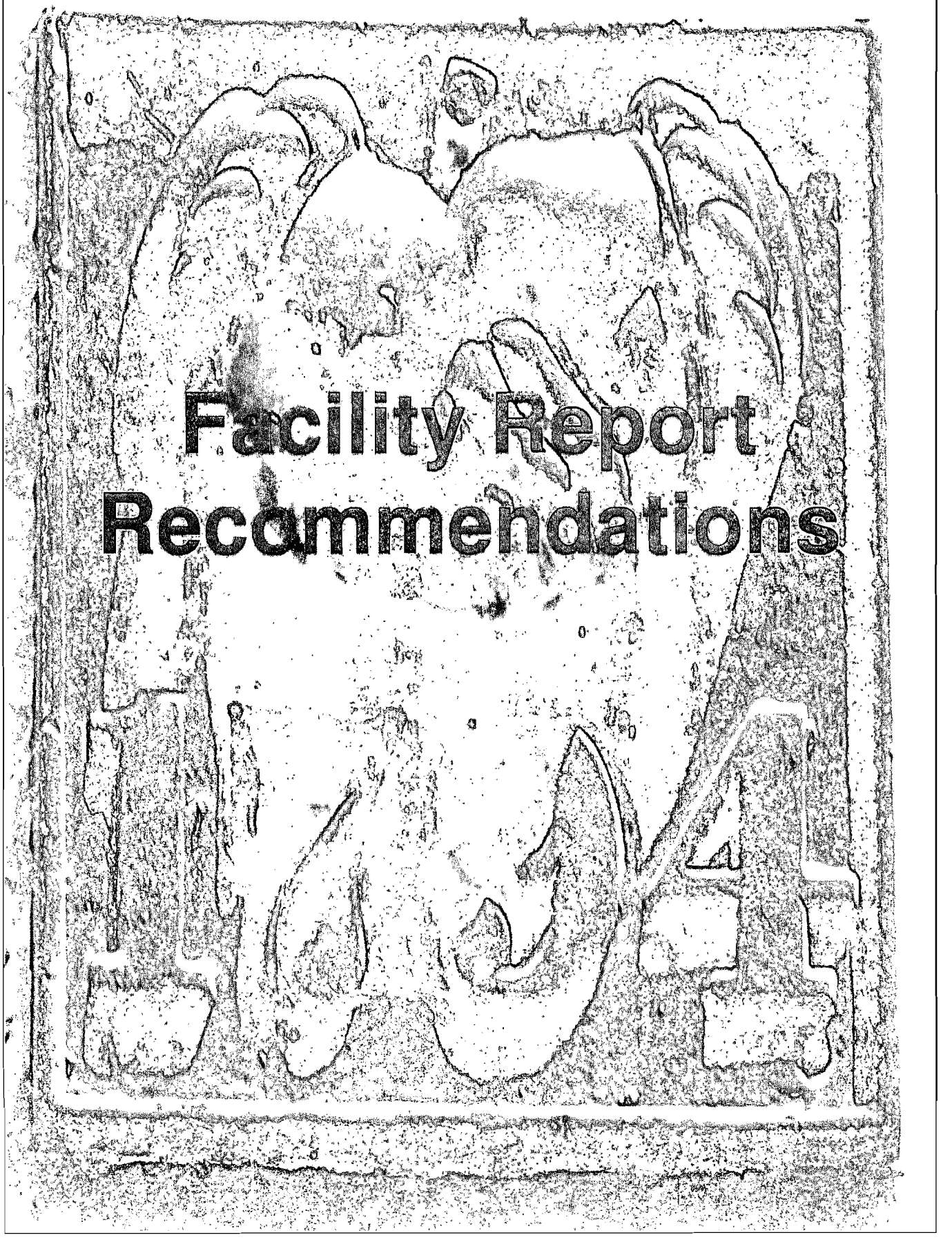

Facility Report
Recommendations

Alexandria, Virginia Fire Department

Station Location Plan Technical Memorandum

1. Key Observations and Findings

The City of Alexandria is undergoing change. As the City changes, the Alexandria Fire Department must change as well. Inefficiencies in deployment of fire and EMS resources in the City will become more problematic as increased development places additional demands upon the fire services.

