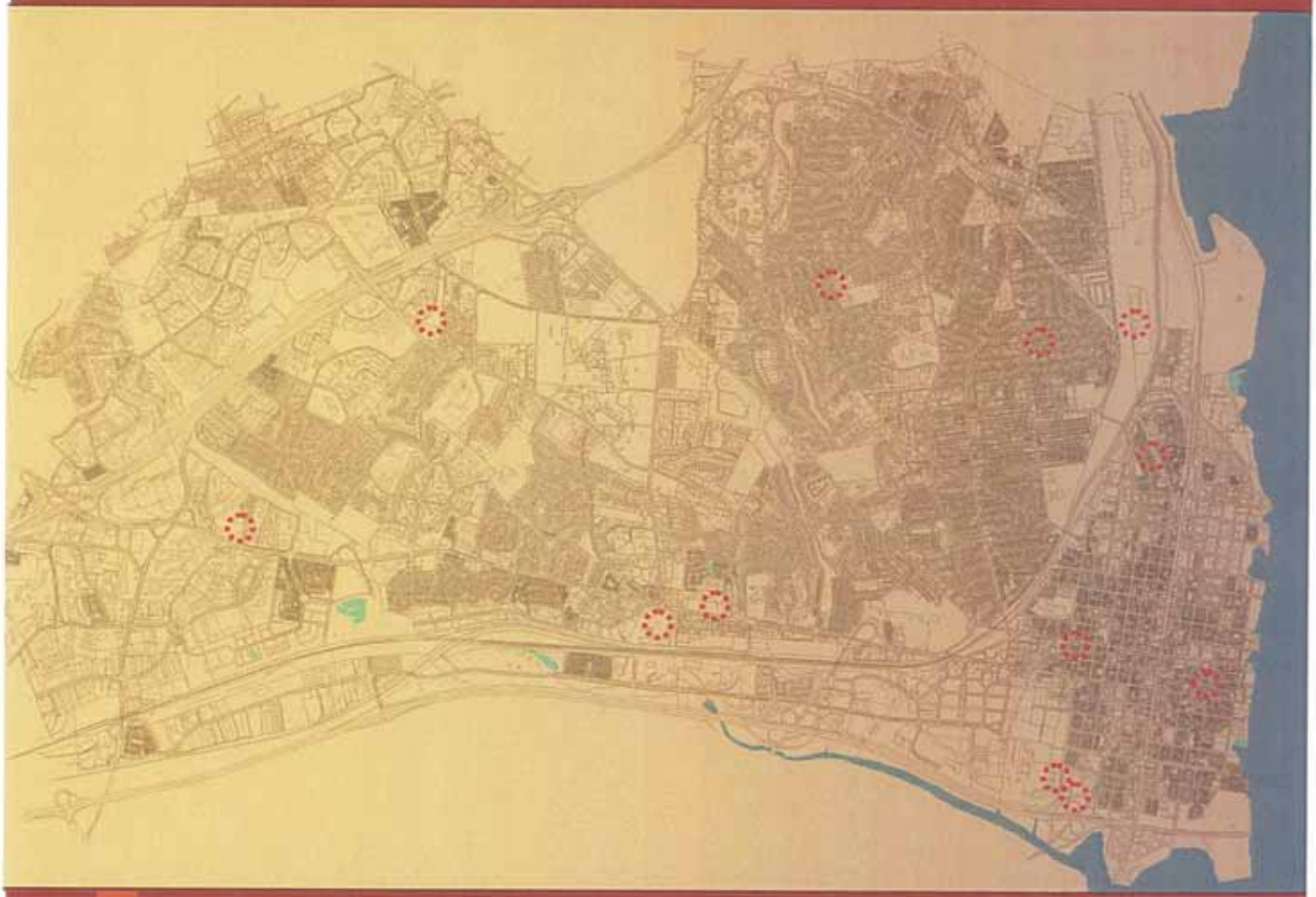
CITY OF ALEXANDRIA
DEPARTMENT OF GENERAL SERVICES



FIRE STATION FACILITIES STUDY

Draft Report
Decenber 19, 2008
FOR OFFICIAL USE ONLY

Baker

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1. INTRODUCTION

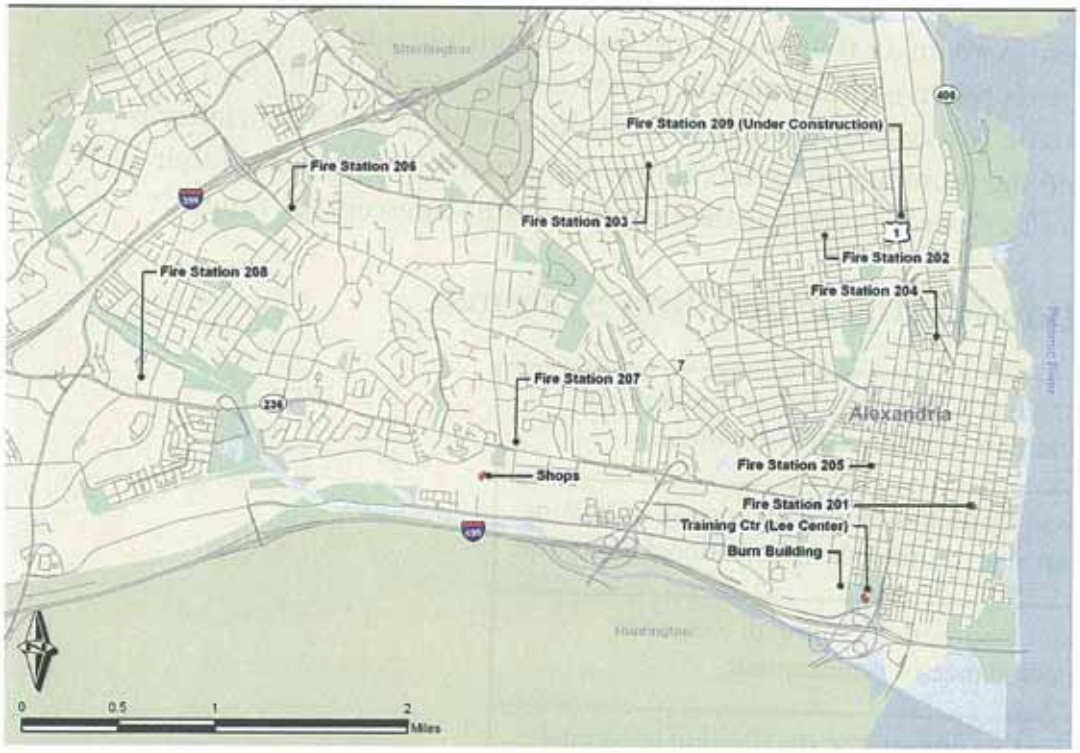
Study Scope

This report presents the work done by the Baker and Associates team for the Department of General Services (DGS), City of Alexandria. This study incorporates available data from the City in conjunction with site investigations conducted in August of 2008. The following chart depicts the existing facility data for the facilities to be studied in this report.

Existing Facility Data

NAME	Date Orig. Const.	Occupancy Classification	Building SF Bsmt	1st Floor	Mezz	2nd Floor	Total	Max Occ Load	LAND_SF	ZONING	LOCATION
Fire Station 201	1921	S-1, R-2,	100	3280	0	2390	**5770**	65	3948	CD	317 PRINCE ST
Fire Station 202	1928	S-1, R-2, B	290	4320	0	3200	**7810**	88	17500	R 2-5	213 E WINDSOR AV
Fire Station 203	1948	S-1, R-2, B	750	3430	0	1730	**5910**	66	39779	R 8	2801 CAMERON MILLS RD
Fire Station 204	1961/2001	S-1, R-2, B	0	10640	0	9750	**20590**	225	15470	RB	900 SECOND ST
Fire Station 205	1949	S-1, R-2, B	780	3940	0	3420	**8140**	96	8844	RB	1210 CAMERON ST
Fire Station 206	1956	S-1, R-2, B	0	4510	0	3820	**8330**	103	37422	R 8	4609 SEMINARY RD
Fire Station 207	1963	S-1, R-2, B	0	7350	0	0	**7350**	67	38050	R 20	3301 DUKE STREET
Fire Station 208	1976	S-1, R-2, B	5600	5600	100	0	**11300**	90	33888	CG	175 N PAXTON ST
Fire Station 209	2009	S-1, R-2, B	0	23800	1900	0	**23500**	236	PORTION	CDD 10	Rt 1 JEFFERSON DAVIS HYWY
Vehicle Maint. Shop	1978	S-1	0	4750	1400	0	**6150**	32	PORTION	I	WHEELER AVE
Fire Station Training	1989	S-1, B	0	6650	0	0	**6650**	57	PORTION	POS	LEE CENTER
Burn Building	1982	U	0	2200	0	2200	**4400**	22	PORTION	I	S. PAYNE ST (SANITARY COMPLEX)

Alexandria Fire Station Locations



Facility Assessment Process Overview

The facility condition process was based upon field examination of building systems and determination of repair and replacement costs. A Facility Condition Index (FCI) was computed for the facility. The FCI is a tool to compare the cost of keeping and maintaining a facility with what it would cost to replace it with a new facility. This information is very useful for assessing priorities with respect to facility repair and replacement.

Condition Assessment

During the condition assessment process extensive photo documentation is provided and plan drawings of the facility are constructed. The condition assessment includes site and building components and systems comprised of the following major groupings.

Site
Building Exterior
Building Interior
Support Functions
Mechanical
Electrical

Each system is given a rating 1 to 4 and then is multiplied by a weighting factor to compare its relative importance to other items assessed. The highest score given is a 0 or, (no system is less than excellent condition or no deficiency is noted), and the more negative the number the worse the condition of that component is. Overall scoring is then compiled into a percentage range.

Condition Rating of Building Systems

4	=	Excellent Condition: In new or like new condition. Performance is optimal.
3	=	Good Condition: Fully functional, indicating wear due to time but in operational condition.
2	=	Fair Condition: Functional, Requires maintenance or replacement.
1	=	Poor Condition: Not functioning adequately, in need of replacement.

Facility Condition Index (FCI)

The FCI value is a snapshot in time, calculated on an annual basis. Forecasted FCI values for a building in the future, for example, would include the current deferred maintenance items, plus projected values of capital renewal requirements. The FCI is represented on a scale of zero to one, or 0% to 100%, with higher FCI values, representing worst facility's condition.

This report employs the following description of an FCI per the International Facility Management Association IFMA Asset Life Cycle Model.

$$(FCI) = \frac{\text{Deferred Maintenance + Capital Renewal}}{\text{Current Replacement Value}}$$

As a general rule when FCI values reach 70% or more it is generally more cost effective to replace the facility vs continued repair and renovation.
This rule of thumb is generally used by a number of federal agencies including the US Army Corps of Engineers as a metric for consideration to replace a facility vs continuing to repair the facility. Other considerations include the following:

- The mission or critical nature of the facility in question.
- The Historic nature of the facility in question.
- Budgetary and phasing considerations.
- Impact to ongoing operations of the facility.

The following descriptions of Deferred Maintenance, and Capital Renewal being employed as formulated by the IFMA are as follows.

Deferred Maintenance: The total dollar amount of existing maintenance repairs and required replacements (capital renewal), not accomplished when they should have been, not funded in the current fiscal year or otherwise delayed to the future. These costs are typically identified by a comprehensive facilities condition assessment/audit of buildings, grounds, fixed equipment and infrastructure. These needs have not been scheduled to be accomplished in the current budget cycle and thereby are postponed until future funding budget cycles. The projects have received a lower priority status than those to be completed in the current budget cycle. For calculation of FCI values, deferred maintenance does not include grand fathered items (e.g., ADA), or programmatic requirements (e.g, adaptation).

Capital Renewal (CR): The systematic management process of planning and budgeting for known future cyclical repair and replacement requirements that extend the life and retain the usable condition of facilities and systems, not normally contained in the annual operating budget. This includes major activities that have a maintenance cycle in excess of one year (e.g., replace roofs, paint buildings, resurface roads, etc.). The cyclical replacement may be for all or a significant portion (e.g., the replacement of 50% or more of a building system component (lighting system, roof system, etc.) as it reaches the end of its useful life, of major components or infrastructure systems, at or near the end of their useful service life. These activities may extend the useful life and retain the usable condition of an associated capital asset (e.g., replacement of an HVAC system, extending the usable life of a facility). Replacement may be capitalized based on the Governmental Accounting Standards Board/Financial Accounting Standards Board (GASB/FASB) definition. A depreciation model calculates a sinking fund for this maintenance activity. Costs are estimated by a current replacement value that is derived by industry standard cost databases, (e.g., Building News, Craftsman Book Company, Richardson General Construction Estimating Standards, RSMeans, PACES).

Facility Condition Index Rating Scale and Criteria

FCI < 15%	Excellent condition (Facility is in new or like new condition. Performance is optimal.)
FCI ≥15% < 30%	Good condition (Facility is fully functional, indicating wear and minor repair but in operational condition.)
FCI ≥ 30% < 70%	Fair condition (Facility is functional, requires maintenance and repairs to continue operation of facility and these costs are starting to escalate.)
FCI ≥ 70%	Poor condition (Facility requires significant repairs and servicing of the facility to keep operational causing facility down time. Facility is getting expensive to keep operational due to repair and maintenance costs. Replacement of facility is generally more cost effective in the long run.)

Life Cycle Cost Analysis

Life Cycle Cost (LCC) analysis is a method of analyzing the cost of a system or a product over its entire lifespan. Life cycle costs analysis is integrated into the FCI analysis in this report to provide a yearly outlook for both. For example the life cycle of a roof can be typically 20 years. Based upon this life cycle costs for the roof would be realized in the analysis after that life span is over. This formulation is provided for all the major system components of the facility. This analysis is tabulated per year and a revised FCI score is produced based in part on life cycle costing.

Fire Station Facility Analysis Recommendations

Based upon the analysis Fire Stations 205 and 206 will be passed the 70% FCI threshold and replacement with new larger more functional facilities is recommended. Current level of CFMP funding is not sufficient to maintain expected level of life cycle costs over the next planned 6 years. Planed improvement projects have been identified in the report as well for the next 6 years. These projects address life cycle systems identified as past their expected life. They also incorporate some other related aspects of needed renovations. The proposed six year improvement projects outlook is provided to more adequately maintain the existing structures as it relates to expected life cycle costs. Facility replacements will also lessen the needs of continuing repairs and renovations to aging facilities. Please see the next 10 year outlook that compares the relationships of anticipated level of renovations required.

Improvement projects can be planned and combined so that they coordinate with other anticipated work that will also occur with in a similar three year window. The scope of projects and should keep up with the level of anticipated life cycle cots that are anticipated to occur for the facility.

The following considerations should be given when planning for improvements to any facility:

- The mission or critical nature of the facility in question.
- The historic nature of the facility in question.
- Budgetary and phasing considerations.
- Impact to on going operations.

Fire Station Facility Analysis

The following charts summarize the FCI and Lifecycle cost analysis and provides a summary of recommendations for each facility based upon the data complied. More detailed description is provided in the next chapter. Based upon the site investigations and subsequent analysis of the existing facilities, the following FCI chart summarizes the overall facility analysis which includes FCI values over 30 years. Funding at present time is noted to be insufficient to keep up with the anticipated costs to the facility over the next 6 years.

Facility Recommendation Summary

EXISTING FACILITIES

FACILITY NAME	TYPE	Date Orig. Const.	Bldg SF Total	No. Bays	Current FCI	FCI After 6 Years (No Expenditure)	FCI After 6 Years (After Expenditure)	6 Year Project Improvement Costs	Recommendation
Fire Station 201	Fire Station	1921	5,770	2	63%	80%	67%	$218,717.18	Historic: No Replacement Option
Fire Station 202	Fire Station	1926	7,810	3	39%	56%	55%	$32,697.85	Historic District: Plan For Renovation
Fire Station 203	Fire Station	1948	5,910	2	69%	81%	60%	$389,712.13	*Plan For Renovation
Fire Station 204	Fire Station	1961/2001	20,590	3	38%	56%	56%	$31,674.69	Plan For Renovation
Fire Station 205	Fire Station	1949	8,140	2	80%	95%	74%	$527,877.28	Plan For Replacement
Fire Station 206	Fire Station	1958	8,330	2	80%	94%	75%	$473,903.46	Plan For Replacement
Fire Station 207	Fire Station	1963	7,350	2	75%	88%	67%	$478,309.58	*Plan For Renovation
Fire Station 208	Fire Station	1976	11,300	2	54%	69%	58%	$371,273.25	Plan For Major Renovation
Fire Station 209	Fire Station	2009	23,500	5	0%	22%	22%	$0.00	Plan For Minor Renovation
Vehicle Maint. Shop	Vehicle Maint.	1978	6,150	2	59%	74%	47%	$331,234.63	*Plan For Renovation
Fire Station Training	Training Facility	1989	6,650	1	43%	61%	60%	$13,105.97	Plan For Renovation
Fire Station Burn Bldg.	Training Facility	1982	4,400	0	49%	53%	35%	$247,373.03	Plan For Renovation
6 Year Improvement Project Total			115900					**$3,115,879.05**	
6 Year Approved FY09 CFMP Budget Total								**$1,637,301.00**	
6 Year Funding Deficit Total								**($1,478,578.05)**	

Note : As a general rule when FCI values reach 70% or more it is generally more cost effective to replace the facility vs. continued repair and renovation.
This rule of thumb is generally used by a number of federal agencies including the US Army Corps of Engineers as a metric for consideration to replace a facility vs. continuing to repair.
Other considerations include the following:

The mission or critical nature of the facility in question
The Historic nature of the facility in question.
Budgetary and phasing considerations.
Impact to ongoing operations of the facility.

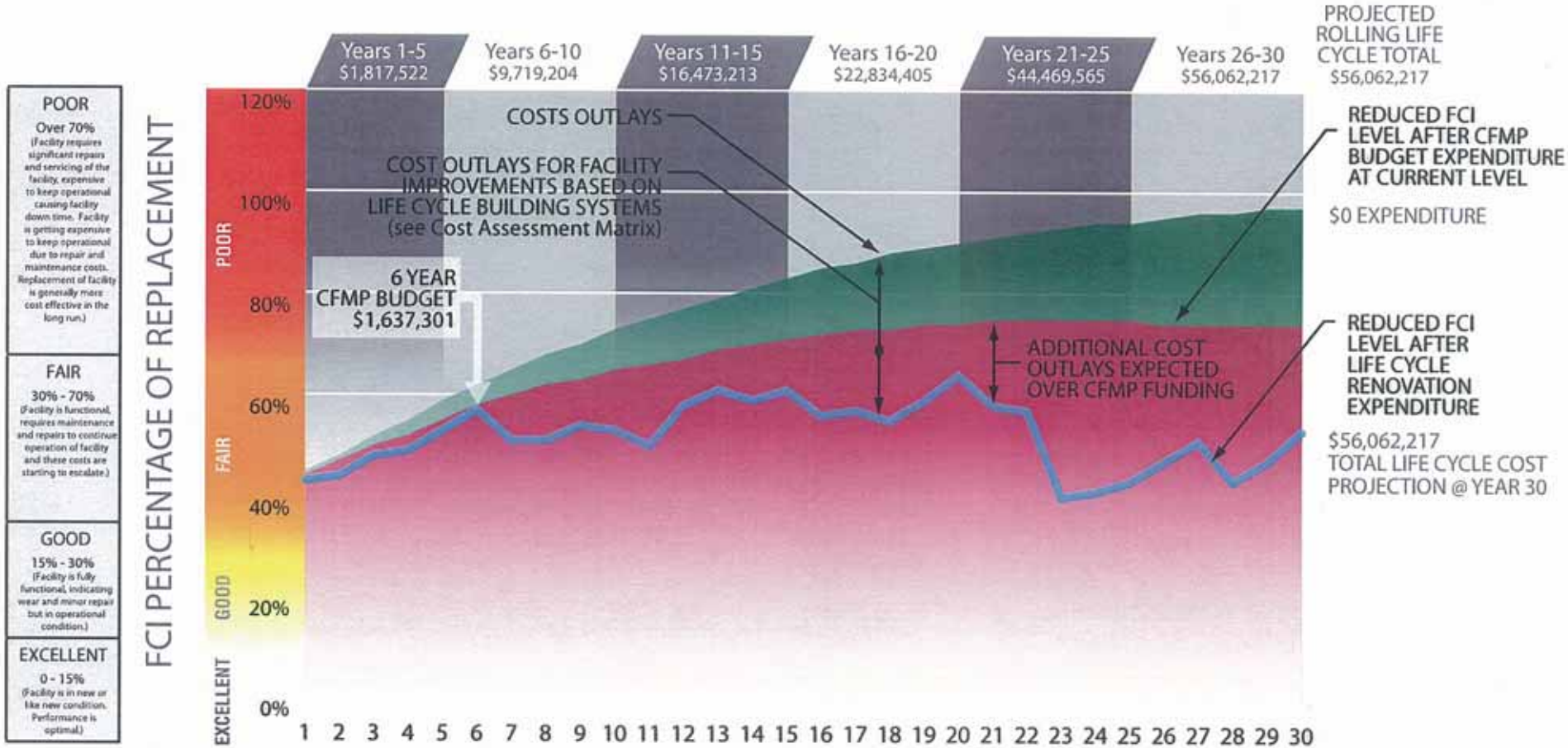
Exceeds 70% FCI
Nearing 70% FCI or reduced below 70% by anticipated renovation expenditure
* Recommend replacement if renovations are not sufficient to lower FCI values below 70%.

NEW PROPOSED FACILITIES

FACILITY NAME	Bldg SF Total	6 Year Proposed Project Costs	Recommendation
Fire Station 205 Replacement	18,500	$ 8,000,000	New larger more modern facility
Fire Station 206 Replacement	18,500	$ 8,000,000	New larger more modern facility
New Fire Station 210	18,500	$ 8,000,000	New Modern Facility
New Fire Station 211	18,500	$ 8,000,000	New Modern Facility
Total	**74,000**	**$ 32,000,000**	

Note: costs indicated are escalated @ 3% per year and do not include any land acquisition costs.

COMPOSITE (ALL FACILITIES) FCI/LIFE CYCLE CHART



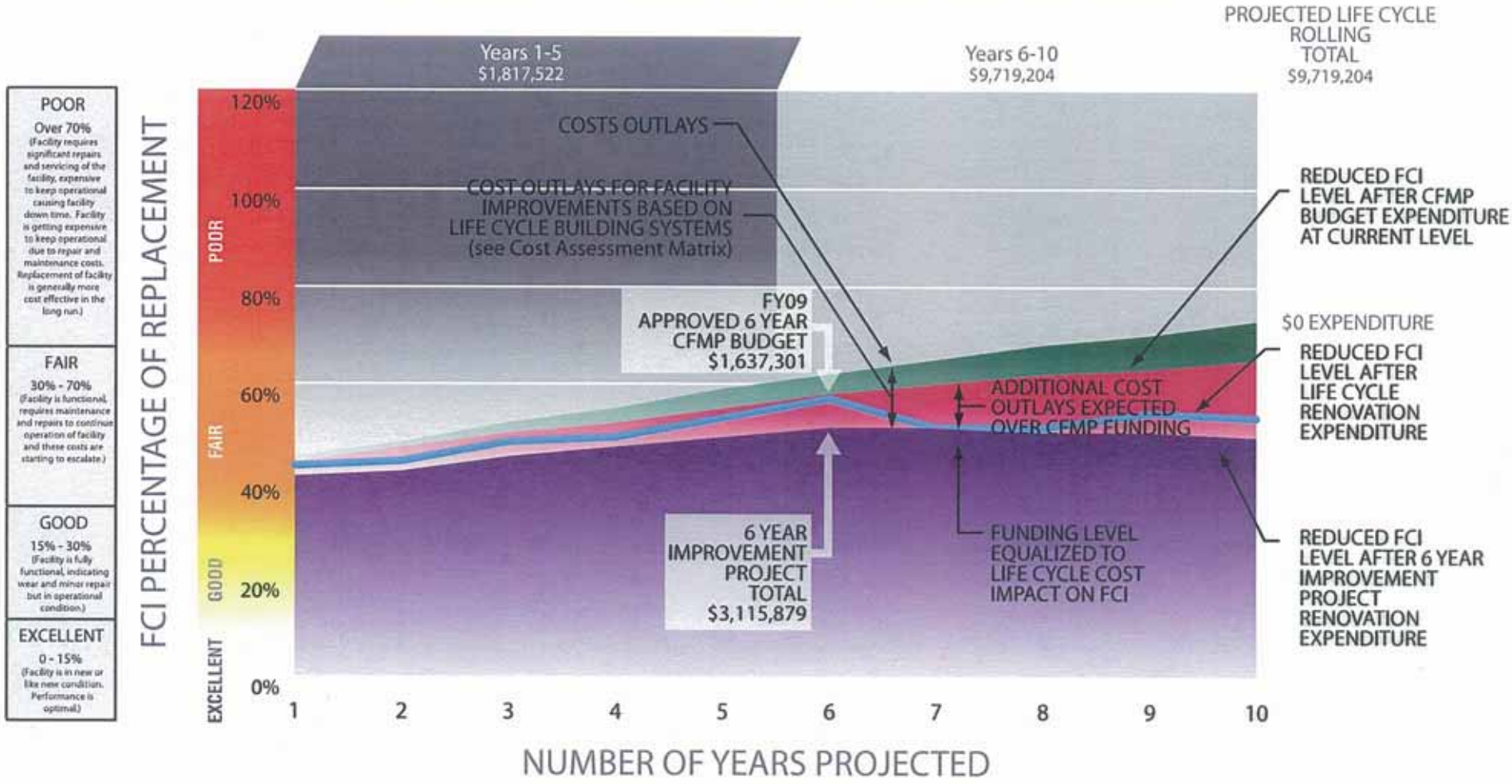
NOTE:

1. Facility Condition Index is the ratio of costs to renovate or repair vs. to replace with new as calculated below.

$$(FCI) = \frac{\text{Deferred Maintenance + Capital Renewal}}{\text{Current Replacement Value}}$$

2. Life cycle costs are based upon the value to replace the system that once the life of that system is over.
   Example: 20 year life span of a roof system and the cost to replace it in 20 years.

COMPOSITE (ALL FACILITIES) 10 YEAR RENOVATION IMPROVEMENT PROJECTS/FCI/LIFE CYCLE OUTLOOK



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   Example: 20 year life span of a roof system and the cost to replace it in 20 years.

2. EXISTING SITE CONDITIONS

Overall Issues

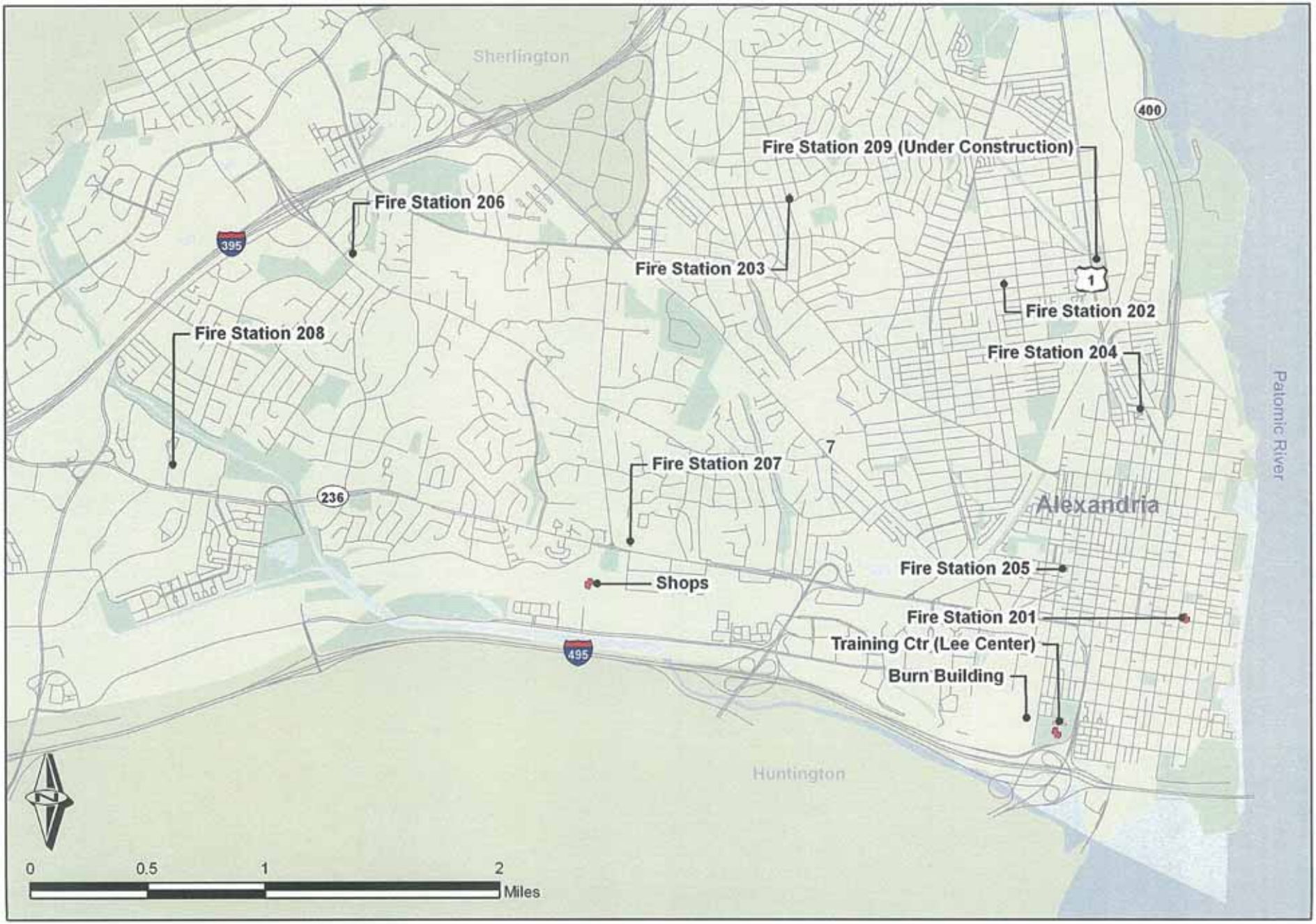
There appear to be no zoning issues with the existing facilities. Many facilities are in urban setting where land is a premium. Off street parking is not always sufficient to accommodate many of the locations.

Fire Station 201 is an historic building. Fire Station 202 is in a historic district. Both facilities will need to comply with City of Alexandria's Board of Architectural Review and the State Historic Preservation Office requirements.

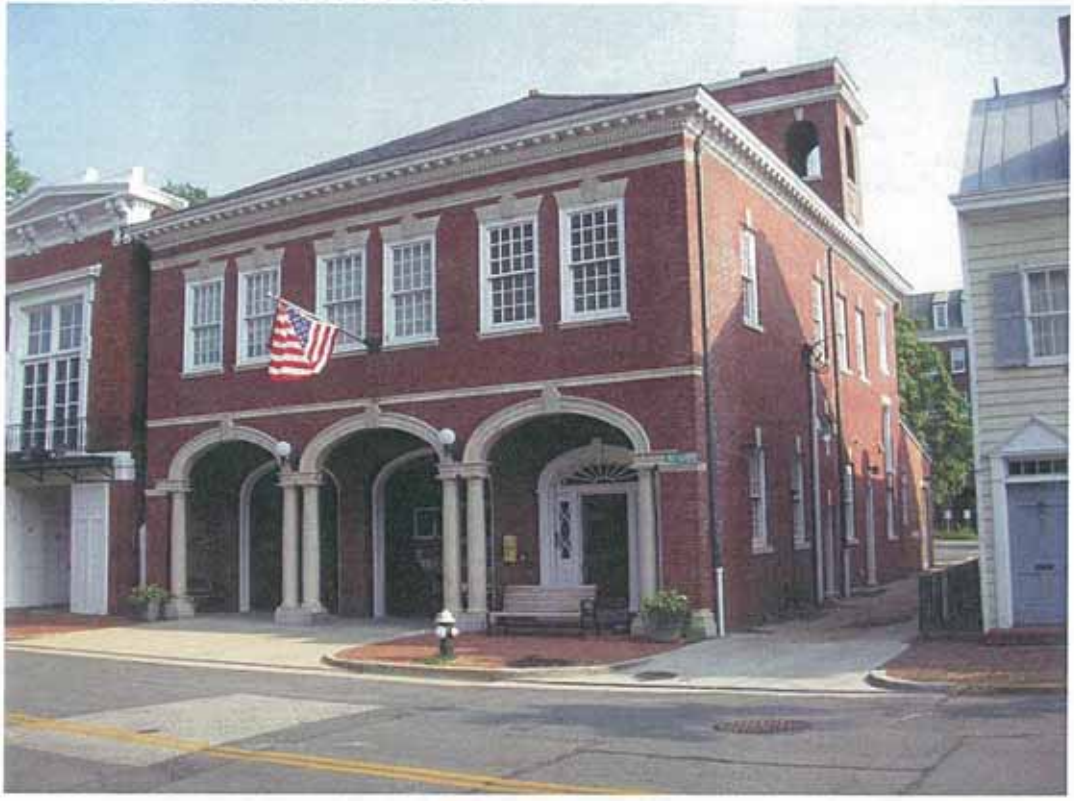
A study should be conducted to examine the essential facility requirements of each facility site. The study should examine the facility operating needs as would be required to operate during a major disaster such as an earth quake or hurricane. It was observed during the site investigations that only minimal emergency power was provided at the fire stations.

Many sites have large trees that are close to the facilities. Trees should be pruned and or removed if overhanging the facility. Many of the facilities are old and out dated and will require major renovations and expansions to meet the future needs of the City. It was also concluded that many building systems will require replacement due to age and condition of the facilities.

Alexandria Fire Station Locations



Fire Station 201



Built in 1921 the facility is a historic building in the heart of Old Town Alexandria. The site is cramped and has no real off street parking. The fire station construction is brick masonry units with wooden roof framing and slate shingles. The old basement coal bin has been converted to storage and space for the current gas fired boiler and fire sprinkler system controls. This facility has had a number of renovations and upgrades over the years. Door openings and column spacing does not accommodate large vehicles.

Poor window conditions

Scrapes on columns from vehicles

Lack of storage

Small Vehicle Bays

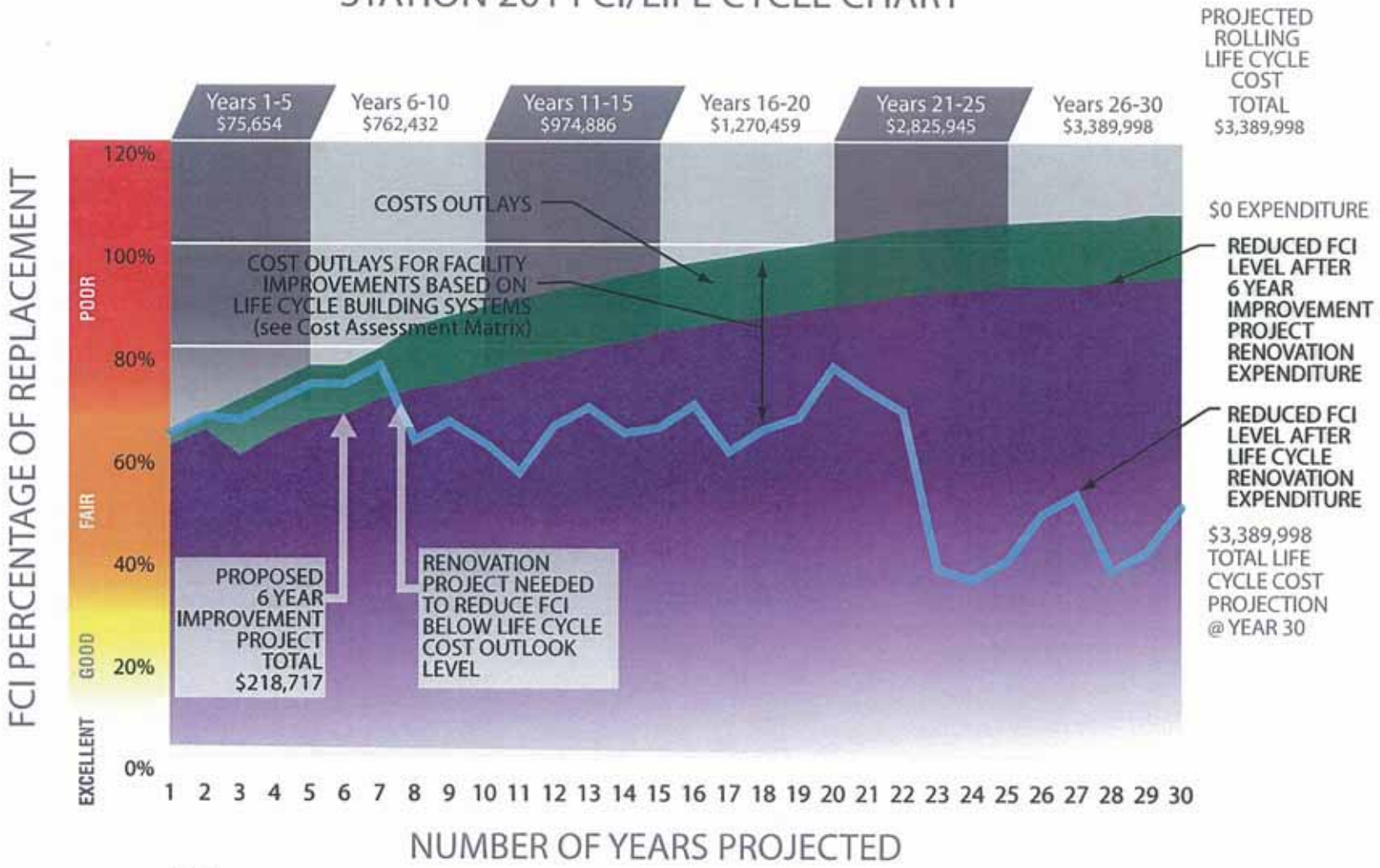
Facility Outlook

The following charts depict the life cycle costs and FCI values over a 30 year outlook, including a six year building renovations improvement project cost matrix.

Station # 201

1 inch equals 30 feet

STATION 201 FCI/LIFE CYCLE CHART



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2. Life cycle costs are based upon the value to replace the system that once the life of that system is over.
   Example: 20 year life span of a roof system and the cost to replace it in 20 years.

FIRE STATION #201

RENOVATION COST MATRIX

Alexandria Fire Department - Alexandria, Virginia

CAPITAL IMPROVEMENTS - SIX YEAR OUTLOOK

Project Description	Priority 1 - 5	UM	Qty	Unit $	Subtotal $	Total $ ESCALATED	2009 1.00	2010 1.03	2011 1.06	2012 1.09	2013 1.12	2014 1.15	Defered	Remarks
						$ 218,717	$ 44,392	$ -	$ 141,320	$ -	$ -	$ 33,004	$ -	
Replace Exterior Windows	4					$ 23,780			$ 24,493					
Demo		EA	25	$ 50.00	$ 1,250									
New Windows		EA	25	$ 901.19	$ 22,530									
Replace Exterior Doors	4					$ 13,884						$ 15,967		
Demo		EA	3	$ 250.00	$ 750									
New Exterior Doors		EA	3	$ 4,378.02	$ 13,134									
Refinish Exterior	4					$ 12,867						$ 14,797		
Power Wash Exterior Surfaces		SF	5,770	$ 0.75	$ 4,328									
Patch and Point Brick		SF	5,770	$ 0.98	$ 5,655									
Paint		SF	5,770	$ 0.50	$ 2,885									
Replace Flooring	3					$ 87,663			$ 92,922					
Demo		SF	5,770	2.5	$ 14,425									
New Flooring		SF	5,770	$ 12.69	$ 73,238									
Paint - Walls/Ceiling	3					$ 21,931			$ 23,905					
Walls		SF	5,770	$ 1.74	$ 10,029									
Ceilings		SF	5,770	$ 2.06	$ 11,902									
Replace Boiler	4													Complete by 2009
Replace Hot Water Distribution	4													Complete by 2009
Replace Controls	4													Complete by 2009
Electrical														
Install exits lights as per code.	5					$ 1,538	$ 1,538							
Demo		EA	5	$ 75.00	$ 375									
New Exit Lights		EA	5	$ 232.64	$ 1,163									
Install GFI receptacles in the kitchen.	5					$ 1,303	$ 1,303							
Demo		EA	2	$ 75.00	$ 150									
New GFI's		EA	2	$ 576.46	$ 1,153									
Install smoke detectors in the corridors.	5					$ 987	$ 987							
Demo		EA	4	$ 75.00	$ 300									
New Smoke Detectors		EA	4	$ 171.80	$ 687									
Install a new generator	5					$ 40,564	$ 40,564							
Demo		EA	1	$ 3,401.63	$ 3,402									
New Generator		EA	1	$37,162.53	$ 37,163									
Sitework	1					$ 2,000						$ 2,240		
Miscellaneous Site improvements.		SF	2,955	$ 0.68	$ 2,000									

Notes:

Cost estimate shows the following:

- Project Elements.
- Base Year Costs.
- Distribution of costs
- Differences are due to rounding.

Priority Rating 1 - 5

- 5- Life safety & building security.
- 4- Building exterior & primary systems.
- 3- Buiding interior finishes and secondary systems.
- 2- Supplemental systems.
- 1- Noncritical systems.

Fire Station 202

Built in 1926 the facility is located in the Mt Vernon area of Alexandria in the historic Potomac District. The site has off street parking. The fire station construction is brick masonry units with wooden roof framing and slate shingles. The third vehicle bay was an addition with a flat roof. The facility is currently under a major renovation.

