EAST CAROLINA UNIVERSITY

Facility Condition Assessment

Medical Pavilion
Asset 099

Inspected January 26, 2023

ISES CORPORATION

TABLE OF CONTENTS

FACILITY CONDITION ASSESSMENT

SECTION 1

ASSET OVERVIEW

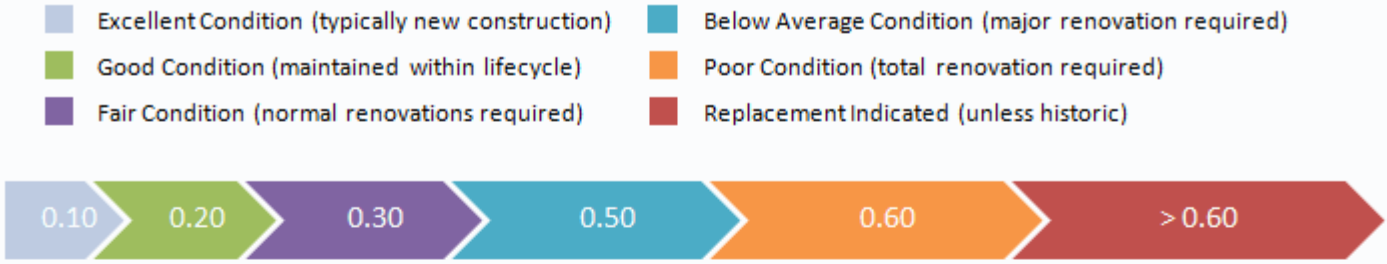
ASSET EXECUTIVE SUMMARY

All costs shown as Present Value

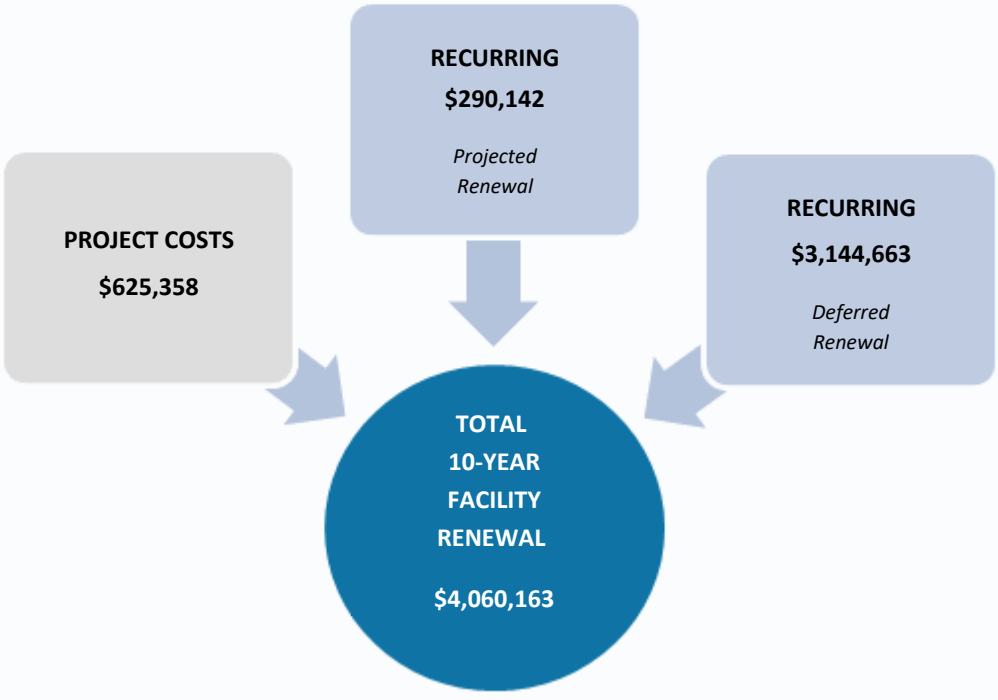
ASSET CODE	099	**CURRENT REPLACEMENT VALUE**	$10,665,000
ASSET NAME	MEDICAL PAVILION	**FACILITY CONDITION NEEDS INDEX**	0.38
ASSET USE	Office / Administrative	**FACILITY CONDITION INDEX**	0.29
YEAR BUILT	1966	**10-YEAR $/SF**	222.76
GSF	18,227		
INSPECTION DATE	01/26/2023		

FCNI Scale

The FCNI for this asset is **0.38**



Total Facility Renewal Costs



Project Costs

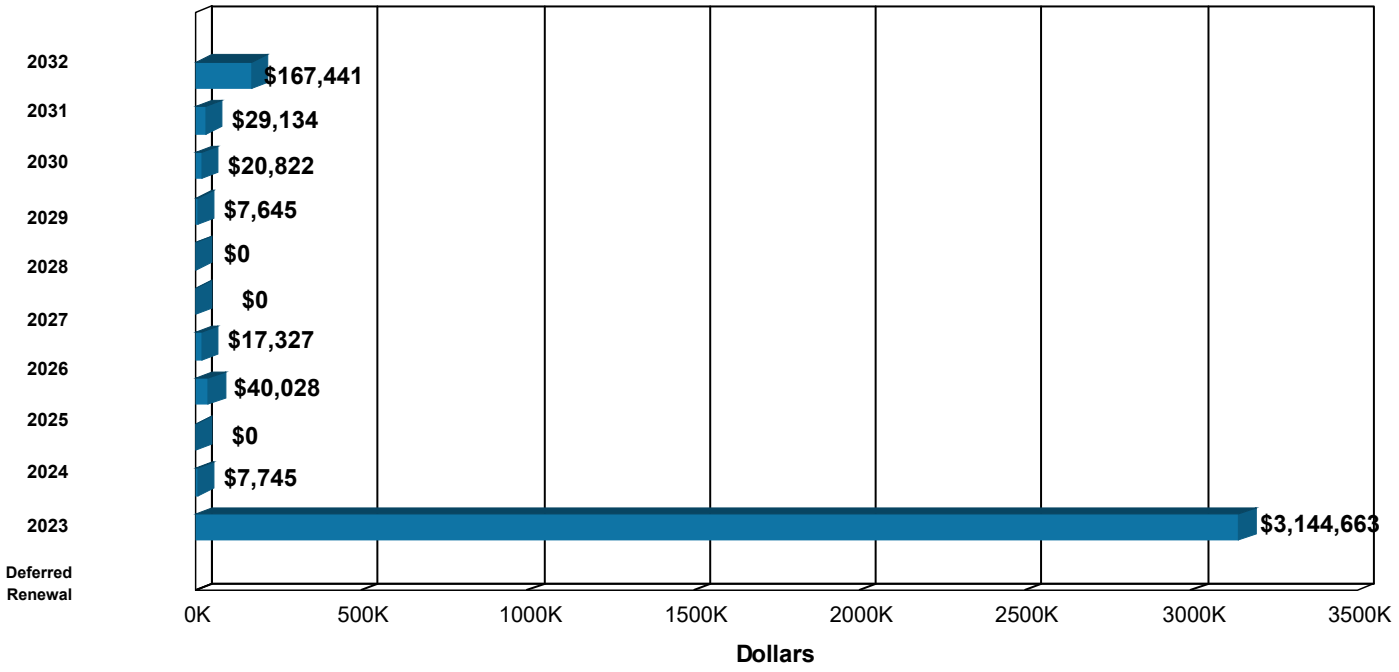
Project Cost by Priority

PLANT ADAPTION	
Priority 1	**$0**
Priority 2	**$365,776**
Priority 3	**$259,582**
Priority 4	**$0**
Priority 5	**$0**

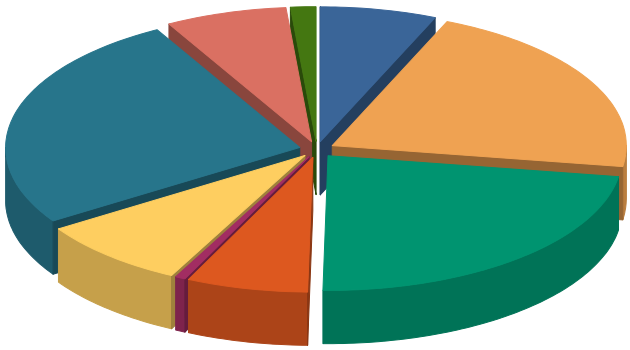
CORRECTIVE ACTION	
Priority 1	**$0**
Priority 2	**$0**
Priority 3	**$0**
Priority 4	**$0**
Priority 5	**$0**

Recurring Costs

Component Replacement Cost by Year



Facilities Renewal Cost by System



Accessibility	$255,488	6%
Electrical	$863,218	21%
Exterior	$925,109	23%
Fire/Life Safety	$269,260	7%
Health	$16,715	0%
HVAC	$346,532	9%
Interiors	$1,051,559	26%
Plumbing	$274,102	7%
Site	$58,179	1.4%
Vert. Trans.	$0	0%
Security	$58,179	0.0%
TOTAL	**$4,060,163**	

ASSET SUMMARY

The Medical Pavilion on the Health Science Campus of East Carolina University was built in 1966. This 18,227 gross square foot complex consists of 10 interconnected one-story medical clinic suites. Each has its own exterior entrance and primarily contains offices for ECU health services. These concrete structures have brick and wood facades and single-ply membrane and built-up roofs. The last reported finish upgrade was in 2006.

The information in this report was gathered during a site visit conducted on January 26, 2023.

Site

Landscaping on this flat site consists of shrubs and some mature trees. The concrete pedestrian paving and asphalt vehicular paving systems are in satisfactory condition but are due for joint maintenance and sealcoating, respectively.

Exterior Structure

The exterior facades are structurally sound but weathered. They consist mostly of brick veneer and wood siding. The siding is in need of replacement, and the brick is recommended for repointing.

Exterior doors are hollow metal and metal-framed glass. Although most are in satisfactory condition, all of the doors and door hardware have exceeded their expected lifecycle and should be replaced. Windows are aged single-pane units that are also past due for replacement. Install new energy-efficient dual-pane glazing.

There is a modified bitumen roof on suites 7 and 10 and an EPDM system with skylights on the rest of the suites. Roof drains are clogged, causing deterioration of the membrane and leaking on the interior. All of these roof systems have exceeded their lifecycles and should be considered for replacement. Also replace the skylights within the report scope.

Interior Finishes/Systems

Floor finishes include carpet, vinyl tile, and sheet vinyl. Wall finishes are painted drywall in most areas, along with some painted wood, ceramic tile, and vinyl wallpaper. Ceilings are mostly suspended acoustical tile and some painted drywall. These finishes vary in age and condition from suite to suite but have generally exceeded their lifecycle and should be considered for near-term replacement or renewal. Half of the interior doors were replaced during a 2002 upgrade. The rest are due for replacement, along with the associated hardware. Also replace the aging cabinetry in the suites.

Accessibility

The complex is not fully accessible. Restrooms in each suite are not fully ADA compliant. Grab bars, signage, and compliant toilets should be installed. Also, the drinking fountains are a single-level design. They should be replaced with dual-level units set in alcoves or with a tapered lower cabinet design.

Accessibility legislation requires that door hardware be designed for people with little or no ability to grasp objects with their hands. To comply with the intent of this legislation, it is recommended that lever hardware be installed on all doors that still have knobs. Also, the signage to permanent spaces is not compliant. All noncompliant room and directional signage should be upgraded.

The break room cabinetry and service counters in several suites are a barrier to accessibility. Install wheelchair accessible cabinetry and a lowered section of service counter to comply with ADA requirements.

Health

There is asbestos in the vinyl floor tile, air distribution network, and on utility piping. During removal of these systems, this asbestos will have to be properly abated in compliance with all applicable national, state, and local regulations.

Fire/Life Safety

Rooftop fall protection is required to protect workers on roofs over six feet above grade. The installation of hard looped tie-off points is recommended at intervals throughout the roof to support worker lifelines and harness personal protective equipment.

There is no fire alarm system in this building. Some monitoring devices are connected to the security system, but this should be replaced with a modern fire alarm system. Specify a point addressable supervised main fire alarm panel with an annunciator and include pull stations, audible and visible alarms, smoke and heat detectors, and an associated wiring network. Install all devices in accordance with NFPA and ADA requirements. The system should be monitored to report activation or trouble to a receiving station.

Emergency exits are not properly identified, and emergency egress lighting is not available. To improve occupant safety, install battery pack LED exit signs, and include egress lighting in the recommended interior lighting upgrade and emergency power system installation.

This facility is not protected by any form of automatic fire suppression system. Only manual, dry chemical fire extinguishers are present. The installation of automatic fire suppression is not recommended.

HVAC

Natural gas furnace split DX systems and four rooftop package units provide heating and cooling for the pavilions. Most of this equipment was installed between 2003 and 2017. The package units, the condensers installed prior to 2013, and all but the newest evaporators should be replaced within the next ten years. Building ventilation is provided by centrifugal roof exhaust fans of various ages and conditions. All are recommended for replacement. The forced air distribution system is also inadequate for the spaces, and there are complaints from staff that various spots in multiple suites are either hot or cold. A new distribution network should be designed and installed.

Electrical

High voltage from the utility company is reduced to 120/208 volt, 3-phase power via a service entrance transformer located on the site. A main switchgear in the electrical room distributes 120/208 volt power to the original 225 amp main electrical panels in each suite. The distribution network supplies 120/208 volt power throughout. Aging components, such as the circuit breakers, wiring and devices, are potential fire hazards if they fail to open a circuit in an overload or short circuit condition. Remove aged electrical components and branch circuitry. Install new power panels, switches, raceways, conductors, and devices. Provide molded case thermal magnetic circuit breakers and HACR circuit breakers for HVAC equipment. Redistribute the electrical loads to the appropriate areas to ensure safe and reliable power to building occupants. Provide ground fault circuit interrupter (GFCI) protection where required, and clearly label all panels for circuit identification.

Interior lighting is provided by lay-in and surface-mounted T12 fluorescent and incandescent fixtures. The lighting system is aging and due for replacement. The installation of LED lighting is recommended, along with occupancy sensors in select areas for additional energy conservation.

Nighttime illumination is provided by soffit- and wall-mounted compact fluorescent fixtures. All exterior lighting should be scheduled for replacement.

There is no contingency for emergency power for this facility. As part of future renovation efforts, it is recommended that a central emergency power system with an appropriately sized generator, associated automatic transfer switches (ATS), and an emergency distribution network be installed to support life safety and specific nonessential loads. Loads considered as life safety include egress lighting, exit signs, and fire alarm systems. Nonessential loads include HVAC equipment, refrigeration equipment, computer equipment, etc.

Plumbing

Potable water is distributed through galvanized steel piping, and sanitary waste and stormwater piping is bell-and-spigot cast-iron with copper runouts. The supply and drain piping networks are aged and should be replaced. Failure to undertake such upgrades will likely lead to leaks, drainage issues, and other problems that will require costly maintenance.

