EAST CAROLINA UNIVERSITY

Facility Condition Assessment

ECU Transit

Asset 258

Inspected January 25, 2023

Revised 8/9/23

ISES CORPORATION

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FACILITY CONDITION ASSESSMENT

SECTION 1

ASSET OVERVIEW

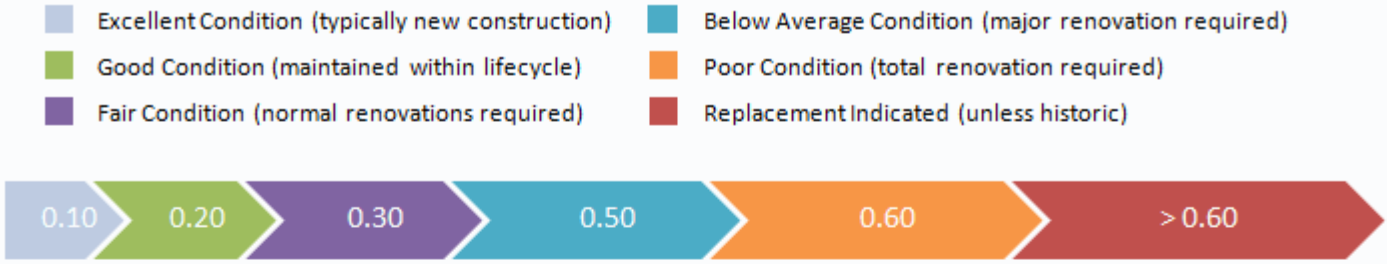
ASSET EXECUTIVE SUMMARY

All costs shown as Present Value

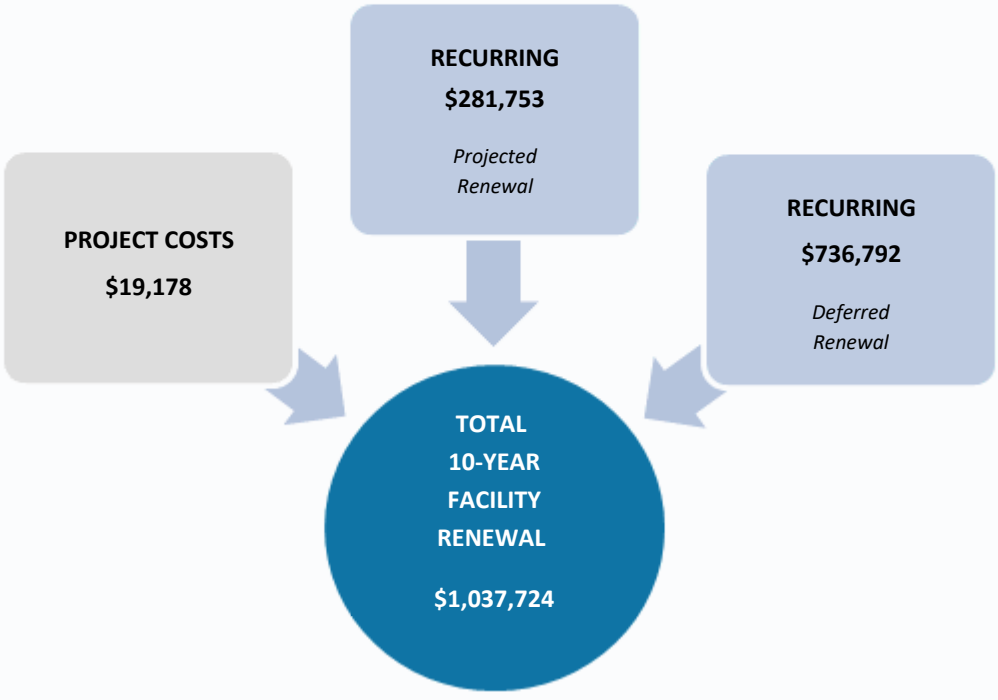
ASSET CODE	258	**CURRENT REPLACEMENT VALUE**	$11,487,000
ASSET NAME	ECU TRANSIT	**FACILITY CONDITION NEEDS INDEX**	0.09
ASSET USE	Shops / Trade	**FACILITY CONDITION INDEX**	0.06
YEAR BUILT	2000	**10-YEAR $/SF**	52.26
GSF	19,856		
INSPECTION DATE	01/25/2023		

FCNI Scale

The FCNI for this asset is **0.09**



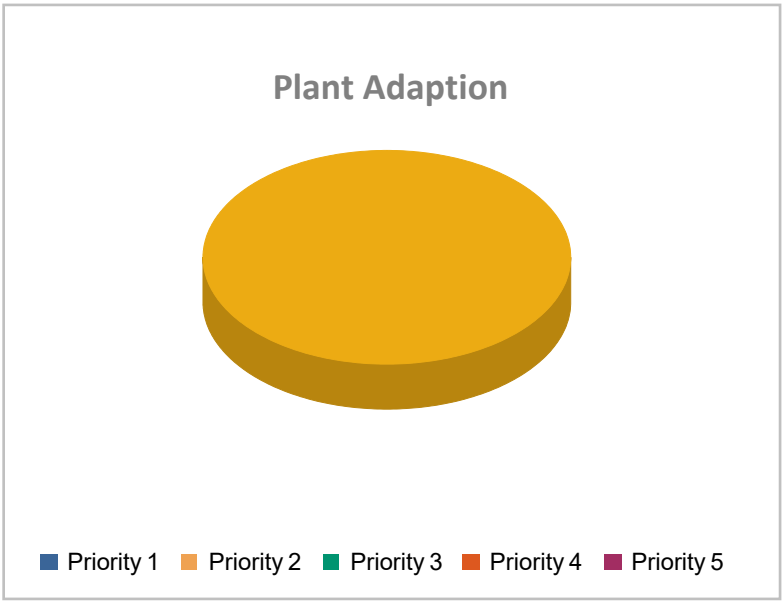
Total Facility Renewal Costs



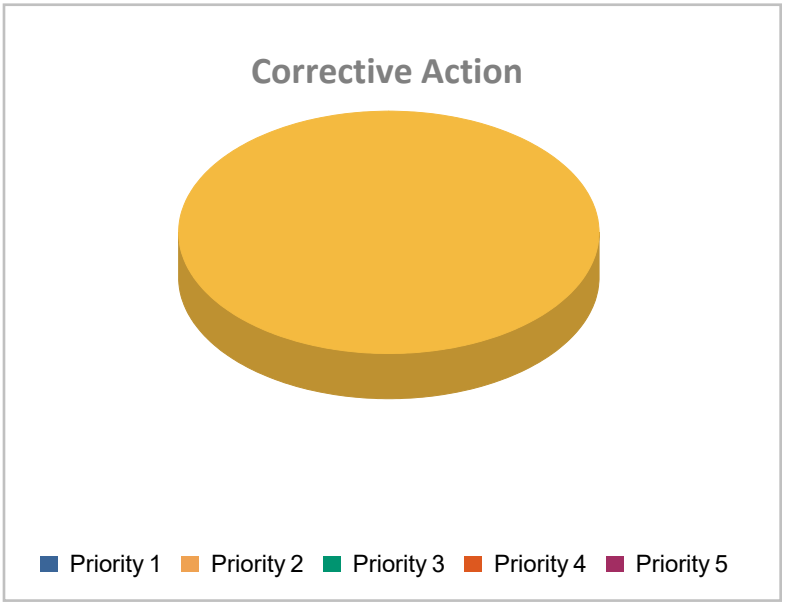
Project Costs

Project Cost by Priority

PLANT ADAPTION	
Priority 1	**$0**
Priority 2	**$16,340**
Priority 3	**$0**
Priority 4	**$0**
Priority 5	**$0**

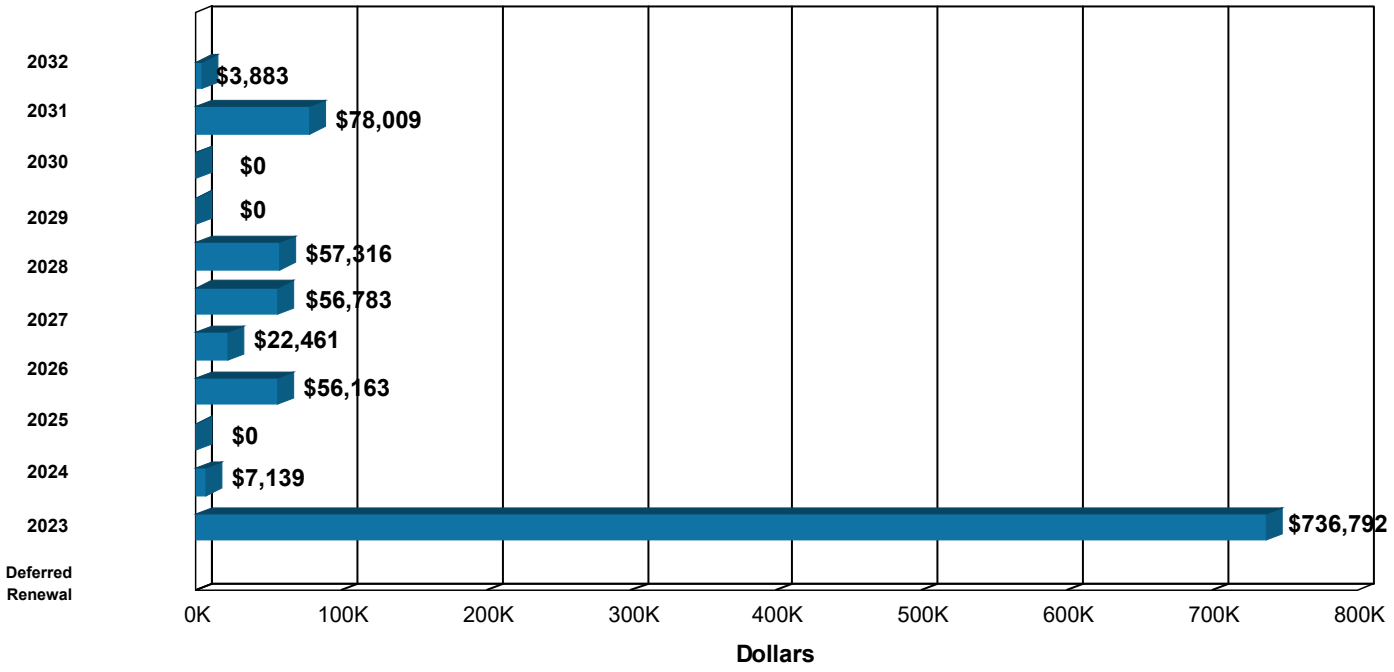


CORRECTIVE ACTION	
Priority 1	**$0**
Priority 2	**$2,838**
Priority 3	**$0**
Priority 4	**$0**
Priority 5	**$0**

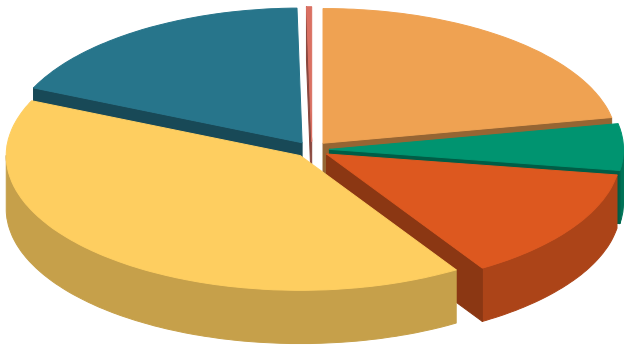


Recurring Costs

Component Replacement Cost by Year



Facilities Renewal Cost by System



Accessibility	$0	0%
Electrical	$228,398	22%
Exterior	$56,986	5%
Fire/Life Safety	$139,915	13%
Health	$0	0%
HVAC	$422,918	41%
Interiors	$186,292	18%
Plumbing	$3,215	0%
Site	$0	0.0%
Vert. Trans.	$0	0%
Security	$0	0.0%
TOTAL	**$1,037,724**	

ASSET SUMMARY

The ECU Transit facility on the East Carolina University campus was constructed in 2000. This single-story, steel structured facility is both an office and vehicle wash station for the university's vehicles. Totaling 19,856 gross square feet, the facility is predominately utilized as a warehouse and trades facility.

