O&M Savings	Total Estimated Annual Cost Savings	Simple Payback	S.I.R.	Life Cycle Savings	Expected Useful Life (EUL)
			Natural Gas	Electricity								
		$	Therms	kWh	kgal	$	$	$	Years		$	Years
No/Low Cost Recommendations												
1	Install Low Flow Shower Heads Details: House/Office	$75	0	1,392	4	$303	$0	$303	0.25	34.70	$2,512	10.00
2	Install Low Flow Faucet Aerators Details: House/Office	$63	20	0	4	$59	$0	$59	1.06	8.04	$440	10.00
3	Replace Existing Refrigerator(s) With Energy Star Certified Refrigerator(s) Details: House/Office	$611	0	821	0	$162	$0	$162	3.78	3.16	$1,317	15.00
4	Install Low Flow Restroom Flush Tank Toilets	$649	0	0	5	$33	$0	$33	19.76	0.75	-$160	20.00
Totals for No/Low Cost Items		**$1,397**	**20**	**2,213**	**14**	**$557**	**$0**	**$557**	**2.51**			

List of Recommended Energy Conservation Measures For Lakeview Cemetery Office

ECM #	Description of ECM	Projected Initial Investment	Estimated Annual Energy Savings		Estimated Annual Water Savings	Estimated Cost Savings	Estimated Annual O&M Savings	Total Estimated Annual Cost Savings	Simple Payback	S.I.R.	Life Cycle Savings	Expected Useful Life (EUL)
			Natural Gas	Electricity								
		$	Therms	kWh	kgal	$	$	$	Years		$	Years
Capital Cost Recommendations												
1	Replace Inefficient Furnace and Air Conditioning System Details: House/Office Basement Furnace	$1,814	523	0	0	$777	$39	$815	2.22	6.69	$10,318	20.00
2	Replace Existing Residential Style Water Heater With New Energy Efficient Units Details: House/Office	$1,161	-69	2,025	0	$296	$0	$296	3.92	3.51	$2,912	18.00
3	Replace External Windows Details: House/Office	$6,600	896	0	0	$1,330	$13	$1,343	4.91	3.99	$19,727	30.00
Total For Capital Cost		**$9,575**	**1,350**	**2,025**	**0**	**$2,403**	**$52**	**$2,455**	**3.90**			
	Interactive Savings Discount @ 10%		-137	-424	-1	-$296	-$5	-$301				
	Total Contingency Expenses @ 15%	$1,646										
Total for Improvements		**$12,618**	**1,234**	**3,814**	**12**	**$2,663**	**$47**	**$2,710**	**4.66**			

13. UTILITY ANALYSIS

Establishing the energy baseline begins with an analysis of the utility cost and consumption of the building. Utilizing the historical energy data and local weather information, we evaluate the existing utility consumption and assign it to the various end-uses throughout the buildings. The Historical Data Analysis breaks down utilities by consumption, cost and annual profile.

This data is analyzed, using standard engineering assumptions and practices. The analysis serves the following functions:

- Allows our engineers to benchmark the energy and water consumption of the facilities against consumption of efficient buildings of similar construction, use and occupancy.
- Generates the historical and current unit costs for energy and water
- Provides an indication of how well changes in energy consumption correlate to changes in weather.
- Reveals potential opportunities for energy consumption and/or cost reduction. For example, the analysis may indicate that there is excessive, simultaneous heating and cooling, which may mean that there is an opportunity to improve the control of the heating and cooling systems.

By performing this analysis and leveraging our experience, our engineers prioritize buildings and pinpoint systems for additional investigation during the site visit, thereby maximizing the benefit of their time spent On site and minimizing time and effort by the customer's personnel.

Based upon the utility information provided about the Lakeview Cemetery, the following energy rates are utilized in determining existing and proposed energy costs.

Utility Rates used for Cost Analysis

Electricity (Blended Rate)	Natural Gas	Water / Sewer
$0.20/kWh	$1.48 /therm	$6.58/kGal

The data analyzed provides the following information: 1) breakdown of utilities by consumption, 2) cost and annual profile, 3) baseline consumption in terms of energy/utility at the facility, 4) the Energy Use Index, or Btu/sq ft, and cost/sq ft. For multiple water meters, the utility data is combined to illustrate annual consumption for each utility type.

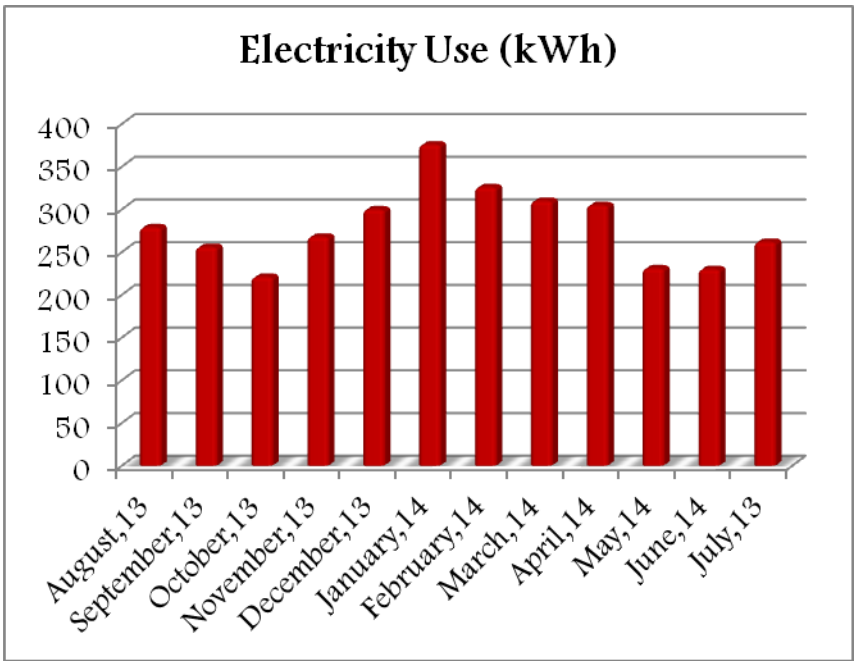
13.1. ELECTRICITY

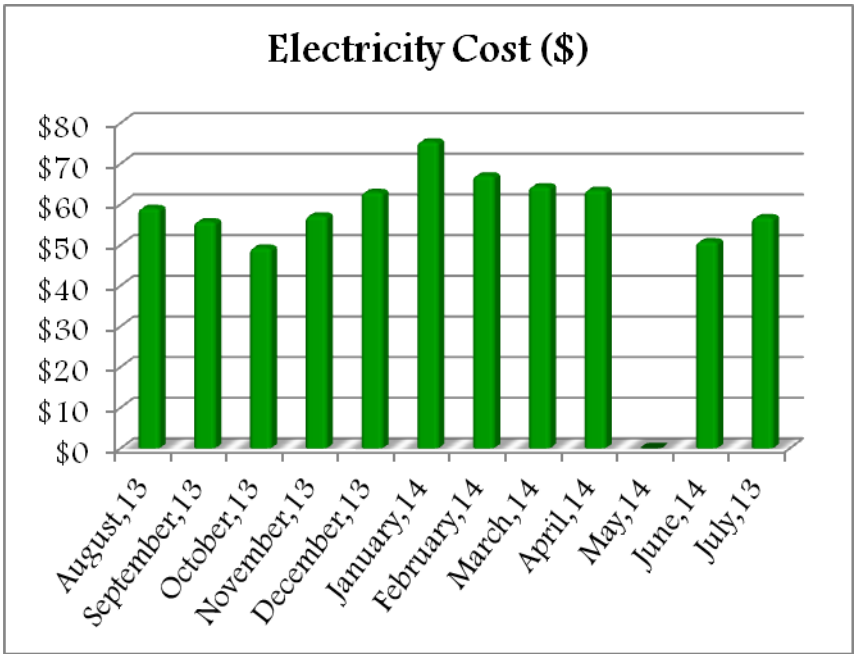
Burlington Electric satisfies the electricity requirements of the facility.

Electricity Consumption and Cost Data

Based on the 2013 electric usage and costs, the average price paid during the year was $0.20 per kWh. The total annual electricity consumption for the 12-month period analyzed is 3,364 kWh for a total cost of $662

Billing Month	Consumption (kWh)	Unit Cost/kWh	Total Cost
August,13	279	$0.21	$59
September,13	256	$0.22	$56
October,13	221	$0.22	$49
November,13	268	$0.21	$57
December,13	300	$0.21	$63
January,14	376	$0.20	$75
February,14	326	$0.21	$67
March,14	310	$0.21	$64
April,14	305	$0.21	$64
May,14	231		51.03.
June,14	230	$0.22	$51
July,13	262	$0.22	$57
Total	**3,364**	**$0.20**	**$662**


Electricity Use (kWh)
400
350
300
250
200
150
100
50
0
August,13
September,13
October,13
November,13
December,13
January,14
February,14
March,14
April,14
May,14
June,14
July,13


Electricity Cost ($)
$80
$70
$60
$50
$40
$30
$20
$10
$0
August,13
September,13
October,13
November,13
December,13
January,14
February,14
March,14
April,14
May,14
June,14
July,13

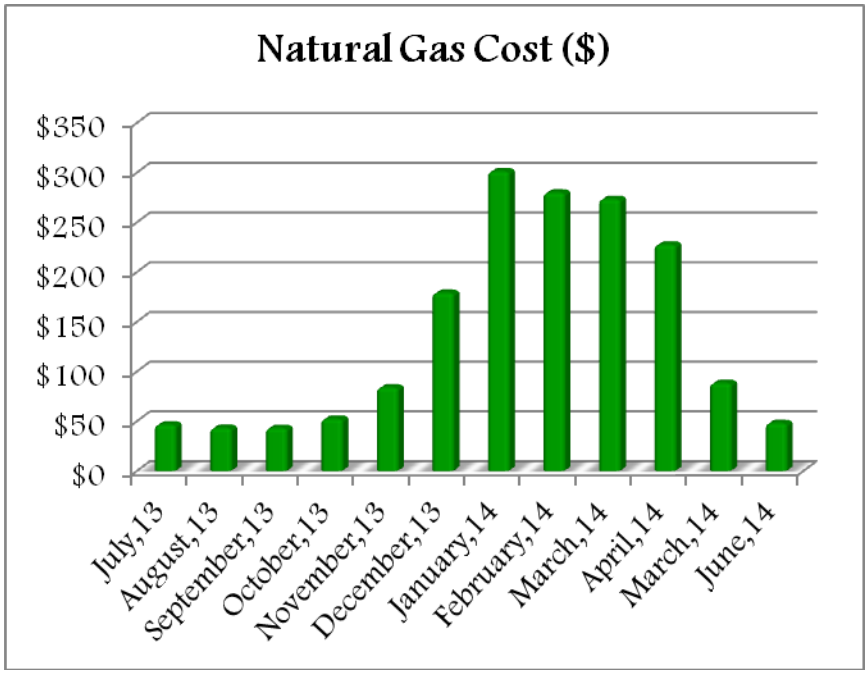
13.2. NATURAL GAS

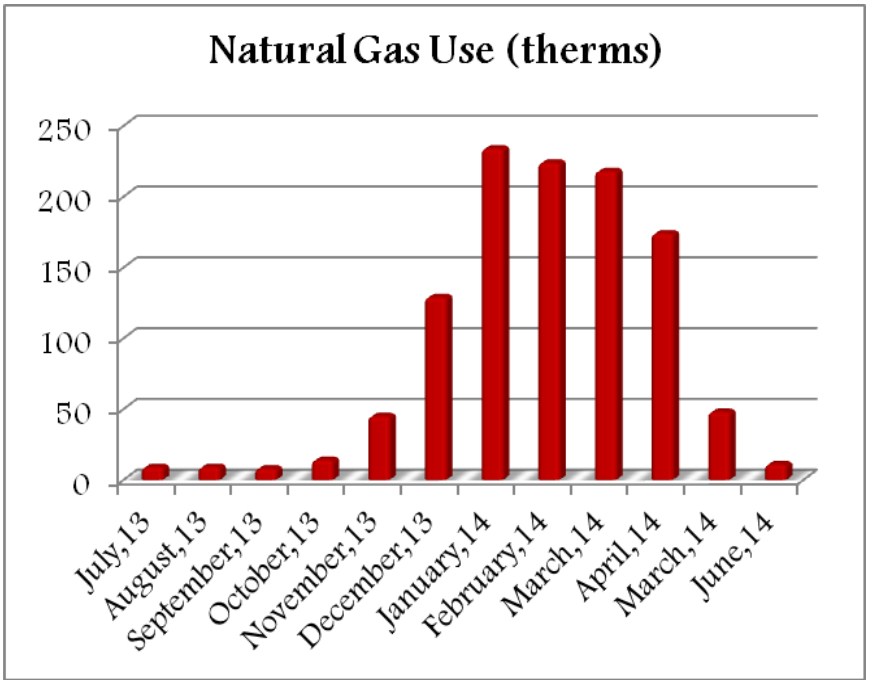
Vermont Gas satisfies the natural gas requirements of the facility are satisfied by.