Low vehicle bay conditions

Second floor renovation

Overhead doors issues

First Floor renovation

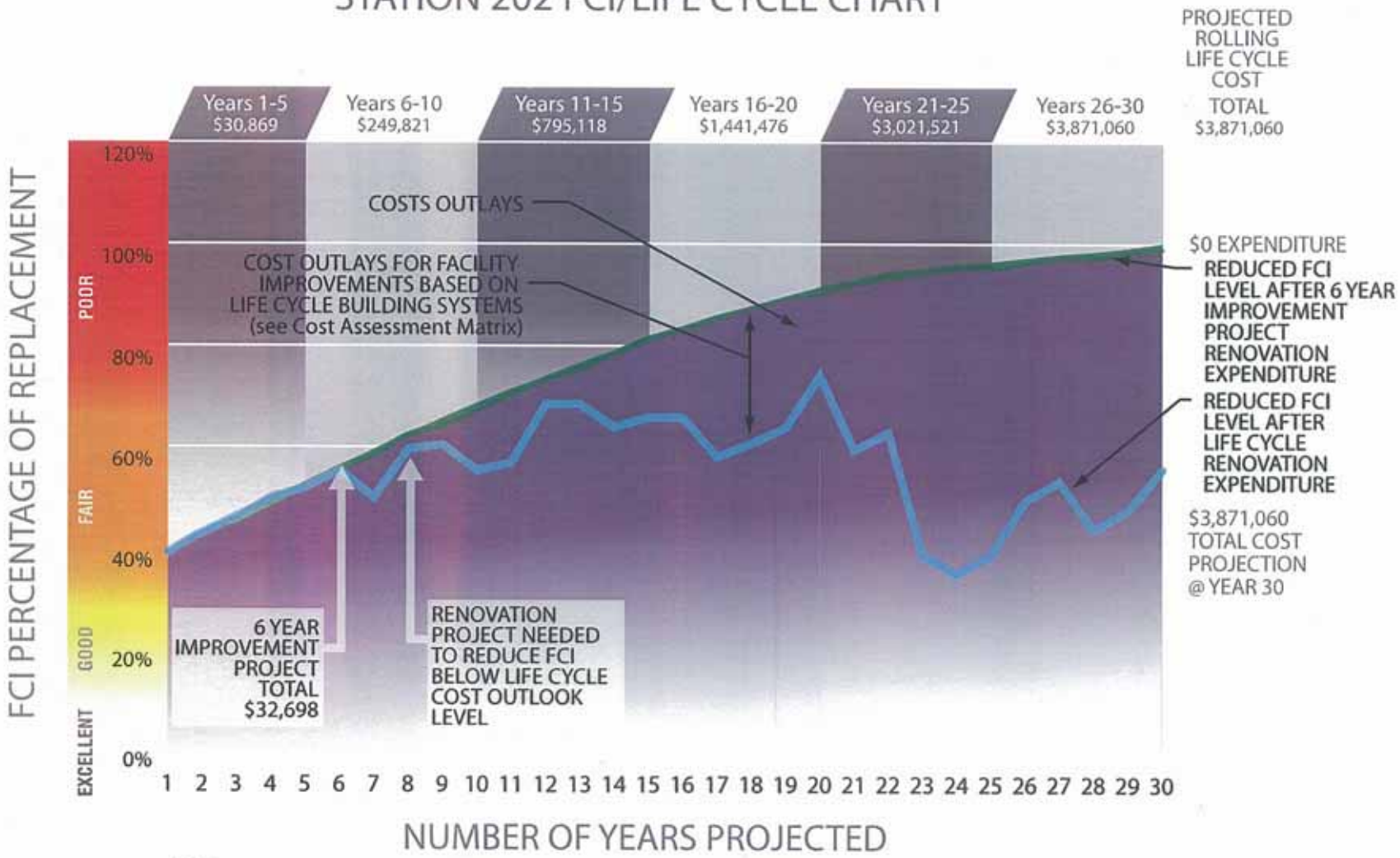
Facility Outlook

The following charts depict the life cycle costs and FCI values over a 30 year outlook, including a six year building renovations improvement project cost matrix.

Station 202

1 inch equals 25 feet

STATION 202 FCI/LIFE CYCLE CHART



NOTE:

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$$(FCI) = \frac{\text{Deferred Maintenance + Capital Renewal}}{\text{Current Replacement Value}}$$

2. Life cycle costs are based upon the value to replace the system that once the life of that system is over.
   Example: 20 year life span of a roof system and the cost to replace it in 20 years.

FIRE STATION #202

RENOVATION COST MATRIX

Alexandria Fire Department - Alexandria, Virginia

CAPITAL IMPROVEMENTS - SIX YEAR OUTLOOK

Project Description	Priority 1 - 5	UM	Qty	Unit $	Subtotal $	Total $ ESCALATED	2009 1.00	2010 1.03	2011 1.06	2012 1.09	2013 1.12	2014 1.15	Defered	Remarks
						BASE YEAR ESTIMATE								
						$ 32,698	$ -	$ -	$ -	$ -	$ 32,698	$ -	$ -	
Replace Overhead Doors	4					$ 27,194					30,457.45			
Demo		EA	3	$ 577.00	$ 1,731									
New Overhead Doors		EA	3	$ 8,487.72	$ 25,463									
Replace Plumbing Distribution	3													Complete by 2009
Install Fire Protection System	5													Complete by 2009
Replace all receptacles and light switches.	3													Complete by 2009
Move AC cable/data wiring away from gas and water piping	5													Complete by 2009
Relocate laundry receptacle away from the waterlines.	5													Complete by 2009
Replace wiring in the apparatus bay and basement	3													Complete by 2009
Install a new generator	5													Complete by 2009
Sitework	2					$ 2,000					$ 2,240			
Miscellaneous Site improvements.		SF	2,955	$ 0.68	$ 2,000									

Notes:

Cost estimate shows the following:

- Project Elements.
- Base Year Costs.
- Distribution of costs
- Differences are due to rounding.

Priority Rating 1 - 5

- 5- Life safety & building security.
- 4- Building exterior & primary systems.
- 3- Buiding interior finishes and secondary systems.
- 2- Supplemental systems.
- 1- Noncritical systems.

Fire Station 203

Built in 1948 the facility is located in a residential neighborhood. The site has off street parking. The fire station construction is brick masonry veneer with wood frame. Roof construction is wooden roof framing and asphalt shingles and metal roof at the rear of the facility. The facility is in the middle of a residential neighborhood development and architecturally blends with the surrounding houses.

Poor metal roofing conditions

Kitchen renovation required

Poor lighting conditions

Poor finish conditions

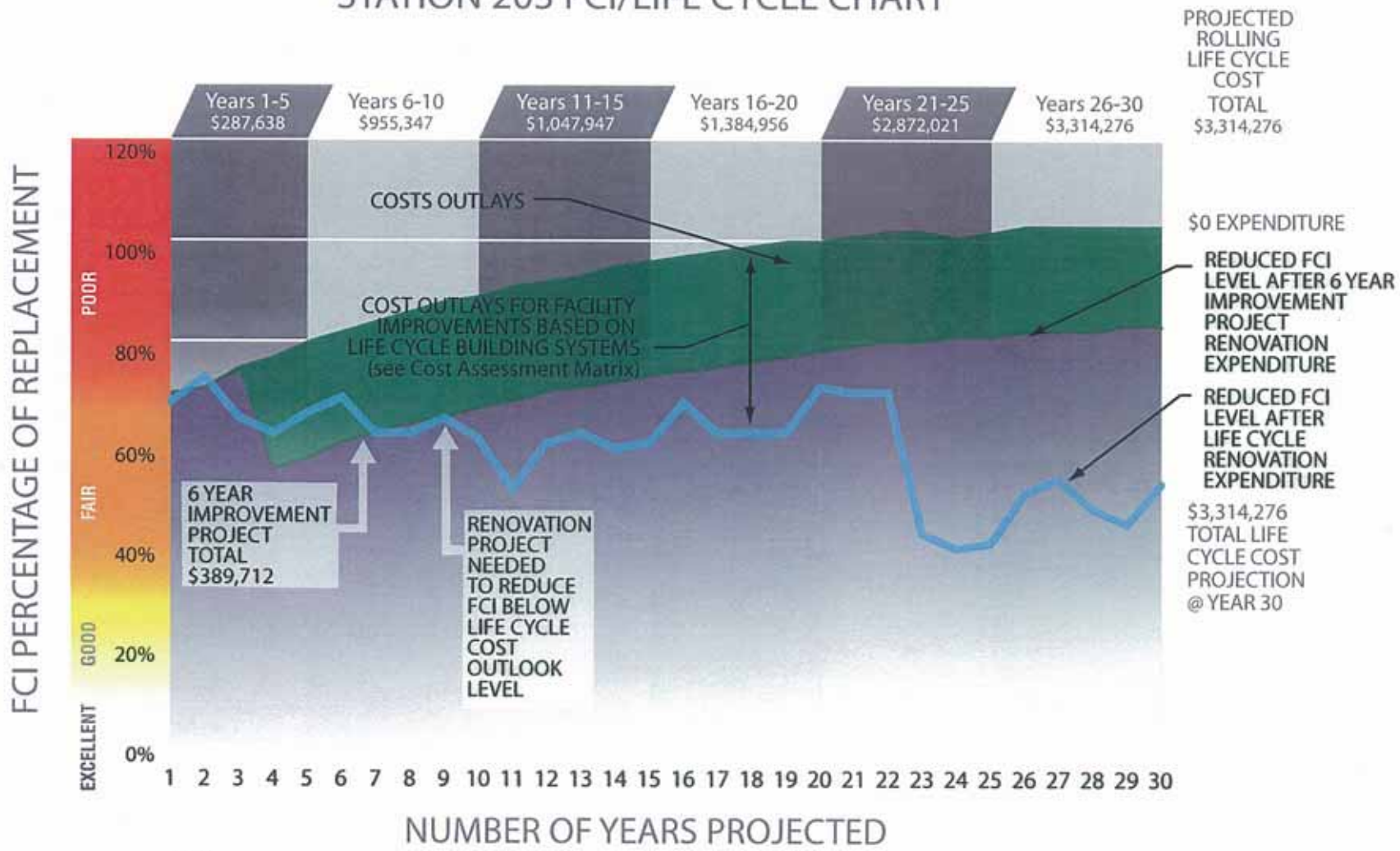
Facility Outlook

The following charts depict the life cycle costs and FCI values over a 30 year outlook, including a six year building renovations improvement project cost matrix.

Station 203

1 inch equals 30 feet

STATION 203 FCI/LIFE CYCLE CHART



NOTE:

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$$(FCI) = \frac{\text{Deferred Maintenance + Capital Renewal}}{\text{Current Replacement Value}}$$

2. Life cycle costs are based upon the value to replace the system that once the life of that system is over.
   Example: 20 year life span of a roof system and the cost to replace it in 20 years.

FIRE STATION #203

RENOVATION COST MATRIX

Alexandria Fire Department - Alexandria, Virginia

CAPITAL IMPROVEMENTS - SIX YEAR OUTLOOK														
BASE YEAR ESTIMATE							SIX YEAR OUTLOOK							
Project Description	Priority 1 - 5	UM	Qty	Unit $	Subtotal $	Total $ ESCALATED	2009 1.00	2010 1.03	2011 1.06	2012 1.09	2013 1.12	2014 1.15	Defered	Remarks
						$ 389,712	$ -	$ -	$ -	$ 389,712	$ -	$ -	$ -	
Replace Metal Roofing	4					$ 6,712				$ 7,316				
Demo		SF	1,100	$ 1.50	$ 1,650									
New Roofing		SF	1,100	$ 4.60	$ 5,062									
Replace Kitchen	3													
Replace Cabinets						$ 16,992				$ 18,521				
Demo		SF	250	$ 4.70	$ 1,175									
New Cabinets		SF	250	$ 63.27	$ 15,817									
Replace Appliances						$ 7,487				$ 8,161				
Demo		EA	6	$ 200.00	$ 1,200									
New Appliances		EA	6	$1,047.87	$ 6,287									
Replace Flooring	3					$ 89,790				$ 97,871				
Demo		SF	5,910	2.5	$ 14,775									
New Flooring		SF	5,910	$ 12.69	$ 75,015									
Paint - Walls/Ceiling	3					$ 22,463				$ 24,485				
Walls		SF	5,910	$ 1.74	$ 10,272									
Ceilings		SF	5,910	$ 2.06	$ 12,191									
Boiler Replacement - Entire Facility	4													Complete by 2009
Electrical	5													
Replace old wiring-Remove exposed/abandoned wiring from attic.						$ 165,336				$ 180,217				
Demo		SF	5,910	$ 4.70	$ 27,777									
New Wiring		SF	5,910	$ 23.28	$ 137,559									
Included with New Wiring														
Install new panels.														(Included)
additional receptacles should be installed.														(Included)
Replace Light fixtures with energy efficient fixtures.														(Included)
Replace exit lights														(Included)
Install smoke detectors in the 1st floor sleeping rooms.														(Included)
Electrical Systems	5					$ 46,754				$ 50,962				
Install a new generator														
Demo		EA	1	$3,401.63	$ 3,402									
New generator		EA	1	########	$ 43,352									
Sitework	2					$ 2,000				$ 2,180				
Miscellaneous Site improvements.														
		SF	2,955	$ 0.68	$ 2,000									

Notes:

Cost estimate shows the following:
- Project Elements.
- Base Year Costs.
- Distribution of costs
- Differences are due to rounding.

Priority Rating 1 - 5
- 5- Life safety & building security.
- 4- Building exterior & primary systems.
- 3- Buiding interior finishes and secondary systems.
- 2- Supplemental systems.
- 1- Noncritical systems.

Fire Station 204

Built in 1961 the facility went under a major expansion and renovation and is the current headquarters facility for the fire department. The site has shared insufficient off street parking. The fire station construction is brick masonry veneer construction.
Roof construction is a combination of flat membrane roofing and sloped asphalt shingle roofing.

Insufficient parking conditions

HVAC modifications needed

Second floor office conditions

Vehicle bay conditions

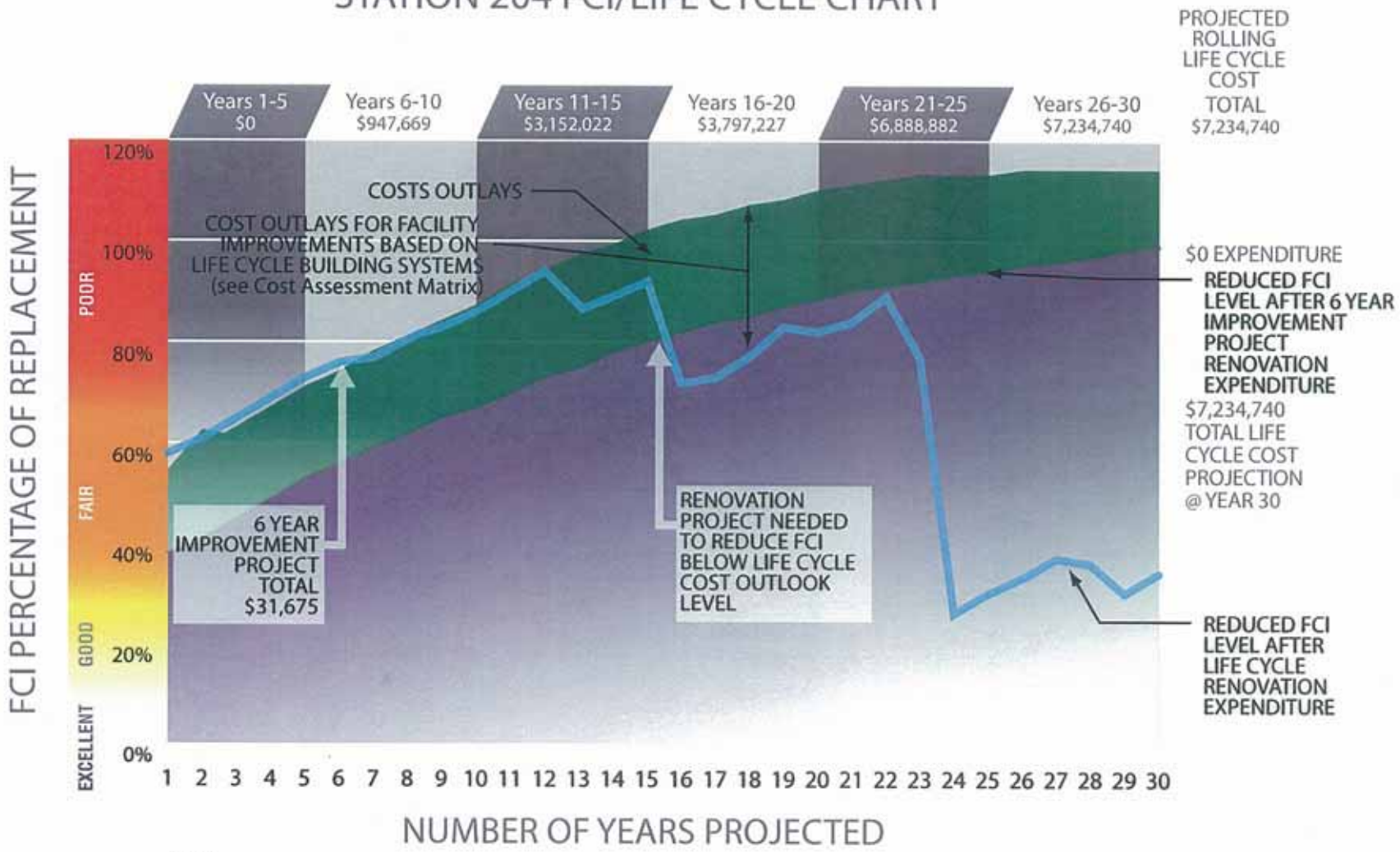
Facility Outlook

The following charts depict the life cycle costs and FCI values over a 30 year outlook, including a six year building renovations improvement project cost matrix.

Station 204

1 inch equals 40 feet

STATION 204 FCI/LIFE CYCLE CHART



NOTE:

1. Facility Condition Index is the ratio of costs to renovate or repair vs. to replace with new as calculated below.

$$(FCI) = \frac{\text{Deferred Maintenance + Capital Renewal}}{\text{Current Replacement Value}}$$

2. Life cycle costs are based upon the value to replace the system that once the life of that system is over.
   Example: 20 year life span of a roof system and the cost to replace it in 20 years.

FIRE STATION #204

RENOVATION COST MATRIX

Alexandria Fire Department - Alexandria, Virginia

CAPITAL IMPROVEMENTS - SIX YEAR OUTLOOK															
BASE YEAR ESTIMATE							SIX YEAR OUTLOOK								
Project Description	Priority 1 - 5	UM	Qty	Unit $	Subtotal $	Total $ ESCALATED	2009 1.00	2010 1.03	2011 1.06	2012 1.09	2013 1.12	2014 1.15	Defered	Remarks
						$ 31,675	$ -	$ -	$ -	$ -	$ -	$ 31,675	$ -	
Supplement / Modify 2nd Floor Heating & Cooling system	4					$ 25,543						$ 29,374		
Demo		SF	9,750	$ 0.75	$ 7,313									
Add Heating and Cooling		SF	9,750	$ 3.74	$ 18,230									
Sitework	2					$ 2,000						$ 2,300		
Miscellaneous Site improvements.		SF	2,955	$ 0.68	$ 2,000									

Notes:

Cost estimate shows the following:
- Project Elements.
- Base Year Costs.
- Distribution of costs
- Differences are due to rounding.

Priority Rating 1 - 5
- 5- Life safety & building security.
- 4- Building exterior & primary systems.
- 3- Building interior finishes and secondary systems.
- 2- Supplemental systems.
- 1- Noncritical systems.

Fire Station 205

Built in 1949 the facility is located on Cameron St and has very limited street parking at the rear of the facility. The fire station construction is brick masonry construction.
Flat built-up roof construction with a small deck area off the kitchen is provided. A new green roof project is planned for to be constructed in the near future

Poor finish conditions

Overhead door replacement needed

Water penetration

Insufficient emergency power

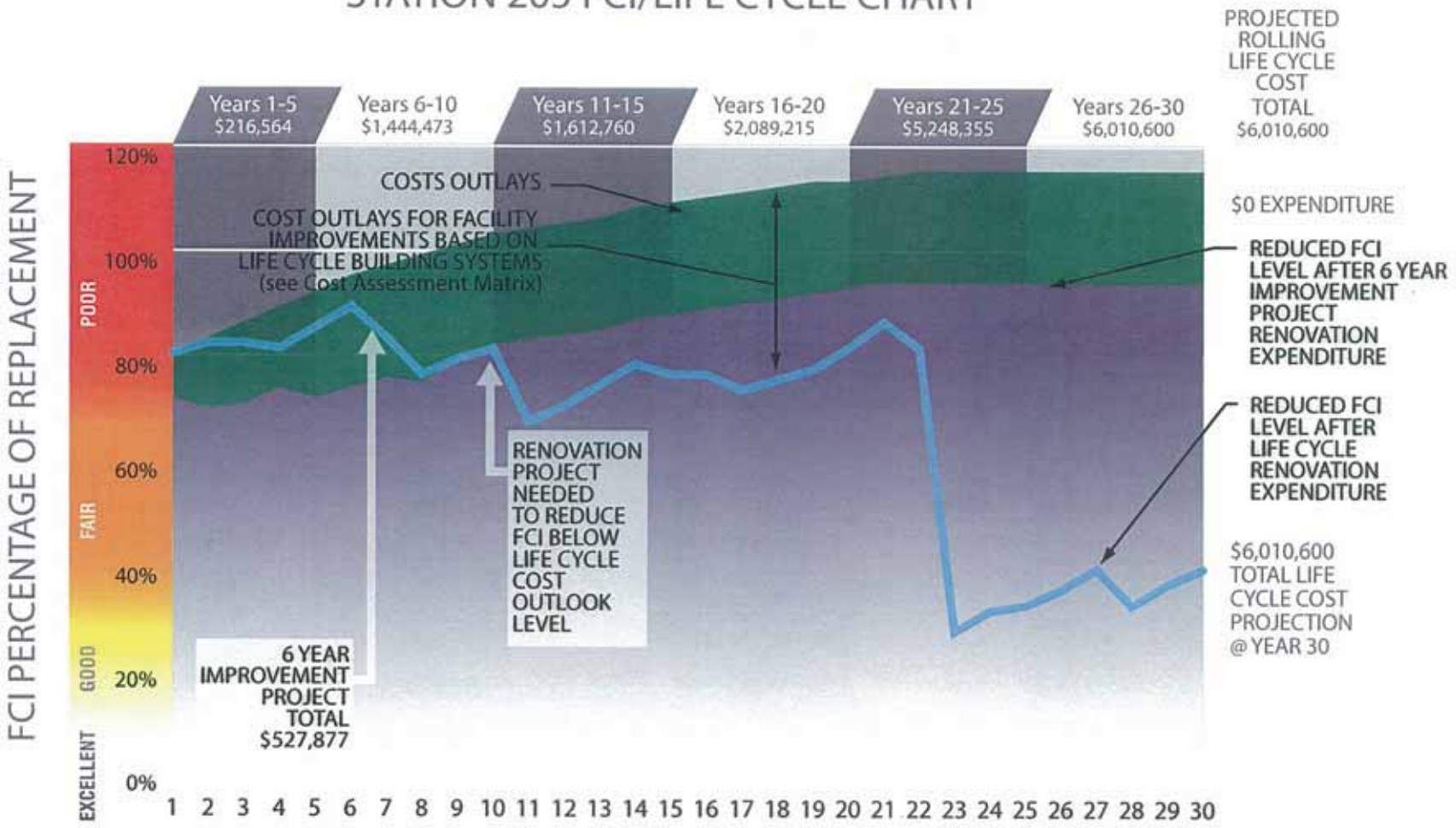
Facility Outlook

The following charts depict the life cycle costs and FCI values over a 30 year outlook, including a six year building renovations improvement project cost matrix.

Station 205

1 inch equals 35 feet

STATION 205 FCI/LIFE CYCLE CHART



NOTE:

1. Facility Condition Index is the ratio of costs to renovate or repair vs. to replace with new as calculated below.

$$(FCI) = \frac{\text{Deferred Maintenance + Capital Renewal}}{\text{Current Replacement Value}}$$

2. Life cycle costs are based upon the value to replace the system that once the life of that system is over.
   Example: 20 year life span of a roof system and the cost to replace it in 20 years.

FIRE STATION #205

RENOVATION COST MATRIX

Alexandria Fire Department - Alexandria, Virginia

CAPITAL IMPROVEMENTS - SIX YEAR OUTLOOK

Project Description	Priority 1 - 5	UM	Qty	Unit $	Subtotal $	ESCALATED	2009 1.00	2010 1.03	2011 1.06	2012 1.09	2013 1.12	2014 1.15	Defered	Remarks
BASE YEAR ESTIMATE / SIX YEAR OUTLOOK						$ 527,877	$ 211,211	$ 104,074	$ 62,650	$ -	$ 132,641	$ 17,301	$ -	
Repair Exterior Envelope - Water Penetration	4					$ 18,152	$ 18,152							
Power Wash Exterior Surfaces		SF	8,140	$ 0.75	$ 6,105									
Patch and Point Brick		SF	8,140	$ 0.98	$ 7,977									
Paint and Seal		SF	8,140	$ 0.50	$ 4,070									
Replace Overhead Doors	4					$ 27,289			$ 28,926					
Demo		EA	3	$ 250.00	$ 750									
New Overhead Doors		EA	3	$ 8,846.35	$ 26,539									
Replace Roofing - Water Remediation	4					$ 56,736	$ 56,736							
Replace Roofing		SF	3,940	$ 14.40	$ 56,736									
Remove Hazardous Materials Asbestos - Hose tower stairs	5					$ 3,665	$ 3,665							
Remove Asbestos		SF	3,940	$ 0.93	$ 3,665									
Paint interior walls/ceilings	3					$ 30,939			$ 33,724					
Walls		SF	8,140	$ 1.74	$ 14,148									
Ceilings		SF	8,140	$ 2.06	$ 16,791									
Replace Flooring	3					$ 109,425					$ 122,556			
Demo		SF	8,140	$ 0.75	$ 6,105									
New Flooring		SF	8,140	$ 12.69	$ 103,320									
Replace Water Distribution System	4					$ 44,751		$ 46,094						
Demo		SF	8,140	$ 0.75	$ 6,105									
New Water Distribution System		SF	8,140	$ 4.75	$ 38,646									
Replace sanitary sewer - Drain/Waste/Vent	4					$ 56,291		$ 57,980						
Demo		SF	8,140	$ 0.75	$ 6,105									
New Sanitary Sewer System		SF	8,140	$ 6.17	$ 50,186									
Replace HVAC - EMS quarters	4					$ 24,887	$ 24,887							
Demo		SF	1,500	$ 0.75	$ 1,125									
New HVAC		SF	1,500	$ 15.84	$ 23,762									
Replace HVAC - Officers quarters	4					$ 16,591	$ 16,591							
Demo		SF	1,000	$ 0.75	$ 750									
New HVAC		SF	1,000	$ 15.84	$ 15,841									
Replace Controls	4					$ 21,646	$ 21,646							
Demo		SF	8,140	$ 0.75	$ 6,105									
New Controls		SF	8,140	$ 1.91	$ 15,541									
Replace hydronic Piping	4					$ 13,018	$ 13,018							
Demo		SF	8,140	$ 0.75	$ 6,105									
New Piping		SF	8,140	$ 0.85	$ 6,913									
Install Smoke Detectors	5					$ 687	$ 687							
New Smoke Detectors		EA	4	$ 171.80	$ 687									
Replace Light Fixture Lenses	1					$ 15,045						$ 17,301		
New Lenses		SF	8,140	$ 1.85	$ 15,045									
Install a new generator	5					$ 55,828	$ 55,828							
Demo		EA	1	$ 3,401.63	$ 3,402									
New Generator		EA	1	$ 52,426.86	$ 52,427									
Replace Concrete - Front ramp	4													Complete by 2009
Replace Sanitary Line	4					$ 9,005					$ 10,085			
Demo		SF	8,140	$ 0.50	$ 4,070									
New Sanitary Line		SF	8,140	$ 0.61	$ 4,935									

Notes:

Cost estimate shows the following:
- Project Elements.
- Base Year Costs.
- Distribution of costs
- Differences are due to rounding.

Priority Rating 1 - 5
- 5- Life safety & building security.
- 4- Building exterior & primary systems.
- 3- Building interior finishes and secondary systems.
- 2- Supplemental systems.
- 1- Noncritical systems.

Fire Station 206

Built in 1958 the facility is located on Seminary Road and has some parking at the rear of the facility. The fire station construction is brick masonry construction.
Low sloped EPDM roof construction with small built up roof areas are provided. Restoration of the brick in some locations is required due to expansion and contraction at the connection to the roof construction.

Poor restroom conditions

Poor exterior door conditions

Interior conditions

Masonry repair required

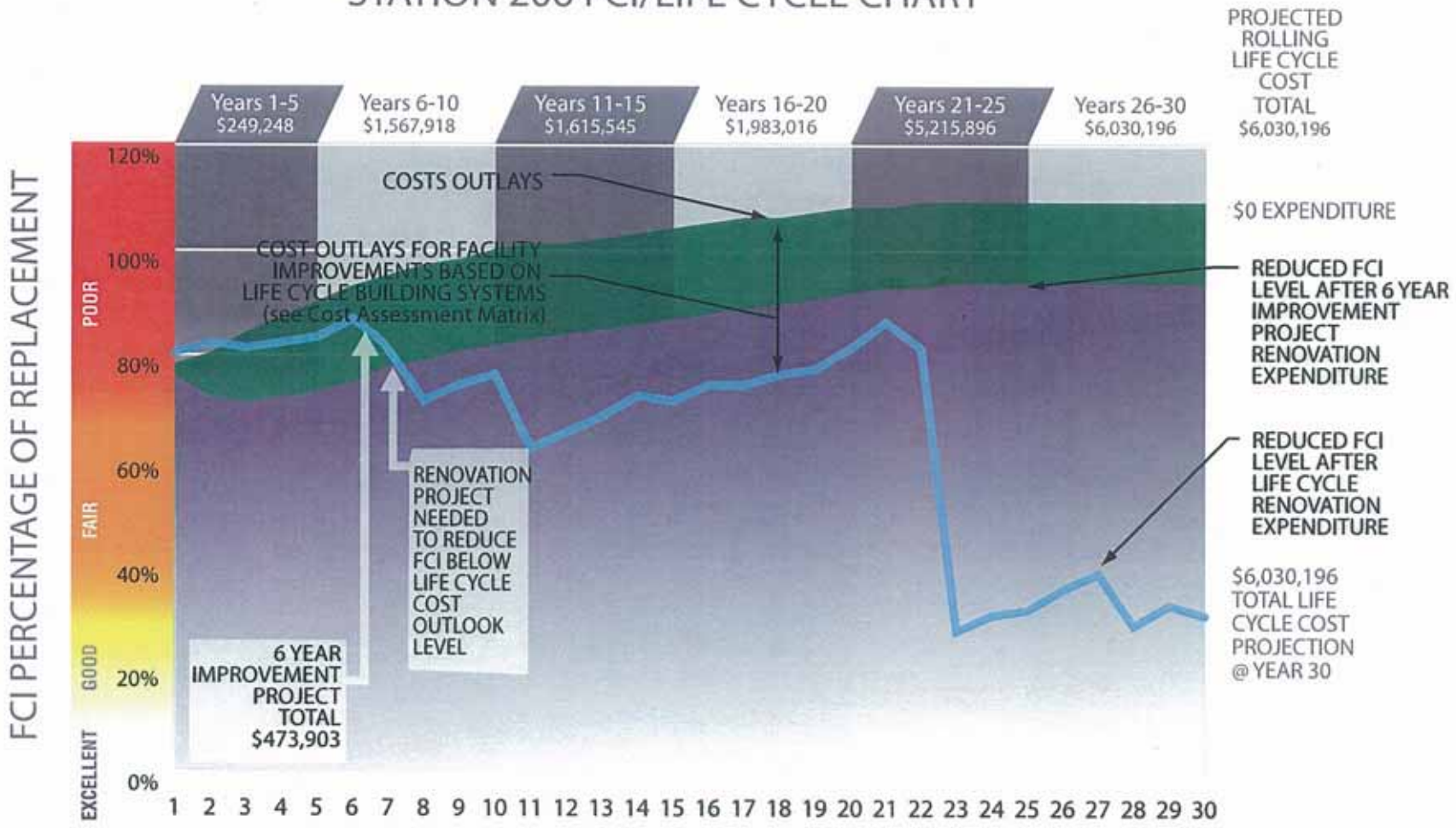
Facility Outlook

The following charts depict the life cycle costs and FCI values over a 30 year outlook, including a six year building renovations improvement project cost matrix.

Station 206

1 inch equals 35 feet

STATION 206 FCI/LIFE CYCLE CHART



NOTE:

1. Facility Condition Index is the ratio of costs to renovate or repair vs. to replace with new as calculated below.

$$(FCI) = \frac{\text{Deferred Maintenance + Capital Renewal}}{\text{Current Replacement Value}}$$

2. Life cycle costs are based upon the value to replace the system that once the life of that system is over.
   Example: 20 year life span of a roof system and the cost to replace it in 20 years.

FIRE STATION #206

RENOVATION COST MATRIX

Alexandria Fire Department - Alexandria, Virginia

CAPITAL IMPROVEMENTS - SIX YEAR OUTLOOK

Project Description	Priority 1 - 5	UM	Qty	Unit $	Subtotal $	Total $ ESCALATED	2009 1.00	2010 1.03	2011 1.06	2012 1.09	2013 1.12	2014 1.15	Defered	Remarks
						$ 473,903	$ 91,732	$ 155,937	$ 108,590	$ 57,246	$ 48,670	$ 11,730	$ -	
Repair Exterior Envelope - Water Penetration	4					$ 18,576	$ 18,576							
Power Wash Exterior Surfaces		SF	8,330	$ 0.75	$ 6,248									
Patch and Point Brick		SF	8,330	$ 0.98	$ 8,163									
Paint and Seal		SF	8,330	$ 0.50	$ 4,165									
Masonry Repair	4					$ 14,258	$ 14,258							
Replace Masonry - Partial		SF	2,500	$ 5.70	$ 14,258									
Replace Overhead Doors	4					$ 28,159			$ 29,848					
Demo		EA	4	$ 250.00	$ 1,000									
New Overhead Doors		EA	4	$ 6,789.63	$ 27,159									
Restroom Renovation	3					$ 52,519				$ 57,246				
Demo		SF	8,330	$ 0.75	$ 6,248									
Renovate Restroom		SF	500	$ 92.54	$ 46,271									
Paint interior walls/ceilings	3					$ 31,661					$ 35,461			
Walls		SF	8,330	$ 1.74	$ 14,479									
Ceilings		SF	8,330	$ 2.06	$ 17,183									
Replace Water Distribution System	4					$ 45,796		$ 47,169						
Demo		SF	8,330	$ 0.75	$ 6,248									
New Water Distribution System		SF	8,330	$ 4.75	$ 39,548									
Replace sanitary sewer - Drain/Waste/Vent	4					$ 57,605		$ 59,333						
Demo		SF	8,330	$ 0.75	$ 6,248									
New Sanitary Sewer System		SF	8,330	$ 6.17	$ 51,358									
Replace Plumbing Fixtures	4					$ 47,994		$ 49,434						
Demo		SF	8,330	$ 0.75	$ 6,248									
New Plumbing Fixtures		SF	8,330	$ 5.01	$ 41,747									
Replace Boiler	4					$ 38,812			$ 41,140					
Demo		SF	8,330	$ 0.75	$ 6,248									
New Boiler		SF	8,330	$ 3.91	$ 32,564									
Replace Hydronic Piping	4					$ 13,322			$ 14,121					
Demo		SF	8,330	$ 0.75	$ 6,248									
New Piping		SF	8,330	$ 0.85	$ 7,074									
Replace Controls	4					$ 22,151			$ 23,480					
Demo		SF	8,330	$ 0.75	$ 6,248									
New Controls		SF	8,330	$ 1.91	$ 15,904									
Install exits lights as per code	5					$ 1,846	$ 1,846							
Demo		EA	6	$ 75.00	$ 450									
New Exit Lights		EA	6	$ 232.64	$ 1,396									
Install a new generator	5					$ 57,052	$ 57,052							
Demo		EA	1	$ 3,401.63	$ 3,402									
New Generator		EA	1	$ 53,650.59	$ 53,651									
Replace Concrete - Front ramp	1					$ 10,200						$ 11,730		
Demo		SF	1,200	$ 2.50	$ 3,000									
New Front ramp		SF	1,200	$ 6.00	$ 7,200									
Resurface Asphalt Parking Lot	1					$ 11,794					$ 13,209			
Resurface		SF	8,330	$ 1.42	$ 11,794									

Notes:

Cost estimate shows the following:
- Project Elements.
- Base Year Costs.
- Distribution of costs
- Differences are due to rounding.

Priority Rating 1 - 5
- 5- Life safety & building security.
- 4- Building exterior & primary systems.
- 3- Buiding interior finishes and secondary systems.
- 2- Supplemental systems.
- 1- Noncritical systems.

Fire Station 207

Built in 1963 the facility is located on Duke St and has very limited parking at the rear of the facility. The fire station construction is brick masonry construction. Roofing consists of EPDM construction with a mansard style slate roof over the vehicle bay area. A video study of the sanitary line should be conducted to determine the extent of sewer issues at the facility.

Spalling masonry

Kitchen remodel needed

Water penetration

Roof ponding conditions

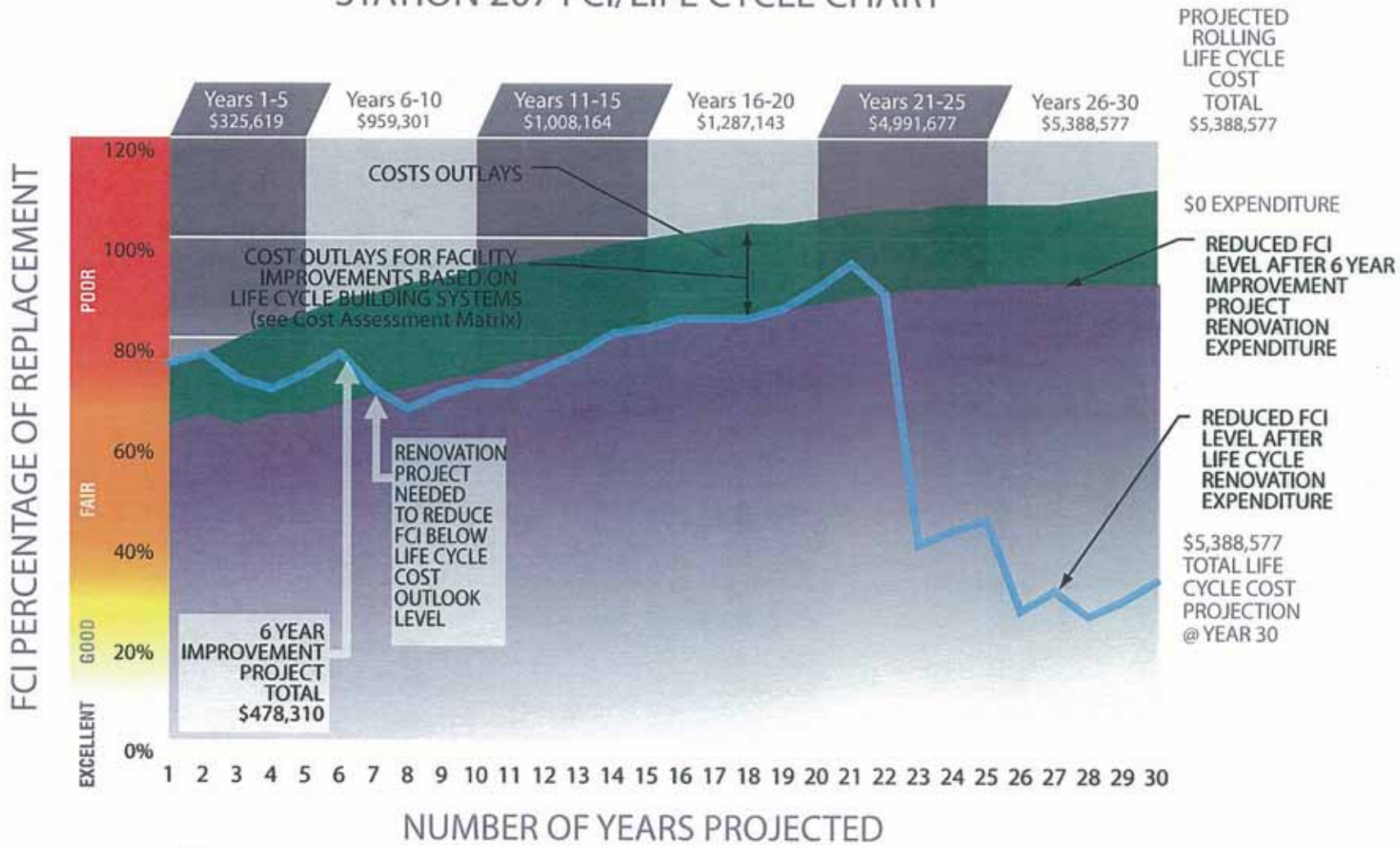
Facility Outlook

The following charts depict the life cycle costs and FCI values over a 30 year outlook, including a six year building renovations improvement project cost matrix.

Station 207

1 inch equals 35 feet

STATION 207 FCI/LIFE CYCLE CHART



NOTE:

1. Facility Condition Index is the ratio of costs to renovate or repair vs. to replace with new as calculated below.

$$(FCI) = \frac{\text{Deferred Maintenance + Capital Renewal}}{\text{Current Replacement Value}}$$

2. Life cycle costs are based upon the value to replace the system that once the life of that system is over.
   Example: 20 year life span of a roof system and the cost to replace it in 20 years.

FIRE STATION #207

RENOVATION COST MATRIX

Alexandria Fire Department - Alexandria, Virginia

CAPITAL IMPROVEMENTS - SIX YEAR OUTLOOK

Project Description	Priority 1 - 5	UM	Qty	Unit $	Subtotal $	Total $ ESCALATED	2009 1.00	2010 1.03	2011 1.06	2012 1.09	2013 1.12	2014 1.15	Defered	Remarks
BASE YEAR ESTIMATE / SIX YEAR OUTLOOK						$ 478,310	$ 270,840	$ -	$ 119,567	$ -	$ 64,206	$ 23,697	$ -	
Repair Exterior Envelope - Water Penetration	4					**$ 16,391**	$ 16,391							
Power Wash Exterior Surfaces		SF	7,350	$ 0.75	$ 5,513									
Patch and Point Brick		SF	7,350	$ 0.98	$ 7,203									
Paint and Seal		SF	7,350	$ 0.50	$ 3,675									
Masonry Repair	4					**$ 14,258**	$ 14,258							
Replace Masonry - Partial		SF	2,500	$ 5.70	$ 14,258									
Replace Overhead Doors	4					**$ 24,463**			$ 25,931					
Demo		EA	2	$ 250.00	$ 500									
New Overhead Doors		EA	2	$11,981.70	$ 23,963									
Replace Exterior Windows	4					**$ 30,199**					$ 32,917			
Demo		EA	30	$ 50.00	$ 1,500									
New Windows		EA	30	$ 956.64	$ 28,699									
Replace Kitchen	3													
Replace Cabinets						**$ 20,845**			$ 22,096					
Demo		SF	250	$ 4.70	$ 1,175									
New Cabinets		SF	250	$ 78.68	$ 19,670									
Replace Appliances						**$ 6,413**			$ 6,798					
Demo		EA	6	$ 200.00	$ 1,200									
New Appliances		EA	6	$ 868.79	$ 5,213									
Replace Flooring						**$ 4,558**			4,831.32					
Demo		SF	300	$ 2.50	$ 750									
New Flooring		SF	300	$ 12.69	$ 3,808									
Paint interior walls/ceilings	3					**$ 27,937**					$ 31,289			
Walls		SF	7,350	$ 1.74	$ 12,775									
Ceilings		SF	7,350	$ 2.06	$ 15,161									
Replace sanitary sewer - Drain/Waste/Vent	3					**$ 50,828**			$ 53,878					
Demo		SF	7,350	$ 0.75	$ 5,513									
New Sanitary Sewer System		SF	7,350	$ 6.17	$ 45,316									
Replace all wiring	3					**$ 189,451**	$ 189,451							
Demo		SF	7,350	$ 2.50	$ 18,375									
New Wiring - Service & Distribution		SF	7,350	$ 10.95	$ 80,513									
New Wiring - Lighting & Branch Wiring		SF	7,350	$ 12.32	$ 90,563									
Install a new generator	5					**$ 50,740**	$ 50,740							
Demo		EA	1	$ 3,401.63	$ 3,402									
New Generator		EA	1	$47,338.75	$ 47,339									
Replace Concrete - Front ramp	1					**$ 10,200**						$ 11,730		
Demo		SF	1,200	$ 2.50	$ 3,000									
New Front ramp		SF	1,200	$ 6.00	$ 7,200									
Resurface Asphalt Parking Lot	1					**$ 10,406**						$ 11,967		
Resurface		SF	7,350	$ 1.42	$ 10,406									
Replace Sanitary Line	4					**$ 5,691**			$ 6,033					
Demo		SF	7,350	$ 0.50	$ 3,675									
New Sanitary Line		SF	7,350	$ 0.27	$ 2,016									

Notes:

Cost estimate shows the following:
- Project Elements.
- Base Year Costs.
- Distribution of costs
- Differences are due to rounding.

