

# EAST CAROLINA UNIVERSITY

Facility Condition Assessment

Slay Hall (076)

Asset SLAY

Inspected May 12, 2021





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# FACILITY CONDITION ASSESSMENT

## SECTION 1

### ASSET OVERVIEW



## ASSET EXECUTIVE SUMMARY

All costs shown as Present Value

<b>ASSET CODE</b>	SLAY	<b>CURRENT REPLACEMENT VALUE</b>	\$15,943,000
<b>ASSET NAME</b>	SLAY HALL (076)	<b>FACILITY CONDITION NEEDS INDEX</b>	0.29
<b>ASSET USE</b>	Office / Administrative	<b>FACILITY CONDITION INDEX</b>	0.12
<b>YEAR BUILT</b>	1949	<b>10-YEAR \$/SF</b>	135.08
<b>GSF</b>	34,269		
<b>INSPECTION DATE</b>	05/12/2021		

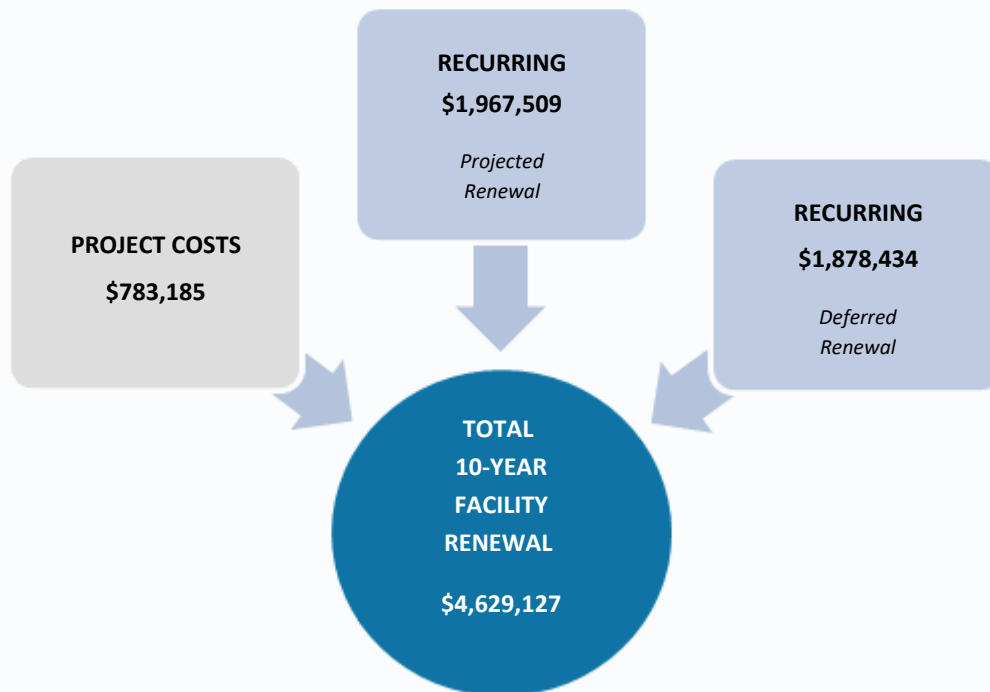
### FCNI Scale

The FCNI for this asset is **0.29**

- Excellent Condition (typically new construction)
- Below Average Condition (major renovation required)
- Good Condition (maintained within lifecycle)
- Poor Condition (total renovation required)
- Fair Condition (normal renovations required)
- Replacement Indicated (unless historic)



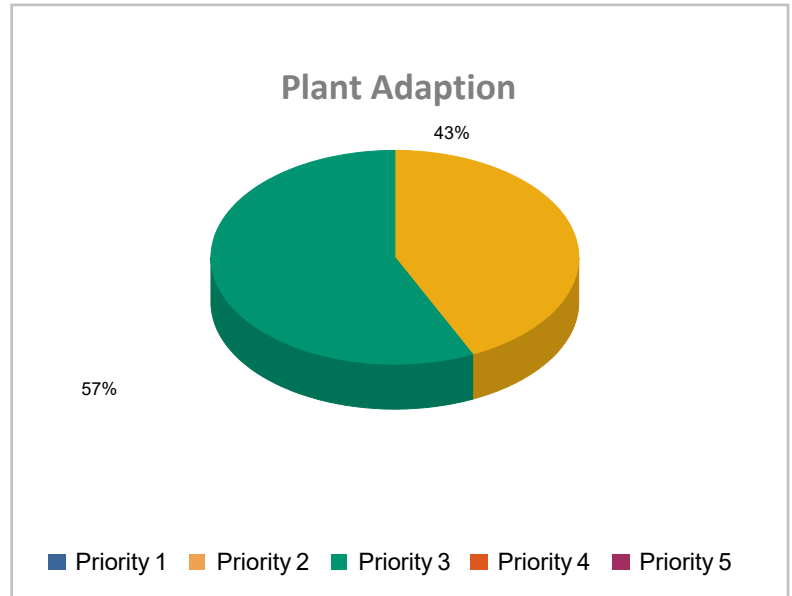
### Total Facility Renewal Costs



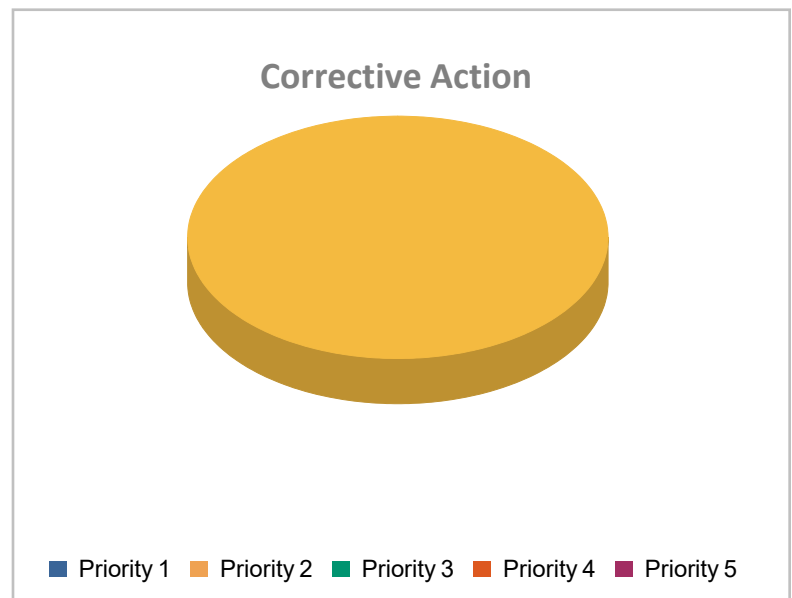
## Project Costs

### Project Cost by Priority

PLANT ADAPTION	
Priority 1	\$0
Priority 2	\$328,019
Priority 3	\$434,512
Priority 4	\$0
Priority 5	\$0



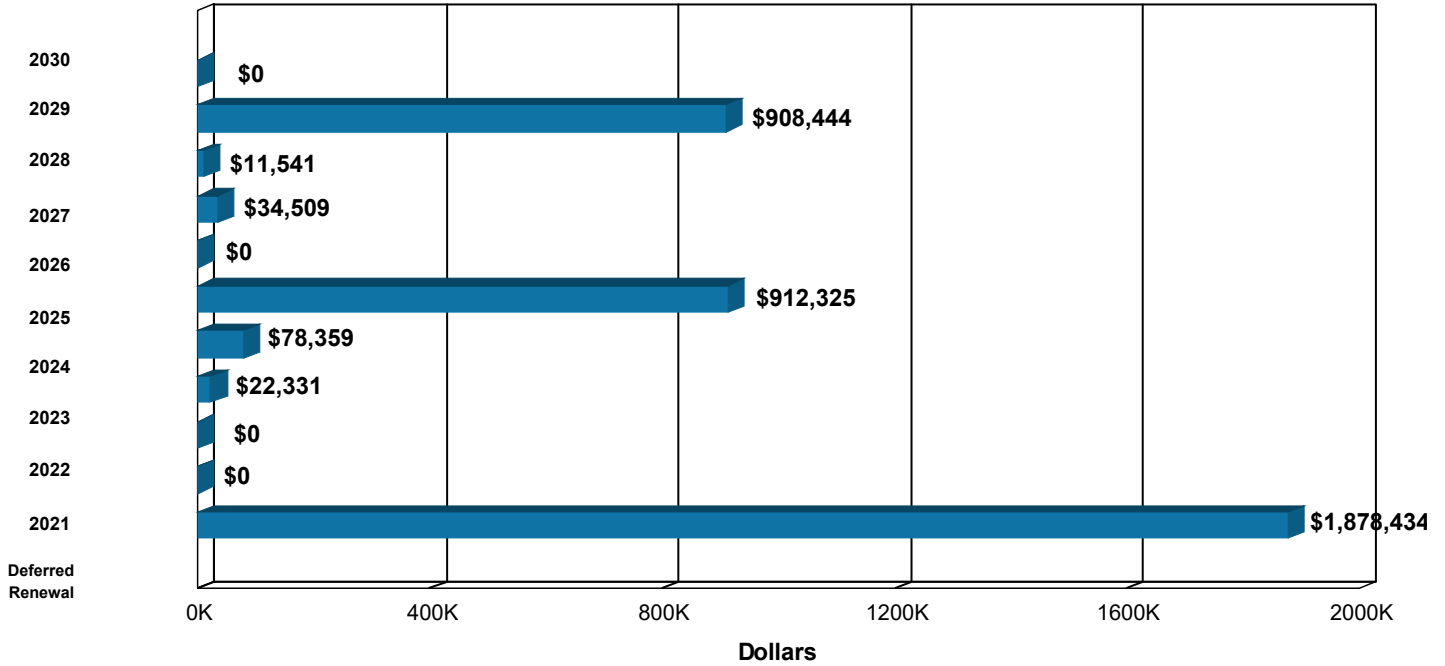
CORRECTIVE ACTION	
Priority 1	\$0
Priority 2	\$20,654
Priority 3	\$0
Priority 4	\$0
Priority 5	\$0



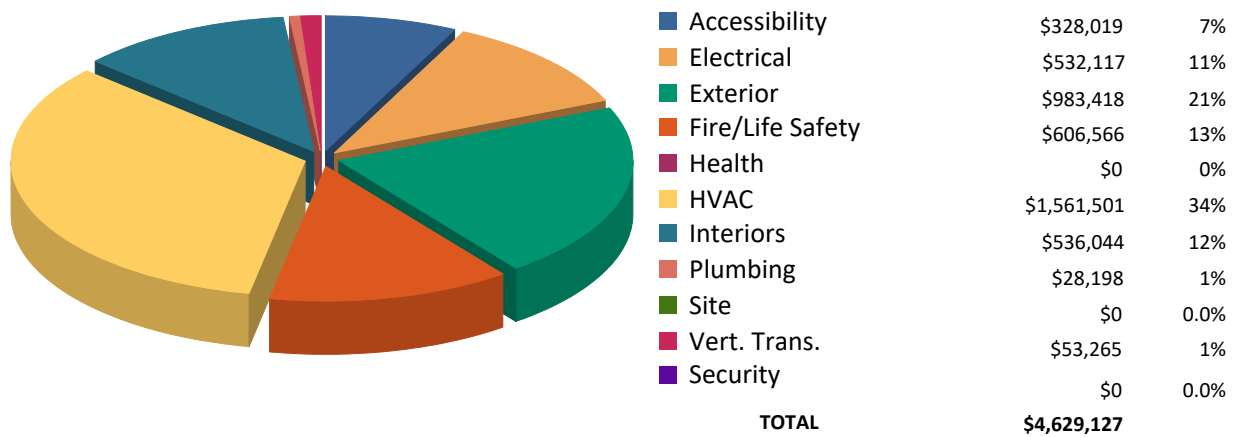


## Recurring Costs

Component Replacement Cost by Year



## Facilities Renewal Cost by System





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## ASSET SUMMARY

Originally built as a three-story dormitory in 1949, Slay Hall is now an office building on the main campus of East Carolina University. In 1995, the building underwent a major renovation including a north lobby area, as well as new windows and exterior doors, the addition of an elevator and accessible hall baths, and refelting of the clay tile roof. In 2003, the building was converted to an administrative building with office areas for various campus departments. The exterior facades are brick with cut stone accents and a hipped clay tile roof with integral guttering. The main entry doors are glass and secondary and service doors are hollow metal. The glazing is a failing metal-framed, thermal-pane system. The north lobby addition has an aging single-ply roofing system. Slay Hall totals 34,269 square feet.