Several issues are emerging at this juncture in the City's development. A review by architectural/engineering professionals has indicated that four of the City's nine fire stations are physically beyond their useful life, and should be replaced in the interests of cost effectiveness.

An internal Fire Department review and two consultant studies have indicated that, independent of their physical condition, several fire stations are no longer suitable for use because they are not large enough to accommodate modern fire apparatus. Overall, there is a shortage of space in existing facilities, which constrains where certain apparatus can be placed. Critical response equipment is stored outdoors in trailers or under covers.

Several stations are not located ideally to serve the entire City. In particular, there is a concentration of older fire facilities in the City's east end, leaving other areas of the City with relatively longer response times.

An aging and poorly-placed physical plant – not sound policy or local needs – is dictating deployment of fire and rescue apparatus in the City. Specific examples include:

- The Alexandria West Area, one of the busiest areas of the City, is served by two facilities located east of Shirley Highway. Future development is likely to result in a degradation of service unless additional resources are placed in the area.
- The center of the City has no fire station. The station (203) serving the North Ridge/Rosemont area is too small to accommodate a Medic unit, meaning that primary response comes from Station 202, located in Potomac West.

Much of the new development in the City is taking places in areas along the City's boundaries, meaning that without adjustment of resources, reliance on automatic aid from surrounding jurisdictions will increase. During periods of high activity, such as storms or inclement weather, these resources are not always available.

Exacerbating the placement and condition of the facilities are the City's desire to increase staffing on fire companies to four personnel based on prevailing local practice and the findings of a post-fire analysis of a 2007 high-rise fire. The existing deficiencies in terms of living and support space in fire stations is only going to get worse. There is a need to develop fire stations that provide facilities for female employees.

Investment on facilities is a means to maximize the return on the City's ongoing investment in the Fire Department. Over the predicted lifespan of these facilities, the capital costs are insignificant when compared to the potential increased efficiencies and resulting maintenance

or improvement of service to the public.

2. Overview of Assignment

Manitou, Inc. was retained to assist in preparation of a capital facility plan for the Alexandria Fire Department. The Department sought technical support and strategic support in integrating several recently-completed studies into a long-range facilities plan that would encompass future development, the condition and suitability of existing fire stations and support facilities, and provide appropriate levels of "coverage" to maintain response times and emergency operations.

This document is provided as a component of the assistance provided under the agreement, executed in September 2008. It is intended as a reference for preparation of a budget submission for an October 17, 2008 deadline.

3. Review of Fire Service Setting and Precedent Reports

The Alexandria Fire Department (AFD) provides fire and emergency medical services including heavy rescue and hazardous materials services to the City of Alexandria through eight fire stations housing 8 engine companies, 3 ladder companies, 5 advanced life support units, a rescue squad, a hazardous materials unit, and supporting equipment. The Department is staffed with approximately 270 personnel. The AFD responded to 17,818 calls for service in 2007, of which 65 percent were emergency medical services incidents (see Figure 1).

Figure 1: AFD Incidents 2001-2007

	2001	2002	2003	2004	2005	2006	2007	Average	Proportion
Fires	433	581	457	511	531	541	534	513	3%
Explosion	163	122	130	112	99	70	23	103	1%
EMS	11,249	11,360	11,652	11,661	11,815	11,755	11,141	11,519	65%
HazMat	630	668	877	613	670	685	526	667	4%
Service	878	815	969	963	961	1,136	1,085	972	5%
Good Intent	1,507	1,696	2,279	1,952	1,747	1,961	2,340	1,926	11%
False Alarms	1,885	1,742	2,070	1,932	2,077	2,007	2,088	1,972	11%
Weather	2	4	85	6	5	15	3	17	0%
Other	554	64	76	48	50	56	58	129	1%
Total	**17,301**	**17,052**	**18,595**	**17,798**	**17,955**	**18,226**	**17,798**	**17,818**	**100%**