Priority Rating 1 - 5
- 5- Life safety & building security.
- 4- Building exterior & primary systems.
- 3- Building interior finishes and secondary systems.
- 2- Supplemental systems.
- 1- Noncritical systems.

Fire Station 208

Built in 1976 the facility is located on Duke St and has very limited parking at the rear of the facility. The fire station construction is brick masonry construction. Roofing consists flat built–up roof membrane construction.

Masonry decay

HVAC issues

Paving issues

Exterior decay

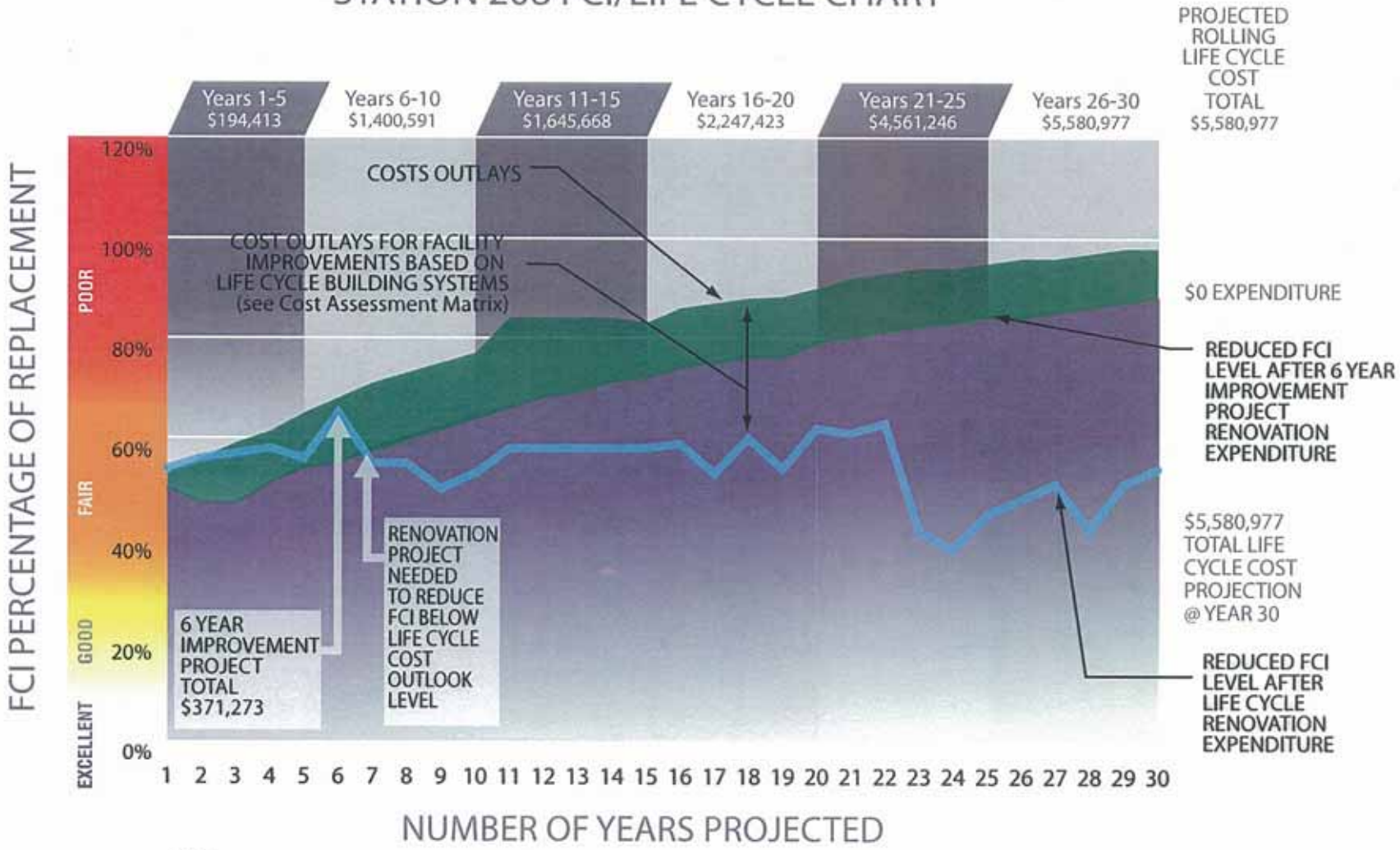
Facility Outlook

The following charts depict the life cycle costs and FCI values over a 30 year outlook, including a six year building renovations improvement project cost matrix.

Station 208

1 inch equals 35 feet

STATION 208 FCI/LIFE CYCLE CHART



NOTE:

1. Facility Condition Index is the ratio of costs to renovate or repair vs. to replace with new as calculated below.

$$(FCI) = \frac{\text{Deferred Maintenance + Capital Renewal}}{\text{Current Replacement Value}}$$

2. Life cycle costs are based upon the value to replace the system that once the life of that system is over.
   Example: 20 year life span of a roof system and the cost to replace it in 20 years.

FIRE STATION #208

RENOVATION COST MATRIX

Alexandria Fire Department - Alexandria, Virginia

CAPITAL IMPROVEMENTS - SIX YEAR OUTLOOK															
BASE YEAR ESTIMATE							SIX YEAR OUTLOOK								
Project Description	Priority 1 - 5	UM	Qty	Unit $	Subtotal $	Total $ ESCALATED	2009 1.00	2010 1.03	2011 1.06	2012 1.09	2013 1.12	2014 1.15	Defered	Remarks
						$ 371,273	$ 118,099	$ 187,287	$ -	$ 6,053	$ 48,104	$ 11,730	$ -	
Repair Exterior Envelope - Water Penetration	4					**$ 25,199**	$ 25,199							
Power Wash Exterior Surfaces		SF	11,300	$ 0.75	$ 8,475									
Patch and Point Brick		SF	11,300	$ 0.98	$ 11,074									
Paint and Seal		SF	11,300	$ 0.50	$ 5,650									
Masonry Repair	4					**$ 14,258**	$ 14,258							
Replace Masonry - Partial		SF	2,500	$ 5.70	$ 14,258									
Paint interior walls/ceilings	3					**$ 42,950**					$ 48,104			
Walls		SF	11,300	$ 1.74	$ 19,641									
Ceilings		SF	11,300	$ 2.06	$ 23,309									
Replace Chiller	4					**$ 50,672**		$ 52,192						
Demo		SF	11,300	$ 0.75	$ 8,475									
New Chiller		SF	11,300	$ 3.73	$ 42,197									
Replace Fan Coil Units	3					**$ 101,112**		$ 104,145						
Demo		SF	11,300	$ 0.75	$ 8,475									
New Fan Coil Units		SF	11,300	$ 8.20	$ 92,637									
Replace Controls	3					**$ 30,049**		$ 30,951						
Demo		SF	11,300	$ 0.75	$ 8,475									
New Controls		SF	11,300	$ 1.91	$ 21,574									
Replace Exit Lights	5					**$ 2,461**	$ 2,461							
Demo		EA	8	$ 75.00	$ 600									
New Exit Lights		EA	8	$ 232.64	$ 1,861									
Repair service trough	4					**$ 2,500**				$ 2,725				
Repair trough		EA	1	$ 2,500.00	$ 2,500									
Replace bathroom/shower lights with flourescent fixtures	1					**$ 3,328**				$ 3,328				
Demo		EA	8	$ 75.00	$ 600									
New Bathroom Lights		EA	8	$ 341.00	$ 2,728									
Install a new generator	5					**$ 76,181**	$ 76,181							
Demo		EA	1	$ 3,401.63	$ 3,402									
New Generator		EA	1	$72,779.31	$ 72,779									
Replace Concrete Apron	2					**$ 10,200**						$ 11,730		
Demo		SF	1,200	$ 2.50	$ 3,000									
New Concrete Apron		SF	1,200	$ 6.00	$ 7,200									

Notes:

Cost estimate shows the following:
- Project Elements.
- Base Year Costs.
- Distribution of costs
- Differences are due to rounding.

Priority Rating 1 - 5
- 5- Life safety & building security.
- 4- Building exterior & primary systems.
- 3- Buiding interior finishes and secondary systems.
- 2- Supplemental systems.
- 1- Noncritical systems.

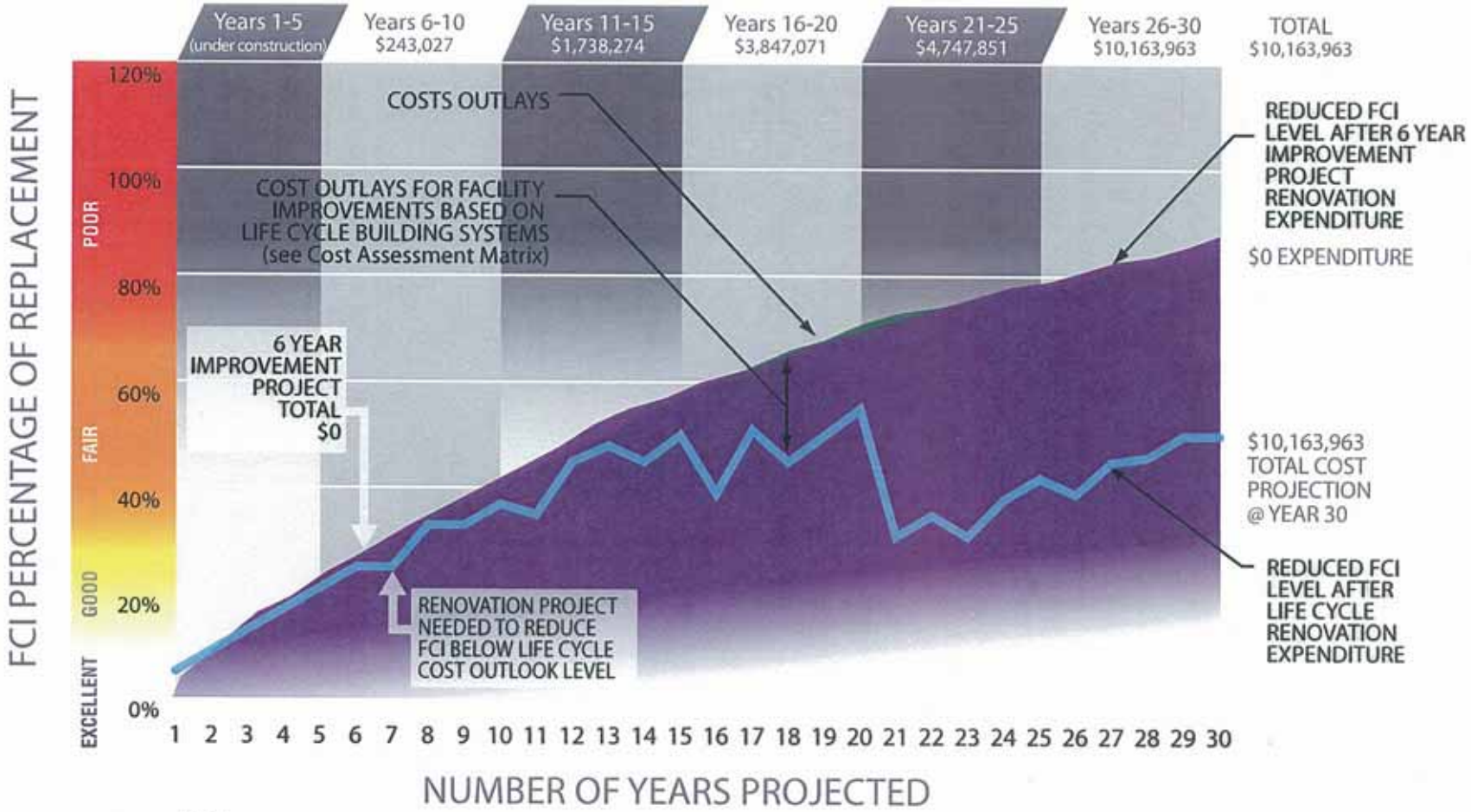
Fire Station 209

Fire station 209 is a 5 bay fire station that occupies the first floor of a multi use building that is under construction. Construction is estimated to be completed in 2009.

Facility Outlook

The following charts depict the life cycle costs and FCI values over a 30 year outlook, including a six year building renovations improvement project cost matrix.

STATION 209 FCI/LIFE CYCLE CHART



NOTE:

1. Facility Condition Index is the ratio of costs to renovate or repair vs. to replace with new as calculated below.

$$(FCI) = \frac{\text{Deferred Maintenance + Capital Renewal}}{\text{Current Replacement Value}}$$

2. Life cycle costs are based upon the value to replace the system that once the life of that system is over.
   Example: 20 year life span of a roof system and the cost to replace it in 20 years.

FIRE STATION #209

RENOVATION COST MATRIX

Alexandria Fire Department - Alexandria, Virginia

CAPITAL IMPROVEMENTS - SIX YEAR OUTLOOK										
BASE YEAR ESTIMATE			SIX YEAR OUTLOOK							
Project Description	Priority 1 - 5	Total $ ESCALATED	2009	2010	2011	2012	2013	2014	Defered	Remarks
			1.00	1.03	1.06	1.09	1.12	1.15		
		$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	
(New Building-No Improvement Projects Required)										

Notes:

Cost estimate shows the following:
- Project Elements.
- Base Year Costs.
- Distribution of costs
- Differences are due to rounding.

Priority Rating 1 - 5
- 5- Life safety & building security.
- 4- Building exterior & primary systems.
- 3- Buiding interior finishes and secondary systems.
- 2- Supplemental systems.
- 1- Noncritical systems.

Training Center

Built in 1989 the facility is collocated at the Lee Center and is used for training purposes. The facility is a steel frame brick building and is shared with other city entities. Roofing consists of EPDM and metal panel construction. There is one vehicle bay for fire station vehicles .

Exterior conditions

Interior conditions

Roof conditions

Site conditions

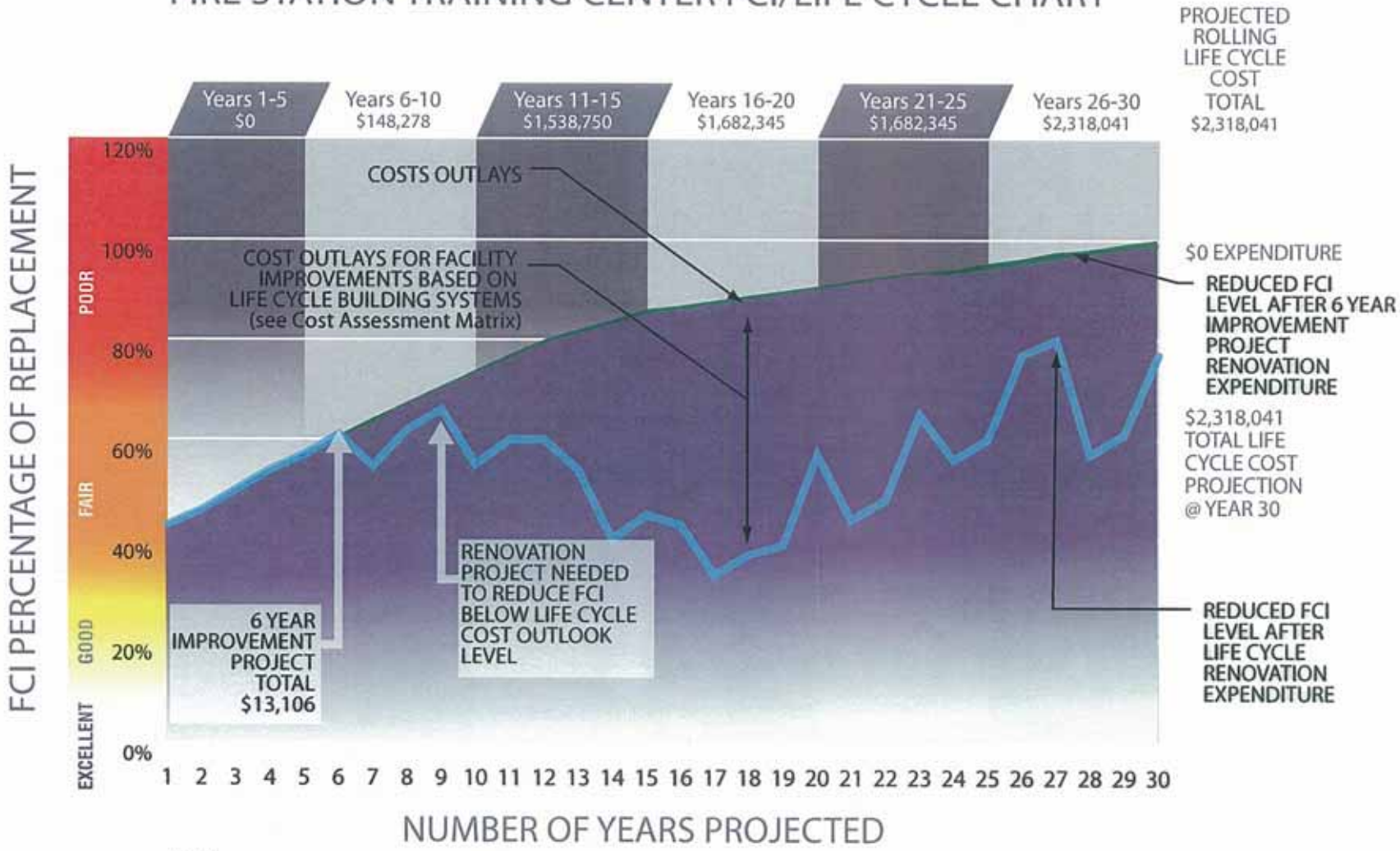
Facility Outlook

The following charts depict the life cycle costs and FCI values over a 30 year outlook, including a six year building renovations improvement project cost matrix.

Lee Center

1 inch equals 85 feet

FIRE STATION TRAINING CENTER FCI/LIFE CYCLE CHART



NOTE:

1. Facility Condition Index is the ratio of costs to renovate or repair vs. to replace with new as calculated below.

$$(FCI) = \frac{\text{Deferred Maintenance + Capital Renewal}}{\text{Current Replacement Value}}$$

2. Life cycle costs are based upon the value to replace the system that once the life of that system is over.
   Example: 20 year life span of a roof system and the cost to replace it in 20 years.

FIRE STATION TRAINING

RENOVATION COST MATRIX

Alexandria Fire Department - Alexandria, Virginia

CAPITAL IMPROVEMENTS - SIX YEAR OUTLOOK														
BASE YEAR ESTIMATE							SIX YEAR OUTLOOK							
Project Description	Priority 1 - 5	UM	Qty	Unit $	Subtotal $	Total $ ESCALATED	2009 1.00	2010 1.03	2011 1.06	2012 1.09	2013 1.12	2014 1.15	Defered	Remarks
						$ 13,106	$ -	$ -	$ -	$ -	$ 13,106	$ -	$ -	
Provide additional visual devices to fire alarm system	4					$ 9,701					$ 10,866			
Add visual devices		SF	6,650	$ 2.92	$ 9,701									
Sitework	2					$ 2,000					$ 2,240			
Miscellaneous Site improvements.		SF	2,955	$ 0.68	$ 2,000									

Notes:

Cost estimate shows the following:
- Project Elements.
- Base Year Costs.
- Distribution of costs
- Differences are due to rounding.

Priority Rating 1 - 5
- 5- Life safety & building security.
- 4- Building exterior & primary systems.
- 3- Building interior finishes and secondary systems.
- 2- Supplemental systems.
- 1- Noncritical systems.

Vehicle Maintenance Shop

Built in 1978 the facility is located on Wheeler Ave and has very limited parking at the rear of the facility. The facility is a prefabricated metal building and is shared with other city entities. Roofing consists of built-up construction. There are 2 maintenance bays in the facility to provide maintenance on fire station vehicles.

Poor exterior conditions

New lift equipment installation

Poor window conditions

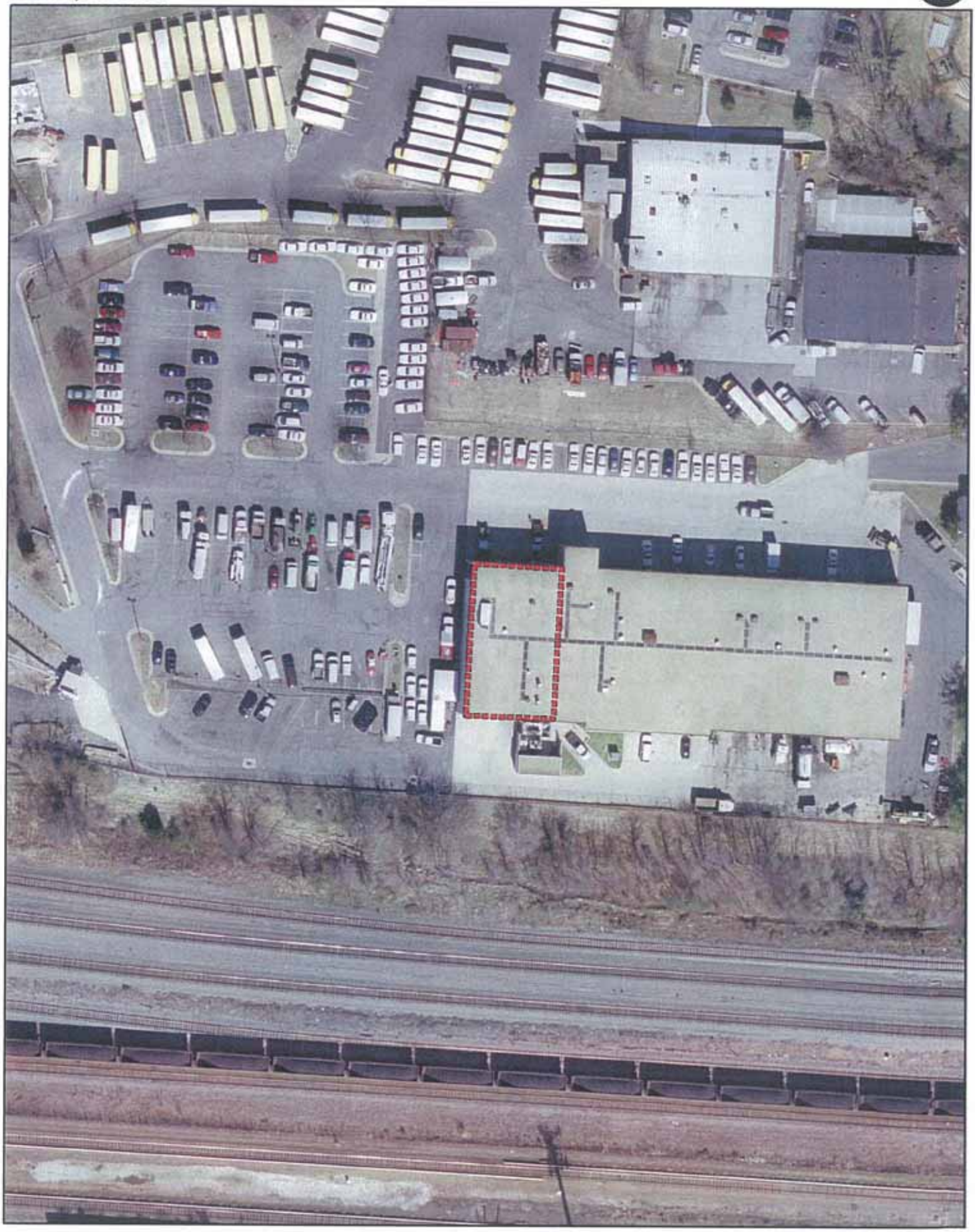
Poor exterior finishes

Facility Outlook

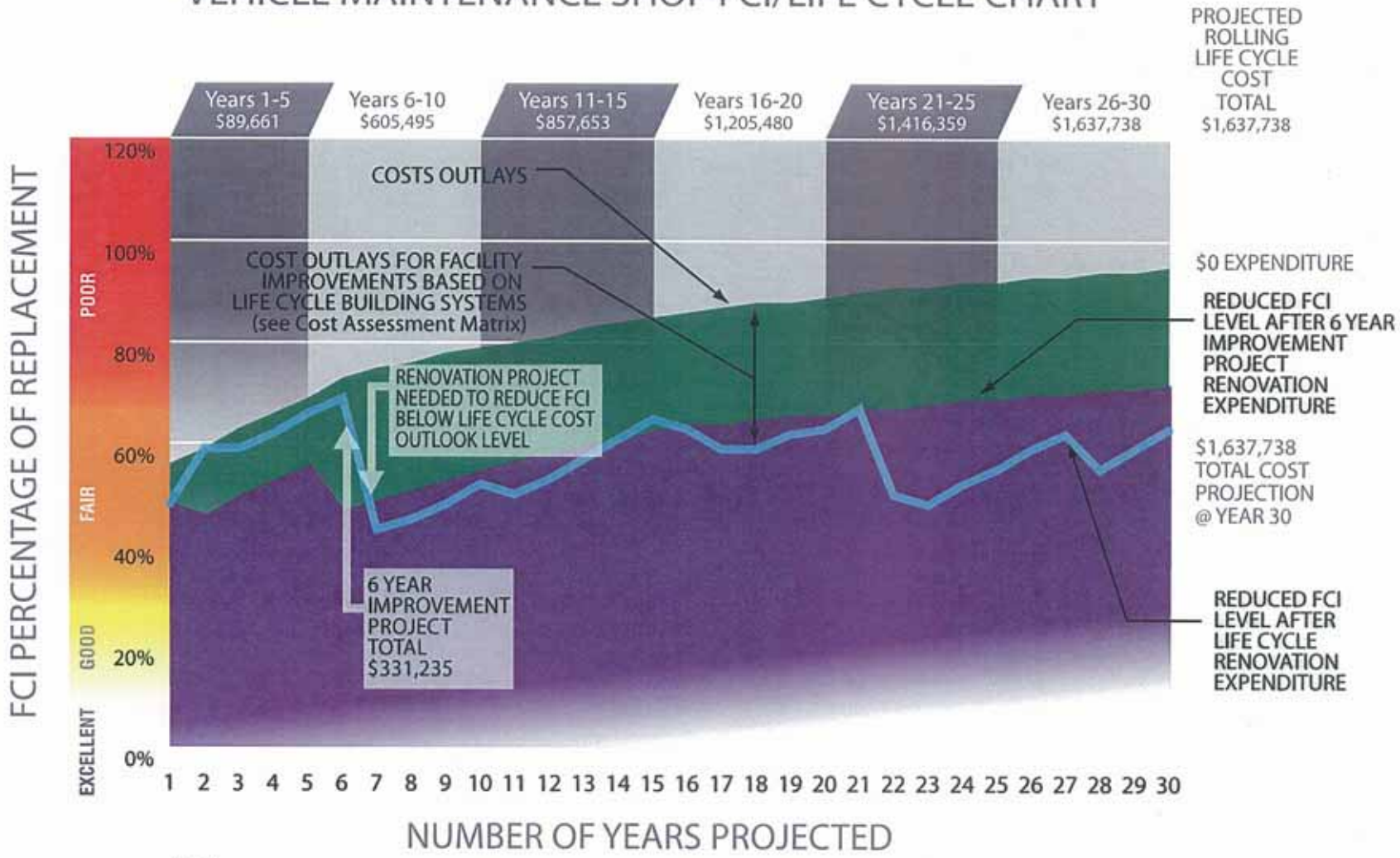
The following charts depict the life cycle costs and FCI values over a 30 year outlook, including a six year building renovations improvement project cost matrix.

Shops

1 inch equals 80 feet



VEHICLE MAINTENANCE SHOP FCI/LIFE CYCLE CHART



NOTE:

1. Facility Condition Index is the ratio of costs to renovate or repair vs. to replace with new as calculated below.

$$(FCI) = \frac{\text{Deferred Maintenance + Capital Renewal}}{\text{Current Replacement Value}}$$

2. Life cycle costs are based upon the value to replace the system that once the life of that system is over.
   Example: 20 year life span of a roof system and the cost to replace it in 20 years.

VEHICLE MAINTENANCE SHOP

RENOVATION COST MATRIX

Alexandria Fire Department - Alexandria, Virginia

CAPITAL IMPROVEMENTS - SIX YEAR OUTLOOK

Project Description	Priority 1 - 5	UM	Qty	Unit $	Subtotal $	Total $ ESCALATED	2009 1.00	2010 1.03	2011 1.06	2012 1.09	2013 1.12	2014 1.15	Defered	Remarks
BASE YEAR ESTIMATE / SIX YEAR OUTLOOK						$ 331,235	$ 133,552	$ 51,469	$ -	$ -	$ -	$ 146,213	$ -	
Repair Exterior Envelope - Water Penetration	4					$ 27,435		$ 28,258						
Power Wash Exterior Surfaces		SF	6,150	$ 0.75	$ 4,613									
Repair Metal Siding		SF	6,150	$ 3.21	$ 19,747									
Paint and Seal		SF	6,150	$ 0.50	$ 3,075									
Replace Exterior Windows	4					$ 8,264		$ 8,512						
Demo		EA	8	$ 50.00	$ 400									
New Windows		EA	8	$ 983.02	$ 7,864									
Replace Exterior Doors	4					$ 14,271		$ 14,699						
Demo		EA	4	$ 250.00	$ 1,000									
New Exterior Doors		EA	4	$ 3,317.76	$ 13,271									
Replace Overhead Doors	4					$ 29,043								
Demo		EA	4	$ 577.00	$ 2,308									
New Exterior OH Doors		EA	4	$ 6,683.67	$ 26,735									
Paint interior walls/ceilings	3					$ 10,487						$11,745.47		
Walls		SF	6,150	$ 0.82	$ 5,018									
Ceilings		SF	6,150	$ 0.89	$ 5,469									
Replace Air handling Units	3					$ 21,487						$22,131.79		
Demo		SF	6,150	$ 0.75	$ 4,613									
New Air handling Units		SF	6,150	$ 2.74	$ 16,875									
Replace Controls	3					$ 26,157						$27,726.04		
Demo		SF	6,150	$ 0.75	$ 4,613									
New Controls		SF	6,150	$ 3.50	$ 21,544									
Replace Light Fixtures with Energy Efficient Ones	3					$ 64,117						$67,964.00		
Demo		SF	6,150	$ 0.75	$ 4,613									
New Light Fixtures		SF	6,150	$ 9.68	$ 59,504									
Replace Exit Lights	5					$ 1,846	$ 1,846							
Demo		EA	6	$ 75.00	$ 450									
New Exit Lights		EA	6	$ 232.64	$ 1,396									
Replace panels.	5					$ 6,300						$ 6,489.00		
Demo		EA	4	$ 75.00	$ 300									
New Panels		EA	4	$ 1,500.00	$ 6,000									
Provide 30 AMP receptacles	2					$ 4,900						$ 5,341.00		
New 30 AMP receptacles		EA	20	$ 245.00	$ 4,900									
Replace fire alarm system	5					$ 17,052	$ 17,052							
Demo		EA	6	$ 75.00	$ 450									
New fire alarm system		SF	6,150	$ 2.70	$ 16,602									
Provide additional receptacles	2					$ 4,300						$ 4,816.00		
New Receptacles		EA	20	$ 215.00	$ 4,300									
Install lift equipment	2					$ 114,654	$ 114,654							Started in 2009
Lift Equipment		SF	6,150	$ 18.64	$ 114,654									

Notes:

Cost estimate shows the following:
- Project Elements.
- Base Year Costs.
- Distribution of costs
- Differences are due to rounding.

Priority Rating 1 - 5
- 5- Life safety & building security.
- 4- Building exterior & primary systems.
- 3- Buiding interior finishes and secondary systems.
- 2- Supplemental systems.
- 1- Noncritical systems.

Burn Building

Built in 1982 the facility is utilized for multi jurisdiction fire training purposes. The facility is a concrete frame with CMU infill. Roofing consists of metal panel construction. A large chimney structure is adjacent to the structure and is a potential liability and serves no functional purpose to the facility.

Burn finish conditions

Large adjacent chimney

Roofing conditions

Interior conditions

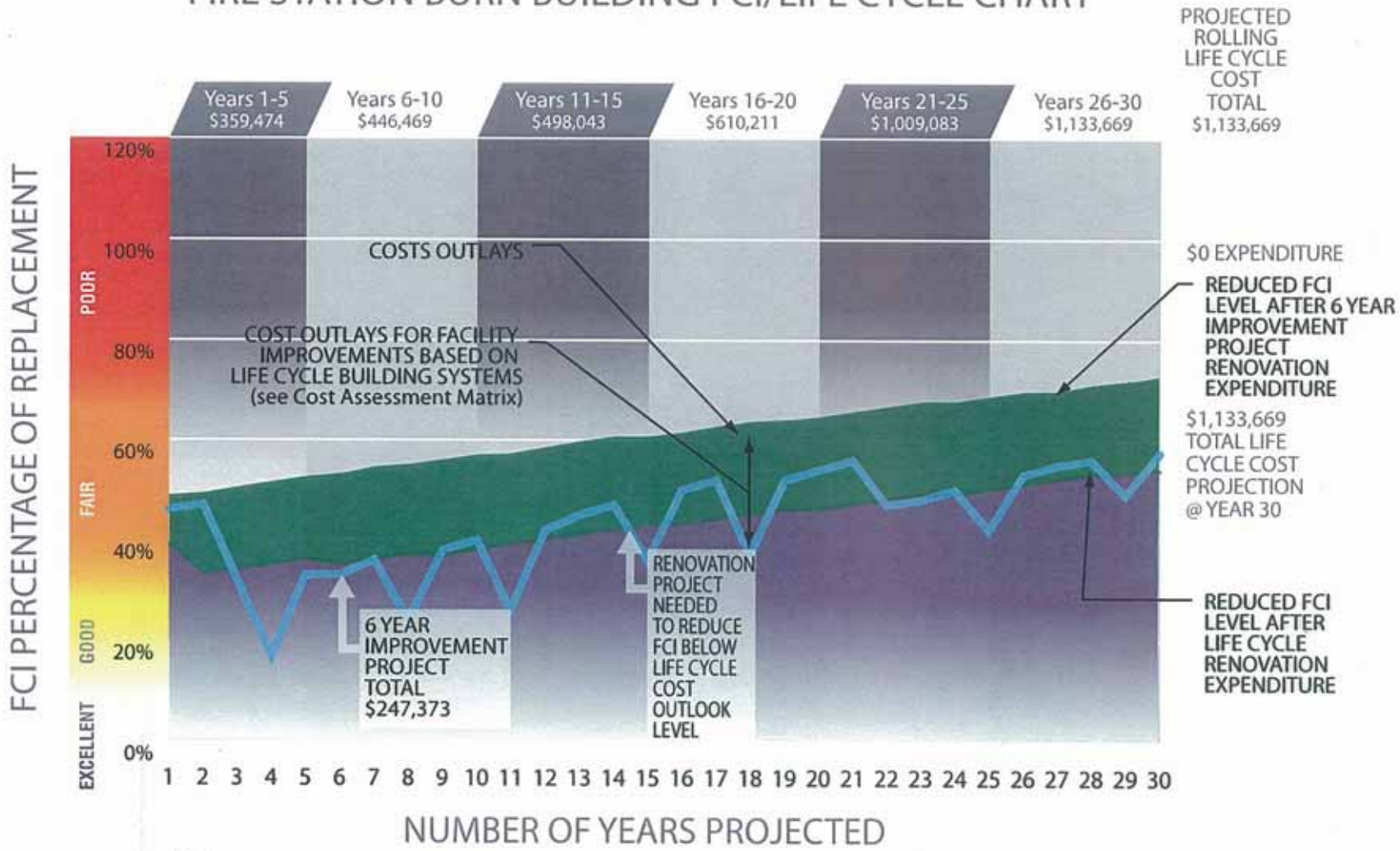
Facility Outlook

The following charts depict the life cycle costs and FCI values over a 30 year outlook, including a six year building renovations improvement project cost matrix.

Burn Building

1 inch equals 50 feet

FIRE STATION BURN BUILDING FCI/LIFE CYCLE CHART



NOTE:

1. Facility Condition Index is the ratio of costs to renovate or repair vs. to replace with new as calculated below.

$$(FCI) = \frac{\text{Deferred Maintenance + Capital Renewal}}{\text{Current Replacement Value}}$$

2. Life cycle costs are based upon the value to replace the system that once the life of that system is over.
   Example: 20 year life span of a roof system and the cost to replace it in 20 years.

FIRE STATION BURN BUILDING

RENOVATION COST MATRIX

Alexandria Fire Department - Alexandria, Virginia

CAPITAL IMPROVEMENTS - SIX YEAR OUTLOOK															
BASE YEAR ESTIMATE							SIX YEAR OUTLOOK								
Project Description	Priority 1 - 5	UM	Qty	Unit $	Subtotal $	Total $ ESCALATED	2009 1.00	2010 1.03	2011 1.06	2012 1.09	2013 1.12	2014 1.15	Defered	Remarks
						$ 247,373	$ 134,203	$ 81,887	$ -	$ -	$ -	$ 31,283	$ -	
Masonry/Conc Repair	4					$ 50,385	$ 50,385							
Power Wash Exterior Surfaces		SF	4,400	$ 0.75	$ 3,300									
Patch and Point Masonry		SF	4,400	$ 0.98	$ 4,312									
Repair Masonry/Conc		SF	2,500	$ 17.11	$ 42,773									
Replace Exterior Doors	4					$ 11,016	$ 11,016							
Demo		EA	4	$ 250.00	$ 1,000									
New Exterior Doors		EA	4	$ 2,503.89	$ 10,016									
Replace Exterior Windows	4					$ 27,780	$ 27,780							
Demo		EA	36	$ 50.00	$ 1,800									
New Windows		EA	36	$ 721.68	$ 25,980									
Stair restoration	4					$ 16,085		$ 16,568						
Stairs		SF	4,400	$ 3.66	$ 16,085									
Interior renovation	3					$ 63,416		$ 65,319						
Restore Interior		SF	4,400	$ 14.41	$ 63,416									
Replace Roof	4					$ 27,947						$ 27,947		
Demo		SF	4,400	$ 1.75	$ 7,700									
New Roof		SF	4,400	$ 4.60	$ 20,247									
Electrical work	3					$ 27,107	$ 27,107							
Repair Electrical		SF	4,400	$ 6.16	$ 27,107									
Replace Heat monitoring equipment	2					$ 17,915	$ 17,915							
Demo		SF	4,400	$ 0.10	$ 440									
New Heat monitoring equipment		SF	4,400	$ 3.97	$ 17,475									
Sitework	2					$ 2,979						$ 3,336		
Miscellaneous Site improvements.		SF	4,400	$ 0.68	$ 2,979									

Notes:

Cost estimate shows the following:
- Project Elements.
- Base Year Costs.
- Distribution of costs
- Differences are due to rounding.

Priority Rating 1 - 5
- 5- Life safety & building security.
- 4- Building exterior & primary systems.
- 3- Building interior finishes and secondary systems.
- 2- Supplemental systems.
- 1- Noncritical systems.

FIRE STATION FACILITIES

Alexandria Fire Department - Alexandria, Virginia

Opinion Of Probable Cost

The basis for this Opinion Of Probable Cost was established using the following assumptions to provide estimates for the Fire Station Facilities, Alexandria, Virginia.

The PACES (Parametric Cost Engineering System) estimating software was selected for this Project because it provides estimates based on cost models for many types of facilities and sitework systems where very little, if any, design information exists. Each model contains a set of parameters that allow the model to be "customized" to fit the specific requirements of the proposed project. PACES uses the model equations together with parametric information to calculate a detailed estimate of the construction costs for the project.

The Estimates are based on the best available information regarding the anticipated scope of the project. Changes in the cost elements are likely to occur as a result of new information and data collected during the design and engineering process. Major changes should be documented in the form of a memorandum to the administrative record file with an explanation of significant differences.