The information in this report was gathered during a site visit that concluded on May 12, 2021.

### Site

The site is relatively flat and landscaping around the building consists of turf grass with some ornamental shrubs and trees. The planting is adequate and no upgrades are recommended. The concrete sidewalk layout is also adequate at this time. The adjoining parking lots are considered part of campus infrastructure and not addressed in this report.

### Exterior Structure

While the brick facades and upper cut stone accents appear to be sound, they have localized staining and some masonry stress cracks are visible. The facades will need to be cleaned and repointed in the near future. The main entry doors for the north lobby are aging and should be upgraded in kind. The hollow-metal secondary and service doors are still in adequate working order and no upgrades are recommended at this time. The windows were upgraded around 1995 but many are fogging and should be replaced. The stair tower windows are older, original single-pane windows that should be upgraded at the same time. Install new metal-framed, thermal-pane windows building-wide in the next few years.

The single-ply membrane roof on the north entry lobby is past its normal lifecycle. Signs of water staining on the lobby ceiling indicate that this flat roof should be replaced in the very near future. The hipped clay tile roof on the main building was reportedly refelted in the mid-1990s reusing the existing clay tiles where possible. While the roof should outlast the scope of this report, there are reported roof leaks around some of the dormers that are being addressed. Also, there are current water infiltration issues on the perimeter of the third floor. The source of these water leaks are likely attributed to integral gutter issues. Clean and line these original gutters with a membrane to better control roof drainage. The attic also has inadequate roof insulation and additional batt insulation should be installed as part of routine maintenance.

## Interior Finishes/Systems

The interior finishes are mostly older and due for upgrade. The second floor has newer LVT flooring and newer interior wall and ceiling paint. The main entry lobby has similar upgrades. The remaining interior spaces on the first and the third floors have older carpeting in the offices and corridors and timeworn paint on the walls and ceilings. New carpeting is needed in all of these areas and new vinyl tile flooring should be installed in areas like the first floor staff break room. Ceramic floor and wall tile finishes in the hall baths were updated in the mid-1990s and are still in average condition with no upgrades warranted at this time.

Painted walls and ceilings in the newer second floor areas have a good appearance but the painted walls and ceilings in the first and third floor areas vary in condition. Water damaged areas should be repainted in the near future and the other older paint finishes should be renewed in the near future. Interior doors are still in good working order and should be adequate. The rubber stair treads on the stair runs in the three stair towers are worn and should be replaced in kind. Casework in the first floor staff break area is adequate and no cabinetry upgrades are recommended at this time.

## Accessibility

The accessible parking has inadequate signage, excessive slope, and a noncompliant curb cut. Relevel the designated accessible parking spaces, add proper signage, and rework the curb cut.

Access to the building is provided by wheelchair ramps on the north and west elevations. The main entry ramp lacks adequate flat landings and turning areas, and the handrails do not extend beyond the ends of the ramp. Rework this main entry ramp to conform with current accessibility standards.

The three stair towers have accessible handrails, and interior doors have both lever hardware and ADA wall-mounted room signage with Braille. However, additional accessible directional signage should be installed, especially around main entry points, to help improve general accessibility.

The hall baths were remodeled in 1995 and fitted with accessible fixtures and shower units that no longer meet current ADA standards. Rework all six hall baths with new accessible sinks and counters, toilet stalls and roll-in showers. Also provide power assist units for each hall bath entry door. The new larger layouts will require some space modifications and presumably new ceramic floor and wall tile.

The kitchenette 104 has a noncompliant layout and should be reworked with proper accessible knee space, wrapped drain lines, and compliant faucet and counter height around the sink area. Also provide accessible storage shelving.

If this building is converted back to a dorm, a percentage of the individual rooms will need to be fitted with accessible lighting switches, visible alarms, etc. to comply with lodging accessibility standards.

While the passenger elevator has accessible controls and star signage for the main entry floor level, the emergency communication unit is installed in a nonaccessible phone box. As part of routine

maintenance, remove the phone box access door and shim the communication unit flush with the face of the control panel to make it accessible.

## Health

No health issues were noted or reported at the time of the building inspection.

## Fire/Life Safety

As mentioned above, the worn rubber stair treads in the three stair towers should be replaced with new rubber treads to help improve user safety.

This facility contains a Simplex point addressable fire alarm and detection system with a main fire alarm panel, manual pull stations, smoke detectors, and horn and strobe alarm systems. The panel was installed in the mid-1990s and the devices were replaced around 2010. It is recommended that the panel and devices be considered for replacement within the next ten years due to technical obsolescence.

This facility is not protected via an automatic fire suppression system. Fire suppression is handled manually via strategically placed dry-type handheld fire extinguishers and standpipes. As a part of future renovation efforts, it is recommended an automatic wet-pipe fire suppression system be installed to protect the asset from a potential fire.

## HVAC

The main HVAC system provides heating and cooling via four-pipe console style and conventional style fan coil units utilizing heating hot water and chilled water. Two makeup air handling units in the attic serve the restrooms. Two fan coil units serve the main lobby and the lobby restrooms. Restroom exhaust is handled by rooftop centrifugal exhaust fans while the mechanical spaces have inline exhaust fans. The majority of these systems were installed in the mid-1990s during a renovation and should be considered for replacement due to lifecycle depletion.

Chilled water is generated and supplied by an air-cooled packed chiller with the pumps in Umstead Residence Hall. Heating hot water is generated through a shell-and-tube heat exchanger utilizing steam generated at the central plant. High pressure steam is reduced to low pressure steam for local devices through pressure reducing valves. Condensate generated from the heat exchanger is collected and returned to the steam plant via a duplex condensate receiver. Hot water is circulated throughout this building and Umstead Residence Hall via two 7.5-hp base-mounted heating hot water pumps. The heat exchanger appears to be in good condition and should remain viable for the next ten years. The heating hot water pumps, condensate receivers, and pressure reducing valves were installed in 1995 and should be evaluated for replacement within the next ten years.

The HVAC distribution network is a constant air volume (CAV) design utilizing mainly fan coil units and makeup air handling units. The distribution network consists of insulated metallic conduit, insulated mechanical piping, valves, diffusers, and similar elements. No issues were observed during the inspection and the current system appears to be adequate for this facility. The HVAC controls are a direct digital (DDC) and pneumatic hybrid. It was reported that local thermostats associated with the fan coil units are obsolete and are difficult to obtain replacements. It is recommended that the existing controls be upgraded to a full DDC system. The controls air compressor for the pneumatic system was replaced in 2019 and should remain viable for the next ten years. However, it may be removed from future budgeting with an upgrade to full DDC.

## Electrical

Power is fed to this facility at 277/480 volts routed to an 800-amp main switchboard. Power is further reduced to 120/208 volts through secondary step-down transformers. Power is distributed at 120/208 and 277/480 volts via individual conductors in metallic conduit to secondary panelboards for use in local devices. The downline electrical system components include distribution feeders, conduits, local panelboards, load centers, safety switches, fused disconnects, receptacles, switches, and similar terminal elements. The incoming electrical service and distribution network were replaced in 1995 and are expected to remain viable for the next ten years. However, the switchboard should be evaluated for replacement due to lifecycle depletion.

Emergency power is supplied to this facility and routed to a 150-amp automatic transfer switch. The automatic transfer switch was installed in 1995 and should be evaluated for replacement due to lifecycle depletion.

The majority of the interior lighting was replaced in 1995 and consist of T8 troffers and recessed can CFL fixtures. Although the current lighting system appears to be in usable condition, it has fulfilled its financially viable life expectancy. Lighting technology is rapidly advancing and expectations for lamp durability, quality, intensity control, and efficiency are increasing with the advancement of LED lighting options. The lighting fixtures should be considered for upgrade to LED technology.

Automated on/off timer lighting controls and occupancy sensing on/off lighting controls are recommended to be added throughout to save energy and reduce operational costs through extended lamp life. Timers should be controlled by building automation systems or be otherwise digitally programmable. The occupancy sensors should be preset for preferred inactivity periods for activation. A cost adjustment has been added to the vintage lighting for the installation of lighting controls.

The exterior lighting consists of HID wallpacks that were likely installed in the mid-1990s during the renovation. While currently functional, the majority of the exterior lighting is less efficient and requires more frequent maintenance than modern LED-based outdoor lighting. It is recommended that the exterior lighting be replaced with LED fixtures.

## Plumbing

Potable water supply, sanitary sewer, and stormwater handling systems serve this facility. The supply piping is copper with soldered connections. The drain piping is cast-iron with hubless connections. The supply and drain piping were replaced during the 1995 renovation and are expected to remain viable for the next ten years. Three backflow preventers serve the fire suppression system and the water main. It is recommended that they be replaced within the next five years prior to failure.

Domestic hot water is generated through two heat exchangers utilizing steam generated at the central plant with two associated circulation pumps that also serve Umstead Residence Hall. The heat exchangers and pumps were installed in 2002 and no issues were observed or reported.

The tankless water closets, counter lavatories, and individual showers were updated in the mid-1990s and appear to be in adequate condition. The wall-mounted service sinks in the janitor's closets are original and should be considered for replacement. The stainless-steel kitchen sink in the staff break area is adequate at this time.

## Vertical Transportation

A three-stop hydraulic-controlled passenger elevator with a capacity of 2,500 pounds serves this facility. The elevator was modernized in 2005 and no issues were observed or reported during the inspection. However, the elevator cab should be evaluated for modernization within the next ten years due to lifecycle depletion. No detailed elevator testing was conducting during this assessment.

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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Duluth, GA 30096

### Project Manager

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dougf@isescorp.com

### Date of Inspection

May 12, 2021

### Inspection Team Personnel

NAME	POSITION	SPECIALTY
Andrew Derrick	Project Engineer	Mechanical, Electrical, Plumbing, Energy, Fire/Life Safety, Health
Carl Turner, AIA	Senior Project Architect	Interior Finishes, Exterior Structure, ADA Compliance, Site, 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.

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

#### 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

<i>Example:</i> Category Code = EL5A	
<b>EL</b>	System Description
<b>5</b>	Component Description
<b>A</b>	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.

<i>Example</i>			
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).