Natural Gas Consumption and Cost Data

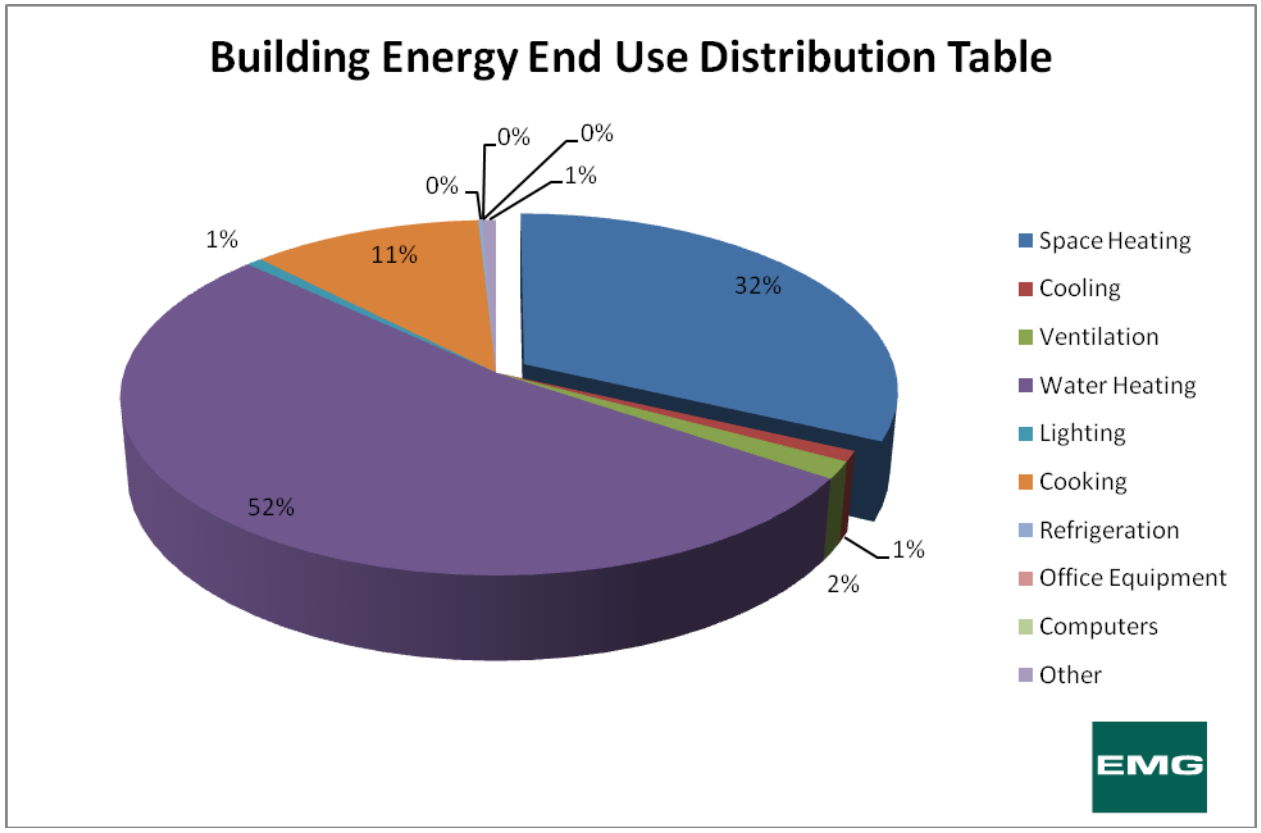
Based on the 2013 natural gas usage and costs, the average price paid during the year was $1.48 per therm. The total annual natural gas consumption for the 12-month period analyzed is 1,123 kWh for a total cost of $1,667.

Billing Month	Consumption (Therms)	Unit Cost/Therm	Total Cost
July,13	9	$5.18	$47
August,13	9	$4.81	$43
September,13	8	$5.39	$43
October,13	14	$3.74	$52
November,13	45	$1.86	$84
December,13	129	$1.39	$179
January,14	234	$1.29	$301
February,14	224	$1.25	$280
March,14	218	$1.25	$273
April,14	174	$1.31	$228
March,14	48	$1.84	$88
June,14	11	$4.37	$48
Total	**1,123**	**$1.48**	**$1,667**


Natural Gas Cost ($)
$350
$300
$250
$200
$150
$100
$50
$0
July,13
August,13
September,13
October,13
November,13
December,13
January,14
February,14
March,14
April,14
March,14
June,14


Natural Gas Use (therms)
250
200
150
100
50
0
July,13
August,13
September,13
October,13
November,13
December,13
January,14
February,14
March,14
April,14
March,14
June,14