Information for this report was gathered during a site visit that concluded on January 25, 2023.

Site

The building sits on a flat parcel of land. Landscaping consists of ornamental planting beds, shrubbery, specimen trees, and areas of turf. The site is in overall in good condition.

Exterior Structure

The facility has two separate sections of roof. Both are standing-seam metal applications and in good condition. The roof drains via galvanized metal gutters and downspouts. These systems are in fair condition and recommended for replacement.

The exterior consists of split faced CMU with metal panels on the top soffit and fascia areas. Additionally, the wash bay has corrugated metal siding. The metal panels and corrugated panels will need some maintenance to the screws and joint sealants. Aluminum and glass glazing is limited to the office area only and is in good condition with no recommendations.

The aluminum and glass exit doors are in fair condition and should be replaced within the next ten years. While the hollow metal secondary exit doors are structurally in good condition, they should be painted to maintain their overall condition.

Interior Finishes/Systems

The painted gypsum wall finishes are in good to fair condition but due to normal wear will need to be repainted in four to six years. One restroom has fiberglass reinforced panels. These are in fair condition and should be replaced within the next ten years. Ceilings are suspended acoustical tiles and in good condition. No upgrade is recommended at this time. Offices have carpet tile and composite vinyl tile flooring. These finishes are recommended for replacement. Also, apply a clear sealant to the concrete floors in the warehouse area and wash bays to maintain their overall condition.

The wood and hollow metal interior doors are in good condition and do not require replacement. The interior door hardware is lever style with panic bars on the main exit doors. The door hardware is in good condition and should be replaced within the next ten years, as should the break room casework.

Accessibility

The main and secondary entrances are wheelchair accessible. All of the exterior and interior door hardware has been upgraded to lever style and the two main entrance doors have panic bars. The restrooms are accessible, and there are single-level and dual-level drinking fountains in the office area.

Health

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

Fire/Life Safety

Fall protection is required for roofing installations to protect the welfare of workers on roofing systems located over six feet above grade. The installation of hard looped tie-off points is recommended at intervals throughout the roof to support workers associated lifelines and harness personal protective equipment.

Vertical access ladders are needed to access the roof of the office building and to access the wash bay roof from the office building. Install a new ladder, cage, and platform to promote user safety and limit liability.

The Simplex 4010 fire alarm system is equipped with strobes and audible annunciator units. Additionally, there are manual input devices at each exit door and smoke detectors throughout the building.

This facility is not protected by any form of automatic fire suppression, and none appears to be required. Manual, dry chemical fire extinguishers are available for immediate use.

HVAC

Heating and cooling are provided primarily by natural gas rooftop package units with a metal duct distribution system. The gas package units appear to be in good condition and should outlast the ten-year scope of this report. The HVAC controls were upgraded in 2014. The HVAC distribution system has been modified multiple times and is not servicing all areas efficiently and should be redesigned and replaced. Two DX split systems are installed for the office areas. The warehouse and wash bay are heated with natural gas unit heaters that are suspended from the ceiling. These will need to be scheduled for replacement in three to five years. The electric wall heaters in the restrooms and other various locations are in poor condition and should be scheduled for near-term replacement. The wash bay area ventilation is provided by wall-mounted exhaust fans that were installed in 2013 as part of the renovation. They are in good condition and should outlast the ten-year scope of this report. The warehouse fans and restroom ventilation fan appear to be original and should be replaced.

A small utility air compressor was installed in 2013 and a 50-CFM refrigerated air dryer was installed in 2017. Both serve the wash bay area and are in good condition with no recommendations at this time.

A small portable steam boiler used for steam cleaning the vehicle is inadequate for the area and should be replaced with a permanent electric boiler system.

Electrical

High voltage from the utility company is reduced to 120/208-volt, three-phase power via a service entrance transformer on the site. A main switchgear in the electrical room distributes 120/208 service to the electrical panels that support the 120/208-volt distribution panels. They were installed as part of the 2013 renovation and are in good condition with no recommendations at this time.

Interior lighting in the office area consists of lay-in fluorescent fixtures, and the wash bay has high bay fluorescent fixtures. Newer LED fixtures have been installed in the shop. While these fixtures should outlast the report scope, the older lighting is due for replacement, along with the battery back-up emergency light wall packs.

Nighttime illumination is provided by wall-mounted compact HID lighting fixtures. Compact LED fixtures are provided at all exit doors. The LED fixtures are in good condition but the HID wall fixtures should be scheduled for replacement in two to three years.

Plumbing

Potable water is distributed throughout via an insulated copper piping network. Sanitary waste is conveyed by cast-iron, bell-and-spigot piping construction with copper runouts. Both systems are in good condition and should outlast the ten-year scope of this report. Domestic hot water is provided by a residential electric water heater that has reached the end of its useful service life and should be replaced this year. A water treatment skid installed out back of the wash bay was added as part of the 2013 renovations and should outlast the ten-year scope of this report. The fixtures in the restrooms appear to be original but do not require replacement at this time.

Vertical Transportation

The electric bridge crane and hoist are in good condition and should outlast the ten-year scope of this report.

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 25, 2023

Inspection Team Personnel

NAME	POSITION	SPECIALTY
John Pasley	Facility Assessor	Interior Finishes, Exterior Structure, ADA Compliance, Site, 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	0	0	0	0	0	0	0	0	0	0	0	0	0	$0
EXTERIOR	0	2,838	0	8,694	0	0	45,454	0	0	0	0	0	0	0	$56,986
INTERIOR	0	0	0	129,509	0	0	0	0	56,783	0	0	0	0	0	$186,292
PLUMBING	0	0	0	0	3,215	0	0	0	0	0	0	0	0	0	$3,215
HVAC	0	0	0	380,900	3,924	0	0	22,461	0	11,750	0	0	0	3,883	$422,918
FIRE/LIFE SAFETY	0	16,340	0	0	0	0	0	0	0	45,567	0	0	78,009	0	$139,915
ELECTRICAL	0	0	0	217,689	0	0	10,709	0	0	0	0	0	0	0	$228,398
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	0	0	0	0	0	0	0	$0
HEALTH/EQUIP.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	$0
SUBTOTAL	$0	$19,178	$0	$736,792	$7,139	$0	$56,163	$22,461	$56,783	$57,316	$0	$0	$78,009	$3,883	$1,037,724
TOTAL NONRECURRING PROJECT NEEDS			$19,178	TOTAL RECURRING COMPONENT REPLACEMENT NEEDS										$1,018,546	

CURRENT REPLACEMENT VALUE	$11,487,000
FACILITY CONDITION NEEDS INDEX	0.09
FACILITY CONDITION INDEX	0.06

GSF	TOTAL 10-YEAR FACILITY RENEWAL NEEDS	10-YEAR NEEDS/SF
19,856	$1,037,724	$52.26

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	$0	$0	$0
EXTERIOR	$2,838	$54,148	$56,986
INTERIOR	$0	$186,292	$186,292
PLUMBING	$0	$3,215	$3,215
HVAC	$0	$422,918	$422,918
FIRE/LIFE SAFETY	$16,340	$123,575	$139,915
ELECTRICAL	$0	$228,398	$228,398
SITE	$0	$0	$0
VERT. TRANS	$0	$0	$0
HEALTH	$0	$0	$0
TOTALS	**$19,178**	**$1,018,546**	**$1,037,724**

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
258	RR20	ROOF GUTTER AND LEADER - ALUMINUM OR GALVANIZED, COATED			MAIN OFFICE ROOF	B3010	Deferred Renewal	2,557
258	RR20	ROOF GUTTER AND LEADER - ALUMINUM OR GALVANIZED, COATED			WASH BAY	B3010	Deferred Renewal	6,137
258	DR24	DOOR LOCK, COMMERCIAL-GRADE			SECONDARY EXITS	C1020	Deferred Renewal	7,171
258	DR26	DOOR PANIC HARDWARE			MAIN ENTRANCE	C1020	Deferred Renewal	2,933
258	CW01	CASEWORK - WOOD BASE AND WALL, TOP, STANDARD	WOOD, LAMINATE		BREAK ROOM	C1030	Deferred Renewal	6,492
258	IW12	WALL FINISH - PANEL, MEDICAL / LABORATORY APPLICATION	FIBERGLASS FIBER BOARD		RESTROOMS	C3010	Deferred Renewal	3,582
258	IF01	FLOORING - CARPET, TILE OR ROLL, STANDARD	CARPET TILES		GENERAL OFFICES	C3020	Deferred Renewal	32,283
258	IF03	FLOORING - VINYL COMPOSITION TILE, STANDARD	VCT FLOORING		CMNS, CRRDRS, RR	C3020	Deferred Renewal	52,076
258	IF15	FLOORING - FLUID APPLIED, PAINT OR CLEAR SEAL	SEALED CONCRETE		WAREHOUSE, WASH BAY	C3020	Deferred Renewal	24,972
258	HU52	UNIT HEATER, ELECTRIC	WALL HEATER		WASH BAY EQUIP RM	D3020	Deferred Renewal	2,957
258	FN25	FAN - PROPELLER WITH LOUVER, 1/4" SP (<=0.5 HP)			RR	D3040	Deferred Renewal	2,706
258	FN30	FAN - PROPELLER WITH LOUVER, 1/4" SP (>4 HP)	BAF		WAREHOUSE	D3040	Deferred Renewal	6,347
258	HV14	HVAC DISTRIBUTION NETWORKS - OFFICE	OFFICES		BLDG WIDE	D3040	Deferred Renewal	368,890
258	SG01	MAIN SWITCHBOARD W/BREAKERS (<400 AMP)	MDP		WAREHOUSE	D5010	Deferred Renewal	39,436
258	LI14	LIGHTING SYSTEM, INTERIOR - OFFICE	HIGH BAY FLUOR		BLDG WIDE	D5020	Deferred Renewal	168,099