<i>Example:</i>	
Photo Number: 0001006e	
<b>0001</b>	Asset Number
<b>006</b>	Photo Sequence
<b>e</b>	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	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	TOTAL
ACCESSIBILITY	0	328,019	0	0	0	0	0	0	0	0	0	0	0	0	\$328,019
EXTERIOR	0	20,654	0	21,440	0	0	17,458	0	912,325	0	0	11,541	0	0	\$983,418
INTERIOR	0	0	0	441,787	0	0	4,873	0	0	0	34,509	0	54,875	0	\$536,044
PLUMBING	0	0	0	28,198	0	0	0	0	0	0	0	0	0	0	\$28,198
HVAC	0	0	0	707,932	0	0	0	0	0	0	0	0	853,569	0	\$1,561,501
FIRE/LIFE SAFETY	0	0	434,512	172,054	0	0	0	0	0	0	0	0	0	0	\$606,566
ELECTRICAL	0	0	0	507,023	0	0	0	25,094	0	0	0	0	0	0	\$532,117
SITE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	\$0
VERT. TRANS.	0	0	0	0	0	0	0	53,265	0	0	0	0	0	0	\$53,265
HEALTH/EQUIP.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	\$0
<b>SUBTOTAL</b>	<b>\$0</b>	<b>\$348,673</b>	<b>\$434,512</b>	<b>\$1,878,434</b>	<b>\$0</b>	<b>\$0</b>	<b>\$22,331</b>	<b>\$78,359</b>	<b>\$912,325</b>	<b>\$0</b>	<b>\$34,509</b>	<b>\$11,541</b>	<b>\$908,444</b>	<b>\$0</b>	<b>\$4,629,127</b>
<b>TOTAL NONRECURRING PROJECT NEEDS</b>			<b>\$783,185</b>	<b>TOTAL RECURRING COMPONENT REPLACEMENT NEEDS</b>										<b>\$3,845,942</b>	

<b>CURRENT REPLACEMENT VALUE</b>	<b>\$15,943,000</b>
<b>FACILITY CONDITION NEEDS INDEX</b>	<b>0.29</b>
<b>FACILITY CONDITION INDEX</b>	<b>0.12</b>

<b>GSF</b>	<b>TOTAL 10-YEAR FACILITY RENEWAL NEEDS</b>	<b>10-YEAR NEEDS/SF</b>
<b>34,269</b>	<b>\$4,629,127</b>	<b>\$135.08</b>

## 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	\$328,019	\$0	\$328,019
EXTERIOR	\$20,654	\$962,764	\$983,418
INTERIOR	\$0	\$536,044	\$536,044
PLUMBING	\$0	\$28,198	\$28,198
HVAC	\$0	\$1,561,501	\$1,561,501
FIRE/LIFE SAFETY	\$434,512	\$172,054	\$606,566
ELECTRICAL	\$0	\$532,117	\$532,117
SITE	\$0	\$0	\$0
VERT. TRANS	\$0	\$53,265	\$53,265
HEALTH	\$0	\$0	\$0
<b>TOTALS</b>	<b>\$783,185</b>	<b>\$3,845,942</b>	<b>\$4,629,127</b>

**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
SLAY DR28	DOOR OPERATOR, POWER-ASSIST			NW ELEV	B2030	Deferred Renewal	8,729
SLAY RR03	ROOF - 1-PLY, ADHERED (EPDM, PIB, CSPE, PVC)	LOWER FLAT ROOF			B3010	Deferred Renewal	12,712
SLAY DR24	DOOR LOCK, COMMERCIAL-GRADE	SERVICE		NE ELEV	C1020	Deferred Renewal	745
SLAY DR24	DOOR LOCK, COMMERCIAL-GRADE			CORRIDORS	C1020	Deferred Renewal	89,356
SLAY DR26	DOOR PANIC HARDWARE	SECONDARY		NE ELEV	C1020	Deferred Renewal	1,218
SLAY DR26	DOOR PANIC HARDWARE	SECONDARY		NW ELEV	C1020	Deferred Renewal	1,218
SLAY DR26	DOOR PANIC HARDWARE	SECONDARY		SOUTH ELEV	C1020	Deferred Renewal	3,655
SLAY DR26	DOOR PANIC HARDWARE			STAIR TOWER	C1020	Deferred Renewal	10,964
SLAY IW01	WALL FINISH - PAINT, STANDARD	PT WALLS			C3010	Deferred Renewal	128,033
SLAY IF01	FLOORING - CARPET, TILE OR ROLL, STANDARD	BROADLOOM CARPET			C3020	Deferred Renewal	188,816
SLAY IF03	FLOORING - VINYL COMPOSITION TILE, STANDARD	VCT			C3020	Deferred Renewal	3,973
SLAY IC04	CEILING FINISH - PAINTED OR STAINED, STANDARD	PT CLGS			C3030	Deferred Renewal	13,808
SLAY FX06	PLUMBING FIXTURE - SINK, SERVICE/LAUNDRY/UTILITY	WALL MOUNTED		JAN CLOS	D2010	Deferred Renewal	10,755
SLAY BF02	BACKFLOW PREVENTER (1-2 INCHES)	BFP-WM-1		EXT	D2020	Deferred Renewal	2,339
SLAY BF02	BACKFLOW PREVENTER (1-2 INCHES)	BFP-WM-2		EXT	D2020	Deferred Renewal	2,339
SLAY BF05	BACKFLOW PREVENTER (4-6 INCHES)	BFP-FIRE		EXT	D2020	Deferred Renewal	12,764
SLAY AH01	AIR HANDLING UNIT - INDOOR (.5-1.25 HP)	AHU-1		152	D3040	Deferred Renewal	9,008

## 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
SLAY AH01	AIR HANDLING UNIT - INDOOR (.5-1.25 HP)	AHU-2		152	D3040	Deferred Renewal	9,008
SLAY AH01	AIR HANDLING UNIT - INDOOR (.5-1.25 HP)	FCU, APPROX 106		OFFICES, RR, CORR	D3040	Deferred Renewal	477,428
SLAY AH02	AIR HANDLING UNIT - INDOOR (1.25-1.75 HP)	MAU-1		ATTIC	D3040	Deferred Renewal	11,059
SLAY AH02	AIR HANDLING UNIT - INDOOR (1.25-1.75 HP)	MAU-2		ATTIC	D3040	Deferred Renewal	11,059
SLAY FN20	FAN - CENTRIFUGAL ROOF EXHAUST, 1/4" SP (25"-30" DIAMETER)	EF-4		EXT WALL	D3040	Deferred Renewal	7,951
SLAY FN21	FAN - INLINE CENTRIFUGAL AIRFOIL, SUPPLY, 2.5" SP (<=30 HP)	EF-2		ATTIC	D3040	Deferred Renewal	1,402
SLAY HX09	PRESSURE REDUCING VALVE, STEAM SYSTEM (2")	PRV-2		114E	D3040	Deferred Renewal	4,466
SLAY HX09	PRESSURE REDUCING VALVE, STEAM SYSTEM (2")	PRV-3		114E	D3040	Deferred Renewal	4,466
SLAY HX11	PRESSURE REDUCING VALVE, STEAM SYSTEM (3")	PRV-1		114E	D3040	Deferred Renewal	6,828
SLAY PH01	PUMP - ELECTRIC (<=10 HP)	HWP-1		114E	D3040	Deferred Renewal	12,339
SLAY PH01	PUMP - ELECTRIC (<=10 HP)	HWP-2		114E	D3040	Deferred Renewal	12,339
SLAY PH14	CONDENSATE RECEIVER, ELECTRIC, 2 PUMPS	CDR-1		114E	D3040	Deferred Renewal	7,437
SLAY BA114	HVAC CONTROLS SYSTEM - OFFICE	DDC, PNEUM		THROUGHOUT	D3060	Deferred Renewal	133,142
SLAY FA01	FIRE ALARM PANEL, DIALER, BATTERY, & CHARGER	PA, SIMPLEX		137	D4030	Deferred Renewal	37,851
SLAY FA02	FIRE ALARM SYSTEM - DEVICES	HS, MP, SD		THROUGHOUT	D4030	Deferred Renewal	134,203
SLAY SG03	MAIN SWITCHBOARD W/BREAKERS (600-800 AMP)	9SPA		114E	D5010	Deferred Renewal	57,442
SLAY LE07	LIGHTING - EXTERIOR, WALL FLOOD (SV, MH, ID, LED)	HID WP		EXT	D5020	Deferred Renewal	9,884

**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
SLAY LI14	LIGHTING SYSTEM, INTERIOR - OFFICE	T8, CFL		THROUGHOUT	D5020	Deferred Renewal	433,530
SLAY GN15	SWITCH - AUTO TRANSFER, 480 V (100-400 AMP)	ATS-1		114E	D5090	Deferred Renewal	6,167
SLAY DR28	DOOR OPERATOR, POWER-ASSIST			N ENTRY	B2030	2023	17,458
SLAY DR26	DOOR PANIC HARDWARE			N ENTRY	C1020	2023	2,437
SLAY DR26	DOOR PANIC HARDWARE			N ENTRY	C1020	2023	2,437
SLAY VT04	ELEVATOR CAB RENOVATION - PASSENGER	ELEV-1		ELEV	D1010	2024	53,265
SLAY TX29	TRANSFORMER - DRY-TYPE, 3PH, 480V SECONDARY (150-225 KVA)	T-6		114E	D5010	2024	25,094
SLAY EW01	WALL, EXTERIOR, MASONRY POINTING	CUT STONE		ALL ELEVS	B2010	2025	24,517
SLAY EW01	WALL, EXTERIOR, MASONRY POINTING			ALL ELEVS	B2010	2025	220,914
SLAY WN01	GLASS, WINDOW, ALUMINUM OR WOOD, STANDARD			ALL ELEVS	B2010	2025	666,893
SLAY IC04	CEILING FINISH - PAINTED OR STAINED, STANDARD	PT CLGS			C3030	2027	34,509
SLAY DR05	DOOR AND FRAME, EXTERIOR, SWINGING, ALUMINUM AND GLASS			N ENTRY	B2030	2028	5,770
SLAY DR05	DOOR AND FRAME, EXTERIOR, SWINGING, ALUMINUM AND GLASS			N ENTRY	B2030	2028	5,770
SLAY IW01	WALL FINISH - PAINT, STANDARD	PT WALLS			C3010	2029	54,875
SLAY HV14	HVAC DISTRIBUTION NETWORKS - OFFICE	CAV, FAN COIL UNITS		THROUGHOUT	D3040	2029	853,569

**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
<b>TOTAL</b>							<b>\$3,845,942</b>

**FACILITIES RENEWAL PLAN**  
**NONRECURRING PROJECT COSTS**

*All costs shown as Present Value*

PROJECT NUMBER	PROJECT TITLE	UNI-FORMAT	PRIORITY CLASS	PROJECT CLASSIFICATION	PROJECT COST
SLAYAC02	ENTRY RAMP ACCESSIBILITY UPGRADES	B2030	2	Plant Adaption	37,350
SLAYES01	RELINING INTEGRAL GUTTER	B3010	2	Corrective Action	20,654
SLAYAC03	KITCHENETTE 104 ACCESSIBILITY UPGRADES	C1010	2	Plant Adaption	13,327
SLAYAC04	INSTALL ADA DIRECTIONAL SIGNAGE	C1010	2	Plant Adaption	8,795
SLAYAC05	BATHROOM ACCESSIBILITY UPGRADES	D2010	2	Plant Adaption	242,885
SLAYAC01	PARKING ACCESSIBILITY UPGRADES	G2020	2	Plant Adaption	25,662
SLAYFS02	STAIR TOWER TREAD UPGRADES	C2020	3	Plant Adaption	22,878
SLAYFS01	FIRE SPRINKLER SYSTEM INSTALLATION	D4010	3	Plant Adaption	411,633
<b>TOTAL</b>					<b>\$783,185</b>





FACILITY CONDITION ASSESSMENT

**SECTION 3**

**NONRECURRING  
PROJECT DETAILS**

All costs shown as Present Value

PARKING ACCESSIBILITY UPGRADES			
<b>Project Number:</b>	SLAYAC01	<b>Category Code:</b>	
<b>Priority Sequence:</b>	1	AC1C	
<b>Priority Class:</b>	Critical	<b>System:</b>	ACCESSIBILITY
<b>Project Class:</b>	Plant Adaption	<b>Component:</b>	SITE
<b>Date Basis:</b>	5/12/2021	<b>Element:</b>	PARKING

Code Application:		Subclass/Savings:	Project Location:
ADAAG	502	DOJ1 - Approach & Entrance	Undefined: Floor(s) 1

**Description**

The accessible parking has inadequate signage, excessive slope and a noncompliant curb cut. Relevel the designated accessible parking spaces, add proper signage, and rework the curb cut.

All costs shown as Present Value

**Project Cost Estimate**

Task Description	Unit	Qty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
Accessible parking space, including striping, signage, leveling, curb cut	EA	3	\$1,500	\$4,500	\$6,500	\$19,500	\$24,000
<b>Base Material/Labor Costs</b>				<b>\$4,500</b>		<b>\$19,500</b>	
<b>Indexed Material/Labor Costs</b>				<b>\$4,532</b>		<b>\$13,904</b>	<b>\$18,435</b>
<b>Construction Mark Up at 20.0%</b>							<b>\$3,687</b>
<b>Original Construction Cost</b>							<b>\$22,122</b>
<b>Date of Original Estimate:</b>	5/12/2021					<b>Inflation</b>	<b>\$0</b>
<b>Current Year Construction Cost</b>							<b>\$22,122</b>
<b>Professional Fees at 16.0%</b>							<b>\$3,540</b>
<b>TOTAL PROJECT COST</b>							<b>\$25,662</b>

All costs shown as Present Value

ENTRY RAMP ACCESSIBILITY UPGRADES			
<b>Project Number:</b>	SLAYAC02	<b>Category Code:</b>	
<b>Priority Sequence:</b>	2	AC2A	
<b>Priority Class:</b>	Critical	<b>System:</b>	ACCESSIBILITY
<b>Project Class:</b>	Plant Adaption	<b>Component:</b>	BUILDING ENTRY
<b>Date Basis:</b>	5/12/2021	<b>Element:</b>	GENERAL

Code Application:		Subclass/Savings:	Project Location:
ADAAG	403.6,405,505	DOJ1 - Approach & Entrance	Undefined: Floor(s) 1

**Description**

The main entry ramp lacks adequate flat landings and turning areas, and the handrails do not extend beyond the ends of the ramp. Rework this main entry ramp to conform with current accessibility standards.