The recent incident history for the Department belies some underlying trends. The fluctuation in calls for service, particularly EMS, may reflect a number of recent circumstances including enacting fees for service, and a slight decline in population in the City possibly reflecting some displacement attendant to redevelopment. The plateau in EMS calls for service is expected to be temporary, with a small but steady increase in the future as more residents and jobs move to the City, and as the population ages, thus requiring more emergency medical service. The per capita demand for service, a measure of utilization of service, shows stability. This trend appears to be consistent with neighboring jurisdictions.

There were several recent reports that are of interest to this study. They will be briefly summarized here:

TriData Corporation completed an *Assessment of Fire Department Resource Locations, Staffing, and Facilities* in October 2007. This study made recommendations for new facilities and included an assessment of existing facilities.

J. Gordon Routley, a fire service consultant, provided a report in early 2008 that analyzed an August 2007 residential high-rise fire that injured four civilians and six firefighters. This thorough analysis included numerous operational recommendations. It is an important contextual document. Most critical to this effort was the recommendation that the AFD move to staff fire companies with four personnel. With current staffing of three personnel per unit, adoption of this recommendation will require additional planning for space in existing and new fire stations.

Michael Baker, consulting engineering firm, is completing a comprehensive facilities review which will include forecasts of capital needs based solely on existing facility conditions and expected maintenance needs. This study is useful in that it has identified four fire stations that are not cost-effective to renovate and has recommended their replacement. However, this analysis does not consider the current or future operational suitability of facilities in the context of overall fire and rescue needs. These issues include such critical but prosaic concerns as room for modern fire apparatus, adequate space administrative support, and sleeping accommodations for the number of personnel at the facility.

4. Environmental Overview

The City of Alexandria is a largely urbanized area, with a significant area of lower-density single-family housing. It has a historic "Old Town" section along the Potomac River, characterized by very old building stock, some of which is historic. The community is vibrant. Numerous major development initiatives are underway. Its population is 140,000, and expected to grow for the foreseeable future. Household income is relatively high, and the City has a thriving civic culture.

A number of significant, high-density developments are proposed or underway for areas along the City's edges. These developments are mixed-use, and will contain both population and employment. Many of these developments will include high-rise buildings. In addition, the City recently developed regulations for infill development, recognizing the trend toward greater densification of older residential neighborhoods as new houses are constructed.

Significant increases are forecast in population, housing units, and employment. Changes are illustrated in Table 1. The majority of population growth will occur in multi-family housing. Figure 2 shows the major areas of growth within the City.

Table 1: Summary of Growth through 2020

Measure	2000	2020	Percent Change
Population	139,991 (2008)	152,043	+ 8.6 percent
Employment	91,277	134,463	+ 37 percent