14. END USE ENERGY DISTRIBUTION



15. APPENDICES

APPENDIX A: Photographic Record

APPENDIX B: Site Plan

APPENDIX C: Supporting Documentation

APPENDIX D: EMG Abbreviated Accessibility Checklist

APPENDIX E: Pre Survey Questionnaires and Documentation Request Checklist

APPENDIX F: Terminology

APPENDIX G: Glossary of Terms-Energy Audits

APPENDIX H: Energy Conservation Measures

APPENDIX A:
PHOTOGRAPHIC RECORD

EMG
ENGINEERING PEACE OF MIND

EMG PHOTOGRAPHIC RECORD

Project No.: 110266.14R-014.294 **Project Name: Lakeview Cemetery Building**

Photo #1:	East elevation of cemetery building

Photo #2:	South elevation of cemetery building

Photo #3:	North elevation of cemetery building

Photo #4:	West elevation of cemetery building

Photo #5:	Cemetery building roof

Photo #6:	Cemetery building chimney

EMG
ENGINEERING PEACE OF MIND

EMG PHOTOGRAPHIC RECORD

Project No.: 110266.14R-014.294 **Project Name: Lakeview Cemetery Building**

Photo #7:	Cemetery building roof detail

Photo #8:	Cemetery building siding detail

Photo #9:	Cemetery building ADA ramp

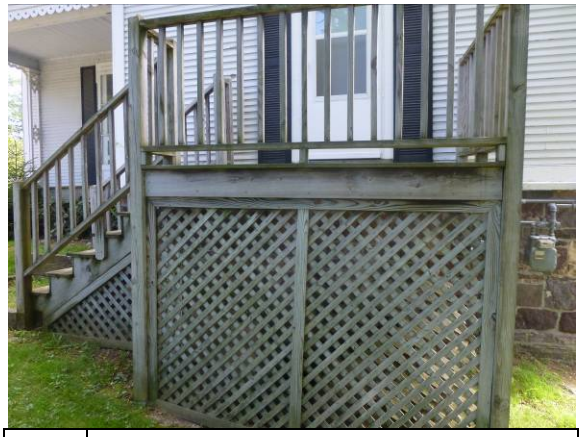


Photo #10:	Cemetery building stairs

Photo #11:	Cemetery building window

Photo #12:	Cemetery building foundation

EMG
ENGINEERING PEACE OF MIND

EMG PHOTOGRAPHIC RECORD

Project No.: 110266.14R-014.294 **Project Name: Lakeview Cemetery Building**

Photo #13:	Cemetery building porch

Photo #14:	Main entrance

Photo #15:	Enclosed porch

Photo #16:	Entrance door

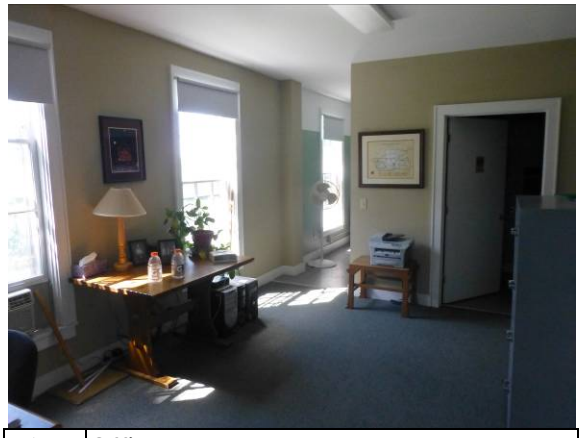


Photo #17:	Office area

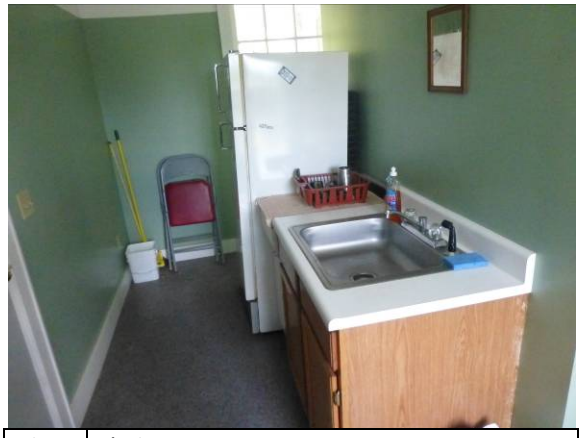


Photo #18:	Kitchenette

EMG
ENGINEERING PEACE OF MIND

EMG PHOTOGRAPHIC RECORD

Project No.: 110266.14R-014.294 **Project Name: Lakeview Cemetery Building**

Photo #19:	Conference

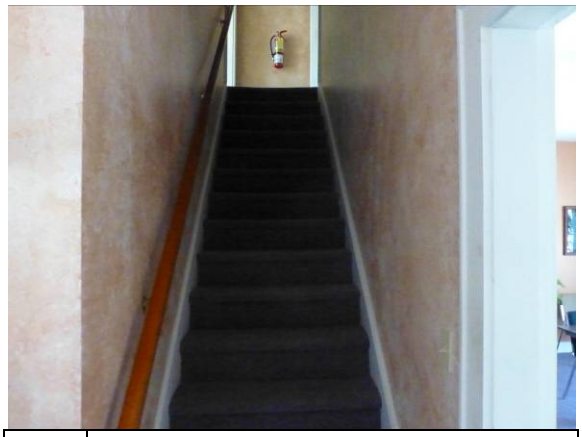


Photo #20:	Stairs

Photo #21:	Second floor storage area

Photo #22:	Second floor storage area

Photo #23:	Basement

Photo #24:	Porch ceiling detail

EMG
ENGINEERING PEACE OF MIND

EMG PHOTOGRAPHIC RECORD

Project No.: 110266.14R-014.294 **Project Name: Lakeview Cemetery Building**

Photo #25:	Porch flooring detail

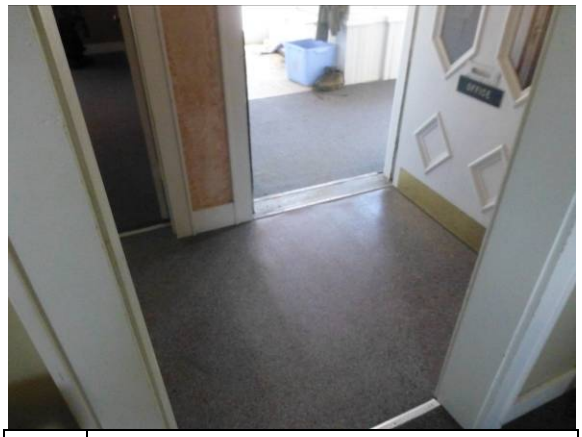


Photo #26:	Entrance flooring detail

Photo #27:	Carpet detail

Photo #28:	Attic storage area

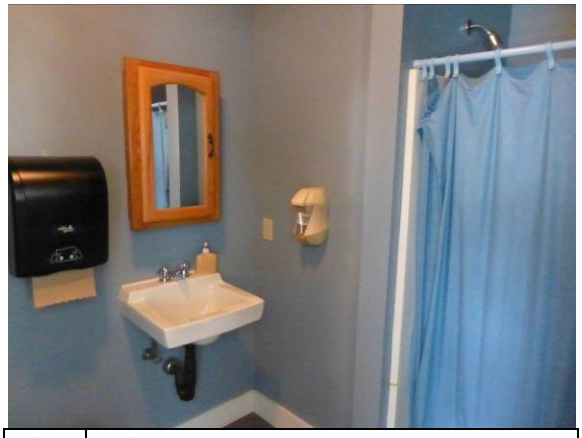


Photo #29:	Bathroom

Photo #30:	Floor structure

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ENGINEERING PEACE OF MIND

EMG PHOTOGRAPHIC RECORD

Project No.: 110266.14R-014.294 **Project Name: Lakeview Cemetery Building**

Photo #31:	Wall detail

Photo #32:	Basement area

Photo #33:	Chapel east elevation

Photo #34:	Chapel south east elevation

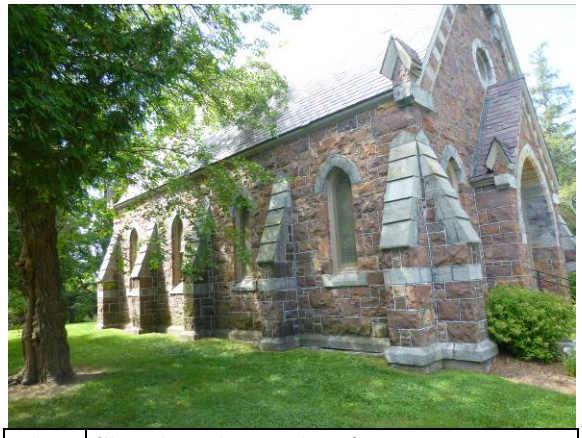

Photo #35:	Chapel north east elevation

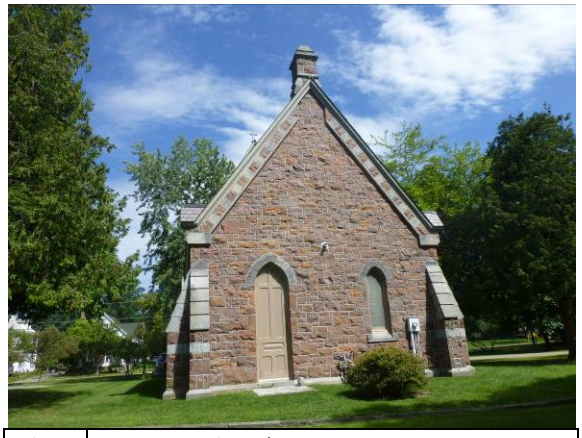

Photo #36:	West east elevation

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EMG PHOTOGRAPHIC RECORD

Project No.: 110266.14R-014.294 **Project Name: Lakeview Cemetery Building**

Photo #37:	Chapel paving detail

Photo #38:	Chapel stair detail

Photo #39:	Chapel slate roof

Photo #40:	Chapel chimney detail

Photo #41:	Chapel foundation detail

Photo #42:	Chapel window

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ENGINEERING PEACE OF MIND

EMG PHOTOGRAPHIC RECORD

Project No.: 110266.14R-014.294 **Project Name: Lakeview Cemetery Building**

Photo #43:	Maintenance building exterior elevation

Photo #44:	Maintenance building exterior elevation

Photo #45:	Maintenance building exterior elevation

Photo #46:	Maintenance building roof

Photo #47:	Maintenance building interior

Photo #48:	Maintenance building overhead doors

EMG
ENGINEERING PEACE OF MIND

EMG PHOTOGRAPHIC RECORD

Project No.: 110266.14R-014.294 **Project Name: Lakeview Cemetery Building**

Photo #49:	Maintenance building stairs

Photo #50:	Maintenance building door

Photo #51:	Maintenance building interior attic space

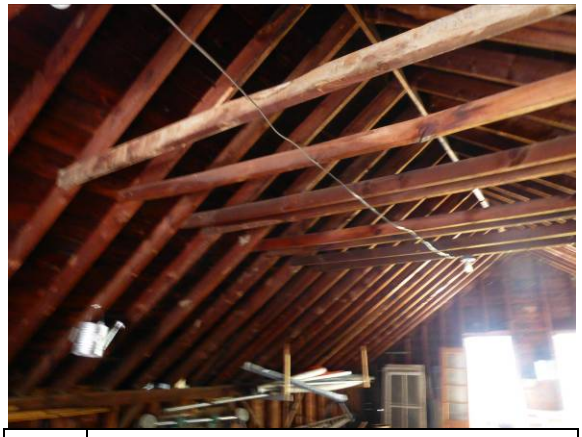

Photo #52:	Maintenance building structure

Photo #53:	Maintenance building window

Photo #54:	Storage building

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ENGINEERING PEACE OF MIND

EMG PHOTOGRAPHIC RECORD

Project No.: 110266.14R-014.294 **Project Name: Lakeview Cemetery Building**

Photo #55:	Break house exterior elevation

Photo #56:	Break house exterior elevation

Photo #57:	Break house exterior elevation

Photo #58:	Break house exterior stairs

Photo #59:	Break house roof

Photo #60:	Break house window

EMG
ENGINEERING PEACE OF MIND

EMG PHOTOGRAPHIC RECORD

Project No.: 110266.14R-014.294 **Project Name: Lakeview Cemetery Building**

Photo #61:	Break house chimney

Photo #62:	Break house interior

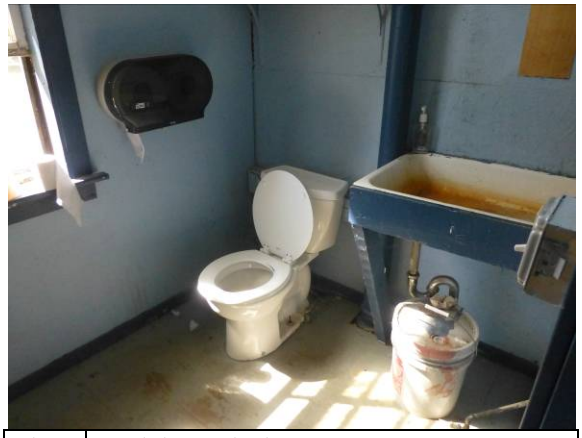

Photo #63:	Break house bathroom

Photo #64:	Break house window detail

Photo #65:	Break house roof structure

Photo #66:	Main signage

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ENGINEERING PEACE OF MIND

EMG PHOTOGRAPHIC RECORD

Project No.: 110266.14R-014.294 **Project Name: Lakeview Cemetery Building**

Photo #67:	Main driver aisle

Photo #68:	Drive aisle

Photo #69:	Drive aisle

Photo #70:	Site overview

Photo #71:	Curbing detail

Photo #72:	Cemetery fence

EMG
ENGINEERING PEACE OF MIND

EMG PHOTOGRAPHIC RECORD

Project No.: 110266.14R-014.294 **Project Name: Lakeview Cemetery Building**

Photo #73:	Site stairs

Photo #74:	Vault

Photo #75:	Vault doors

Photo #76:	Retaining wall

Photo #77:	Incoming electrical service

Photo #78:	Incoming gas service

EMG
ENGINEERING PEACE OF MIND

EMG PHOTOGRAPHIC RECORD

Project No.: 110266.14R-014.294 **Project Name: Lakeview Cemetery Building**

Photo #79:	Residential gas-fired furnace located in the House/Office basement

Photo #80:	Thermostat

Photo #81:	Window air conditioner

Photo #82:	Window air conditioner

Photo #83:	Domestic gas fired water heater

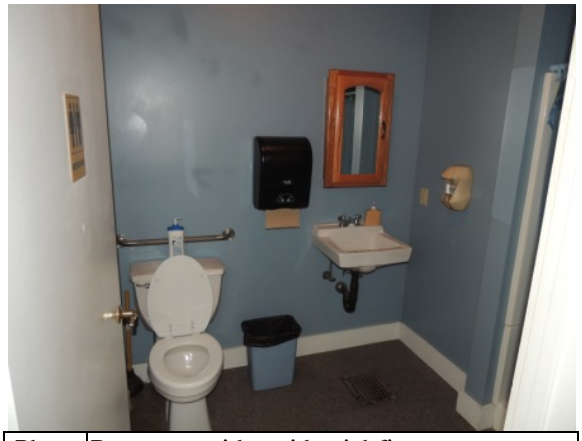


Photo #84:	Restroom with residential fixtures

EMG
ENGINEERING PEACE OF MIND

EMG PHOTOGRAPHIC RECORD

Project No.: 110266.14R-014.294 **Project Name: Lakeview Cemetery Building**

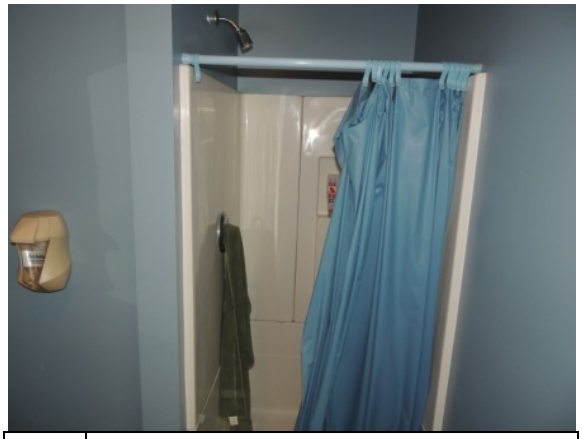


Photo #85:	Shower

Photo #86:	Security system

Photo #87:	Floor register

Photo #88:	Security system

Photo #89:	Exterior lighting

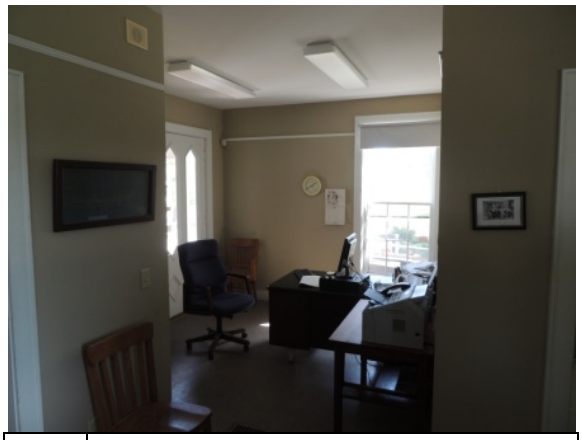


Photo #90:	Florescent lighting typical throughout

EMG
ENGINEERING PEACE OF MIND

EMG PHOTOGRAPHIC RECORD

Project No.: 110266.14R-014.294 **Project Name: Lakeview Cemetery Building**

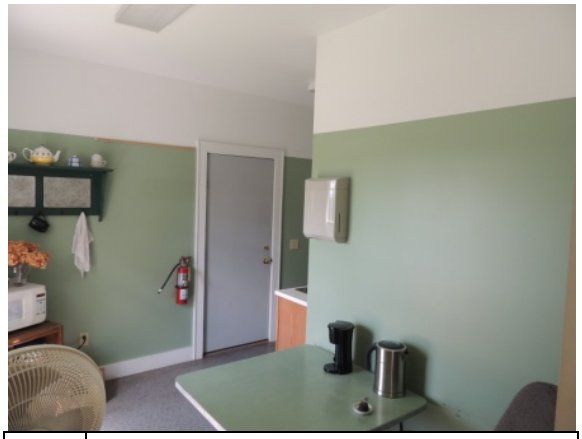


Photo #91:	Fire extinguisher

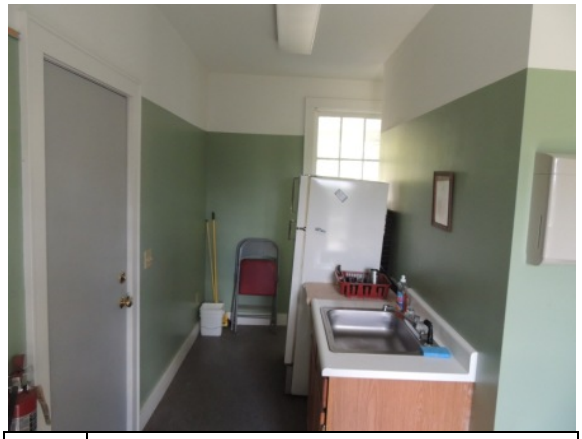


Photo #92:	Break room kitchen

Photo #93:	Chapel hot water central heating system

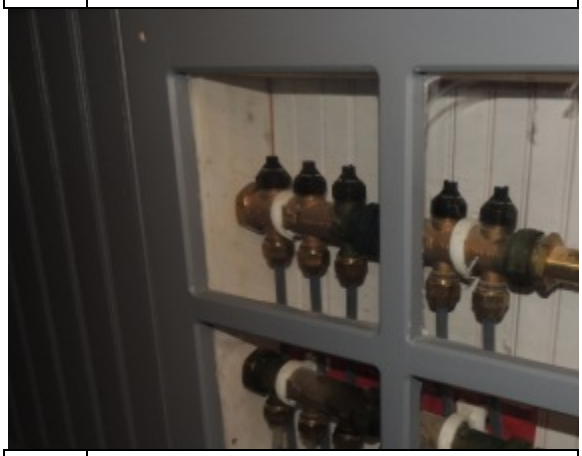


Photo #94:	Heating system hot water manifold

Photo #95:	House/Break Room unit heater

Photo #96:	Maintenance Building furnace

APPENDIX B:
SITE PLAN

Site Plan

EMG		**Project Number:** 110266.14R-014.294
N		**Project Name:** Lakeview Cemetery Building
	Not drawn to scale. The north arrow indicator is an approximation of 0° North.	**On-Site Date:** August 29, 2014

APPENDIX C:
SUPPORTING DOCUMENTATION

RECORD OF COMMUNICATION

Date:	August 25, 2014
Recorded by:	Cheyenne Irby
Project Name:	Lakeview Cemetery
Project Number:	110266.14R-014.294

Communication with:	Sybil Thomas
of:	Burlington Code Enforcement Office
Phone:	802.863.0442

Communication via:

	Telephone Conversation
	Discussions During Site Inspection
✓	Office Visitation/Meeting

Re:

Outstanding violations, Certificate of Occupancy, and other record information.