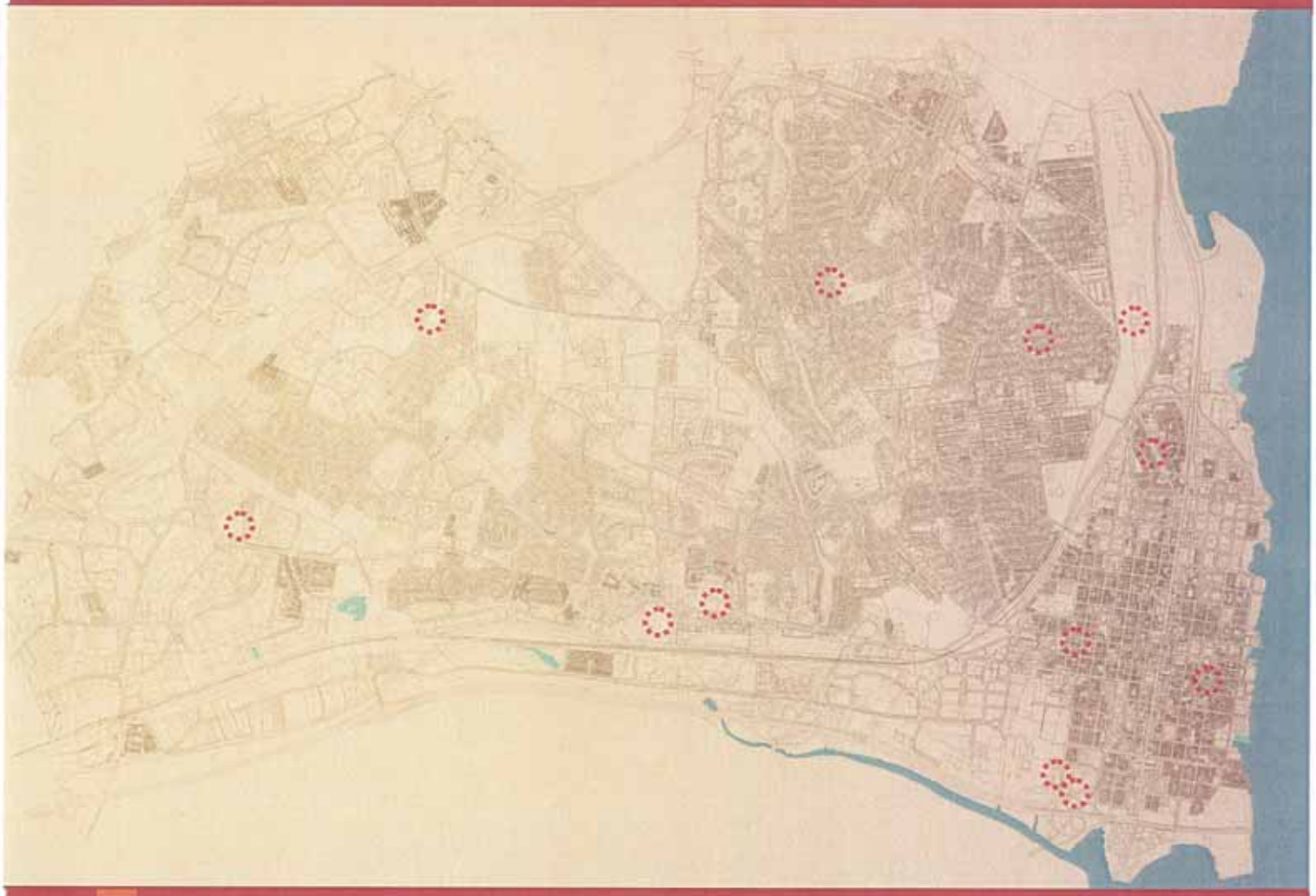
The quantity survey for this project is detailed as possible and indicative of the levels of design and documentation available, and does not indicate a higher degree of accuracy than is actually possible. Where quantities are not available, assumptions have been made based on the historical information from a similar type or other recently estimated project(s).

The pricing used reflects the probable construction costs for the scheduled time period of the project. This estimate assumes a competitive bid situation, and is an opinion of probable costs based on fair market value, and is not a prediction of the anticipated low bid. This estimate assumes no control over the cost of labor and materials, the General Contractor's or any subcontractor's method of determining price or competitive bidding and market conditions.

This opinion of probable cost of construction is made on the basis of the experience, qualifications, and best judgment of the Cost Estimator. There can be no guarantee that proposals, bid or actual construction costs will not vary from this or subsequent estimates. This estimate was prepared in accordance with generally accepted cost estimating practices and standards.

Based on the criteria for Project Definition and Estimating Methodologies, the Fire Station estimates would be considered Stochastic, Order of Magnitude, or a Study, where project engineering has yet to be developed. Stochastic estimates are prepared for any number of strategic business planning purposes, such as but not limited to assessment of initial viability, evaluation of alternate schemes, project screening, project location studies, evaluation of resource needs and budgeting, and long range capital planning.

CITY OF ALEXANDRIA
DEPARTMENT OF GENERAL SERVICES



FIRE STATION FACILITIES STUDY

Appendix

Draft Report
Decenber 19, 2008
FOR OFFICIAL USE ONLY

Baker

Facility Recommendation Summary

EXISTING FACILITIES

FACILITY NAME	TYPE	Date Orig. Const.	Bldg SF Total	No. Bays	Current FCI	FCI After 6 Years (No Expenditure)	FCI After 6 Years (After Expenditure)	6 Year Project Improvement Costs	Recommendation
Fire Station 201	Fire Station	1921	5,770	2	63%	80%	67%	$218,717.18	Historic: No Replacement Option
Fire Station 202	Fire Station	1926	7,810	3	39%	56%	55%	$32,697.85	Historic District: Plan For Renovation
Fire Station 203	Fire Station	1948	5,910	2	69%	81%	60%	$389,712.13	*Plan For Renovation
Fire Station 204	Fire Station	1961/2001	20,590	3	38%	56%	56%	$31,674.69	Plan For Renovation
Fire Station 205	Fire Station	1949	8,140	2	80%	95%	74%	$527,877.28	Plan For Replacement
Fire Station 206	Fire Station	1958	8,330	2	80%	94%	75%	$473,903.46	Plan For Replacement
Fire Station 207	Fire Station	1963	7,350	2	75%	88%	67%	$478,309.58	*Plan For Renovation
Fire Station 208	Fire Station	1976	11,300	2	54%	69%	58%	$371,273.25	Plan For Major Renovation
Fire Station 209	Fire Station	2009	23,500	5	0%	22%	22%	$0.00	Plan For Minor Renovation
Vehicle Maint. Shop	Vehicle Maint.	1978	6,150	2	59%	74%	47%	$331,234.63	*Plan For Renovation
Fire Station Training	Training Facility	1989	6,650	1	43%	61%	60%	$13,105.97	Plan For Renovation
Fire Station Burn Bldg.	Training Facility	1982	4,400	0	49%	53%	35%	$247,373.03	Plan For Renovation
6 Year Improvement Project Total			**115900**					**$3,115,879.05**	
6 Year Approved FY09 CFMP Budget Total								**$1,637,301.00**	
6 Year Funding Deficit Total								**($1,478,578.05)**	

Note : As a general rule when FCI values reach 70% or more it is generally more cost effective to replace the facility vs. continued repair and renovation.
This rule of thumb is generally used by a number of federal agencies including the US Army Corps of Engineers as a metric for consideration to replace a facility vs. continuing to repair.
Other considerations include the following:

The mission or critical nature of the facility in question
The Historic nature of the facility in question.
Budgetary and phasing considerations.
Impact to ongoing operations of the facility.

Exceeds 70% FCI
Nearing 70% FCI or reduced below 70% by anticipated renovation expenditure
* Recommend replacement if renovations are not sufficient to lower FCI values below 70%.

NEW PROPOSED FACILITIES

FACILITY NAME	Bldg SF Total	6 Year Proposed Project Costs	Recommendation
Fire Station 205 Replacement	18,500	$ 8,000,000	New larger more modern facility
Fire Station 206 Replacement	18,500	$ 8,000,000	New larger more modern facility
New Fire Station 210	18,500	$ 8,000,000	New Modern Facility
New Fire Station 211	18,500	$ 8,000,000	New Modern Facility
Total	**74,000**	**$ 32,000,000**	

Note: costs indicated are escalated @ 3% per year and do not include any land acquisition costs.

Capital Improvement Plan CIP

Alexandria Fire Department - Alexandria, Virginia

CIP AND SUSTAINMENT OUTLOOK													CIP RESULT		
BASE ESTIMATE SUMMARY	*ESCALATED COSTS PER YEAR*											*TOTAL ESCALATED COSTS*	SIZE	AGE	RESULTS
Fire Stations & Project Descriptions	2009	2010	2011	2012	2013	2014	Yr 7 - 10	Yr 11 - 15	Yr 16 - 20	Yr 21 - 25	Yr 26 - 30				
RUNNING LIFE CYCLE / SUSTAINMENT COST OUTLOOK	$ 34,096	$ 1,053,585	$ 603,124	$ 79,844	$ 46,873	$ 2,000,016	$ 5,901,668	$ 6,754,009	$ 6,361,192	$ 21,635,160	$ 11,092,652	$ 56,062,217			
PROJECT IMPROVEMENTS - SIX YEAR OUTLOOK	$ 1,004,029	$ 580,654	$ 432,128	$ 483,011	$ 339,424	$ 306,634	$ -	$ -	$ -	$ -	$ -	$ 3,115,879			
NEW CONSTRUCTION PROJECTS W/ SUSTAINMENT					$ 32,000,000	$ -	$ -	$ 2,116,772	$ 5,044,405	$ 11,164,051	$ 13,778,078	$ 64,102,306	SF	+30 YEARS	REMARKS
Fire Station #201													5770	116	RENOVATED HISTORIC STRUCTURE
RUNNING LIFE CYCLE / SUSTAINMENT COST OUTLOOK	$ -	$ 76,656	$ -	$ -	$ -	$ 216,782	$ 469,995	$ 212,454	$ 295,573	$ 1,005,486	$ 564,053	$ 2,389,998			SMALL / ANTIQUATED / 2 BAY
PROJECT IMPROVEMENTS - SIX YEAR OUTLOOK	$ 44,392	$ -	$ 141,320	$ -	$ -	$ 33,004						$ 218,717			
NO REPLACEMENT ANTICIPATED												$ -			
Fire Station #202													7810	113	RENOVATED HISTORIC STRUCTURE
RUNNING LIFE CYCLE / SUSTAINMENT COST OUTLOOK	$ -	$ 30,869	$ -	$ -	$ -	$ 24,257	$ 194,895	$ 549,297	$ 646,557	$ 1,680,045	$ 849,540	$ 3,971,061			SMALL / ANTIQUATED / 3 BAY
PROJECT IMPROVEMENTS - SIX YEAR OUTLOOK	$ -	$ -	$ -	$ -	$ 32,696	$ -						$ 32,696			
NO REPLACEMENT ANTICIPATED												$ -			
Fire Station #203													5910	91	RENOVATED STRUCTURE
RUNNING LIFE CYCLE / SUSTAINMENT COST OUTLOOK	$ -	$ 167,875	$ 108,141	$ -	$ -	$ 276,016	$ 391,892	$ 92,601	$ 337,009	$ 1,487,066	$ 442,250	$ 3,302,854			SMALL / ANTIQUATED / 2 BAY
PROJECT IMPROVEMENTS - SIX YEAR OUTLOOK	$ -	$ -	$ -	$ 369,712	$ -	$ -						$ 369,712			
NO REPLACEMENT ANTICIPATED												$ -			MAY REQUIRE REPLACEMENT LONG TERM
Fire Station #204													20590	39	WAS EXPANDED
RUNNING LIFE CYCLE / SUSTAINMENT COST OUTLOOK	$ -	$ -	$ -	$ -	$ -	$ 184,868	$ 762,791	$ 3,294,353	$ 846,205	$ 3,291,656	$ 345,868	$ 7,334,741			MODERN 3 BAY
PROJECT IMPROVEMENTS - SIX YEAR OUTLOOK	$ -	$ -	$ -	$ -	$ -	$ 31,675						$ 31,675			CURRENT HQ
NO REPLACEMENT ANTICIPATED												$ -			
Fire Station #205													8140	90	REPLACEMENT RECOMMENDED
RUNNING LIFE CYCLE / SUSTAINMENT COST OUTLOOK	$ -	$ 98,820	$ 117,944	$ -	$ -	$ 286,156	$ 871,153	$ 168,286	$ 476,455	$ 3,109,141	$ 782,044	$ 6,010,000			SMALL / ANTIQUATED / 2 BAY
PROJECT IMPROVEMENTS - SIX YEAR OUTLOOK	$ 211,211	$ 104,074	$ 62,600	$ -	$ 132,641	$ 17,301						$ 527,877			
18,500 SF REPLACEMENT ANTICIPATED	REPLACEMENT WITHIN 5 YEARS RECOMMENDED				$ 6,000,000	$0.00	$0.00	$528,942.97	$1,261,101.31	$2,791,012.70	$3,444,519.43	$ 10,025,576	18500	25	LARGER MODERN FACILITY
Fire Station #206													8330	81	REPLACEMENT RECOMMENDED
RUNNING LIFE CYCLE / SUSTAINMENT COST OUTLOOK	$ -	$ 100,823	$ 66,462	$ 79,844	$ -	$ 262,135	$ 1,056,535	$ 47,827	$ 367,472	$ 3,232,880	$ 814,300	$ 6,030,196			SMALL / ANTIQUATED / 2 BAY
PROJECT IMPROVEMENTS - SIX YEAR OUTLOOK	$ 91,732	$ 155,937	$ 108,588	$ 57,246	$ 48,676	$ 11,730						$ 473,909			
18,500 SF REPLACEMENT ANTICIPATED	REPLACEMENT WITHIN 5 YEARS RECOMMENDED				$ 6,000,000	$0.00	$0.00	$528,942.97	$1,261,101.31	$2,791,012.70	$3,444,519.43	$ 10,025,576	18500	25	LARGER MODERN FACILITY
Fire Station #207													7350	76	RENOVATED STRUCTURE
RUNNING LIFE CYCLE / SUSTAINMENT COST OUTLOOK	$ -	$ 182,936	$ 142,681	$ -	$ -	$ 283,993	$ 369,689	$ 48,863	$ 378,979	$ 3,704,534	$ 396,500	$ 5,389,577			SMALL / ANTIQUATED / 2 BAY
PROJECT IMPROVEMENTS - SIX YEAR OUTLOOK	$ 270,840	$ -	$ 119,567	$ -	$ 64,206	$ 23,697						$ 478,310			
NO REPLACEMENT ANTICIPATED												$ -			MAY REQUIRE REPLACEMENT LONG TERM
Fire Station #208													11300	63	RENOVATED STRUCTURE
RUNNING LIFE CYCLE / SUSTAINMENT COST OUTLOOK	$ -	$ 101,515	$ 92,898	$ -	$ -	$ 329,501	$ 885,677	$ 240,077	$ 601,755	$ 2,313,823	$ 1,019,731	$ 5,585,979			SMALL / ANTIQUATED / 2 BAY
PROJECT IMPROVEMENTS - SIX YEAR OUTLOOK	$ 118,099	$ 167,287	$ -	$ 6,053	$ 48,134	$ 11,730						$ 171,273			
NO REPLACEMENT ANTICIPATED												$ -			MAY REQUIRE REPLACEMENT LONG TERM
Fire Station #209													23500	30	RENOVATED STRUCTURE
RUNNING LIFE CYCLE / SUSTAINMENT COST OUTLOOK	$0	$0	$0	$0	$0	$0	$ 243,028	$ 1,495,247	$ 2,108,797	$ 900,750	$ 5,416,112	$ 10,163,964			MODERN FACILITY
PROJECT IMPROVEMENTS - SIX YEAR OUTLOOK	$ -	$ -	$ -	$ -	$ -	$ -						$ -			
NO REPLACEMENT ANTICIPATED												$ -			
Vehicle Maintenance Shop													6150	61	RENOVATED STRUCTURE
RUNNING LIFE CYCLE / SUSTAINMENT COST OUTLOOK	$0	$55,034	$23,735	$0	$16,891	$91,350	$ 424,484.27	$252,158	$347,828	$210,879	$221,379	$ 1,637,738			
PROJECT IMPROVEMENTS - SIX YEAR OUTLOOK	$ 133,552	$ 51,469	$ -	$ -	$ -	$ 146,213						$ 331,235			
NO REPLACEMENT ANTICIPATED												$ -			MAY REQUIRE REPLACEMENT LONG TERM
Fire Station Training													6650	50	RENOVATED STRUCTURE
RUNNING LIFE CYCLE / SUSTAINMENT COST OUTLOOK	$0	$0	$0	$0	$0	$153,857	$ 44,421	$ 1,390,472	$ 143,595	$ -	$ 535,696	$ 2,318,041			
PROJECT IMPROVEMENTS - SIX YEAR OUTLOOK	$ -	$ -	$ -	$ -	$ 13,106	$ -						$ 13,106			
NO REPLACEMENT ANTICIPATED												$ -			
Burn Building													4400	57	RENOVATED STRUCTURE
RUNNING LIFE CYCLE / SUSTAINMENT COST OUTLOOK	$34,096	$240,156	$48,242	$0	$35,981	$0	$ 86,995	$ 51,574	$ 112,168	$ 398,872	$ 134,586	$ 1,133,669			
PROJECT IMPROVEMENTS - SIX YEAR OUTLOOK	$ 134,201	$ 81,697	$ -	$ -	$ -	$ 31,283						$ 247,371			
NO REPLACEMENT ANTICIPATED												$ -			
Future Facility Outlook															
18,500 SF FIRE STATION 210	CONSTRUCTION WITH IN 5 YEARS RECOMMENDED				$ 6,000,000	$0.00	$0.00	$528,942.97	$1,261,101.31	$2,791,012.70	$3,444,519.43	$ 10,025,576	18500	25	MODERN FACILITY
18,500 SF FIRE STATION 211	CONSTRUCTION WITH IN 5 YEARS RECOMMENDED				$ 6,000,000	$0.00	$0.00	$528,942.97	$1,261,101.31	$2,791,012.70	$3,444,519.43	$ 10,025,576	18500	25	MODERN FACILITY

Note: costs indicated are escalated @ 3% per year and do not include any land acquisition costs.

Improvement Projects - Life Cycle and Sustainment Summary

Alexandria Fire Department - Alexandria, Virginia

IMPROVEMENT PROJECTS and RUNNING LIFE CYCLE / SUSTAINMENT OUTLOOK															
BASE ESTIMATE SUMMARY			ESCALATED COSTS PER YEAR												TOTAL ESCALATED COSTS
Fire Stations & Project Descriptions	Priority 1 - 5	Base Year (BY)	2009	2010	2011	2012	2013	2014	Yr 7 - 10	Yr 11 - 15	Yr 16 - 20	Yr 21 - 25	Yr 26 - 30	
RUNNING LIFE CYCLE / SUSTAINMENT COST OUTLOOK	TOTAL >		$ 34,096	$ 1,053,585	$ 603,124	$ 79,844	$ 46,873	$ 2,000,016	$ 5,901,666	$ 6,754,009	$ 6,361,192	$ 21,635,160	$ 11,592,652	$ 56,062,217
PROJECT IMPROVEMENTS - SIX YEAR OUTLOOK	TOTAL >	$ 2,975,381	$ 1,004,029	$ 580,654	$ 432,128	$ 453,011	$ 339,424	$ 306,634	$ -	$ -	$ -	$ -	$ -	$ 3,115,879
Fire Station #201															
RUNNING LIFE CYCLE / SUSTAINMENT COST OUTLOOK			$ -	$ 75,655	$ -	$ -	$ -	$ 216,782	$ 469,995	$ 212,454	$ 295,573	$ 1,555,486	$ 564,053	$ 3,389,998
PROJECT IMPROVEMENTS - SIX YEAR OUTLOOK		$ 206,518	$ 44,382	$ -	$ 141,329	$ -	$ -	$ 33,804						$ 218,717
Replace Exterior Windows	4	$ 23,760	$ -	$ -	$ 24,493	$ -	$ -	$ -						
Replace Exterior Doors	4	$ 13,884	$ -	$ -	$ -	$ -	$ -	$ 15,967						
Refinish Exterior	4	$ 12,867	$ -	$ -	$ -	$ -	$ -	$ 14,797						
Replace Flooring	3	$ 87,663	$ -	$ -	$ 92,922	$ -	$ -	$ -						
Paint - Walls/Ceiling	3	$ 21,931	$ -	$ -	$ 23,905	$ -	$ -	$ -						
Replace Boiler	4	Complete by 2009		$ -	$ -	$ -	$ -	$ -						
Replace Hot Water Distribution	4	Complete by 2009		$ -	$ -	$ -	$ -	$ -						
Replace Controls	4	Complete by 2009	$ -	$ -	$ -	$ -	$ -	$ -						
Install exits lights as per code.	5	$ 1,538	$ 1,538	$ -	$ -	$ -	$ -	$ -						
Install GFI receptacles in the kitchen.	5	$ 1,303	$ 1,303	$ -	$ -	$ -	$ -	$ -						
Install smoke detectors in the corridors.	5	$ 987	$ 987	$ -	$ -	$ -	$ -	$ -						
Install a new generator	5	$ 40,564	$ 40,564	$ -	$ -	$ -	$ -	$ -						
Miscellaneous Site improvements.	1	$ 2,000	$ -	$ -	$ -	$ -	$ -	$ 2,240						
Fire Station #202															
RUNNING LIFE CYCLE / SUSTAINMENT COST OUTLOOK			$ -	$ 30,868	$ -	$ -	$ -	$ 24,257	$ 194,695	$ 545,297	$ 646,357	$ 1,580,045	$ 849,540	$ 3,871,061
PROJECT IMPROVEMENTS - SIX YEAR OUTLOOK		$ 29,195	$ -	$ -	$ -	$ -	$ 32,698	$ -						$ 32,698
Replace Overhead Doors	4	$ 27,194	$ -	$ -	$ -	$ -	$ 30,457	$ -						
Replace Plumbing Distribution	3	Complete by 2009	$ -	$ -	$ -	$ -	$ -	$ -						
Install Fire Protection System	5	Complete by 2009	$ -	$ -	$ -	$ -	$ -	$ -						
Replace all receptacles and light switches.	3	Complete by 2009	$ -	$ -	$ -	$ -	$ -	$ -						
Move AC cable/data wiring away from gas and water piping	5	Complete by 2009	$ -	$ -	$ -	$ -	$ -	$ -						
Relocate laundry receptacle away from the waterlines.	5	Complete by 2009	$ -	$ -	$ -	$ -	$ -	$ -						
Replace wiring in the apparatus bay and basement	3	Complete by 2009	$ -	$ -	$ -	$ -	$ -	$ -						
Install a new generator	5	Complete by 2009	$ -	$ -	$ -	$ -	$ -	$ -						
Miscellaneous Site improvements.	2	$ 2,000	$ -	$ -	$ -	$ -	$ 2,240	$ -						
Fire Station #203															
RUNNING LIFE CYCLE / SUSTAINMENT COST OUTLOOK			$ -	$ 167,875	$ 108,141	$ -	$ -	$ 276,016	$ 391,692	$ 92,601	$ 337,909	$ 1,487,066	$ 442,255	$ 3,302,654
PROJECT IMPROVEMENTS - SIX YEAR OUTLOOK		$ 257,534	$ -	$ -	$ -	$ 389,712	$ -	$ -						$ 389,712
Replace Metal Roofing	4	$ 6,712	$ -	$ -	$ -	$ 7,316	$ -	$ -						
Replace Kitchen	3	$ 24,479	$ -	$ -	$ -	$ 26,682	$ -	$ -						
Replace Flooring	3	$ 89,780	$ -	$ -	$ -	$ 97,871	$ -	$ -						
Paint - Walls/Ceiling	3	$ 22,463	$ -	$ -	$ -	$ 24,485	$ -	$ -						
Boiler Replacement - Entire Facility	4	Complete by 2009	$ -	$ -	$ -	$ -	$ -	$ -						
Electrical	5	$ 165,336	$ -	$ -	$ -	$ 180,217	$ -	$ -						
Electrical Systems	5	$ 46,754	$ -	$ -	$ -	$ 50,962	$ -	$ -						
Sitework	2	$ 2,000	$ -	$ -	$ -	$ 2,180	$ -	$ -						
Fire Station #204															
RUNNING LIFE CYCLE / SUSTAINMENT COST OUTLOOK			$ -	$ -	$ -	$ -	$ -	$ 184,968	$ 762,701	$ 2,304,353	$ 645,205	$ 3,091,656	$ 345,858	$ 7,234,741
PROJECT IMPROVEMENTS - SIX YEAR OUTLOOK		$ 27,543	$ -	$ -	$ -	$ -	$ -	$ 31,675						$ 31,675
Supplement / Modify 2nd Floor Heating & Cooling system	4	$ 25,543	$ -	$ -	$ -	$ -	$ -	$ 29,374						
Miscellaneous Site improvements.	2	$ 2,000	$ -	$ -	$ -	$ -	$ -	$ 2,300						

IMPROVEMENT PROJECTS and RUNNING LIFE CYCLE / SUSTAINMENT OUTLOOK

BASE ESTIMATE SUMMARY			ESCALATED COSTS PER YEAR											TOTAL ESCALATED COSTS
Fire Stations & Project Descriptions	Priority 1 - 5	Base Year (BY)	2009	2010	2011	2012	2013	2014	Yr 7 - 10	Yr 11 - 15	Yr 16 - 20	Yr 21 - 25	Yr 26 - 30	
RUNNING LIFE CYCLE / SUSTAINMENT COST OUTLOOK	TOTAL >		$ 34,096	$ 1,053,585	$ 603,124	$ 79,844	$ 46,873	$ 2,000,016	$ 5,901,666	$ 6,754,009	$ 6,361,192	$ 21,635,160	$ 11,592,652	$ 56,062,217
PROJECT IMPROVEMENTS - SIX YEAR OUTLOOK	TOTAL >	$ 2,975,381	$ 1,004,029	$ 580,654	$ 432,128	$ 453,011	$ 339,424	$ 306,634	$ -	$ -	$ -	$ -	$ -	$ 3,115,879
Fire Station #205														
RUNNING LIFE CYCLE / SUSTAINMENT COST OUTLOOK			$ -	$ 98,620	$ 117,944	$ -	$ -	$ 256,156	$ 971,753	$ 168,286	$ 476,455	$ 3,159,141	$ 762,244	$ 6,010,600
PROJECT IMPROVEMENTS - SIX YEAR OUTLOOK		$ 503,956	$ 211,211	$ 104,074	$ 62,650	$ -	$ 132,641	$ 17,301						$ 527,877
Repair Exterior Envelope - Water Penetration	4	$ 18,152	$ 18,152	$ -	$ -	$ -	$ -	$ -						
Replace Overhead Doors	4	$ 27,289	$ -	$ -	$ 28,926	$ -	$ -	$ -						
Replace Roofing - Water Remediation	4	$ 56,736	$ 56,736	$ -	$ -	$ -	$ -	$ -						
Remove Hazardous Materials Asbestos - Hose tower stairs	5	$ 3,665	$ 3,665	$ -	$ -	$ -	$ -	$ -						
Paint interior walls/ceilings	3	$ 30,939	$ -	$ -	$ 33,724	$ -	$ -	$ -						
Replace Flooring	3	$ 109,425	$ -	$ -	$ -	$ -	$ 122,556	$ -						
Replace Water Distribution System	4	$ 44,751	$ -	$ 46,094	$ -	$ -	$ -	$ -						
Replace sanitary sewer - Drain/Waste/Vent	4	$ 56,291	$ -	$ 57,980	$ -	$ -	$ -	$ -						
Replace HVAC - EMS quarters	4	$ 24,887	$ 24,887	$ -	$ -	$ -	$ -	$ -						
Replace HVAC - Officers quarters	4	$ 16,591	$ 16,591	$ -	$ -	$ -	$ -	$ -						
Replace Controls	4	$ 21,646	$ 21,646	$ -	$ -	$ -	$ -	$ -						
Replace hydronic Piping	4	$ 13,018	$ 13,018	$ -	$ -	$ -	$ -	$ -						
Install Smoke Detectors	5	$ 687	$ 687	$ -	$ -	$ -	$ -	$ -						
Replace Light Fixture Lenses	1	$ 15,045	$ -	$ -	$ -	$ -	$ -	$ 17,301						
Install a new generator	5	$ 55,826	$ 55,826	$ -	$ -	$ -	$ -	$ -						
Replace Concrete - Front ramp	4	Complete by 2009	$ -	$ -	$ -	$ -	$ -	$ -						
Replace Sanitary Line	4	$ 9,005	$ -	$ -	$ -	$ -	$ 10,085	$ -						
Fire Station #206														
RUNNING LIFE CYCLE / SUSTAINMENT COST OUTLOOK			$ -	$ 100,922	$ 68,482	$ 79,844	$ -	$ 262,135	$ 1,056,535	$ 47,627	$ 367,472	$ 3,232,880	$ 814,300	$ 6,030,196
PROJECT IMPROVEMENTS - SIX YEAR OUTLOOK		$ 451,744	$ 91,732	$ 155,937	$ 108,590	$ 57,246	$ 48,670	$ 11,730						$ 473,903
Repair Exterior Envelope - Water Penetration	4	$ 16,576	$ 16,576	$ -	$ -	$ -	$ -	$ -						
Masonry Repair	4	$ 14,258	$ 14,258	$ -	$ -	$ -	$ -	$ -						
Replace Overhead Doors	4	$ 28,159	$ -	$ -	$ 29,846	$ -	$ -	$ -						
Restroom Renovation	3	$ 52,519	$ -	$ -	$ -	$ 57,246	$ -	$ -						
Paint interior walls/ceilings	3	$ 31,661	$ -	$ -	$ -	$ -	$ 35,461	$ -						
Replace Water Distribution System	4	$ 45,796	$ -	$ 47,169	$ -	$ -	$ -	$ -						
Replace sanitary sewer - Drain/Waste/Vent	4	$ 57,605	$ -	$ 59,333	$ -	$ -	$ -	$ -						
Replace Plumbing Fixtures	4	$ 47,994	$ -	$ 49,434	$ -	$ -	$ -	$ -						
Replace Boiler	4	$ 38,812	$ -	$ -	$ 41,140	$ -	$ -	$ -						
Replace Hydronic Piping	4	$ 13,322	$ -	$ -	$ 14,121	$ -	$ -	$ -						
Replace Controls	4	$ 22,151	$ -	$ -	$ 23,480	$ -	$ -	$ -						
Install exits lights as per code	5	$ 1,846	$ 1,846	$ -	$ -	$ -	$ -	$ -						
Install a new generator	5	$ 57,052	$ 57,052	$ -	$ -	$ -	$ -	$ -						
Replace Concrete - Front ramp	1	$ 10,200	$ -	$ -	$ -	$ -	$ -	$ 11,730						
Resurface Asphalt Parking Lot	1	$ 11,794	$ -	$ -	$ -	$ -	$ 13,209	$ -						
Fire Station #207														
RUNNING LIFE CYCLE / SUSTAINMENT COST OUTLOOK			$ -	$ 182,938	$ 142,681	$ -	$ -	$ 263,993	$ 369,689	$ 48,863	$ 278,979	$ 3,754,534	$ 296,900	$ 5,388,577
PROJECT IMPROVEMENTS - SIX YEAR OUTLOOK		$ 462,380	$ 270,840	$ -	$ 119,567	$ -	$ 54,296	$ 23,697						$ 478,310
Repair Exterior Envelope - Water Penetration	4	$ 16,391	$ 16,391	$ -	$ -	$ -	$ -	$ -						
Masonry Repair	4	$ 14,258	$ 14,258	$ -	$ -	$ -	$ -	$ -						
Replace Overhead Doors	4	$ 24,463	$ -	$ -	$ 25,931	$ -	$ -	$ -						
Replace Exterior Windows	4	$ 30,199	$ -	$ -	$ -	$ -	$ 32,917	$ -						
Replace Kitchen	3	$ 31,816	$ -	$ -	$ 33,725	$ -	$ -	$ -						
Paint interior walls/ceilings	3	$ 27,937	$ -	$ -	$ -	$ -	$ 31,289	$ -						
Replace sanitary sewer - Drain/Waste/Vent	3	$ 50,828	$ -	$ -	$ 53,878	$ -	$ -	$ -						
Replace all wiring	3	$ 189,451	$ 189,451	$ -	$ -	$ -	$ -	$ -						
Install a new generator	5	$ 50,740	$ 50,740	$ -	$ -	$ -	$ -	$ -						
Replace Concrete - Front ramp	1	$ 10,200	$ -	$ -	$ -	$ -	$ -	$ 11,730						
Resurface Asphalt Parking Lot	1	$ 10,406	$ -	$ -	$ -	$ -	$ -	$ 11,967						
Replace Sanitary Line	4	$ 5,691	$ -	$ -	$ 6,033	$ -	$ -	$ -						

IMPROVEMENT PROJECTS and RUNNING LIFE CYCLE / SUSTAINMENT OUTLOOK

BASE ESTIMATE SUMMARY			ESCALATED COSTS PER YEAR											TOTAL ESCALATED COSTS
Fire Stations & Project Descriptions	Priority 1 - 5	Base Year (BY)	2009	2010	2011	2012	2013	2014	Yr 7 - 10	Yr 11 - 15	Yr 16 - 20	Yr 21 - 25	Yr 26 - 30	
RUNNING LIFE CYCLE / SUSTAINMENT COST OUTLOOK	TOTAL >		$ 34,096	$ 1,053,585	$ 603,124	$ 79,844	$ 46,873	$ 2,000,016	$ 5,901,666	$ 6,754,009	$ 6,361,102	$ 21,635,160	$ 11,592,652	$ 56,062,217
PROJECT IMPROVEMENTS - SIX YEAR OUTLOOK	TOTAL >	$ 2,975,381	$ 1,004,029	$ 580,654	$ 432,128	$ 453,011	$ 339,424	$ 306,634	$ -	$ -	$ -	$ -	$ -	$ 3,115,879
Fire Station #208														
RUNNING LIFE CYCLE / SUSTAINMENT COST OUTLOOK			$ -	$ 101,515	$ 92,898	$ -	$ -	$ 320,501	$ 885,677	$ 245,077	$ 601,755	$ 2,313,823	$ 1,019,731	$ 5,580,978
PROJECT IMPROVEMENTS - SIX YEAR OUTLOOK		$ 358,909	$ 118,099	$ 187,287	$ -	$ 6,953	$ 48,104	$ 11,730						$ 371,273
Repair Exterior Envelope - Water Penetration	4	$ 25,199	$ 25,199	$ -	$ -	$ -	$ -	$ -						
Masonry Repair	4	$ 14,258	$ 14,258	$ -	$ -	$ -	$ -	$ -						
Paint interior walls/ceilings	3	$ 42,950	$ -	$ -	$ -	$ -	$ 48,104	$ -						
Replace Chiller	4	$ 50,672	$ -	$ 52,192	$ -	$ -	$ -	$ -						
Replace Fan Coil Units	3	$ 101,112	$ -	$ 104,145	$ -	$ -	$ -	$ -						
Replace Controls	3	$ 30,048	$ -	$ 30,951	$ -	$ -	$ -	$ -						
Replace Exit Lights	5	$ 2,461	$ 2,461	$ -	$ -	$ -	$ -	$ -						
Repair service trough	4	$ 2,500	$ -	$ -	$ -	$ 2,725	$ -	$ -						
Replace bathroom/shower lights with flourescent fixtures	1	$ 3,328	$ -	$ -	$ -	$ 3,328	$ -	$ -						
Install a new generator	5	$ 76,181	$ 76,181	$ -	$ -	$ -	$ -	$ -						
Replace Concrete Apron	2	$ 10,200	$ -	$ -	$ -	$ -	$ -	$ 11,730						
Fire Station #209														
RUNNING LIFE CYCLE / SUSTAINMENT COST OUTLOOK			$0	$0	$0	$0	$0	$0	$ 243,028	$ 1,495,247	$ 2,108,797	$ 900,788	$ 5,416,112	$ 10,163,964
PROJECT IMPROVEMENTS - SIX YEAR OUTLOOK		$ -	$ -	$ -	$ -	$ -	$ -	$ -						$ -
(New Building-No Improvement Projects Required)														
Vehicle Maintenance Shop														
RUNNING LIFE CYCLE / SUSTAINMENT COST OUTLOOK			$0	$55,034	$23,735	$0	$10,801	$91,356	$ 424,484.27	$252,158	$347,828	$210,879	$221,379	$ 1,637,736
PROJECT IMPROVEMENTS - SIX YEAR OUTLOOK		$ 321,270	$ 133,552	$ 51,469	$ -	$ -	$ -	$ 146,213						$ 331,235
Repair Exterior Envelope - Water Penetration	4	$ 27,435	$ -	$ 28,258	$ -	$ -	$ -	$ -						
Replace Exterior Windows	4	$ 8,264	$ -	$ 8,512	$ -	$ -	$ -	$ -						
Replace Exterior Doors	4	$ 14,271	$ -	$ 14,699	$ -	$ -	$ -	$ -						
Paint interior walls/ceilings	3	$ 10,487	$ -	$ -	$ -	$ -	$ -	$ 11,745						
Replace Air handling Units	3	$ 21,487	$ -	$ -	$ -	$ -	$ -	$ 22,132						
Replace Controls	3	$ 26,157	$ -	$ -	$ -	$ -	$ -	$ 27,726						
Replace Light Fixtures with Energy Efficient Ones	3	$ 64,117	$ -	$ -	$ -	$ -	$ -	$ 67,964						
Replace Exit Lights	5	$ 1,846	$ 1,846	$ -	$ -	$ -	$ -	$ -						
Replace panels.	5	$ 6,300	$ -	$ -	$ -	$ -	$ -	$ 6,489						
Provide 30 AMP receptacles	2	$ 4,900	$ -	$ -	$ -	$ -	$ -	$ 5,341						
Replace fire alarm system	5	$ 17,052	$ 17,052	$ -	$ -	$ -	$ -	$ -						
Provide additional receptacles	2	$ 4,300	$ -	$ -	$ -	$ -	$ -	$ 4,816						
Install lift equipment	2	$ 114,654	$ 114,654	$ -	$ -	$ -	$ -	$ -						
Fire Station Training														
RUNNING LIFE CYCLE / SUSTAINMENT COST OUTLOOK			$0	$0	$0	$0	$0	$103,857	$ 44,421	$ 1,390,472	$ 143,595	$ -	$ 635,696	$ 2,318,041
PROJECT IMPROVEMENTS - SIX YEAR OUTLOOK		$ 11,702	$ -	$ -	$ -	$ -	$ 13,106	$ -						$ 13,106
Provide additional visual devices to fire alarm system	4	$ 9,701	$ -	$ -	$ -	$ -	$ 10,866	$ -						
Miscellaneous Site improvements.	2	$ 2,000	$ -	$ -	$ -	$ -	$ 2,240	$ -						
Burn Building														
RUNNING LIFE CYCLE / SUSTAINMENT COST OUTLOOK			$34,096	$240,156	$49,242	$0	$35,981	$0	$ 86,895	$ 51,574	$ 112,168	$ 398,872	$ 124,586	$ 1,133,669
PROJECT IMPROVEMENTS - SIX YEAR OUTLOOK		$ 244,631	$ 134,203	$ 81,887	$ -	$ -	$ -	$ 31,283						$ 247,373
Masonry/Conc Repair	4	$ 50,385	$ 50,385	$ -	$ -	$ -	$ -	$ -						
Replace Exterior Doors	4	$ 11,016	$ 11,016	$ -	$ -	$ -	$ -	$ -						
Replace Exterior Windows	4	$ 27,780	$ 27,780	$ -	$ -	$ -	$ -	$ -						
Stair restoration	4	$ 16,065	$ -	$ 16,568	$ -	$ -	$ -	$ -						
Interior renovation	3	$ 63,416	$ -	$ 65,319	$ -	$ -	$ -	$ -						
Replace Roof	4	$ 27,947	$ -	$ -	$ -	$ -	$ -	$ 27,947						
Electrical work	3	$ 27,107	$ 27,107	$ -	$ -	$ -	$ -	$ -						
Replace Heat monitoring equipment	2	$ 17,915	$ 17,915	$ -	$ -	$ -	$ -	$ -						
Miscellaneous Site Improvements.	2	$ 2,979	$ -	$ -	$ -	$ -	$ -	$ 3,336						

Notes:

This table shows the following:

- Escalated costs.
- Base year cost.
- Differences are due to rounding.

Priority Rating 1 - 5

- 5- Life safety & building security.
- 4- Building exterior & primary systems.
- 3- Building interior finishes and secondary systems.
- 2- Supplemental systems.
- 1- Noncritical systems.