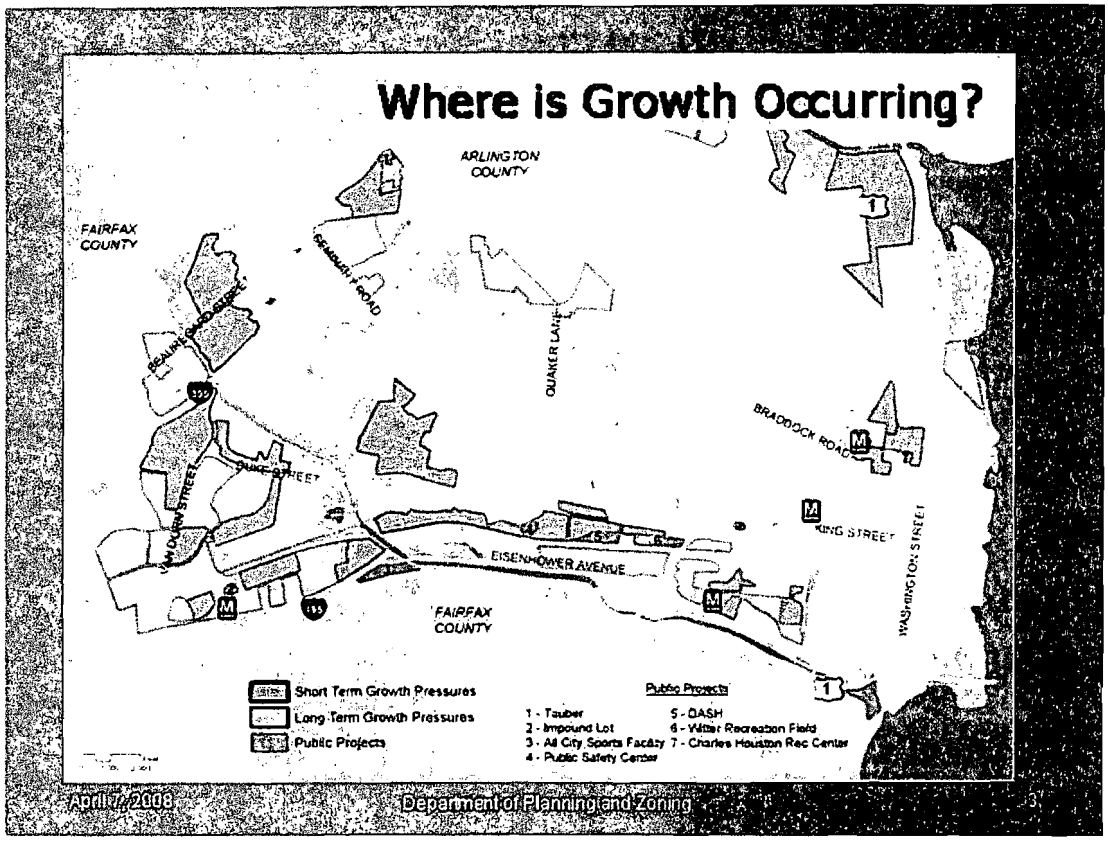


Figure 2: Future Major Growth Areas

Projected development through 2012 includes 12.5 million square feet of new construction. As indicated, much of this growth will take place on the periphery of the City (Figure 2).[1] The location of this growth is important to planning for fire and rescue services for two reasons: 1) it is located in areas that may not be adequately served by existing fire stations; and 2) it will cause increases in demand for service in areas that may diminish the capacity of existing on-duty resources. An aggravating factor is that this new development is in areas where primary service may be provided by fire rescue units from neighboring jurisdictions under automatic aid.

a. Qualitative Issues in Land Acquisition

This dynamic environment provides both challenges and opportunities in terms of acquiring property to construct new fire stations. A historic building stock and well-defined neighborhoods limit the availability of sites that do not require potential acquisition of private property and demolition of existing structures. However, large-scale developments of several areas such as Potomac Yards, a former railroad yard, present opportunities for partnership with developers to integrate fire rescue facilities into these projects. The City has undertaken an exemplary approach to this with the construction of a mixed-use station 209 in the Potomac Yards area. A similar opportunity may present itself in the Alexandria West area, in the Landmark or Mark Center areas.

[1] City of Alexandria, Department of Planning and Zoning, *Development and Growth Projections*, Powerpoint Presentation, April 8, 2008.

b. Fire Station Implications

The Implications of this environment for planning new fire stations indicates that the AFD must be involved closely with the Planning and Zoning process to anticipate fire station needs and identify and acquire sites for new or relocated facilities well in advance. Given the pace of development in the City, the changes identified in this current process are likely to represent the AFD's last opportunity to develop stations in the next 20-50 years. After this wave of activity takes place, future needs will likely be met be reinforcing these facilities with additional staff and units.