All costs shown as Present Value

**Project Cost Estimate**

Task Description	Unit	Qty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
Wheelchair ramp construction, including demolition and construction of new ramp and railing system	VFT	4	\$3,900	\$15,600	\$3,900	\$15,600	\$31,200
<b>Base Material/Labor Costs</b>				<b>\$15,600</b>		<b>\$15,600</b>	
<b>Indexed Material/Labor Costs</b>				<b>\$15,709</b>		<b>\$11,123</b>	<b>\$26,832</b>
<b>Construction Mark Up at 20.0%</b>							<b>\$5,366</b>
<b>Original Construction Cost</b>							<b>\$32,198</b>
<b>Date of Original Estimate:</b>	5/12/2021		<b>Inflation</b>				<b>\$0</b>
<b>Current Year Construction Cost</b>							<b>\$32,198</b>
<b>Professional Fees at 16.0%</b>							<b>\$5,152</b>
<b>TOTAL PROJECT COST</b>							<b>\$37,350</b>

All costs shown as Present Value

KITCHENETTE 104 ACCESSIBILITY UPGRADES			
<b>Project Number:</b>	SLAYAC03	<b>Category Code:</b>	
<b>Priority Sequence:</b>	3	AC4A	
<b>Priority Class:</b>	Critical	<b>System:</b>	ACCESSIBILITY
<b>Project Class:</b>	Plant Adaption	<b>Component:</b>	GENERAL
<b>Date Basis:</b>	5/12/2021	<b>Element:</b>	FUNCTIONAL SPACE MOD.

Code Application:		Subclass/Savings:	Project Location:
ADAAG	804	DOJ2 - Access to Goods & Services	Room Only: Floor(s) 1

**Description**

The kitchenette 104 has a noncompliant layout and should be reworked with proper accessible knee space, wrapped drain lines, and compliant faucet and counter height around the sink area. Also provide accessible storage shelving.

All costs shown as Present Value

**Project Cost Estimate**

Task Description	Unit	Qty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
Kitchenette with accessible sink and counter, knee space and accessible storage shelving	EA	1	\$7,100	\$7,100	\$3,400	\$3,400	\$10,500
<b>Base Material/Labor Costs</b>				<b>\$7,100</b>		<b>\$3,400</b>	
<b>Indexed Material/Labor Costs</b>				<b>\$7,150</b>		<b>\$2,424</b>	<b>\$9,574</b>
<b>Construction Mark Up at 20.0%</b>							<b>\$1,915</b>
<b>Original Construction Cost</b>							<b>\$11,489</b>
<b>Date of Original Estimate:</b>	5/12/2021					<b>Inflation</b>	<b>\$0</b>
<b>Current Year Construction Cost</b>							<b>\$11,489</b>
<b>Professional Fees at 16.0%</b>							<b>\$1,838</b>
<b>TOTAL PROJECT COST</b>							<b>\$13,327</b>

All costs shown as Present Value

BATHROOM ACCESSIBILITY UPGRADES			
<b>Project Number:</b>	SLAYAC05	<b>Category Code:</b>	
<b>Priority Sequence:</b>	4	AC3E	
<b>Priority Class:</b>	Critical	<b>System:</b>	ACCESSIBILITY
<b>Project Class:</b>	Plant Adaption	<b>Component:</b>	INTERIOR PATH OF TRAVEL
<b>Date Basis:</b>	5/12/2021	<b>Element:</b>	RESTROOMS/BATHROOMS

Code Application:		Subclass/Savings:	Project Location:
ADAAG	211,309, 602,603,604, 605	DOJ3 - Restrooms	Floor-wide: Floor(s) 1,2,3

**Description**

Former hall baths were updated just prior to converting this building from dorm to office use. However, the bathroom sinks, counters, designated toilet stalls, and roll-in showers are not fully compliant under current standards. Rework all six hall baths with new accessible sinks and counters, toilet stalls and roll-in showers. Also provide power assist units for each hall bath entry door. The new larger layouts will require some space modifications and presumably new ceramic floor and wall tile.



All costs shown as Present Value

**Project Cost Estimate**

Task Description	Unit	Qty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
Door opener, signage and controls	EA	6	\$5,002	\$30,012	\$1,732	\$10,392	\$40,404
Grab bars	EA	6	\$192	\$1,152	\$455	\$2,730	\$3,882
Mirror	EA	6	\$397	\$2,382	\$305	\$1,830	\$4,212
ADA signage	EA	6	\$72.00	\$432	\$21.00	\$126	\$558
ADA lavatory	EA	12	\$837	\$10,044	\$311	\$3,732	\$13,776
ADA toilet stall	EA	6	\$2,199	\$13,194	\$1,360	\$8,160	\$21,354
ADA toilet	EA	6	\$1,315	\$7,890	\$348	\$2,088	\$9,978
ADA roll-in shower	EA	6	\$4,469	\$26,814	\$5,816	\$34,896	\$61,710
Hall bath layout modifications including, new floor and wall ceramic tile finishes	EA	6	\$2,500	\$15,000	\$4,960	\$29,760	\$44,760
<b>Base Material/Labor Costs</b>				<b>\$106,920</b>		<b>\$93,714</b>	
<b>Indexed Material/Labor Costs</b>				<b>\$107,668</b>		<b>\$66,818</b>	<b>\$174,487</b>
<b>Construction Mark Up at 20.0%</b>							<b>\$34,897</b>
<b>Original Construction Cost</b>							<b>\$209,384</b>
<b>Date of Original Estimate:</b>	5/12/2021					<b>Inflation</b>	<b>\$0</b>
<b>Current Year Construction Cost</b>							<b>\$209,384</b>
<b>Professional Fees at 16.0%</b>							<b>\$33,501</b>
<b>TOTAL PROJECT COST</b>							<b>\$242,885</b>

All costs shown as Present Value

INSTALL ADA DIRECTIONAL SIGNAGE			
<b>Project Number:</b>	SLAYAC04	<b>Category Code:</b>	
<b>Priority Sequence:</b>	5	AC3D	
<b>Priority Class:</b>	Critical	<b>System:</b>	ACCESSIBILITY
<b>Project Class:</b>	Plant Adaption	<b>Component:</b>	INTERIOR PATH OF TRAVEL
<b>Date Basis:</b>	5/12/2021	<b>Element:</b>	SIGNAGE

Code Application:		Subclass/Savings:	Project Location:
ADAAG	703.1	DOJ2 - Access to Goods & Services	Floor-wide: Floor(s) 1,2,3

**Description**

Install additional accessible directional signage in the building, especially around main entry points, to help improve general accessibility.

All costs shown as Present Value

**Project Cost Estimate**

Task Description	Unit	Qty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
ADA compliant directional signage	LOT	1	\$5,000	\$5,000	\$1,800	\$1,800	\$6,800
<b>Base Material/Labor Costs</b>				<b>\$5,000</b>		<b>\$1,800</b>	
<b>Indexed Material/Labor Costs</b>				<b>\$5,035</b>		<b>\$1,283</b>	<b>\$6,318</b>
<b>Construction Mark Up at 20.0%</b>							<b>\$1,264</b>
<b>Original Construction Cost</b>							<b>\$7,582</b>
<b>Date of Original Estimate:</b>	5/12/2021					<b>Inflation</b>	<b>\$0</b>
<b>Current Year Construction Cost</b>							<b>\$7,582</b>
<b>Professional Fees at 16.0%</b>							<b>\$1,213</b>
<b>TOTAL PROJECT COST</b>							<b>\$8,795</b>

All costs shown as Present Value

RELINE INTEGRAL GUTTER			
<b>Project Number:</b>	SLAYES01	<b>Category Code:</b>	
<b>Priority Sequence:</b>	6	ES4A	
<b>Priority Class:</b>	Critical	<b>System:</b>	EXTERIOR
<b>Project Class:</b>	Corrective Action	<b>Component:</b>	ROOF
<b>Date Basis:</b>	6/11/2021	<b>Element:</b>	REPAIR

<b>Code Application:</b>	<b>Subclass/Savings:</b>	<b>Project Location:</b>
Not Applicable	Not Applicable	Undefined: Floor(s) R

**Description**

There are indication of water infiltration around sections of the third floor perimeter that are likely attributed to integral gutter issues. Clean and line these original gutters with a membrane to better control roof drainage.

All costs shown as Present Value

**Project Cost Estimate**

Task Description	Unit	Qty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
Membrane liner application for relining integral gutter system	LOT	1	\$7,300	\$7,300	\$10,500	\$10,500	\$17,800
<b>Base Material/Labor Costs</b>				<b>\$7,300</b>		<b>\$10,500</b>	
<b>Indexed Material/Labor Costs</b>				<b>\$7,351</b>		<b>\$7,487</b>	<b>\$14,838</b>
<b>Construction Mark Up at 20.0%</b>							<b>\$2,968</b>
<b>Original Construction Cost</b>							<b>\$17,805</b>
<b>Date of Original Estimate:</b>	6/11/2021					<b>Inflation</b>	<b>\$0</b>
<b>Current Year Construction Cost</b>							<b>\$17,805</b>
<b>Professional Fees at 16.0%</b>							<b>\$2,849</b>
<b>TOTAL PROJECT COST</b>							<b>\$20,654</b>

All costs shown as Present Value

FIRE SPRINKLER SYSTEM INSTALLATION			
<b>Project Number:</b>	SLAYFS01	<b>Category Code:</b>	
<b>Priority Sequence:</b>	7	FS3A	
<b>Priority Class:</b>	Noncritical	<b>System:</b>	FIRE/LIFE SAFETY
<b>Project Class:</b>	Plant Adaption	<b>Component:</b>	SUPPRESSION
<b>Date Basis:</b>	6/1/2021	<b>Element:</b>	SPRINKLERS

**Code Application:**

NFPA 1, 13, 13R, 101

**Subclass/Savings:**

Not Applicable

**Project Location:**

Floor-wide: Floor(s) 1,2,3

**Description**

As a part of future renovation efforts, it is recommended that this facility be fully protected by an automatic, wet-pipe sprinkler system.

All costs shown as Present Value

**Project Cost Estimate**

Task Description	Unit	Qty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
Install a wet-pipe sprinkler system, including valves, piping, sprinkler heads, piping supports, etc.	SF	34,269	\$4.59	\$157,295	\$5.62	\$192,592	\$349,886
<b>Base Material/Labor Costs</b>				<b>\$157,295</b>		<b>\$192,592</b>	
<b>Indexed Material/Labor Costs</b>				<b>\$158,396</b>		<b>\$137,318</b>	<b>\$295,714</b>
<b>Construction Mark Up at 20.0%</b>							<b>\$59,143</b>
<b>Original Construction Cost</b>							<b>\$354,856</b>
<b>Date of Original Estimate:</b>	6/1/2021		<b>Inflation</b>				<b>\$0</b>
<b>Current Year Construction Cost</b>							<b>\$354,856</b>
<b>Professional Fees at 16.0%</b>							<b>\$56,777</b>
<b>TOTAL PROJECT COST</b>							<b>\$411,633</b>

All costs shown as Present Value

STAIR TOWER TREAD UPGRADES			
<b>Project Number:</b>	SLAYFS02	<b>Category Code:</b>	
<b>Priority Sequence:</b>	8	FS5E	
<b>Priority Class:</b>	Noncritical	<b>System:</b>	FIRE/LIFE SAFETY
<b>Project Class:</b>	Plant Adaption	<b>Component:</b>	EGRESS PATH
<b>Date Basis:</b>	6/11/2021	<b>Element:</b>	STAIRS AND RAILING

Code Application:		Subclass/Savings:	Project Location:
IBC	1003.3	Not Applicable	Floor-wide: Floor(s) 1,2,3

**Description**

Replace the worn rubber stair treads in the three stair towers with new rubber treads to help improve user safety.