FIRE STATION #201

COST ASSESSMENT MATRIX

Alexandria Fire Department - Alexandria, Virginia

CONDITION ASSESSMENT ANALYSIS			RUNNING LIFE CYCLE / SUSTAINMENT COST OUTLOOK														
Building Component	System Life Years	Life Cycle Remaining Years	Year 1 Cost Basis	Year 2 Cost Basis	Year 3 Cost Basis	Year 4 Cost Basis	Year 5 Cost Basis	Year 6 Cost Basis	Year 7 Cost Basis	Year 8 Cost Basis	Year 9 Cost Basis	Year 10 Cost Basis	Year 6 - 10 Cost Total	Year 11 - 15 Cost Total	Year 16 - 20 Cost Total	Year 21 - 25 Cost Total	Year 26 - 30 Cost Total	30 YEAR Cost Total
SUBSTRUCTURE																		
SLAB AND FOUNDATION	70	21	0										$ -	$ -	$ -	$ 168,372.16	$ -	$ 168,372.16
SUPERSTRUCTURE																		
STRUCTURE BELOW ROOF	70	21	0										$ -	$ -	$ -	$ 46,405.86	$ -	$ 46,405.86
ROOF STRUCTURE	70	21	0										$ -	$ -	$ -	$ 128,342.43	$ -	$ 128,342.43
EXTERIOR CLOSURE																		
EXTERIOR WALLS	70	49	0										$ -	$ -	$ -	$ -	$ -	$ -
EXTERIOR WINDOWS	20	1	0	$ 28,909.19									$ -	$ -	$ -	$ 28,909.19	$ -	$ 51,818.39
OH DOORS	15	5	0					$ 20,693.29					$ 20,693.29	$ -	$ -	$ 20,693.29	$ -	$ 41,386.59
EXTERIOR DOORS	15	5	0					$ 14,447.46					$ 14,447.46	$ -	$ -	$ 14,447.46	$ -	$ 28,894.93
ROOFING																		
ROOFING	30	21	0										$ -	$ -	$ -	$ 31,861.94	$ -	$ 31,861.94
INTERIOR CONSTRUCTION																		
PARTITIONS	70	21	0										$ -	$ -	$ -	$ 141,367.79	$ -	$ 141,367.79
INTERIOR DOORS	25	8	0								$ 26,468.56		$ 26,468.56	$ -	$ -	$ -	$ -	$ 26,468.56
INTERIOR SPECIALTY DOORS	25	24	0										$ -	$ -	$ -	$ -	$ -	$ -
INTERIOR GLAZING SYSTEMS	25	8	0								$ 94.95		$ 94.95	$ -	$ -	$ -	$ -	$ 94.95
INTERIOR SPECIALTIES	15	5	0					$ 10,550.83					$ 10,550.83	$ -	$ -	$ 10,550.83	$ -	$ 21,101.66
CASEWORK	20	14	0										$ -	$ 20,383.31	$ -	$ -	$ -	$ 20,383.31
INTERIOR FINISHES																		
WALL FINISHES	7	5	0					$ 41,767.59					$ 41,767.59	$ 41,767.59	$ -	$ -	$ 41,767.59	$ 167,150.36
FLOORING & FLOOR FINISHES	20	6	0						$ 84,223.25				$ 84,223.25	$ -	$ -	$ -	$ 84,223.25	$ 168,446.50
CEILING & CEILING FINISHES	15	5	0					$ 43,641.21					$ 43,641.21	$ -	$ -	$ 43,641.21	$ -	$ 87,282.42
PLUMBING																		
PLUMBING FIXTURES	30	9	0									$ 31,808.63	$ 31,808.63	$ -	$ -	$ -	$ -	$ 31,808.63
DOMESTIC WATER SUPPLY	30	9	0									$ 30,133.48	$ 30,133.48	$ -	$ -	$ -	$ -	$ 30,133.48
SANITARY WASTE & VENT SYSTEM	30	9	0									$ 52,175.64	$ 52,175.64	$ -	$ -	$ -	$ -	$ 52,175.64
PLUMBING EQUIPMENT	30	9	0									$ 2,017.71	$ 2,017.71	$ -	$ -	$ -	$ -	$ 2,017.71
H.V.A.C																		
ENERGY SUPPLY	30	9	0									$ 5,390.34	$ 5,390.34	$ -	$ -	$ -	$ -	$ 5,390.34
HEAT GENERATING SYSTEM	30	29	0										$ -	$ -	$ -	$ -	$ 24,812.03	$ 24,812.03
COOLING GENERATING SYSTEM	20	14	0										$ -	$ 23,701.01	$ -	$ -	$ -	$ 23,701.01
DISTRIBUTION SYSTEMS	50	15	0										$ -	$ -	$ 47,302.08	$ -	$ -	$ 47,302.08
EXHAUST SYSTEMS	50	35	0										$ -	$ -	$ -	$ -	$ -	$ -
TERMINAL & PACKAGE UNITS	30	29	0										$ -	$ -	$ -	$ -	$ -	$ -
CONTROLS & INSTRUMENTATION	30	9	0									$ 11,016.28	$ 11,016.28	$ -	$ -	$ -	$ -	$ 11,016.28
FIRE PROTECTION SYSTEMS																		
WATER SUPPLY (FIRE PROTECTION)	30	21	0										$ -	$ -	$ -	$ 10,463.66	$ -	$ 10,463.66
SPRINKLERS	20	14	0										$ -	$ 40,633.92	$ -	$ -	$ -	$ 40,633.92
FIRE EXTINGUISHERS	10	7	0							$ 207.72			$ 207.72	$ -	$ 207.72	$ -	$ 207.72	$ 623.16
ELECTRIC POWER & LIGHTING																		
SERVICE AND DISTRIBUTION	30	21	0										$ -	$ -	$ -	$ 56,884.99	$ -	$ 56,884.99
LIGHTING & BRANCH WIRING	20	6	0						$ 53,321.46				$ 53,321.46	$ -	$ -	$ -	$ 53,321.46	$ 106,642.93
ELECTRICAL SYSTEMS																		
COMMUNICATION, SECURITY, & ALARM SYSTEMS	15	14	0										$ -	$ -	$ -	$ -	$ -	$ -
SPECIAL ELECTRICAL SYSTEMS	15	5	0					$ 20,624.45					$ 20,624.45	$ -	$ -	$ 20,624.45	$ -	$ 41,248.90
EQUIPMENT																		
FOOD SERVICE	15	14	0										$ -	$ 7,161.32	$ -	$ -	$ 7,161.32	$ 14,322.64
ELEVATORS OR LIFTS	20	19	0										$ -	$ -	$ -	$ -	$ -	$ -
FIXED & MOVEABLE EQUIPMENT	15	5	0					$ 23,019.81					$ 23,019.81	$ -	$ -	$ 23,019.81	$ -	$ 46,039.61
HAZARDOUS MATERIALS																		
ASBESTOS ABATEMENT	30	9	0									$ 6,171.59	$ 6,171.59	$ -	$ -	$ -	$ -	$ 6,171.59
LEAD ABATEMENT	30	9	0									$ 14,491.68	$ 14,491.68	$ -	$ -	$ -	$ -	$ 14,491.68
ESSENTIAL FACILITY																		
EMERGENCY POWER	20	1	0	$ 42,736.91									$ -	$ -	$ -	$ 42,736.91	$ -	$ 85,473.82
SITE																		
Site Preparation																		
Clear and Grub	20	19	0										$ -	$ -	$ -	$ -	$ -	$ -
Earthwork	20	19	0										$ -	$ -	$ -	$ -	$ -	$ -
Site Improvements																		
Landscaping	100	30	0										$ -	$ -	$ -	$ -	$ -	$ -
Asphalt Paving	25	6	0						$ 29,953.35				$ 29,953.35	$ -	$ -	$ -	$ 29,953.36	$ 59,906.71
Concrete Paving	25	8	0								$ 4,296.54		$ 4,296.54	$ -	$ -	$ -	$ -	$ 4,296.54
Fencing	20	19	0										$ -	$ -	$ -	$ -	$ -	$ -
Misc Site Improvements	20	19	0										$ -	$ -	$ -	$ -	$ -	$ -
Site Utilities																		
Water Distribution	50	15	0										$ -	$ -	$ 1,741.24	$ -	$ -	$ 1,741.24
Sewer Distribution	50	15	0										$ -	$ -	$ 3,847.85	$ -	$ -	$ 3,847.85
Gas Distribution	50	15	0										$ -	$ -	$ 516.65	$ -	$ -	$ 516.65
Storm Sewer	50	15	0										$ -	$ -	$ 2,586.66	$ -	$ -	$ 2,586.66
Site Electrical																		
Electrical Distribution	50	15	0										$ -	$ -	$ 37,275.30	$ -	$ -	$ 37,275.30
Exterior Lighting	50	15	0										$ -	$ -	$ 17,143.37	$ -	$ -	$ 17,143.37
Communications	50	15	0										$ -	$ -	$ 2,603.24	$ -	$ -	$ 2,603.24
ADA Compliance	50	15	0										$ -	$ -	$ 16,444.50	$ -	$ -	$ 16,444.50
AT/FP Compliance	50	49	0										$ -	$ -	$ -	$ -	$ -	$ -
TOTAL PERMANENT FACILITY COST			$ -	$ 69,646.11	$ -	$ -	$ -	$ 174,764.85	$ 167,495.07	$ 207.72	$ 30,865.04	$ 153,205.35	$ 526,538.03	$ 133,667.14	$ 171,466.18	$ 785,321.09	$ 241,466.73	$ 1,927,893.98
TOTAL COST WITH AREA COST FACTOR @ 7%			$ -	$ 75,481.35	$ -	$ -	$ -	$ 186,909.19	$ 179,220.24	$ 222.28	$ 33,026.29	$ 163,929.72	$ 563,389.03	$ 143,023.64	$ 183,490.12	$ 840,194.81	$ 258,369.40	$ 2,061,996.58
TOTAL W/ESCALATION @ 3%			$0.00	$76,694.87	$0.00	$0.00	$0.00	$216,782.12	$214,001.56	$273.26	$41,829.06	$213,891.10	$ 686,777.21	$ 212,454.64	$ 295,572.64	$ 1,555,495.89	$ 964,052.99	$ 3,389,997.60
RUNNING TOTAL			$0.00	$76,694.87	$76,694.87	$76,694.87	$76,694.87	$293,477.00	$507,478.56	$507,751.82	$549,580.88	$763,471.98	$763,471.98	$975,926.62	$1,271,499.26	$2,827,995.15	$3,792,048.14	$3,792,048.14
RUNNING FCI OUTLOOK																		
FCI (WITH NO COSTS INCURED)			63.3%	66.6%	69.8%	73.2%	76.5%	79.8%	82.2%	84.1%	86.5%	87.8%	87.8%	90.3%	100.8%	184.2%	196.3%	196.3%
REVISED FCI (AFTER INCURED COSTS INDICATED)			63.3%	66.6%	69.8%	73.2%	72.9%	76.5%	81.3%	82.5%	83.7%	81.5%	81.5%	64.4%	79.2%	38.5%	49.8%	49.8%
			YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5	YEAR 6	YEAR 7	YEAR 8	YEAR 9	YEAR 10	YEARS 6-10	YEARS 11-15	YEARS 16-20	YEARS 21-25	YEARS 26-30	YEARS 1-30

EXISTING FACILITY CONDITIONS ASSESSMENT MATRIX

Facility: Fire Station __201_____, Alexandria VA

	Item	Condition Remarks	I - Immediate M - Monitor	Recommended Solution
5	**MECHANICAL**			
A	PREVENTIVE MAINTENANCE PROGRAM	It appears that there are not any preventive maintenance programs for the building		
B	UTILITIES	Gas and water connection has been provided at basement.	M	
C	HEATING PLANT	An old boiler (National Gas Boiler #5-66) is providing hot water for radiators throughout the building in the first and second floor. This boiler has been already scheduled for replacement. There is also a 2-Ton York Heat Pump (Manufacture date of 1989) which serves the office space and small kitchen room at the first floor. This unit seems in fair condition.	M	
D	COOLING PLANT(S):	One 1-Ton York Condensing Unit (manufacture date of 1989) and one 2-Ton York Heat Pump (manufacture date of 1989) serving first floor are in fair condition. One 5-Ton Trane Condensing Unit (manufacture date of 2006), serves the second floor. This unit is in excellent condition.	M	
E	AIR QUALITY STANDARDS:	Outdoor air has been provided for the Trane unit. Serving the second floor this AHU is relatively new. Fresh air also has been provided for AHU serving the office and kitchen room in the first floor. We don't have data regarding outside air provided for each unit. We were not able to verify if fresh air has been provided for AHU in first floor, this office space can get the outside air through natural ventilation if the open area is more than 4% of the floor area.	M	
F	EXHAUST SYSTEMS:	Exhaust air has been provided for toilets and shower rooms. Apparatus bay has not been equipped with plymovent exhaust system. It was said the engine for this fire station is a special engine so there is no need for plymovent exhaust system.	M	
G	AIR HANDLERS:	Trane AHU serving the second floor is new and in good condition. Two other AHUs in the first floor are relatively old but in fair condition.	M	
H	HYDRONIC/AIR DISTRIBUTION:	Hydronic distribution system is original, by considering the age of the building (built in 1921). The hydronic distribution system needs to be replaced in the near future.	M	
I	ROOM TERMINAL UNITS:	N/A		

EXISTING FACILITY CONDITIONS ASSESSMENT MATRIX

Facility: Fire Station __201_____, Alexandria VA

	Item	Condition Remarks	I - Immediate M - Monitor	Recommended Solution
J	HVAC - CONTROLS:	Controls related to radiators are very old, still they need to be replaced with renovation of heating system. Controls related to York units are in fair condition and controls related to Trane unit is in good condition.	M	
K	PLUMBING FACILITIES OCCUPANCY LEVEL:			
L	PLUMBING DISTRIBUTION SYSTEMS:	Most of the piping is underground or concealed in the ceiling space. Part of the plumbing system has been renovated. The rest is original piping. Current plumbing system is in acceptable shape.	M	
M	PLUMBING FIXTURES:	Plumbing fixtures are in fair condition.	M	
N	FIRE SUPPRESSION:	Sprinkler system has been provided for the building.	M	

EXISTING FACILITY CONDITIONS ASSESSMENT MATRIX

Facility: Fire Station ____201_____, Alexandria VA

	Item	Condition Remarks	I - Immediate M - Monitor	Recommended Solution
6	ELECTRICAL			
A	Exterior Lighting	Exterior lighting are incandescent fixture.	I	Three of the boxes that fixtures are mounted on need to be reset and secured in place.
B	Interior Lighting	Interior lighting consisted of T-12, fluorescent and incandescent fixtures. However, the fluorescent fixtures in the apparatus bay are retrofitted with T-8 lamps, need to verify if the ballast in the apparatus bay area fixtures were replaced with electronic ballast.	I	Replace all T-12 lamps with T-8 fluorescent lamps and install electronic ballasts in all fluorescent fixtures. Install self-contained compact fluorescent lamps in all fixtures designed for incandescent lamps.
C	Exit/ Emergency Lighting	We did not notice any exit lighting in the building.	I	Install exits lights as per code.
D	Service Size	A 400 amp service serves two 200 amp panels, one in each floor.	M	
E	Overhead/ Underground Electric Service	Service to the building is from a pad mounted transformer. However, the primary lines are overhead and the secondary lines enter the building through a weather head to the second floor of the building.	M	
F	Service Equipment Condition	The panel boards are in fair condition.		
G	Emergency System	The emergency power is supplied from a 15 kw gas generator, the generators is installed inside in back of the apparatus bay and taking valuable space. This generator has reached end of it's useful life and needs to be replaced in near future.	I	The battery terminals of the generator are exposed and there is a chance that the terminals could become shorted by accident as the entire areas around the generator is being used as storage. Install a larger generator outside and power the entire building from the new generator.
H	Panelboards	Existing panels are in good condition and thereare plenty of spare circuit breaker in the second floor panel.	M	
I	Receptacles	Additional receptacles should be installed in the kitchen. Presently, most outlets in the kitchen are from a wire mold that does not include GFI protection.	I	Install GFI receptacles in the kitchen.
J	Wiring	This fire house was renovated in the mid-1980's and it appears that the wiring was replaced in that period.	M	

EXISTING FACILITY CONDITIONS ASSESSMENT MATRIX

Facility: Fire Station ____201_____, Alexandria VA

	Item	Condition Remarks	I - Immediate M - Monitor	Recommended Solution
K	Fire Alarm System	There is no fire alarm or smoke detection in the corridors that lead to the sleeping rooms.	I	Install single station smoke detectors in the corridors.
L	IDS	There are no intrusion detection system.	M	
M	Public Address System	The existing ZETRON system is working properly.	M	
N	Clock System	There are no clock system in the building.	M	Not required.
P	Building Lightning Protection	Building does not have any lightning protection system.	M	Not required by code.
	TOTAL			

FIRE STATION #202

COST ASSESSMENT MATRIX

Alexandria Fire Department - Alexandria, Virginia

CONDITION ASSESSMENT ANALYSIS			RUNNING LIFE CYCLE / SUSTAINMENT COST OUTLOOK													
Building Component	System Life Years	Life Cycle Remaining Years	Year 1 Cost Basis	Year 2 Cost Basis	Year 3 Cost Basis	Year 4 Cost Basis	Year 5 Cost Basis	Year 6 Cost Basis	Year 7 Cost Basis	Year 8 Cost Basis	Year 9 Cost Basis	Year 10 Cost Basis	Year 11 - 15 Cost Total	Year 16 - 20 Cost Total	Year 21 - 25 Cost Total	Year 26 - 30 Cost Total	30 YEAR Cost Total
SUBSTRUCTURE																	
SLAB AND FOUNDATION	70	21	0										$ -	$ -	$ 227,900.62	$ -	$ 227,900.62
SUPERSTRUCTURE																	
STRUCTURE BELOW ROOF	70	21	0										$ -	$ -	$ 62,812.92	$ -	$ 62,812.92
ROOF STRUCTURE	70	21	0										$ -	$ -	$ 173,718.27	$ -	$ 173,718.27
EXTERIOR CLOSURE																	
EXTERIOR WALLS	70	49	0										$ -	$ -	$ -	$ -	$ -
EXTERIOR WINDOWS	20	14	0										$ 35,089.46	$ -	$ -	$ -	$ 35,089.46
OH DOORS	15	1	0	$ 28,009.47									$ -	$ 28,009.47	$ -	$ -	$ 56,018.93
EXTERIOR DOORS	15	9	0					$ 19,555.41					$ -	$ -	$ 19,555.41	$ -	$ 39,110.81
ROOFING																	
ROOFING	30	9	0									$ 43,126.82	$ -	$ -	$ -	$ -	$ 43,126.82
INTERIOR CONSTRUCTION																	
PARTITIONS	70	49	0										$ -	$ -	$ -	$ -	$ -
INTERIOR DOORS	25	18	0										$ -	$ 35,826.59	$ -	$ -	$ 35,826.59
INTERIOR SPECIALTY DOORS	25	24	0										$ -	$ -	$ -	$ -	$ -
INTERIOR GLAZING SYSTEMS	25	18	0										$ -	$ 126.52	$ -	$ -	$ 126.52
INTERIOR SPECIALTIES	15	14	0										$ 14,281.11	$ -	$ -	$ 14,281.11	$ 28,562.21
CASEWORK	20	19	0										$ -	$ 27,589.68	$ -	$ -	$ 27,589.68
INTERIOR FINISHES																	
WALL FINISHES	7	7	0								$ 56,561.71		$ 56,561.71	$ -	$ 56,561.71	$ 56,561.71	$ 226,246.85
FLOORING & FLOOR FINISHES	20	19	0										$ -	$ 114,000.62	$ -	$ -	$ 114,000.62
CEILING & CEILING FINISHES	15	14	0										$ 59,070.69	$ -	$ -	$ 59,070.69	$ 118,141.37
PLUMBING																	
PLUMBING FIXTURES	30	21	0										$ -	$ -	$ 43,064.66	$ -	$ 43,064.66
DOMESTIC WATER SUPPLY	30	21	0										$ -	$ -	$ 40,787.26	$ -	$ 40,787.26
SANITARY WASTE & VENT SYSTEM	30	21	0										$ -	$ -	$ 70,622.49	$ -	$ 70,622.49
PLUMBING EQUIPMENT	30	21	0										$ -	$ -	$ 2,731.09	$ -	$ 2,731.09
H.V.A.C																	
ENERGY SUPPLY	30	29	0										$ -	$ -	$ -	$ 7,296.11	$ 7,296.11
HEAT GENERATING SYSTEM	30	29	0										$ -	$ -	$ -	$ 33,584.40	$ 33,584.40
COOLING GENERATING SYSTEM	20	19	0										$ -	$ 32,080.87	$ -	$ -	$ 32,080.87
DISTRIBUTION SYSTEMS	50	49	0										$ -	$ -	$ -	$ -	$ -
EXHAUST SYSTEMS	50	49	0										$ -	$ -	$ -	$ -	$ -
TERMINAL & PACKAGE UNITS	30	29	0										$ -	$ -	$ -	$ 15,724.34	$ 15,724.34
CONTROLS & INSTRUMENTATION	30	29	0										$ -	$ -	$ -	$ 14,811.11	$ 14,811.11
FIRE PROTECTION SYSTEMS																	
WATER SUPPLY (FIRE PROTECTION)	30	29	0										$ -	$ -	$ -	$ -	$ -
SPRINKLERS	20	19	0										$ -	$ -	$ -	$ -	$ -
FIRE EXTINGUISHERS	10	7	0								$ 281.16		$ -	$ 281.16	$ -	$ 281.16	$ 843.48
ELECTRIC POWER & LIGHTING																	
SERVICE AND DISTRIBUTION	30	21	0										$ -	$ -	$ 76,866.84	$ -	$ 76,866.84
LIGHTING & BRANCH WIRING	20	14	0										$ 72,173.42	$ -	$ -	$ -	$ 72,173.42
ELECTRICAL SYSTEMS																	
COMMUNICATION, SECURITY, & ALARM SYSTEMS	15	11	0										$ 36,459.73	$ -	$ -	$ 36,459.73	$ 72,919.46
SPECIAL ELECTRICAL SYSTEMS	15	11	0										$ 27,916.28	$ -	$ -	$ 27,916.28	$ 55,832.57
EQUIPMENT																	
FOOD SERVICE	15	14	0										$ 9,693.23	$ -	$ -	$ 9,693.23	$ 19,386.45
ELEVATORS OR LIFTS	20	19	0										$ -	$ -	$ -	$ -	$ -
FIXED & MOVEABLE EQUIPMENT	15	14	0										$ 31,158.53	$ -	$ -	$ 31,158.53	$ 62,317.05
HAZARDOUS MATERIALS																	
ASBESTOS ABATEMENT	30	29	0										$ -	$ -	$ -	$ -	$ -
LEAD ABATEMENT	30	21	0										$ -	$ -	$ 19,615.28	$ -	$ 19,615.28
ESSENTIAL FACILITY																	
EMERGENCY POWER	20	19	0										$ -	$ 57,846.67	$ -	$ -	$ 57,846.67
SITE																	
Site Preparation																	
Clear and Grub	20	19	0										$ -	$ -	$ -	$ -	$ -
Earthwork	20	19	0										$ -	$ -	$ -	$ -	$ -
Site Improvements													$ -	$ -	$ -	$ -	$ -
Landscaping	100	30	0										$ -	$ -	$ -	$ -	$ -
Asphalt Paving	20	6	0						$ 40,543.45				$ -	$ -	$ -	$ 40,543.45	$ 81,086.90
Concrete Paving	25	6	0									$ 5,815.59	$ -	$ -	$ -	$ -	$ 5,815.59
Fencing	20	19	0										$ -	$ -	$ -	$ -	$ -
Misc Site Improvements	20	6	$ -										$ -	$ -	$ -	$ -	$ -
Site Utilities																	
Water Distribution	50	19	0										$ -	$ 2,356.85	$ -	$ -	$ 2,356.85
Sewer Distribution	50	19	0										$ -	$ 5,208.27	$ -	$ -	$ 5,208.27
Gas Distribution	50	15	0										$ -	$ 699.31	$ -	$ -	$ 699.31
Storm Sewer	50	19	0										$ -	$ -	$ -	$ -	$ -
Site Electrical																	
Electrical Distribution	50	15	0										$ -	$ 50,454.08	$ -	$ -	$ 50,454.08
Exterior Lighting	50	19	0										$ -	$ -	$ -	$ -	$ -
Communications	50	35	0										$ -	$ -	$ -	$ -	$ -
ADA Compliance	50	35	0										$ -	$ -	$ -	$ -	$ -
AT/FP Compliance	50	49	0										$ -	$ -	$ -	$ -	$ -
TOTAL PERMANENT FACILITY COST			$ -	$ 28,009.47	$ -	$ -	$ -	$ 19,555.41	$ 40,543.45	$ 56,842.87	$ 5,815.59	$ 43,126.82	$ 342,364.17	$ 364,481.89	$ 794,356.51	$ 347,491.64	$ 2,002,586.11
TOTAL COST WITH AREA COST FACTOR @ 1%			$ -	$ 28,289.12	$ -	$ -	$ -	$ 19,824.24	$ 41,391.49	$ 57,971.87	$ 5,932.84	$ 44,149.70	$ 349,211.36	$ 376,295.73	$ 826,361.40	$ 361,805.57	$ 2,174,819.99
TOTAL W/ ESCALATION @ 3%			$0.00	$30,869.23	$0.00	$0.00	$0.00	$24,256.99	$51,799.77	$74,803.23	$7,883.71	$60,206.67	$ 545,297.40	$ 648,357.19	$ 1,580,644.54	$ 849,839.58	$ 3,871,660.71
RUNNING TOTAL			$0.00	$30,869.23	$30,869.23	$30,869.23	$30,869.23	$55,126.21	$106,926.00	$181,729.22	$189,611.92	$249,821.59	$795,118.99	$1,443,476.18	$3,021,820.72	$3,871,660.71	$3,871,660.71
RUNNING FCI OUTLOOK																	
FCI (WITH NO COSTS INCURED)			39.4%	42.8%	46.2%	49.6%	52.9%	56.3%	59.7%	62.9%	65.8%	68.8%	82.0%	91.8%	96.6%	100.1%	100.1%
REVISED FCI (AFTER INCURED COSTS INDICATED)			39.4%	42.8%	46.0%	49.5%	51.9%	55.4%	59.0%	62.5%	65.0%	65.4%	68.8%	74.2%	96.6%	99.8%	99.8%
			YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5	YEAR 6	YEAR 7	YEAR 8	YEAR 9	YEAR 10	YEARS 11-15	YEARS 16-20	YEARS 21-25	YEARS 26-30	YEARS 1-30

EXISTING FACILITY CONDITIONS ASSESSMENT MATRIX

Facility: Fire Station __202_____, Alexandria VA

	Item	Condition Remarks	I - Immediate M - Monitor	Recommended Solution
5	**MECHANICAL**			
A	PREVENTIVE MAINTENANCE PROGRAM	It appears that there are not any preventive maintenance programs for the building		
B	UTILITIES			
C	HEATING PLANT	There is no boiler in this building. There are two Reznor Gas Heaters in apparatus bay. These units are in good condition. There is a gas water heater with storage tank in the basement. Gas heater seems old, but in fair condition. Part of the first floor and whole 2nd floor is under renovation and new units will be provided for this building. New units (Bryant Split System with gas heater) are being installed. These units will provide heating and cooling.	M	
D	COOLING PLANT(S):	Refer to heating plant.	M	
E	AIR QUALITY STANDARDS:	Major part of the building is under renovation. We assume the current designers have provided fresh air for the building based on applicable code.	M	
F	EXHAUST SYSTEMS:	Apparatus bay has been equipped with plymovent exhaust system by considering this matter, that major part of the building is under renovation. We assume exhaust will be provided for bathrooms and shower rooms.	M	
G	AIR HANDLERS:	New Bryant units are being installed. They will be in good condition.	M	
H	HYDRONIC/AIR DISTRIBUTION:	N/A		
I	ROOM TERMINAL UNITS:	There is just one through the wall unit at the first floor, this unit is in fair condition.	M	

EXISTING FACILITY CONDITIONS ASSESSMENT MATRIX

Facility: Fire Station __202_____, Alexandria VA

	Item	Condition Remarks	I - Immediate M - Monitor	Recommended Solution
J	HVAC - CONTROLS:	After renovation we assume controls will be in good condition.	M	
K	PLUMBING FACILITIES OCCUPANCY LEVEL:			
L	PLUMBING DISTRIBUTION SYSTEMS:	Plumbing distribution is original (building was built in 1926) part of the plumbing (2nd floor bathrooms) has been renovated by considering the age of the building. We assume the original piping need to be replaced in near future.	M	
M	PLUMBING FIXTURES:	After renovation plumbing fixtures will be in excellent condition.	M	
N	FIRE SUPPRESSION:	There is no Fire Suppression System in this building.		

EXISTING FACILITY CONDITIONS ASSESSMENT MATRIX

Facility: Fire Station ____202_____, Alexandria VA

6	ELECTRICAL			
A	Exterior Lighting	Exterior light fixtures are in good condition	M	
B	Interior Lighting	The second floor and part of the first floor of this building is under a complete renovation, and the new light fixtures are being installed. The apparatus bay lighting fixtures have been retrofitted with T-8 lamps. However, the light fixtures in the basement are still utilizing T-12 fluorescent lamps.	I	Verify that all ballasts in the apparatus bay fixtures have been replaced with electronic ballast. Replace all T-12 lamps with T-8 and electronic ballast.
C	Exit/ Emergency Lighting	The second floor is being renovated and new emergency lighting is being installed. There are adequate emergency lights in the apparatus bay area.	M	
D	Service Size	A service upgrade is in progress, a 600 amp new service is being installed.	M	
E	Overhead/ Underground Electric Service	Service to the facility is overhead.	M	
F	Service Equipment Condition	All service equipment is new.	M	
G	Emergency System	The existing generator has reached the end of it's life cycle and needs to be replaced. At present, this generator only serves emergency lighting, overhead doors, and the public address system.	I	We recommend a new generator to be installed in a weatherproof housing outside the building and it should be sized to serve entire building.
H	Panelboards	The entire distribution system is being upgraded, and new panels are being installed.	M	
I	Receptacles	Upgrade of the receptacles on the second floor is in progress, the receptacles in the apparatus bay area and the basement need to be upgraded .	I	Replace all exiting receptacles and light switches.
J	Wiring	New wirings are being installed on the second floor and part of the first floor. The branch wiring on the apparatus bay area and the basement need to be replaced.	I	Type AC cable and data wiring are supported from gas and water piping in the apparatus bay area. This condition needs to be corrected. Also the laundry receptacle in the basement should be relocated away from the waterlines. Replace all old wiring in the apparatus bay area and basement.
K	Fire Alarm System	No Fire alarm in this building.	M	
L	IDS	No intrusion detection system in this building.		
M	Public Address System	The public address system is working properly. However, rewiring in the apparatus bay area will be required.	I	
N	Clock System	No clock system in this building.		

EXISTING FACILITY CONDITIONS ASSESSMENT MATRIX

Facility: Fire Station ____202_____, Alexandria VA

P	Building Lightning Protection	The lightning system should be checked and the continuity of all wiring and the down conductor needs to be checked.	I	Check the entire lightning system.
	TOTAL			

FIRE STATION #203

COST ASSESSMENT MATRIX

Alexandria Fire Department - Alexandria, Virginia

CONDITION ASSESSMENT ANALYSIS			RUNNING LIFE CYCLE / SUSTAINMENT COST OUTLOOK													
Building Component	System Life Years	Life Cycle Remaining Years	Year 1 Cost Basis	Year 2 Cost Basis	Year 3 Cost Basis	Year 4 Cost Basis	Year 5 Cost Basis	Year 6 Cost Basis	Year 7 Cost Basis	Year 8 Cost Basis	Year 9 Cost Basis	Year 10 Cost Basis	Year 11 - 15 Cost Total	Year 16 - 20 Cost Total	Year 21 - 25 Cost Total	Year 26 - 30 Cost Total	30 YEAR Cost Total
SUBSTRUCTURE																	
SLAB AND FOUNDATION	70	21	0										$ -	$ -	$ 172,457.44	$ -	$ 172,457.44
SUPERSTRUCTURE																	
STRUCTURE BELOW ROOF	70	21	0										$ -	$ -	$ 47,331.93	$ -	$ 47,331.93
ROOF STRUCTURE	70	21	0										$ -	$ -	$ 131,456.48	$ -	$ 131,456.48
EXTERIOR CLOSURE																	
EXTERIOR WALLS	70	49	0										$ -	$ -	$ -	$ -	$ -
EXTERIOR WINDOWS	20	17	0										$ -	$ 26,537.84	$ -	$ -	$ 26,537.84
OH DOORS	15	11	0										$ 21,195.38	$ -	$ -	$ 21,195.38	$ 42,390.77
EXTERIOR DOORS	15	11	0										$ 14,798.01	$ -	$ -	$ 14,798.01	$ 29,596.02
ROOFING																	
ROOFING	30	21	0										$ -	$ -	$ 32,635.02	$ -	$ 32,635.02
INTERIOR CONSTRUCTION																	
PARTITIONS	70	21	0										$ -	$ -	$ 144,797.88	$ -	$ 144,797.88
INTERIOR DOORS	25	8	0								$ 27,110.77		$ -	$ -	$ -	$ -	$ 27,110.77
INTERIOR SPECIALTY DOORS	25	24	0										$ -	$ -	$ -	$ -	$ -
INTERIOR GLAZING SYSTEMS	25	8	0								$ 97.25		$ -	$ -	$ -	$ -	$ 97.25
INTERIOR SPECIALTIES	15	5	0					$ 10,806.83					$ -	$ -	$ 10,806.83	$ -	$ 21,613.66
CASEWORK	20	8	0						$ 20,877.87				$ -	$ -	$ -	$ 20,877.87	$ 41,755.75
INTERIOR FINISHES																	
WALL FINISHES	7	2	0		$ 42,801.50							$ 42,801.50	$ -	$ 42,801.50	$ 42,801.50	$ -	$ 171,206.00
FLOORING & FLOOR FINISHES	20	8	0						$ 86,266.80				$ -	$ -	$ -	$ 86,266.80	$ 172,533.59
CEILING & CEILING FINISHES	15	5	0					$ 44,700.10					$ -	$ -	$ 44,700.10	$ -	$ 89,400.19
PLUMBING																	
PLUMBING FIXTURES	30	9	0									$ 32,580.41	$ -	$ -	$ -	$ -	$ 32,580.41
DOMESTIC WATER SUPPLY	30	9	0									$ 30,864.62	$ -	$ -	$ -	$ -	$ 30,864.62
SANITARY WASTE & VENT SYSTEM	30	9	0									$ 53,441.60	$ -	$ -	$ -	$ -	$ 53,441.60
PLUMBING EQUIPMENT	30	9	0									$ 2,066.67	$ -	$ -	$ -	$ -	$ 2,066.67
H.V.A.C																	
ENERGY SUPPLY	30	9	0									$ 5,521.13	$ -	$ -	$ -	$ -	$ 5,521.13
HEAT GENERATING SYSTEM	30	9	0									$ 25,414.06	$ -	$ -	$ -	$ -	$ 25,414.06
COOLING GENERATING SYSTEM	20	14	0										$ 24,276.06	$ -	$ -	$ -	$ 24,276.06
DISTRIBUTION SYSTEMS	50	35	0										$ -	$ -	$ -	$ -	$ -
EXHAUST SYSTEMS	50	15	0										$ -	$ 8,160.92	$ -	$ -	$ 8,160.92
TERMINAL & PACKAGE UNITS	30	9	0									$ 11,899.95	$ -	$ -	$ -	$ -	$ 11,899.95
CONTROLS & INSTRUMENTATION	30	9	0									$ 11,283.57	$ -	$ -	$ -	$ -	$ 11,283.57
FIRE PROTECTION SYSTEMS																	
WATER SUPPLY (FIRE PROTECTION)	30	25	0										$ -	$ -	$ -	$ -	$ -
SPRINKLERS	20	18	0										$ -	$ -	$ -	$ -	$ -
FIRE EXTINGUISHERS	10	7	0							$ 212.76			$ -	$ 212.76	$ -	$ 212.76	$ 638.29
ELECTRIC POWER & LIGHTING																	
SERVICE AND DISTRIBUTION	30	2	0		$ 58,265.21								$ -	$ -	$ -	$ -	$ 58,265.21
LIGHTING & BRANCH WIRING	20	1	0	$ 54,615.23									$ -	$ -	$ 54,615.23	$ -	$ 109,230.46
ELECTRICAL SYSTEMS																	
COMMUNICATION, SECURITY, & ALARM SYSTEMS	15	1	0	$ 27,589.80									$ -	$ 27,589.80	$ -	$ -	$ 55,179.78
SPECIAL ELECTRICAL SYSTEMS	15	6	0					$ 21,124.87					$ -	$ -	$ 21,124.87	$ -	$ 42,249.74
EQUIPMENT																	
FOOD SERVICE	15	1	0	$ 7,335.08									$ -	$ 7,335.08	$ -	$ -	$ 14,670.16
ELEVATORS OR LIFTS	20	19	0										$ -	$ -	$ -	$ -	$ -
FIXED & MOVEABLE EQUIPMENT	15	1	0	$ 23,578.35									$ -	$ 23,578.35	$ -	$ -	$ 47,156.69
HAZARDOUS MATERIALS																	
ASBESTOS ABATEMENT	20	6	0									$ 6,321.33	$ -	$ -	$ -	$ -	$ 6,321.33
LEAD ABATEMENT	30	9	0									$ 14,843.30	$ -	$ -	$ -	$ -	$ 14,843.30
ESSENTIAL FACILITY																	
EMERGENCY POWER	20	1	0	$ 43,773.69									$ -	$ -	$ 43,773.86	$ -	$ 87,547.71
SITE																	
Site Preparation																	
Clear and Grub	20	19	0										$ -	$ -	$ -	$ -	$ -
Earthwork	20	19	0										$ -	$ -	$ -	$ -	$ -
Site Improvements													$ -	$ -	$ -	$ -	$ -
Landscaping	100	30	0										$ -	$ -	$ -	$ -	$ -
Asphalt Paving	20	6	0						$ 30,680.13				$ -	$ -	$ -	$ 30,680.13	$ 61,360.25
Concrete Paving	25	8	0								$ 4,400.79		$ -	$ -	$ -	$ -	$ 4,400.79
Fencing	20	6	0						$ 17,617.93				$ -	$ -	$ -	$ 17,617.93	$ 35,235.85
Misc Site Improvements	20	19	0										$ -	$ -	$ -	$ -	$ -
Site Utilities																	
Water Distribution	50	15	0										$ -	$ 1,783.48	$ -	$ -	$ 1,783.48
Sewer Distribution	50	15	0										$ -	$ 3,941.21	$ -	$ -	$ 3,941.21
Gas Distribution	50	15	0										$ -	$ 529.18	$ -	$ -	$ 529.18
Storm Sewer	50	16	0										$ -	$ -	$ -	$ -	$ -
Site Electrical																	
Electrical Distribution	50	15	0										$ -	$ 38,179.72	$ -	$ -	$ 38,179.72
Exterior Lighting	50	16	0										$ -	$ -	$ -	$ -	$ -
Communications	50	35	0										$ -	$ -	$ -	$ -	$ -
ADA Compliance	50	15	0										$ -	$ 16,843.50	$ -	$ -	$ 16,843.50
AT/FP Compliance	50	48	0										$ -	$ -	$ -	$ -	$ -
TOTAL PERMANENT FACILITY COST			$ -	$ 106,892.40	$ 101,068.71	$ -	$ -	$ 76,631.79	$ 155,442.72	$ 212.76	$ 31,608.82	$ 237,037.14	$ 60,259.47	$ 197,493.44	$ 746,721.09	$ 181,648.68	$ 1,855,069.23
TOTAL COST WITH AREA COST FACTOR @ 1%			$ -	$ 107,874.57	$ 102,041.38	$ -	$ -	$ 77,358.02	$ 156,922.71	$ 214.85	$ 31,924.91	$ 239,307.51	$ 60,862.06	$ 199,418.37	$ 754,188.30	$ 183,465.17	$ 2,991,855.80
TOTAL W/ ESCALATION @ 3%			$0.00	$172,911.12	$114,727.19	$0.00	$0.00	$95,055.86	$158,599.21	$279.95	$42,643.96	$330,929.29	$ 92,891.83	$ 337,998.64	$ 1,467,865.34	$ 442,294.60	$ 3,314,276.45
RUNNING TOTAL			$0.00	$172,911.12	$287,638.31	$287,638.31	$287,638.31	$382,694.17	$581,293.38	$581,573.37	$624,417.33	$955,346.64	$1,047,947.67	$1,384,906.30	$2,872,021.65	$3,314,276.45	$3,314,276.45
RUNNING FCI OUTLOOK																	
FCI (WITH NO COSTS INCURED)			68.8%	70.8%	73.9%	76.4%	78.9%	81.4%	83.7%	85.4%	87.2%	88.8%	94.9%	99.8%	102.9%	105.1%	105.1%
REVISED FCI (AFTER INCURED COSTS INDICATED)			68.8%	70.8%	65.3%	62.5%	60.0%	59.5%	62.5%	62.7%	65.9%	61.7%	60.3%	72.8%	49.8%	52.9%	52.9%
			YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5	YEAR 6	YEAR 7	YEAR 8	YEAR 9	YEAR 10	YEARS 11-15	YEARS 16-20	YEARS 21-25	YEARS 26-30	YEARS 1-30

EXISTING FACILITY CONDITIONS ASSESSMENT MATRIX

Facility: Fire Station __203_____, Alexandria VA

	Item	Condition Remarks	I - Immediate M - Monitor	Recommended Solution
5	**MECHANICAL**			
A	PREVENTIVE MAINTENANCE PROGRAM	It appears that there are not any preventive maintenance programs for the building		
B	UTILITIES	There are gas, water and sanitary connections for this building. The existing utility connections (water, gas and sanitary) provides the capacity required for the current occupants of the building.	M	
C	HEATING PLANT	There is an older boiler in the basement which provides heating for the whole building. Hot water radiators have been installed on first and second floor. Two hot water unit heaters provide heating for apparatus bay, radiators and hot water unit heaters are in fair condition. Boiler is old and already has been scheduled for replacement. There is a gas water heater in the boiler room. Water heater is in fair condition. There has been some complaint about the heating capacity of the apparatus bay. These areas need extra heat in winter.	M	
D	COOLING PLANT(S):	A 4-Ton Carrier Split System (manufactured 2002) provide cooling for the first floor and a 5-Ton Trane condensing unit (manufactured 2007) provides cooling for the second floor. These units are in good condition. There is also a small Mitsubishi Split System for one office room on the first floor. This unit is in fair condition.	M	
E	AIR QUALITY STANDARDS:	Outdoor air has been provided for the Carrier AHU on the first floor. No damper has been seen in outside air ductwork. Also we were not able to verify the termination point of the outside connection for the new Trane unit on the second floor. In the heating mode, outdoor air shall be provided by natural ventilation. In order to verify if the requirement for natural ventilation has been met, we had further information about operable area and floor area of each room.	M	
F	EXHAUST SYSTEMS:	Plymovent exhaust system has been provided for apparatus bay. Exhaust has been provided for all toilet and shower rooms. In general the exhaust system is in fair condition.	M	
G	AIR HANDLERS:	Trane and Carrier Air handling units are in good condition.	M	
H	HYDRONIC/AIR DISTRIBUTION:	Hydronic distribution system is original. No specific complaint was given about the distribution system. Most of the piping is underground or concealed in the ceiling space.	M	
I	ROOM TERMINAL UNITS:	There are few through the wall units on the first and second floor. They work as supplemental units for cooling.	M	

EXISTING FACILITY CONDITIONS ASSESSMENT MATRIX

Facility: Fire Station __203_____, Alexandria VA

	Item	Condition Remarks	I - Immediate M - Monitor	Recommended Solution
J	HVAC - CONTROLS:	Controls related to heating system (radiators) are old, but still working. Controls related to Carrier unit (first floor) and Trane unit (second floor) are in good condition.	M	
K	PLUMBING FACILITIES OCCUPANCY LEVEL:			
L	PLUMBING DISTRIBUTION SYSTEMS:	Most of the piping is underground or concealed in the ceiling space.	M	
M	PLUMBING FIXTURES:	Fixtures are in fair condition.	M	
N	FIRE SUPPRESSION:	There is no Fire Suppression System in this building.		

EXISTING FACILITY CONDITIONS ASSESSMENT MATRIX

Facility: Fire Station __203_____, Alexandria VA

	Item	Condition Remarks	I - Immediate M - Monitor	Recommended Solution
6	ELECTRICAL			
A	Exterior Lighting	Exterior lighting fixture consists of old jelly jars and incandescent flood lamps.	I	Replace existing fixtures with newer energy efficient fixtures.
B	Interior Lighting	Interior fixtures are old fluorescent and utilize T-12 lamps.	I	Replace existing fixtures with newer energy efficient fixtures.
C	Exit/ Emergency Lighting	Fixtures are self-contained battery units and have reached the end of their useful life.	I	Replace existing self contained units with standard exit lights and remove emergency battery units.
D	Service Size	400 amps, at 120-240 volt	I	Pipes are passing over the panels. This is a code violation and it should be corrected. Upgrade service.
E	Overhead/ Underground Electric Service	Service is underground from overhead lines.	I	Install new panels.
F	Service Equipment Condition	Service equipments consist of one 42 pole panel with few 20 amp single pole spaces.	I	Provide two new panels.
G	Emergency System	Existing 7.5 kw generator has reached end of it's useful life.	I	Replace existing generator with larger generator and install outside in a weather proof housing. Power the entire building from new generator.
H	Panelboards	Panels are in fair condition.	I	New panels will be required.
I	Receptacles	There are no GFI receptacles in the kitchen area, this does not meet the code.	I	The number and quantity of receptacles does not appear to be adequate, and additional receptacles should be installed.
J	Wiring	In a few areas the wiring appears to be the original wiring, except where newer power and receptacles were added.	I	Replace all old wiring. Remove exposed and abandoned wiring from the attic.
K	Fire Alarm System	There are no fire alarms in the building. However, there are smoke detectors in the	I	Install smoke detectors in the 1st floor sleeping rooms.