5. Station Location Philosophy

There is no single "right" way to locate fire stations. Demand for service, local conditions, and public preferences will influence the position of facilities. Practically speaking, history is the most influential, in that historic development patterns likely determine the majority of station locations. Alexandria is no exception.

There are two competing and sometimes contradictory goals in locating fire stations. The first is to assure a timely response to all populated areas of a community. This is normally assumed, and typically uses a logic of distance or time from the nearest station to justify a new facility. The other goal is to minimize the time it takes to serve actual calls for service. Studies of fire service demand have shown that calls for service are seldom uniformly distributed throughout a community. Issues such as land use, construction type, and density of employment and population will all influence demand for service. Further, fire and EMS services are not uniformly linked, meaning that areas of high fire demand for service are not necessarily the same as those with high EMS demand. Temporal variation and severity are also relevant. While there is great complexity in understanding and describing demand, the historical demand for service provides a very useful guide for locating facilities and encompasses many of these factors.

From a fiscal standpoint, the one-time costs of building a fire station are small in comparison to the operating costs of personnel required to staff these facilities. That is, adjustments to facility locations should be considered in terms of their ability to increase the effectiveness of existing and ongoing investments in personnel. In some cases, adjustments to facility locations can avoid the need to expand staff and be a wise strategy for long-term cost containment.

The City of Alexandria is faced with such a decision. This decision will require consideration of long-term consequences, as well as coordinated and decisive action to assure that building sites can be acquired.