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
258	LI20	LIGHTING SYSTEM, INTERIOR - SHOPS / TRADES, DRY LABORATORY			WASH BAY	D5020	Deferred Renewal	10,154
258	WH23	WATER HEATER - RESIDENTIAL, ELECTRIC (25-46 GAL)	TAN-001	21050	NEAR 114	D2020	2023	3,215
258	HU27	UNIT HEATER - INDOOR, GAS, SUSPENDED (100-140 MBH)	GUH-05			D3040	2023	3,924
258	EW12	WALL, EXTERIOR, PANEL JOINT RESTORATION	METAL AWNING		OFFICE	B2010	2025	7,655
258	EW12	WALL, EXTERIOR, PANEL JOINT RESTORATION	CORRIGUATED METAL		WAREHOUSE, WASH BAY	B2010	2025	30,852
258	DR05	DOOR AND FRAME, EXTERIOR, SWINGING, ALUMINUM AND GLASS	FULL GLASS		MAIN ENTRANCE	B2030	2025	6,947
258	LE07	LIGHTING - EXTERIOR, WALL FLOOD (SV, MH, ID, LED)	HID WALL		ALL ELEVS	D5020	2025	10,709
258	HU26	UNIT HEATER - INDOOR, GAS, SUSPENDED (40-100 MBH)	GIH01		WASH BUILDING	D3040	2026	2,808
258	HU26	UNIT HEATER - INDOOR, GAS, SUSPENDED (40-100 MBH)	GIH02		WASH BUILDING	D3040	2026	2,808
258	HU26	UNIT HEATER - INDOOR, GAS, SUSPENDED (40-100 MBH)	GIH03		WASH BUILDING	D3040	2026	2,808
258	HU26	UNIT HEATER - INDOOR, GAS, SUSPENDED (40-100 MBH)	GIH04		WASH BUILDING	D3040	2026	2,808
258	HU26	UNIT HEATER - INDOOR, GAS, SUSPENDED (40-100 MBH)	GIH05		WASH BUILDING	D3040	2026	2,808
258	HU26	UNIT HEATER - INDOOR, GAS, SUSPENDED (40-100 MBH)	GIH06		WASH BUILDING	D3040	2026	2,808
258	HU26	UNIT HEATER - INDOOR, GAS, SUSPENDED (40-100 MBH)	GIH07		WASH BUILDING	D3040	2026	2,808
258	HU26	UNIT HEATER - INDOOR, GAS, SUSPENDED (40-100 MBH)	GIH08		WASH BUILDING	D3040	2026	2,808

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
258	IW01	WALL FINISH - PAINT, STANDARD	PAINTED HARD SURFACES		GENERAL AREAS	C3010	2027	39,389
258	IF01	FLOORING - CARPET, TILE OR ROLL, STANDARD	CARPET TILES		EXECUTIVE OFFICES	C3020	2027	17,394
258	WT09	WATER TREATMENT SKID	WASH BAY CHEMICALS		WASH BAY	D3070	2028	11,750
258	FA01	FIRE ALARM PANEL, DIALER, BATTERY, & CHARGER	SIMPLEX 4010	21049	MAIN OFFICE	D4030	2028	45,567
258	FA02	FIRE ALARM SYSTEM - DEVICES	SIMPLEX 4010		THROUGHOUT	D4030	2031	78,009
258	AD03	AIR DRYER - REFRIGERATED - 26-50 CFM			WASH BAY EQUIP RM	D3060	2032	3,883
							TOTAL	**$1,018,546**

FACILITIES RENEWAL PLAN

NONRECURRING PROJECT COSTS

All costs shown as Present Value

PROJECT NUMBER	PROJECT TITLE	UNI-FORMAT	PRIORITY CLASS	PROJECT CLASSIFICATION	PROJECT COST
258ES01	PAINT THE EXTERIOR DOOORS	B2030	2	Corrective Action	2,838
258FS01	ADD ROPE DAVITS TO SUPPORT WORKER FALL PROTECTION	B3010	2	Plant Adaption	11,722
258FS02	INSTALL COMPLIANT LADDER WITH SAFETY CAGE	C1010	2	Plant Adaption	4,618
				TOTAL	**$19,178**

FACILITY CONDITION ASSESSMENT

SECTION 3

NONRECURRING PROJECT DETAILS

All costs shown as Present Value

INSTALL COMPLIANT LADDER WITH SAFETY CAGE

Project Number:	258FS02	**Category Code:** FS5A	
Priority Sequence:	1		
Priority Class:	Medium	**System:**	FIRE/LIFE SAFETY
Project Class:	Plant Adaption	**Component:**	EGRESS PATH
Date Basis:	2/16/2023	**Element:**	DESIGNATION

Code Application:		Subclass/Savings:	Project Location:
OSHA	1910.27	Not Applicable	Item Only: Floor(s) 1,R

Description

Vertical access ladders are needed to access the roof of the office building and to access the wash bay roof from the office building. Install a new ladder, cage, and platform to promote user safety and limit liability.

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
Vertical safety ladder with cage	LF	28	$65.20	$1,826	$74.08	$2,074	$3,900
Base Material/Labor Costs				**$1,826**		**$2,074**	
Indexed Material/Labor Costs				**$1,838**		**$1,479**	**$3,317**
Construction Mark Up at 20.0%							**$663**
Original Construction Cost							**$3,981**
Date of Original Estimate: 2/16/2023						**Inflation**	**$0**
Current Year Construction Cost							**$3,981**
Professional Fees at 16.0%							**$637**
TOTAL PROJECT COST							**$4,618**

All costs shown as Present Value

ADD ROPE DAVITS TO SUPPORT WORKER FALL PROTECTION

Project Number:	258FS01	**Category Code:** FS6A	
Priority Sequence:	2		
Priority Class:	Medium	**System:**	FIRE/LIFE SAFETY
Project Class:	Plant Adaption	**Component:**	GENERAL
Date Basis:	2/16/2023	**Element:**	OTHER

Code Application:		Subclass/Savings:	Project Location:
OSHA	1910.27	Not Applicable	Area Wide: Floor(s) R

Description

Fall protection is required for roofing installations to protect the welfare of workers on roofing systems located over six feet above grade. The installation of hard looped tie-off points is recommended at intervals throughout the roof to support workers associated 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	10	$391	$3,914	$628	$6,283	$10,197
Base Material/Labor Costs				**$3,914**		**$6,283**	
Indexed Material/Labor Costs				**$3,941**		**$4,480**	**$8,421**
Construction Mark Up at 20.0%							**$1,684**
Original Construction Cost							**$10,105**
Date of Original Estimate: 2/16/2023						**Inflation**	**$0**
Current Year Construction Cost							**$10,105**
Professional Fees at 16.0%							**$1,617**
TOTAL PROJECT COST							**$11,722**

All costs shown as Present Value

PAINT THE EXTERIOR DOOORS

Project Number:	258ES01	**Category Code:** ES5A	
Priority Sequence:	3		
Priority Class:	Medium	**System:**	EXTERIOR
Project Class:	Corrective Action	**Component:**	FENESTRATIONS
Date Basis:	3/20/2023	**Element:**	DOORS

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

Description

The exterior hollow-metal doors should be painted to preserve the integrity of the doors.

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
Paint exterior doors and trim	EA	8	$63.89	$511	$267	$2,138	$2,649
Base Material/Labor Costs				**$511**		**$2,138**	
Indexed Material/Labor Costs				**$515**		**$1,524**	**$2,039**
Construction Mark Up at 20.0%							**$408**
Original Construction Cost							**$2,447**
Date of Original Estimate: 3/20/2023						**Inflation**	**$0**
Current Year Construction Cost							**$2,447**
Professional Fees at 16.0%							**$391**
TOTAL PROJECT COST							**$2,838**

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
EW12	WALL, EXTERIOR, PANEL JOINT RESTORATION	METAL AWNING		OFFICE	330	SF	1.00	$7,655	2000	25		2025
EW12	WALL, EXTERIOR, PANEL JOINT RESTORATION	CORRIGUATED METAL		WAREHOUSE, WASH BAY	1,330	SF	1.00	$30,852	2000	25		2025
WN01	GLASS, WINDOW, ALUMINUM OR WOOD, STANDARD	ALUMINUM AND GLASS		OFFICE	590	SF	1.00	$108,721	2000	40		2040
DR05	DOOR AND FRAME, EXTERIOR, SWINGING, ALUMINUM AND GLASS	FULL GLASS		MAIN ENTRANCE	2	LEAF	1.00	$6,947	2000	25		2025
DR08	DOOR AND FRAME, EXTERIOR, SWINGING, HOLLOW METAL	PAINTED METAL		SECONDARY EXITS	8	LEAF	1.00	$19,559	2000	40		2040
DR19	DOOR, EXTERIOR, OVERHEAD ROLLING METAL, LOCK	METAL PANELS		WASH BAY	1,280	SF	1.00	$151,228	2000	30	3	2033
DR19	DOOR, EXTERIOR, OVERHEAD ROLLING METAL, LOCK	METAL PANELS		WAREHOUSE	64	SF	1.00	$7,561	2000	30	3	2033
RR10	ROOF - PANEL, ALUMINUM OR GALVANIZED, STANDING SEAM			MAIN OFFICE ROOF	11,914	SF	1.00	$283,291	2000	40		2040
RR10	ROOF - PANEL, ALUMINUM OR GALVANIZED, STANDING SEAM			WASH BAY	7,942	SF	1.00	$188,845	2000	40		2040
RR20	ROOF GUTTER AND LEADER - ALUMINUM OR GALVANIZED, COATED			MAIN OFFICE ROOF	125	LF	1.00	$2,557	2000	20	2	DR
RR20	ROOF GUTTER AND LEADER - ALUMINUM OR GALVANIZED, COATED			WASH BAY	300	LF	1.00	$6,137	2000	20	2	DR
DR01	DOOR AND FRAME, INTERIOR, NON-RATED	STD, W/ LEVER		GENERAL AREAS	18	LEAF	1.00	$46,906	2000	40		2040
DR02	DOOR AND FRAME, INTERIOR, FIRE-RATED	HOLLOW METAL		WAREHOUSE, WASH BAY	3	LEAF	1.00	$13,502	2000	40		2040
DR24	DOOR LOCK, COMMERCIAL-GRADE			GENERAL AREAS	18	EA	1.00	$16,136	2015	20		2035
DR24	DOOR LOCK, COMMERCIAL-GRADE			WAREHOUSE, WASH BAY	3	EA	1.00	$2,689	2015	20		2035