Summary of Communication:

See Section 2.5 for information regarding the Point of Contact

RECORD OF COMMUNICATION

Date:	August 25, 2014
Recorded by:	Cheyenne Irby
Project Name:	Lakeview Cemetery
Project Number:	110266.14R-014.294

Communication with:	Nic Anderson
of:	Burlington Planning and Zoning Department
Phone:	

Communication via:

	Telephone Conversation
	Discussions During Site Inspection
✓	Office Visitation/Meeting

Re:

Outstanding violations, Certificate of Occupancy, and other record information.

Summary of Communication:

See Section 2.3 and 3.1 for information regarding the Point of Contact

RECORD OF COMMUNICATION

Date:	August 25, 2014
Recorded by:	Cheyenne Irby
Project Name:	Lakeview Cemetery
Project Number:	110266.14R-014.294

Communication with:	Meghan Sweeney
of:	Burlington Fire Department
Phone:	802.865.5387

Communication via:

	Telephone Conversation
	Discussions During Site Inspection
✓	Office Visitation/Meeting

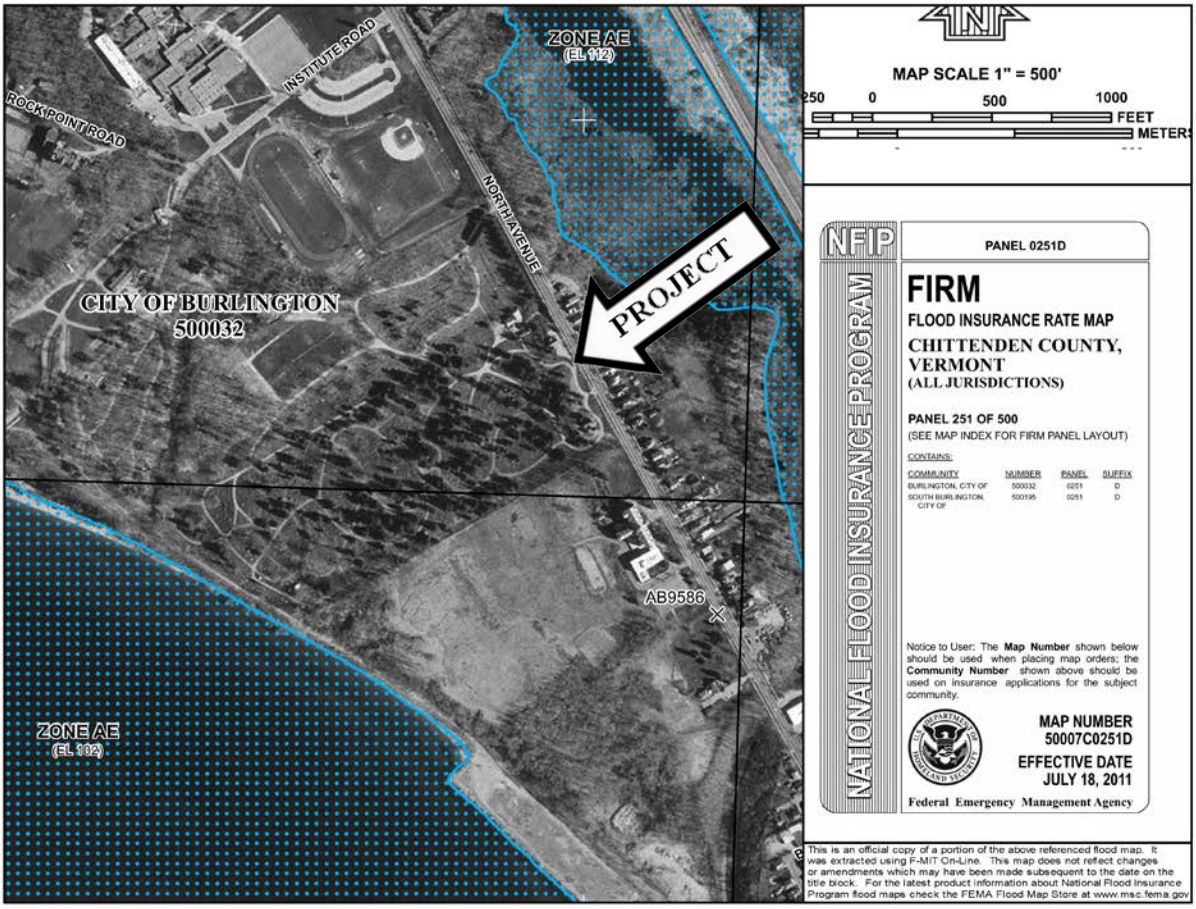
Re:

Outstanding fire code violations and inspection history

Summary of Communication:

See Section 2.3 and 3.1 for information regarding the Point of Contact

Flood Map



EMG	**Source:** FEMA Map Number: 50007C0251D Dated: July 18, 2011	**Project Number:** **110266.14R-014.294**
N		**Project Name:** **Lakeview Cemetery Building**
	Not drawn to scale. The north arrow indicator is an approximation of 0° North.	**On-Site Date:** **August 29, 2014**

APPENDIX D:
EMG ABBREVIATED ACCESSIBILITY CHECKLIST

Property Name: Lakeview Cemetery
Date: 8.26.2014 and 8.29.2014
Project Number: 110266.14R-014.294

EMG Abbreviated Accessibility Checklist					
	Building History	**Yes**	**No**	**N/A**	**Comments**
1.	Has the management previously completed an ADA review?		✓		
2.	Have any ADA improvements been made to the property?	✓			
3.	Does a Barrier Removal Plan exist for the property?		✓		
4.	Has the Barrier Removal Plan been reviewed/approved by an arms-length third party such as an engineering firm, architectural firm, building department, other agencies, etc.?		✓		
5.	Has building ownership or management received any ADA related complaints that have not been resolved?			✓	
6.	Is any litigation pending related to ADA issues?			✓	
	Parking	**Yes**	**No**	**N/A**	**Comments**
1.	Are there sufficient parking spaces with respect to the total number of reported spaces?			✓	
2.	Are there sufficient van-accessible parking spaces available (96" wide/ 96" aisle for van)?			✓	
3.	Are accessible spaces marked with the International Symbol of Accessibility? Are there signs reading "Van Accessible" at van spaces?	✓			
4.	Is there at least one accessible route provided within the boundary of the site from public transportation stops, accessible parking spaces, passenger loading zones, if provided, and public streets and sidewalks?	✓			
5.	Do curbs on the accessible route have depressed, ramped curb cuts at drives, paths, and drop-offs?	✓			
6.	Does signage exist directing you to accessible parking and an accessible building entrance?			✓	

EMG Abbreviated Accessibility Checklist					
	Ramps	**Yes**	**No**	**N/A**	**Comments**
1.	If there is a ramp from parking to an accessible building entrance, does it meet slope requirements? (1:12)	✓			
2.	Are ramps longer than 6 ft complete with railings on both sides?	✓			
3.	Is the width between railings at least 36 inches?	✓			
4.	Is there a level landing for every 30 ft horizontal length of ramp, at the top and at the bottom of ramps and switchbacks?	✓			
	Entrances/Exits	**Yes**	**No**	**N/A**	**Comments**
1.	Is the main accessible entrance doorway at least 32 inches wide?	✓			
2.	If the main entrance is inaccessible, are there alternate accessible entrances?	✓			
3.	Can the alternate accessible entrance be used independently?	✓			
4.	Is the door hardware easy to operate (lever/push type hardware, no twisting required, and not higher than 48 inches above the floor)?	✓			
5.	Are main entry doors other than revolving door available?	✓			
6.	If there are two main doors in series, is the minimum space between the doors 48 inches plus the width of any door swinging into the space?	✓			
	Paths of Travel	**Yes**	**No**	**N/A**	**Comments**
1.	Is the main path of travel free of obstruction and wide enough for a wheelchair (at least 36 inches wide)?	✓			
2.	Does a visual scan of the main path reveal any obstacles (phones, fountains, etc.) that protrude more than 4 inches into walkways or corridors?	✓			
3.	Are floor surfaces firm, stable, and slip resistant (carpets wheelchair friendly)?	✓			
4.	Is at least one wheelchair-accessible public telephone available?	✓			
5.	Are wheelchair-accessible facilities (toilet rooms, exits, etc.) identified with signage?	✓			

EMG Abbreviated Accessibility Checklist					
	Paths of Travel	**Yes**	**No**	**N/A**	**Comments**
6.	Is there a path of travel that does not require the use of stairs?	✓			
7.	If audible fire alarms are present, are visual alarms (strobe light alarms) also installed in all common areas?	✓			
	Elevators	**Yes**	**No**	**N/A**	**Comments**
1.	Do the call buttons have visual signals to indicate when a call is registered and answered?			✓	
2.	Are there visual and audible signals inside cars indicating floor change?			✓	
3.	Are there standard raised and Braille marking on both jambs of each host way entrance?			✓	
4.	Do elevator doors have a reopening device that will stop and reopen a car door if an object or a person obstructs the door?			✓	
5.	Do elevator lobbies have visual and audible indicators of car arrival?			✓	
6.	Does the elevator interior provide sufficient wheelchair turning area (51″ x 68″)?			✓	
7.	Are elevator controls low enough to be reached from a wheelchair (48 inches front approach/54 inches side approach)?			✓	
8.	Are elevator control buttons designated by Braille and by raised standard alphabet characters (mounted to the left of the button)?			✓	
9.	If a two-way emergency communication system is provided within the elevator cab, is it usable without voice communication?			✓	
	Restrooms	**Yes**	**No**	**N/A**	**Comments**
1.	Are common area public restrooms located on an accessible route?	✓			
2.	Are pull handles push/pull or lever type?	✓			
3.	Are there audible and visual fire alarm devices in the toilet rooms?	✓			
4.	Are corridor access doors wheelchair-accessible (at least 32 inches wide)?	✓			
5.	Are public restrooms large enough to accommodate a wheelchair turnaround (60″ turning diameter)?	✓			

EMG Abbreviated Accessibility Checklist					
	Restrooms	**Yes**	**No**	**N/A**	**Comments**
6.	In unisex toilet rooms, are there safety alarms with pull cords?			✓	
7.	Are stall doors wheelchair accessible (at least 32″ wide)?			✓	
8.	Are grab bars provided in toilet stalls?	✓			
9.	Are sinks provided with clearance for a wheelchair to roll under (29″ clearance)?	✓			
10.	Are sink handles operable with one hand without grasping, pinching or twisting?	✓			
11.	Are exposed pipes under sink sufficiently insulated against contact?	✓			
12.	Are soap dispensers, towel, etc. reachable (48″ from floor for frontal approach, 54″ for side approach)?	✓			
13.	Is the base of the mirror no more than 40″ from the floor?	✓			

APPENDIX E:
PRE SURVEY QUESTIONNAIRES AND DOCUMENTATION REQUEST CHECKLIST

THE PRE-SURVEY QUESTIONNAIRE WAS NOT RETURNED TO EMG

REQUEST FOR DOCUMENTATION

On the day of the site visit, provide EMG's Field Observer the documents listed below. Signify which documents will be copied, available for review at the site, not available, or not applicable by placing a check mark in the appropriate columns. Also provide this completed checklist.