Domestic hot water is provided by a residential electric water heater and a commercial water heater. The commercial water heater was installed in 2013 and should outlast the scope of this report. The residential water heater, however, has reached the end of its service life and should be replaced.

Restroom plumbing fixtures include wall-hung and counter lavatories and tank-type and tankless water closets. All of these fixtures, as well as the stainless steel kitchen sinks and utility sinks, are in satisfactory working condition but have exceeded their expected service life and should be considered for replacement.

Note: The renewal needs outlined in this report were identified from the visual inspection and staff interviews. Our professional architectural and engineering inspectors examined the accessible equipment and various building components to determine what repairs or modifications may be necessary to restore the systems and asset to an acceptable condition, or to a level defined by the Client. The estimated costs represent correction of existing deficiencies and anticipated lifecycle failures within a ten-year period. These recommendations are to bring the facility to modern standards without any anticipation of change to facility space layout or function. The total costs include variable project delivery costs as determined by the Owner. The costs developed do not represent the cost of a complete facility renovation. Soft costs not represented in this report include telecommunications, security, furniture, window treatment, space change, program issues, relocation, swing space, contingency, or costs that could not be identified or determined from the visual inspection and available building information.

INSPECTION TEAM DATA

Report Development

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Date of Inspection

January 26, 2023

Inspection Team Personnel

NAME	POSITION	SPECIALTY
Michelle Thompson	Facility Assessor	Interior Finishes, Exterior Structure, ADA Compliance, Site, Fire/Life Safety, Health
Jerry Watkins	Senior Project Manager	Mechanical, Electrical, Plumbing, Energy, Fire/Life Safety, Health

Client Contact

NAME	POSITION
Griffin L. Avin, CEFP	Director of Facilities Services, Health Sciences Campus Chief Sustainability Officer

DEFINITIONS

The following information is a clarification of the Facility Condition Assessment report using example definitions.

Overview

Recurring and Nonrecurring Facility Renewal Costs

Facility renewal costs are divided into two main categories – recurring and nonrecurring. Recurring costs are cyclical and consist primarily of major repairs to or replacement/rebuilding of facility systems and components (e.g., roof or HVAC system replacement at or past the end of its normal useful life). The tool for projecting the recurring renewal costs is the Renewable Component Inventory, which is explained in detail below. Nonrecurring costs typically consist of modifications or repairs necessary to comply with fire/life safety or accessibility code requirements or to address isolated, nonrecurring deficiencies that could negatively affect the structure of the facility or the systems and components within. For these nonrecurring costs, projects have been developed and include estimated material and labor costs.

Facility Condition Needs Index (FCNI)

The FCNI provides a lifecycle cost comparison. It is a ratio of the sum of the recurring and nonrecurring renewal costs over ten years to the current replacement value of the asset. The current replacement value is based on replacement with current construction standards for the facility use type, and not original design parameters. This index gives the university a comparison within all buildings for identifying worst case/best case building conditions.

$$\text{FCNI} = \frac{\text{Nonrecurring Projects + 10-Year Recurring Component Renewal}}{\text{Current Replacement Value}}$$

Facility Condition Index (FCI)

The FCI is a ratio of the Deferred Renewal costs to the current replacement value.

$$\text{FCI} = \frac{\text{Deferred Renewal}}{\text{Current Replacement Value}}$$

Material and Labor Cost Factors and Additional Markups

The project costs are adjusted from the national averages to reflect conditions in Greenville using the R. S. Means City Cost Index for material and labor cost factors. The percentage adjustment of the national average is shown in the table below. Also included in the renewal costs are the construction markup (general contractor profit and overhead, construction management, permitting, accounting, site security, insurance, bonds, sales tax, institutional fees, site utilities, refuse fees, and insurance) and professional fees (architect or engineer design fees and in-house design costs).

GLOBAL MARKUP	%
Local Labor Index	71.3
Local Materials Index	100.7
Construction Markup	20.0
Professional Fees	16.0

Recurring Costs

Renewable Component Inventory and Cost Projections

The Renewable Component Inventory (starting on page 4.1.1) is based on industry standard lifecycle expectancies applied to an inventory of major systems and components within a facility. Each indicated component has the following associated information:

CATEGORY	DESCRIPTION
Component Code	A four-digit code assigned by AMS to the component
Component Description	Description of the individual component
Identifier	Identifying information can be entered as necessary.
Customer ID	Customer-provided equipment ID number
Location	The location of each component can be entered if applicable.
Quantity	The quantity of the listed component
Units	The unit of measure associated with the quantity
Complexity Factor	Adjusts the component replacement costs when it is anticipated that the actual cost will deviate from the average for that component
Total Cost	The unit cost multiplied by quantity, in today's dollars (note that this is a one-time renewal/replacement cost)
Install Date	This is the year that the component was or is estimated to have been installed. When this data is not available, the default is the year the asset was constructed.
Useful Life	Average life expectancy of the component
Useful Life Adjustment	An optional adjustment that lengthens or reduces the first lifecycle of the component
Replacement Year	Expresses when the next replacement should occur and is the sum of the install date, useful life, and any useful life adjustment

The component listing forms the basis of the Recurring Costs by Year report, which provides a year-by-year list of projected recurring renewal costs (in future year dollars) over the next ten years. Each individual component is assigned a replacement year based on lifecycles. For items already past the end of their lifecycle, the replacement year is shown as Deferred Renewal.

For a longer term perspective, the Recurring Component Expenditure Projections Graph presents recurring renewal cost projections over a 50-year period (starting from the date the report is run) based on each individual item's renewal cost and life span. Some components might require renewal several times within the 50-year model, while others might not occur at all. The vertical bars on the graph represent the accumulated total costs for each individual year. The average annual cost per gross square foot ($/GSF) is shown at the bottom of the graph. In this calculation, costs are not escalated. This figure can be utilized to assess the adequacy of existing capital renewal and repair budgets.

Recurring Cost Classifications

- Deferred Renewal
  Recurring repairs, generated by the Renewable Component Inventory, that are past due for completion and have not yet been accomplished as part of normal maintenance or capital repair efforts. Further deferral could impair the proper functioning of the facility. Deferred Renewal upgrades should include compliance with applicable codes, even if such compliance requires expenditures beyond those essential to effect the needed repairs.

- Projected Renewal
  Recurring renewal efforts, generated by the Renewable Component Inventory, that will be due within the scope of the assessment. These are regular or normal facility maintenance, repair, or renovation efforts that should be planned in the near future.

Nonrecurring Costs

As previously mentioned, modifications or repairs necessary to comply with fire/life safety or accessibility code requirements and those that address isolated, nonrecurring deficiencies that could negatively affect the structure of the facility or the systems and components within are not included in the Renewable Component Inventory. For each such deficiency identified during the facility inspection, a project with an estimated cost to rectify said deficiency is recommended. These projects each have a unique identifier and are categorized by system type, priority, and classification, which are defined below. The costs in these projects are also indexed to local conditions and markups applied as the situation dictates.

Project Number

Each project has a unique number consisting of three elements, the asset identification number, system code, and a sequential number assigned by the FCA software. For example, the third fire/life safety project identified for asset 0001 would have a project number of 0001FS03 (0001 for the asset number, FS for fire/life safety, and 03 being the next sequential number for a fire/life safety project).

Project Classifications

- Plant Adaption
  Nonrecurring expenditures, stored in the Projects module, required to adapt the physical plant to the evolving needs of the institution and to changing codes or standards. These are expenditures beyond normal maintenance. Examples include compliance with changing codes (e.g., accessibility), facility alterations required by changing teaching or research methods, and improvements occasioned by the adoption of modern technology (e.g., the use of personal computer networks).

- Corrective Action
  Nonrecurring expenditures, stored in the Projects module, for repairs needed to correct random and unpredictable deficiencies. Such projects are not related to aligning a building with codes or standards. Deficiencies classified as Corrective Action could have an effect on building aesthetics, safety, or usability.

Priority Classes

Recurring renewal needs do not receive individual prioritization, as the entire data set of needs in this category is year-based. Each separate component has a distinct need year, rendering further prioritization unnecessary. Each nonrecurring renewal project, however, has a priority assigned to indicate the criticality of the recommended work. The prioritization utilized for this subset of the data is as follows.

- Priority 1 – High

  Items in this category include:

  a. correcting a cited safety hazard
  b. stopping accelerated deterioration
  c. returning a facility to normal operation

- Priority 2 – Medium

  Items in this category include:

  a. repairs to prevent further deterioration
  b. improvements to facility approach/entry and access to goods and services (DOJ ADA title III, priorities 1 and 2)
  c. correction of potential safety hazards

- Priority 3 – Low

  Items in this category include:

  a. improving access to restrooms and other amenities (DOJ ADA title III, priorities 3 and 4)

  b. bringing a facility into compliance with current building codes as grandfather clauses expire

  c. increasing usability following an occupancy or use change

  d. actions that are recommended but not required by code

Project Subclass

Subclass ratings are assigned to accessibility upgrade activities based on the four Department of Justice priority rankings recommended by the Title III regulations for planning readily achievable barrier removal projects. These ratings are:

- DOJ1 Accessible approach and entrance
- DOJ2 Access to goods and services
- DOJ3 Access to restrooms
- DOJ4 Any other necessary measures

Category Codes

CATEGORY CODE*	SYSTEM DESCRIPTION
AC1A – AC4B	ACCESSIBILITY
EL1A – EL8A	ELECTRICAL
ES1A – ES6E	EXTERIOR STRUCTURE
FS1A – FS6A	FIRE/LIFE SAFETY
HE1A – HE7A	HEALTH
HV1A – HV8B	HVAC
IS1A – IS6D	INTERIOR FINISHES/SYSTEMS
PL1A – PL5A	PLUMBING
SI1A – SI4A	SITE
VT1A – VT7A	VERTICAL TRANSPORTATION

Example: **Category Code = EL5A**	
EL	System Description
5	Component Description
A	Element Description

Priority Sequence

A Priority Sequence number is automatically assigned to each project to rank the projects in order of relative criticality and show the recommended execution order. This number is calculated based on the Priority Class and identified system of each project.

Example			
Priority Class	**Category Code**	**Project Number**	**Priority Sequence**
1	HV2C	0001HV04	01
1	PL1D	0001PL02	02
2	IS1E	0001IS06	03
2	EL4C	0001EL03	04

Drawings

Floor plans for this facility are provided as a reference.

Photographs

A code shown on the Photo Log identifies the asset number, photo sequence, and a letter designation for architect (a) or engineer (e).

Example: **Photo Number: 0001006e**	
0001	Asset Number
006	Photo Sequence
e	Engineering Photo

Sustainability/Energy Analysis

Energy/resource conservation measures (ECMs) are recommendations that will reduce resource consumption or the rate of growth in consumption. Examples include improving the efficiency of an HVAC system (e.g., digital motor speed controls, exhaust energy recovery, retrocommissioning) or directly reducing the consumption of a resource (e.g., low flow plumbing fixtures, high-efficiency lighting, or structural insulation improvement). Where significant conservation opportunities are evident for this facility, ECMs are identified and tabulated in Section 7 as a basis for further viability investigation.

FACILITY CONDITION ASSESSMENT

SECTION 2

COST SUMMARIES AND TOTALS

RENEWAL NEEDS MATRIX

All dollars shown as Present Value

CATEGORY	NONRECURRING PROJECT NEEDS			RECURRING COMPONENT REPLACEMENT NEEDS											
	Immediate	Critical	Noncritical	Deferred Renewal	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	TOTAL
ACCESSIBILITY	0	87,495	167,993	0	0	0	0	0	0	0	0	0	0	0	$255,488
EXTERIOR	0	0	0	877,982	0	0	0	0	0	0	0	0	0	47,128	$925,109
INTERIOR	0	0	0	947,521	0	0	0	4,418	0	0	0	0	0	99,620	$1,051,559
PLUMBING	0	0	0	274,102	0	0	0	0	0	0	0	0	0	0	$274,102
HVAC	0	0	0	207,556	7,745	0	40,028	12,909	0	0	7,645	20,822	29,134	20,694	$346,532
FIRE/LIFE SAFETY	0	269,260	0	0	0	0	0	0	0	0	0	0	0	0	$269,260
ELECTRICAL	0	0	83,895	779,323	0	0	0	0	0	0	0	0	0	0	$863,218
SITE	0	0	0	58,179	0	0	0	0	0	0	0	0	0	0	$58,179
VERT. TRANS.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	$0
HEALTH/EQUIP.	0	9,020	7,695	0	0	0	0	0	0	0	0	0	0	0	$16,715
SUBTOTAL	$0	$365,776	$259,582	$3,144,663	$7,745	$0	$40,028	$17,327	$0	$0	$7,645	$20,822	$29,134	$167,441	$4,060,163
TOTAL NONRECURRING PROJECT NEEDS			$625,358	TOTAL RECURRING COMPONENT REPLACEMENT NEEDS										$3,434,805	

CURRENT REPLACEMENT VALUE	$10,665,000
FACILITY CONDITION NEEDS INDEX	0.38
FACILITY CONDITION INDEX	0.29

GSF	TOTAL 10-YEAR FACILITY RENEWAL NEEDS	10-YEAR NEEDS/SF
18,227	$4,060,163	$222.76

RENEWAL NEEDS BY SYSTEM

All costs shown as Present Value

CATEGORY	NONRECURRING PROJECT COSTS	RECURRING COMPONENT REPLACEMENT COSTS	TOTAL 10-YEAR FACILITY RENEWAL COSTS
ACCESSIBILITY	$255,488	$0	$255,488
EXTERIOR	$0	$925,109	$925,109
INTERIOR	$0	$1,051,559	$1,051,559
PLUMBING	$0	$274,102	$274,102
HVAC	$0	$346,532	$346,532
FIRE/LIFE SAFETY	$269,260	$0	$269,260
ELECTRICAL	$83,895	$779,323	$863,218
SITE	$0	$58,179	$58,179
VERT. TRANS	$0	$0	$0
HEALTH	$16,715	$0	$16,715
TOTALS	**$625,358**	**$3,434,805**	**$4,060,163**