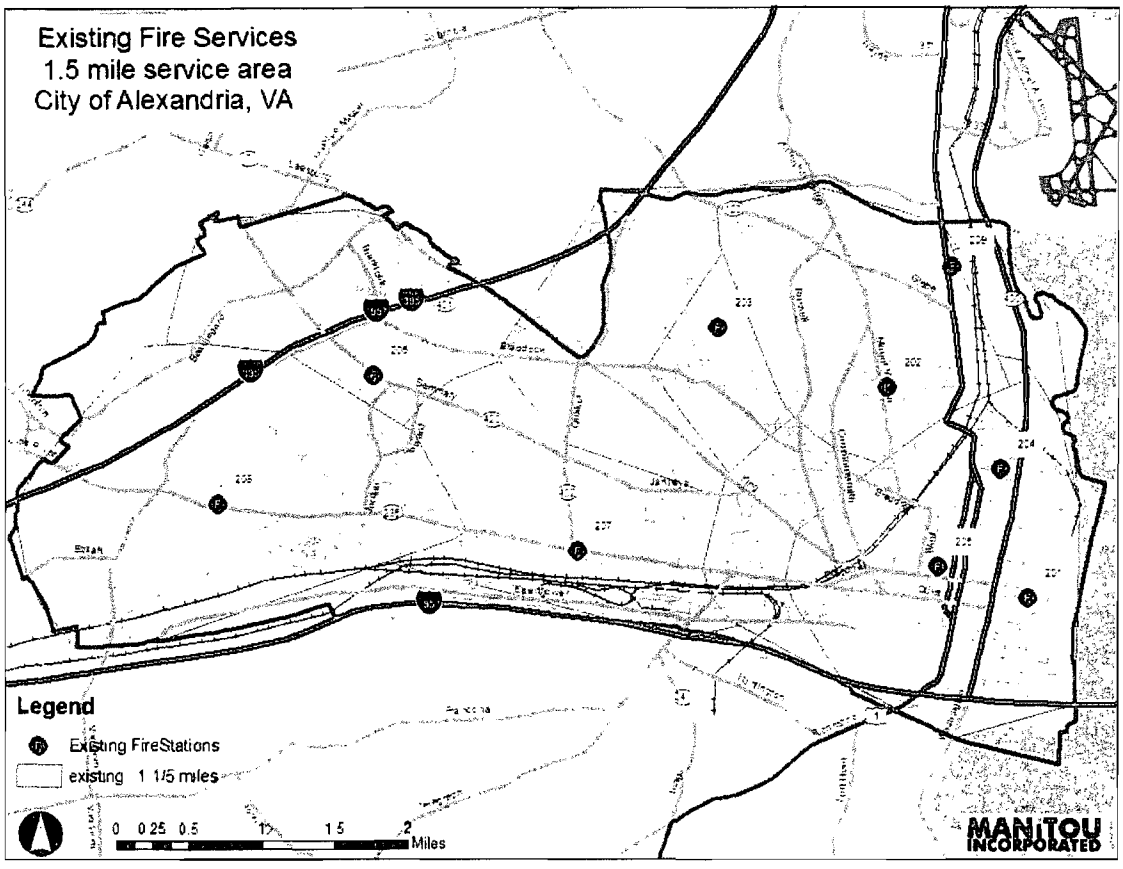


Figure 3: AFD Existing Station Locations (includes Station 9)

Figure 3 shows the current sire station locations for the City of Alexandria. As indicated in the previous discussion, the western half of the City has three fire stations, while the eastern half has six. Some of the busiest areas of the City are in the west, particularly in the Shirley Highway corridor.

6. Forecast of Calls for Service 2008-2030

To gain a better understanding of the likely future needs for fire and rescue service in the City, a forecast of incidents was undertaken. This forecast was limited in scope, and consisted of a high-level summary of incidents at a citywide level. Given additional resources and time, a forecast of unit demand and small-area forecasts can be produced. This effort was designed to assure that recommendations for additional facilities were qualitatively accurate. It is useful in the aggregate, but can not predict with certainty the workload for a particular unit, nor can it identify the precise placement of units that may be needed to provide service. This degree of uncertainty speaks to the need to design future facilities with a 3-bay configuration permitting maximum flexibility to position apparatus based on changing development, population, and demographic patterns.

Manitou has developed and refined a methodology for forecasting incidents based on empirical information and consistent with theories on relationships between community characteristics and demand for services. The methodology can be adjusted for available data and the planning

horizon used, and is very robust. We used fire department incident data from 1985 to 2007, and population, housing, and employment information compiled by the City's Department of Planning and Zoning. We relate existing demand for service to the population and employment within the City. We develop per capita demand for service for EMS and all other incidents, and then examine the per capita rates to see if they are increasing or decreasing. Therefore, change in demand for service is attributable to a) change in population and b) change in utilization rates. Although we can disaggregate calls for service and carry this methodology down to small areas, in this case we only looked at citywide data.

EMS is the dominant source of demand for service in most departments providing this service. Per capita rates for EMS appear to be decreasing in recent years. This is contrary to many departments, which have experienced an apparent unending increase in EMS demand for service. All non-EMS calls for service were analyzed separately, and had a stable to slightly increasing per capita rate.

These trends indicate that the primary cause of increased demand for service in Alexandria will be attributable to increased population and employment, rather than underlying changes in the rate of utilization of service. Employed population contributes to calls for service, and are converted to "resident equivalents" by multiplying each employee by a factor to reflect a 40 hour presence for 52 weeks a year, or roughly 0.23. Thus, 1000 jobs equates to having an additional 230 residents, in terms of calls for service.

Two forecasts were produced: a low forecast and a high forecast. In the low forecast, rates for calls for service were fixed at current (2007) levels, and any changes in demand were attributable to increases in population (adjusted for employment). In the high forecast, EMS per capita demand was forecast to grow at 0.36 percent annually, which is comparable to EMS per capita demand increasing from its level of 65 calls per 1,000 population per year, to its average over the past eight years of 70 calls per 1,000 population. For non-EMS calls (fire and other incidents), a rate of increase of 0.25 percent annually was used based on the average rate of change from 2000-2007.