		Copies Provided	Reviewed at Site	Not Available	Not Applicable
1	**Maintenance Contractor List.** Provide the company name, phone number, and contact person of all maintenance contractors who serve the property, such as mechanical contractors, roof contractors, fire sprinkler and fire alarm testing contractors, and elevator contractors.	✓			
2	**Construction Documents (Blueprints).** Provide all available construction documents for the original construction of the building or for any tenant improvement work or other recent construction work.				
3	**Site plan.** Provide a site plan, preferably 8 1/2" X 11", which depicts the arrangement of buildings, roads, parking stalls, and other site features.				
4	**Certificates of Occupancy** and original **Building Permits**.				
5	**Tenant List.** For commercial properties, provide a tenant list, which identifies the names of each tenant, vacant tenant units, the floor area of each tenant space, and the gross and net leasable area of the building(s).				
6	**Apartment Unit Summary.** For apartment properties, provide a summary of the apartment unit types and quantities, including the floor area of each apartment unit as measured in square feet.				
7	**Hotel & Nursing Home Room Summary.** For hotel or nursing home properties, provide a summary of the room types and room type quantities, including the floor area of each room type.				
8	**Occupancy Percentage.** Provide the current occupancy percentage and typical turnover rate records (for commercial and apartment properties).				
9	**Inspection Documents and Certificates.** Fire, building, and health department inspection reports and elevator inspection certificates.				
10	**Warranties.** Roof and HVAC warranties, or any other similar relevant documents.				
11	**Utility Companies.** The names of the local utility companies which serve the property, including the water, sewer, electric, gas, and phone companies.				
12	**Capital Improvement Summary.** A summary of recent (over the last 5 years) capital improvement work which describes the scope of the work and the cost of the improvements.				
13	**Proposed Improvements.** Pending contracts or proposals for future improvements.				
14	**Historical Costs.** Costs for repairs, improvements, and replacements.				
15	**Records.** Records of system & material ages (roof, MEP, paving, finishes, furnishings).				
16	**Brochures or Marketing Information.**				
17	**Appraisal**, either current or previously prepared.				
18	**Previous reports** pertaining to the physical condition of property.				
19	**ADA survey** and status of improvements implemented.				
20	**Litigation.** Current / pending litigation related to property condition.				

APPENDIX F:
TERMINOLOGY

The following are definitions of terms utilized in this report.

TERMINOLOGY	
Actual Knowledge	Information or observations known first hand by EMG.
ADA	The Americans with Disabilities Act
Ancillary Structures	Structures that are not the primary improvements of the Property but which may have been constructed to provide support uses.
Appropriate Inquiry	A requests for information from appropriate entity conducted by a Freedom of Information Letter (FOIL), verbal request, or by written request made either by fax, electronic mail, or mail. A good-faith one time effort conducted to obtain the information in light of the time constraints to deliver the FCA.
ASTM	American Society for Testing and Materials
Base Building	That portion of the building (common area) and its systems that are not typically subject to improvements to suit tenant requirements.
Baseline	A minimum scope level of observation, inquiry, research, documentation review, and cost estimating for conducting a Facility Condition Assessment as normally conducted by EMG.
BOMA	Building Owners & Managers Association
Building	Referring to the primary building or buildings on the Property, which are within the scope of the FCA as defined under Section 2.
Building Codes	A compilation of rules adopted by the municipal, county and/or state governments having jurisdiction over the Property that govern the property's design &/or construction of buildings.
Building Department Records	Information concerning the Property's compliance with applicable Building, Fire and Zoning Codes that is readily available for use by EMG within the time frame required for production of the Facility Condition Assessment.
Building Systems	Interacting or interdependent components that comprise a building such as structural, roofing, side wall, plumbing, HVAC, water, sanitary sewer and electrical systems.
BUR	Built Up Roof
Client	The entity identified on the cover of this document as the Client.
Commercial Real Estate	Real property used for industrial, retail, office, agricultural, other commercial, medical, or educational purposes, and property used for residential purposes that has more than four (4) residential dwelling units.
Commercial Real Estate Transaction	The transfer of either a mortgage, lease, or deed; the re-financing of a commercial property by an existing mortgagee; or the transferring of an equity interest in commercial property.
Component	A piece of equipment or element in its entirety that is part of a system.
Consultant	The entity or individual that prepares the Facility Condition Assessment and that is responsible for the observance of, and reporting on the physical condition of Commercial Property.
Dangerous or Adverse Conditions	Situations which may pose a threat or possible injury to the Project Manager, or those situations which may require the use of special protective clothing, safety equipment, access equipment, or any precautionary measures.
Deferred Maintenance	Deficiencies that result from postponed maintenance, or repairs that have been put off until a later time and that require repair or replacement to an acceptable condition relative to the age of the system or property.
Dismantle	To take apart; disassemble; tear down any component, device or piece of equipment that is bolted, screwed, secured, or fastened by other means.

TERMINOLOGY	
DWV	Drainage Waste Ventilation
EIFS	Exterior Insulation and Finish System
EMS	Energy Management System
Engineering	Analysis or design work requiring extensive formal education, preparation and experience in the use of mathematics, chemistry, physics, and the engineering sciences as provided by a Professional Engineer licensed to practice engineering by any state of the 50 states.
Expected Useful Life (EUL)	The average amount of time in years that a system or component is estimated to function when installed new.
FEMA	Federal Emergency Management Agency
FFHA	Federal Fair Housing Act
Fire Department Records	Information generated or acquired by the Fire Department having jurisdiction over the Property, and that is readily available to EMG within the time frame required for production of the FCA.
FIRM	Flood Insurance Rate Maps
FM	Factory Mutual
FOIA	U.S. Freedom of Information Act (5 USC 552 et seq.)
FOIL	Freedom of Information Letter
FRT	Fire Retardant Treated
Guide	A series of options or instructions that do not recommend a specific course of action.
His	Referring to either a male or female Project Manager, or individuals interviewed by the Project Manager.
HVAC	Heating, Ventilating & Air-conditioning
IAQ	Indoor Air Quality
Immediate Repairs	Physical deficiencies that require immediate action as a result of: (i) existing or potentially material unsafe conditions, (ii) significant negative conditions impacting tenancy/marketability, (iii) material building code violations, or (iv) poor or deteriorated condition of critical element or system, or (v) a condition that if left "as is", with an extensive delay in addressing same, has the potential to result in or contribute to critical element or system failure within one (1) year.
Interviews	Interrogatory with those knowledgeable about the Property.
Material	Having significant importance or great consequence to the asset's intended use or physical condition.
MEP	Mechanical, Electrical, and Plumbing
NFPA	National Fire Protection Association
Observations	The results of the Project Manager's Walk-through Survey.
Observe	The act of conducting a visual, unaided survey of items, systems or conditions that are readily accessible and easily visible on a given day as a result of the Project Manager's walk-through.
Obvious	That which is plain or evident; a condition that is readily accessible and can be easily seen by the Project Manager as a result of his Walk-through without the removal of materials, moving of chattel, or the aid of any instrument, device, or equipment.
Owner	The entity holding the deed to the Property that is the subject of the FCA.
FCA	Facility Condition Assessment, the Purpose and Scope of which is defined in Section 2. of this report.

TERMINOLOGY	
Physical Deficiency	Patent, conspicuous defects, or significant deferred maintenance of the Property's material systems, components, or equipment as observed during the Project Manager's Walk-through Survey. Material systems, components, or equipment that are approaching, have realized, or have exceeded their typical Expected Useful Life (EUL); or, that have exceeded their useful life result of abuse, excessive wear and tear, exposure to the elements, or lack of proper or adequate maintenance. This definition specifically excludes deficiencies that may be remedied with routine maintenance, miscellaneous repairs, normal operating maintenance, and conditions that do not present a material deficiency to the Property.
PML	Probable Maximum Loss
Practically Reviewable	Information that is practically reviewable means that the information is provided by the source in a manner and form that, upon examination, yields information relevant to the property without the need for extraordinary analysis of irrelevant data.
Practice	A definitive procedure for performing one or more specific operations or functions that does not produce a test result.
Primary Improvements	The site and building improvements that are of fundamental importance with respect to the Property.
Project Manager	The individual Professional Engineer or Registered Architect having a general, well rounded knowledge of all pertinent site and building systems and components that conducts the on site visit and walk-through observation.
Property	The site and building improvements, which are specifically within the scope of the FCA to be prepared in accordance with the agreement between the Client and EMG.
Readily Accessible	Those areas of the Property that are promptly made available for observation by the Project Manager without the removal of materials or chattel, or the aid of any instrument, device, or equipment at the time of the Walk-through Survey.
Reasonably Ascertainable	Information that is publicly available, provided to EMG's offices from either its source or an information research/retrieval concern, practically reviewable, and available at a nominal cost for either retrieval, reproduction or forwarding.
Recreational Facilities	Spas, saunas, steam baths, swimming pools, tennis courts, playground equipment, and other exercise, entertainment, or athletic facilities.
Remaining Useful Life (RUL)	The consultant's professional opinion of the number of years before a system or component will require replacement or reconditioning. The estimate is based upon observation, available maintenance records, and accepted EUL's for similar items or systems. Inclement weather, exposure to the elements, demand on the system, quality of installation, extent of use, and the degree and quality of preventive maintenance exercised are all factors that could impact the RUL of a system or component. As a result, a system or component may have an effective age greater or less than its actual age. The RUL may be greater or less than its Expected Useful Life (EUL) less actual age.
Replacement Costs	Costs to replace the system or component "in kind" based on Invoices or Bid Documents provided by the current owner or the client, construction costs developed by construction resources such as *Means* and *Dodge*, EMG's experience with past costs for similar properties, or the current owner's historical incurred costs.
Replacement Reserves	Major recurring probable expenditures, which are neither commonly classified as an operation or maintenance expense. Replacement Reserves are reasonably predictable both in terms of frequency and cost. However, they may also include components or systems that have an indeterminable life but nonetheless have a potential liability for failure within the reserve term.
RTU	Rooftop Unit

TERMINOLOGY	
RUL	Remaining Useful Life (See definition)
Short Term Repair Costs	Opinions of Costs to remedy Physical Deficiencies, such as deferred maintenance, that may not warrant immediate attention, but requiring repairs or replacements that should be undertaken on a priority basis, taking precedence over routine preventive maintenance work within a zero to one year time frame. Included are such Physical Deficiencies resulting from improper design, faulty installation and/or substandard quality of original system or materials. Components or systems that have realized or exceeded their Expected Useful Life (EUL) that may require replacement to be implemented within zero to one-year time frame are also included.
Shut-Down	Equipment or systems that are not operating at the time of the Project Manager's Walk-through Survey. Equipment or systems may be considered shutdown if it is not in operation as a result of seasonal temperatures.
Significant	Important, material, and/or serious.
Site Visit	The visit to the property by EMG's Project Manager including walk-through visual observations of the Property, interviews of available project personnel and tenants (if appropriate), review of available documents and interviews of available municipal personnel at municipal offices, all in accordance with the agreement for the Facility Condition Assessment.
Specialty Consultants	Practitioners in the fields of engineering, architecture; or, building system mechanics, specialized service personnel or other specialized individuals that have experience in the maintenance and repair of a particular building component, equipment, or system that have acquired detailed, specialized knowledge in the design, assessment, operation, repair, or installation of the particular component, equipment, or system.
Structural Component	A component of the building, which supports non-variable forces or weights (dead loads) and variable forces or weights (live loads).
Suggested Remedy	A preliminary opinion as to a course of action to remedy or repair a physical deficiency. There may be alternate methods that may be more commensurate with the Client's requirements. Further investigation might make other schemes more appropriate or the suggested remedy unworkable. The suggested remedy may be to conduct further research or testing, or to employee Specialty Consultants to gain a better understanding of the cause, extent of a deficiency (whether observed or highly probable), and the appropriate remedy.
Survey	Observations as the result of a walk-through scan or reconnaissance to obtain information by EMG of the Property's readily accessible and easily visible components or systems.
System	A combination of interacting or interdependent components assembled to carry out one or more functions.
Technically Exhaustive	The use of measurements, instruments, testing, calculations, exploratory probing or discover, and/or other means to discover and/or troubleshoot Physical Deficiencies, develop scientific or Engineering findings, conclusions, and recommendations. Such efforts are not part of this report unless specifically called for under Section 2.2.
Term	Reserve Term: The number of years that Replacement Reserves are projected for as specified in the Replacement Reserves Cost Estimate.
Timely Access	Entry provided to the Project Manager at the time of his site visit.
UST	Underground Storage Tank

TERMINOLOGY	
Walk-through Survey	The Project Manager's site visit of the Property consisting of his visual reconnaissance and scan of readily accessible and easily visible components and systems. This definition connotes that such a survey should not be considered in depth, and is to be conducted without the aid of special protective clothing, exploratory probing, removal of materials, testing, or the use of special equipment such as ladders, scaffolding, binoculars, moisture meters, air flow meters, or metering/testing equipment or devices of any kind. It is literally the Project Manager's walk of the Property and observations.

APPENDIX G:
GLOSSARY OF TERMS-ENERGY AUDITS

Glossary of Terms and Acronyms-Energy Audit

ECM – Energy Conservation Measures are projects recommended to reduce energy consumption. These can be No/Low cost items implemented as part of routine maintenance or Capital Cost items to be implemented as a capital improvement project.

Initial Investment – The estimated cost of implementing an ECM project. Estimates typically are based on R.S. Means Construction cost data and Industry Standards.

Annual Energy Savings – The reduction in energy consumption attributable to the implementation of a particular ECM. These savings values do not include the interactive effects of other ECMs.

Cost Savings – The expected reduction in utility or energy costs achieved through the corresponding reduction in energy consumption by implementation of an ECM.

Simple Payback Period –The number of years required for the cumulative value of energy or water cost savings less future non-fuel or non-water costs to equal the investment costs of the building energy or water system, without consideration of discount rates.