FACILITIES RENEWAL PLAN

RECURRING COMPONENT REPLACEMENT COSTS

All costs shown as Present Value

ASSET CODE	COMP CODE	COMPONENT	IDENTIFIER	CUSTOMER ID	LOCATION	UNI-FORMAT	REPLACEMENT YEAR	REPLACEMENT COST
099	EW01	WALL, EXTERIOR, MASONRY POINTING	BLOND BRICK		ALL ELEVS	B2010	Deferred Renewal	73,233
099	EW06	WALL, EXTERIOR, SIDING, WOOD BOARD, STANDARD	BOARD SIDING		ALL ELEVS	B2010	Deferred Renewal	34,225
099	WN01	GLASS, WINDOW, ALUMINUM OR WOOD, STANDARD	SINGLE PANE		ALL ELEVS	B2010	Deferred Renewal	486,480
099	DR08	DOOR AND FRAME, EXTERIOR, SWINGING, HOLLOW METAL	PTD HM		ALL ELEVS	B2030	Deferred Renewal	68,456
099	DR12	DOOR AND STOREFRONT, EXTERIOR, SWINGING, ALUMINUM AND GLASS	METAL & GLASS		EXTERIOR	B2030	Deferred Renewal	9,028
099	RR03	ROOF - 1-PLY, ADHERED (EPDM, PIB, CSPE, PVC)	FLAT EPDM			B3010	Deferred Renewal	198,449
099	RR07	ROOF - BITUMINOUS, 2-PLY, APPLIED MODIFIED BITUMEN, TORCH	FLAT MOD BIT			B3010	Deferred Renewal	8,110
099	DR02	DOOR AND FRAME, INTERIOR, FIRE-RATED	WOOD		THROUGHOUT	C1020	Deferred Renewal	247,542
099	DR24	DOOR LOCK, COMMERCIAL-GRADE	METAL & GLASS DRS			C1020	Deferred Renewal	1,793
099	DR24	DOOR LOCK, COMMERCIAL-GRADE	PTD HM DRS		ALL ELEVS	C1020	Deferred Renewal	25,100
099	DR24	DOOR LOCK, COMMERCIAL-GRADE	INT DRS		THROUGHOUT	C1020	Deferred Renewal	49,304
099	DR24	DOOR LOCK, COMMERCIAL-GRADE	INT DRS		THROUGHOUT	C1020	Deferred Renewal	49,304
099	CW01	CASEWORK - WOOD BASE AND WALL, TOP, STANDARD	LAMINATE		BREAK RMS	C1030	Deferred Renewal	48,689
099	IW01	WALL FINISH - PAINT, STANDARD	PTD DRYWALL		THROUGHOUT	C3010	Deferred Renewal	50,489
099	IW01	WALL FINISH - PAINT, STANDARD	PTD DRYWALL		THROUGHOUT	C3010	Deferred Renewal	50,489
099	IW03	WALL FINISH - TILE, CERAMIC / STONE, STANDARD	CERAMIC		RESTROOMS	C3010	Deferred Renewal	53,590

FACILITIES RENEWAL PLAN

RECURRING COMPONENT REPLACEMENT COSTS

All costs shown as Present Value

ASSET CODE	COMP CODE	COMPONENT	IDENTIFIER	CUSTOMER ID	LOCATION	UNI-FORMAT	REPLACEMENT YEAR	REPLACEMENT COST
099	IW08	WALL FINISH - WOOD PANEL, STANDARD	PT ON WOOD		CORRIDORS	C3010	Deferred Renewal	42,753
099	IW09	WALL FINISH - WALL COVERING, ROLL	VINYL WP		OFFICES	C3010	Deferred Renewal	12,104
099	IF01	FLOORING - CARPET, TILE OR ROLL, STANDARD	BROADLOOM		THROUGHOUT	C3020	Deferred Renewal	72,526
099	IF01	FLOORING - CARPET, TILE OR ROLL, STANDARD	BROADLOOM		THROUGHOUT	C3020	Deferred Renewal	72,526
099	IF03	FLOORING - VINYL COMPOSITION TILE, STANDARD	VCT		THROUGHOUT	C3020	Deferred Renewal	25,305
099	IF03	FLOORING - VINYL COMPOSITION TILE, STANDARD	VCT		THROUGHOUT	C3020	Deferred Renewal	25,305
099	IF04	FLOORING - VINYL SHEET, STANDARD	30 MIL		RESTROOM	C3020	Deferred Renewal	21,085
099	IC01	CEILING FINISH - SUSPENDED ACOUSTICAL TILE, STANDARD	2X2 GRID		THROUGHOUT	C3030	Deferred Renewal	99,620
099	FX01	PLUMBING FIXTURE - LAVATORY, COUNTER	PC ON LAMINATE		RESTROOMS	D2010	Deferred Renewal	7,933
099	FX02	PLUMBING FIXTURE - LAVATORY, WALL HUNG	PC		RESTROOM	D2010	Deferred Renewal	19,216
099	FX04	PLUMBING FIXTURE - SINK, KITCHEN	SST			D2010	Deferred Renewal	12,999
099	FX06	PLUMBING FIXTURE - SINK, SERVICE/LAUNDRY/UTILITY	CAST IRON			D2010	Deferred Renewal	6,474
099	FX11	PLUMBING FIXTURE - WATER CLOSET, TANK-TYPE	TANKS		RESTROOMS	D2010	Deferred Renewal	11,238
099	FX12	PLUMBING FIXTURE - WATER CLOSET, TANKLESS	PC LOW FLOW		RESTROOM	D2010	Deferred Renewal	21,111
099	PS14	SUPPLY PIPING SYSTEM - OFFICE	GALVINIZED STEEL		THROUGHOUT	D2020	Deferred Renewal	77,123
099	WH24	WATER HEATER - RESIDENTIAL, ELECTRIC (46-100 GAL)	WH-02		MECH ROOM	D2020	Deferred Renewal	1,980
099	PD14	DRAIN PIPING SYSTEM - OFFICE	CAST IRON		THROUGHOUT	D2030	Deferred Renewal	116,028

FACILITIES RENEWAL PLAN

RECURRING COMPONENT REPLACEMENT COSTS

All costs shown as Present Value

ASSET CODE	COMP CODE	COMPONENT	IDENTIFIER	CUSTOMER ID	LOCATION	UNI-FORMAT	REPLACEMENT YEAR	REPLACEMENT COST
099	HU15	EVAPORATOR UNIT, NATURAL GAS HEAT (45-100 MBH)	AHU-019	19707	MECH ROOM	D3030	Deferred Renewal	4,369
099	HU15	EVAPORATOR UNIT, NATURAL GAS HEAT (45-100 MBH)	AHU-034	19650	MECH ROOM	D3030	Deferred Renewal	5,461
099	HU15	EVAPORATOR UNIT, NATURAL GAS HEAT (45-100 MBH)	AHU-003	19461	MECH ROOM	D3030	Deferred Renewal	4,369
099	HU15	EVAPORATOR UNIT, NATURAL GAS HEAT (45-100 MBH)	AHU-004	19460	MECH ROOM	D3030	Deferred Renewal	3,277
099	FN19	FAN - CENTRIFUGAL ROOF EXHAUST, 1/4" SP (20"-22" DIAMETER)	ALUMINUM DOME		MAIN ROOFS	D3040	Deferred Renewal	92,537
099	FN20	FAN - CENTRIFUGAL ROOF EXHAUST, 1/4" SP (25"-30" DIAMETER)	ALUMINUM DOME		MAIN ROOFS	D3040	Deferred Renewal	9,572
099	HV14	HVAC DISTRIBUTION NETWORKS - OFFICE	ORIGINAL		THROUGHOUT	D3040	Deferred Renewal	56,932
099	HU30	PACKAGE HVAC UNIT, DX, GAS OR ELECTRIC HEAT, SINGLE-ZONE (<= 5 TON)	AHU-023 GAS PACK	19724	MAIN ROOFS	D3050	Deferred Renewal	20,694
099	HU30	PACKAGE HVAC UNIT, DX, GAS OR ELECTRIC HEAT, SINGLE-ZONE (<= 5 TON)	AHU-024 GAS PACK	19726	MAIN ROOFS	D3050	Deferred Renewal	10,347
099	SE14	ELECTRICAL DISTRIBUTION NETWORK - OFFICE	CONDUIT, CABLES		THROUGHOUT	D5010	Deferred Renewal	430,736
099	SG04	MAIN SWITCHBOARD W/BREAKERS (800-1200 AMP)	MAIN PANELBOARD		MAIN MECH ROOM	D5010	Deferred Renewal	71,019
099	LE03	LIGHTING - EXTERIOR, RECESSED (INC, CFL, LED)	CAN INCAND		COVERED SOFFITS	D5020	Deferred Renewal	5,646
099	LE08	LIGHTING - EXTERIOR, WALL LANTERN or FLOOD (INC, CFL, LED)	WALL MOUNT SCONCE		EXTERIOR WALLS	D5020	Deferred Renewal	12,491
099	LI14	LIGHTING SYSTEM, INTERIOR - OFFICE	FLUOR, INCAND		THROUGHOUT	D5020	Deferred Renewal	259,431
099	SI06	ASPHALT VEHICULAR PAVING - SEALCOAT AND STRIPE	VEHICULAR PAVING		PARKING LOT	G2020	Deferred Renewal	26,099

FACILITIES RENEWAL PLAN

RECURRING COMPONENT REPLACEMENT COSTS

All costs shown as Present Value

ASSET CODE	COMP CODE	COMPONENT	IDENTIFIER	CUSTOMER ID	LOCATION	UNI-FORMAT	REPLACEMENT YEAR	REPLACEMENT COST
099	SI06	ASPHALT VEHICULAR PAVING - SEALCOAT AND STRIPE	VEHICULAR PAVING		PARKING LOT	G2020	Deferred Renewal	26,099
099	SI01	CONCRETE PEDESTRIAN PAVING - JOINT MAINTENANCE	CONCRETE WALK		PERIMETER	G2030	Deferred Renewal	2,990
099	SI01	CONCRETE PEDESTRIAN PAVING - JOINT MAINTENANCE	CONCRETE WALK		PERIMETER	G2030	Deferred Renewal	2,990
099	HU01	CONDENSER - REFRIGERANT, AIR-COOLED (<=10 TON)	AHU-030	21041	MAIN ROOFS	D3030	2023	7,745
099	HU01	CONDENSER - REFRIGERANT, AIR-COOLED (<=10 TON)	AHU-033	19652	MAIN ROOFS	D3030	2025	5,164
099	HU01	CONDENSER - REFRIGERANT, AIR-COOLED (<=10 TON)	AHU-036	19656	MAIN ROOFS	D3030	2025	10,327
099	HU01	CONDENSER - REFRIGERANT, AIR-COOLED (<=10 TON)	AHU-002	19462	MAIN ROOFS	D3030	2025	10,327
099	HU07	EVAPORATOR UNIT, NO HEAT (1.5-2 TON)	AHU-001	19712	MECH ROOM	D3030	2025	5,496
099	FN18	FAN - CENTRIFUGAL ROOF EXHAUST, 1/4" SP (10"-18" DIAMETER)	ALUMINUM DOME		MAIN ROOFS	D3040	2025	8,714
099	IC04	CEILING FINISH - PAINTED OR STAINED, STANDARD	PT ON DRYWALL		THROUGHOUT	C3030	2026	4,418
099	HU01	CONDENSER - REFRIGERANT, AIR-COOLED (<=10 TON)	AHU-010	19591	MAIN ROOFS	D3030	2026	5,164
099	HU01	CONDENSER - REFRIGERANT, AIR-COOLED (<=10 TON)	AHU-008	19595	MAIN ROOFS	D3030	2026	7,745
099	HU15	EVAPORATOR UNIT, NATURAL GAS HEAT (45-100 MBH)	AHU-012	19597	MECH ROOM	D3030	2029	3,277
099	HU15	EVAPORATOR UNIT, NATURAL GAS HEAT (45-100 MBH)	AHU-026	19648	MECH ROOM	D3030	2029	4,369
099	HU07	EVAPORATOR UNIT, NO HEAT (1.5-2 TON)	AHU-028	21043	MECH ROOM	D3030	2030	5,496
099	HU07	EVAPORATOR UNIT, NO HEAT (1.5-2 TON)	AHU-031	21045	MECH ROOM	D3030	2030	5,496
099	HU15	EVAPORATOR UNIT, NATURAL GAS HEAT (45-100 MBH)	AHU-037	19654	MECH ROOM	D3030	2030	4,369

FACILITIES RENEWAL PLAN

RECURRING COMPONENT REPLACEMENT COSTS

All costs shown as Present Value

ASSET CODE COMP CODE		COMPONENT	IDENTIFIER	CUSTOMER ID	LOCATION	UNI-FORMAT	REPLACEMENT YEAR	REPLACEMENT COST
099	HU15	EVAPORATOR UNIT, NATURAL GAS HEAT (45-100 MBH)	AHU-009	19592	MECH ROOM	D3030	2030	5,461
099	HU01	CONDENSER - REFRIGERANT, AIR-COOLED (<=10 TON)	YORK		MAIN ROOFS	D3030	2031	5,164
099	HU15	EVAPORATOR UNIT, NATURAL GAS HEAT (45-100 MBH)	AHU-006	19467	MECH ROOM	D3030	2031	3,277
099	HU30	PACKAGE HVAC UNIT, DX, GAS OR ELECTRIC HEAT, SINGLE-ZONE (<= 5 TON)	AHU-021 GAS PACK	19725	MAIN ROOFS	D3050	2031	20,694
099	RR26	ROOF SKYLIGHT - GLASS WITH ALUMINUM FRAME	SQUARE		ROOF	B3020	2032	47,128
099	IC01	CEILING FINISH - SUSPENDED ACOUSTICAL TILE, STANDARD	2X2 GRID		THROUGHOUT	C3030	2032	99,620
099	HU30	PACKAGE HVAC UNIT, DX, GAS OR ELECTRIC HEAT, SINGLE-ZONE (<= 5 TON)	AHU-022 GAS PACK	19727	MAIN ROOFS	D3050	2032	20,694
							TOTAL	**$3,434,805**

FACILITIES RENEWAL PLAN

NONRECURRING PROJECT COSTS

All costs shown as Present Value

PROJECT NUMBER	PROJECT TITLE	UNI-FORMAT	PRIORITY CLASS	PROJECT CLASSIFICATION	PROJECT COST
099AC01	INTERIOR DOOR ACCESSIBILITY UPGRADES	C1020	2	Plant Adaption	57,412
099AC03	INTERIOR AMENITY ACCESSIBILITY UPGRADES	C1010	2	Plant Adaption	30,084
099FS01	INSTALL FIRE ALARM SYSTEM	D5030	2	Plant Adaption	135,166
099FS02	ADD ROPE DAVITS TO SUPPORT WORKER FALL PROTECTION	B3010	2	Plant Adaption	127,773
099FS03	IMPROVE EGRESS PATHWAY DESIGNATION	D5090	2	Plant Adaption	6,321
099HE02	ASBESTOS ABATEMENT - INTERIOR FINISH SYSTEMS	C3020	2	Plant Adaption	9,020
099AC02	RESTROOM AND DRINKING FOUNTAIN ACCESSIBILITY UPGRADES	D2010	3	Plant Adaption	167,993
099EL01	INSTALL EMERGENCY GENERATOR AND POWER NETWORK	D5090	3	Plant Adaption	83,895
099HE01	ASBESTOS ABATEMENT - MECHANICAL SYSTEMS	F2020	3	Plant Adaption	7,695
				TOTAL	**$625,358**

FACILITY CONDITION ASSESSMENT

SECTION 3

NONRECURRING PROJECT DETAILS

All costs shown as Present Value

INSTALL FIRE ALARM SYSTEM

Project Number:	099FS01	**Category Code:** FS2A	
Priority Sequence:	1		
Priority Class:	Medium	**System:**	FIRE/LIFE SAFETY
Project Class:	Plant Adaption	**Component:**	DETECTION ALARM
Date Basis:	2/14/2023	**Element:**	GENERAL

Code Application:		Subclass/Savings:	Project Location:
ADAAG	702.1	Not Applicable	Floor-wide: Floor(s) 1
NFPA	1, 101		

Description

There is no fire alarm system in this building. Some monitoring devices are connected to the security system, but this should be replaced with a modern fire alarm system. Specify a point addressable supervised main fire alarm panel with an annunciator and include pull stations, audible and visible alarms, smoke and heat detectors, and an associated wiring network. Install all devices in accordance with NFPA and ADA requirements. The system should be monitored to report activation or trouble to a receiving station.