All costs shown as Present Value

**Project Cost Estimate**

Task Description	Unit	Qty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
Stair tread and landing finish upgrades per floor	FLR	6	\$1,975	\$11,849	\$1,053	\$6,316	\$18,165
<b>Base Material/Labor Costs</b>				<b>\$11,849</b>		<b>\$6,316</b>	
<b>Indexed Material/Labor Costs</b>				<b>\$11,932</b>		<b>\$4,503</b>	<b>\$16,436</b>
<b>Construction Mark Up at 20.0%</b>							<b>\$3,287</b>
<b>Original Construction Cost</b>							<b>\$19,723</b>
<b>Date of Original Estimate:</b>	6/11/2021					<b>Inflation</b>	<b>\$0</b>
<b>Current Year Construction Cost</b>							<b>\$19,723</b>
<b>Professional Fees at 16.0%</b>							<b>\$3,156</b>
<b>TOTAL PROJECT COST</b>							<b>\$22,878</b>



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	IN STL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
EW01	WALL, EXTERIOR, MASONRY POINTING			ALL ELEVS	25,680	SF	1.12	\$220,914	1995	30		2025
EW01	WALL, EXTERIOR, MASONRY POINTING	CUT STONE		ALL ELEVS	2,850	SF	1.12	\$24,517	1995	30		2025
WN01	GLASS, WINDOW, ALUMINUM OR WOOD, STANDARD			ALL ELEVS	3,890	SF	1.12	\$666,893	1995	40	-10	2025
DR05	DOOR AND FRAME, EXTERIOR, SWINGING, ALUMINUM AND GLASS			N ENTRY	2	LEAF	1.00	\$5,770	2003	25		2028
DR05	DOOR AND FRAME, EXTERIOR, SWINGING, ALUMINUM AND GLASS			N ENTRY	2	LEAF	1.00	\$5,770	2003	25		2028
DR08	DOOR AND FRAME, EXTERIOR, SWINGING, HOLLOW METAL	SECONDARY		NE ELEV	1	LEAF	1.00	\$2,031	1995	40		2035
DR08	DOOR AND FRAME, EXTERIOR, SWINGING, HOLLOW METAL	SECONDARY		SOUTH ELEV	3	LEAF	1.00	\$6,093	1995	40		2035
DR08	DOOR AND FRAME, EXTERIOR, SWINGING, HOLLOW METAL	SECONDARY		NW ELEV	1	LEAF	1.00	\$2,031	1995	40		2035
DR28	DOOR OPERATOR, POWER-ASSIST			N ENTRY	2	EA	1.00	\$17,458	2003	20		2023
DR28	DOOR OPERATOR, POWER-ASSIST			NW ELEV	1	EA	1.00	\$8,729	1995	20	5	DR
RR03	ROOF - 1-PLY, ADHERED (EPDM, PIB, CSPE, PVC)	LOWER FLAT ROOF			1,885	SF	1.00	\$12,712	1995	20	5	DR
RR18	ROOF - TILE, CLAY, FLAT	UPPER PITCHED ROOF			14,575	SF	1.00	\$632,194	1995	70		2065
DR02	DOOR AND FRAME, INTERIOR, FIRE-RATED			CORRIDORS	120	LEAF	1.00	\$448,637	1995	40		2035
DR02	DOOR AND FRAME, INTERIOR, FIRE-RATED			STAIR TOWER	9	LEAF	1.00	\$33,648	1995	40		2035
DR24	DOOR LOCK, COMMERCIAL-GRADE			CORRIDORS	120	EA	1.00	\$89,356	1995	20	5	DR

### RENEWABLE COMPONENT INVENTORY

COMP CODE	COMPONENT DESCRIPTION	IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	CPLX FACTR	TOTAL COST	IN STL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
DR24	DOOR LOCK, COMMERCIAL-GRADE	SERVICE		NE ELEV	1	EA	1.00	\$745	1995	20	5	DR
DR26	DOOR PANIC HARDWARE			N ENTRY	2	EA	1.00	\$2,437	2003	20		2023
DR26	DOOR PANIC HARDWARE			N ENTRY	2	EA	1.00	\$2,437	2003	20		2023
DR26	DOOR PANIC HARDWARE	SECONDARY		NE ELEV	1	EA	1.00	\$1,218	1995	20	5	DR
DR26	DOOR PANIC HARDWARE	SECONDARY		SOUTH ELEV	3	EA	1.00	\$3,655	1995	20	5	DR
DR26	DOOR PANIC HARDWARE	SECONDARY		NW ELEV	1	EA	1.00	\$1,218	1995	20	5	DR
DR26	DOOR PANIC HARDWARE			STAIR TOWER	9	EA	1.00	\$10,964	1995	20	5	DR
CW01	CASEWORK - WOOD BASE AND WALL, TOP, STANDARD	CABINETS		KITCHEN	15	LF	1.00	\$8,089	1995	20	17	2032
IW01	WALL FINISH - PAINT, STANDARD	PT WALLS			57,210	SF	1.00	\$128,033	2003	12	5	DR
IW01	WALL FINISH - PAINT, STANDARD	PT WALLS			24,520	SF	1.00	\$54,875	2017	12		2029
IW03	WALL FINISH - TILE, CERAMIC / STONE, STANDARD	CER WALL TILE			7,270	SF	1.00	\$278,987	1995	30	7	2032
IF01	FLOORING - CARPET, TILE OR ROLL, STANDARD	BROADLOOM CARPET			15,420	SF	1.00	\$188,816	2003	12	5	DR
IF03	FLOORING - VINYL COMPOSITION TILE, STANDARD	VCT			620	SF	1.00	\$3,973	1995	20	5	DR
IF06	FLOORING - TILE, CERAMIC / STONE / QUARRY STANDARD	CER FLR TILE			2,470	SF	1.00	\$78,545	1995	30	7	2032
IF13	FLOORING - LAMINATE PLANK, PREMIUM	LVT			12,340	SF	1.00	\$137,595	2017	15		2032

### RENEWABLE COMPONENT INVENTORY

COMP CODE	COMPONENT DESCRIPTION	IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	CPLX FACTR	TOTAL COST	IN STL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
IC04	CEILING FINISH - PAINTED OR STAINED, STANDARD	PT CLGS			15,420	SF	1.00	\$34,509	2003	24		2027
IC04	CEILING FINISH - PAINTED OR STAINED, STANDARD	PT CLGS			6,170	SF	1.00	\$13,808	2003	24	-8	DR
IC04	CEILING FINISH - PAINTED OR STAINED, STANDARD	PT CLGS			9,250	SF	1.00	\$20,701	2017	24		2041
VT03	ELEVATOR MODERNIZATION - HYDRAULIC	ELEV-1		150	1	EA	1.00	\$302,064	2005	25	2	2032
VT04	ELEVATOR CAB RENOVATION - PASSENGER	ELEV-1		ELEV	1	EA	1.00	\$53,265	2005	12	7	2024
FX01	PLUMBING FIXTURE - LAVATORY, COUNTER	PC		HALL BATHS	36	EA	1.00	\$47,447	1995	35	2	2032
FX04	PLUMBING FIXTURE - SINK, KITCHEN	SST		FLR 1 BREAK RM	1	EA	1.00	\$2,160	1995	35	10	2040
FX06	PLUMBING FIXTURE - SINK, SERVICE/LAUNDRY/UTILITY	WALL MOUNTED		JAN CLOS	6	EA	1.00	\$10,755	1949	35		DR
FX08	PLUMBING FIXTURE - SHOWER VALVE AND HEAD	CHROME		HALL BATHS	36	EA	1.00	\$62,084	1995	35	2	2032
FX12	PLUMBING FIXTURE - WATER CLOSET, TANKLESS	PC		HALL BATHS	36	EA	1.00	\$70,146	1995	35	2	2032
BF02	BACKFLOW PREVENTER (1-2 INCHES)	BFP-WM-1		EXT	1	EA	1.00	\$2,339	2010	10		DR
BF02	BACKFLOW PREVENTER (1-2 INCHES)	BFP-WM-2		EXT	1	EA	1.00	\$2,339	2010	10		DR
BF05	BACKFLOW PREVENTER (4-6 INCHES)	BFP-FIRE		EXT	1	EA	1.00	\$12,764	2010	10		DR
PS14	SUPPLY PIPING SYSTEM - OFFICE	COPPER		THROUGHOUT	34,269	SF	0.96	\$115,629	1995	35	2	2032
WH27	WATER HEATER - SHELL & TUBE (45-93 GPM)	DHX-1		114E	48	GPM	1.00	\$56,593	2002	30		2032

### RENEWABLE COMPONENT INVENTORY

COMP CODE	COMPONENT DESCRIPTION	IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	CPLX FACTR	TOTAL COST	IN STL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
WH27	WATER HEATER - SHELL & TUBE (45-93 GPM)	DHX-2		114E	48	GPM	1.00	\$56,593	2002	30		2032
PD14	DRAIN PIPING SYSTEM - OFFICE	CAST IRON HUBLESS		THROUGHOUT	34,269	SF	0.96	\$173,959	1995	40		2035
AH01	AIR HANDLING UNIT - INDOOR (.5-1.25 HP)	AHU-1		152	1	HP	1.00	\$9,008	1995	25		DR
AH01	AIR HANDLING UNIT - INDOOR (.5-1.25 HP)	AHU-2		152	1	HP	1.00	\$9,008	1995	25		DR
AH01	AIR HANDLING UNIT - INDOOR (.5-1.25 HP)	FCU, APPROX 106		OFFICES, RR, CORR	53	HP	1.00	\$477,428	1995	25		DR
AH02	AIR HANDLING UNIT - INDOOR (1.25-1.75 HP)	MAU-1		ATTIC	1.50	HP	1.00	\$11,059	1995	25		DR
AH02	AIR HANDLING UNIT - INDOOR (1.25-1.75 HP)	MAU-2		ATTIC	1.50	HP	1.00	\$11,059	1995	25		DR
FN20	FAN - CENTRIFUGAL ROOF EXHAUST, 1/4" SP (25"-30" DIAMETER)	EF-3		ROOF	1	EA	1.00	\$7,951	2015	20		2035
FN20	FAN - CENTRIFUGAL ROOF EXHAUST, 1/4" SP (25"-30" DIAMETER)	EF-4		EXT WALL	1	EA	1.00	\$7,951	1995	20	5	DR
FN21	FAN - INLINE CENTRIFUGAL AIRFOIL, SUPPLY, 2.5" SP (<=30 HP)	EF-1		ATTIC	1	HP	1.00	\$1,402	2015	20		2035
FN21	FAN - INLINE CENTRIFUGAL AIRFOIL, SUPPLY, 2.5" SP (<=30 HP)	EF-2		ATTIC	1	HP	1.00	\$1,402	1995	20	5	DR
HV14	HVAC DISTRIBUTION NETWORKS - OFFICE	CAV, FAN COIL UNITS		THROUGHOUT	34,269	SF	0.96	\$853,569	1995	40	-6	2029
HX05	HEAT EXCHANGER - SHELL & TUBE STEAM TO WATER (>85 GPM)	HX-1		114E	140	GPM	1.00	\$20,586	2010	35		2045
HX09	PRESSURE REDUCING VALVE, STEAM SYSTEM (2")	PRV-2		114E	1	EA	1.00	\$4,466	1995	20	5	DR
HX09	PRESSURE REDUCING VALVE, STEAM SYSTEM (2")	PRV-3		114E	1	EA	1.00	\$4,466	1995	20	5	DR