EUL – Expected Useful Life is the estimated lifespan of a typical piece of equipment based on industry accepted standards.

RUL – Remaining Useful Life is the EUL minus the effective age of the equipment and reflects the estimated number of operating years remaining for the item.

SIR - The savings-to-investment ratio is the ratio of the present value savings to the present value costs of an energy or water conservation measure. The numerator of the ratio is the present value of net savings in energy or water and non-fuel or non-water operation and maintenance costs attributable to the proposed energy or water conservation measure. The denominator of the ratio is the present value of the net increase in investment and replacement costs less salvage value attributable to the proposed energy or water conservation measure. It is recommended that energy-efficiency recommendations be based on a calculated SIR, with larger SIRs receiving a higher priority. A project typically is recommended only if the SIR is greater than or equal to 1.0, unless other factors outweigh the financial benefit.

Life Cycle Cost - The sum of the present values of (a) **I**nvestment costs, less salvage values at the end of the study period; (b) Non-fuel operation and maintenance costs: (c) Replacement costs less salvage costs of replaced building systems; and (d) Energy and/or water costs.

Life Cycle Savings – The sum of the estimated annual cost savings over the EUL of the recommended ECM, expressed in present value dollars.

Building Site Energy Use Intensity - The sum of the total site energy use in thousand of Btu per unit of gross building area. Site energy accounts for all energy consumed at the building location only not the energy consumed during generation and transmission of the energy to the site.

Building Source Energy Use Intensity – The sum of the total source energy use in thousand of Btu per unit of gross building area. Source energy is the energy consumed during generation and transmission in supplying the energy to your site.

Building Cost Intensity - This metric is the sum of all energy use costs in dollars per unit of gross building area.

Greenhouse Gas Emissions - Although there are numerous gases that are classified as contributors to the total for Greenhouse Emissions, the scope of this energy audit focuses on carbon dioxide (CO_2). Carbon dioxide enters the atmosphere through the burning of fossil fuels (oil, natural gas, and coal), solid waste, trees and wood products, and also as a result of other chemical reactions (e.g., manufacture of cement).

APPENDIX H:
ENERGY CONSERVATION MEASURES

UIC	Replace External Windows
EAE2	Details: House/Office

ENTER EXISTING CONDITIONS

Existing and Proposed Window Properties

Total Sq.Ft window area:	72	sq.ft
Approximate number of windows:	12	
Total existing window area:	72	Sq.Ft
Select The Existing Window Type	Wooden Frame -Single Glazing	(Select)
Existing U-value of window: (1/R)	0.9	Btu/ ft²·°F·h
ASHRAE Climatic Zone	Zone-6	
New U-value with Double pane Low E window: (1/R)	0.31	Btu/ ft²·°F·h
AHRAE 90.1 Recommended Value		

Existing & Proposed Air Leakage Through Windows

Insert Existing Estimated Air Change Rate/Hr (ACH 1):	3.00	
(Existing Air Changes Per Hour, 3 is very leaky and 0.35 ideal)		
Insert Proposed Estimated Air Change Rate/Hr (ACH 2):	2.00	
Estimated Space Volume Under Consideration	23,700.00	Cu. Ft
Is the Property Cooled ?	No	(Select)

WINTER

Select Type of Heating Fuel	Natural Gas	(Select)
Net heating plant & distribution system efficiency:	80.00	%
Annual Heating Hours:	6,994	HDD
Estimated Total Annual Input Heating Energy Savings By Replacing Windows	0.89	Therms
Estimated Total Annual Input Heating Energy Savings Achieved By Controlling Air Leakage Through Windows	895	Therms
Estimated Total Input Heating Fuel Savings From Replacing Windows	896	Therms

SUMMER

Select Type of Cooling Fuel:	Electric	(Default)
Cooling Plant Efficiency **(EER)**:	7.00	EER
Annual Cooling Hours:	732	CDD
Annual Total Input Cooling Fuel Savings During Summer Season By Replacing Windows	107	kWh
Estimated Total Annual Input Cooling Energy Savings Achieved By Controlling Air Leakage Through Windows	0	kWh
Estimated Total Input Cooling Fuel Savings From Replacing Windows	0	kWh

ENERGY & COST ANALYSIS

Insert Cost of Heating Fuel:	$1.48	$/Therm	Annual Heating Cost Savings:	$1,329.87	$$
Insert Cost of Cooling Fuel:	$0.20	$/kWh	Annual Cooling Cost Savings:	$0.00	$$
Total Annual Cost Savings	$1,343		Total Annual Cost Savings From Heating & Cooling:	$1,330	$$
Cost of window upgrade:	$6,600		Estimated Annual O&M Savings	$13	$
Simple payback:	4.91	**Yrs**	*Type of Recommendation*	Capital Cost ECM Recommendation	

ECM DESCRIPTION:

Windows play a major role in the energy use and comfort of an interior space. In the winter, heat in a room is lost when cold outside air infiltrates around the edges of windows. Heat also can be lost by conduction directly through the pane, even if the window fits tightly. Windows with insulated panes, such as those filled with Argon address this issue, while proper caulking and sealant address the infiltration issue. The cold drafts and the chilly windowpane make the room uncomfortable. Windows also can help to heat a room by letting the sun's rays enter. While this solar radiation is beneficial in the winter, it can be a major source of discomfort in hot, summer climates. Energy Star rated windows with Low-E glazing are designed to keep the solar heat gain minimized during the summer months. Choosing a replacement window that fits properly has the desired U-value, and proper glazing characteristics is critical to energy conservation through window upgrades.

Summary:

Initial Investment:	$6,600	Simple Payback	4.91 Yrs
Annual Energy Cost Savings:	$1,343.17		

UIC	Replace Inefficient Furnace and Air Conditioning System
EAH12	Details:

Estimated Annual Cooling Hours:	455	Hrs	Estimated Annual Heating Hours:	2,651	Hrs
Are The Condensing Units Being Replaced	No		Existing Type of Heating Fuel:	Natural Gas	
Existing Cooling System			**Existing Heating System**		
No. of Cooling Plants To Be Replaced:	0		No. of Furnaces To Be Replaced:	1	
Input the Btu/Hr of the air conditioner:	0		Input the MBH Rating of the Furnace:	100	MBH
Input Existing EER of the Air Conditioner:	0.00		Input Existing AFUE for the Furnace:	80%	%
Estimated Current Annual Energy Consumption For Cooling: *(For All Units)*	#DIV/0!	kWh	Estimated Annual Current Energy Consumption For Heating: *(For All Units)*	3,314	Therms
Proposed Cooling System			**Proposed Heating System**		
Input the Btu/Hr of the Proposed Air Conditioner:	0	Btuh	Proposed Furnace:	Gas Fired -100MBH	
Input EER of the Proposed Air Conditioner:	0.00		Input AFUE for the Proposed Furnace:	95%	
Estimated Annual Energy Consumption With New AC's *(For One Unit)*	#DIV/0!	kWh	Estimated Annual Energy Consumption With New Furnace *(For One Unit)*	2,791	Therms
Energy & Cost Savings From New Cooling System			**Energy & Cost Savings From New Heating System**		
Estimated Annual Energy Savings From New Cooling System: *(Total)*	0	kWh	Estimated Annual Energy Consumptions From New Heating System: *(Total)*	2,791	Therms
Average Electric Rate:	$0.20	$/kWh	Average Heating Fuel Cost For New Furnace:	$1.48	$/Therm
Estimated Annual Cost Savings From Cooling:	$0		Estimated Annual Cost Savings From Heating:	$777	$$
Estimated Cost of New Condensing Unit: *(Material + Installation+Labor)*	$0		Estimated Cost of New Furnace Unit: *(Material + Installation+Labor)*	$1,814	$$
Estimated Cost of New Evaporator Coils In Furnace: *(Material + Installation+Labor)*	$0		Estimated Total Cost of New Furnace Unit: *(Material + Installation+Labor)*	$1,814	$$

Total Estimated Installed Cost For A New Air Conditioning System Setup + New High Efficiency Furnace : $1,814 $$
(Includes Location Factor)

Estimated Total Energy Cost Savings From New HVAC System: $777 $$ Estimated O&M Savings: $39 Total Annual Savings: $815 $$

Estimated Simple Pay Back Period: 2.22 Years

Type of Recommendation Capital Cost ECM Recommendation

UIC	**Replace Existing Residential Style Water Heater With New Energy Efficient Units**
EAD3	**Details: House/Office**

	Number of Water Heaters Being Replaced:	1	
Step 1	**Existing Water Heater Details**		
	Select Existing Hot Water Heater Fuel	Electric	
	Insert Energy Factor of Existing Water Heater	0.70	EF
	Input Existing Water Heater Input Rating	4.50	kW
	Select One Method For Calculation	Annual Heating Hours	
	Insert Average Annual Hours of Operation	450	hrs
	Annual Water Heater Energy Consumption/Heater	2,025	kWh
	Total Estimated Annual Energy Consumption For all Heaters	2,025	kWh
	Total Estimated Annual Operating Energy Costs For all Heaters	$399	$
Step 2	**Proposed New Water Heater**		
	Proposed Hot Water Heater Fuel	Natural Gas	
	Capacity of the Proposed New Water Heater	40-Gal,40-kBtu	
	Energy Factor of Proposed Water Heater	0.70	EF
	Proposed Water Heater Input Rating	40.00	kBtuh
	Annual kBtuh Consumption For All The Proposed Water Heaters	6,909	kBtuh
	Estimated Annual Water Heater Fuel Consumption (All Heaters)	69	Therms
	Estimated Total Annual Energy Costs	$14	$
Step 3	**Energy & Cost Saving Calculation**		
	Estimated Cost of New Water Heater/Unit	$1,160	$$
	Total Estimated Installation Cost	$1,161	$$
	Total Estimated Annual Cost Savings	$385	$
	Simple Pay Back Period	3.02	Years
	Type of Recommendation	Capital Cost ECM Recommendation	

ECM SUMMARY:

Electric resistance is the most expensive method for heating domestic hot water. A natural gas or propane fired water system provide more units of heat with direct burning of fuel while high wattage draw is required for electric water heaters to create resistance heat. This electric usage can be seen with the increase power demand for the site and the additional kWh consumption. The installation process of the gas/propane fired water heater requires additional measures with tying a gas line or fuel tank to the system along with installing an exhaust gas vent. This process is not a costly retrofit if a current gas line or tank is at the site. The hot water exhaust duct can be tied to the existing gas fired furnaces or boilers for an easy retrofit.

SUMMARY:

Initial Investment:	$1,161	Simple Payback:	3.02	Years
Annual Cost Savings:	$385			

UIC	Replace Existing Refrigerator(s) With Energy Star Certified Refrigerator(s)
EAA1	Details: House/Office

Number of Refrigerators To Be Replaced	1 Qty	
Details of Existing Refrigerator:	1990-1992 Top Freezer 7.5-16.4 CuFt -1202.5 kWh	
Estimated Annual Energy Consumption By The Existing Refrigerator:	1,203	kWh/Year
Proposed New Refrigerator:	2010 -2012 Top Freezer 16.0-19.5 CuFt-382 kWh/Yr	
Estimated Proposed Annual Energy Consumption of The New Refrigerator:	382	kWh/Year
Annual Kwh Savings Per Unit (Kwh/year)	821	kWh
Total Annual Kwh Savings (Kwh/year)	821	kWh
Current Electrical Tariff ($/Kwh)	$0.20	$/kWh
Annual Cost Savings From All Refrigerators ($$)	$162	$$

Total Installation Cost Including, Eco Friendly Disposal Of Existing Refrigerator ($$)

No. of Units	Disposal Tax	Unit Cost	Total Cost	
1	$50	$561	$611	$$

Simple Return on Investment: 3.78 Yrs

Note- *Average Life of a Refrigerator is 15 Years*

Type of Recommendation: No/Low Cost ECM Recommendation

ECM DESCRIPTION:

One of the highest 'silent' energy consuming devices in any home/office is the refrigerator, which runs all year long. Having a low energy consuming refrigerator thus results in a considerable reduction in the annual energy costs. On an average a useful life of any refrigerator is approximately 19 years and hence EMG recommends replacing the current refrigerator at the end of its useful life with a new energy star certified low energy

EMG strongly recommends replacing the existing older non energy star refrigerators with new energy efficient Energy Star Certified refrigerators of the appropriate type.

The expected useful life of new refrigerators is approximately 15 years.