All costs shown as Present Value

Project Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
Smoke and heat detectors, manual pull stations, audible and visual alarms, wiring, conduit, cut and patching materials	SF	18,227	$2.36	$43,016	$1.62	$29,528	$72,543
Fire alarm control panel, annunciator, cut and patching materials	EA	1	$19,986	$19,986	$17,680	$17,680	$37,666
Base Material/Labor Costs				**$63,002**		**$47,208**	
Indexed Material/Labor Costs				**$63,443**		**$33,659**	**$97,102**
Construction Mark Up at 20.0%							**$19,420**
Original Construction Cost							**$116,523**
Date of Original Estimate: 2/14/2023						**Inflation**	**$0**
Current Year Construction Cost							**$116,523**
Professional Fees at 16.0%							**$18,644**
TOTAL PROJECT COST							**$135,166**

All costs shown as Present Value

ADD ROPE DAVITS TO SUPPORT WORKER FALL PROTECTION

Project Number:	099FS02	**Category Code:** FS6A	
Priority Sequence:	2		
Priority Class:	Medium	**System:**	FIRE/LIFE SAFETY
Project Class:	Plant Adaption	**Component:**	GENERAL
Date Basis:	2/20/2023	**Element:**	OTHER

Code Application:	Subclass/Savings:	Project Location:
Not Applicable	Not Applicable	Building-wide: Floor(s) R

Description

Rooftop fall protection is required to protect workers on roofs over six feet above grade. The installation of hard looped tie-off points is recommended at intervals throughout the roof to support worker lifelines and harness personal protective equipment.

All costs shown as Present Value

Project Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
Allocation to install metal rope davits to support PPE equipment on roof	EA	109	$391	$42,663	$628	$68,485	$111,147
			Base Material/Labor Costs	**$42,663**		**$68,485**	
			Indexed Material/Labor Costs	**$42,961**		**$48,830**	**$91,791**
						Construction Mark Up at 20.0%	**$18,358**
						Original Construction Cost	**$110,149**
Date of Original Estimate: 2/20/2023						**Inflation**	**$0**
						Current Year Construction Cost	**$110,149**
						Professional Fees at 16.0%	**$17,624**
						TOTAL PROJECT COST	**$127,773**

All costs shown as Present Value

IMPROVE EGRESS PATHWAY DESIGNATION

Project Number:	099FS03	**Category Code:** FS1A	
Priority Sequence:	3		
Priority Class:	Medium	**System:**	FIRE/LIFE SAFETY
Project Class:	Plant Adaption	**Component:**	LIGHTING
Date Basis:	2/23/2023	**Element:**	EGRESS LTG./EXIT SIGNAGE

Code Application:		Subclass/Savings:	Project Location:
NFPA	101-47	Not Applicable	Area Wide: Floor(s) 1
IBC	1011		

Description

The egress paths in each of the suites are not clearly designated by exit signs. It is recommended that new LED battery backup exit signs be installed.

All costs shown as Present Value

Project Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
Install new battery pack LED exit signs, including all connections and extension of power	EA	10	$331	$3,311	$169	$1,692	$5,004
Base Material/Labor Costs				**$3,311**		**$1,692**	
Indexed Material/Labor Costs				**$3,334**		**$1,207**	**$4,541**
Construction Mark Up at 20.0%							**$908**
Original Construction Cost							**$5,449**
Date of Original Estimate: 2/23/2023						**Inflation**	**$0**
Current Year Construction Cost							**$5,449**
Professional Fees at 16.0%							**$872**
TOTAL PROJECT COST							**$6,321**

All costs shown as Present Value

ASBESTOS ABATEMENT - INTERIOR FINISH SYSTEMS

Project Number:	099HE02	**Category Code:** HE6A	
Priority Sequence:	4		
Priority Class:	Medium	**System:**	HEALTH
Project Class:	Plant Adaption	**Component:**	HAZARDOUS MATERIAL
Date Basis:	2/24/2023	**Element:**	STRUCTURAL ASBESTOS

Code Application:		Subclass/Savings:	Project Location:
EPA	40 CFR 61.M, 763	Not Applicable	Area Wide: Floor(s) 1
OSHA	29 CFR 1910.1001, 1926.1101		

Description

There is asbestos in the vinyl floor tile. Before being replaced, the flooring will have to be properly abated in compliance with all applicable national, state, and local regulations.

All costs shown as Present Value

Project Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
Typical asbestos abatement of floor tile and mastic	SF	2,870	$0.38	$1,091	$2.63	$7,548	$8,639
Base Material/Labor Costs				**$1,091**		**$7,548**	
Indexed Material/Labor Costs				**$1,098**		**$5,382**	**$6,480**
Construction Mark Up at 20.0%							**$1,296**
Original Construction Cost							**$7,776**
Date of Original Estimate: 2/24/2023						**Inflation**	**$0**
Current Year Construction Cost							**$7,776**
Professional Fees at 16.0%							**$1,244**
TOTAL PROJECT COST							**$9,020**

All costs shown as Present Value

INTERIOR AMENITY ACCESSIBILITY UPGRADES

Project Number:	099AC03	**Category Code:** AC4A	
Priority Sequence:	5		
Priority Class:	Medium	**System:**	ACCESSIBILITY
Project Class:	Plant Adaption	**Component:**	GENERAL
Date Basis:	2/18/2023	**Element:**	FUNCTIONAL SPACE MOD.

Code Application:		Subclass/Savings:	Project Location:
ADAAG	804	Not Applicable	Floor-wide: Floor(s) 1

Description

The break room cabinetry and service counters in several suites are a barrier to accessibility. Install wheelchair accessible cabinetry and a lowered section of service counter.

All costs shown as Present Value

Project Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
ADA compliant kitchen sink with base cabinet knee space and storage shelving upgrade	EA	5	$2,469	$12,347	$1,578	$7,889	$20,236
ADA compliant service counter	LF	10	$256	$2,562	$137	$1,366	$3,928
			Base Material/Labor Costs	**$14,909**		**$9,255**	
			Indexed Material/Labor Costs	**$15,013**		**$6,599**	**$21,612**
					Construction Mark Up at 20.0%		**$4,322**
					Original Construction Cost		**$25,934**
Date of Original Estimate: 2/18/2023					**Inflation**		**$0**
					Current Year Construction Cost		**$25,934**
					Professional Fees at 16.0%		**$4,149**
					TOTAL PROJECT COST		**$30,084**

All costs shown as Present Value

INTERIOR DOOR ACCESSIBILITY UPGRADES

Project Number:	099AC01	**Category Code:** AC3C	
Priority Sequence:	6		
Priority Class:	Medium	**System:**	ACCESSIBILITY
Project Class:	Plant Adaption	**Component:**	INTERIOR PATH OF TRAVEL
Date Basis:	2/20/2023	**Element:**	DOORS AND HARDWARE

Code Application:		Subclass/Savings:	Project Location:
ADAAG	309.4, 703.1	DOJ2 - Access to Goods & Services	Floor-wide: Floor(s) 1

Description

Accessibility legislation requires that door hardware be designed for people with little or no ability to grasp objects with their hands. To comply with the intent of this legislation, it is recommended that lever hardware be installed on all doors that still have knobs. Also, the signage to permanent spaces is not compliant. All noncompliant room and directional signage should be upgraded.

All costs shown as Present Value

Project Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
Lever actuated door hardware	EA	55	$498	$27,399	$200	$10,976	$38,375
ADA compliant signage	EA	55	$87.09	$4,790	$25.61	$1,409	$6,199
			Base Material/Labor Costs	**$32,189**		**$12,384**	
			Indexed Material/Labor Costs	**$32,414**		**$8,830**	**$41,244**
					Construction Mark Up at 20.0%		**$8,249**
					Original Construction Cost		**$49,493**
Date of Original Estimate:	2/20/2023				**Inflation**		**$0**
					Current Year Construction Cost		**$49,493**
					Professional Fees at 16.0%		**$7,919**
					TOTAL PROJECT COST		**$57,412**

All costs shown as Present Value

ASBESTOS ABATEMENT - MECHANICAL SYSTEMS

Project Number:	099HE01	**Category Code:** HE6B	
Priority Sequence:	7		
Priority Class:	Low	**System:**	HEALTH
Project Class:	Plant Adaption	**Component:**	HAZARDOUS MATERIAL
Date Basis:	2/24/2023	**Element:**	MECHANICAL ASBESTOS

Code Application:		Subclass/Savings:	Project Location:
EPA	40 CFR 61.M, 763	Not Applicable	Floor-wide: Floor(s) 1
OSHA	29 CFR 1910.1001, 1926.1101		

Description

There is asbestos in the air distribution network and on utility piping. During removal of these systems, this asbestos will have to be properly abated in compliance with all applicable national, state, and local regulations.

All costs shown as Present Value

Project Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
HVAC system - abate asbestos from air distribution network and utility piping	SF	18,227	$0.11	$2,005	$0.27	$4,921	$6,926
			Base Material/Labor Costs	**$2,005**		**$4,921**	
			Indexed Material/Labor Costs	**$2,019**		**$3,509**	**$5,528**
						Construction Mark Up at 20.0%	**$1,106**
						Original Construction Cost	**$6,633**
Date of Original Estimate:	2/24/2023					**Inflation**	**$0**
						Current Year Construction Cost	**$6,633**
						Professional Fees at 16.0%	**$1,061**
						TOTAL PROJECT COST	**$7,695**

All costs shown as Present Value

RESTROOM AND DRINKING FOUNTAIN ACCESSIBILITY UPGRADES

Project Number:	099AC02	**Category Code:** AC3E	
Priority Sequence:	8		
Priority Class:	Low	**System:**	ACCESSIBILITY
Project Class:	Plant Adaption	**Component:**	INTERIOR PATH OF TRAVEL
Date Basis:	2/18/2023	**Element:**	RESTROOMS/BATHROOMS

Code Application:		Subclass/Savings:	Project Location:
ADAAG	211, 602-608	DOJ3 - Restrooms	Floor-wide: Floor(s)

Description

Restrooms in each suite are not fully ADA compliant. Grab bars, signage, and compliant lavatories should be installed. Also, the drinking fountains are a single-level design. They should be replaced with dual-level units set in alcoves or with a tapered lower cabinet design.

All costs shown as Present Value

Project Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
Grab bars	SYS	10	$232	$2,322	$546	$5,465	$7,787
ADA compliant signage	EA	10	$1,008	$10,081	$375	$3,753	$13,834
ADA compliant toilet	EA	10	$1,584	$15,836	$418	$4,185	$20,020
Dual-level drinking fountains	EA	10	$1,995	$19,945	$613	$6,130	$26,075
Alcove construction	EA	10	$1,438	$14,378	$6,137	$61,372	$75,750
			Base Material/Labor Costs	**$62,562**		**$80,904**	
			Indexed Material/Labor Costs	**$63,000**		**$57,685**	**$120,684**
						Construction Mark Up at 20.0%	**$24,137**
						Original Construction Cost	**$144,821**
Date of Original Estimate:	2/18/2023					**Inflation**	**$0**
						Current Year Construction Cost	**$144,821**
						Professional Fees at 16.0%	**$23,171**
						TOTAL PROJECT COST	**$167,993**

All costs shown as Present Value

INSTALL EMERGENCY GENERATOR AND POWER NETWORK

Project Number:	099EL01	**Category Code:** EL5A	
Priority Sequence:	9		
Priority Class:	Low	**System:**	ELECTRICAL
Project Class:	Plant Adaption	**Component:**	EMERGENCY POWER SYSTEM
Date Basis:	2/14/2023	**Element:**	GENERATION/DISTRIBUTION

Code Application:	Subclass/Savings:	Project Location:
Not Applicable	Not Applicable	Floor-wide: Floor(s) 1

Description

As part of future renovation efforts, it is recommended that a central emergency power system with an appropriately sized generator, associated automatic transfer switches (ATS), and an emergency distribution network be installed to support life safety and specific nonessential loads. Loads considered as life safety include egress lighting, exit signs, and fire alarm systems. Nonessential loads include HVAC equipment, refrigeration equipment, computer equipment, etc.