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
DR24	DOOR LOCK, COMMERCIAL-GRADE			SECONDARY EXITS	8	EA	1.00	$7,171	2000	20	2	DR
DR26	DOOR PANIC HARDWARE			MAIN ENTRANCE	2	EA	1.00	$2,933	2000	20	2	DR
CW01	CASEWORK - WOOD BASE AND WALL, TOP, STANDARD	WOOD, LAMINATE		BREAK ROOM	10	LF	1.00	$6,492	2000	20	2	DR
IW01	WALL FINISH - PAINT, STANDARD	PAINTED HARD SURFACES		GENERAL AREAS	14,620	SF	1.00	$39,389	2015	12		2027
IW12	WALL FINISH - PANEL, MEDICAL / LABORATORY APPLICATION	FIBERGLASS FIBER BOARD		RESTROOMS	270	SF	1.00	$3,582	2000	20	2	DR
IF01	FLOORING - CARPET, TILE OR ROLL, STANDARD	CARPET TILES		GENERAL OFFICES	2,190	SF	1.00	$32,283	2000	12	10	DR
IF01	FLOORING - CARPET, TILE OR ROLL, STANDARD	CARPET TILES		EXECUTIVE OFFICES	1,180	SF	1.00	$17,394	2015	12		2027
IF03	FLOORING - VINYL COMPOSITION TILE, STANDARD	VCT FLOORING		CMNS, CRRDRS, RR	6,750	SF	1.00	$52,076	2000	20	2	DR
IF15	FLOORING - FLUID APPLIED, PAINT OR CLEAR SEAL	SEALED CONCRETE		WAREHOUSE, WASH BAY	6,750	SF	1.00	$24,972	2000	10	2	DR
IC01	CEILING FINISH - SUSPENDED ACOUSTICAL TILE, STANDARD	SUSPENDED ACOUSTICAL TILE		OFFICE AREAS	6,910	SF	1.00	$83,948	2000	30	3	2033
CN19	BRIDGE CRANE, 2 GIRDER, 50' SPAN 7-13 TON	STAHL 10 TON BRIDGE CRANE		WASH BAY	1	TON	1.50	$32,353	2013	60		2073
FX01	PLUMBING FIXTURE - LAVATORY, COUNTER	SINGLE LEVER		RESTROOM	2	EA	1.00	$3,173	2000	35		2035
FX02	PLUMBING FIXTURE - LAVATORY, WALL HUNG	SINGLE LEVER		RESTROOM	2	EA	1.00	$3,203	2000	35		2035
FX03	PLUMBING FIXTURE - LAVATORY, GANG	MULTI USE		WASH BAY	1	EA	1.00	$10,018	2000	35		2035
FX04	PLUMBING FIXTURE - SINK, KITCHEN	STAINLESS STEEL		BREAK ROOM	1	EA	1.00	$2,600	2018	35		2053

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
FX10	PLUMBING FIXTURE - URINAL	MANUAL FLUSH		RESTROOM	1	EA	1.00	$2,550	2000	35		2035
FX11	PLUMBING FIXTURE - WATER CLOSET, TANK-TYPE	TANK TYPE		RESTROOM	4	EA	1.00	$5,619	2000	35		2035
PS14	SUPPLY PIPING SYSTEM - OFFICE	INSUL, COPPER		THROUGHOUT	11,356	SF	1.00	$48,050	2000	35		2035
PS20	SUPPLY PIPING SYSTEM - SHOPS / TRADES, DRY LABORATORY			SHOP	7,000	SF	1.13	$35,548	2000	35		2035
PS20	SUPPLY PIPING SYSTEM - SHOPS / TRADES, DRY LABORATORY			WASH BAY	1,500	SF	1.18	$7,955	2000	35		2035
WH23	WATER HEATER - RESIDENTIAL, ELECTRIC (25-46 GAL)	TAN-001	21050	NEAR 114	40	GAL	1.50	$3,215	2013	10		2023
PD14	DRAIN PIPING SYSTEM - OFFICE	CAST IRON		BLDG WIDE	11,356	SF	1.04	$75,181	2000	40		2040
PD20	DRAIN PIPING SYSTEM - SHOPS / TRADES, DRY LABORATORY			SHOP	7,000	SF	1.13	$53,687	2000	40		2040
PD20	DRAIN PIPING SYSTEM - SHOPS / TRADES, DRY LABORATORY			WASH BAY	1,500	SF	1.18	$12,013	2000	40		2040
PG16	AIR COMPRESSOR - UTILITY (>5 HP)	ACOM-01		WASH BUILDING	7.50	HP	1.00	$17,705	2013	25		2038
BL16	BOILER - ELECTRIC (>10,150 MBH)	PORTABLE STEAM CLEANER BOILER		WASH BAY	150	MBH	1.00	$3,330	2013	35		2048
HU52	UNIT HEATER, ELECTRIC	WALL HEATER		WASH BAY EQUIP RM	15	KW	1.00	$2,957	2000	15	7	DR
HU17	DUCTLESS DX SPLIT SYSTEM (<=1 TON)	ACU-1		OFFICE	1	TON	1.00	$3,333	2012	23		2035
HU18	DUCTLESS DX SPLIT SYSTEM (1-2 TON)	ACU-2	21047	OFFICE	1.50	TON	1.00	$4,237	2011	23		2034
FN08	FAN - AXIAL, SUPPLY, 2.5" SP (<=3 HP) 3800 CFM	WALL FAN		WASH BAY	3	HP	1.00	$12,997	2013	20	2	2035

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
FN25	FAN - PROPELLER WITH LOUVER, 1/4" SP (<=0.5 HP)			RR	0.30	HP	1.00	$2,706	2000	20	2	DR
FN30	FAN - PROPELLER WITH LOUVER, 1/4" SP (>4 HP)	BAF		WAREHOUSE	5	HP	1.00	$6,347	2000	20		DR
HU26	UNIT HEATER - INDOOR, GAS, SUSPENDED (40-100 MBH)	GIH01		WASH BUILDING	60	MBH	1.00	$2,808	2013	13		2026
HU26	UNIT HEATER - INDOOR, GAS, SUSPENDED (40-100 MBH)	GIH02		WASH BUILDING	60	MBH	1.00	$2,808	2013	13		2026
HU26	UNIT HEATER - INDOOR, GAS, SUSPENDED (40-100 MBH)	GIH03		WASH BUILDING	60	MBH	1.00	$2,808	2013	13		2026
HU26	UNIT HEATER - INDOOR, GAS, SUSPENDED (40-100 MBH)	GIH04		WASH BUILDING	60	MBH	1.00	$2,808	2013	13		2026
HU26	UNIT HEATER - INDOOR, GAS, SUSPENDED (40-100 MBH)	GIH05		WASH BUILDING	60	MBH	1.00	$2,808	2013	13		2026
HU26	UNIT HEATER - INDOOR, GAS, SUSPENDED (40-100 MBH)	GIH06		WASH BUILDING	60	MBH	1.00	$2,808	2013	13		2026
HU26	UNIT HEATER - INDOOR, GAS, SUSPENDED (40-100 MBH)	GIH07		WASH BUILDING	60	MBH	1.00	$2,808	2013	13		2026
HU26	UNIT HEATER - INDOOR, GAS, SUSPENDED (40-100 MBH)	GIH08		WASH BUILDING	60	MBH	1.00	$2,808	2013	13		2026
HU27	UNIT HEATER - INDOOR, GAS, SUSPENDED (100-140 MBH)	GUH-05			120	MBH	1.00	$3,924	2010	13		2023
HV14	HVAC DISTRIBUTION NETWORKS - OFFICE	OFFICES		BLDG WIDE	11,356	SF	1.04	$368,890	2000	40	-18	DR
HU37	PACKAGE HVAC UNIT, DX, GAS OR ELECTRIC HEAT, MULTI-ZONE (9-35 TON)	GP1, CARRIER		ROOF	4	TON	1.00	$34,724	2013	23		2036
HU37	PACKAGE HVAC UNIT, DX, GAS OR ELECTRIC HEAT, MULTI-ZONE (9-35 TON)	GP2, CARRIER		ROOF	4	TON	1.00	$34,724	2013	23		2036
AD03	AIR DRYER - REFRIGERATED - 26-50 CFM			WASH BAY EQUIP RM	1	EA	1.00	$3,883	2017	15		2032

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
BA14	HVAC CONTROLS - TERMINAL ASSEMBLIES - OFFICE			OFFICES	11,356	SF	1.04	$36,071	2014	20		2034
WT09	WATER TREATMENT SKID	WASH BAY CHEMICALS		WASH BAY	1	EA	0.15	$11,750	2013	15		2028
FA01	FIRE ALARM PANEL, DIALER, BATTERY, & CHARGER	SIMPLEX 4010	21049	MAIN OFFICE	1	EA	1.00	$45,567	2013	15		2028
FA02	FIRE ALARM SYSTEM - DEVICES	SIMPLEX 4010		THROUGHOUT	19,856	SF	0.80	$78,009	2013	18		2031
SE14	ELECTRICAL DISTRIBUTION NETWORK - OFFICE	COUNDUIT/WIRE		BLDG WIDE	11,356	SF	1.04	$279,097	2000	40		2040
SE20	ELECTRICAL DISTRIBUTION NETWORK - SHOPS / TRADES, DRY LABORATORY			SHOP	7,000	SF	1.13	$143,413	2000	40		2040
SE20	ELECTRICAL DISTRIBUTION NETWORK - SHOPS / TRADES, DRY LABORATORY			WASH BAY	1,500	SF	1.18	$32,091	2000	40		2040
SG01	MAIN SWITCHBOARD W/BREAKERS (<400 AMP)	MDP		WAREHOUSE	400	AMP	1.00	$39,436	2000	20	2	DR
LE07	LIGHTING - EXTERIOR, WALL FLOOD (SV, MH, ID, LED)	HID WALL		ALL ELEVS	9	EA	1.00	$10,709	2010	15		2025
LE08	LIGHTING - EXTERIOR, WALL LANTERN or FLOOD (INC, CFL, LED)	LED WALL		OVER EXIT DOORS	4	EA	1.00	$1,999	2018	15		2033
LI14	LIGHTING SYSTEM, INTERIOR - OFFICE	HIGH BAY FLUOR		BLDG WIDE	11,356	SF	1.04	$168,099	2000	20	2	DR
LI20	LIGHTING SYSTEM, INTERIOR - SHOPS / TRADES, DRY LABORATORY	LED HIGH BAY		SHOP	7,000	SF	1.13	$45,379	2020	20		2040
LI20	LIGHTING SYSTEM, INTERIOR - SHOPS / TRADES, DRY LABORATORY			WASH BAY	1,500	SF	1.18	$10,154	2000	20	2	DR
							Grand Total:	$2,881,979				