Summary:

Initial Investment:	$611.00	Simple Payback:	3.78
Annual Cost Savings:	$161.53		

UIC	Install Low Flow Shower Heads
EAP1	Details: House/Office

Total Number of Shower Heads To Be Replaced		1	
No. of Shower Days/Year		365	
No. of Residents		2	
Estimated Time Per Shower		8.10	Mins
GPM of Existing Shower Head		2.5	GPM
GPM of Proposed Shower Head *	*(Select)*	1.75	GPM

**(Federal Law Requires all new shower heads to have a max flow rate of 2.5 GPM)*

Water & Energy Savings Calculations

Property Location in United States		Northern Localities	
Select Type of Water Heater Fuel	*(Select)*	Electric	
Average Hot Water Discharge Temperature		130.00	°F
Annual Water Savings		4	kGal
(Assuming 1 shower/day/person for 365 days a year)			
Energy Factor of Domesitc Hot Water Heater:		0.70	EF
Equivalent Heating Fuel Energy savings:		4,750	kBtu

Cost Savings Calculations

Equivalent Heating Fuel Savings Electric		1,392	kWh
Water Tariff ($/1000 Gal)	$6.58	$/kGal	
Annual Cost Savings In Form of Water		$29	$$
Annual Energy Savings From Water Heater		$274	$$
Estimated Total Annual Cost Savings		$303	$$

Estimated Installation Costs

Estimated Total Installation Cost		$75	$$
Simple Payback Period		0.25	Years
Type of Recommendation		No/Low Cost ECM Recommendation	

ECM EXPLANATION:

By reducing the flow of water coming off the shower heads, savings can be generated in the form of reduced water and sewer costs. Additional savings can be realized via reduction in the demand for hot water. Currently Federal law requires all new shower heads to have a maximum flow rate of 2.5 GPM.

EMG recommends replacing the existing shower heads with new low flow shower heads as mentioned above. The proposed ECM shall also result in an annual energy saving in form of reduction in water heating bills.

Summary:

Initial Investment:	$75	Simple Payback:	0.25
Annual Cost Savings:	$303.23		

UIC	Install Low Flow Faucet Aerators
EAP2	Details: House/Office

Property Type:	Residential	Estimated No. of Operational Weeks	52
No. of Occupants	2	Number of Occupied Days/Week (Max 7)	7

KITCHEN FAUCETS			BATHROOM FAUCETS		
Do You Want To Replace Kitchen Faucets Aerators	Yes	*(Select)*	Do You Want To Replace Bathroom Faucets Aerators	Yes	*(Select)*
Total Number of Faucet Aerators To Be Replaced	1		Total Number of Faucet Aerators To Be Replaced	1	
Total Number of Faucets To Be Replaced:	0		Total Number of Faucets To Be Replaced:	0	
GPM of Existing Faucet Aerators	2.2	GPM	GPM of Existing Faucet Aerators	3.2	GPM
GPM of Proposed Faucet Aerator	1	GPM	GPM of Proposed Faucet Aerator	1.5	GPM
Estimated Number of Uses Per Day	4		Estimated Number of Uses Per Day	6	
Estimated Time Per Faucet Use *8.1 Min/Person/day @AWWA*	0.49	Mins	Estimated Time Per Faucet Use *8.1 Min/Person/day @AWWA*	0.74	Mins
Annual Water Savings From Kitchen Faucets	1.04	kGal	Annual Water Savings From Bathroom Faucets	3.30	kGal

WATER & ENERGY SAVING CALCULATION			COST SAVING CALCULATION		
Select Type of Water Heater Fuel:	Natural Gas	(Select)	Property Location in United States	Southern Localities	
Energy Factor of Domestic Hot Water Heater:	0.75	EF	Heating Fuel Tariff	$1.48	$/Therm
Hot Water Discharge Temperature at Faucet	120.00	°F	Water Tariff ($/1000 Gal)	$6.58	$/kGal
Equivalent Heating Fuel Savings: *Savings Discounted by 15% to Account For Cold Water Use*	20	Therms	Annual Cost Savings In Form of Water	$29	$
Annual Water Savings	4.34	kGal	Annual Energy Savings From Water Heater	$30	$

COST BENEFIT ANALYSIS				
Estimated Total Annual Cost Savings	$59	$$	Estimated Total Installation Cost	$63 $$
Simple Payback Period	1.06	Years	*Type of Recommendation*	No/Low Cost ECM Recommendation

ECM EXPLANATION:

By reducing the flow of water coming from the restroom faucets, aerators can generate energy savings at low cost and with easy installation. The savings generated would be in the form of reduced water and sewer costs and at the same time aerators would save energy by reducing the demand for hot water. The average faucet has a flow rate of about 2 to 4 GPM. Adding a screw-in faucet aerator reduces the flow to 0.5 to 1.5 GPM in the bathroom and 2.2 GPM in the kitchen. In addition to saving energy and water, the "foamier" water that comes from faucet aerators wets objects better than water from a faucet with no aerator, which tends to bounce off the object rather than thoroughly wetting it.

EMG recommends replacing the proposed faucet aerators with new low flow aerators as mentioned above. The proposed ECM shall also result in an annual energy saving in form of reduction in water heating bills.

Summary:

Initial Investment: $62.55 Estimated Annual Cost Savings: $58.94 Simple Payback Period (Yrs): 1.06

UIC	**Install Low Flow Restroom Flush Tank Toilets**
EAP3	**Details: House/Office**

EXISTING CONDITION

Total Occupants:	2	
Number of Water Closets To Be Replaced	1	
Number of Occupied Days Per Week (Max 7)	5	
Number of Occupied Weeks/Year (Max 52)	52	
Estimated Restroom Usage/Individual/Day *5.05 flushes/person/day@American Water Works Association (AWWA)*	5	(Select)

PROPOSED RETROFIT/REPLACEMENT

Water Closets With External Flush Tanks

Existing Gallons Per Flush Ratings For Water Closet Flushes	3.20	GPF
GPF of Proposed New Low Flow Water Closet Fixture*	1.28	GPF

**(Federal Law Requires All Flushes Not To Exceed 1.6 GPF)*

Water & Cost Saving Calculations

Water Savings By The Use of Low Flow Water Closet Flush Valves/Day	19.20	gal
Total Annual Water Savings in gallons	4.99	kgal
Cost Savings Calculations		
Enter Water Tariff Rate ($/1000Gal)	$6.58	$$
Estimated Cost Savings From Water	$33	$$
Estimated Cost of Retrofit		
Estimated Total Cost For Retrofit** ***$549/WC replacement*	$649	$$
Simple Pay Back Period	19.76	Yrs

Type of Recommendation — No/Low Cost ECM Recommendation

ECM EXPLANATION:

The highest water utilization at any home/office occurs in the restrooms. It is estimated that on an average a normal human being uses the restroom at least four times a day. Keeping with the global water conservation objectives, federal law prohibits use of any new water closet flushes over 1.6 GPF.

Existing toilets can be retrofitted with pressure-assisted flush technology to reduce the flush rate to 1.0 GPF or less. Though water efficient these toilets make considerable amount of noise as this involves release of pressurized air during the course of flushing. Thus making them unpopular among residential properties.

Thus EMG recommends replacing the existing high flow toilets with new low flow 1.28GPF rated flush tank toilets, which are comparatively more water efficient at the same time considerably quiter as compared to the pressure assisted technology retrofitted toilets.

Summary:

Initial Investment: $649

Simple Payback: 19.76 Years

Annual Cost Savings: $33

Replacement Reserves Report

Lake View Cemetery Building
11/11/2014

EMG

Report Section	Location Description	ID	Cost Description	Lifespan (EUL)	EAge	RUL	Quantity	Unit	Unit Cost	Subtotal	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	Deficiency Repair Estimate
3.2	Chapel and House/Office	290289	_0001 Measured ADA Study of Property	0	0	0	1	EA	$5,500.00	$5,500	$5,500																				$5,500
5.3	Flatwork throughout the cemetery	290290	G2012 Asphalt- overlay 1"	25	24	1	95000	SF	$1.14	$108,300		$108,300																			$108,300
5.3	Throughout the cemetery	290300	G2023A Replace stone curbs	25	24	1	40	LF	$31.95	$1,278		$1,278																			$1,278
5.4	Rear of House/Office	290292	G2042 Replace stone retaining wall, mortar set	50	49	1	250	SF Face	$75.25	$18,813		$18,813																			$18,813
5.5	Eastern fence	290293	G2041 Replace wrought iron fence 3' high	30	29	1	1133	LF	$28.50	$32,291		$32,291																			$32,291
6.1	House/Office	290295	A2022 Waterproof coating at basement wall	7	6	1	960	SF Face	$2.53	$2,429		$2,429							$2,429							$2,429					$7,286
6.1	Houses and Maintenance Building	290294	G2041 Masonry wall repairs and improvements	20	19	1	1150	SF Face	$10.84	$12,466		$12,466																			$12,466
6.2	House/Office Basement	290296	C1011 Replace wood stud walls, 5/8" drywall, no insulation	0	0	0	140	SF	$7.72	$1,081	$1,081																				$1,081
6.3	Maintenance building	290299	B2011 Wood siding replacement	25	24	1	60	SF	$19.56	$1,174		$1,174																			$1,174
6.3	Chimney	290298	B2011 Stone masonry wall up to 4 stories - joint repair/pointing	20	19	1	72	SF	$10.69	$770		$770																			$770
6.3	Off of the houses	290297	B3011 Roof flashing	0	0	0	320	LF	$3.25	$1,040	$1,040																				$1,040
6.3	Houses and Maintenance Building	290105	B3011 Slate roofing replacement, historic structure	50	49	1	32	SQ	$1,823.00	$58,336		$58,336																			$58,336
6.4	All buildings	290304	B2011 Caulking, expansion joints,1"x1/2", remove and replace	15	14	1	640	LF	$6.31	$4,038		$4,038															$4,038				$8,077
6.4	Houses, maintenance and storage building	290301	B2011 Wood siding replacement	25	24	1	1200	SF	$13.56	$16,272		$16,272																			$16,272
6.4	Houses, maintenance and storage building	290327	B2011 General painting cost per SF, minor prep work, single story bldg. (up to 15 feet)	10	9	1	4700	SF	$2.42	$11,374		$11,374										$11,374									$22,748
6.4	Houses, Chapel, maintenance and storage building -	290302	B3015 Wood trim replacement	25	24	1	640	LF	$12.85	$8,224		$8,224																			$8,224
6.5	House/Break room stairs	290308	G2035 Replace cast-in-place concrete stairs, no rails,including demo	25	24	1	16	LF Nosing	$30.38	$486		$486																			$486
6.6	Chapel Windows	290311	B2021 Historic wood window patch, repair and paint	15	10	5	12	Each	$238.87	$2,866						$2,866															$2,866
6.6	Houses and Maintenance Building	290310	B2021 Replace 3' x 2' Historic Wood Window	35	34	1	30	EA	$2,300.00	$69,000		$69,000																			$69,000
6.6	Chapel Windows	290312	B2021 Storm window replacement, 4' x 6'	20	15	5	12	EA	$168.74	$2,025						$2,025															$2,025
6.6	City Vault	290316	B2031A Prepare and refinish 3'-0" wide steel door	4	2	2	2	EA	$493.00	$986			$986				$986				$986				$986			$986			$4,930
6.6	Houses, Maintenance and Storage Building -	290313	B2031A Replace 3'-0" wide solid core, painted, door	40	35	5	6	EA	$990.00	$5,940						$5,940															$5,940
6.6	Chapel	290317	B2031A Prepare and refinish solid core, painted, door	4	3	1	3	EA	$361.00	$1,083		$1,083				$1,083				$1,083				$1,083				$1,083			$5,415
6.7	Front and side porches	290323	B1012 Porch Roof Deck and Structure Replacement	20	19	1	160	SF	$75.00	$12,000		$12,000																			$12,000
6.7	House/Office ramp	290320	B1014 ADA, replace H/C access ramp, 3' wide, railings both sides,including demo	25	18	7	30	LF	$662.00	$19,860								$19,860													$19,860
6.7	House/Office Stairs	290322	C2011A Replace wood steps	20	18	2	25	SF	$103.10	$2,578		$2,578																			$2,578
7.1	Chapel	297198	D2023 Water heater, tankless, on demand, natural gas, to 180,000 BTU - 9.5 GPM	15	11	4	1	EA	$2,069.00	$2,069					$2,069															$2,069	$4,138
7.1	House/Office basement	296267	D3041 Gas-fired furnace 90% efficiency, 80 to 100 MBH, no AC	25	20	5	1	EA	$2,957.00	$2,957						$2,957															$2,957
7.1	Maintenance Building	296896	D3041 Gas-fired furnace 175 to 200 MBH no AC	25	11	14	1	EA	$3,540.00	$3,540														$3,540							$3,540
7.1	House/Break Room	296894	D3041 Replace Unitary Space Heater, 25 to 50 MBH	20	11	9	1	EA	$1,350.00	$1,350										$1,350											$1,350
7.1	Office Area	296269	D3051 Window air-conditioner 12,000 Btuh	12	10	2	1	Each	$761.99	$762		$762													$762						$1,524
7.2	Basement	296268	D2023 Replace gas water heater, residential 40 gal	10	5	5	1	EA	$1,350.00	$1,350						$1,350										$1,350					$2,700
8.1	House	290326	C3024 Sand and refinish hardwood floor	10	5	5	3200	SF	$5.50	$17,600						$17,600										$17,600					$35,200
8.1	Houses	290325	C3024 Replace sheet vinyl	15	10	5	122	SY	$110.25	$13,451						$13,451															$13,451
8.1	House/Office and Chapel	290324	C3025 Replace carpet, standard commercial, medium traffic	8	4	4	333	SY	$59.90	$19,947					$19,947								$19,947								$39,893
9	Cemetery	297200	G2034 Replace yard fountain, large, outdoor with figures, concrete pool, pump	50	49	1	2	EA	$35,000.00	$70,000		$70,000																			$70,000
Totals, Unescalated											$7,621	$428,333	$4,325	$0	$22,016	$47,272	$986	$19,860	$2,429	$2,433	$986	$11,374	$19,947	$1,083	$5,288	$21,379	$4,038	$1,083	$986	$2,069	$603,507
Location Factor (1.00)											$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Totals, Escalated (3.0% inflation, compounded annually)											$7,621	$441,183	$4,589	$0	$24,779	$54,801	$1,177	$24,425	$3,077	$3,175	$1,325	$15,744	$28,439	$1,590	$7,999	$33,307	$6,480	$1,790	$1,679	$3,628	$666,808

DRAFT
Parks and Rec Letterhead
Cemetery Division

October 7, 2015

Mr. Bob Rusten
Chief Administrative Officer
City Hall
149 Church Street
Burlington, VT 05401

Dear CFO Rusten:

Vermont statutes provide for the establishment and maintenance of a Perpetual Care Fund, such funds to be used for cemetery purposes. The City long ago established such fund, and custody of the fund resides in the City Treasurer.