All costs shown as Present Value

Project Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
Generator set, including fuel tank, battery, charger, exhaust, connections	KW	30	$1,277	$38,307	$174	$5,205	$43,512
Emergency power network, including power panels, conduit, all connections, and terminations	SF	18,227	$0.36	$6,562	$0.50	$9,114	$15,675
Automatic transfer switch (240 V), connections	AMP	200	$21.49	$4,298	$3.85	$770	$5,068
			Base Material/Labor Costs	**$49,167**		**$15,089**	
			Indexed Material/Labor Costs	**$49,511**		**$10,758**	**$60,269**
					Construction Mark Up at 20.0%		**$12,054**
					Original Construction Cost		**$72,323**
Date of Original Estimate:	2/14/2023				**Inflation**		**$0**
					Current Year Construction Cost		**$72,323**
					Professional Fees at 16.0%		**$11,572**
					TOTAL PROJECT COST		**$83,895**

FACILITY CONDITION ASSESSMENT

SECTION 4

LIFECYCLE COMPONENT INVENTORY

RENEWABLE COMPONENT INVENTORY

COMP CODE	COMPONENT DESCRIPTION	IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	CPLX FACTR	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
EW01	WALL, EXTERIOR, MASONRY POINTING	BLOND BRICK		ALL ELEVS	7,920	SF	1.00	$73,233	1966	30	26	DR
EW06	WALL, EXTERIOR, SIDING, WOOD BOARD, STANDARD	BOARD SIDING		ALL ELEVS	2,640	SF	1.00	$34,225	1966	30	26	DR
WN01	GLASS, WINDOW, ALUMINUM OR WOOD, STANDARD	SINGLE PANE		ALL ELEVS	2,640	SF	1.00	$486,480	1966	40	16	DR
DR08	DOOR AND FRAME, EXTERIOR, SWINGING, HOLLOW METAL	PTD HM		ALL ELEVS	28	LEAF	1.00	$68,456	1966	40	16	DR
DR12	DOOR AND STOREFRONT, EXTERIOR, SWINGING, ALUMINUM AND GLASS	METAL & GLASS		EXTERIOR	2	LEAF	1.00	$9,028	1966	25	31	DR
RR03	ROOF - 1-PLY, ADHERED (EPDM, PIB, CSPE, PVC)	FLAT EPDM			24,445	SF	1.00	$198,449	2002	20		DR
RR07	ROOF - BITUMINOUS, 2-PLY, APPLIED MODIFIED BITUMEN, TORCH	FLAT MOD BIT			1,331	SF	1.00	$8,110	2002	20		DR
RR26	ROOF SKYLIGHT - GLASS WITH ALUMINUM FRAME	SQUARE		ROOF	144	SF	1.00	$47,128	2002	35	-5	2032
DR02	DOOR AND FRAME, INTERIOR, FIRE-RATED	WOOD		THROUGHOUT	55	LEAF	1.00	$247,542	1966	40	16	DR
DR02	DOOR AND FRAME, INTERIOR, FIRE-RATED	WOOD		THROUGHOUT	55	LEAF	1.00	$247,542	2002	40		2042
DR24	DOOR LOCK, COMMERCIAL-GRADE	INT DRS		THROUGHOUT	55	EA	1.00	$49,304	1966	20	36	DR
DR24	DOOR LOCK, COMMERCIAL-GRADE	INT DRS		THROUGHOUT	55	EA	1.00	$49,304	2002	20		DR
DR24	DOOR LOCK, COMMERCIAL-GRADE	PTD HM DRS		ALL ELEVS	28	EA	1.00	$25,100	1966	20	36	DR
DR24	DOOR LOCK, COMMERCIAL-GRADE	METAL & GLASS DRS			2	EA	1.00	$1,793	1966	20	36	DR
CW01	CASEWORK - WOOD BASE AND WALL, TOP, STANDARD	LAMINATE		BREAK RMS	75	LF	1.00	$48,689	1966	20	35	DR

RENEWABLE COMPONENT INVENTORY

COMP CODE	COMPONENT DESCRIPTION	IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	CPLX FACTR	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
IW01	WALL FINISH - PAINT, STANDARD	PTD DRYWALL		THROUGHOUT	18,740	SF	1.00	$50,489	1966	12	44	DR
IW01	WALL FINISH - PAINT, STANDARD	PTD DRYWALL		THROUGHOUT	18,740	SF	1.00	$50,489	2002	12	8	DR
IW03	WALL FINISH - TILE, CERAMIC / STONE, STANDARD	CERAMIC		RESTROOMS	1,160	SF	1.00	$53,590	1966	30	26	DR
IW08	WALL FINISH - WOOD PANEL, STANDARD	PT ON WOOD		CORRIDORS	1,930	SF	1.00	$42,753	1966	40		DR
IW09	WALL FINISH - WALL COVERING, ROLL	VINYL WP		OFFICES	1,930	SF	1.00	$12,104	1966	20		DR
IF01	FLOORING - CARPET, TILE OR ROLL, STANDARD	BROADLOOM		THROUGHOUT	4,920	SF	1.00	$72,526	1966	12	44	DR
IF01	FLOORING - CARPET, TILE OR ROLL, STANDARD	BROADLOOM		THROUGHOUT	4,920	SF	1.00	$72,526	2002	12	8	DR
IF03	FLOORING - VINYL COMPOSITION TILE, STANDARD	VCT		THROUGHOUT	3,280	SF	1.00	$25,305	1966	20	36	DR
IF03	FLOORING - VINYL COMPOSITION TILE, STANDARD	VCT		THROUGHOUT	3,280	SF	1.00	$25,305	2002	20		DR
IF04	FLOORING - VINYL SHEET, STANDARD	30 MIL		RESTROOM	1,640	SF	1.00	$21,085	1966	15		DR
IC01	CEILING FINISH - SUSPENDED ACOUSTICAL TILE, STANDARD	2X2 GRID		THROUGHOUT	8,200	SF	1.00	$99,620	1966	30	26	DR
IC01	CEILING FINISH - SUSPENDED ACOUSTICAL TILE, STANDARD	2X2 GRID		THROUGHOUT	8,200	SF	1.00	$99,620	2002	30		2032
IC04	CEILING FINISH - PAINTED OR STAINED, STANDARD	PT ON DRYWALL		THROUGHOUT	1,640	SF	1.00	$4,418	2002	24		2026
FX01	PLUMBING FIXTURE - LAVATORY, COUNTER	PC ON LAMINATE		RESTROOMS	5	EA	1.00	$7,933	1966	35	21	DR
FX02	PLUMBING FIXTURE - LAVATORY, WALL HUNG	PC		RESTROOM	12	EA	1.00	$19,216	1966	35	21	DR

RENEWABLE COMPONENT INVENTORY

COMP CODE	COMPONENT DESCRIPTION	IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	CPLX FACTR	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
FX04	PLUMBING FIXTURE - SINK, KITCHEN	SST			5	EA	1.00	$12,999	1966	35	21	DR
FX06	PLUMBING FIXTURE - SINK, SERVICE/LAUNDRY/UTILITY	CAST IRON			3	EA	1.00	$6,474	1966	35	6	DR
FX11	PLUMBING FIXTURE - WATER CLOSET, TANK-TYPE	TANKS		RESTROOMS	8	EA	1.00	$11,238	1966	35	21	DR
FX12	PLUMBING FIXTURE - WATER CLOSET, TANKLESS	PC LOW FLOW		RESTROOM	9	EA	1.00	$21,111	1966	35	21	DR
PS14	SUPPLY PIPING SYSTEM - OFFICE	GALVINIZED STEEL		THROUGHOUT	18,227	SF	1.00	$77,123	1966	35	21	DR
WH03	WATER HEATER - COMMERCIAL, GAS (168-225 MBH INPUT)	WH-01	24425	MECH ROOM	200	MBH	0.70	$14,629	2013	25		2038
WH24	WATER HEATER - RESIDENTIAL, ELECTRIC (46-100 GAL)	WH-02		MECH ROOM	50	GAL	1.00	$1,980	2001	10	11	DR
PD14	DRAIN PIPING SYSTEM - OFFICE	CAST IRON		THROUGHOUT	18,227	SF	1.00	$116,028	1966	40	16	DR
HU01	CONDENSER - REFRIGERANT, AIR-COOLED (<=10 TON)	AHU-036	19656	MAIN ROOFS	4	TON	1.00	$10,327	2002	23		2025
HU01	CONDENSER - REFRIGERANT, AIR-COOLED (<=10 TON)	AHU-002	19462	MAIN ROOFS	4	TON	1.00	$10,327	2002	23		2025
HU01	CONDENSER - REFRIGERANT, AIR-COOLED (<=10 TON)	AHU-008	19595	MAIN ROOFS	3	TON	1.00	$7,745	2003	23		2026
HU01	CONDENSER - REFRIGERANT, AIR-COOLED (<=10 TON)	AHU-010	19591	MAIN ROOFS	2	TON	1.00	$5,164	2003	23		2026
HU01	CONDENSER - REFRIGERANT, AIR-COOLED (<=10 TON)	AHU-025	19647	MAIN ROOFS	2	TON	1.00	$5,164	2013	23		2036
HU01	CONDENSER - REFRIGERANT, AIR-COOLED (<=10 TON)	AHU-027	21040	MAIN ROOFS	2	TON	1.00	$5,164	2013	23		2036
HU01	CONDENSER - REFRIGERANT, AIR-COOLED (<=10 TON)	YORK		MAIN ROOFS	2	TON	1.00	$5,164	2008	23		2031

RENEWABLE COMPONENT INVENTORY

COMP CODE	COMPONENT DESCRIPTION	IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	CPLX FACTR	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
HU01	CONDENSER - REFRIGERANT, AIR-COOLED (<=10 TON)	AHU-030	21041	MAIN ROOFS	3	TON	1.00	$7,745	2000	23		2023
HU01	CONDENSER - REFRIGERANT, AIR-COOLED (<=10 TON)	AHU-033	19652	MAIN ROOFS	2	TON	1.00	$5,164	2002	23		2025
HU01	CONDENSER - REFRIGERANT, AIR-COOLED (<=10 TON)	AHU-005	19465	MAIN ROOFS	2	TON	1.00	$5,164	2022	23		2045
HU01	CONDENSER - REFRIGERANT, AIR-COOLED (<=10 TON)	AHU-015	19705	MAIN ROOFS	2	TON	1.00	$5,164	2022	23		2045
HU01	CONDENSER - REFRIGERANT, AIR-COOLED (<=10 TON)	AHU-018	19708	MAIN ROOFS	2	TON	1.00	$5,164	2016	23		2039
HU01	CONDENSER - REFRIGERANT, AIR-COOLED (<=10 TON)	CARRIER		MAIN ROOFS	2	TON	1.00	$5,164	2017	23		2040
HU07	EVAPORATOR UNIT, NO HEAT (1.5-2 TON)	AHU-028	21043	MECH ROOM	2	TON	1.00	$5,496	2010	20		2030
HU07	EVAPORATOR UNIT, NO HEAT (1.5-2 TON)	AHU-031	21045	MECH ROOM	2	TON	1.00	$5,496	2010	20		2030
HU07	EVAPORATOR UNIT, NO HEAT (1.5-2 TON)	AHU-001	19712	MECH ROOM	2	TON	1.00	$5,496	2005	20		2025
HU15	EVAPORATOR UNIT, NATURAL GAS HEAT (45-100 MBH)	AHU-003	19461	MECH ROOM	80	MBH	1.00	$4,369	2000	17	5	DR
HU15	EVAPORATOR UNIT, NATURAL GAS HEAT (45-100 MBH)	AHU-004	19460	MECH ROOM	60	MBH	1.00	$3,277	2002	17	3	DR
HU15	EVAPORATOR UNIT, NATURAL GAS HEAT (45-100 MBH)	AHU-009	19592	MECH ROOM	100	MBH	1.00	$5,461	2013	17		2030
HU15	EVAPORATOR UNIT, NATURAL GAS HEAT (45-100 MBH)	AHU-011	19593	MECH ROOM	100	MBH	1.00	$5,461	2017	17		2034
HU15	EVAPORATOR UNIT, NATURAL GAS HEAT (45-100 MBH)	AHU-012	19597	MECH ROOM	60	MBH	1.00	$3,277	2012	17		2029
HU15	EVAPORATOR UNIT, NATURAL GAS HEAT (45-100 MBH)	AHU-016	19704	MECH ROOM	80	MBH	1.00	$4,369	2017	17		2034

RENEWABLE COMPONENT INVENTORY

COMP CODE	COMPONENT DESCRIPTION	IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	CPLX FACTR	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
HU15	EVAPORATOR UNIT, NATURAL GAS HEAT (45-100 MBH)	AHU-019	19707	MECH ROOM	80	MBH	1.00	$4,369	2002	17		DR
HU15	EVAPORATOR UNIT, NATURAL GAS HEAT (45-100 MBH)	AHU-034	19650	MECH ROOM	100	MBH	1.00	$5,461	2002	17		DR
HU15	EVAPORATOR UNIT, NATURAL GAS HEAT (45-100 MBH)	AHU-037	19654	MECH ROOM	80	MBH	1.00	$4,369	2013	17		2030
HU15	EVAPORATOR UNIT, NATURAL GAS HEAT (45-100 MBH)	AHU-006	19467	MECH ROOM	60	MBH	1.00	$3,277	2014	17		2031
HU15	EVAPORATOR UNIT, NATURAL GAS HEAT (45-100 MBH)	AHU-026	19648	MECH ROOM	80	MBH	1.00	$4,369	2012	17		2029
FN18	FAN - CENTRIFUGAL ROOF EXHAUST, 1/4" SP (10"-18" DIAMETER)	ALUMINUM DOME		MAIN ROOFS	2	EA	1.00	$8,714	2005	20		2025
FN19	FAN - CENTRIFUGAL ROOF EXHAUST, 1/4" SP (20"-22" DIAMETER)	ALUMINUM DOME		MAIN ROOFS	15	EA	0.80	$92,537	1966	20	36	DR
FN20	FAN - CENTRIFUGAL ROOF EXHAUST, 1/4" SP (25"-30" DIAMETER)	ALUMINUM DOME		MAIN ROOFS	1	EA	1.00	$9,572	2000	20	2	DR
HV14	HVAC DISTRIBUTION NETWORKS - OFFICE	ORIGINAL		THROUGHOUT	18,227	SF	0.10	$56,932	1966	40	16	DR
HU30	PACKAGE HVAC UNIT, DX, GAS OR ELECTRIC HEAT, SINGLE-ZONE (<= 5 TON)	AHU-023 GAS PACK	19724	MAIN ROOFS	4	TON	1.00	$20,694	2002	15		DR
HU30	PACKAGE HVAC UNIT, DX, GAS OR ELECTRIC HEAT, SINGLE-ZONE (<= 5 TON)	AHU-021 GAS PACK	19725	MAIN ROOFS	4	TON	1.00	$20,694	2016	15		2031
HU30	PACKAGE HVAC UNIT, DX, GAS OR ELECTRIC HEAT, SINGLE-ZONE (<= 5 TON)	AHU-024 GAS PACK	19726	MAIN ROOFS	2	TON	1.00	$10,347	2003	15		DR
HU30	PACKAGE HVAC UNIT, DX, GAS OR ELECTRIC HEAT, SINGLE-ZONE (<= 5 TON)	AHU-022 GAS PACK	19727	MAIN ROOFS	4	TON	1.00	$20,694	2017	15		2032
SE14	ELECTRICAL DISTRIBUTION NETWORK - OFFICE	CONDUIT, CABLES		THROUGHOUT	18,227	SF	1.00	$430,736	1966	40	16	DR
SG04	MAIN SWITCHBOARD W/BREAKERS (800-1200 AMP)	MAIN PANELBOARD		MAIN MECH ROOM	800	AMP	1.00	$71,019	1966	20	36	DR

RENEWABLE COMPONENT INVENTORY

COMP CODE	COMPONENT DESCRIPTION	IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	CPLX FACTR	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
LE03	LIGHTING - EXTERIOR, RECESSED (INC, CFL, LED)	CAN INCAND		COVERED SOFFITS	20	EA	1.00	$5,646	1966	15	41	DR
LE08	LIGHTING - EXTERIOR, WALL LANTERN or FLOOD (INC, CFL, LED)	WALL MOUNT SCONCE		EXTERIOR WALLS	25	EA	1.00	$12,491	1966	15	41	DR
LI14	LIGHTING SYSTEM, INTERIOR - OFFICE	FLUOR, INCAND		THROUGHOUT	18,227	SF	1.00	$259,431	1966	20	36	DR
SI06	ASPHALT VEHICULAR PAVING - SEALCOAT AND STRIPE	VEHICULAR PAVING		PARKING LOT	6,000	SY	1.00	$26,099	2002	7		DR
SI01	CONCRETE PEDESTRIAN PAVING - JOINT MAINTENANCE	CONCRETE WALK		PERIMETER	500	LF	1.00	$2,990	2002	7		DR
								Grand Total:	**$3,708,697**			