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
RR20	ROOF GUTTER AND LEADER - ALUMINUM OR GALVANIZED, COATED			MAIN OFFICE ROOF	B3010	125	LF	$2,557	DR
RR20	ROOF GUTTER AND LEADER - ALUMINUM OR GALVANIZED, COATED			WASH BAY	B3010	300	LF	$6,137	DR
DR24	DOOR LOCK, COMMERCIAL-GRADE			SECONDARY EXITS	C1020	8	EA	$7,171	DR
DR26	DOOR PANIC HARDWARE			MAIN ENTRANCE	C1020	2	EA	$2,933	DR
CW01	CASEWORK - WOOD BASE AND WALL, TOP, STANDARD	WOOD, LAMINATE		BREAK ROOM	C1030	10	LF	$6,492	DR
IW12	WALL FINISH - PANEL, MEDICAL / LABORATORY APPLICATION	FIBERGLASS FIBER BOARD		RESTROOMS	C3010	270	SF	$3,582	DR
IF01	FLOORING - CARPET, TILE OR ROLL, STANDARD	CARPET TILES		GENERAL OFFICES	C3020	2,190	SF	$32,283	DR
IF03	FLOORING - VINYL COMPOSITION TILE, STANDARD	VCT FLOORING		CMNS, CRRDRS, RR	C3020	6,750	SF	$52,076	DR
IF15	FLOORING - FLUID APPLIED, PAINT OR CLEAR SEAL	SEALED CONCRETE		WAREHOUSE, WASH BAY	C3020	6,750	SF	$24,972	DR
HU52	UNIT HEATER, ELECTRIC	WALL HEATER		WASH BAY EQUIP RM	D3020	15	KW	$2,957	DR
HV14	HVAC DISTRIBUTION NETWORKS - OFFICE	OFFICES		BLDG WIDE	D3040	11,356	SF	$368,890	DR
FN30	FAN - PROPELLER WITH LOUVER, 1/4" SP (>4 HP)	BAF		WAREHOUSE	D3040	5	HP	$6,347	DR

RECURRING NEEDS BY YEAR

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

FN25	FAN - PROPELLER WITH LOUVER, 1/4" SP (<=0.5 HP)			RR	D3040	0.30	HP	$2,706	DR
SG01	MAIN SWITCHBOARD W/BREAKERS (<400 AMP)	MDP		WAREHOUSE	D5010	400	AMP	$39,436	DR
LI14	LIGHTING SYSTEM, INTERIOR - OFFICE	HIGH BAY FLUOR		BLDG WIDE	D5020	11,356	SF	$168,099	DR
LI20	LIGHTING SYSTEM, INTERIOR - SHOPS / TRADES, DRY LABORATORY			WASH BAY	D5020	1,500	SF	$10,154	DR
							TOTAL DEFERRED RENEWAL COST	**$736,792**	

2023									
COMP CODE	**COMPONENT DESCRIPTION**	**IDENTIFIER**	**CUSTOMER ID**	**LOCATION**	**UNI-FORMAT**	**QTY**	**UNITS**	**REPLACEMENT COST**	**YEAR**
WH23	WATER HEATER - RESIDENTIAL, ELECTRIC (25-46 GAL)	TAN-001	21050	NEAR 114	D2020	40	GAL	$3,215	2023
HU27	UNIT HEATER - INDOOR, GAS, SUSPENDED (100-140 MBH)	GUH-05			D3040	120	MBH	$3,924	2023
							2023 PROJECTED COMPONENT REPLACEMENT COST	**$7,139**	

RECURRING NEEDS BY YEAR

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

No Projected Component Replacement Cost for Asset No. 258 for 2024

2025									
COMP CODE	COMPONENT DESCRIPTION	IDENTIFIER	CUSTOMER ID	LOCATION	UNI-FORMAT	QTY	UNITS	REPLACEMENT COST	YEAR
EW12	WALL, EXTERIOR, PANEL JOINT RESTORATION	METAL AWNING		OFFICE	B2010	330	SF	$8,121	2025
EW12	WALL, EXTERIOR, PANEL JOINT RESTORATION	CORRIGUATED METAL		WAREHOUSE, WASH BAY	B2010	1,330	SF	$32,731	2025
DR05	DOOR AND FRAME, EXTERIOR, SWINGING, ALUMINUM AND GLASS	FULL GLASS		MAIN ENTRANCE	B2030	2	LEAF	$7,370	2025
LE07	LIGHTING - EXTERIOR, WALL FLOOD (SV, MH, ID, LED)	HID WALL		ALL ELEVS	D5020	9	EA	$11,361	2025
						2025 PROJECTED COMPONENT REPLACEMENT COST		$59,583	

RECURRING NEEDS BY YEAR

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

2026									
COMP CODE	COMPONENT DESCRIPTION	IDENTIFIER	CUSTOMER ID	LOCATION	UNI-FORMAT	QTY	UNITS	REPLACEMENT COST	YEAR
HU26	UNIT HEATER - INDOOR, GAS, SUSPENDED (40-100 MBH)	GIH01		WASH BUILDING	D3040	60	MBH	$3,068	2026
HU26	UNIT HEATER - INDOOR, GAS, SUSPENDED (40-100 MBH)	GIH02		WASH BUILDING	D3040	60	MBH	$3,068	2026
HU26	UNIT HEATER - INDOOR, GAS, SUSPENDED (40-100 MBH)	GIH03		WASH BUILDING	D3040	60	MBH	$3,068	2026
HU26	UNIT HEATER - INDOOR, GAS, SUSPENDED (40-100 MBH)	GIH04		WASH BUILDING	D3040	60	MBH	$3,068	2026
HU26	UNIT HEATER - INDOOR, GAS, SUSPENDED (40-100 MBH)	GIH05		WASH BUILDING	D3040	60	MBH	$3,068	2026
HU26	UNIT HEATER - INDOOR, GAS, SUSPENDED (40-100 MBH)	GIH06		WASH BUILDING	D3040	60	MBH	$3,068	2026
HU26	UNIT HEATER - INDOOR, GAS, SUSPENDED (40-100 MBH)	GIH07		WASH BUILDING	D3040	60	MBH	$3,068	2026
HU26	UNIT HEATER - INDOOR, GAS, SUSPENDED (40-100 MBH)	GIH08		WASH BUILDING	D3040	60	MBH	$3,068	2026
					2026 PROJECTED COMPONENT REPLACEMENT COST			$24,544	

RECURRING NEEDS BY YEAR

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

2027									
COMP CODE	COMPONENT DESCRIPTION	IDENTIFIER	CUSTOMER ID	LOCATION	UNI-FORMAT	QTY	UNITS	REPLACEMENT COST	YEAR
IW01	WALL FINISH - PAINT, STANDARD	PAINTED HARD SURFACES		GENERAL AREAS	C3010	14,620	SF	$44,332	2027
IF01	FLOORING - CARPET, TILE OR ROLL, STANDARD	CARPET TILES		EXECUTIVE OFFICES	C3020	1,180	SF	$19,577	2027
						2027 PROJECTED COMPONENT REPLACEMENT COST		$63,910	

2028									
COMP CODE	COMPONENT DESCRIPTION	IDENTIFIER	CUSTOMER ID	LOCATION	UNI-FORMAT	QTY	UNITS	REPLACEMENT COST	YEAR
WT09	WATER TREATMENT SKID	WASH BAY CHEMICALS		WASH BAY	D3070	1	EA	$13,621	2028
FA01	FIRE ALARM PANEL, DIALER, BATTERY, & CHARGER	SIMPLEX 4010	21049	MAIN OFFICE	D4030	1	EA	$52,824	2028
						2028 PROJECTED COMPONENT REPLACEMENT COST		$66,445	

RECURRING NEEDS BY YEAR

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

No Projected Component Replacement Cost for Asset No. 258 for 2029

No Projected Component Replacement Cost for Asset No. 258 for 2030

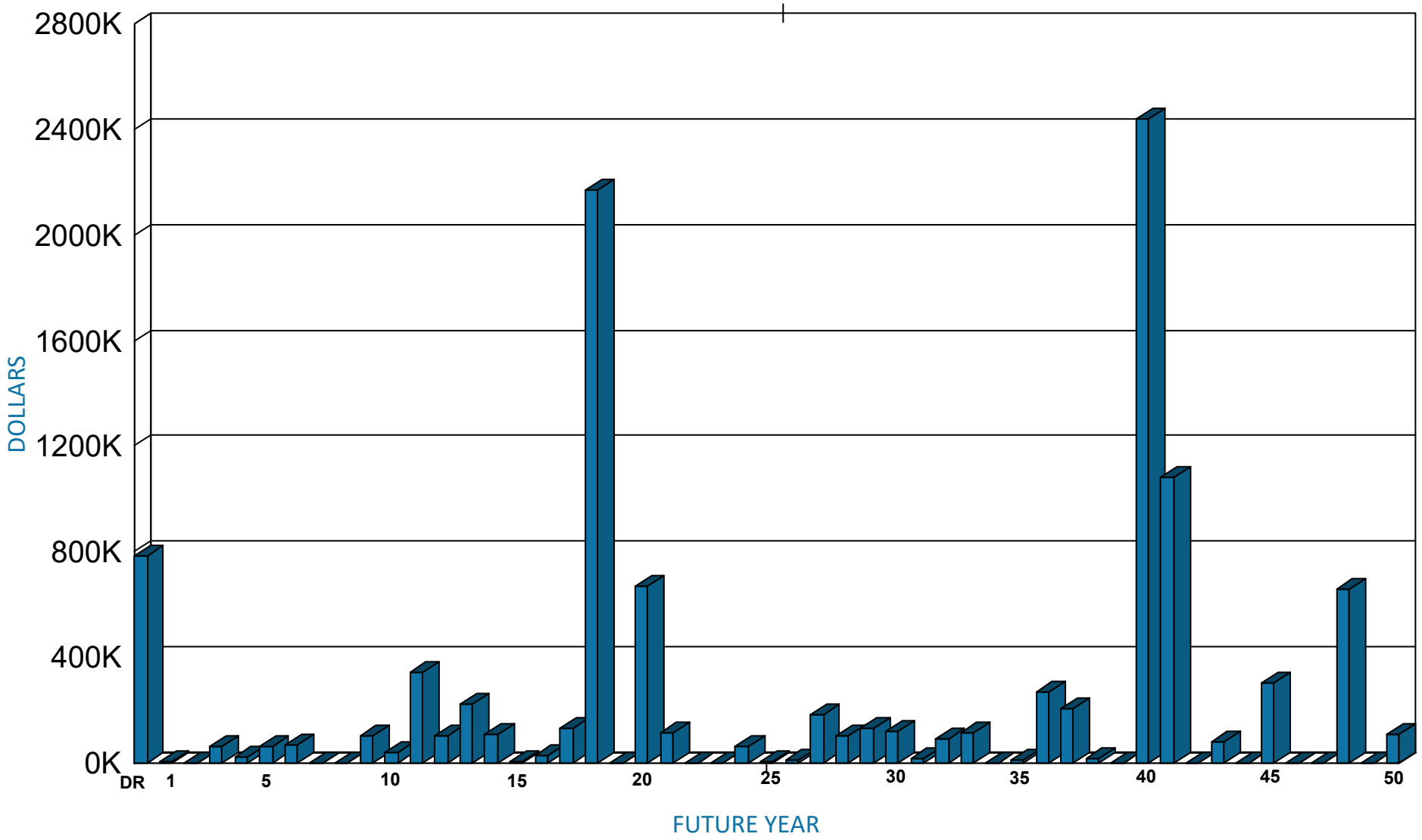
2031									
COMP CODE	COMPONENT DESCRIPTION	IDENTIFIER	CUSTOMER ID	LOCATION	UNI-FORMAT	QTY	UNITS	REPLACEMENT COST	YEAR
FA02	FIRE ALARM SYSTEM - DEVICES	SIMPLEX 4010		THROUGHOUT	D4030	19,856	SF	$98,819	2031
						2031 PROJECTED COMPONENT REPLACEMENT COST		$98,819	