Cemetery Supervisor Jesse Bridges has reported to us earlier this year that the Perpetual Care Fund resides in two accounts, one designated Cemetery Perpetual Care Fund with funds of $1,058,965, and the other designated Cemetery Depository-Interest Only with funds of $133,819.

The Cemetery Commission requests a meeting with you, or your designee, to discuss a number of questions it has concerning the fund. In advance of that meeting, the Commission poses several questions. We would respectfully request a written response to the questions to serve as the further basis for the meeting. Our intent is to report our fact-finding to the City Council and the public on this most important cemetery matter.

Very truly yours,

Donna Waldron, Commission Chair
Rita Church, Commissioner
Barry Trutor, Commissioner
Helaine Rappaport, Commissioner
Allison Curran, Commissioner

cc:
Jane Knodell, City Council President
Miro Weinberger, Mayor
Jesse Bridges, Director Parks and Recreation

Questions to CFO Rusten
From the Cemetery Commission
Re: Perpetual Care Fund
October 7, 2015

1: In what financial institution is the Perpetual Care Fund kept? What branch/physical address? Who is the institution's account manager for the fund? What is the account number?

2. What is the nature of the investment vehicle? Please provide a copy of the investment agreement. What is the interest rate? Please provide an accounting of the interest earned for the last 3 fiscal years.

3. Why is the fund held in two accounts, one principal and one interest? Prior to 11/20/2014, the Perpetual Care Fund was contained in one account.

4. Where may the fund's investment and accounting records be viewed for the last 3 years?

5. Is the Perpetual Care Fund fully insured in the event of the financial institution's failure? Please describe the nature of the insurance.

6. We were told by the Cemetery Supervisor that the interest for the last fiscal year was about $10,000. When was the investment vehicle last reviewed by your office to insure that the investment was attracting the highest available return? What were the conclusions and actions to be taken?

7. Is the Perpetual Care Fund in any way encumbered, mortgaged, collateral, or otherwise pledged to any party, interest, contract, agreement, or other entity? Is the Perpetual Care Fund in any way a part of a larger investment pool? Is the Perpetual Care Fund in any way mixed with other monies?

BURLINGTON
PARKS
RECREATION
WATERFRONT

Cemetery Division

Cemetery Commission Meeting Agenda

October 7, 2015, 4:30 PM

Lakeview Cemetery, 455 North Avenue

I. Approval of Agenda

II. Approval of Minutes from September 17, 2015 Meeting

III. Old Business

A. Tabled from July 9, 2015 mtg.:
   1. Request to re-define resident status for lot purchase.
   2. Follow up on Martha Keenan was going to get back to the Commission concerning which category Chapel repair falls under. Roach is aware of Chapel repair needs, and is on the team working to prioritize maintenance & repair projects.

B. Tabled from August 13, 2015 mtg.: Request from staff for Commission approval of mausoleum site.

IV. Superintendent's Items

V. Commissioner's Items

VI. Office Report

VII. Adjournment

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PARKS
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Cemetery Division

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A. Letter from Barry Trutor to City of Burlington CFO Bob Rustin

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BURLINGTON
PARKS
RECREATION
WATERFRONT
Cemetery Division

Cemetery Commission Meeting Minutes

Meeting Date: October 7, 2015, 4:30 pm

Commissioners Present: Rita Church, Allison Curran, Lainey Rappaport, Barry Trutor, Donna Waldron

Staff Present: Anne D'Alton, Cemetery Office Assistant; Deryk Roach, Parks Dept.

Public Present: Liisa Reimann, Preservation Burlington

Attachments:
Excerpt from a spreadsheet listing Lakeview Cemetery Building repair priorities
Facility Condition Assessment and Level I Energy Audit of Lakeview Cemetery Building, 11.11.2014, with extra copy of Replacement Reserves Report, Lakeview Cemetery Building, 11.11.2014
Letter to Bob Rustin from Barry Trutor dated 10.07.15

I. Agenda approval

A. Barry Trutor added presentation of his letter to Bob Rustin as Item V.A. Unanimously approved.

II. Approval of Minutes from September 17, 2015 Meeting

A. Unanimously approved.

III. Old Business

A. Tabled from July 9, 2015 mtg.:

1. Request to re-define resident status for lot purchase.

- Donna Waldron asked that Annie D'Alton review the problem: Situations occur where D'Alton feels that the rule governing determination of whether the resident or non-resident price should be charged needs to be changed. The current rule is that the residence of the lot owner is what determines the price charged. So if a Burlington resident dies and his non-resident family buys a lot for him, they have to pay the non-resident price. Sometimes the family is upset & perplexed about the need to pay the non-resident price. In order to avoid the higher non-resident price, sometimes non-residents have residents buy the lot for them and transfer it, or list the lot owner as the estate of the deceased. D'Alton would like to approach this determination in a manner that shows fairness and caring on the part of the City, not grasping for money.
- Waldron suggested charging resident price if the lot is to be used only for the resident, and they must have been born in Burlington—if other family members intend to use the lot, charge the non-resident price.
- Trutor suggested charging resident price if deceased was a resident at the time of death.
- Allison Curran noted that any change could involve creating grey areas, and the determination should be clear.

- Trutor suggested asking Commission to decide on a case-by-case basis. D'Alton responded that often time-sensitivity would not allow for this process.
- Lainey Rappaport noted that the situation is complicated.
- Deryk Roach suggested leaving it up to the discretion of the Cemetery. D'Alton responded that the Office Assistant has neither the authority nor the responsibility to make policy decisions.
- D'Alton could not find documentation for the reason why the Commission started charging more for lots purchased by non-residents. The first indication of the rate difference found was in 1993. Perhaps the same rationale was used that the Library uses: The Library charges non-residents for membership because they do not pay taxes and the Library is supported by tax revenue.
- Summary of polling of area cemeteries about this issue (from 5/5/2015 supporting document to 7.09.2015 Commission Mtg):

SUMMARY:
Of the 22 towns asked, 20 responded-- 10 discriminate between residents & non-residents.
Of these 10, 4 require that lot owner is or was a resident.
Of these 10, resident status is based on:
--for 6: the lot purchaser's residence, but lot purchaser is considered a resident if they lived in or have family in town.
--for 1: if the purchaser pays property or business taxes.
--for 1: person to be interred.
--for 1: the issue is currently under discussion.
--for 1: the issue has not come up, but they think it would be based on the residency of the person to be interred.

- The Commissioners noted that there could be legal ramifications if a consistent policy is not in place. Final conclusion was that D'Alton would ask the City Attorney for advice, especially if a lot can be purchased by the estate of the deceased.

2. Follow up on Martha Keenan getting back to the Commission concerning which category Chapel repair falls under. The list from the Assessment document includes Chapel repairs, and indicates when projects will be done (2015-2033). Roach described the major priorities on the Lakeview Cemetery Building Repair list. Priorities have been determined by weighing need, expense that would result from further postponement, and budget allocations.
   - Paving contract signed, to start in about a week: Entrance and exit hill section will get a 1" surface coat with shimming up of low spots. 3" is standard, so this won't be an ideal solution, but it addresses the worst areas with the money allowed. The north entrance will be improved to prevent bottoming-out, too.
   - Curb replacement: Professional advice is to wait until a full-depth repaving is done.
   - Retaining wall repair: Still working on choosing a solution. Best fix would be to extend the wall to stabilize flower bed bank, but not enough funds for this right now. Also, the footings/foundation at the north end of the house/porch has been affected and needs shoring up.
   - Fence: There may be historic preservation considerations for choosing replacement. Rita Church will consult with Friends of Lakeview Cemetery about the entrance gate (Was it a donation? If so by whom? Are there restrictions to altering it?).
   - Roof: Slate will be repaired soon, and roofer will see if they can add side porch roof repair (which has leaked badly for years, affection wood of porch ceiling and floor).

- Rappaport asked why the Lakeview sign is at the bottom of the hill and not at the top? Roach said signage would be discussed later.
- Waldron thanked Roach for the presentation, and said the Commission is really looking forward to seeing some of these long-awaited repairs done.
- Roach invited questions and reminded Commissioners to email staff with any further concerns.

B. Tabled from August 13, 2015 mtg.: Request from staff for Commission approval of mausoleum site. (Not discussed).

IV. Superintendent's Items

A. Roach reported that Parks Department Head Jesse Bridges wanted Roach to describe maintenance plans in detail.

V. Commissioner's Items

A. Letter to Bob Rustin from Barry Trutor dated 10.07.15
   1. Trutor feels it is important to present Bob Rustin with a list of questions about the management of the Cemetery's Perpetual Care Fund, and asked the Commissioners to consider the questions he delineated, and add to it or edit as needed.

B. Next meeting set for Thursday, December 3, 2015, 4:30 pm, Cemetery Office.

C. Waldron asked that this item be included on Agenda for next meeting:
   1. Waldron reported that Bridges asked all Commissioners to research funding possibilities through grants.

D. Trutor asked Waldron what City Council's final conclusion was about the future of the Cemetery Commission. Waldron said that the Commission made their point, there was good support from the community, and the City Council decided not to eliminate the Cemetery Commission, or make it a Parks Commission Committee.

VI. Office Report

A. Volunteer Gail Asbury is making slow but steady progress with burial data entry.

B. Volunteer Deb Light is making slow but steady progress with researching the formerly-considered-illegible interment log entries of 1920-1921, moving toward recreating the log and printing burial cards to rectify the records. Note that the Cemetery Office has potentially been mistakenly responding to inquiries concerning the burial of these people for almost 100 years.

C. D'Alton expressed a lot of frustration with a recently-renewed inability to reconcile the Accounts Receivable records reported in the City's New World accounting software with her office records. For example: The FY16 reports are showing revenue from FY15. Staff in the City Clerk's Office will not respond to email requests to correct this, or give assistance in understanding any errors D'Alton is making in utilizing New World, if that is the problem. There is much, much more deferred document maintenance, correction and preservation work to do than could ever be done in a 20-hour/week job, and much of that 20 hours needs to be spent on the priority work of answering inquiries from the public, showing and selling lots, preparing for and documenting burials, and supervising volunteers. Reconciling the office's

financial records should be a simple, standard procedure with any necessary support provided in a timely manner.

VII. Adjournment

A. The meeting adjourned informally at 6:00, after a discussion with Liisa Reimann:

1. Preservation Burlington is making October Cemetery Month. Activities include 2 tours on 10.31.15 at noon and 1 pm, followed by a talk at the Champlain Club on Crowley Street by Scott McLaughlin.
2. Reimann invited the Commissioners to be interviewed on the Alive at 521 TV show. Curran and Waldron expressed an interest.
3. Reimann expressed interest in partnering with the Commission on programs, and asked for ideas.
4. Trutor recalled that Reimann was the author of a well-written article about Elmwood Cemetery in the Preservation Burlington newsletter, The Sentinel.
5. Reimann invited all to attend the Preservation Burlington Board meetings on the 1st Wednesday of each month at 6:30 pm.