### RENEWABLE COMPONENT INVENTORY

COMP CODE	COMPONENT DESCRIPTION	IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	CPLX FACTR	TOTAL COST	IN STL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
HX11	PRESSURE REDUCING VALVE, STEAM SYSTEM (3")	PRV-1		114E	1	EA	1.00	\$6,828	1995	20	5	DR
PH01	PUMP - ELECTRIC (<=10 HP)	HWP-1		114E	7.50	HP	1.00	\$12,339	1995	25		DR
PH01	PUMP - ELECTRIC (<=10 HP)	HWP-2		114E	7.50	HP	1.00	\$12,339	1995	25		DR
PH01	PUMP - ELECTRIC (<=10 HP)	DHWP-1		114E	1	HP	1.00	\$1,645	2002	25	5	2032
PH01	PUMP - ELECTRIC (<=10 HP)	DHWP-2		114E	1	HP	1.00	\$1,645	2002	25	5	2032
PH14	CONDENSATE RECEIVER, ELECTRIC, 2 PUMPS	CDR-1		114E	1	HP	1.00	\$7,437	1995	20	5	DR
AC01	AIR COMPRESSOR SYSTEM - HVAC CONTROLS (<=6 TOTAL HP)	CAC-1		114E	2	HP	1.00	\$3,588	2019	20		2039
BA114	HVAC CONTROLS SYSTEM - OFFICE	DDC, PNEUM		THROUGHOUT	34,269	SF	0.96	\$133,142	1995	18	7	DR
FA01	FIRE ALARM PANEL, DIALER, BATTERY, & CHARGER	PA, SIMPLEX		137	1	EA	1.00	\$37,851	1995	15	10	DR
FA02	FIRE ALARM SYSTEM - DEVICES	HS, MP, SD		THROUGHOUT	34,269	SF	0.96	\$134,203	1995	18	7	DR
SE14	ELECTRICAL DISTRIBUTION NETWORK - OFFICE	1995 RENO, 277/480		THROUGHOUT	34,269	SF	0.96	\$645,797	1995	40		2035
SG03	MAIN SWITCHBOARD W/BREAKERS (600-800 AMP)	9SPA		114E	800	AMP	1.00	\$57,442	1995	20	5	DR
TX29	TRANSFORMER - DRY-TYPE, 3PH, 480V SECONDARY (150-225 KVA)	T-6		114E	225	KVA	1.00	\$25,094	1994	30		2024
LE07	LIGHTING - EXTERIOR, WALL FLOOD (SV, MH, ID, LED)	HID WP		EXT	10	EA	1.00	\$9,884	1995	15	10	DR
LI14	LIGHTING SYSTEM, INTERIOR - OFFICE	T8, CFL		THROUGHOUT	34,269	SF	1.07	\$433,530	1995	20	5	DR

### RENEWABLE COMPONENT INVENTORY

COMP CODE	COMPONENT DESCRIPTION	IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	CPLX FACTR	TOTAL COST	INSL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
GN15	SWITCH - AUTO TRANSFER, 480 V (100-400 AMP)	ATS-1		114E	150	AMP	1.00	\$6,167	1995	25		DR
<b>Grand Total:</b>								<b>\$7,063,780</b>				

## 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
DR28	DOOR OPERATOR, POWER-ASSIST			NW ELEV	B2030	1	EA	\$8,729	DR
RR03	ROOF - 1-PLY, ADHERED (EPDM, PIB, CSPE, PVC)	LOWER FLAT ROOF			B3010	1,885	SF	\$12,712	DR
DR24	DOOR LOCK, COMMERCIAL-GRADE	SERVICE		NE ELEV	C1020	1	EA	\$745	DR
DR26	DOOR PANIC HARDWARE	SECONDARY		NE ELEV	C1020	1	EA	\$1,218	DR
DR26	DOOR PANIC HARDWARE	SECONDARY		SOUTH ELEV	C1020	3	EA	\$3,655	DR
DR26	DOOR PANIC HARDWARE	SECONDARY		NW ELEV	C1020	1	EA	\$1,218	DR
DR24	DOOR LOCK, COMMERCIAL-GRADE			CORRIDORS	C1020	120	EA	\$89,356	DR
DR26	DOOR PANIC HARDWARE			STAIR TOWER	C1020	9	EA	\$10,964	DR
IW01	WALL FINISH - PAINT, STANDARD	PT WALLS			C3010	57,210	SF	\$128,033	DR
IF01	FLOORING - CARPET, TILE OR ROLL, STANDARD	BROADLOOM CARPET			C3020	15,420	SF	\$188,816	DR
IF03	FLOORING - VINYL COMPOSITION TILE, STANDARD	VCT			C3020	620	SF	\$3,973	DR
IC04	CEILING FINISH - PAINTED OR STAINED, STANDARD	PT CLGS			C3030	6,170	SF	\$13,808	DR

### RECURRING NEEDS BY YEAR

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

FX06	PLUMBING FIXTURE - SINK, SERVICE/LAUNDRY/UTILITY	WALL MOUNTED		JAN CLOS	D2010	6	EA	\$10,755	DR
BF05	BACKFLOW PREVENTER (4-6 INCHES)	BFP-FIRE		EXT	D2020	1	EA	\$12,764	DR
BF02	BACKFLOW PREVENTER (1-2 INCHES)	BFP-WM-1		EXT	D2020	1	EA	\$2,339	DR
BF02	BACKFLOW PREVENTER (1-2 INCHES)	BFP-WM-2		EXT	D2020	1	EA	\$2,339	DR
AH02	AIR HANDLING UNIT - INDOOR (1.25-1.75 HP)	MAU-1		ATTIC	D3040	1.50	HP	\$11,059	DR
AH02	AIR HANDLING UNIT - INDOOR (1.25-1.75 HP)	MAU-2		ATTIC	D3040	1.50	HP	\$11,059	DR
AH01	AIR HANDLING UNIT - INDOOR (.5-1.25 HP)	AHU-1		152	D3040	1	HP	\$9,008	DR
AH01	AIR HANDLING UNIT - INDOOR (.5-1.25 HP)	AHU-2		152	D3040	1	HP	\$9,008	DR
AH01	AIR HANDLING UNIT - INDOOR (.5-1.25 HP)	FCU, APPROX 106		OFFICES, RR, CORR	D3040	53	HP	\$477,428	DR
FN20	FAN - CENTRIFUGAL ROOF EXHAUST, 1/4" SP (25"-30" DIAMETER)	EF-4		EXT WALL	D3040	1	EA	\$7,951	DR
FN21	FAN - INLINE CENTRIFUGAL AIRFOIL, SUPPLY, 2.5" SP (<=30 HP)	EF-2		ATTIC	D3040	1	HP	\$1,402	DR
HX11	PRESSURE REDUCING VALVE, STEAM SYSTEM (3")	PRV-1		114E	D3040	1	EA	\$6,828	DR
HX09	PRESSURE REDUCING VALVE, STEAM SYSTEM (2")	PRV-2		114E	D3040	1	EA	\$4,466	DR
HX09	PRESSURE REDUCING VALVE, STEAM SYSTEM (2")	PRV-3		114E	D3040	1	EA	\$4,466	DR

### RECURRING NEEDS BY YEAR

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

PH01	PUMP - ELECTRIC (<=10 HP)	HWP-1		114E	D3040	7.50	HP	\$12,339	DR
PH01	PUMP - ELECTRIC (<=10 HP)	HWP-2		114E	D3040	7.50	HP	\$12,339	DR
PH14	CONDENSATE RECEIVER, ELECTRIC, 2 PUMPS	CDR-1		114E	D3040	1	HP	\$7,437	DR
BA114	HVAC CONTROLS SYSTEM - OFFICE	DDC, PNEUM		THROUGHOUT	D3060	34,269	SF	\$133,142	DR
FA01	FIRE ALARM PANEL, DIALER, BATTERY, & CHARGER	PA, SIMPLEX		137	D4030	1	EA	\$37,851	DR
FA02	FIRE ALARM SYSTEM - DEVICES	HS, MP, SD		THROUGHOUT	D4030	34,269	SF	\$134,203	DR
SG03	MAIN SWITCHBOARD W/BREAKERS (600-800 AMP)	9SPA		114E	D5010	800	AMP	\$57,442	DR
LE07	LIGHTING - EXTERIOR, WALL FLOOD (SV, MH, ID, LED)	HID WP		EXT	D5020	10	EA	\$9,884	DR
LI14	LIGHTING SYSTEM, INTERIOR - OFFICE	T8, CFL		THROUGHOUT	D5020	34,269	SF	\$433,530	DR
GN15	SWITCH - AUTO TRANSFER, 480 V (100-400 AMP)	ATS-1		114E	D5090	150	AMP	\$6,167	DR
<b>TOTAL DEFERRED RENEWAL COST</b>								<b>\$1,878,433.91</b>	

## RECURRING NEEDS BY YEAR

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

**No Projected Component Replacement Cost for Asset No. SLAY for 2021**

**No Projected Component Replacement Cost for Asset No. SLAY for 2022**

2023									
COMP CODE	COMPONENT DESCRIPTION	IDENTIFIER	CUSTOMER ID	LOCATION	UNI-FORMAT	QTY	UNITS	REPLACEMENT COST	YEAR
DR28	DOOR OPERATOR, POWER-ASSIST			N ENTRY	B2030	2	EA	\$18,521	2023
DR26	DOOR PANIC HARDWARE			N ENTRY	C1020	2	EA	\$2,585	2023
DR26	DOOR PANIC HARDWARE			N ENTRY	C1020	2	EA	\$2,585	2023
<b>2023 PROJECTED COMPONENT REPLACEMENT COST</b>								<b>\$23,691.01</b>	

### RECURRING NEEDS BY YEAR

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

2024									
COMP CODE	COMPONENT DESCRIPTION	IDENTIFIER	CUSTOMER ID	LOCATION	UNI-FORMAT	QTY	UNITS	REPLACEMENT COST	YEAR
VT04	ELEVATOR CAB RENOVATION - PASSENGER	ELEV-1		ELEV	D1010	1	EA	\$58,204	2024
TX29	TRANSFORMER - DRY-TYPE, 3PH, 480V SECONDARY (150-225 KVA)	T-6		114E	D5010	225	KVA	\$27,421	2024
<b>2024 PROJECTED COMPONENT REPLACEMENT COST</b>								<b>\$85,625.32</b>	

2025									
COMP CODE	COMPONENT DESCRIPTION	IDENTIFIER	CUSTOMER ID	LOCATION	UNI-FORMAT	QTY	UNITS	REPLACEMENT COST	YEAR
EW01	WALL, EXTERIOR, MASONRY POINTING			ALL ELEVS	B2010	25,680	SF	\$248,641	2025
EW01	WALL, EXTERIOR, MASONRY POINTING	CUT STONE		ALL ELEVS	B2010	2,850	SF	\$27,594	2025
WN01	GLASS, WINDOW, ALUMINUM OR WOOD, STANDARD			ALL ELEVS	B2010	3,890	SF	\$750,594	2025
<b>2025 PROJECTED COMPONENT REPLACEMENT COST</b>								<b>\$1,026,829.58</b>	

### RECURRING NEEDS BY YEAR

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

**No Projected Component Replacement Cost for Asset No. SLAY for 2026**

2027									
COMP CODE	COMPONENT DESCRIPTION	IDENTIFIER	CUSTOMER ID	LOCATION	UNI-FORMAT	QTY	UNITS	REPLACEMENT COST	YEAR
IC04	CEILING FINISH - PAINTED OR STAINED, STANDARD	PT CLGS			C3030	15,420	SF	\$41,206	2027
<b>2027 PROJECTED COMPONENT REPLACEMENT COST</b>								<b>\$41,205.79</b>	

2028									
COMP CODE	COMPONENT DESCRIPTION	IDENTIFIER	CUSTOMER ID	LOCATION	UNI-FORMAT	QTY	UNITS	REPLACEMENT COST	YEAR
DR05	DOOR AND FRAME, EXTERIOR, SWINGING, ALUMINUM AND GLASS			N ENTRY	B2030	2	LEAF	\$7,097	2028