EXISTING FACILITY CONDITIONS ASSESSMENT MATRIX

Facility: Fire Station __203_____, Alexandria VA

	Item	Condition Remarks	I - Immediate M - Monitor	Recommended Solution
		second floor sleeping rooms, boiler room and corridors.		
L	IDS	There are no intrusion detection systems in the building.	M	
M	Public Address System	Few of the speakers do not function properly, and the quality of the sound system is poor.	I	Check the sound system and replace devices and or amplifier, if required.
N	Clock System	There are no clock systems in the building.	M	
P	Building Lightning Protection	Building is not protected by lightning system.	M	
	TOTAL			

FIRE STATION #204

COST ASSESSMENT MATRIX

Alexandria Fire Department - Alexandria, Virginia

CONDITION ASSESSMENT ANALYSIS			RUNNING LIFE CYCLE / SUSTAINMENT COST OUTLOOK															
Building Component	System Life Years	Life Cycle Remaining Years	Year 1 Cost Basis	Year 2 Cost Basis	Year 3 Cost Basis	Year 4 Cost Basis	Year 5 Cost Basis	Year 6 Cost Basis	Year 7 Cost Basis	Year 8 Cost Basis	Year 9 Cost Basis	Year 10 Cost Basis	Year 11 - 15 Cost Total	Year 16 - 20 Cost Total	Year 21 - 25 Cost Total	Year 26 - 30 Cost Total	30 YEAR Cost Total
SUBSTRUCTURE																	
SLAB AND FOUNDATION	70	49	0										$ -	$ -	$ -	$ -	$ -
SUPERSTRUCTURE																	
STRUCTURE BELOW ROOF	70	49	0										$ -	$ -	$ -	$ -	$ -
ROOF STRUCTURE	70	49	0										$ -	$ -	$ -	$ -	$ -
EXTERIOR CLOSURE																	
EXTERIOR WALLS	70	49	0										$ -	$ -	$ -	$ -	$ -
EXTERIOR WINDOWS	20	17	0										$ -	$ 92,455.86	$ -	$ -	$ 92,455.86
OH DOORS	15	6	0						$ 73,843.14				$ -	$ -	$ 73,843.14	$ -	$ 147,686.28
EXTERIOR DOORS	15	6	0						$ 51,555.16				$ -	$ -	$ 51,555.16	$ -	$ 103,110.33
ROOFING																	
ROOFING	30	21	0										$ -	$ -	$ 113,697.98	$ -	$ 113,697.98
INTERIOR CONSTRUCTION																	
PARTITIONS	70	49	0										$ -	$ -	$ -	$ -	$ -
INTERIOR DOORS	25	18	0										$ -	$ 94,451.92	$ -	$ -	$ 94,451.92
INTERIOR SPECIALTY DOORS	25	24	0										$ -	$ -	$ -	$ -	$ -
INTERIOR GLAZING SYSTEMS	25	18	0										$ -	$ 339.83	$ -	$ -	$ 339.83
INTERIOR SPECIALTIES	15	6	0						$ 37,850.19				$ -	$ -	$ 37,850.19	$ -	$ 75,300.38
CASEWORK	20	14	0										$ 72,736.98	$ -	$ -	$ -	$ 72,736.98
INTERIOR FINISHES																	
WALL FINISHES	7	5	0					$ 149,117.24					$ 149,117.24	$ 149,117.24	$ -	$ 149,117.24	$ 596,468.96
FLOORING & FLOOR FINISHES	20	14	0										$ 300,547.10	$ -	$ -	$ -	$ 300,547.10
CEILING & CEILING FINISHES	15	6	0						$ 155,731.81				$ -	$ -	$ 155,731.81	$ -	$ 311,463.61
PLUMBING																	
PLUMBING FIXTURES	30	21	0										$ -	$ -	$ 113,507.73	$ -	$ 113,507.73
DOMESTIC WATER SUPPLY	30	21	0										$ -	$ -	$ 107,530.05	$ -	$ 107,530.05
SANITARY WASTE & VENT SYSTEM	30	21	0										$ -	$ -	$ 186,186.56	$ -	$ 186,186.56
PLUMBING EQUIPMENT	30	21	0										$ -	$ -	$ 7,200.12	$ -	$ 7,200.12
H.V.A.C																	
ENERGY SUPPLY	30	21	0										$ -	$ -	$ 19,235.15	$ -	$ 19,235.15
HEAT GENERATING SYSTEM	30	21	0										$ -	$ -	$ 88,540.69	$ -	$ 88,540.69
COOLING GENERATING SYSTEM	20	14	0										$ 84,576.05	$ -	$ -	$ -	$ 84,576.05
DISTRIBUTION SYSTEMS	50	41	0										$ -	$ -	$ -	$ -	$ -
EXHAUST SYSTEMS	50	35	0										$ -	$ -	$ -	$ -	$ -
TERMINAL & PACKAGE UNITS	30	21	0										$ -	$ -	$ 41,455.07	$ -	$ 41,455.07
CONTROLS & INSTRUMENTATION	30	21	0										$ -	$ -	$ 38,311.11	$ -	$ 38,311.11
FIRE PROTECTION SYSTEMS																	
WATER SUPPLY (FIRE PROTECTION)	30	21	0										$ -	$ -	$ 37,338.76	$ -	$ 37,338.76
SPRINKLERS	20	14	0										$ 145,000.41	$ -	$ -	$ -	$ 145,000.41
FIRE EXTINGUISHERS	15	7	0							$ 741.24			$ -	$ 741.24	$ -	$ 741.24	$ 2,223.72
ELECTRIC POWER & LIGHTING																	
SERVICE AND DISTRIBUTION	30	21	0										$ -	$ -	$ 202,991.66	$ -	$ 202,991.66
LIGHTING & BRANCH WIRING	20	14	0										$ 180,275.38	$ -	$ -	$ -	$ 180,275.38
ELECTRICAL SYSTEMS																	
COMMUNICATION, SECURITY, & ALARM SYSTEMS	15	6	0						$ 96,121.15				$ -	$ -	$ 96,121.15	$ -	$ 192,242.30
SPECIAL ELECTRICAL SYSTEMS	15	6	0						$ 73,597.47				$ -	$ -	$ 73,597.47	$ -	$ 147,194.95
EQUIPMENT																	
FOOD SERVICE	15	6	0						$ 25,554.87				$ -	$ -	$ 25,554.87	$ -	$ 51,109.73
ELEVATORS OR LIFTS	20	14	0										$ 116,602.49	$ -	$ -	$ -	$ 116,602.49
FIXED & MOVEABLE EQUIPMENT	15	5	0						$ 82,145.21				$ -	$ -	$ 82,145.21	$ -	$ 164,290.41
HAZARDOUS MATERIALS																	
ASBESTOS ABATEMENT	30	29	0										$ -	$ -	$ -	$ -	$ -
LEAD ABATEMENT	30	29	0										$ -	$ -	$ -	$ -	$ -
ESSENTIAL FACILITY																	
EMERGENCY POWER	20	14	0										$ 102,504.85	$ -	$ -	$ -	$ 102,504.85
SITE																	
Site Preparation																	
Clear and Grub	20	19	0										$ -	$ -	$ -	$ -	$ -
Earthwork	20	19	0										$ -	$ -	$ -	$ -	$ -
Site Improvements													$ -	$ -	$ -	$ -	$ -
Landscaping	100	70	0										$ -	$ -	$ -	$ -	$ -
Asphalt Paving	20	11	0										$ 106,887.27	$ -	$ -	$ -	$ 106,887.27
Concrete Paving	25	18	0										$ -	$ 16,332.01	$ -	$ -	$ 16,332.01
Fencing	20	14	0										$ 61,379.54	$ -	$ -	$ -	$ 61,379.54
Misc Site Improvements	20	19	0										$ -	$ -	$ -	$ -	$ -
Site Utilities																	
Water Distribution	50	41	0										$ -	$ -	$ -	$ -	$ -
Sewer Distribution	50	41	0										$ -	$ -	$ -	$ -	$ -
Gas Distribution	50	41	0										$ -	$ -	$ -	$ -	$ -
Storm Sewer	50	42	0										$ -	$ -	$ -	$ -	$ -
Site Electrical																	
Electrical Distribution	50	35	0										$ -	$ -	$ -	$ -	$ -
Exterior Lighting	50	36	0										$ -	$ -	$ -	$ -	$ -
Communications	50	36	0										$ -	$ -	$ -	$ -	$ -
ADA Compliance	50	35	0										$ -	$ -	$ -	$ -	$ -
ATFP Compliance	50	49	0										$ -	$ -	$ -	$ -	$ -
TOTAL SITE COST																	
TOTAL PERMENENT BUILDING COST																	
TOTAL PERMANENT FACILITY COST			$ -	$ -	$ -	$ -	$ -	$ 149,117.24	$ 598,198.90	$ 741.24	$ -	$ -	$ 1,379,627.20	$ 292,437.10	$ 1,553,165.80	$ 149,858.48	$ 4,181,174.25
TOTAL COST WITH AREA COST FACTOR @ 7%			$ -	$ -	$ -	$ -	$ -	$ 159,555.45	$ 637,002.32	$ 793.13	$ -	$ -	$ 1,476,201.27	$ 317,101.70	$ 1,661,917.49	$ 160,348.57	$ 4,473,856.45
TOTAL W/ ESCALATION @ 3%			$0.00	$0.00	$0.00	$0.00	$0.00	$184,968.49	$761,725.27	$975.42	$0.00	$0.00	$ 2,204,352.78	$ 645,204.69	$ 3,091,856.06	$ 345,417.33	$ 7,234,740.58
RUNNING TOTAL			$0.00	$0.00	$0.00	$0.00	$0.00	$184,968.49	$946,693.76	$947,669.21	$947,669.21	$947,669.21	$3,152,021.99	$3,797,226.67	$6,889,082.93	$7,234,740.58	$7,234,740.58
			RUNNING FCI OUTLOOK														
FCI (WITH NO COSTS INCURED)			37.6%	41.3%	45.1%	48.8%	52.6%	56.3%	58.7%	62.4%	65.1%	67.8%	81.0%	88.8%	94.7%	99.4%	99.4%
REVISED FCI (AFTER INCURED COSTS INDICATED)			37.6%	41.3%	45.1%	48.8%	52.6%	56.3%	44.0%	51.0%	54.7%	45.0%	89.1%	87.7%	49.6%	74.3%	74.3%
			YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5	YEAR 6	YEAR 7	YEAR 8	YEAR 9	YEAR 10	YEARS 11-15	YEARS 16-20	YEARS 21-25	YEARS 26-30	YEARS 1-30

EXISTING FACILITY CONDITIONS ASSESSMENT MATRIX

Facility: Fire Station __204_____, Alexandria VA

5	**MECHANICAL**			
A	PREVENTIVE MAINTENANCE PROGRAM	It appears that there are not any preventive maintenance programs for the building		
B	UTILITIES	water gas and sanitary connections has been provided for the building. Gas and water connections satisfy the current demand of the buiding.	M	
C	HEATING PLANT	First floor of the building are being served by the following systems: 3 ton, 5 ton , 2 and 2.5 ton carrier condensing units (manufacturing date for all units is 2000) , all outdoor units have been connected to indoor air handling units with DX coils, each indoor air handling unit has been equipped with carrier gas furnace which provide heating for heating operation. In general all of these units are in fair condition. Second floor is being served by the following roof top units: 12 1/2 ton , 8 1/2 ton,5 ton , 4 ton carrier roof top unit gas heat ,electric cooling, constant volume. All of these units have been manufactured in 2000. these roof top units are in fair condition. There is also a 3 ton Trane roof top unit gas heat manufactured in 2007, this unit is in excelent condition. A 3 ton carrier unit serves ductless units in the second floor (manufacturing date 2001) this unit is in fair condition. Two carrier cassete type units are being installed for IT room at the second floor we assume these units will be in excelent conditions. Apparatus bay is being served by seven gas fired radiant heaters these heaters are in fair condition. In addition of these radiant heaters a Rezn	M	
D	COOLING PLANT(S):	Refer to Heating plant (Item C).	M	
E	AIR QUALITY STANDARDS:			
F	EXHAUST SYSTEMS:	Plymovent exhaust system has been provided for the apparatus bay, exhaust also have been provided for toilet and shower rooms, in general exhaust system is in fair condition.	M	
G	AIR HANDLERS:	As it was mentioned in item C there are some AHU at the first floor these units are in fair condition.	M	
H	HYDRONIC/AIR DISTRIBUTION:			
I	ROOM TERMINAL UNITS:			

EXISTING FACILITY CONDITIONS ASSESSMENT MATRIX

Facility: Fire Station __204_____, Alexandria VA

J	HVAC - CONTROLS:	Controls related to roof top units and spilit systems are working in general controls are in fair condition. There has been some complains about temprature swing specially at some parts of the second floor these problems are not related to the controls system.	M	
K	PLUMBING FACILITIES OCCUPANCY LEVEL:			
L	PLUMBING DISTRIBUTION SYSTEMS:	Most of the piping is underground or concealed in the ceiling space, no specific problem was mentioned regarding plumbing system, in general plumbing system is in fair condition.	M	
M	PLUMBING FIXTURES:	In general plumbing fixtures are in fair condition.	M	
N	FIRE SUPPRESSION:	Sprinkler system has been provided for the building.		

Hi Mike

This is our recommendation for problrms that they have for the FS 204, second floor.

we recommend 2 options:

Option 1: using one big roof top unit to serve the whole second floor, VAV system with reheat and proper zoning . if we have proper zoning for VAV boxes (with reheat) the problem related to tempeature swing will be solved.
Option 2: using smaller roof top units with proper zoning. small roof top units can not provide good humidity control when the out side air is very humid, if the zoning has been done correctly it can solve the tempretaure related problems.

personally if there is ceiling space for VAV boxes I prefer option 1.
let me know if you have any questions.

Thanks

--

Kumars Haidari, P.E. , LEED AP

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EXISTING FACILITY CONDITIONS ASSESSMENT MATRIX

Facility: Fire Station ___204_____, Alexandria VA

	Item	Condition Remarks	I - Immediate M - Monitor	Recommended Solution
6	ELECTRICAL			
A	Exterior Lighting	Exterior lighting fixtures are in good shape.	M	
B	Interior Lighting	Interior fixtures are fluorescent and utilize either T-8 or compact fluorescent lamps.	I	Replace broken lenses in the apparatus bay area.
C	Exit/ Emergency Lighting	Exit and emergency lighting is adequate.	M	
D	Service Size	Service is 1200 amps and served from a pad mounted transformer.	M	
E	Overhead/ Underground Electric Service	Service is underground from overhead lines.	M	
F	Service Equipment Condition	Service equipments are new and in good condition.	M	
G	Emergency System	There are two generators serving the emergency and the critical load in the building, generators are in good condition.	M	
H	Panelboards	Panelboards are in good condition.	M	
I	Receptacles	Quantity and quality of the receptacles appears to be adequate.	M	
J	Wiring	Wiring in good condition.	M	
K	Fire Alarm System	Building is equipped with fire alarm system, and in good condition.	M	

EXISTING FACILITY CONDITIONS ASSESSMENT MATRIX

Facility: Fire Station ___204_____, Alexandria VA

	Item	Condition Remarks	I - Immediate M - Monitor	Recommended Solution
L	IDS	Building is equipped with exterior cameras, and appear to be adequate.	M	
M	Public Address System	In general, the public address system appears working properly. However, one person indicated that sometimes it does not work as it should or as intended.	I	Check the sound system and replace devices and or speakers, if required.
N	Clock System	There is no clock system in the building.	M	
P	Building Lightning Protection	Building equipped with lightning system, and the system is adequate.	M	
	TOTAL			

FIRE STATION #205

COST ASSESSMENT MATRIX

Alexandria Fire Department - Alexandria, Virginia

CONDITION ASSESSMENT ANALYSIS			RUNNING LIFE CYCLE / SUSTAINMENT COST OUTLOOK														
Building Component	System Life Years	Life Cycle Remaining Years	Year 1 Cost Basis	Year 2 Cost Basis	Year 3 Cost Basis	Year 4 Cost Basis	Year 5 Cost Basis	Year 6 Cost Basis	Year 7 Cost Basis	Year 8 Cost Basis	Year 9 Cost Basis	Year 10 Cost Basis	Year 11 - 15 Cost Total	Year 16 - 20 Cost Total	Year 21 - 25 Cost Total	Year 26 - 30 Cost Total	30 YEAR Cost Total
SUBSTRUCTURE																	
SLAB AND FOUNDATION	75	21	0										$ -	$ -	$ 237,530.22	$ -	$ 237,530.22
SUPERSTRUCTURE																	
STRUCTURE BELOW ROOF	75	21	0										$ -	$ -	$ 65,466.99	$ -	$ 65,466.99
ROOF STRUCTURE	75	21	0										$ -	$ -	$ 181,058.48	$ -	$ 181,058.48
EXTERIOR CLOSURE																	
EXTERIOR WALLS	75	21	0										$ -	$ -	$ 580,282.62	$ -	$ 580,282.62
EXTERIOR WINDOWS	20	9	0									$ 36,551.27	$ -	$ -	$ -	$ 36,551.27	$ 73,102.55
OH DOORS	15	1	0	$ 29,192.96									$ -	$ 29,192.96	$ -	$ -	$ 58,385.93
EXTERIOR DOORS	15	5	0					$ 20,381.69					$ -	$ -	$ 20,381.69	$ -	$ 40,763.38
ROOFING																	
ROOFING	30	2	0		$ 44,949.08								$ -	$ -	$ -	$ -	$ 44,949.08
INTERIOR CONSTRUCTION																	
PARTITIONS	75	21	0										$ -	$ -	$ 199,433.93	$ -	$ 199,433.93
INTERIOR DOORS	25	6	0								$ 37,340.39		$ -	$ -	$ -	$ -	$ 37,340.39
INTERIOR SPECIALTY DOORS	25	24	0										$ -	$ -	$ -	$ -	$ -
INTERIOR GLAZING SYSTEMS	25	6	0								$ 133.95		$ -	$ -	$ -	$ -	$ 133.95
INTERIOR SPECIALTIES	15	5	0					$ 14,884.53					$ -	$ -	$ 14,884.53	$ -	$ 29,769.07
CASEWORK	20	14	0										$ 28,755.65	$ -	$ -	$ -	$ 28,755.65
INTERIOR FINISHES																	
WALL FINISHES	7	2	0		$ 58,981.84							$ 58,981.84	$ -	$ 58,981.84	$ 58,981.84	$ -	$ 236,806.57
FLOORING & FLOOR FINISHES	20	6	0						$ 118,817.55				$ -	$ -	$ -	$ 118,817.55	$ 237,635.10
CEILING & CEILING FINISHES	15	5	0					$ 61,566.63					$ -	$ -	$ 61,566.63	$ -	$ 123,133.26
PLUMBING																	
PLUMBING FIXTURES	30	9	0									$ 44,873.87	$ -	$ -	$ -	$ -	$ 44,873.87
DOMESTIC WATER SUPPLY	30	9	0									$ 42,510.67	$ -	$ -	$ -	$ -	$ 42,510.67
SANITARY WASTE & VENT SYSTEM	30	9	0									$ 73,606.54	$ -	$ -	$ -	$ -	$ 73,606.54
PLUMBING EQUIPMENT	30	9	0									$ 2,846.48	$ -	$ -	$ -	$ -	$ 2,846.48
H.V.A.C																	
ENERGY SUPPLY	30	9	0									$ 7,804.39	$ -	$ -	$ -	$ -	$ 7,804.39
HEAT GENERATING SYSTEM	30	29	0										$ -	$ -	$ -	$ 35,003.45	$ 35,003.45
COOLING GENERATING SYSTEM	20	6	0						$ 33,436.09				$ -	$ -	$ -	$ 33,436.09	$ 66,872.17
DISTRIBUTION SYSTEMS	50	15	0										$ -	$ 66,731.18	$ -	$ -	$ 66,731.18
EXHAUST SYSTEMS	30	15	0										$ -	$ 11,240.29	$ -	$ -	$ 11,240.29
TERMINAL & PACKAGE UNITS	30	9	0									$ 16,388.74	$ -	$ -	$ -	$ -	$ 16,388.74
CONTROLS & INSTRUMENTATION	30	9	0									$ 15,541.16	$ -	$ -	$ -	$ -	$ 15,541.16
FIRE PROTECTION SYSTEMS																	
WATER SUPPLY (FIRE PROTECTION)	30	9	0									$ 14,761.42	$ -	$ -	$ -	$ -	$ 14,761.42
SPRINKLERS	20	6	0						$ 57,324.10				$ -	$ -	$ -	$ 57,324.10	$ 114,648.21
FIRE EXTINGUISHERS	10	7	0							$ 293.04			$ -	$ 293.04	$ -	$ 293.04	$ 879.12
ELECTRIC POWER & LIGHTING																	
SERVICE AND DISTRIBUTION	30	9	0									$ 80,290.23	$ -	$ -	$ -	$ -	$ 80,290.23
LIGHTING & BRANCH WIRING	20	14	0										$ 75,223.00	$ -	$ -	$ -	$ 75,223.00
ELECTRICAL SYSTEMS																	
COMMUNICATION, SECURITY, & ALARM SYSTEMS	15	5	0					$ 38,000.30					$ -	$ -	$ 38,000.30	$ -	$ 76,000.60
SPECIAL ELECTRICAL SYSTEMS	15	5	0					$ 29,095.84					$ -	$ -	$ 29,095.84	$ -	$ 58,191.69
EQUIPMENT																	
FOOD SERVICE	15	5	0					$ 10,102.80					$ -	$ -	$ 10,102.80	$ -	$ 20,205.60
ELEVATORS OR LIFTS	20	19	0										$ -	$ -	$ -	$ -	$ -
FIXED & MOVEABLE EQUIPMENT	15	5	0					$ 32,475.08					$ -	$ -	$ 32,475.08	$ -	$ 64,950.17
HAZARDOUS MATERIALS																	
ASBESTOS ABATEMENT	30	9	0									$ 8,706.54	$ -	$ -	$ -	$ -	$ 8,706.54
LEAD ABATEMENT	30	9	0									$ 20,444.07	$ -	$ -	$ -	$ -	$ 20,444.07
ESSENTIAL FACILITY																	
EMERGENCY POWER	20	1	0	$ 60,290.89									$ -	$ -	$ 60,290.89	$ -	$ 120,581.79
SEISMIC CAPACITY	50	48	0										$ -	$ -	$ -	$ -	$ -
SITE																	
Site Preparation																	
Clear and Grub	20	19	0										$ -	$ -	$ -	$ -	$ -
Earthwork	20	19	0										$ -	$ -	$ -	$ -	$ -
Site Improvements													$ -	$ -	$ -	$ -	$ -
Landscaping	100	30	0										$ -	$ -	$ -	$ -	$ -
Asphalt Paving	20	6	0						$ 42,256.55				$ -	$ -	$ -	$ 42,256.55	$ 84,513.11
Concrete Paving	25	6	0								$ 6,081.32		$ -	$ -	$ -	$ -	$ 6,081.32
Fencing	20	19	0										$ -	$ -	$ -	$ -	$ -
Misc Site Improvements	20	19	0										$ -	$ -	$ -	$ -	$ -
Site Utilities																	
Water Distribution	50	15	0										$ -	$ 2,456.44	$ -	$ -	$ 2,456.44
Sewer Distribution	50	15	0										$ -	$ 5,428.33	$ -	$ -	$ 5,428.33
Gas Distribution	50	15	0										$ -	$ 728.86	$ -	$ -	$ 728.86
Storm Sewer	50	16	0										$ -	$ 3,649.11	$ -	$ -	$ 3,649.11
Site Electrical																	
Electrical Distribution	50	15	0										$ -	$ 52,585.95	$ -	$ -	$ 52,585.95
Exterior Lighting	50	16	0										$ -	$ 24,184.93	$ -	$ -	$ 24,184.93
Communications	50	15	0										$ -	$ 3,872.51	$ -	$ -	$ 3,872.51
ADA Compliance	50	15	0										$ -	$ 23,199.00	$ -	$ -	$ 23,199.00
AT/FP Compliance	50	48	0										$ -	$ -	$ -	$ -	$ -
TOTAL PERMANENT FACILITY COST			$ -	$ 89,483.86	$ 103,900.72	$ -	$ -	$ 206,506.69	$ 251,834.29	$ 293.04	$ 43,535.59	$ 423,037.21	$ 103,978.65	$ 282,314.22	$ 1,668,521.88	$ 329,667.06	$ 3,416,669.06
TOTAL COST WITH AREA COST FACTOR @ 7%			$ -	$ 95,747.73	$ 111,173.77	$ -	$ -	$ 220,962.36	$ 269,462.89	$ 313.55	$ 46,583.18	$ 452,649.93	$ 111,257.16	$ 302,076.21	$ 1,785,196.12	$ 352,636.81	$ 3,657,354.23
TOTAL W/ ESCALATION @ 3%			30.00	$98,620.16	$117,944.26	$0.00	30.00	$256,168.93	$321,752.55	$380.83	$59,010.15	$890,609.06	$ 168,286.44	$ 476,454.82	$ 3,158,140.79	$ 762,244.43	$ 6,910,880.23
RUNNING TOTAL			$0.00	$98,620.16	$216,564.42	$216,564.42	$216,564.42	$472,720.35	$794,472.90	$794,856.53	$853,866.68	$1,444,473.75	$1,612,760.18	$2,089,215.01	$5,248,355.80	$6,010,600.23	$6,910,880.23
RUNNING FCI OUTLOOK																	
FCI (WITH NO COSTS INCURED)			88.2%	83.8%	86.3%	86.3%	92.3%	95.3%	97.7%	99.6%	101.4%	103.2%	109.4%	113.8%	115.6%	115.9%	115.9%
REVISED FCI (AFTER INCURED COSTS INDICATED)			80.2%	82.8%	82.8%	81.7%	86.4%	89.0%	83.7%	76.4%	75.5%	81.8%	76.8%	81.7%	32.4%	39.8%	39.8%
			YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5	YEAR 6	YEAR 7	YEAR 8	YEAR 9	YEAR 10	YEARS 11-15	YEARS 16-20	YEARS 21-25	YEARS 26-30	YEARS 1-30

EXISTING FACILITY CONDITIONS ASSESSMENT MATRIX

Facility: Fire Station __205_____, Alexandria VA

	Item	Condition Remarks	I - Immediate M - Monitor	Recommended Solution
5	MECHANICAL			
A	PREVENTIVE MAINTENANCE PROGRAM	It appears that there are not preventive maintenance program for the building		
B	UTILITIES	There are gas and water connections in the gear room and sanitary connection at the boiler room. 3/4" gas line coming to the building. We did not received any complaint regarding the capacity of existing gas and water lines. The existing connections satisfy the building demand for current occupancy level. Sanitary system has problem and constantly get locked. Sanitary and gas and water piping are original (building was built in 1949).	M	
C	HEATING PLANT	There is an old boiler (Rite Boiler) which serves the hot water unit heaters in apparatus bay.	M	
D	COOLING PLANT(S):	Cooling has been provided by	M	
E	AIR QUALITY STANDARDS:	We have not been able to verify the connection of outdoor air for air handling units. Any compliance with code needs further investigation.		
F	EXHAUST SYSTEMS:	Apparatus bay has been equipped with plymovent exhaust system, exhaust for toilet and bathrooms has been provided no specific complain has been reported regarding exhaust system.	M	
G	AIR HANDLERS:	By considering the age of the heat pump units, we assume most of them are in good condition. There has been a complaint by maintenance personnel about the AHU installed above ceiling space, above the male EMS room. Unit is old and drain pan is rusted, this AHU needs to be replaced.	M	
H	HYDRONIC/AIR DISTRIBUTION:	Hydronic piping is the original piping system most of the piping is underground or concealed above ceiling, based on age of the building (59 years old) we assume hydronic piping system needs to be replaced in near future.	M	
I	ROOM TERMINAL UNITS:	There are a few through the wall units which provide supplemental cooling and serve the second floor these units are in fair condition.	M	
J	HVAC - CONTROLS:	Controls related to the hydronic system are old. Controls related to heat pumps and roof top units are in good condition. Controls related to hydronic system needs to be replaced with any future modification on this system.	M	
K	PLUMBING FACILITIES OCCUPANCY LEVEL:			

EXISTING FACILITY CONDITIONS ASSESSMENT MATRIX

Facility: Fire Station __205_____, Alexandria VA

	Item	Condition Remarks	I - Immediate M - Monitor	Recommended Solution
L	PLUMBING DISTRIBUTION SYSTEMS:	Main part of the plumbing system is original, most of the piping is underground or concealed in the ceiling space. Based on building age (59 years old). We assume plumbing distribution needs to be replaced in near future.	M	
M	PLUMBING FIXTURES:	Plumbing fixtures are in fair conditions.	M	
N	FIRE SUPPRESSION:	There is no fire suppression system in this building.	M	

EXISTING FACILITY CONDITIONS ASSESSMENT MATRIX

Facility: Fire Station ____205____, Alexandria VA

	Item	Condition Remarks	I - Immediate M - Monitor	Recommended Solution
ASSESSMENT SUMMARY:				
5	**MECHANICAL**			
6	**ELECTRICAL**			
A	Exterior Lighting	Exterior lighting fixtures are of good quality. However, few of the fixtures have discolored lenses.	I	Replace discolored lenses.
B	Interior Lighting	Interior fixtures are fluorescent and utilize T-8 fluorescent lamps. There is no emergency lighting in the second floor corridor.	I	The fixture lenses in the kitchen are discolored, and need to be replaced.
C	Exit/ Emergency Lighting	There are no emergency lighting on 2nd floor.	I	Install emergency lighting on 2nd floor.
D	Service Size	Service is 600 amps 120-240 single phase.	M	
E	Overhead/ Underground Electric Service	Service is underground from overhead lines. There is one spare 4" conduit for future use.	M	
F	Service Equipment Condition	Service equipment are in good condition.	M	
G	Emergency System	There is a 7.5 kw generators installed in the apparatus bay, the generator and it's transfer switch have reached their useful life, the battery unit is beneath the generator on a movable frame, the battery terminal will touch the generator frame if moved by accident and will short the terminal.	I	The battery unit should be secured immediately to prevent the shorting of the terminals. However, for a permanent resolution, consider replacing the generator with a larger size generator in a weather proof enclosure and locate it outside the building and serve the entire building power from the new generator.
H	Panelboards	Panelboards are in good condition, but needs a panel directory. There is space available in the main MDP panel, panel LB and KP and the first floor panel LP, appears to be full.	I	Update the panel directories.
I	Receptacles	The duplex receptacle outlets in the apparatus bay are old and they should be changed. The kitchen receptacle located to the left of the sink need to be GFI type.	I	

EXISTING FACILITY CONDITIONS ASSESSMENT MATRIX

Facility: Fire Station ____205____, Alexandria VA

	Item	Condition Remarks	I - Immediate M - Monitor	Recommended Solution
J	Wiring	It appears that the wiring in the station office on the first floor and sleeping rooms were changed, however, this should be verified.	I	Verify that the wiring on station offices and the sleeping rooms were replaced. Replace wiring if required.
K	Fire Alarm System	There is no fire alarm system in the building. However, the sleeping rooms have single station smoke detectors, there are no smoke detectors in the second floor corridor, the smoke detector is missing in the 1st floor officers quarters room.	I	Provide smoke detectors in the 2nd floor corridor and install the missing detector in the officers quarters.
L	IDS	Building does not have any intrusion system.	M	
M	Public Address System	In general, the public system appears to be working properly.	M	
N	Clock System	There is no clock system in the building.	M	
P	Building Lightning Protection	None exist.	M	
	TOTAL			

FIRE STATION #206

COST ASSESSMENT MATRIX

Alexandria Fire Department - Alexandria, Virginia

CONDITION ASSESSMENT ANALYSIS			RUNNING LIFE CYCLE / SUSTAINMENT COST OUTLOOK														
Building Component	System Life Years	Life Cycle Remaining Years	Year 1 Cost Basis	Year 2 Cost Basis	Year 3 Cost Basis	Year 4 Cost Basis	Year 5 Cost Basis	Year 6 Cost Basis	Year 7 Cost Basis	Year 8 Cost Basis	Year 9 Cost Basis	Year 10 Cost Basis	Year 11 - 15 Cost Total	Year 16 - 20 Cost Total	Year 21 - 25 Cost Total	Year 26 - 30 Cost Total	30 YEAR Cost Total
SUBSTRUCTURE																	
SLAB AND FOUNDATION	70	21	$ 0										$ -	$ -	$ 243,074.64	$ -	$ 243,074.64
SUPERSTRUCTURE																	
STRUCTURE BELOW ROOF	70	21	0										$ -	$ -	$ 66,995.09	$ -	$ 66,995.09
ROOF STRUCTURE	70	21	0										$ -	$ -	$ 165,284.66	$ -	$ 165,284.66
EXTERIOR CLOSURE																	
EXTERIOR WALLS	70	21	0										$ -	$ -	$ 593,827.30	$ -	$ 593,827.30
EXTERIOR WINDOWS	25	6	0						$ 37,404.44				$ -	$ -	$ -	$ 37,404.44	$ 74,808.87
OH DOORS	15	1	0	$ 29,874.37									$ -	$ 29,874.37	$ -	$ -	$ 59,748.75
EXTERIOR DOORS	15	5	0					$ 20,857.43					$ -	$ -	$ 20,857.43	$ -	$ 41,714.86
ROOFING																	
ROOFING	30	9	0									$ 49,998.26	$ -	$ -	$ -	$ -	$ 49,998.26
INTERIOR CONSTRUCTION																	
PARTITIONS	70	21	0										$ -	$ -	$ 204,089.03	$ -	$ 204,089.03
INTERIOR DOORS	25	6	0								$ 38,211.97		$ -	$ -	$ -	$ -	$ 38,211.97
INTERIOR SPECIALTY DOORS	25	24	0										$ -	$ -	$ -	$ -	$ -
INTERIOR GLAZING SYSTEMS	25	8	0								$ 137.08		$ -	$ -	$ -	$ -	$ 137.08
INTERIOR SPECIALTIES	15	5	0					$ 15,231.86					$ -	$ -	$ 15,231.86	$ -	$ 30,463.92
CASEWORK	20	14	0										$ 29,426.85	$ -	$ -	$ -	$ 29,426.85
INTERIOR FINISHES																	
WALL FINISHES	7	2	0		$ 60,327.66							$ 60,327.66	$ -	$ 60,327.66	$ 60,327.66	$ -	$ 241,310.66
FLOORING & FLOOR FINISHES	20	6	0						$ 121,990.93				$ -	$ -	$ -	$ 121,990.93	$ 243,981.87
CEILING & CEILING FINISHES	15	5	0					$ 63,003.69					$ -	$ -	$ 63,003.69	$ -	$ 126,007.38
PLUMBING																	
PLUMBING FIXTURES	30	9	0									$ 48,921.29	$ -	$ -	$ -	$ -	$ 48,921.29
DOMESTIC WATER SUPPLY	30	9	0									$ 43,502.93	$ -	$ -	$ -	$ -	$ 43,502.93
SANITARY WASTE & VENT SYSTEM	30	9	0									$ 75,324.62	$ -	$ -	$ -	$ -	$ 75,324.62
PLUMBING EQUIPMENT	30	9	0									$ 2,912.92	$ -	$ -	$ -	$ -	$ 2,912.92
H.V.A.C																	
ENERGY SUPPLY	30	9	0									$ 7,781.89	$ -	$ -	$ -	$ -	$ 7,781.89
HEAT GENERATING SYSTEM	30	29	0										$ -	$ -	$ -	$ 35,820.49	$ 35,820.49
COOLING GENERATING SYSTEM	20	6	0						$ 34,216.54				$ -	$ -	$ -	$ 34,216.54	$ 68,433.07
DISTRIBUTION SYSTEMS	50	3	0			$ 88,288.79							$ -	$ -	$ -	$ -	$ 88,288.79
EXHAUST SYSTEMS	50	15	0										$ -	$ 11,502.62	$ -	$ -	$ 11,502.62
TERMINAL & PACKAGE UNITS	30	9	0									$ 16,771.28	$ -	$ -	$ -	$ -	$ 16,771.28
CONTROLS & INSTRUMENTATION	30	9	0									$ 10,903.91	$ -	$ -	$ -	$ -	$ 10,903.91
FIRE PROTECTION SYSTEMS																	
WATER SUPPLY (FIRE PROTECTION)	30	29	0										$ -	$ -	$ -	$ -	$ -
SPRINKLERS	20	19	0										$ -	$ -	$ -	$ -	$ -
FIRE EXTINGUISHERS	10	7	0							$ 299.88			$ -	$ 299.88	$ -	$ 299.88	$ 899.64
ELECTRIC POWER & LIGHTING																	
SERVICE AND DISTRIBUTION	30	9	0									$ 82,123.39	$ -	$ -	$ -	$ -	$ 82,123.39
LIGHTING & BRANCH WIRING	20	6	0						$ 76,978.82				$ -	$ -	$ -	$ 76,978.82	$ 153,957.64
ELECTRICAL SYSTEMS																	
COMMUNICATION, SECURITY, & ALARM SYSTEMS	15	5	0					$ 38,887.29					$ -	$ -	$ 38,887.29	$ -	$ 77,774.57
SPECIAL ELECTRICAL SYSTEMS	15	5	0					$ 29,774.99					$ -	$ -	$ 29,774.99	$ -	$ 59,549.97
EQUIPMENT																	
FOOD SERVICE	15	5	0					$ 10,338.61					$ -	$ -	$ 10,338.61	$ -	$ 20,677.23
ELEVATORS OR LIFTS	20	19	0										$ -	$ -	$ -	$ -	$ -
FIXED & MOVEABLE EQUIPMENT	15	5	0					$ 33,233.10					$ -	$ -	$ 33,233.10	$ -	$ 66,466.20
HAZARDOUS MATERIALS																	
ASBESTOS ABATEMENT	30	9	0									$ 8,808.77	$ -	$ -	$ -	$ -	$ 8,808.77
LEAD ABATEMENT	30	9	0									$ 20,821.27	$ -	$ -	$ -	$ -	$ 20,821.27
ESSENTIAL FACILITY																	
EMERGENCY POWER	20	1	0	$ 61,696.17									$ -	$ -	$ 61,696.17	$ -	$ 123,392.33
SEISMIC CAPACITY	50	-1	$ -										$ -	$ -	$ -	$ -	$ -
SITE																	
Site Preparation																	
Clear and Grub	20	19	0										$ -	$ -	$ -	$ -	$ -
Earthwork	20	19	0										$ -	$ -	$ -	$ -	$ -
Site Improvements													$ -	$ -	$ -	$ -	$ -
Landscaping	100	30	0										$ -	$ -	$ -	$ -	$ -
Asphalt Paving	20	6	0						$ 43,242.88				$ -	$ -	$ -	$ 43,242.88	$ 86,485.77
Concrete Paving	25	8	0								$ 6,202.80		$ -	$ -	$ -	$ -	$ 6,202.80
Fencing	20	19	0										$ -	$ -	$ -	$ -	$ -
Misc Site Improvements	20	19	0										$ -	$ -	$ -	$ -	$ -
Site Utilities																	
Water Distribution	50	15	0										$ -	$ 2,513.78	$ -	$ -	$ 2,513.78
Sewer Distribution	50	15	0										$ -	$ 5,555.04	$ -	$ -	$ 5,555.04
Gas Distribution	50	15	0										$ -	$ 745.87	$ -	$ -	$ 745.87
Storm Sewer	50	15	0										$ -	$ 3,734.29	$ -	$ -	$ 3,734.29
Site Electrical																	
Electrical Distribution	50	15	0										$ -	$ 53,813.38	$ -	$ -	$ 53,813.38
Exterior Lighting	50	15	0										$ -	$ 24,749.45	$ -	$ -	$ 24,749.45
Communications	50	35	0										$ -	$ -	$ -	$ -	$ -
ADA Compliance	50	15	0										$ -	$ 23,740.50	$ -	$ -	$ 23,740.50
AT/FP Compliance	50	-1	$ -										$ -	$ -	$ -	$ -	$ -
TOTAL PERMANENT FACILITY COST			$ -	$ 91,570.55	$ 60,327.66	$ 88,288.79	$ -	$ 211,327.06	$ 313,453.61	$ 299.88	$ 44,551.85	$ 426,399.20	$ 29,426.85	$ 216,856.84	$ 1,826,625.52	$ 349,553.98	$ 3,458,881.78
TOTAL COST WITH AREA COST FACTOR @ 7%			$ -	$ 97,992.83	$ 64,550.60	$ 73,069.00	$ -	$ 226,119.86	$ 335,373.96	$ 320.87	$ 47,670.48	$ 456,247.14	$ 31,486.73	$ 232,036.82	$ 1,740,497.16	$ 374,022.76	$ 3,679,368.11
TOTAL W/ ESCALATION @ 3%			$0.00	$100,922.11	$68,481.73	$79,844.47	$0.00	$252,139.00	$400,454.05	$394.83	$60,367.54	$595,269.03	$ 47,626.51	$ 367,471.81	$ 3,232,875.95	$ 814,299.57	$ 6,830,196.40
RUNNING TOTAL			$0.00	$100,922.11	$169,403.84	$249,248.31	$249,248.31	$501,383.31	$901,837.36	$902,231.89	$962,599.53	$1,567,918.56	$1,615,545.07	$1,983,016.88	$5,215,896.84	$6,030,196.40	$6,830,196.40
RUNNING FCI OUTLOOK																	
FCI (WITH NO COSTS INCURED)			79.8%	82.2%	85.8%	88.4%	91.2%	94.2%	96.4%	98.1%	99.7%	101.2%	108.3%	116.8%	112.5%	112.8%	112.8%
REVISED FCI (AFTER INCURED COSTS INDICATED)			79.8%	82.2%	81.8%	82.8%	83.4%	86.9%	81.4%	71.6%	74.8%	76.8%	71.3%	81.8%	31.7%	36.8%	36.8%
			YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5	YEAR 6	YEAR 7	YEAR 8	YEAR 9	YEAR 10	YEARS 11-15	YEARS 16-20	YEARS 21-25	YEARS 26-30	YEARS 1-30

EXISTING FACILITY CONDITIONS ASSESSMENT MATRIX

Facility: Fire Station __206_____, Alexandria VA

	Item	Condition Remarks	I - Immediate M - Monitor	Recommended Solution
5	MECHANICAL			
A	PREVENTIVE MAINTENANCE PROGRAM	It appears that there are not any preventive maintenance programs for the building.		
B	UTILITIES	There are gas, water and sanitary connections for this building. The existing connections satisfy the demand of current occupancy. For any future change (for example increasing the emergency generator capacity) utility connection sizes need to be checked.	M	
C	HEATING PLANT	There is an old boiler which provides hot water for radiators (first and second floors) and hot water unit heaters (apparatus bay) in the building. This boiler has already been scheduled for replacement. A gas water heater with storage tank provides service of hot water. The water heater is in fair condition. There are three hot water unit heaters which serve apparatus bay. There has been some complaints about the elevation of these units, regarding blowing air to the ___ not above the ___. For any future renovation elevation it will need to be modified.	M	
D	COOLING PLANT(S):	A 7-5 Ton Carrier condensing unit (split system, manufacture date 1999). Serves the part of the first floor, the rest of the rooms in this building are being served by through the wall units. Through the wall units are in fair condition. One single room at the second floor is being served by a 3-Ton Bard heat pump with 5 kw electric heat (manufacture date, approximately 1990). This heat pump is relatively old but working.	M	
E	AIR QUALITY STANDARDS:	We have not been able to verify if there is any outdoor air connection to Carrier unit, serving the first floor. Major part of the building is being served by through the wall units. So there is no mechanical ventilation for these rooms. Outdoor air could be provided through natural ventilation. This type of ventilation needs further data about floor area and operable area for each space. For any future renovation ventilation air shall be based on Virginia Mechanical Code 2006.	M	
F	EXHAUST SYSTEMS:	Plymovent exhaust has been provided for apparatus bay, exhaust also for toilet and shower rooms has been provided. In general the exhaust system is in fair condition.	M	
G	AIR HANDLERS:	The only air handler in this building is a 7.5-Ton Carrier AHU (Manufacture date 1999), serving first floor. Unit is in fair condition.	M	
H	HYDRONIC/AIR DISTRIBUTION:	Hydronic distribution system is original by considering the age of the building (building was built in 1958). We assume hydronic distribution needs to be replaced in near future.	M	
I	ROOM TERMINAL UNITS:	There are several through the wall units at on the first and second floors, these units are in fair condition.	M	