RECURRING NEEDS BY YEAR

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

2032									
COMP CODE	COMPONENT DESCRIPTION	IDENTIFIER	CUSTOMER ID	LOCATION	UNI-FORMAT	QTY	UNITS	REPLACEMENT COST	YEAR
AD03	AIR DRYER - REFRIGERATED - 26-50 CFM			WASH BAY EQUIP RM	D3060	1	EA	$5,066	2032
					2032 PROJECTED COMPONENT REPLACEMENT COST			$5,066	

RECURRING COMPONENT EXPENDITURE PROJECTIONS

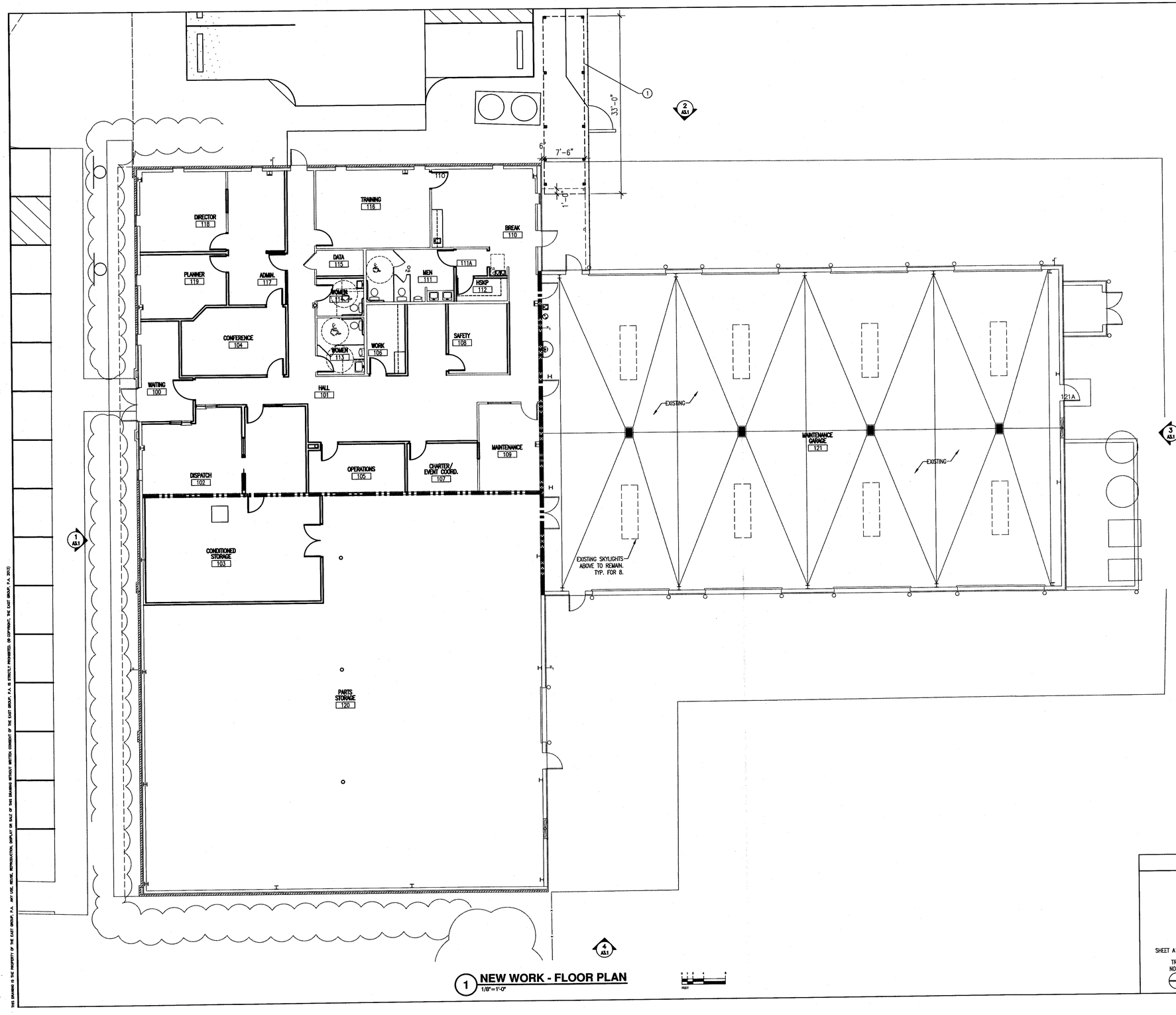


Average Annual Renewal Cost per SF $5.26

FACILITY CONDITION ASSESSMENT

SECTION 5

DRAWINGS



1 NEW WORK - FLOOR PLAN
1/8" = 1'-0"

New Work Legend

- EXISTING CONSTRUCTION TO REMAIN
- NEW CONSTRUCTION
- WAITING 100 — ROOM DESIGNATION
- M-01 — MILLWORK DESIGNATION – SEE MILLWORK ELEVATIONS, SHEET A2.1
- W1 — WINDOW DESIGNATION – SEE FRAME ELEVATIONS & SCHEDULES, SHEET A3.1
- 101 — DOOR DESIGNATION – SEE THIS SHEET & DOOR SCHEDULE, SHEET A3.1.
- P1-3 — PARTITION TYPE DESIGNATION
- STUD SIZE INDICATOR
- SB — SOUND ATTENUATION INSULATION, WHERE INDICATED ON PLAN

NOTE: ALL INTERIOR PARTITIONS NOT OTHERWISE NOTED SHALL BE PARTITION TYPE P1-3 WITH SOUND ATTENUATION INSULATION (SB) SEE PARTITION TYPE DETAILS ON SHEET A2.2.

- 2 HOUR FIRE BARRIER
- OFCI — OWNER FURNISHED, CONTRACTOR INSTALLED
- CFCI — CONTRACTOR FURNISHED, CONTRACTOR INSTALLED
- OFOI — OWNER FURNISHED, OWNER INSTALLED

General Notes

1. SEE SHEET G2.1 FOR LOCATION OF ALL FIRE-RATED WALLS AND EGRESS CRITERIA.
2. CONTRACTOR SHALL VERIFY ALL DIMENSIONS. IF CONDITIONS ARE FOUND WHICH DIFFER FROM THOSE SHOWN ON THE DRAWINGS, CONTRACTOR SHALL NOTIFY THE ARCHITECT IMMEDIATELY.
3. CONTRACTOR SHALL VERIFY ALL DIMENSIONS AT EQUIPMENT, CABINETRY, FIXTURES ETC.
4. WHERE NEW WALLS MEET EXISTING WALLS, ALIGN WALLS FOR A SMOOTH TRANSITION. PATCH AND REPAIR WALLS TO MATCH.
5. ALL FLOORS SHALL BE PATCHED AND REPAIRED AS REQUIRED TO ACHIEVE A SMOOTH SURFACE.
6. REFER TO SHEET A2.1 FOR ADDITIONAL ELEVATIONS, NOTES, AND DIMENSIONS.

Keyed Renovation Notes

1. PROVIDE ALUMINUM PEDESTRIAN CANOPY BY DAC AWNINGS, INC. (MIKE SCHLAGE, 919-309-4444) OR APPROVED EQUAL; MINIMUM CLEAR HEIGHT 8" ABOVE ADJACENT CANOPY, APPROXIMATELY 9'-10". ALL DESIGN AND STRUCTURAL ENGINEERING SHALL BE PREPARED BY A LICENSED PROFESSIONAL ENGINEER EMPLOYED BY THE CANOPY MANUFACTURER.

Alternates

- #1 STOREFRONT AT ADMIN AREA 117 TO BE CFCI. (FRAME ELEVATIONS E2 & W2)
- #2 NEW STORAGE A/C UNIT TO BE CFCI.
- #3 ALL NEW MILLWORK TO BE CFCI.
- #4 INSTALL MANUAL TRANSFER SWITCH AND GENERATOR TERMINATION CABINET. SEE ELECTRICAL.
- #5 EXTERIOR CONDUIT INSTALLATION. SEE ELECTRICAL.