### RECURRING NEEDS BY YEAR

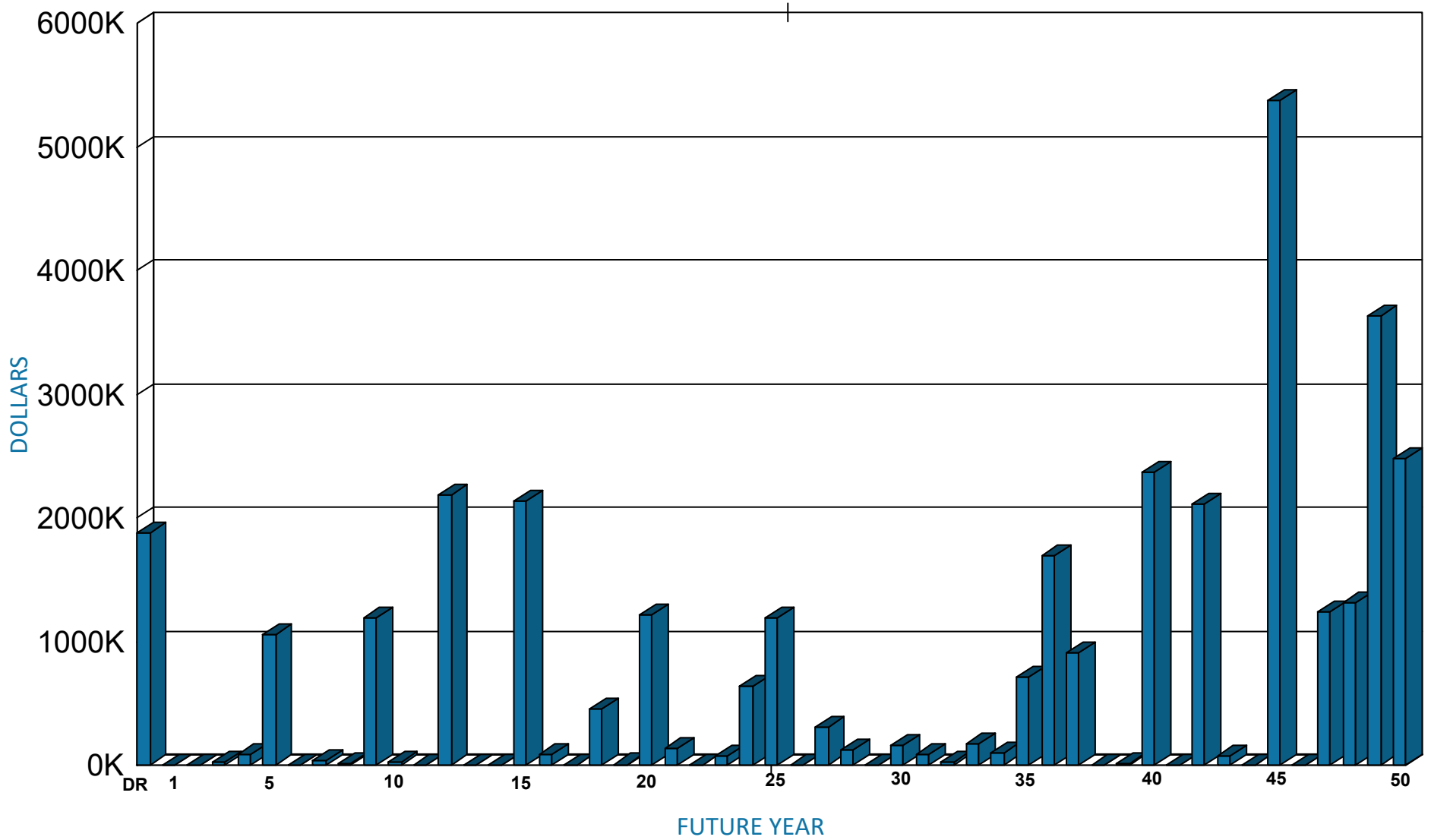
*All costs shown as Future Value using a 3% average inflation rate*

DR05	DOOR AND FRAME, EXTERIOR, SWINGING, ALUMINUM AND GLASS			N ENTRY	B2030	2	LEAF	\$7,097	2028
<b>2028 PROJECTED COMPONENT REPLACEMENT COST</b>								<b>\$14,193.63</b>	

2029									
COMP CODE	COMPONENT DESCRIPTION	IDENTIFIER	CUSTOMER ID	LOCATION	UNI-FORMAT	QTY	UNITS	REPLACEMENT COST	YEAR
IW01	WALL FINISH - PAINT, STANDARD	PT WALLS			C3010	24,520	SF	\$69,513	2029
HV14	HVAC DISTRIBUTION NETWORKS - OFFICE	CAV, FAN COIL UNITS		THROUGHOUT	D3040	34,269	SF	\$1,081,276	2029
<b>2029 PROJECTED COMPONENT REPLACEMENT COST</b>								<b>\$1,150,789.07</b>	

*No Projected Component Replacement Cost for Asset No. SLAY for 2030*

### RECURRING COMPONENT EXPENDITURE PROJECTIONS



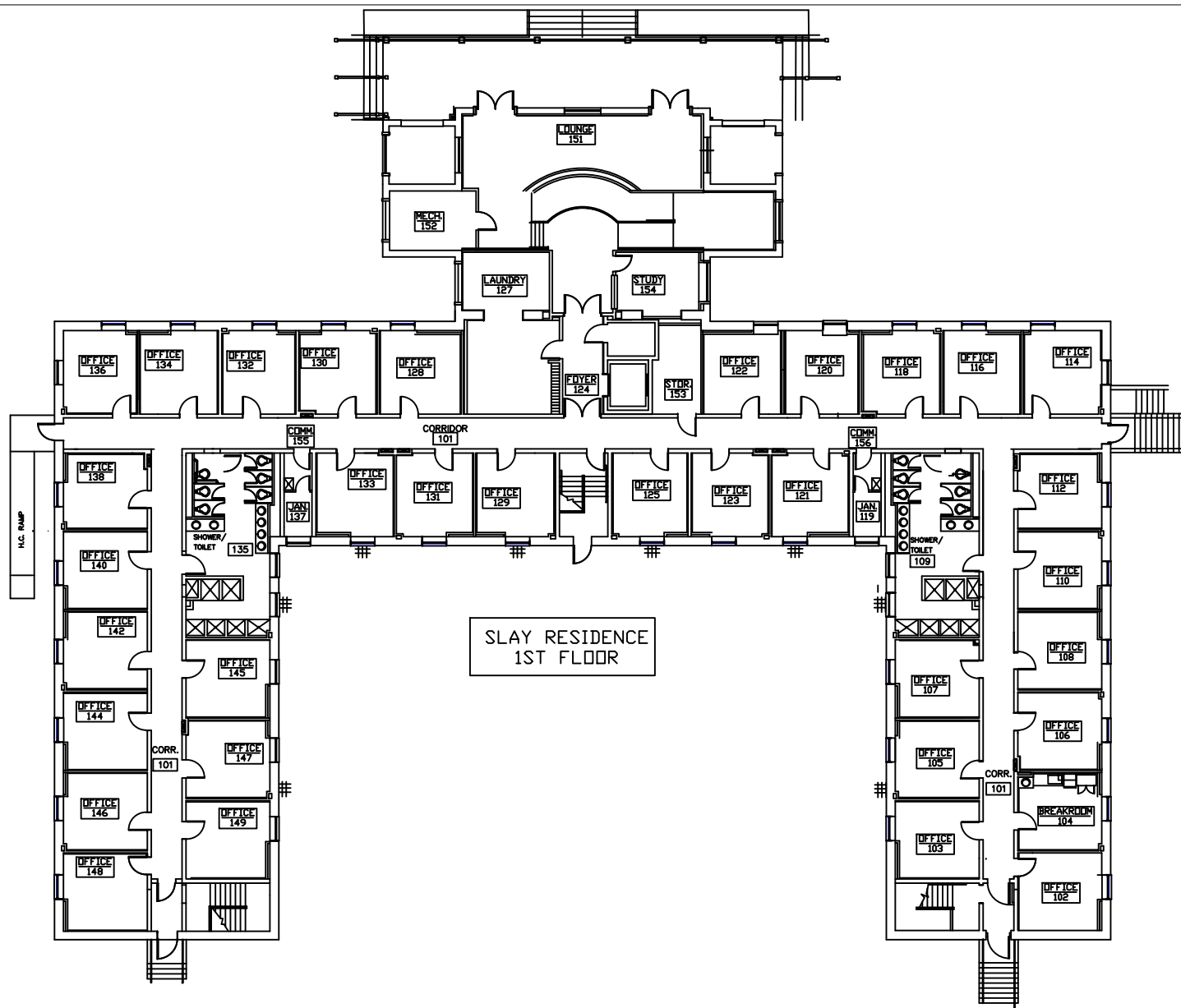
Average Annual Renewal Cost per SF \$8.66

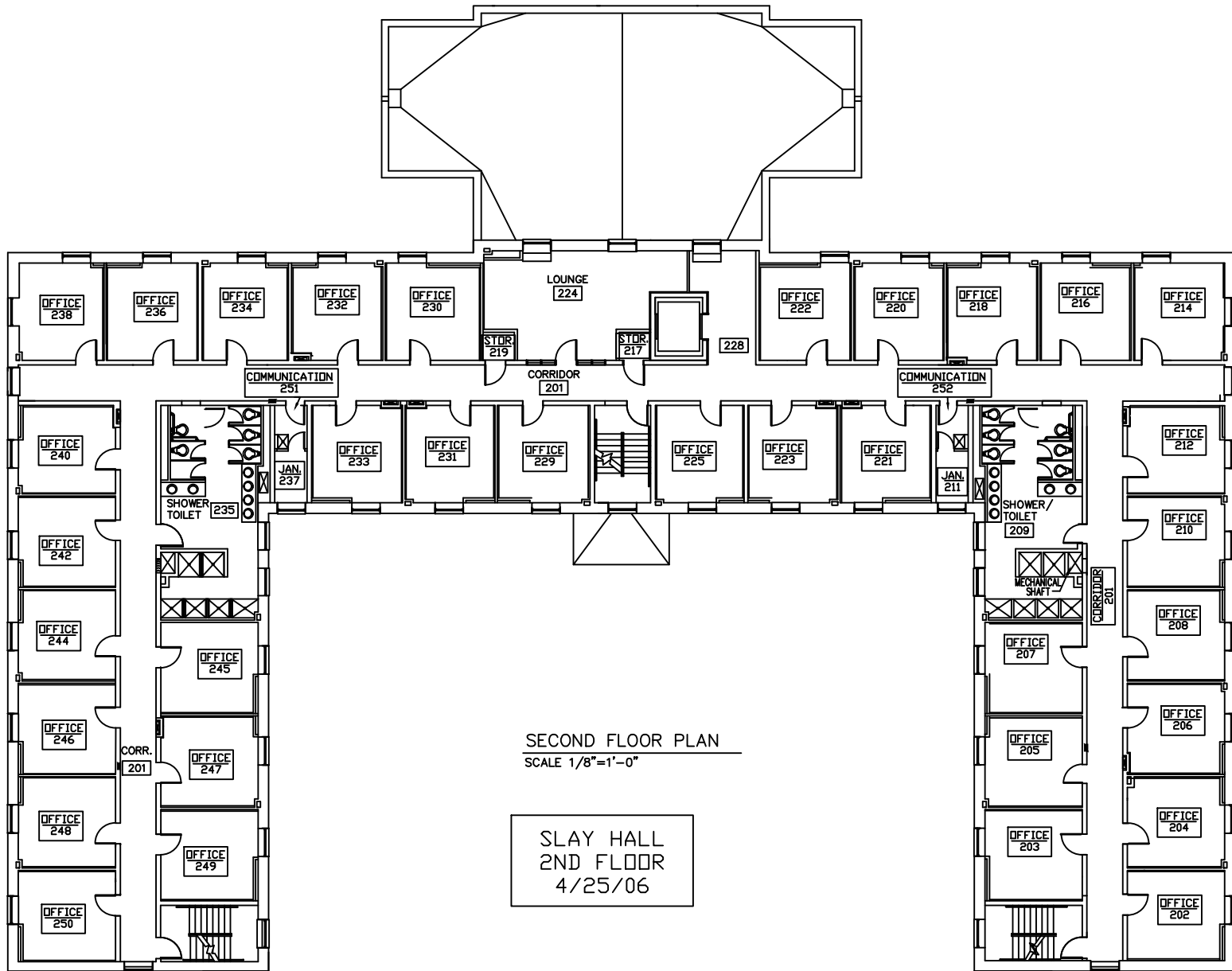
FACILITY CONDITION ASSESSMENT

**SECTION 5**

**DRAWINGS**







SECOND FLOOR PLAN  
SCALE 1/8"=1'-0"