EXISTING FACILITY CONDITIONS ASSESSMENT MATRIX

Facility: Fire Station __206_____, Alexandria VA

	Item	Condition Remarks	I - Immediate M - Monitor	Recommended Solution
J	HVAC - CONTROLS:	Controls related to heating plant (boiler and radiators) are pneumatic and old, these controls need to be replaced when the heating system is renovated. Controls related to Carrier unit and through the wall units are in fair condition.	M	
K	PLUMBING FACILITIES OCCUPANCY LEVEL:			
L	PLUMBING DISTRIBUTION SYSTEMS:	Plumbing is original, by considering the age of the building. We assume the plumbing system needs to be replaced in near future.	M	
M	PLUMBING FIXTURES:	Major part of plumbing fixtures are original and old, for any future renovation they need to be replaced.	M	
N	FIRE SUPPRESSION:	There is no fire suppression system in this building.	M	
6	**ELECTRICAL**			

EXISTING FACILITY CONDITIONS ASSESSMENT MATRIX

Facility: Fire Station ___206_____, Alexandria VA

	Item	Condition Remarks	I - Immediate M - Monitor	Recommended Solution
6	ELECTRICAL			
A	Exterior Lighting	Exterior lighting consist of building mounted floods lights and recessed canopy lighting, three of these fixtures have discolored lens and need to be replaced.	I	Replace discolored lenses.
B	Interior Lighting	Interior fixtures are fluorescent and utilize T-8 fluorescent lamps. It appears that there is too much light in the bedrooms and operated by a single switch. There is no way to control the light level.	I	Provide additional light switches for multilevel light level control.
C	Exit/ Emergency Lighting	There are no exit and emergency lighting signs on 2nd floor.	I	Add exit and emergency lighting.
D	Service Size	Service is 800 amps.	M	

EXISTING FACILITY CONDITIONS ASSESSMENT MATRIX

Facility: Fire Station ___206_____, Alexandria VA

	Item	Condition Remarks	I - Immediate M - Monitor	Recommended Solution
E	Overhead/ Underground Electric Service	Service is underground from overhead lines.	M	
F	Service Equipment Condition	Service equipment are in good condition.	M	
G	Emergency System	There is a 30 kw generators with two transfer switches, a 150 amp transfer switch that serves the emergency panel. Also a 250 amp transfer switch that it is not serving any load. The existing generator is in good condition, but only serving emergency lighting, over head doors and other critical loads.	I	Consider replacing the generator with a larger size generator in a weather proof enclosure and locate it outside the building and serves the entire building power from the new generator.
H	Panelboards	Panelboards are in fair condition but need panel directory. Panel serving the second floor is old and hard to find spare part.	I	Update the panel directories. Replace panel board.
I	Receptacles	There are lot of old outlets and light switches still operational, appears that the quantity of outlets in the living area is not adequate and one outlet in the second floor bedrooms need cover plates and it should be secured to the device box.	I	Provide cover plate for the second floor outlet, install addition receptacles in the sleeping rooms, replace all old outlets and light switch, and provide GFI receptacle in the 2nd floor Cap. Bedroom.
J	Wiring	Wiring consists of old and new, we suspect that some of the original wiring still in operation.	I	Verify the wiring, and replace all old wiring.
K	Fire Alarm System	There is no fire alarm system in the building. However, the sleeping rooms have single station smoke detectors.	M	
L	IDS	Building does not have any intrusion system.	M	
M	Public Address System	In general, the public system appears to be working properly.	M	
N	Clock System	There is no clock system in the building.	M	
P	Building Lightning Protection	None Exist	M	
	TOTAL			

FIRE STATION #207

COST ASSESSMENT MATRIX

Alexandria Fire Department - Alexandria, Virginia

CONDITION ASSESSMENT ANALYSIS			RUNNING LIFE CYCLE / SUSTAINMENT COST OUTLOOK														
Building Component	System Life Years	Life Cycle Remaining Years	Year 1 Cost Basis	Year 2 Cost Basis	Year 3 Cost Basis	Year 4 Cost Basis	Year 5 Cost Basis	Year 6 Cost Basis	Year 7 Cost Basis	Year 8 Cost Basis	Year 9 Cost Basis	Year 10 Cost Basis	Year 11 - 15 Cost Total	Year 16 - 20 Cost Total	Year 21 - 25 Cost Total	Year 26 - 30 Cost Total	30 YEAR Cost Total
SUBSTRUCTURE																	
SLAB AND FOUNDATION	70	24	0										$ -	$ -	$ 214,477.53	$ -	$ 214,477.53
SUPERSTRUCTURE																	
STRUCTURE BELOW ROOF	70	24	0										$ -	$ -	$ 59,113.32	$ -	$ 59,113.32
ROOF STRUCTURE	70	24	0										$ -	$ -	$ 163,486.46	$ -	$ 163,486.46
EXTERIOR CLOSURE																	
EXTERIOR WALLS	70	21	0										$ -	$ -	$ 523,965.27	$ -	$ 523,965.27
EXTERIOR WINDOWS	20	6	0						$ 33,003.91				$ -	$ -	$ -	$ 33,003.91	$ 66,007.83
OH DOORS	15	5	0					$ 26,359.74					$ -	$ -	$ 26,359.74	$ -	$ 52,719.48
EXTERIOR DOORS	15	5	0					$ 18,403.62					$ -	$ -	$ 18,403.62	$ -	$ 36,807.23
ROOFING																	
ROOFING	30	21	0										$ -	$ -	$ 40,586.70	$ -	$ 40,586.70
INTERIOR CONSTRUCTION																	
PARTITIONS	70	21	0										$ -	$ -	$ 180,076.55	$ -	$ 180,076.55
INTERIOR DOORS	25	6	0								$ 33,716.44		$ -	$ -	$ -	$ -	$ 33,716.44
INTERIOR SPECIALTY DOORS	25	24	0										$ -	$ -	$ -	$ -	$ -
INTERIOR GLAZING SYSTEMS	25	6	0								$ 120.95		$ -	$ -	$ -	$ -	$ 120.95
INTERIOR SPECIALTIES	15	5	0					$ 13,439.87					$ -	$ -	$ 13,439.87	$ -	$ 26,879.93
CASEWORK	20	6	0						$ 25,964.87				$ -	$ -	$ -	$ 25,964.87	$ 51,929.74
INTERIOR FINISHES																	
WALL FINISHES	7	2	0		$ 53,230.29							$ 53,230.29	$ -	$ 53,230.29	$ 53,230.29	$ -	$ 212,921.17
FLOORING & FLOOR FINISHES	20	6	0						$ 107,286.12				$ -	$ -	$ -	$ 107,286.12	$ 214,572.23
CEILING & CEILING FINISHES	15	5	0					$ 55,591.49					$ -	$ -	$ 55,591.49	$ -	$ 111,182.98
PLUMBING																	
PLUMBING FIXTURES	30	21	0										$ -	$ -	$ 40,518.79	$ -	$ 40,518.79
DOMESTIC WATER SUPPLY	30	21	0										$ -	$ -	$ 38,384.94	$ -	$ 38,384.94
SANITARY WASTE & VENT SYSTEM	30	21	0										$ -	$ -	$ 66,462.90	$ -	$ 66,462.90
PLUMBING EQUIPMENT	30	21	0										$ -	$ -	$ 2,570.22	$ -	$ 2,570.22
H.V.A.C																	
ENERGY SUPPLY	30	21	0										$ -	$ -	$ 6,866.37	$ -	$ 6,866.37
HEAT GENERATING SYSTEM	30	21	0										$ -	$ -	$ 31,606.31	$ -	$ 31,606.31
COOLING GENERATING SYSTEM	20	14	0										$ 30,191.06	$ -	$ -	$ -	$ 30,191.06
DISTRIBUTION SYSTEMS	50	35	0										$ -	$ -	$ -	$ -	$ -
EXHAUST SYSTEMS	50	15	0										$ -	$ 10,149.37	$ -	$ -	$ 10,149.37
TERMINAL & PACKAGE UNITS	30	21	0										$ -	$ -	$ 14,798.19	$ -	$ 14,798.19
CONTROLS & INSTRUMENTATION	30	21	0										$ -	$ -	$ 14,032.87	$ -	$ 14,032.87
FIRE PROTECTION SYSTEMS																	
WATER SUPPLY (FIRE PROTECTION)	30	29	0										$ -	$ -	$ -	$ -	$ -
SPRINKLERS	20	19	0										$ -	$ -	$ -	$ -	$ -
FIRE EXTINGUISHERS	10	7	0							$ 264.60			$ -	$ 264.60	$ -	$ 264.60	$ 793.80
ELECTRIC POWER & LIGHTING																	
SERVICE AND DISTRIBUTION	30	2	0		$ 72,461.81								$ -	$ -	$ -	$ -	$ 72,461.81
LIGHTING & BRANCH WIRING	20	1	0	$ 67,922.49									$ -	$ -	$ 67,922.49	$ -	$ 135,844.98
ELECTRICAL SYSTEMS																	
COMMUNICATION, SECURITY, & ALARM SYSTEMS	15	5	0					$ 34,312.31					$ -	$ -	$ 34,312.31	$ -	$ 68,624.62
SPECIAL ELECTRICAL SYSTEMS	15	5	0					$ 26,272.05					$ -	$ -	$ 26,272.05	$ -	$ 52,544.09
EQUIPMENT																	
FOOD SERVICE	15	5	0					$ 9,122.31					$ -	$ -	$ 9,122.31	$ -	$ 18,244.61
ELEVATORS OR LIFTS	20	19	0										$ -	$ -	$ -	$ -	$ -
FIXED & MOVEABLE EQUIPMENT	15	5	0					$ 29,323.32					$ -	$ -	$ 29,323.32	$ -	$ 58,646.65
HAZARDOUS MATERIALS																	
ASBESTOS ABATEMENT	30	9	0									$ 7,861.06	$ -	$ -	$ -	$ -	$ 7,861.06
LEAD ABATEMENT	30	9	0									$ 18,409.94	$ -	$ -	$ -	$ -	$ 18,409.94
ESSENTIAL FACILITY																	
EMERGENCY POWER	20	1	0	$ 54,439.57									$ -	$ -	$ 54,439.57	$ -	$ 108,879.13
SEISMIC CAPACITY	50	4	0				$ -						$ -	$ -	$ -	$ -	$ -
SITE																	
Site Preparation																	
Clear and Grub	20	19	0										$ -	$ -	$ -	$ -	$ -
Earthwork	20	19	0										$ -	$ -	$ -	$ -	$ -
Site Improvements													$ -	$ -	$ -	$ -	$ -
Landscaping	100	30	0										$ -	$ -	$ -	$ -	$ -
Asphalt Paving	20	1	0	$ 38,155.49									$ -	$ -	$ 38,155.49	$ -	$ 76,310.97
Concrete Paving	25	1	0	$ 5,473.06									$ -	$ -	$ -	$ 5,473.06	$ 10,946.12
Fencing	20	19	0										$ -	$ -	$ -	$ -	$ -
Misc Site Improvements	20	19	0										$ -	$ -	$ -	$ -	$ -
Site Utilities																	
Water Distribution	50	15	0										$ -	$ 2,218.04	$ -	$ -	$ 2,218.04
Sewer Distribution	50	15	0										$ -	$ 4,901.50	$ -	$ -	$ 4,901.50
Gas Distribution	50	15	0										$ -	$ 658.12	$ -	$ -	$ 658.12
Storm Sewer	50	15	0										$ -	$ 3,294.96	$ -	$ -	$ 3,294.96
Site Electrical																	
Electrical Distribution	50	15	0										$ -	$ 47,482.40	$ -	$ -	$ 47,482.40
Exterior Lighting	50	15	0										$ -	$ 21,837.75	$ -	$ -	$ 21,837.75
Communications	50	35	0										$ -	$ -	$ -	$ -	$ -
ADA Compliance	50	15	0										$ -	$ 20,947.50	$ -	$ -	$ 20,947.50
AT/FP Compliance	50	4	0				$ -						$ -	$ -	$ -	$ -	$ -
TOTAL PERMANENT FACILITY COST			$ -	$ 166,990.60	$ 125,692.11	$ -	$ -	$ 212,824.80	$ 166,294.90	$ 264.60	$ 33,837.45	$ 79,501.79	$ 30,191.06	$ 164,984.53	$ 1,423,521.06	$ 171,997.05	$ 2,575,105.40
TOTAL COST WITH AREA COST FACTOR @ 7%			$ -	$ 177,809.94	$ 134,490.58	$ -	$ -	$ 227,722.53	$ 177,932.14	$ 283.13	$ 36,206.27	$ 85,066.92	$ 32,304.44	$ 176,533.45	$ 1,523,187.53	$ 184,037.04	$ 2,755,342.19
TOTAL W/ ESCALATION @ 3%			$0.00	$182,938.24	$142,681.03	$0.00	$0.00	$263,957.35	$212,473.54	$348.20	$46,854.69	$111,967.84	$46,863.36	$ 278,979.21	$ 2,704,533.63	$ 386,900.21	$ 3,568,877.40
RUNNING TOTAL			$0.00	$182,938.24	$325,619.27	$325,619.27	$325,619.27	$589,612.10	$802,029.34	$802,373.54	$848,238.24	$956,391.07	$1,003,164.43	$1,287,143.64	$4,991,677.27	$5,388,577.48	$5,568,877.40
RUNNING FCI OUTLOOK																	
FCI (WITH NO COSTS INCURED)			75.1%	77.3%	80.4%	83.6%	85.7%	88.3%	90.2%	91.8%	93.3%	94.8%	102.9%	108.5%	112.1%	113.4%	112.4%
REVISED FCI (AFTER INCURED COSTS INDICATED)			75.1%	77.3%	72.8%	70.3%	73.8%	77.3%	70.5%	55.1%	69.0%	71.4%	82.1%	90.2%	44.1%	32.4%	32.4%
			YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5	YEAR 6	YEAR 7	YEAR 8	YEAR 9	YEAR 10	YEARS 11-15	YEARS 16-20	YEARS 21-25	YEARS 26-30	YEARS 1-30

EXISTING FACILITY CONDITIONS ASSESSMENT MATRIX

Facility: Fire Station ____207_____, Alexandria VA

	Item	Condition Remarks	I - Immediate M - Monitor	Recommended Solution
6	ELECTRICAL			
A	Exterior Lighting	Exterior lighting consist of incandescent recess canopy light and HID wall packs.	I	Replace all incandescent recess down lights with compact flourescent down lights.
B	Interior Lighting	Interior lighting is a combination of T12 and T8 flourescent lighting fixtures. Bedrooms are lit with 2 X 2 flourescent fixtures.	I	Replace all T12 lamps in the apparatus bay with T8 flourescent fixtures. Provide additional light switches to control the bedroom lights for light level reduction.
C	Exit/ Emergency Lighting	It appears the emergency exit lighting is in good condition.	M	
D	Service Size	Service to the facility is 400 AMP.	M	

EXISTING FACILITY CONDITIONS ASSESSMENT MATRIX

Facility: Fire Station ____207_____, Alexandria VA

	Item	Condition Remarks	I - Immediate M - Monitor	Recommended Solution
E	Overhead/ Underground Electric Service	Service is underground and fed from a pad mounted transformer and there is a 4 inch spare conduit from the C/T cabinet to the path mounted transformer which can be utilized for future expansion.	M	
F	Service Equipment Condition	Service equipments are the original fused switch distribution panel and include (6) main switches with no capability for expansion.	I	Provide new 800 AMP distribution panel with a 800 AMP main circuit breaker. Additionally, extend new secondary conductors from the new distribution panel to the power company transformer utilizing exisitng spare conduit. Back feed all exisiting loads from the new distribution panel.
G	Emergency System	Exisiting 7.5 KW gas generator and its associated transfer switch have reached their useful life which is installed inside the building. At the present, it only serves emergency lighting and a few other critical loads.	I	Provide a new generator outside in weatherproof housing and size the generator to serve the entire facility.
H	Panelboards	Majority of the panels are the original panels installed in the 1970's and have reached maximum capacity. It would be difficult to locate spare parts for expansion and panels do not have any directory of the branch circuit breakers.	I	Replace existing panelboards with new panels and provide directories for all panels.
I	Receptacles	Most receptacles are the original receptacles installed in the 1970's and appear to be adequate. However, additional GFI type receptacles are needed over the counter in the Kitchen area.	I	Install additional GFI kitchen counter receptacles.
J	Wiring	Most wirings are the original wirings.	I	Verify all wiring and replace all existing wiring with new wiring.
K	Fire Alarm System	No fire alarm system installed in the building and not required. However, single station smoke detectors are installed in the bedrooms.	M	
L	IDS		M	
M	Public Address System	Existing public address system appears to be working properly.	M	
N	Clock System		M	
P	Building Lightning Protection	Building is not protected with lightning protection system.	M	
	TOTAL			

EXISTING FACILITY CONDITIONS ASSESSMENT MATRIX

Facility: Fire Station __207_____, Alexandria VA

	Item	Condition Remarks	I - Immediate M - Monitor	Recommended Solution
5	**MECHANICAL**			
A	PREVENTIVE MAINTENANCE PROGRAM	It appears that there are not any preventive maintenance program for the building		
B	UTILITIES	There are Gas, Water, Sanitary Connections for this building. The current connection sizes satisfy the current demand of the building.	M	
C	HEATING PLANT	4 Ton Carrier roof top unit (Gas Heat), (manufacture date 1998) and two 5 ton Trane roof top unit (manufacture date 2004) are providing heating and cooling for the major part of the building, Carrier roof top unit is in fair condition and Trane roof top units are in good condition also. 1 ton and 1.5 ton Trane heat pumps (split system, manufacture date 2004) serving the kitchen and day room, these units are in good condition. A gas water heater provides hot water for the building, water heater is in fair condition. There are a few radiant gas heaters which provide heating for apparatus bay, these heaters are in fair condition.	M	
D	COOLING PLANT(S):	Refer to item C	M	
E	AIR QUALITY STANDARDS:	We assume outdoor air has been provided for the major part of the building through roof top units. We do not have quantitative data about outdoor air day room and the kitchen room are not being served by roof top unit, these rooms have windows and they can get their outdoor air through natural ventilation, verification needs further investigation.	M	
F	EXHAUST SYSTEMS:	In addition to plymovent exhaust system there is another exhaust fan for for the apparatus bay, exhaust also has been provided for bathrooms and shower rooms. In general the exhaust system is in fair condition	M	
G	AIR HANDLERS:	N/A		
H	HYDRONIC/AIR DISTRIBUTION:	N/A		

EXISTING FACILITY CONDITIONS ASSESSMENT MATRIX

Facility: Fire Station __207_____, Alexandria VA

	Item	Condition Remarks	I - Immediate M - Monitor	Recommended Solution
I	ROOM TERMINAL UNITS:	Two Trane indoor units (heat pump systems) serving kitchen and day room, these units are in good condition.	M	

EXISTING FACILITY CONDITIONS ASSESSMENT MATRIX

Facility: Fire Station __207_____, Alexandria VA

	Item	Condition Remarks	I - Immediate M - Monitor	Recommended Solution
J	HVAC - CONTROLS:	Temprature control has been provided for all roof top units and heat pumps, in genral the controls are in good condition.		
K	PLUMBING FACILITIES OCCUPANCY LEVEL:			
L	PLUMBING DISTRIBUTION SYSTEMS:	Most of piping is underground or concealed in the ceiling space. Based on maitenance personel some parts of the underground domestic and sanitary has been rusted and has leakage problem. Further investigations are required if sanitary or domestic piping need to be replaced in near future.	M	
M	PLUMBING FIXTURES:	Plumbing fixtures are in good conditions	M	
N	FIRE SUPPRESSION:	There is no Fire Suppression system in this building.		

FIRE STATION #208

COST ASSESSMENT MATRIX

Alexandria Fire Department - Alexandria, Virginia

CONDITION ASSESSMENT ANALYSIS			RUNNING LIFE CYCLE / SUSTAINMENT COST OUTLOOK														
Building Component	System Life Years	Life Cycle Remaining Years	Year 1 Cost Basis	Year 2 Cost Basis	Year 3 Cost Basis	Year 4 Cost Basis	Year 5 Cost Basis	Year 6 Cost Basis	Year 7 Cost Basis	Year 8 Cost Basis	Year 9 Cost Basis	Year 10 Cost Basis	Year 11 - 15 Cost Total	Year 16 - 20 Cost Total	Year 21 - 25 Cost Total	Year 26 - 30 Cost Total	30 YEAR Cost Total
SUBSTRUCTURE																	
SLAB AND FOUNDATION	70	49	0										$ -	$ -	$ -	$ -	$ -
SUPERSTRUCTURE																	
STRUCTURE BELOW ROOF	70	49	0										$ -	$ -	$ -	$ -	$ -
ROOF STRUCTURE	70	49	0										$ -	$ -	$ -	$ -	$ -
EXTERIOR CLOSURE																	
EXTERIOR WALLS	70	51	0										$ -	$ -	$ -	$ -	$ -
EXTERIOR WINDOWS	20	9	0									$ 50,740.71	$ -	$ -	$ -	$ 50,740.71	$ 101,481.42
OH DOORS	15	7	0							$ 40,525.86			$ -	$ -	$ 40,525.86	$ -	$ 81,051.72
EXTERIOR DOORS	15	7	0							$ 28,293.99			$ -	$ -	$ 28,293.99	$ -	$ 56,587.98
ROOFING																	
ROOFING	30	21	0										$ -	$ -	$ 82,398.60	$ -	$ 82,398.60
INTERIOR CONSTRUCTION																	
PARTITIONS	70	21	0										$ -	$ -	$ 276,855.46	$ -	$ 276,855.46
INTERIOR DOORS	25	8	0								$ 51,836.17		$ -	$ -	$ -	$ -	$ 51,836.17
INTERIOR SPECIALTY DOORS	25	24	0										$ -	$ -	$ -	$ -	$ -
INTERIOR GLAZING SYSTEMS	25	8	0								$ 165.95		$ -	$ -	$ -	$ -	$ 165.95
INTERIOR SPECIALTIES	15	5	0					$ 20,662.80					$ -	$ -	$ 20,662.80	$ -	$ 41,325.61
CASEWORK	20	6	0						$ 39,918.78				$ -	$ -	$ -	$ 39,918.78	$ 79,837.56
INTERIOR FINISHES																	
WALL FINISHES	7	2	0		$ 81,837.05							$ 81,837.05	$ -	$ 81,837.05	$ 81,837.05	$ -	$ 327,348.19
FLOORING & FLOOR FINISHES	20	6	0						$ 164,843.28				$ -	$ -	$ -	$ 164,843.28	$ 329,686.57
CEILING & CEILING FINISHES	15	5	0					$ 85,467.19					$ -	$ -	$ 85,467.19	$ -	$ 170,934.38
PLUMBING																	
PLUMBING FIXTURES	30	21	0										$ -	$ -	$ 82,294.19	$ -	$ 82,294.19
DOMESTIC WATER SUPPLY	30	21	0										$ -	$ -	$ 59,013.58	$ -	$ 59,013.58
SANITARY WASTE & VENT SYSTEM	30	21	0										$ -	$ -	$ 102,181.06	$ -	$ 102,181.06
PLUMBING EQUIPMENT	30	21	0										$ -	$ -	$ 3,961.60	$ -	$ 3,961.60
H.V.A.C																	
ENERGY SUPPLY	30	21	0										$ -	$ -	$ 10,588.47	$ -	$ 10,588.47
HEAT GENERATING SYSTEM	30	21	0										$ -	$ -	$ 48,562.02	$ -	$ 48,562.02
COOLING GENERATING SYSTEM	20	14	0										$ 46,416.19	$ -	$ -	$ -	$ 46,416.19
DISTRIBUTION SYSTEMS	50	17	0										$ -	$ 92,636.65	$ -	$ -	$ 92,636.65
EXHAUST SYSTEMS	50	15	0										$ -	$ 15,603.79	$ -	$ -	$ 15,603.79
TERMINAL & PACKAGE UNITS	30	21	0										$ -	$ -	$ 22,750.96	$ -	$ 22,750.96
CONTROLS & INSTRUMENTATION	30	21	0										$ -	$ -	$ 21,574.34	$ -	$ 21,574.34
FIRE PROTECTION SYSTEMS																	
WATER SUPPLY (FIRE PROTECTION)	30	-3	$ -										$ -	$ -	$ -	$ -	$ -
SPRINKLERS	20	19	0										$ -	$ -	$ -	$ -	$ -
FIRE EXTINGUISHERS	10	7	0							$ 406.80			$ -	$ 406.80	$ -	$ 406.80	$ 1,220.40
ELECTRIC POWER & LIGHTING																	
SERVICE AND DISTRIBUTION	30	12	0										$ 111,403.88	$ -	$ -	$ -	$ 111,403.88
LIGHTING & BRANCH WIRING	20	9	0									$ 104,425.05	$ -	$ -	$ -	$ 104,425.05	$ 208,850.10
ELECTRICAL SYSTEMS																	
COMMUNICATION, SECURITY, & ALARM SYSTEMS	15	5	0					$ 52,752.26					$ -	$ -	$ 52,752.26	$ -	$ 105,504.51
SPECIAL ELECTRICAL SYSTEMS	15	5	0					$ 40,391.04					$ -	$ -	$ 40,391.04	$ -	$ 80,782.07
EQUIPMENT																	
FOOD SERVICE	15	5	0					$ 14,024.77					$ -	$ -	$ 14,024.77	$ -	$ 28,049.54
ELEVATORS OR LIFTS	20	19	0										$ -	$ -	$ -	$ -	$ -
FIXED & MOVEABLE EQUIPMENT	15	5	0					$ 45,082.12					$ -	$ -	$ 45,082.12	$ -	$ 90,164.24
HAZARDOUS MATERIALS																	
ASBESTOS ABATEMENT	30	9	0									$ 12,086.48	$ -	$ -	$ -	$ -	$ 12,086.48
LEAD ABATEMENT	30	9	0									$ 28,380.59	$ -	$ -	$ -	$ -	$ 28,380.59
ESSENTIAL FACILITY																	
EMERGENCY POWER	20	1	0	$ 83,696.20									$ -	$ -	$ 83,696.20	$ -	$ 167,392.41
SEISMIC CAPACITY	50	48	0										$ -	$ -	$ -	$ -	$ -
SITE																	
Site Preparation																	
Clear and Grub	20	19	0										$ -	$ -	$ -	$ -	$ -
Earthwork	20	19	0										$ -	$ -	$ -	$ -	$ -
Site Improvements													$ -	$ -	$ -	$ -	$ -
Landscaping	100	87	0										$ -	$ -	$ -	$ -	$ -
Asphalt Paving	20	6	0						$ 58,660.82				$ -	$ -	$ -	$ 58,660.82	$ 117,321.63
Concrete Paving	20	1	0	$ 8,414.36									$ -	$ -	$ -	$ 8,414.36	$ 16,828.73
Fencing	20	19	0										$ -	$ -	$ -	$ -	$ -
Misc Site Improvements	20	19	0										$ -	$ -	$ -	$ -	$ -
Site Utilities																	
Water Distribution	50	15	0										$ -	$ 3,410.05	$ -	$ -	$ 3,410.05
Sewer Distribution	50	15	0										$ -	$ 7,536.65	$ -	$ -	$ 7,536.65
Gas Distribution	50	15	0										$ -	$ 1,011.80	$ -	$ -	$ 1,011.80
Storm Sewer	50	16	0										$ -	$ 5,065.72	$ -	$ -	$ 5,065.72
Site Electrical																	
Electrical Distribution	50	15	0										$ -	$ 73,000.15	$ -	$ -	$ 73,000.15
Exterior Lighting	50	16	0										$ -	$ 33,573.68	$ -	$ -	$ 33,573.68
Communications	50	17	0										$ -	$ 5,098.21	$ -	$ -	$ 5,098.21
ADA Compliance	50	15	0										$ -	$ 32,205.00	$ -	$ -	$ 32,205.00
AT/FP Compliance	50	48	0										$ -	$ -	$ -	$ -	$ -
TOTAL PERMANENT FACILITY COST			$ -	$ 82,110.87	$ 81,837.05	$ -	$ -	$ 258,380.17	$ 263,822.88	$ 69,226.86	$ 82,022.12	$ 277,469.88	$ 157,820.06	$ 301,384.54	$ 1,182,801.45	$ 427,609.80	$ 3,194,186.97
TOTAL COST WITH AREA COST FACTOR @ 7%			$ -	$ 88,558.31	$ 87,565.64	$ -	$ -	$ 276,466.78	$ 281,969.48	$ 74,072.52	$ 89,863.67	$ 296,892.77	$ 168,867.47	$ 379,991.45	$ 1,244,304.55	$ 457,435.49	$ 3,417,779.14
TOTAL W/ ESCALATION @ 3%			$0.00	$101,515.06	$92,898.39	$0.00	$0.00	$320,500.78	$336,686.20	$91,099.86	$70,613.07	$387,377.72	$ 245,077.81	$ 601,755.49	$ 2,213,823.21	$ 1,019,730.14	$ 5,580,977.63
RUNNING TOTAL			$0.00	$101,515.06	$194,413.45	$194,413.45	$194,413.45	$514,914.22	$851,600.03	$942,700.38	$1,013,313.45	$1,400,691.17	$1,645,668.19	$2,247,423.68	$4,561,246.89	$5,580,977.63	$5,580,977.63

RUNNING FCI OUTLOOK

	YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5	YEAR 6	YEAR 7	YEAR 8	YEAR 9	YEAR 10	YEARS 11-15	YEARS 16-20	YEARS 21-25	YEARS 26-30	YEARS 1-30
FCI (WITH NO COSTS INCURED)	53.8%	56.4%	59.8%	62.8%	65.8%	68.8%	71.3%	73.3%	75.2%	77.1%	84.6%	90.9%	95.2%	98.7%	98.7%
REVISED FCI (AFTER INCURED COSTS INDICATED)	53.8%	56.4%	57.1%	58.0%	58.0%	65.0%	64.9%	55.7%	50.8%	53.8%	58.3%	62.2%	45.7%	54.2%	54.2%

EXISTING FACILITY CONDITIONS ASSESSMENT MATRIX

Facility: Fire Station __208_____, Alexandria VA

	Item	Condition Remarks	I - Immediate M - Monitor	Recommended Solution
5	**MECHANICAL**			
A	PREVENTIVE MAINTENANCE PROGRAM	It appears that there are not any preventive maintenance programs for the building		
B	UTILITIES	There are gas, water and sanitary connections for this building.	M	
C	HEATING PLANT	There is no boiler in this building. Heating is provided through electric unit heaters and electric heat in fan coil units in the building. There is one Reznor gas heater at the basement, unit is in fair condition. Four electric unit heater serves the apparatus bay based on maintenance personel, heating for this area is little weak in winter time, for any future renovation this issue for apparatus bay needs to be fixed. Electric unit heaters are in fair condition, fan coil units are old. There is a gas water heater in mechanical room, water heater is in fair condition.	M	
D	COOLING PLANT(S):	An old Carrier chiller (manufacture date 1979) is providing chilled water for fan coil units in the building. This chiller serves the whole building, this unit is very old and some parts have been rusted, chiller needs to be replaced in future. A 15 ton air cooled condenser (manufacture date 1992) serves this chiller. Carrier air cooled chiller is in fair condition.	I	
E	AIR QUALITY STANDARDS:	Outdoor air has not been provided for the building occupant. Weight room at the basement does not have any exterior window, outdoor air shall be provided for this area, the major occupant areas in the building have windows having outdoor air for the building provided through natural ventilation needs further investigation.	I	
F	EXHAUST SYSTEMS:	Plymovent exhaust system has been provided for the apparatus bay, exhaust also for toilet and shower rooms has been provided. In general the exhaust sysytem is in fair condition.		
G	AIR HANDLERS:			
H	HYDRONIC/AIR DISTRIBUTION:	Hydronic distribution system is original (building was built in 1976). Most of the piping is concealed. We have not received any specific complaint regarding hydronic sysytem.	M	

EXISTING FACILITY CONDITIONS ASSESSMENT MATRIX

Facility: Fire Station __208_____, Alexandria VA

	Item	Condition Remarks	I - Immediate M - Monitor	Recommended Solution
I	ROOM TERMINAL UNITS:	There are several fan coil units (Airtherm fan coil units) in this building, they are old but working.	M	

EXISTING FACILITY CONDITIONS ASSESSMENT MATRIX

Facility: Fire Station __208_____, Alexandria VA

	Item	Condition Remarks	I - Immediate M - Monitor	Recommended Solution
J	HVAC - CONTROLS:	Controls related to HVAC equipment are old but working. They need to be replaced in any future renovation.	M	
K	PLUMBING FACILITIES OCCUPANCY LEVEL:			
L	PLUMBING DISTRIBUTION SYSTEMS:	Main part of the plumbing sysytem is original. Most of the piping is underground or concealed in the ceiling space. There is no specific compliant about the plumbing system.	M	
M	PLUMBING FIXTURES:	Plumbing fixtures are in fair condition.	M	
N	FIRE SUPPRESSION:	Fire Suppression system is being installed in the building		

EXISTING FACILITY CONDITIONS ASSESSMENT MATRIX

Facility: Fire Station ____208_____, Alexandria VA

	Item	Condition Remarks	I - Immediate M - Monitor	Recommended Solution
6	ELECTRICAL			
A	Exterior Lighting	Exterior lighting fixtures are good quality HID type fixtures. However, it appears in some cases incorrect lamp types are installed in a few of these fixtures and a few of the lenses are missing from the exterior fixtures.	I	Provide the missing lenses and replace all lamps with proper lamp types as recommended by the manufacturing of the fixtures.
B	Interior Lighting	Interior lighting fixtures are a combination of T12 and T8 flourescent. It appears the original fixtures had T12 lamps and they were retrofited with T8 lamps (we noticed in some fixtures both T12 and T8 lamps are installed) need to verify if the ballasts on the original fixtures were also changed. Incandscent lighting fixtures are installed in bathroom and shower areas.	I	Verify Ballasts in all fixtures were changed to electronic for T8 lamps and replace all T12 lamps with proper T8 lamps. Replace existing incandscent bathroom and shower lights with flourescent type fixtures.
C	Exit/ Emergency Lighting	Exit lights on first floors are the original incandenscent type fixtures.	I	Replace all incandscent type Exit lights with new LED type Exit fixture.
D	Service Size	Existing service is 800 AMP and appears adequate for the building. There are six spare circuit breakers in the exisiting distribution panel which can be utilized for future expansion. However, the cover of the existing service trough needs to be checked and re-installed, properly.	I	Repair service trough.

EXISTING FACILITY CONDITIONS ASSESSMENT MATRIX

Facility: Fire Station ____208_____, Alexandria VA

	Item	Condition Remarks	I - Immediate M - Monitor	Recommended Solution
E	Overhead/ Underground Electric Service	Service to the building is underground and fed from a pad mounted transformer.	M	
F	Service Equipment Condition	Service equipments are the original switches and are in good condition.	M	
G	Emergency System	The exisiting generator is 15 KW gas generator with a 60 AMP transfer switch and are in good condition. However, the battery unit is sitting on the floor and the battery charger connection is not workman like installation.	I	Check battery charger and its connection to the battery unit and provide charger. Consider replacing entire generator with a larger exterior type generator and power the entire building from the new generator.
H	Panelboards	Panels are in good condition . However, panel directories need to be upgraded and locking device from one panel is missing and few of the breaker spaces do not have proper cover.	I	Provide panel directories and missing panel locking device and proper cover for breaker spaces.
I	Receptacles	In general, receptacles are in good condition.	I	
J	Wiring	In general, wiring is in good condition.	I	
K	Fire Alarm System	No fire alarm system installed in the building. However, single station smoke detectors are installed in the bedrooms.	M	
L	IDS		M	
M	Public Address System	Existing public address system appears to be working properly.	I	Add speakers in the gym and the supplies area.
N	Clock System	Automatic radio control clocks are installed and are working, properly.	M	
P	Building Lightning Protection	Building is not protected with lightning protection system.	M	
	TOTAL			

FIRE STATION #209

COST ASSESSMENT MATRIX

Alexandria Fire Department - Alexandria, Virginia

CONDITION ASSESSMENT ANALYSIS			RUNNING LIFE CYCLE / SUSTAINMENT COST OUTLOOK													
Building Component	System Life Years	Life Cycle Remaining Years	Year 1 Cost Basis	Year 2 Cost Basis	Year 3 Cost Basis	Year 4 Cost Basis	Year 5 Cost Basis	Year 6 Cost Basis	Year 7 Cost Basis	Year 8 Cost Basis	Year 9 Cost Basis	Year 10 Cost Basis	Year 11 - 15 Cost Total	Year 16 - 20 Cost Total	Year 21 - 25 Cost Total	Year 26 - 30 Cost Total	30 YEAR Cost Total
SUBSTRUCTURE																	
SLAB AND FOUNDATION	70	67	0										$ -	$ -	$ -	$ -	$ -
SUPERSTRUCTURE																	
STRUCTURE BELOW ROOF	70	67	0										$ -	$ -	$ -	$ -	$ -
ROOF STRUCTURE	70	67	0										$ -	$ -	$ -	$ -	$ -
EXTERIOR CLOSURE																	
EXTERIOR WALLS	70	67	0										$ -	$ -	$ -	$ -	$ -
EXTERIOR WINDOWS	20	22	0										$ -	$ -	$ 114,503.37	$ -	$ 114,503.37
OH DOORS	15	14	0										$ 91,452.16	$ -	$ -	$ 91,452.16	$ 182,904.33
EXTERIOR DOORS	15	14	0										$ 63,849.28	$ -	$ -	$ 63,849.28	$ 127,698.56
ROOFING																	
ROOFING	30	29	0										$ -	$ -	$ -	$ 140,811.00	$ 140,811.00
INTERIOR CONSTRUCTION																	
PARTITIONS	70	67	0										$ -	$ -	$ -	$ -	$ -
INTERIOR DOORS	25	24	0										$ -	$ -	$ 116,875.42	$ -	$ 116,875.42
INTERIOR SPECIALTY DOORS	25	24	0										$ -	$ -	$ -	$ -	$ -
INTERIOR GLAZING SYSTEMS	25	24	0										$ -	$ -	$ 419.63	$ -	$ 419.63
INTERIOR SPECIALTIES	15	14	0										$ 46,628.45	$ -	$ -	$ 46,628.45	$ 93,256.90
CASEWORK	20	19	0										$ -	$ 90,082.20	$ -	$ -	$ 90,082.20
INTERIOR FINISHES																	
WALL FINISHES	7	7	0							$ 184,676.53			$ 184,676.53	$ -	$ 184,676.53	$ 184,676.53	$ 738,706.10
FLOORING & FLOOR FINISHES	20	19	0										$ -	$ 372,217.14	$ -	$ -	$ 372,217.14
CEILING & CEILING FINISHES	15	14	0										$ 192,868.43	$ -	$ -	$ 192,868.43	$ 385,736.87
PLUMBING																	
PLUMBING FIXTURES	30	29	0										$ -	$ -	$ -	$ 140,575.38	$ 140,575.38
DOMESTIC WATER SUPPLY	30	29	0										$ -	$ -	$ -	$ 133,172.24	$ 133,172.24
SANITARY WASTE & VENT SYSTEM	30	29	0										$ -	$ -	$ -	$ 230,585.59	$ 230,585.59
PLUMBING EQUIPMENT	30	29	0										$ -	$ -	$ -	$ 8,917.10	$ 8,917.10
H.V.A.C.																	
ENERGY SUPPLY	30	29	0										$ -	$ -	$ -	$ 23,822.12	$ 23,822.12
HEAT GENERATING SYSTEM	30	29	0										$ -	$ -	$ -	$ 109,654.56	$ 109,654.56
COOLING GENERATING SYSTEM	20	19	0										$ -	$ 104,744.60	$ -	$ -	$ 104,744.60
DISTRIBUTION SYSTEMS	50	48	0										$ -	$ -	$ -	$ -	$ -
EXHAUST SYSTEMS	50	48	0										$ -	$ -	$ -	$ -	$ -
TERMINAL & PACKAGE UNITS	30	29	0										$ -	$ -	$ -	$ 51,340.68	$ 51,340.68
CONTROLS & INSTRUMENTATION	30	29	0										$ -	$ -	$ -	$ 48,685.45	$ 48,685.45
FIRE PROTECTION SYSTEMS																	
WATER SUPPLY (FIRE PROTECTION)	30	29	0										$ -	$ -	$ -	$ -	$ -
SPRINKLERS	20	19	0										$ -	$ -	$ -	$ -	$ -
FIRE EXTINGUISHERS	10	10	0										$ 918.00	$ -	$ 918.00	$ -	$ 1,836.00
ELECTRIC POWER & LIGHTING																	
SERVICE AND DISTRIBUTION	30	29	0										$ -	$ -	$ -	$ 251,398.13	$ 251,398.13
LIGHTING & BRANCH WIRING	20	19	0										$ -	$ 235,849.49	$ -	$ -	$ 235,849.49
ELECTRICAL SYSTEMS																	
COMMUNICATION, SECURITY, & ALARM SYSTEMS	15	14	0										$ 119,042.70	$ -	$ -	$ 119,042.70	$ 238,085.41
SPECIAL ELECTRICAL SYSTEMS	15	14	0										$ 91,147.91	$ -	$ -	$ 91,147.91	$ 182,295.83
EQUIPMENT																	
FOOD SERVICE	15	14	0										$ 31,848.83	$ -	$ -	$ 31,848.83	$ 63,697.65
ELEVATORS OR LIFTS	20	19	0										$ -	$ -	$ -	$ -	$ -
FIXED & MOVEABLE EQUIPMENT	15	14	0										$ 101,733.98	$ -	$ -	$ 101,733.98	$ 203,467.97
HAZARDOUS MATERIALS																	
ASBESTOS ABATEMENT	30	29	0										$ -	$ -	$ -	$ 27,274.79	$ 27,274.79
LEAD ABATEMENT	30	29	0										$ -	$ -	$ -	$ 64,044.70	$ 64,044.70
ESSENTIAL FACILITY																	
EMERGENCY POWER	20	19	0										$ -	$ 188,871.96	$ -	$ -	$ 188,871.96
SEISMIC CAPACITY	50	48	0										$ -	$ -	$ -	$ -	$ -
SITE																	
Site Preparation																	
Clear and Grub	20	19	0										$ -	$ -	$ -	$ -	$ -
Earthwork	20	19	0										$ -	$ -	$ -	$ -	$ -
Site Improvements																	
Landscaping	100	99	0										$ -	$ -	$ -	$ -	$ -
Asphalt Paving	20	19	0										$ -	$ 132,376.18	$ -	$ -	$ 132,376.18
Concrete Paving	25	24	0										$ -	$ -	$ 18,888.17	$ -	$ 18,888.17
Fencing	20	19	0										$ -	$ -	$ -	$ -	$ -
Misc Site Improvements	20	19	0										$ -	$ -	$ -	$ -	$ -
Site Utilities																	
Water Distribution	50	48	0										$ -	$ -	$ -	$ -	$ -
Sewer Distribution	50	48	0										$ -	$ -	$ -	$ -	$ -
Gas Distribution	50	48	0										$ -	$ -	$ -	$ -	$ -
Storm Sewer	50	49	0										$ -	$ -	$ -	$ -	$ -
Site Electrical																	
Electrical Distribution	50	48	0										$ -	$ -	$ -	$ -	$ -
Exterior Lighting	50	49	0										$ -	$ -	$ -	$ -	$ -
Communications	50	48	0										$ -	$ -	$ -	$ -	$ -
ADA Compliance	50	48	0										$ -	$ -	$ -	$ -	$ -
AT/FP Compliance	50	48	0										$ -	$ -	$ -	$ -	$ -
TOTAL PERMANENT FACILITY COST			$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 184,676.53	$ -	$ -	$ 823,966.27	$ 1,123,941.43	$ 436,481.11	$ 2,153,329.56	$ 4,822,395.39
TOTAL COST WITH AREA COST FACTOR @ 7%			$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 197,603.89	$ -	$ -	$ 888,643.91	$ 1,202,617.33	$ 467,034.79	$ 2,304,063.00	$ 5,159,962.90
TOTAL W/ ESCALATION @ 3%			$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$243,027.85	$0.00	$0.00	$ 1,495,246.84	$ 2,108,795.79	$ 908,779.55	$ 5,416,112.43	$ 10,163,963.64
RUNNING TOTAL			$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$243,027.85	$243,027.85	$243,027.85	$1,738,274.70	$3,847,071.56	$4,747,851.11	$10,163,963.64	$10,163,963.64
RUNNING FCI OUTLOOK																	
FCI (WITH NO COSTS INCURED)			4.6%	8.2%	11.7%	15.2%	18.7%	22.2%	25.7%	29.2%	32.4%	35.6%	51.2%	63.5%	71.8%	78.4%	78.4%
REVISED FCI (AFTER INCURED COSTS INDICATED)			4.6%	8.2%	11.7%	15.2%	18.7%	22.2%	18.6%	29.2%	30.2%	33.7%	41.1%	44.1%	46.6%	51.3%	51.3%
			YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5	YEAR 6	YEAR 7	YEAR 8	YEAR 9	YEAR 10	YEARS 11-15	YEARS 16-20	YEARS 21-25	YEARS 26-30	YEARS 1-30