RECORD DOCUMENT

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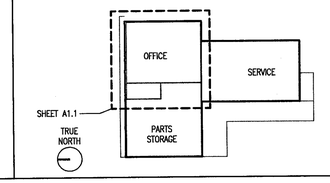
Key Plan - First Floor



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SEAL — JOHNSON ENGINEERING ASSOCIATES, INC. REGISTERED PROFESSIONAL ENGINEER NORTH CAROLINA GREENVILLE

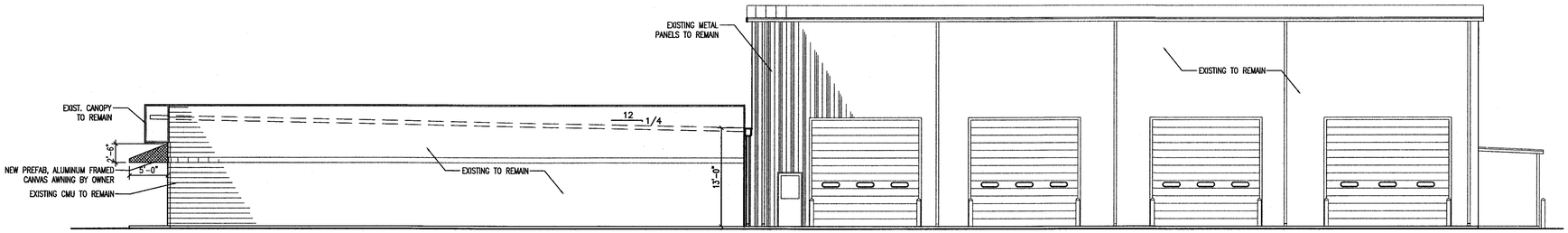
REV	DATE	DESCRIPTION	BY	CHK
0	7/16/2012	ISSUE FOR CONSTRUCTION	DHB	REJ
1	5/22/2013	ISSUE FOR RECORD	DHB	REJ

PROJECT NO. 20120078 | DRAWN BY DHB

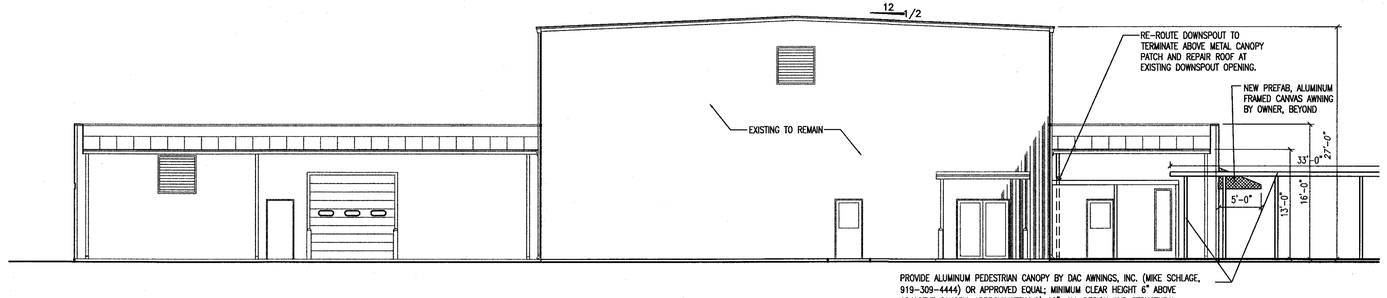
PROJECT TITLE
ECU TRANSIT OPERATIONS FACILITY
SCO ID# 11-09309-01A

DRAWING TITLE
NEW WORK FLOOR PLAN

DRAWING NO.
A1.1

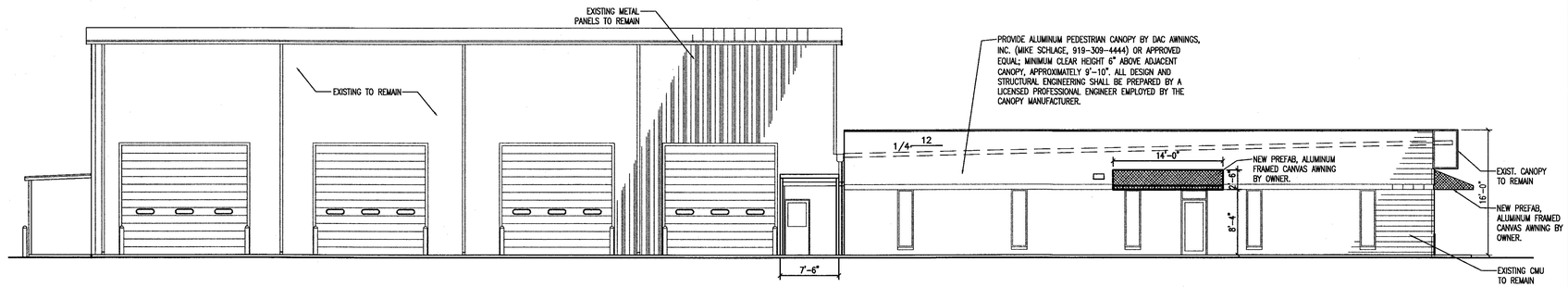


4 EXTERIOR ELEVATION
1/8"=1'-0"

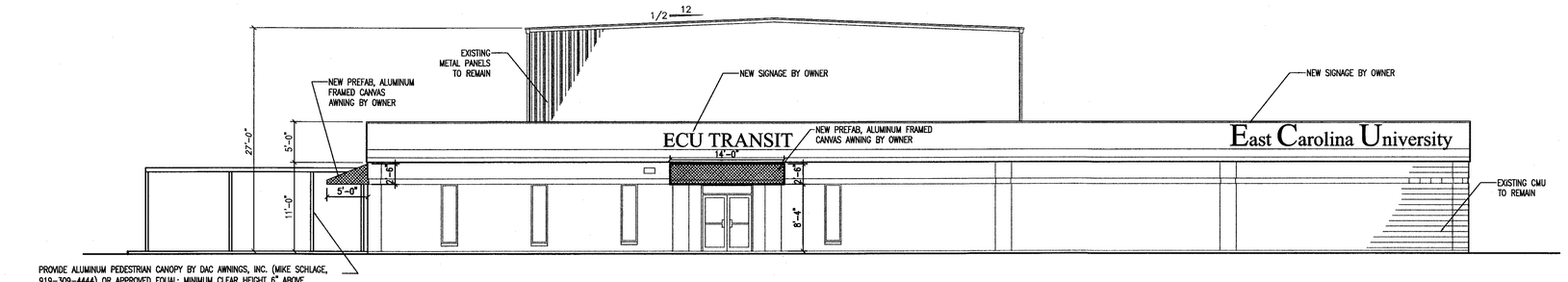


PROVIDE ALUMINUM PEDESTRIAN CANOPY BY DAC AWNINGS, INC. (MIKE SCHLAGE, 919-309-4444) OR APPROVED EQUAL; MINIMUM CLEAR HEIGHT 6" ABOVE ADJACENT CANOPY, APPROXIMATELY 9'-10". ALL DESIGN AND STRUCTURAL ENGINEERING SHALL BE PREPARED BY A LICENSED PROFESSIONAL ENGINEER EMPLOYED BY THE CANOPY MANUFACTURER.

3 EXTERIOR ELEVATION
1/8"=1'-0"



2 EXTERIOR ELEVATION
1/8"=1'-0"



PROVIDE ALUMINUM PEDESTRIAN CANOPY BY DAC AWNINGS, INC. (MIKE SCHLAGE, 919-309-4444) OR APPROVED EQUAL; MINIMUM CLEAR HEIGHT 6" ABOVE ADJACENT CANOPY, APPROXIMATELY 9'-10". ALL DESIGN AND STRUCTURAL ENGINEERING SHALL BE PREPARED BY A LICENSED PROFESSIONAL ENGINEER EMPLOYED BY THE CANOPY MANUFACTURER.

1 EXTERIOR ELEVATION
1/8"=1'-0"

RECORD DOCUMENT

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THE EAST GROUP, P.A. PROFESSIONAL COMPANY 50213 REGISTERED GREENVILLE NC

SEAL

RICHARD E. JOHNSON ARCHITECT 3513 NORTH CAROLINA GREENVILLE

REV	DATE	DESCRIPTION	BY	CHK
0	7/16/2012	ISSUE FOR CONSTRUCTION	DHB	REJ
1	5/22/2013	ISSUE FOR RECORD	DHB	REJ

PROJECT NO.	DRAWN BY
20120078	DHB

PROJECT TITLE
ECU TRANSIT OPERATIONS FACILITY
SCO ID# 11-09309-01A

DRAWING TITLE
EXTERIOR ELEVATIONS

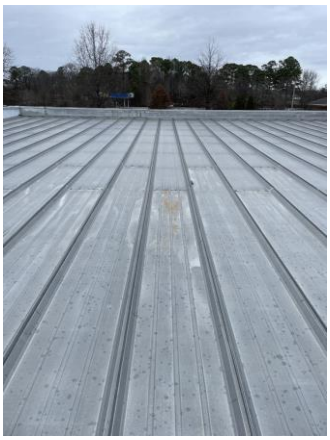
DRAWING NO.
A3.1

SECTION 6

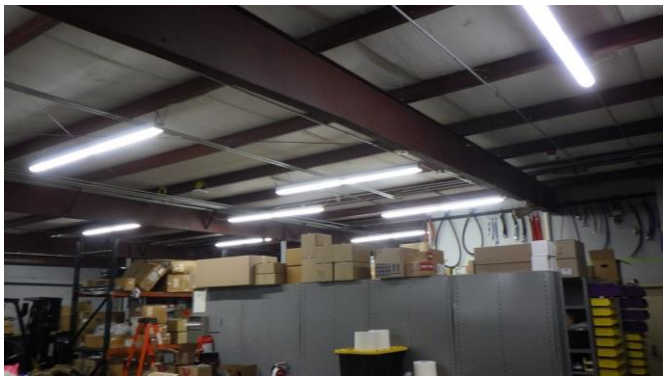
PHOTOGRAPHS

258001a 1/25/2023
Standing-seam metal roofing
Office roof

258001e 1/25/2023
Fluorescent indoor lighting
Office area



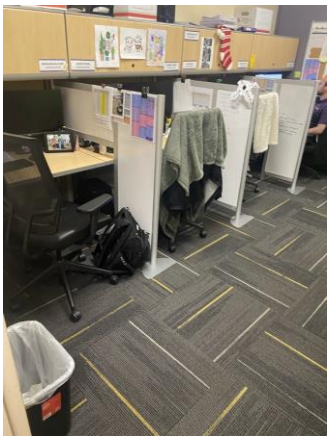
258002a 1/25/2023
Standing-seam metal roofing
Wash bay roof



258002e 1/25/2023
Hi-bay fluorescent lighting
Warehouse parts area

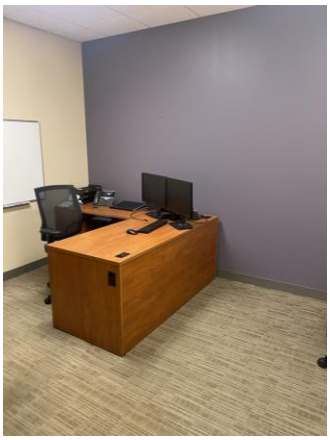
258003a 1/25/2023
Rusted rain gutter
Office roof

258003e 1/25/2023
HID exterior lighting
Exterior wall



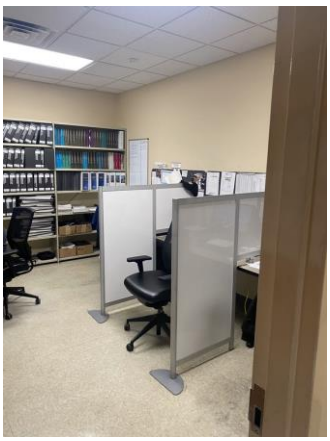
258004a 1/25/2023
Carpet tiles
Office area