SLAY HALL  
2ND FLOOR  
4/25/06



THIRD FLOOR PLAN  
 SCALE 1/8"=1'-0"





# FACILITY CONDITION ASSESSMENT

## **SECTION 6**

### PHOTOGRAPHS





SLAY001a 5/12/2021  
Exterior building signage  
North site



SLAY001e 5/12/2021  
Fan coil unit  
Attic



SLAY002a 5/12/2021  
Accessible communication unit in non-ADA phone box  
Passenger elevator cab



SLAY002e 5/12/2021  
Inline centrifugal exhaust fan  
Attic



SLAY003a 5/12/2021  
Inadequate insulation in attic  
Attic



SLAY003e 5/12/2021  
Fan coil unit  
Attic



SLAY004a 5/12/2021  
Worn carpeting and older paint on walls and ceiling  
Third floor corridor



SLAY004e 5/12/2021  
Inline centrifugal exhaust fan  
Attic



SLAY005a 5/12/2021  
Aging metal-framed windows  
Third floor



SLAY005e 5/12/2021  
Manual pull fire alarm device  
Third floor corridor



SLAY006a 5/12/2021  
Accessible handrails  
Third floor, stair tower



SLAY006e 5/12/2021  
T8 troffer lighting fixture  
Third floor corridor



SLAY007a 5/12/2021  
Worn rubber stair treads  
Third floor, stair tower



SLAY007e 5/12/2021  
Smoke detector  
Room 348



SLAY008a 5/12/2021  
Accessible room signage but damaged wall paint  
Third floor corridor



SLAY008e 5/12/2021  
Fire suppression stand pipe  
Stairwell



SLAY009a 5/12/2021  
Some finish damage on painted ceiling  
Third floor, office



SLAY009e 5/12/2021  
Centrifugal rooftop exhaust fan  
Lower roof



SLAY010a 5/12/2021  
Older broadloom carpeting  
Third floor, office



SLAY010e 5/12/2021  
Local panelboard  
Second floor corridor



SLAY011a 5/12/2021  
Fire-rated corridor door with lever hardware  
Third floor corridor



SLAY011e 5/12/2021  
T8 troffer lighting fixture  
Room 147



SLAY012a 5/12/2021  
Updated counter lavatories  
Third floor, hall bath



SLAY012e 5/12/2021  
Console fan coil unit  
Room 147



SLAY013a 5/12/2021  
Updated counter lavatories  
Third floor, hall bath



SLAY013e 5/12/2021  
Hydraulic elevator controls  
Room 150



SLAY014a 5/12/2021  
Accessible roll-in shower  
Third floor, hall bath



SLAY014e 5/12/2021  
Fire alarm annunciator panel  
Main lobby



SLAY015a 5/12/2021  
Ceramic wall tile  
Third floor, hall bath



SLAY015e 5/12/2021  
Fan coil unit  
Room 152



SLAY016a 5/12/2021  
Accessible toilet stall  
Third floor, hall bath



SLAY016e 5/12/2021  
Fan coil unit  
Room 152



SLAY017a 5/12/2021  
Standard toilet stall  
Third floor, hall bath



SLAY017e 5/12/2021  
Elevator interior  
Elevator



SLAY018a 5/12/2021  
Wall-mounted service sink  
Third floor, janitor's closet



SLAY018e 5/12/2021  
Elevator interior  
Elevator





SLAY019a 5/12/2021  
Ceiling damage possibly due to integral gutter issues  
Third floor



SLAY019e 5/12/2021  
Main fire alarm panel  
Room 137



SLAY020a 5/12/2021  
View of older membrane roof  
Roof over entry lobby



SLAY020e 5/12/2021  
Heating hot water pumps  
Room 114E



SLAY021a 5/12/2021  
Dual-level accessible water fountain  
Third floor, corridor alcove



SLAY021e 5/12/2021  
Chilled water pump  
Room 114E



SLAY022a 5/12/2021  
Water damage around exterior glazing  
Third floor



SLAY022e 5/12/2021  
Condensate receiver  
Room 114E



SLAY023a 5/12/2021  
Original single-pane wire glass stair tower window  
Third floor, stair tower



SLAY023e 5/12/2021  
Step-down transformer  
Room 114E



SLAY024a 5/12/2021  
Pitched roof dormer vent and integral gutter  
Pitched clay tile main roof



SLAY024e 5/12/2021  
Main distribution panelboard  
Room 114E



SLAY025a 5/12/2021  
Older carpeting and painted walls and ceiling  
Second floor, office



SLAY025e 5/12/2021  
Pressure reducing valves  
Room 114E



SLAY026a 5/12/2021  
Newer LVT flooring  
Second floor corridor



SLAY026e 5/12/2021  
Shell-and-tube heat exchanger  
Room 114E



SLAY027a 5/12/2021  
Newer LVT flooring  
Second floor, office



SLAY027e 5/12/2021  
Centrifugal exhaust fan  
Exterior



SLAY028a 5/12/2021  
Worn carpeting and painted walls and ceiling  
First floor corridor



SLAY028e 5/12/2021  
Domestic hot water heater exchanger  
Room 114E



SLAY029a 5/12/2021  
LVT flooring  
First floor, north entry lobby



SLAY029e 5/12/2021  
Domestic hot water heater exchanger  
Room 114E



SLAY030a 5/12/2021  
Unrepaired water damage to lobby ceiling  
First floor, entry lobby



SLAY030e 5/12/2021  
Domestic hot water pumps  
Room 114E



SLAY031a 5/12/2021  
Unrepaired water damage to lobby ceiling  
First floor, entry lobby



SLAY031e 5/12/2021  
Controls air compressor  
Room 114E



SLAY032a 5/12/2021  
Older updated kitchenette  
First floor, staff break area



SLAY032e 5/12/2021  
HID wallpack  
Exterior



SLAY033a 5/12/2021  
Window fogging issues  
First floor



SLAY033e 5/12/2021  
HID wallpacks  
Exterior



SLAY034a 5/12/2021  
Hollow-metal exterior service door  
Northeast mechanical areaway



SLAY034e 5/12/2021  
Fire suppression backflow preventer  
Exterior



SLAY035a 5/12/2021  
Brick facade with cut stone accents  
North elevation



SLAY035e 5/12/2021  
Domestic cold water backflow preventers  
Exterior



SLAY036a 5/12/2021  
Cut down hollow-metal crawl space access door  
North elevation



SLAY037a 5/12/2021  
Wood trellis above entry porch  
North elevation



SLAY038a 5/12/2021  
Adequate handrails at main entry steps  
North elevation



SLAY039a 5/12/2021  
Ramped secondary entry/egress point  
Northwest corner elevation



SLAY040a 5/12/2021  
Hollow-metal exterior door with power door assist  
Northwest corner elevation



SLAY041a 5/12/2021  
Exterior brick facade  
Southwest corner elevation



SLAY042a 5/12/2021  
Hollow-metal secondary egress doors with adequate railings  
Southwest corner elevation



SLAY043a 5/12/2021  
Granite steps with some failed repairs  
Southwest corner elevation



SLAY044a 5/12/2021  
Brick facade  
Center of south elevation



SLAY045a 5/12/2021  
Brick facade  
Southeast corner elevation



SLAY046a 5/12/2021  
Brick facade  
East elevation



SLAY047a 5/12/2021  
Stress cracks at corner of brick and staining of cut stone  
Upper east elevation



SLAY048a 5/12/2021  
Main pitched clay tile roof with integral guttering  
Pitched roof



SLAY049a 5/12/2021  
Main pitched clay tile roof with integral guttering  
Pitched roof



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	SLAY
Asset Name	Slay Hall (076)
Year Built or Last Energy Renovation	1995

## 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.

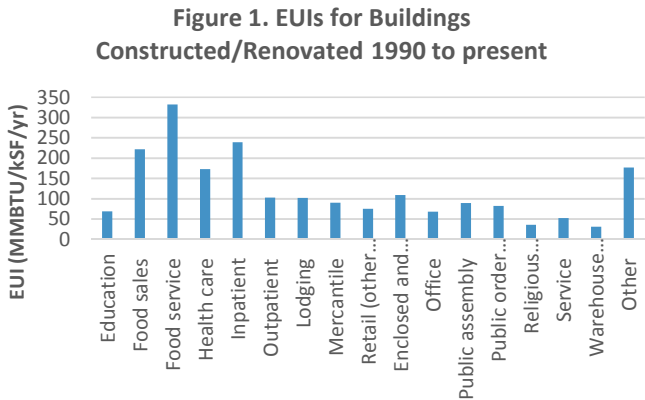
### Metric #1: Energy Use Intensity (EUI)

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	Classroom
Range of Years Constructed/Last Major Energy Renovation	1990 to present
Benchmark EUI (MMBTU/kSF/yr) =	69
<b>Building EUI to be Calculated by Client (MMBTU/kSF/yr) =</b>	

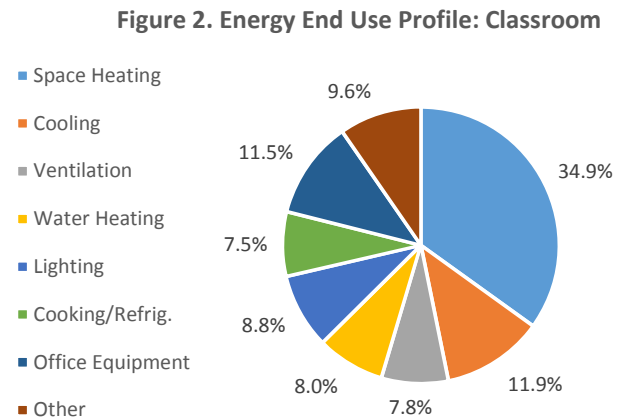
TABLE 3. EUI COMPARISON	
<b>Very Energy Efficient</b> (consumes more than 30% less energy)	EUI < 48.3
<b>Energy Efficient</b> (consumes 10% to 30% less energy)	48.3 <= EUI <= 62.1
<b>Similar</b> (consumes within 10% less or 10% more energy)	62.1 < EUI < 75.9
<b>Energy Inefficient</b> (consumes 10% to 30% more energy)	75.9 <= EUI <= 89.7
<b>Very Energy Inefficient</b> (consumes more than 30% more energy)	EUI > 89.7



### 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: CLASSROOM	
Space Heating	34.9%
Cooling	11.9%
Ventilation	7.8%
Water Heating	8.0%
Lighting	8.8%
Cooking/Refrig.	7.5%
Office Equipment	11.5%
Other	9.6%
<b>Total</b>	<b>100.0%</b>



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
Building Envelope - Window/Door Air Infiltration	WEATHERSTRIP/CAULK WINDOWS/DOORS. When there is air leakage, weatherstrip around movable components and caulk around rigid components to reduce infiltration and save on heating/cooling costs.	O&M; LC/NC
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

ECM CATEGORY	ECM RECOMMENDED FOR FURTHER CONSIDERATION	COST CATEGORY
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
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 - Hydronic Dist. Network Insulation	INSULATE THE HVAC PIPING. Insulating HVAC piping reduces heat loss and decreases energy consumption.	CAP
HVAC - BAS	INSTALL A BAS. Consider installing a BAS so that there is autonomous control of the building HVAC systems.	CAP
HVAC - EMCS	CONNECT BAS TO EMCS. Consider connecting the BAS to a central EMCS so that the system can be monitored and controlled at a central location.	CAP
HVAC - Unitary Equipment	INSTALL EFFICIENT UNITARY EQUIPMENT. Consider replacing the existing equipment with FEMP recommended/ENERGY STAR qualified unitary equipment.	LC/NC; CAP
HVAC - Unitary Equipment Controls	UPGRADE CONTROLS. Install controls that allow the unitary equipment to be programmed for on/off and/or thermostat setpoints so that the systems operate at appropriate temperatures and do not run when the building/space is unoccupied.	LC/NC; 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
Electrical - VFDs	INSTALL VARIABLE FREQUENCY DRIVES. Install VFDs on motors greater than 5 hp to reduce energy consumption by varying motor speed based on system demand.	O&M; LC/NC; CAP