RECURRING NEEDS BY YEAR

All costs shown as Future Value using a 3% average inflation rate

DEFERRED RENEWAL									
COMP CODE	COMPONENT DESCRIPTION	IDENTIFIER	CUSTOMER ID	LOCATION	UNI-FORMAT	QTY	UNITS	REPLACEMENT COST	YEAR
EW06	WALL, EXTERIOR, SIDING, WOOD BOARD, STANDARD	BOARD SIDING		ALL ELEVS	B2010	2,640	SF	$34,225	DR
WN01	GLASS, WINDOW, ALUMINUM OR WOOD, STANDARD	SINGLE PANE		ALL ELEVS	B2010	2,640	SF	$486,480	DR
EW01	WALL, EXTERIOR, MASONRY POINTING	BLOND BRICK		ALL ELEVS	B2010	7,920	SF	$73,233	DR
DR08	DOOR AND FRAME, EXTERIOR, SWINGING, HOLLOW METAL	PTD HM		ALL ELEVS	B2030	28	LEAF	$68,456	DR
DR12	DOOR AND STOREFRONT, EXTERIOR, SWINGING, ALUMINUM AND GLASS	METAL & GLASS		EXTERIOR	B2030	2	LEAF	$9,028	DR
RR03	ROOF - 1-PLY, ADHERED (EPDM, PIB, CSPE, PVC)	FLAT EPDM			B3010	24,445	SF	$198,449	DR
RR07	ROOF - BITUMINOUS, 2-PLY, APPLIED MODIFIED BITUMEN, TORCH	FLAT MOD BIT			B3010	1,331	SF	$8,110	DR
DR02	DOOR AND FRAME, INTERIOR, FIRE-RATED	WOOD		THROUGHOUT	C1020	55	LEAF	$247,542	DR
DR24	DOOR LOCK, COMMERCIAL-GRADE	INT DRS		THROUGHOUT	C1020	55	EA	$49,304	DR
DR24	DOOR LOCK, COMMERCIAL-GRADE	INT DRS		THROUGHOUT	C1020	55	EA	$49,304	DR
DR24	DOOR LOCK, COMMERCIAL-GRADE	METAL & GLASS DRS			C1020	2	EA	$1,793	DR
DR24	DOOR LOCK, COMMERCIAL-GRADE	PTD HM DRS		ALL ELEVS	C1020	28	EA	$25,100	DR

RECURRING NEEDS BY YEAR

All costs shown as Future Value using a 3% average inflation rate

CW01	CASEWORK - WOOD BASE AND WALL, TOP, STANDARD	LAMINATE		BREAK RMS	C1030	75	LF	$48,689	DR
IW01	WALL FINISH - PAINT, STANDARD	PTD DRYWALL		THROUGHOUT	C3010	18,740	SF	$50,489	DR
IW01	WALL FINISH - PAINT, STANDARD	PTD DRYWALL		THROUGHOUT	C3010	18,740	SF	$50,489	DR
IW03	WALL FINISH - TILE, CERAMIC / STONE, STANDARD	CERAMIC		RESTROOMS	C3010	1,160	SF	$53,590	DR
IW08	WALL FINISH - WOOD PANEL, STANDARD	PT ON WOOD		CORRIDORS	C3010	1,930	SF	$42,753	DR
IW09	WALL FINISH - WALL COVERING, ROLL	VINYL WP		OFFICES	C3010	1,930	SF	$12,104	DR
IF04	FLOORING - VINYL SHEET, STANDARD	30 MIL		RESTROOM	C3020	1,640	SF	$21,085	DR
IF01	FLOORING - CARPET, TILE OR ROLL, STANDARD	BROADLOOM		THROUGHOUT	C3020	4,920	SF	$72,526	DR
IF01	FLOORING - CARPET, TILE OR ROLL, STANDARD	BROADLOOM		THROUGHOUT	C3020	4,920	SF	$72,526	DR
IF03	FLOORING - VINYL COMPOSITION TILE, STANDARD	VCT		THROUGHOUT	C3020	3,280	SF	$25,305	DR
IF03	FLOORING - VINYL COMPOSITION TILE, STANDARD	VCT		THROUGHOUT	C3020	3,280	SF	$25,305	DR
IC01	CEILING FINISH - SUSPENDED ACOUSTICAL TILE, STANDARD	2X2 GRID		THROUGHOUT	C3030	8,200	SF	$99,620	DR
FX01	PLUMBING FIXTURE - LAVATORY, COUNTER	PC ON LAMINATE		RESTROOMS	D2010	5	EA	$7,933	DR
FX11	PLUMBING FIXTURE - WATER CLOSET, TANK-TYPE	TANKS		RESTROOMS	D2010	8	EA	$11,238	DR

RECURRING NEEDS BY YEAR

All costs shown as Future Value using a 3% average inflation rate

FX02	PLUMBING FIXTURE - LAVATORY, WALL HUNG	PC		RESTROOM	D2010	12	EA	$19,216	DR
FX12	PLUMBING FIXTURE - WATER CLOSET, TANKLESS	PC LOW FLOW		RESTROOM	D2010	9	EA	$21,111	DR
FX06	PLUMBING FIXTURE - SINK, SERVICE/LAUNDRY/UTILITY	CAST IRON			D2010	3	EA	$6,474	DR
FX04	PLUMBING FIXTURE - SINK, KITCHEN	SST			D2010	5	EA	$12,999	DR
PS14	SUPPLY PIPING SYSTEM - OFFICE	GALVINIZED STEEL		THROUGHOUT	D2020	18,227	SF	$77,123	DR
WH24	WATER HEATER - RESIDENTIAL, ELECTRIC (46-100 GAL)	WH-02		MECH ROOM	D2020	50	GAL	$1,980	DR
PD14	DRAIN PIPING SYSTEM - OFFICE	CAST IRON		THROUGHOUT	D2030	18,227	SF	$116,028	DR
HU15	EVAPORATOR UNIT, NATURAL GAS HEAT (45-100 MBH)	AHU-003	19461	MECH ROOM	D3030	80	MBH	$4,369	DR
HU15	EVAPORATOR UNIT, NATURAL GAS HEAT (45-100 MBH)	AHU-004	19460	MECH ROOM	D3030	60	MBH	$3,277	DR
HU15	EVAPORATOR UNIT, NATURAL GAS HEAT (45-100 MBH)	AHU-019	19707	MECH ROOM	D3030	80	MBH	$4,369	DR
HU15	EVAPORATOR UNIT, NATURAL GAS HEAT (45-100 MBH)	AHU-034	19650	MECH ROOM	D3030	100	MBH	$5,461	DR
HV14	HVAC DISTRIBUTION NETWORKS - OFFICE	ORIGINAL		THROUGHOUT	D3040	18,227	SF	$56,932	DR
FN19	FAN - CENTRIFUGAL ROOF EXHAUST, 1/4" SP (20"-22" DIAMETER)	ALUMINUM DOME		MAIN ROOFS	D3040	15	EA	$92,537	DR
FN20	FAN - CENTRIFUGAL ROOF EXHAUST, 1/4" SP (25"-30" DIAMETER)	ALUMINUM DOME		MAIN ROOFS	D3040	1	EA	$9,572	DR

RECURRING NEEDS BY YEAR

All costs shown as Future Value using a 3% average inflation rate

HU30	PACKAGE HVAC UNIT, DX, GAS OR ELECTRIC HEAT, SINGLE-ZONE (<= 5 TON)	AHU-024 GAS PACK	19726	MAIN ROOFS	D3050	2	TON	$10,347	DR
HU30	PACKAGE HVAC UNIT, DX, GAS OR ELECTRIC HEAT, SINGLE-ZONE (<= 5 TON)	AHU-023 GAS PACK	19724	MAIN ROOFS	D3050	4	TON	$20,694	DR
SE14	ELECTRICAL DISTRIBUTION NETWORK - OFFICE	CONDUIT, CABLES		THROUGHOUT	D5010	18,227	SF	$430,736	DR
SG04	MAIN SWITCHBOARD W/BREAKERS (800-1200 AMP)	MAIN PANELBOARD		MAIN MECH ROOM	D5010	800	AMP	$71,019	DR
LI14	LIGHTING SYSTEM, INTERIOR - OFFICE	FLUOR, INCAND		THROUGHOUT	D5020	18,227	SF	$259,431	DR
LE03	LIGHTING - EXTERIOR, RECESSED (INC, CFL, LED)	CAN INCAND		COVERED SOFFITS	D5020	20	EA	$5,646	DR
LE08	LIGHTING - EXTERIOR, WALL LANTERN or FLOOD (INC, CFL, LED)	WALL MOUNT SCONCE		EXTERIOR WALLS	D5020	25	EA	$12,491	DR
SI06	ASPHALT VEHICULAR PAVING - SEALCOAT AND STRIPE	VEHICULAR PAVING		PARKING LOT	G2020	6,000	SY	$26,099	DR
SI01	CONCRETE PEDESTRIAN PAVING - JOINT MAINTENANCE	CONCRETE WALK		PERIMETER	G2030	500	LF	$2,990	DR
					TOTAL DEFERRED RENEWAL COST			**$3,115,573**	

RECURRING NEEDS BY YEAR

All costs shown as Future Value using a 3% average inflation rate

2023									
COMP CODE	COMPONENT DESCRIPTION	IDENTIFIER	CUSTOMER ID	LOCATION	UNI-FORMAT	QTY	UNITS	REPLACEMENT COST	YEAR
HU01	CONDENSER - REFRIGERANT, AIR-COOLED (<=10 TON)	AHU-030	21041	MAIN ROOFS	D3030	3	TON	$7,745	2023
SI06	ASPHALT VEHICULAR PAVING - SEALCOAT AND STRIPE	VEHICULAR PAVING		PARKING LOT	G2020	6,000	SY	$26,099	2023
SI01	CONCRETE PEDESTRIAN PAVING - JOINT MAINTENANCE	CONCRETE WALK		PERIMETER	G2030	500	LF	$2,990	2023
					2023 PROJECTED COMPONENT REPLACEMENT COST			$36,835	

No Projected Component Replacement Cost for Asset No. 099 for 2024

2025									
COMP CODE	COMPONENT DESCRIPTION	IDENTIFIER	CUSTOMER ID	LOCATION	UNI-FORMAT	QTY	UNITS	REPLACEMENT COST	YEAR
HU01	CONDENSER - REFRIGERANT, AIR-COOLED (<=10 TON)	AHU-036	19656	MAIN ROOFS	D3030	4	TON	$10,956	2025

RECURRING NEEDS BY YEAR

All costs shown as Future Value using a 3% average inflation rate

HU01	CONDENSER - REFRIGERANT, AIR-COOLED (<=10 TON)	AHU-002	19462	MAIN ROOFS	D3030	4	TON	$10,956	2025
HU01	CONDENSER - REFRIGERANT, AIR-COOLED (<=10 TON)	AHU-033	19652	MAIN ROOFS	D3030	2	TON	$5,478	2025
HU07	EVAPORATOR UNIT, NO HEAT (1.5-2 TON)	AHU-001	19712	MECH ROOM	D3030	2	TON	$5,831	2025
FN18	FAN - CENTRIFUGAL ROOF EXHAUST, 1/4" SP (10"-18" DIAMETER)	ALUMINUM DOME		MAIN ROOFS	D3040	2	EA	$9,244	2025
						2025 PROJECTED COMPONENT REPLACEMENT COST		**$42,465**	

2026

COMP CODE	COMPONENT DESCRIPTION	IDENTIFIER	CUSTOMER ID	LOCATION	UNI-FORMAT	QTY	UNITS	REPLACEMENT COST	YEAR
IC04	CEILING FINISH - PAINTED OR STAINED, STANDARD	PT ON DRYWALL		THROUGHOUT	C3030	1,640	SF	$4,828	2026
HU01	CONDENSER - REFRIGERANT, AIR-COOLED (<=10 TON)	AHU-008	19595	MAIN ROOFS	D3030	3	TON	$8,464	2026
HU01	CONDENSER - REFRIGERANT, AIR-COOLED (<=10 TON)	AHU-010	19591	MAIN ROOFS	D3030	2	TON	$5,642	2026
						2026 PROJECTED COMPONENT REPLACEMENT COST		**$18,934**	

RECURRING NEEDS BY YEAR

All costs shown as Future Value using a 3% average inflation rate

No Projected Component Replacement Cost for Asset No. 099 for 2027

No Projected Component Replacement Cost for Asset No. 099 for 2028

2029									
COMP CODE	COMPONENT DESCRIPTION	IDENTIFIER	CUSTOMER ID	LOCATION	UNI-FORMAT	QTY	UNITS	REPLACEMENT COST	YEAR
HU15	EVAPORATOR UNIT, NATURAL GAS HEAT (45-100 MBH)	AHU-012	19597	MECH ROOM	D3030	60	MBH	$3,912	2029
HU15	EVAPORATOR UNIT, NATURAL GAS HEAT (45-100 MBH)	AHU-026	19648	MECH ROOM	D3030	80	MBH	$5,217	2029
						2029 PROJECTED COMPONENT REPLACEMENT COST		$9,129	

RECURRING NEEDS BY YEAR

All costs shown as Future Value using a 3% average inflation rate

2030

COMP CODE	COMPONENT DESCRIPTION	IDENTIFIER	CUSTOMER ID	LOCATION	UNI-FORMAT	QTY	UNITS	REPLACEMENT COST	YEAR
HU07	EVAPORATOR UNIT, NO HEAT (1.5-2 TON)	AHU-028	21043	MECH ROOM	D3030	2	TON	$6,760	2030
HU07	EVAPORATOR UNIT, NO HEAT (1.5-2 TON)	AHU-031	21045	MECH ROOM	D3030	2	TON	$6,760	2030
HU15	EVAPORATOR UNIT, NATURAL GAS HEAT (45-100 MBH)	AHU-009	19592	MECH ROOM	D3030	100	MBH	$6,716	2030
HU15	EVAPORATOR UNIT, NATURAL GAS HEAT (45-100 MBH)	AHU-037	19654	MECH ROOM	D3030	80	MBH	$5,373	2030
							2030 PROJECTED COMPONENT REPLACEMENT COST	$25,608	

2031

COMP CODE	COMPONENT DESCRIPTION	IDENTIFIER	CUSTOMER ID	LOCATION	UNI-FORMAT	QTY	UNITS	REPLACEMENT COST	YEAR
HU01	CONDENSER - REFRIGERANT, AIR-COOLED (<=10 TON)	YORK		MAIN ROOFS	D3030	2	TON	$6,541	2031
HU15	EVAPORATOR UNIT, NATURAL GAS HEAT (45-100 MBH)	AHU-006	19467	MECH ROOM	D3030	60	MBH	$4,151	2031
HU30	PACKAGE HVAC UNIT, DX, GAS OR ELECTRIC HEAT, SINGLE-ZONE (<= 5 TON)	AHU-021 GAS PACK	19725	MAIN ROOFS	D3050	4	TON	$26,214	2031