FIRE STATION TRAINING

COST ASSESSMENT MATRIX

Alexandria Fire Department - Alexandria, Virginia

CONDITION ASSESSMENT ANALYSIS			RUNNING LIFE CYCLE / SUSTAINMENT COST OUTLOOK														
Building Component	System Life Years	Life Cycle Remaining Years	Year 1 Cost Basis	Year 2 Cost Basis	Year 3 Cost Basis	Year 4 Cost Basis	Year 5 Cost Basis	Year 6 Cost Basis	Year 7 Cost Basis	Year 8 Cost Basis	Year 9 Cost Basis	Year 10 Cost Basis	Year 11 - 15 Cost Total	Year 16 - 20 Cost Total	Year 21 - 25 Cost Total	Year 26 - 30 Cost Total	30 YEAR Cost Total
SUBSTRUCTURE																	
SLAB AND FOUNDATION	70	49	0										$ -	$ -	$ -	$ -	$ -
SUPERSTRUCTURE																	
STRUCTURE BELOW ROOF	70	49	0										$ -	$ -	$ -	$ -	$ -
ROOF STRUCTURE	70	49	0										$ -	$ -	$ -	$ -	$ -
EXTERIOR CLOSURE																	
EXTERIOR WALLS	70	49	0										$ -	$ -	$ -	$ -	$ -
EXTERIOR WINDOWS	20	17	0										$ -	$ 29,860.68	$ -	$ -	$ 29,860.68
OH DOORS	15	11	0										$ 23,849.29	$ -	$ -	$ 23,849.29	$ 47,698.58
EXTERIOR DOORS	15	11	0										$ 16,650.89	$ -	$ -	$ 16,650.89	$ 33,301.78
ROOFING																	
ROOFING	30	10	0										$ 36,721.30	$ -	$ -	$ -	$ 36,721.30
INTERIOR CONSTRUCTION																	
PARTITIONS	70	49	0										$ -	$ -	$ -	$ -	$ -
INTERIOR DOORS	25	5	0					$ 30,505.35					$ -	$ -	$ -	$ -	$ 30,505.35
INTERIOR SPECIALTY DOORS	25	5	0					$ -					$ -	$ -	$ -	$ -	$ -
INTERIOR GLAZING SYSTEMS	25	5	0					$ 109.43					$ -	$ -	$ -	$ -	$ 109.43
INTERIOR SPECIALTIES	15	11	0										$ 12,155.97	$ -	$ -	$ 12,155.97	$ 24,310.94
CASEWORK	20	14	0										$ 23,462.02	$ -	$ -	$ -	$ 23,462.02
INTERIOR FINISHES																	
WALL FINISHES	7	5	0					$ 48,160.74					$ 48,160.74	$ 48,160.74	$ -	$ 48,160.74	$ 192,642.96
FLOORING & FLOOR FINISHES	20	14	0										$ 97,068.39	$ -	$ -	$ -	$ 97,068.39
CEILING & CEILING FINISHES	15	11	0										$ 50,297.06	$ -	$ -	$ 50,297.06	$ 100,594.12
PLUMBING																	
PLUMBING FIXTURES	30	10	0										$ 36,939.85	$ -	$ -	$ -	$ 36,939.85
DOMESTIC WATER SUPPLY	30	10	0										$ 34,729.23	$ -	$ -	$ -	$ 34,729.23
SANITARY WASTE & VENT SYSTEM	30	10	0										$ 60,133.10	$ -	$ -	$ -	$ 60,133.10
PLUMBING EQUIPMENT	30	10	0										$ 2,325.44	$ -	$ -	$ -	$ 2,325.44
H.V.A.C																	
ENERGY SUPPLY	30	10	0										$ 6,212.43	$ -	$ -	$ -	$ 6,212.43
HEAT GENERATING SYSTEM	30	10	0										$ 28,596.19	$ -	$ -	$ -	$ 28,596.19
COOLING GENERATING SYSTEM	20	14	0										$ 27,315.73	$ -	$ -	$ -	$ 27,315.73
DISTRIBUTION SYSTEMS	50	30	0										$ -	$ -	$ -	$ -	$ -
EXHAUST SYSTEMS	50	33	0										$ -	$ -	$ -	$ -	$ -
TERMINAL & PACKAGE UNITS	30	10	0										$ 13,366.84	$ -	$ -	$ -	$ 13,366.84
CONTROLS & INSTRUMENTATION	30	10	0										$ 12,696.40	$ -	$ -	$ -	$ 12,696.40
FIRE PROTECTION SYSTEMS																	
WATER SUPPLY (FIRE PROTECTION)	30	10	0										$ 12,059.39	$ -	$ -	$ -	$ 12,059.39
SPRINKLERS	20	14	0										$ 46,831.12	$ -	$ -	$ -	$ 46,831.12
FIRE EXTINGUISHERS	10	7	0							$ 239.40			$ -	$ 239.40	$ -	$ 239.40	$ 718.20
ELECTRIC POWER & LIGHTING																	
SERVICE AND DISTRIBUTION	30	10	0										$ 65,560.69	$ -	$ -	$ -	$ 65,560.69
LIGHTING & BRANCH WIRING	20	14	0										$ 61,453.66	$ -	$ -	$ -	$ 61,453.66
ELECTRICAL SYSTEMS																	
COMMUNICATION, SECURITY, & ALARM SYSTEMS	15	11	0										$ 31,044.47	$ -	$ -	$ 31,044.47	$ 62,088.94
SPECIAL ELECTRICAL SYSTEMS	15	11	0										$ 23,769.95	$ -	$ -	$ 23,769.95	$ 47,539.89
EQUIPMENT																	
FOOD SERVICE	15	11	0										$ 8,253.51	$ -	$ -	$ 8,253.51	$ 16,507.03
ELEVATORS OR LIFTS	20	14	0										$ 37,699.39	$ -	$ -	$ -	$ 37,699.39
FIXED & MOVEABLE EQUIPMENT	15	11	0										$ 26,530.83	$ -	$ -	$ 26,530.83	$ 53,061.25
HAZARDOUS MATERIALS																	
ASBESTOS ABATEMENT	30	20	0										$ -	$ -	$ -	$ -	$ -
LEAD ABATEMENT	30	20	0										$ -	$ -	$ -	$ -	$ -
ESSENTIAL FACILITY																	
EMERGENCY POWER	20	14	0										$ 49,254.85	$ -	$ -	$ -	$ 49,254.85
SITE																	
Site Preparation																	
Clear and Grub	20	0	$ -										$ -	$ -	$ -	$ -	$ -
Earthwork	20	0	$ -										$ -	$ -	$ -	$ -	$ -
Site Improvements													$ -	$ -	$ -	$ -	$ -
Landscaping	100	70	0										$ -	$ -	$ -	$ -	$ -
Asphalt Paving	20	6	0						$ 34,521.63				$ -	$ -	$ -	$ 34,521.63	$ 69,043.26
Concrete Paving	25	5	0					$ 4,951.62					$ -	$ -	$ -	$ -	$ 4,951.62
Fencing	20	14	0										$ 19,823.89	$ -	$ -	$ -	$ 19,823.89
Misc Site Improvements	20	0	$ -										$ -	$ -	$ -	$ -	$ -
Site Utilities																	
Water Distribution	50	30	0										$ -	$ -	$ -	$ -	$ -
Sewer Distribution	50	30	0										$ -	$ -	$ -	$ -	$ -
Gas Distribution	50	30	0										$ -	$ -	$ -	$ -	$ -
Storm Sewer	50	31	0										$ -	$ -	$ -	$ -	$ -
Site Electrical																	
Electrical Distribution	50	30	0										$ -	$ -	$ -	$ -	$ -
Exterior Lighting	50	36	0										$ -	$ -	$ -	$ -	$ -
Communications	50	35	0										$ -	$ -	$ -	$ -	$ -
ADA Compliance	50	33	0										$ -	$ -	$ -	$ -	$ -
AT/FP Compliance	50	46	0										$ -	$ -	$ -	$ -	$ -
TOTAL SITE COST																	
TOTAL PERMENENT BUILDING COST																	
TOTAL PERMANENT FACILITY COST			$ -	$ -	$ -	$ -	$ -	$ 83,727.34	$ 34,521.63	$ 239.40	$ -	$ -	$ 913,608.43	$ 78,260.82	$ -	$ 275,477.54	$ 1,384,835.17
TOTAL COST WITH AREA COST FACTOR @ 7%			$ -	$ -	$ -	$ -	$ -	$ 89,588.29	$ 36,939.14	$ 256.16	$ -	$ -	$ 976,947.02	$ 83,739.08	$ -	$ 294,760.97	$ 1,481,899.83
TOTAL W/ ESCALATION @ 3%			$0.00	$0.00	$0.00	$0.00	$0.00	$103,857.34	$44,106.00	$315.04	$0.00	$0.00	$ 1,398,472.20	$ 143,580.07	$ -	$ 435,895.50	$ 2,318,041.33
RUNNING TOTAL			$0.00	$0.00	$0.00	$0.00	$0.00	$103,857.34	$147,963.42	$148,278.46	$148,278.46	$148,278.46	$1,538,750.79	$1,682,345.83	$1,682,345.83	$2,318,241.33	$2,318,041.33
RUNNING FCI OUTLOOK																	
FCI (WITH NO COSTS INCURED)			42.7%	46.1%	49.6%	53.6%	57.3%	61.1%	64.4%	67.8%	70.8%	74.5%	85.8%	93.7%	93.4%	160.1%	160.1%
REVISED FCI (AFTER INCURED COSTS INDICATED)			42.7%	46.1%	49.6%	53.6%	57.3%	61.1%	47.4%	62.2%	68.0%	69.8%	46.9%	67.1%	60.8%	77.2%	77.2%
			YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5	YEAR 6	YEAR 7	YEAR 8	YEAR 9	YEAR 10	YEARS 11-15	YEARS 16-20	YEARS 21-25	YEARS 26-30	YEARS 1-30

EXISTING FACILITY CONDITIONS ASSESSMENT MATRIX

Facility: Fire Station __Fire Training Academy_, Alexandria VA

	Item	Condition Remarks	I - Immediate M - Monitor	Recommended Solution
5	**MECHANICAL**			
A	PREVENTIVE MAINTENANCE PROGRAM	It appears that there is not any preventive maintenance program for the building		
B	UTILITIES	Water, Gas and Sanitary connections have been provided through the lee center building (adjacent building to the Fire Training Academy Building). Current conections satisfy the current demand of the building.	M	
C	HEATING PLANT	Heating and cooling for this building is provided through two roof top units. A 30 ton self contained Trane unit (manufacturing date 1996), gas heat serves part of the building and rest of the building is being served by another 40 ton self contained Trane unit (manufacturing date 1996), gas heat. These units are in fair condition.	M	
D	COOLING PLANT(S):	Refer to item C	M	
E	AIR QUALITY STANDARDS:	Outdoor air will be provided through roof top units. No specific complaint about air quality was given.	M	
F	EXHAUST SYSTEMS:	Plymovent exhaust has been provided for apparatus bay, exhaust has also been provided for toilet and shower rooms, In general exhaust system is in fair condition.	M	
G	AIR HANDLERS:			
H	HYDRONIC/AIR DISTRIBUTION:			

EXISTING FACILITY CONDITIONS ASSESSMENT MATRIX

Facility: Fire Station __Fire Training Academy_, Alexandria VA

	Item	Condition Remarks	I - Immediate M - Monitor	Recommended Solution
J	HVAC - CONTROLS:	Controls related to packaged roof top units are working and they are in fair condition	M	
K	PLUMBING FACILITIES OCCUPANCY LEVEL:			
L	PLUMBING DISTRIBUTION SYSTEMS:	Most of the piping is underground or concealed in the ceiling space, no specific compliant was given about the plumbing sysytem, In general plumbing sysytem isin fair condition.	M	
M	PLUMBING FIXTURES:	Plumbing fixtures are in fair condition	M	
N	FIRE SUPPRESSION:	There is sprinkler system in the building.		

EXISTING FACILITY CONDITIONS ASSESSMENT MATRIX

Facility: Fire Station: EMS Training Center, Alexandria, VA

	Item	Condition Remarks	I - Immediate M - Monitor	Recommended Solution
6	ELECTRICAL			
A	Exterior Lighting	Exterior lightings are good quality fixtures and are in good condition.	M	Routine maintenance of relamping fixtures would be sufficient.
B	Interior Lighting	Interior lighting consists of a combination of compact flourescent and T8 2 X 4 parabolic fixtures.	M	Existing parabolic fixtures have 24 cells and are not as efficient as fixtures with less number of cells. It would be advisable to replace fixtures with less number of parabolic cells or retrofit existing fixtures if possible to 18 cell parabolic louvers.
C	Exit/ Emergency Lighting	Exisitng exit lights are in fair condition.	M	
D	Service Size	Service to this facility is fed from Lee Center and two feeders of 175 AMPand 225 AMP are serving panels in the Lee Center.	M	

EXISTING FACILITY CONDITIONS ASSESSMENT MATRIX

Facility: Fire Station: EMS Training Center, Alexandria, VA

	Item	Condition Remarks	I - Immediate M - Monitor	Recommended Solution
E	Overhead/ Underground Electric Service		M	
F	Service Equipment Condition		M	
G	Emergency System	A 200 KW generator is serving in the EMS facility and the Lee Center and generator is in good condition.	M	
H	Panelboards	Panels are in good condition.	M	
I	Receptacles	Receptacles are in good condition and appear to be adequate	M	
J	Wiring	Good condition.	M	
K	Fire Alarm System	Existing fire alarm system from the Lee Center is also serving the EMS Facility and it appears the system is working, properly. However, additional audio/visual devices need to be added to bring the facility up to date with new code requirement.	M	Add additional visual devices.
L	IDS		M	
M	Public Address System	Public Address System working properly.	M	
N	Clock System	Clock System working properly.	M	
P	Building Lightning Protection		M	
	TOTAL			

VEHICLE MAINTENANCE SHOP

COST ASSESSMENT MATRIX

Alexandria Fire Department - Alexandria, Virginia

CONDITION ASSESSMENT ANALYSIS			RUNNING LIFE CYCLE / SUSTAINMENT COST OUTLOOK														
Building Component	System Life Years	Life Cycle Remaining Years	Year 1 Cost Basis	Year 2 Cost Basis	Year 3 Cost Basis	Year 4 Cost Basis	Year 5 Cost Basis	Year 6 Cost Basis	Year 7 Cost Basis	Year 8 Cost Basis	Year 9 Cost Basis	Year 10 Cost Basis	Year 11 - 15 Cost Total	Year 16 - 20 Cost Total	Year 21 - 25 Cost Total	Year 26 - 30 Cost Total	30 YEAR Cost Total
SUBSTRUCTURE																	
SLAB AND FOUNDATION	70	39	$ -										$ -	$ -	$ -	$ -	$ -
SUPERSTRUCTURE																	
STRUCTURE BELOW ROOF	70	39	$ -										$ -	$ -	$ -	$ -	$ -
ROOF STRUCTURE	70	39	$ -										$ -	$ -	$ -	$ -	$ -
EXTERIOR CLOSURE																	
EXTERIOR WALLS	70	39	$ -										$ -	$ -	$ -	$ -	$ -
EXTERIOR WINDOWS	20	4	$ -				$ 9,043.80						$ -	$ -	$ 9,043.80	$ -	$ 18,087.60
OH DOORS	15	1	$ -	$ 22,056.11									$ -	$ 22,056.11	$ -	$ -	$ 44,112.22
EXTERIOR DOORS	15	1	$ -	$ 14,598.12									$ -	$ 14,598.12	$ -	$ -	$ 29,196.25
ROOFING																	
ROOFING	30	9	$ -									$ 65,293.42	$ -	$ -	$ -	$ -	$ 65,293.42
INTERIOR CONSTRUCTION																	
PARTITIONS	70	39	$ -										$ -	$ -	$ -	$ -	$ -
INTERIOR DOORS	25	8	$ -								$ 24,406.40		$ -	$ -	$ -	$ -	$ 24,406.40
INTERIOR SPECIALTY DOORS	25	24	$ -										$ -	$ -	$ -	$ -	$ -
INTERIOR GLAZING SYSTEMS	25	8	$ -								$ 1,014.75		$ -	$ -	$ -	$ -	$ 1,014.75
INTERIOR SPECIALTIES	15	3	$ -					$ 7,647.85					$ -	$ -	$ 7,647.85	$ -	$ 15,295.70
CASEWORK	20	8	$ -						$ 2,759.67				$ -	$ -	$ -	$ 2,759.67	$ 5,519.75
INTERIOR FINISHES																	
WALL FINISHES	7	2	$ -		$ 20,909.15							$ 20,909.15	$ -	$ 20,909.15	$ 20,909.15	$ -	$ 83,636.60
FLOORING & FLOOR FINISHES	20	6	$ -						$ 28,919.61				$ -	$ -	$ -	$ 28,919.61	$ 57,839.23
CEILING & CEILING FINISHES	15	5	$ -					$ 20,052.37					$ -	$ -	$ 20,052.37	$ -	$ 40,104.73
PLUMBING																	
PLUMBING FIXTURES	30	9	$ -									$ 15,709.02	$ -	$ -	$ -	$ -	$ 15,709.02
DOMESTIC WATER SUPPLY	30	9	$ -									$ 13,238.57	$ -	$ -	$ -	$ -	$ 13,238.57
SANITARY WASTE & VENT SYSTEM	30	9	$ -									$ 11,731.30	$ -	$ -	$ -	$ -	$ 11,731.30
PLUMBING EQUIPMENT	30	9	$ -									$ 15,085.95	$ -	$ -	$ -	$ -	$ 15,085.95
H.V.A.C																	
ENERGY SUPPLY	30	9	$ -									$ 5,262.46	$ -	$ -	$ -	$ -	$ 5,262.46
HEAT GENERATING SYSTEM	30	9	$ -									$ 21,324.35	$ -	$ -	$ -	$ -	$ 21,324.35
COOLING GENERATING SYSTEM	20	14	$ -										$ 49,209.90	$ -	$ -	$ -	$ 49,209.90
DISTRIBUTION SYSTEMS	50	15	$ -										$ -	$ 33,749.35	$ -	$ -	$ 33,749.35
EXHAUST SYSTEMS	50	15	$ -										$ -	$ 8,492.33	$ -	$ -	$ 8,492.33
TERMINAL & PACKAGE UNITS	30	9	$ -									$ 1,453.81	$ -	$ -	$ -	$ -	$ 1,453.81
CONTROLS & INSTRUMENTATION	30	9	$ -									$ 21,544.14	$ -	$ -	$ -	$ -	$ 21,544.14
FIRE PROTECTION SYSTEMS																	
WATER SUPPLY (FIRE PROTECTION)	30	-1	$ -										$ -	$ -	$ -	$ -	$ -
SPRINKLERS	20	19	$ -										$ -	$ -	$ -	$ -	$ -
FIRE EXTINGUISHERS	10	7	$ -							$ 221.40			$ -	$ 221.40	$ -	$ 221.40	$ 664.20
ELECTRIC POWER & LIGHTING																	
SERVICE AND DISTRIBUTION	30	21	$ -										$ -	$ -	$ 2,377.30	$ -	$ 2,377.30
LIGHTING & BRANCH WIRING	20	14	$ -										$ 89,256.73	$ -	$ -	$ -	$ 89,256.73
ELECTRICAL SYSTEMS																	
COMMUNICATION, SECURITY, & ALARM SYSTEMS	15	1	$ -	$ 13,281.72									$ -	$ 13,281.72	$ -	$ -	$ 26,563.43
SPECIAL ELECTRICAL SYSTEMS	15	5	$ -					$ 12,646.58					$ -	$ -	$ 12,646.58	$ -	$ 25,293.17
EQUIPMENT																	
FOOD SERVICE	15	14	$ -										$ -	$ -	$ -	$ -	$ -
ELEVATORS OR LIFTS	20	6	$ -						$ 32,103.00				$ -	$ -	$ -	$ 32,103.00	$ 64,206.00
FIXED & MOVEABLE EQUIPMENT	15	5	$ -					$ 33,397.67					$ -	$ -	$ 33,397.67	$ -	$ 66,795.33
HAZARDOUS MATERIALS																	
ASBESTOS ABATEMENT	30	-1	$ -										$ -	$ -	$ -	$ -	$ -
LEAD ABATEMENT	30	-1	$ -										$ -	$ -	$ -	$ -	$ -
ESSENTIAL FACILITY																	
EMERGENCY POWER	20	19	$ -										$ -	$ -	$ -	$ -	$ -
SEISMIC CAPACITY	50	49	$ -										$ -	$ -	$ -	$ -	$ -
SITE																	
Site Preparation																	
Clear and Grub	20	19	$ -										$ -	$ -	$ -	$ -	$ -
Earthwork	20	19	$ -										$ -	$ -	$ -	$ -	$ -
Site Improvements																	
Landscaping	100	70	$ -										$ -	$ -	$ -	$ -	$ -
Asphalt Paving	20	6	$ -						$ 31,926.02				$ -	$ -	$ -	$ 31,926.02	$ 63,852.04
Concrete Paving	25	18	$ -										$ -	$ 4,579.50	$ -	$ -	$ 4,579.50
Fencing	20	14	$ -										$ 18,333.38	$ -	$ -	$ -	$ 18,333.38
Misc Site Improvements	20	6	$ -						$ -				$ -	$ -	$ -	$ -	$ -
Site Utilities																	
Water Distribution	50	15	$ -										$ -	$ 1,855.91	$ -	$ -	$ 1,855.91
Sewer Distribution	50	15	$ -										$ -	$ 4,101.26	$ -	$ -	$ 4,101.26
Gas Distribution	50	15	$ -										$ -	$ 550.67	$ -	$ -	$ 550.67
Storm Sewer	50	16	$ -										$ -	$ 2,757.01	$ -	$ -	$ 2,757.01
Site Electrical																	
Electrical Distribution	50	15	$ -										$ -	$ 39,730.17	$ -	$ -	$ 39,730.17
Exterior Lighting	50	16	$ -										$ -	$ 18,272.40	$ -	$ -	$ 18,272.40
Communications	50	15	$ -										$ -	$ 2,774.69	$ -	$ -	$ 2,774.69
ADA Compliance	50	15	$ -										$ -	$ 17,527.50	$ -	$ -	$ 17,527.50
AT/FP Compliance	50	48	$ -										$ -	$ -	$ -	$ -	$ -
TOTAL PERMANENT FACILITY COST			$ -	$ 49,935.95	$ 20,909.15	$ -	$ 9,043.80	$ 73,844.47	$ 95,708.61	$ 221.40	$ 25,421.15	$ 191,572.19	$ 155,800.00	$ 205,457.26	$ 105,874.72	$ 95,929.91	$ 1,826,818.63
TOTAL COST WITH AREA COST FACTOR @ 7%			$ -	$ 51,431.46	$ 22,372.79	$ -	$ 9,675.37	$ 78,799.58	$ 102,408.10	$ 236.90	$ 27,200.63	$ 204,983.24	$ 166,706.00	$ 219,839.28	$ 113,286.01	$ 102,645.00	$ 1,955,891.21
TOTAL W/ ESCALATION @ 3%			$0.00	$ 53,234.41	$ 23,735.24	$0.00	$ 10,891.40	$ 91,560.31	$ 122,780.63	$ 291.39	$ 34,456.99	$ 267,455.75	$ 252,157.75	$ 347,827.53	$ 216,879.57	$ 221,378.64	$ 1,837,738.20
RUNNING TOTAL			$0.00	$ 55,634.41	$ 79,769.70	$ 79,769.70	$ 90,661.10	$ 181,911.41	$ 304,692.04	$ 305,683.39	$ 339,940.34	$ 607,495.89	$ 857,653.46	$ 1,205,480.99	$ 1,422,360.56	$ 1,643,739.20	$ 1,837,738.20
RUNNING FCI OUTLOOK																	
FCI (WITH NO COSTS INCURED)			55.9%	61.0%	64.7%	67.5%	70.6%	73.5%	76.5%	79.1%	80.2%	82.2%	86.7%	93.9%	95.9%	98.8%	98.8%
REVISED FCI (AFTER INCURED COSTS INDICATED)			55.9%	61.0%	60.5%	62.3%	65.9%	68.8%	69.7%	69.8%	64.0%	65.7%	66.7%	83.6%	82.2%	79.4%	79.4%
			YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5	YEAR 6	YEAR 7	YEAR 8	YEAR 9	YEAR 10	YEARS 11-15	YEARS 16-20	YEARS 21-25	YEARS 26-30	YEARS 1-30

EXISTING FACILITY CONDITIONS ASSESSMENT MATRIX

Facility: Fire Station __Fire Shop_, Alexandria VA

	Item	Condition Remarks	I - Immediate M - Monitor	Recommended Solution
5	**MECHANICAL**			
A	PREVENTIVE MAINTENANCE PROGRAM	it appears that there are not any preventive maintenance programs for the building		
B	UTILITIES	Water, Gas and sanitary connections has been provided for the building	M	
C	HEATING PLANT	There are two old Peerless Boilers (Serial# 211-6778) which provide hot water for hot wate unit heaters and hot water coil in the air handling units in this building. Four haot water unit heaters provide heating for the main repair area on the ground floor. There are some hot eater unit heaters which serves several spaces in the first and second floor, in general these hot water unit heaters are old but working. There is an old Trane Air handling unit with hot water coil which provides heating for part of the building. This blow -thru air handler is old but working.	M	
D	COOLING PLANT(S):	A 30 ton Trane air cooled chiller (manufactured date 2007) provides chilled water for the building. This chiller is relatively new and is in excelent condition. As it was mentioned in item C an old trane air handler with chilled water cooilng coil provides cooling for part of the building this unit is old with pneumatic controls. There are a few thru the wall units which provide cooling for some rooms in the building these units are in fair condition.	M	
E	AIR QUALITY STANDARDS:			
F	EXHAUST SYSTEMS:	Plymovent exhaust system and Toilet exhaust has been provided in this building, in general exhaust system is in fair condition.	M	
G	AIR HANDLERS:	A trane blow-thru air handler serves part of the building, unit is old but working.	M	
H	HYDRONIC/AIR DISTRIBUTION:	Part of the hydronic system is not visible. Hydronic piping system is original, no specific complain was given for hot or chilled water piping	M	

EXISTING FACILITY CONDITIONS ASSESSMENT MATRIX

Facility: Fire Station __Fire Shop_, Alexandria VA

	Item	Condition Remarks	I - Immediate M - Monitor	Recommended Solution
I	ROOM TERMINAL UNITS:	There are a few thru the wall units in the building in general they are infair condition	M	

EXISTING FACILITY CONDITIONS ASSESSMENT MATRIX

Facility: Fire Station __Fire Shop_, Alexandria VA

	Item	Condition Remarks	I - Immediate M - Monitor	Recommended Solution
J	HVAC - CONTROLS:	Controls related to heating system and boilers are old, they need to be replaced with any future renovation. By considering the age of the air cooled chiller we assume the controls related to this equipment are in good condition. Controls related to air handling unit are old and they need to be replaced with any future renovation.	M	
K	PLUMBING FACILITIES OCCUPANCY LEVEL:			
L	PLUMBING DISTRIBUTION SYSTEMS:	Most of the piping system is concealed, in general plumbing ssytem is in fair condition	M	
M	PLUMBING FIXTURES:	Plumbing fixtures are in fair condition	M	
N	FIRE SUPPRESSION:	There is no fire suppression system in this building		

EXISTING FACILITY CONDITIONS ASSESSMENT MATRIX

Facility: Fire Station Maintenance Facility, Alexandria VA

	Item	Condition Remarks	I - Immediate M - Monitor	Recommended Solution
6	ELECTRICAL			
A	Exterior Lighting	Exterior lighting is high pressure sodium type and the lighting is in good condition.	M	
B	Interior Lighting	Shop area lighting is high bay HID type and the Offices are lighted by T12 flourescent fixtures. During our site visit we were instructed that the light level in the bay area was not sufficient.	I	Replace all T12 flourescent fixtures with a T8 fixture type. Add additional high bay lights to compensate for lighting difficiencies.
C	Exit/ Emergency Lighting	Existing Exit lights have reached end of their useful life and need to be replaced.	I	Replace all exit lights.
D	Service Size	Service to the facility is fed from next door City Vehicle Maintenance building with a 225 AMP breaker from a 480 volts panel.	M	

EXISTING FACILITY CONDITIONS ASSESSMENT MATRIX

Facility: Fire Station Maintenance Facility, Alexandria VA

	Item	Condition Remarks	I - Immediate M - Monitor	Recommended Solution
E	Overhead/ Underground Electric Service		M	
F	Service Equipment Condition	Panels are the original installed from the 1980's.	M	
G	Emergency System	Generator power is fed from the 350 KW generator that serves the City Vehicle Maintenance facility and emergency power only serves overhead door and emergency door.	M	
H	Panelboards	Panel boards are old and maxed out and the directories need to be updated.	I	Replace existing panels with new panel of more circuit breaker capacity.
I	Receptacles	There are no adequate 30 AMP receptacles for shop equipment.	I	Provide 30 AMP receptacles as per shop manager's requirements.
J	Wiring	All wirings are installe d in conduit and are in good condition.	M	
K	Fire Alarm System	Fire Alarm is installed in Vehicle Maintenance Facilty and is an obsolete 110 volt Elenco system	M	The existing fire alarm system cannot be expanded and since it is installed in the Vehicle Maintenance Facility it should be upgraded by the Vehicle Maintenance Facility Operation
L	IDS		M	
M	Public Address System		M	
N	Clock System		M	
P	Building Lightning Protection		M	
	TOTAL			

FIRE STATION BURN BUILDING

COST ASSESSMENT MATRIX

Alexandria Fire Department - Alexandria, Virginia

CONDITION ASSESSMENT ANALYSIS				RUNNING LIFE CYCLE / SUSTAINMENT COST OUTLOOK														
Building Component	System Life Years	Life Cycle Remaining Years	Remaining Life %	Year 1 Cost Basis	Year 2 Cost Basis	Year 3 Cost Basis	Year 4 Cost Basis	Year 5 Cost Basis	Year 6 Cost Basis	Year 7 Cost Basis	Year 8 Cost Basis	Year 9 Cost Basis	Year 10 Cost Basis	Year 11 - 15 Cost Total	Year 16 - 20 Cost Total	Year 21 - 25 Cost Total	Year 26 - 30 Cost Total	30 YEAR Cost Total
SUBSTRUCTURE																		
SLAB AND FOUNDATION	70	43	61%	0										$ -	$ -	$ -	$ -	$ -
SUPERSTRUCTURE																		
STRUCTURE BELOW ROOF	70	43	61%	0										$ -	$ -	$ -	$ -	$ -
ROOF STRUCTURE	70	43	61%	0										$ -	$ -	$ -	$ -	$ -
EXTERIOR CLOSURE																		
EXTERIOR WALLS	70	43	61%	0										$ -	$ -	$ -	$ -	$ -
EXTERIOR WINDOWS	20	4	20%	0				$ 29,877.44						$ -	$ -	$ 29,877.44	$ -	$ 59,754.89
OH DOORS	15	14	93%	0										$ -	$ -	$ -	$ -	$ -
EXTERIOR DOORS	15	1	7%	0	$ 11,017.13									$ -	$ 11,017.13	$ -	$ -	$ 22,034.26
ROOFING																		
ROOFING	30	9	30%	0									$ 24,298.80	$ -	$ -	$ -	$ -	$ 24,298.80
INTERIOR CONSTRUCTION																		
PARTITIONS	70	43	61%	0										$ -	$ -	$ -	$ -	$ -
INTERIOR DOORS	25	1	4%	0	$ 20,183.99									$ -	$ -	$ -	$ 20,183.99	$ 40,367.99
INTERIOR SPECIALTY DOORS	25	-2	-8%	$ -										$ -	$ -	$ -	$ -	$ -
INTERIOR GLAZING SYSTEMS	25	-2	-8%	$ -										$ -	$ -	$ -	$ -	$ -
INTERIOR SPECIALTIES	15	14	93%	0										$ -	$ -	$ -	$ -	$ -
CASEWORK	20	19	95%	0										$ -	$ -	$ -	$ -	$ -
INTERIOR FINISHES																		
WALL FINISHES	7	0	0%	$ 31,865.75							$ 31,865.75			$ 31,865.75	$ -	$ 31,865.75	$ 31,865.75	$ 156,328.77
FLOORING & FLOOR FINISHES	20	1	5%	0	$ 64,225.70									$ -	$ -	$ 64,225.70	$ -	$ 128,451.41
CEILING & CEILING FINISHES	15	1	7%	0	$ 33,279.26									$ -	$ 33,279.26	$ -	$ -	$ 66,558.52
PLUMBING																		
PLUMBING FIXTURES	30	3	10%	0			$ -							$ -	$ -	$ -	$ -	$ -
DOMESTIC WATER SUPPLY	30	3	10%	0			$ -							$ -	$ -	$ -	$ -	$ -
SANITARY WASTE & VENT SYSTEM	30	3	10%	0			$ -							$ -	$ -	$ -	$ -	$ -
PLUMBING EQUIPMENT	30	3	10%	0			$ -							$ -	$ -	$ -	$ -	$ -
H.V.A.C																		
ENERGY SUPPLY	30	3	10%	0			$ -							$ -	$ -	$ -	$ -	$ -
HEAT GENERATING SYSTEM	30	3	10%	0			$ -							$ -	$ -	$ -	$ -	$ -
COOLING GENERATING SYSTEM	20	18	98%	0										$ -	$ -	$ -	$ -	$ -
DISTRIBUTION SYSTEMS	50	48	96%	0										$ -	$ -	$ -	$ -	$ -
EXHAUST SYSTEMS	50	48	96%	0										$ -	$ -	$ -	$ -	$ -
TERMINAL & PACKAGE UNITS	30	3	10%	0			$ -							$ -	$ -	$ -	$ -	$ -
CONTROLS & INSTRUMENTATION	30	3	10%	0			$ -							$ -	$ -	$ -	$ -	$ -
FIRE PROTECTION SYSTEMS																		
WATER SUPPLY (FIRE PROTECTION)	30	9	30%	0									$ 7,979.14	$ -	$ -	$ -	$ -	$ 7,979.14
SPRINKLERS	20	1	5%	0	$ 30,986.00									$ -	$ -	$ 30,986.00	$ -	$ 61,972.01
FIRE EXTINGUISHERS	10	10	100%	0										$ -	$ -	$ -	$ -	$ -
ELECTRIC POWER & LIGHTING																		
SERVICE AND DISTRIBUTION	30	2	7%	0		$ 43,376.50								$ -	$ -	$ -	$ -	$ 43,376.50
LIGHTING & BRANCH WIRING	20	1	5%	0	$ 40,661.08									$ -	$ -	$ 40,661.08	$ -	$ 81,322.16
ELECTRICAL SYSTEMS																		
COMMUNICATION, SECURITY, & ALARM SYSTEMS	15	14	93%	0										$ -	$ -	$ -	$ -	$ -
SPECIAL ELECTRICAL SYSTEMS	15	14	93%	0										$ -	$ -	$ -	$ -	$ -
EQUIPMENT																		
FOOD SERVICE	15	14	93%	0										$ -	$ -	$ -	$ -	$ -
ELEVATORS OR LIFTS	20	19	95%	0										$ -	$ -	$ -	$ -	$ -
FIXED & MOVEABLE EQUIPMENT	15	1	7%	0	$ 17,554.10									$ -	$ 17,554.10	$ -	$ -	$ 35,108.20
HAZARDOUS MATERIALS																		
ASBESTOS ABATEMENT	30	3	10%	0			$ -							$ -	$ -	$ -	$ -	$ -
LEAD ABATEMENT	30	3	10%	0			$ -							$ -	$ -	$ -	$ -	$ -
ESSENTIAL FACILITY																		
EMERGENCY POWER	20	19	95%	0										$ -	$ -	$ -	$ -	$ -
SEISMIC CAPACITY	50	48	96%	0										$ -	$ -	$ -	$ -	$ -
SITE																		
Site Preparation																		
Clear and Grub	20	19	95%	0										$ -	$ -	$ -	$ -	$ -
Earthwork	20	19	95%	0										$ -	$ -	$ -	$ -	$ -
Site Improvements																		
Landscaping	100	70	70%	0										$ -	$ -	$ -	$ -	$ -
Asphalt Paving	20	19	95%	0										$ -	$ -	$ -	$ -	$ -
Concrete Paving	25	18	72%	0										$ -	$ 3,276.39	$ -	$ -	$ 3,276.39
Fencing	20	19	95%	0										$ -	$ -	$ -	$ -	$ -
Misc Site Improvements	20	19	95%	0										$ -	$ -	$ -	$ -	$ -
Site Utilities																		
Water Distribution	50	35	70%	0										$ -	$ -	$ -	$ -	$ -
Sewer Distribution	50	48	96%	0										$ -	$ -	$ -	$ -	$ -
Gas Distribution	50	48	96%	0										$ -	$ -	$ -	$ -	$ -
Storm Sewer	50	49	98%	0										$ -	$ -	$ -	$ -	$ -
Site Electrical																		
Electrical Distribution	50	48	96%	0										$ -	$ -	$ -	$ -	$ -
Exterior Lighting	50	49	98%	0										$ -	$ -	$ -	$ -	$ -
Communications	50	48	96%	0										$ -	$ -	$ -	$ -	$ -
ADA Compliance	50	48	96%	0										$ -	$ -	$ -	$ -	$ -
AT/FP Compliance	50	48	96%	0										$ -	$ -	$ -	$ -	$ -
TOTAL PERMANENT FACILITY COST				$ 31,865.75	$ 217,807.27	$ 43,376.50	$ -	$ 29,877.44	$ -	$ -	$ 31,865.75	$ -	$ 32,278.94	$ 31,865.75	$ 65,126.58	$ 197,615.69	$ 52,049.74	$ 733,829.63
TOTAL COST WITH AREA COST FACTOR @ 7%				$ 34,096.36	$ 233,100.76	$ 46,415.00	$ -	$ 31,969.57	$ -	$ -	$ 34,096.36	$ -	$ 34,538.26	$ 34,096.36	$ 69,685.16	$ 211,446.10	$ 55,693.23	$ 785,137.04
W/ ESCALATION @ 3%				$34,096.36	$242,155.60	$49,241.67	$0.00	$35,561.24	$0.00	$0.00	$41,934.22	$0.00	$43,060.68	$ 51,573.80	$ 113,147.79	$ 396,873.34	$ 124,585.43	$ 1,133,669.22
RUNNING TOTAL				$34,096.36	$274,251.96	$323,493.63	$323,493.63	$359,474.87	$359,474.87	$359,474.87	$401,409.08	$401,409.08	$444,469.76	$496,043.56	$610,211.35	$1,006,083.69	$1,133,669.22	$1,133,669.22
RUNNING FCI OUTLOOK																		
FCI (WITH NO COSTS INCURED)				48.9%	49.3%	50.4%	51.4%	52.4%	53.3%	54.3%	55.1%	56.0%	56.8%	60.8%	64.8%	68.7%	72.7%	72.7%
REVISED FCI (AFTER INCURED COSTS INDICATED)				48.4%	47.1%	52.1%	17.7%	33.5%	33.5%	26.3%	24.7%	38.2%	40.7%	36.9%	64.5%	42.4%	58.7%	58.7%
				YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5	YEAR 6	YEAR 7	YEAR 8	YEAR 9	YEAR 10	YEARS 11-15	YEARS 16-20	YEARS 21-25	YEARS 26-30	YEARS 1-30