258004e 1/25/2023
LED exterior lighting
Exterior wall



258005a 1/25/2023
Carpet tiles
Office area

258005e 1/25/2023
Main electrical disconnects
Electrical mechanical room

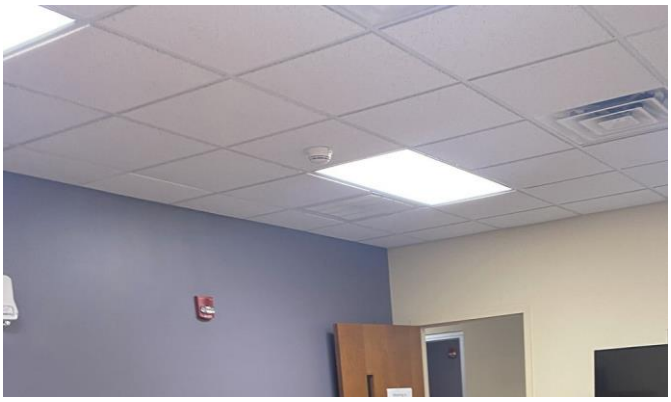


258006a 1/25/2023
Vinyl composite tile flooring
Office area

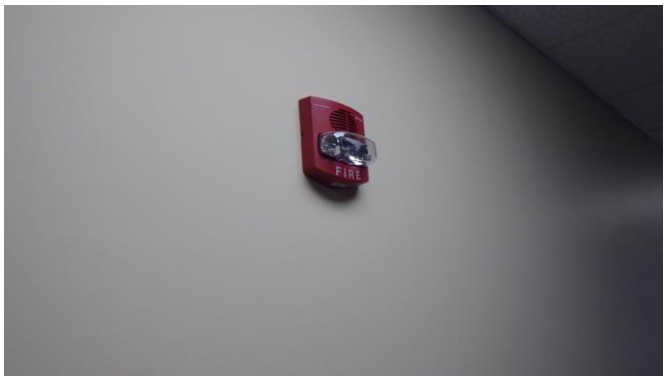
258006e 1/25/2023
Fire alarm panel
Office area

258007a 1/25/2023
Sealed concrete floor
Wash bay

258007e 1/25/2023
Manual fire pull station
Office area



258008a 1/25/2023
Suspended acoustical tile ceiling
Office area



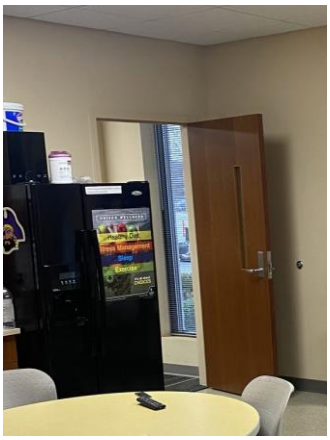
258008e 1/25/2023
Audio visual fire device
Office area

258009a 1/25/2023
Painted hard surface walls
Office area

258009e 1/25/2023
Illuminated exit sign
Office area

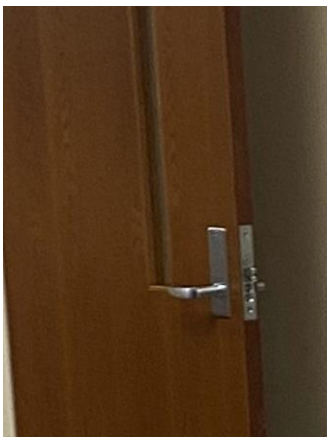
258010a 1/25/2023
Fiberglass reinforced panels
Restroom

258010e 1/25/2023
Ventilation fan
Wash bay



258011a 1/25/2023
Standard interior door
Break room

258011e 1/25/2023
Ceiling fan
Warehouse parts area



258012a 1/25/2023
Lever style door hardware
Break room

258012e 1/25/2023
Mini split condensing unit
Site

258013a 1/25/2023
Hollow-metal rated door
Office to wash bay

258013e 1/25/2023
Mini split condensing unit
Site

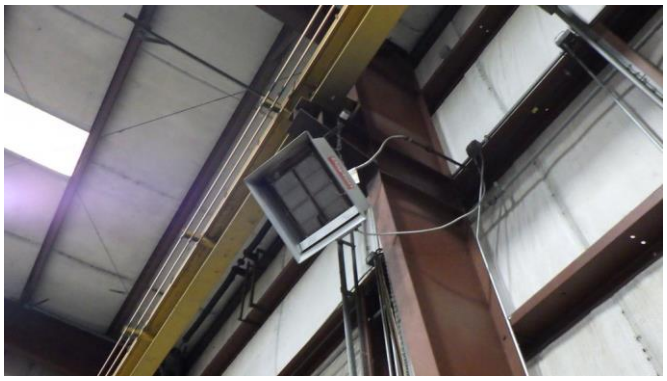
258014a 1/25/2023
Lever style door hardware
Office to wash bay

258014e 1/25/2023
Mini split evaporator
Office area

258015a 1/25/2023
Base casework with sink
Break room

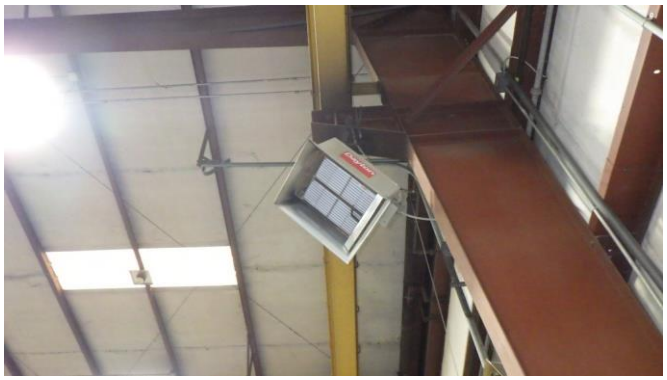
258015e 1/25/2023
Mini split evaporator
Office area

258016a 1/25/2023
Aluminum and glass exterior door
Secondary office exit



258016e 1/25/2023
Natural gas unit heater
Wash bay

258017a 1/25/2023
Panic bar door hardware
Secondary office exit



258017e 1/25/2023
Natural gas unit heater
Wash bay

258018a 1/25/2023
Metal panel garage door
Warehouse

258018e 1/25/2023
Natural gas HVAC package unit
Main roof

258019a 1/25/2023
Metal panel garage doors
Wash bay

258019e 1/25/2023
Natural gas HVAC package unit
Main roof

258020a 1/25/2023
Split faced cement block exterior wall
Exterior of office

258020e 1/25/2023
Natural gas unit heater
Warehouse parts area

258021a 1/25/2023
Aluminum and glass glazing
Exterior of office

258021e 1/25/2023
Utility air compressor
Electrical mechanical room

258022a 1/25/2023

Metal panel facades

Exterior of office

258022e 1/25/2023

Residential water heater

Near 114

258023a 1/25/2023

Corrugated metal siding

Wash bay

258024a 1/25/2023

Tank type water closet

Restroom

258025a 1/25/2023

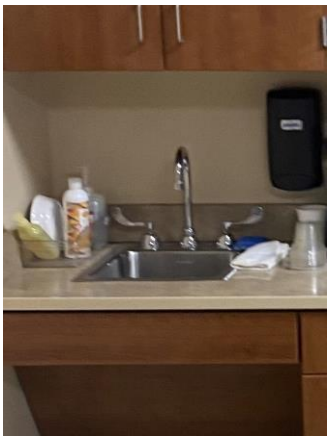
Wall-hung lavatory

Restroom

258026a 1/25/2023

Manual flush urinal

Restroom



258027a 1/25/2023
Stainless-steel sink
Break room

258028a 1/25/2023
Counter lavatories
Restroom

258029a 1/25/2023
Gang lavatory
Wash bay

258030a 1/25/2023
Split faced cement block exterior wall
Entrance

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	258
Asset Name	ECU Transit
Year Built or Last Energy Renovation	2000

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)

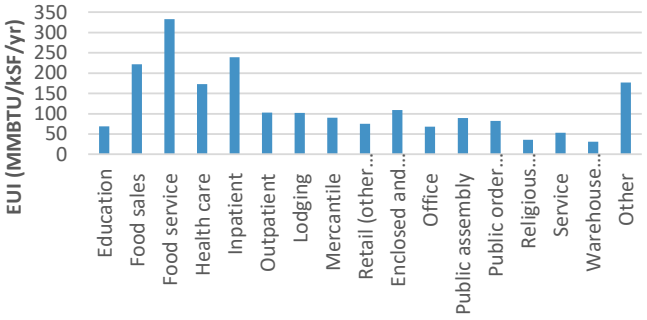
EUI is a measure of energy consumption per square foot of building space per year. The units of measurement are million British thermal units per thousand square foot per year (MMBTU/kSF/yr). The US-DOE EUI can be compared to the actual EUI of the client building to determine how efficient the building 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	Shops/Trades, Dry Lab
Energy Information Administration Equivalent Building Type	Service
Range of Years Constructed/Last Major Energy Renovation	1990 to present
Benchmark EUI (MMBTU/kSF/yr) =	**52.8**
Building EUI to be Calculated by Client (MMBTU/kSF/yr) =	

TABLE 3. EUI COMPARISON	
Very Energy Efficient (consumes more than 30% less energy)	EUI < 37
Energy Efficient (consumes 10% to 30% less energy)	37 <= EUI <= 47.5
Similar (consumes within 10% less or 10% more energy)	47.5 < EUI < 58.1
Energy Inefficient (consumes 10% to 30% more energy)	58.1 <= EUI <= 68.6
Very Energy Inefficient (consumes more than 30% more energy)	EUI > 68.6

Figure 1. EUIs for Buildings Constructed/Renovated 1990 to present

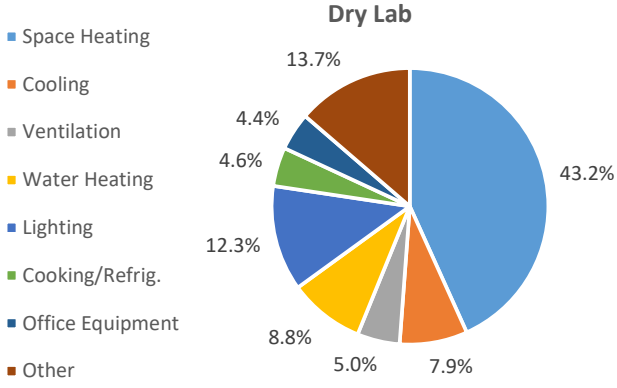


Metric #2: Energy End Use

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: SHOPS/TRADES, DRY LAB	
Space Heating	43.2%
Cooling	7.9%
Ventilation	5.0%
Water Heating	8.8%
Lighting	12.3%
Cooking/Refrig.	4.6%
Office Equipment	4.4%
Other	13.7%
Total	99.9%

Figure 2. Energy End Use Profile: Shops/Trades, Dry Lab



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
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
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
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