RECURRING NEEDS BY YEAR

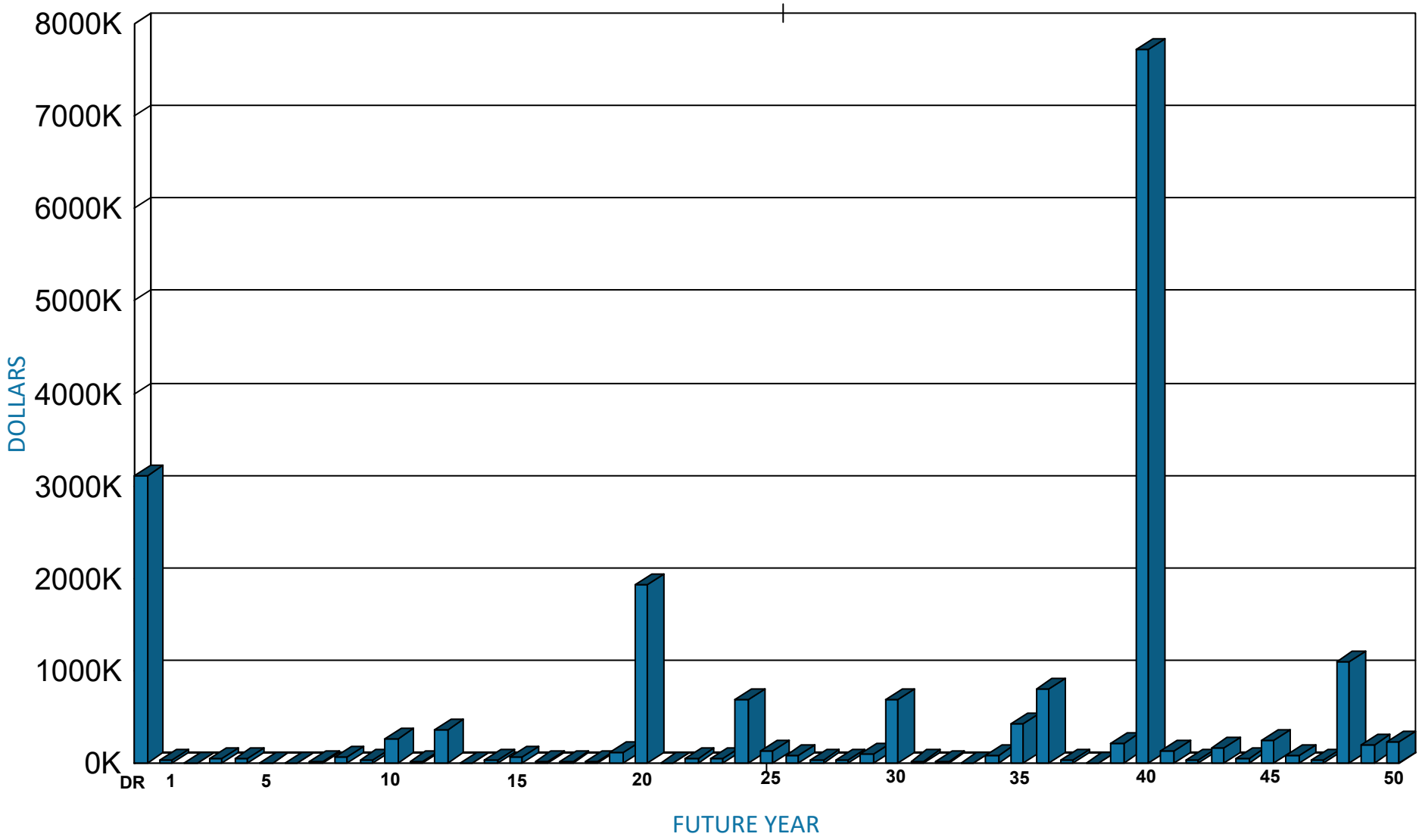
All costs shown as Future Value using a 3% average inflation rate

	2031 PROJECTED COMPONENT REPLACEMENT COST	**$36,906**

2032

COMP CODE	COMPONENT DESCRIPTION	IDENTIFIER	CUSTOMER ID	LOCATION	UNI-FORMAT	QTY	UNITS	REPLACEMENT COST	YEAR
RR26	ROOF SKYLIGHT - GLASS WITH ALUMINUM FRAME	SQUARE		ROOF	B3020	144	SF	$61,491	2032
IC01	CEILING FINISH - SUSPENDED ACOUSTICAL TILE, STANDARD	2X2 GRID		THROUGHOUT	C3030	8,200	SF	$129,981	2032
HU30	PACKAGE HVAC UNIT, DX, GAS OR ELECTRIC HEAT, SINGLE-ZONE (<= 5 TON)	AHU-022 GAS PACK	19727	MAIN ROOFS	D3050	4	TON	$27,001	2032
					2032 PROJECTED COMPONENT REPLACEMENT COST			**$218,473**	

RECURRING COMPONENT EXPENDITURE PROJECTIONS

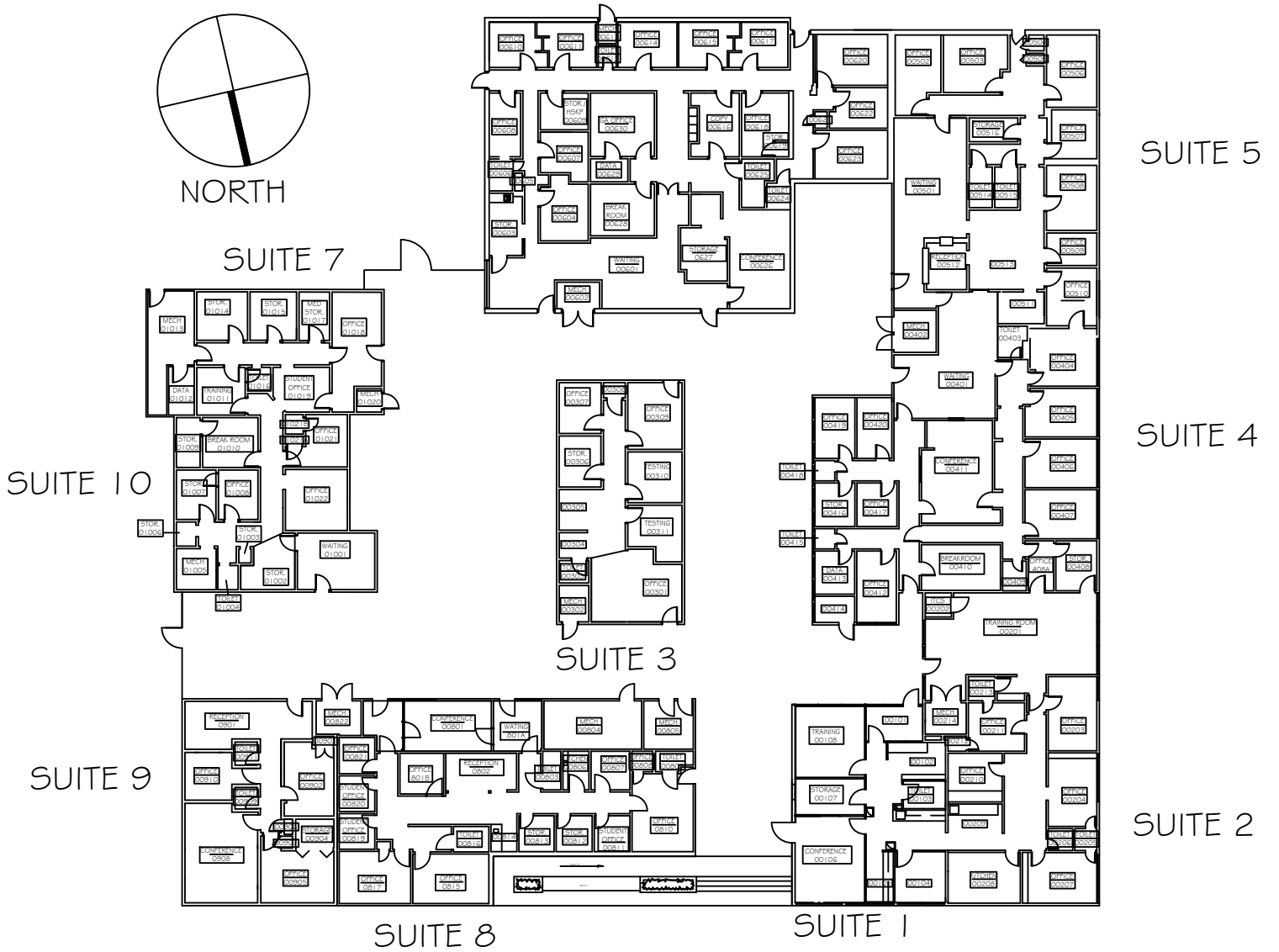


Average Annual Renewal Cost per SF $10.06

FACILITY CONDITION ASSESSMENT

SECTION 5

DRAWINGS



SCHEMATIC FLOOR PLAN

SCALE: 1/4"= 1'-0"

MEDICAL PAVILION 8.22.16

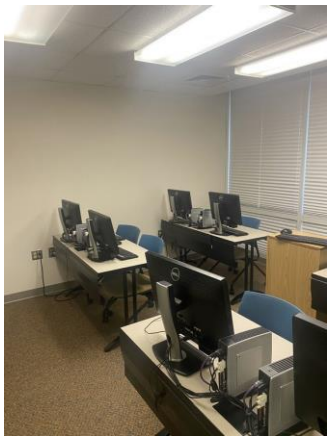
1800 FIFTH STREET

SECTION 6

PHOTOGRAPHS

099001a 1/26/2023
Acoustical tile ceiling, carpet, painted walls, drinking fountain
Corridor

099001e 1/26/2023
Fluorescent lighting
General office area



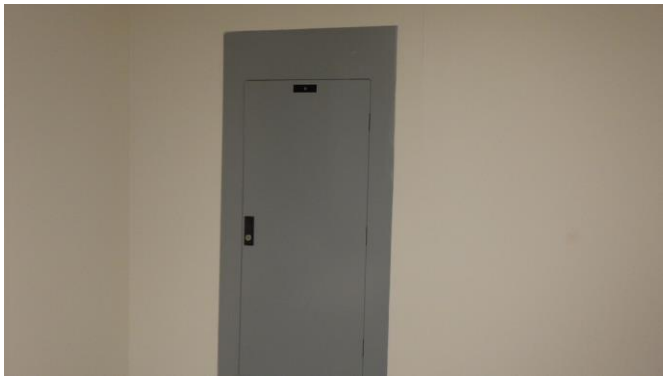
099002a 1/26/2023
Acoustical tile ceiling, carpet, painted walls
Classroom

099002e 1/26/2023
Incandescent lighting
Exterior soffit

099003a 1/26/2023
Acoustical tile ceiling, carpet, painted walls, casework
Reception area

099003e 1/26/2023
Incandescent exterior sconce light
Exterior wall

099004a 1/26/2023
Sheet vinyl, painted walls, acoustical tile ceiling, lavatory, accessible water closet
Restroom



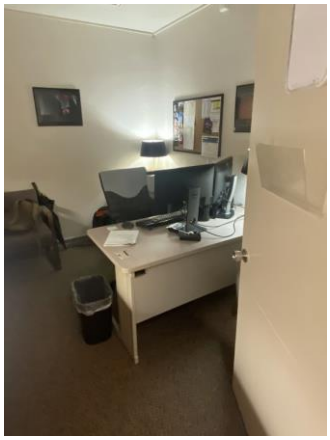
099004e 1/26/2023
120 volt electrical distribution
Suite electrical room

099005a 1/26/2023
Single-level drinking fountain
Corridor

099005e 1/26/2023
Main switchgear panel
Main electrical room

099006a 1/26/2023
Acoustical tile ceiling, carpet, painted walls, casework with a sink
Break room

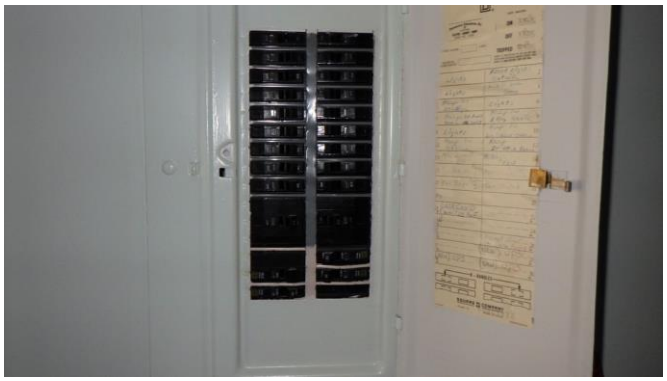
099006e 1/26/2023
Main switchgear disconnect
Main electrical room



099007a 1/26/2023
Painted ceiling and walls, carpet
Office

099007e 1/26/2023
Main 600 amp breaker
Main electrical room

099008a 1/26/2023
Acoustical tile ceiling, carpet, painted walls
Work area



099008e 1/26/2023
120 volt electrical distribution
Suite electrical room

099009a 1/26/2023
Ceramic tile wall, vinyl tile floor, toilet
Restroom

099009e 1/26/2023
Room exhaust fan
Main roof

099010a 1/26/2023
Painted hollow metal door with noncompliant exit sign
Corridor

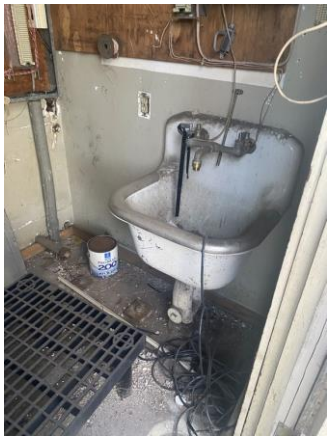
099010e 1/26/2023
Room exhaust fan
Main roof

099011a 1/26/2023
Hollow metal door with lever hardware
Exterior door

099011e 1/26/2023
Room exhaust fan
Main roof

099012a 1/26/2023
Acoustical tile ceiling, carpet, painted walls
Conference room

099012e 1/26/2023
HVAC condensing unit
Main roof

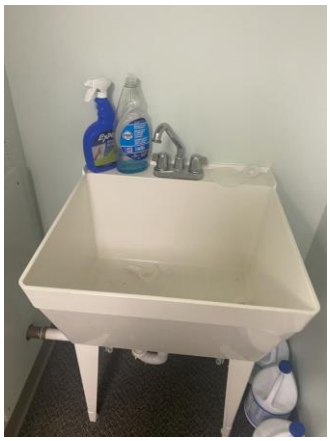


099013a 1/26/2023
Cast-iron sink
Utility room

099013e 1/26/2023
HVAC condensing unit
Main roof

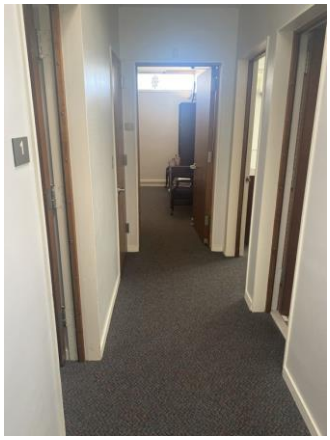
099014a 1/26/2023
Acoustical tile ceiling, carpet, painted walls
Conference room