Tables 2 and 3 present the low and high forecasts, which relied on the *Statistical Profile Alexandria 2007 Update* dated May 2008, and updated forecasts of population and employment provided by the Department of Planning and Zoning in October 2008.[2]

Table 2: Low Forecast 2008-2030

Incident Type	2008	2009	2010	2015	2020	2025	2030
EMS	10803	10905	10929	11522	12070	12685	13300
Fire and Other	7094	7154	7177	7694	8181	8585	8988
Total	17898	18002	18106	19216	20251	21270	22289

Under the low forecast, incidents increase to 22,289 in 2030, or an increase of 4,391 incidents. The relative balance between fire and EMS incidents remains unchanged under the low

[2] The newer forecasts projected higher employment than the previous estimates. The net effect was to add about 1,000 incidents per year at the end of the forecast in 2030.

forecast.

In Table 3, we see the high forecast, which shows 23,744 incidents by 2030. What is remarkable about these two forecasts is their similarity. Because rates of growth in per capita demand are so small, there is not a large difference between the low and high estimates.

Table 3: High Forecast 2008-2030

Incident Type	2008	2009	2010	2015	2020	2025	2030
EMS	10803	10905	10968	11809	12671	13549	14456
Fire and Other	7094	7154	7195	7713	8230	8753	9287
Total	17898	18059	18163	19522	20902	22303	23744

Of course, this growth in demand, while not staggering, will have the effect of increasing the workload on AFD units. These increases in demand are not spread uniformly across the City. The growth will be concentrated with development patterns. As a consequence, we can foresee that the increase in demand will be especially pronounced on station 206 and 208, and 209, and to a lesser extent, Stations 205 and 207.

7. Station Location Recommendations

Its current configuration of stations can be thought of as a dense network of facilities serving the "Old Town" area, with a much less dense configuration serving the remainder of the City. As some of the original facilities were established before motorized vehicles, these locations are not necessarily suited to modern needs.

The consequence of this pattern is that existing fire stations are heavily concentrated along the eastern end of the City. Only one facility is located in the center of the City, and Two facilities serve the entire western end of the City. This pattern results in a considerable mismatch between supply and demand for service such that units on the western end of the City are busier than units located elsewhere. This situation means that resources are poorly distributed in terms of 1) providing service and 2) assuring utilization of existing resources.

Two primary options are presented for new station configurations. These options are informed by the foregoing discussion and the consultant and internal reports. Analysis of current fire station placement in the City clearly indicates that there is a need to create a facility to serve the geographic center of the City by moving the resources at one of the existing facilities in the east. Stations 203 and 205 are both identified as needing replacement, and Station 205 could be moved to the west with a net improvement of coverage. Stations 206 and 207 are also identified for replacement, presenting further opportunities for adjustment.

In terms of serving areas of growing demand for service where existing coverage is marginal or could become so in the future, there are two geographic areas of concern in the City: the Eisenhower Valley and "Alexandria West" (Seminary West).

The Eisenhower Valley is located along the southern boundary of the City, and is geographically isolated by the railroad tracks. There are limited crossings, meaning that units must take a

circuitous route to reach this area. An existing development plan for the eastern end of the Valley is already in progress, and a major development is planned in the western end of the Valley. The area is generally not served within desired response time guidelines for the City. Additionally, there is an ethanol transfer facility in this area that had added to concerns. First-arriving units to this area of the City would likely come from Fairfax County under automatic aid.