099014e 1/26/2023
HVAC gas package unit
Main roof



099015a 1/26/2023
PVC sink
Utility room

099015e 1/26/2023
HVAC indoor fan unit
Suite mechanical room

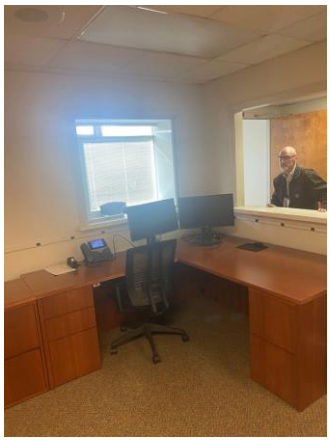


099016a 1/26/2023
Painted ceiling and walls, carpet, wood doors
Corridor

099016e 1/26/2023
HVAC indoor fan unit
Suite mechanical room

099017a 1/26/2023
Painted wall, vinyl tile floor, stainless steel lavatory
Restroom

099017e 1/26/2023
Commercial gas water heater
Suite mechanical room



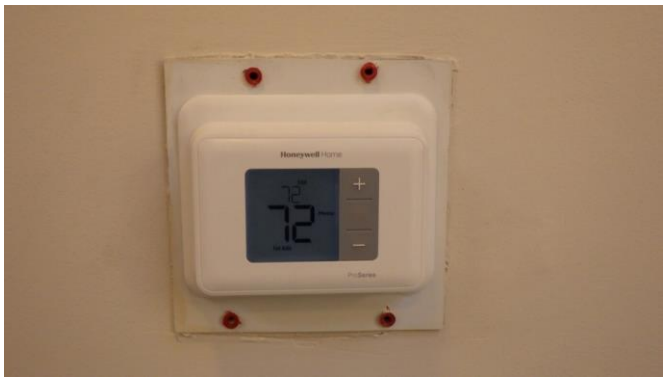
099018a 1/26/2023
Acoustical tile ceiling, carpet, painted walls
Reception counter

099018e 1/26/2023
Residential electric water heater
Suite mechanical room

099019a 1/26/2023
Acoustical tile ceiling, carpet, painted walls
Office

099019e 1/26/2023
HVAC thermostat
General office area

099020a 1/26/2023
Metal and glass storefront door
Entrance



099020e 1/26/2023
Visual alarm device
General office area

099021a 1/26/2023
EPDM roof
Roof

099022a 1/26/2023
EPDM roof
Roof

099023a 1/26/2023
Modified bitumen roof, brick exterior
Exterior

099024a 1/26/2023
EPDM roof
Roof

099025a 1/26/2023
EPDM roof with skylight
Roof

099026a 1/26/2023
Skylight
Roof

099027a 1/26/2023
EPDM roof
Roof

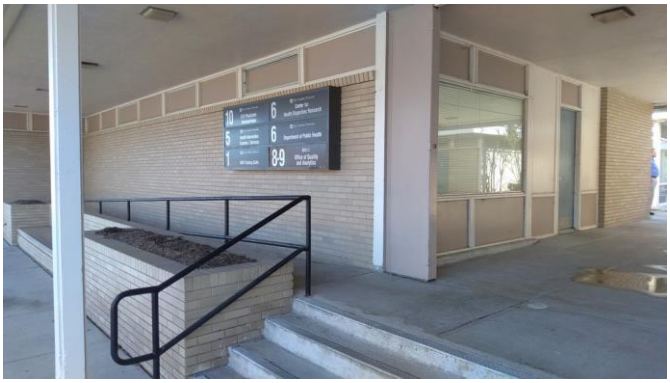
099028a 1/26/2023
EPDM roof, clogged drain
Roof

099029a 1/26/2023
Modified bitumen roof
Roof

099030a 1/26/2023
Metal-framed doors and glazing
Exterior

099031a 1/26/2023
Brick exterior, hollow metal door, glazing
Exterior

099032a 1/26/2023
Brick exterior, hollow metal door, glazing, weathered paneling
Exterior



099033a 1/26/2023
Brick exterior, hollow metal door, glazing, ramp
Exterior

099034a 1/26/2023
Brick exterior, glazing, weathered fascia board
Exterior

099035a 1/26/2023
Brick exterior, glazing, weathered fascia board
Exterior

099036a 1/26/2023
Brick exterior, glazing, weathered fascia board
Exterior

099037a 1/26/2023
Brick exterior, glazing, weathered fascia board
Exterior

FACILITY CONDITION ASSESSMENT

SECTION 7

PRELIMINARY ENERGY ASSESSMENT

INTRODUCTION

A Preliminary Energy Assessment (PEA) was conducted to identify energy conservation opportunities. The PEA is intended to be a preliminary energy screening only. The goal is to identify potential energy savings opportunities in a building. It is not equivalent to an American Society of Heating, Refrigeration, or Air Conditioning Engineers (ASHRAE) Level 1, 2, or 3 audit. The PEA has two sections: 1) Benchmarking Data and 2) Energy Conservation Opportunities. Basic building information is provided in **Table 1**.

TABLE 1. BUILDING INFORMATION	
Client	EAST CAROLINA UNIVERSITY
Asset Number	099
Asset Name	MEDICAL PAVILION
Year Built or Last Energy Renovation	1966

BENCHMARKING DATA

The purpose of benchmarking building performance is to determine how well a building performs in comparison to other similar buildings. For this analysis, buildings were assessed based on their primary use (e.g., education, food sales, food service, etc.) and year constructed. Two metrics -- energy use intensity and energy end use -- are presented for the building manager to use to assess how efficiently the building performs compared to similar buildings.

Metric #1: Energy Use Intensity (EUI)

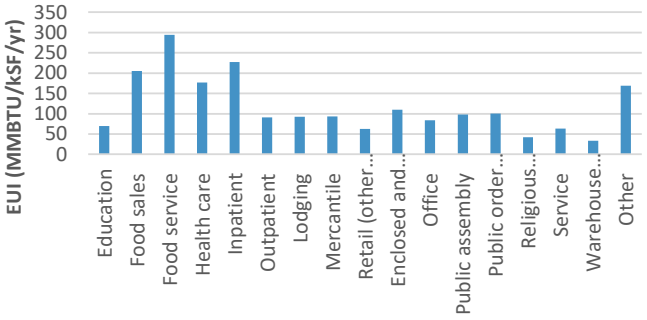
EUI is a measure of energy consumption per square foot of building space per year. The units of measurement are million British thermal units per thousand square foot per year (MMBTU/kSF/yr). The US-DOE EUI can be compared to the actual EUI of the client building to determine how efficient the building is compared to other similar buildings. A building manager can calculate EUI by summing total energy consumption per year (in MMBTU/yr) and dividing it by the building area (in kSF). Benchmarking data from the U.S. Energy Information Administration (EIA) Commercial Building Energy Consumption Survey (CBECS) database was used for this analysis.

Basic information about the building use and the time of the most recent major HVAC or lighting upgrade is provided in **Table 2**. That information is used to determine the Benchmark EUI. The building manager can calculate the Building EUI and compare it to the Benchmark EUI to determine how building efficiency compares to similar buildings (see **Table 3**). In addition, **Figure 1** shows the EUIs of various building types for further comparison.

TABLE 2. BUILDING DETAILS	
FCA Building Type	Office
Energy Information Administration Equivalent Building Type	Office
Range of Years Constructed/Last Major Energy Renovation	1960 to 1989
Benchmark EUI (MMBTU/kSF/yr) =	**84**
Building EUI to be Calculated by Client (MMBTU/kSF/yr) =	

TABLE 3. EUI COMPARISON	
Very Energy Efficient (consumes more than 30% less energy)	EUI < 58.8
Energy Efficient (consumes 10% to 30% less energy)	58.8 <= EUI <= 75.6
Similar (consumes within 10% less or 10% more energy)	75.6 < EUI < 92.4
Energy Inefficient (consumes 10% to 30% more energy)	92.4 <= EUI <= 109.2
Very Energy Inefficient (consumes more than 30% more energy)	EUI > 109.2

Figure 1. EUIs for Buildings Constructed/Renovated 1960 to 1989

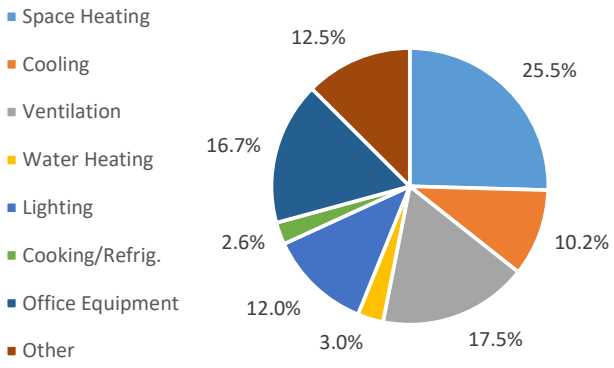


Metric #2: Energy End Use

Energy end use data characterizes how energy is used by profiling energy consumption into end use categories such as space heating, cooling, ventilation, lighting, etc. When energy end use data is presented in a pie chart, high energy-consuming activities are readily identified. A building manager can determine the energy end use profile for a building by analyzing trend data from a Building Automation System and/or Energy Management Control System.

TABLE 4. ENERGY END USE PROFILE: OFFICE	
Space Heating	25.5%
Cooling	10.2%
Ventilation	17.5%
Water Heating	3.0%
Lighting	12.0%
Cooking/Refrig.	2.6%
Office Equipment	16.7%
Other	12.5%
Total	100.0%

Figure 2. Energy End Use Profile: Office



References:
1. U.S. Department of Energy, Office of Energy Efficiency and Renewable Energy. "Technologies and Products by Category." Efficient Technologies and Products for Federal Facilities. DOE. http://energy.gov/eere/femp/efficient-technologies-and-products-federal-facilities. Accessed: June 2016.

2. U.S. Energy Information Administration [EIA]. "2012 CBECS Survey Data." Commercial Building Energy Consumption Survey. EIA. http://www.eia.gov/consumption/commercial/data/2012/index.cfm?view=consumption#c1-c12, Accessed: June 2016.

ENERGY CONSERVATION OPPORTUNITIES

This section presents energy conservation measures (ECMs) recommended for further investigation. Recommended ECMs are categorized into one or more cost categories to indicate an approximate level of resources required to implement the ECM. These cost categories are:

Operation and Maintenance Measures (O&M): O&M actions usually (a) can be completed by in-house maintenance personnel and (b) result in an immediate return on investment.

Low-Cost/No-Cost Measures (LC/NC): LC/NC measures typically (a) can be done by in-house personnel, (b) require little to no investment cost, and (c) result in significant energy savings. In other words, LC/NC measures typically have a quick payback period (less than one year).

Capital Improvement Measures (CAP): CAP measures are major capital investments that usually require significant time (i.e., approximately six months to three years) for planning, design, and implementation. Oftentimes, a request for proposal, design/bid/build (D/B/B), and/or design/build (D/B) package is required. The return on investment for CAP projects ranges significantly, varying from a payback period from one to twenty plus years.

ECM CATEGORY	ECM RECOMMENDED FOR FURTHER CONSIDERATION	COST CATEGORY
Building Envelope - Insulation	INSTALL ADDITIONAL INSULATION. Insulation increases the R-value of the envelope and reduces the heat gain/loss through the envelope.	LC/NC; CAP
Building Envelope - Window/Door Heat Gain/Loss	INCREASE THE R-VALUE OF THE WINDOWS/DOORS. ENERGY STAR qualified fenestration products such as windows and doors can minimize HVAC energy consumption by reducing solar heat gain/loss.	CAP
Lighting - Interior	INSTALL EFFICIENT LIGHTING FIXTURES. While incandescent lamp fixtures have a low initial cost, the lamps are energy inefficient and have a short useful life. Consider CFL and LED lighting instead. HID lamps are necessary in some applications; however, alternatives such as high bay, T5 lighting fixtures or LED fixtures should be considered as an alternate. T12 lamps are an outdated lighting technology that should be replaced with newer technologies such as T8, T5, or LED lamp fixtures.	N/A, Varies
Lighting - Interior, Controls	INSTALL LIGHTING CONTROLS. Oftentimes, lighting fixtures on switches do not get turned off when a space is unoccupied. Occupancy sensors, photocell sensors, and lighting control systems can help reduce lighting energy consumption. For example, consider installing occupancy sensors in offices, common areas, and other areas that have variable occupancy. In areas where there is natural lighting, consider using photocell sensors to dim or shut off fixtures that aren't needed. Alternatively, install a comprehensive light control system that uses time clock schedules, occupancy sensors, photocell sensors, etc., to monitor and control lighting throughout an entire building.	N/A, Varies
Lighting - Exterior	INSTALL EFFICIENT LIGHTING FIXTURES. While incandescent lamp fixtures have a low initial cost, the lamps are energy inefficient and have a short useful life. Consider CFL and LED lighting instead. HID lamps are necessary in some applications; however, alternatives such as high intensity T5 or LED fixtures should be considered. T12 lamps are an outdated lighting technology that should be replaced with newer technologies such as high intensity fluorescent or LED lamp fixtures.	N/A, Varies

ECM CATEGORY	ECM RECOMMENDED FOR FURTHER CONSIDERATION	COST CATEGORY
Lighting - Exterior, Controls	INSTALL LIGHTING CONTROLS. Consider using photocell sensors or timeclocks to shut off building/parking lot fixtures during daylight hours.	N/A, Varies
HVAC - Air Dist. Network Insulation	INSULATE DUCTWORK. Insulating HVAC ductwork reduces heat loss and decreases energy consumption.	CAP
HVAC - Air Dist. Network, VAV	INSTALL VARIABLE AIR VOLUME (VAV) SYSTEM. In constant air volume (CAV) systems, more energy is required to heat, cool, and distribute air than in VAV systems. Consider a VAV system to reduce energy consumption, mainly fan energy consumption.	CAP
HVAC - Building Comfort/Tuning	CONDUCT RETROCOMMISSIONING (RCX). RCx the building to identify and address operating deficiencies, optimize HVAC operations, reduce energy bills, and improve occupant comfort.	CAP
Plumbing - DHW Piping Insulation	INSULATE THE DOMESTIC HOT WATER PIPES. Insulating piping reduces heat loss, thereby reducing the amount of energy consumption.	LC/NC; CAP
Plumbing - DHW Heater Efficiency	INSTALL A HIGH-EFFICIENCY WATER HEATER. High efficiency/ENERGY STAR water heaters consume less energy. Consider condensing water heaters that capture the latent heat from water vapor contained in the flue gases.	LC/NC; CAP