A second area of forecasted growth that may need additional resources is the area known as "Alexandria West" to the west of Shirley Highway to the City's boundary. This area is currently served by Stations 206 and 208. Because of the large areas these stations cover, they are the busiest in the City. Future growth in demand for service is expected to continue as major development takes place. Major projects expected include the Mark Center Department of Defense project, and redevelopment of the Landmark area. Increased traffic congestion and increasing calls for service will make the units currently serving the area busier, resulting in longer response times as a larger share of calls are answered by other stations. As with the Eisenhower area, first response to some incidents will come from automatic aid from Fairfax County.

a. Automatic Aid

The Northern Virginia area, as part of the national capital region, was an early innovator in the concept of automatic aid. Automatic aid refers to a situation in which resources from more than one fire department are alerted and respond jointly on an initial alarm. This concept should be distinguished from mutual aid, where a special request is made form one jurisdiction to another for resources on a case by case basis. The main advantage of automatic aid is that the time it takes to get assistance to the scene of an emergency is reduced. An added element of automatic aid in Northern Virginia is that the closest station is alerted to respond to an emergency regardless of the political jurisdiction. The use of automatic aid has many benefits including a higher level of service to the public, and reduced costs, by eliminating duplication of facilities and services. In large scale incidents, the use of automatic aid fosters closer and effective working relationships due to frequent interaction between crews in adjacent departments.

Owing in part to its irregular boundary and small size relative to its neighbors, the City of Alexandria has a large proportion of incidents where some units are drawn from Arlington or Fairfax Counties. This is a wise practice, and should be continued. There is a balance between the notion of relying on automatic aid and versus adding facilities near a jurisdiction's boundary. It is intended as a reciprocal relationship. The pace of development in some of these border areas threatens to create an imbalance.

The effectiveness of automatic aid is constrained by the communication linkages between jurisdictions. The effectiveness of automatic aid is directly linked to the speed with which communication can take place between the departments involved. Alexandria maintains its own fire dispatch facility, as does Arlington County and Fairfax County. These facilities are connected by telephone. Each maintains its own dispatching system software and communications system.

The lack of real-time connection between dispatch centers places added burdens on dispatchers and effectively delays response. At present, automatic aid works as follows:

- Alexandria Dispatcher dispatches a call for service, including automatic aid unit(s)
- Alexandria Dispatcher then calls Arlington or Fairfax to advise of the call, and request the unit(s)
- The Arlington or Fairfax dispatcher then advises 1) if unit is available; and b) if not, if another unit can be sent in its place.
- The Alexandria dispatcher then adjusts the response as necessary (this may require contacting another communication Center before the appropriate number of units are sent).

The process is even more cumbersome when we realize that this is repeated hundreds of times annually. The underlying problem is two-fold – dispatchers have no awareness of the status of units outside their jurisdiction, and the process of initiating a dispatch requires a telephone conversation.

The most direct way to address this problem is for the City to enter into an agreement to have fire calls dispatched by another agency. Both Arlington and Fairfax Counties have recently completed "state-of-the-art" communications facilities. By having dispatch performed by the same agency, there is no delay due to "handing off" the call, and that dispatch center would have awareness of unit status for all units within its service area, eliminating the need to modify dispatch assignments during the early moments of an incident.

The second way to address this problem is through use of technology to provide linkages between the communications centers. These linkages are through software and communications protocols. Because Alexandria has an older computer aided dispatching (CAD) system, it is necessary to do a custom-programmed interface.[3] At the minimum, this interface will enable each dispatch center to see the status of units in neighboring jurisdictions. Ideally, such an interface would allow a call from one jurisdiction to appear directly in the CAD system of a neighbor, eliminating the need for a telephone relay of information.

Using federal Homeland Security funding, we understand that a project is just beginning to engage a contractor to design an interface that will allow for the real-time exchange of information on unit status between the City of Alexandria, Arlington, and Fairfax counties. This project is critical, and the feasibility of consolidating fire dispatch should be carefully evaluated, especially in light of plans to move the current dispatch center and create a new facility at the Alexandria Police facility. A consolidated dispatch would likely result in cost savings as well.

There are two scenarios for station options – each is based on differing assumptions. In reality, there are numerous combinations and permutations of these moves, particularly when administrative space and functions are considered.

b. Scenario One -- Optimize Facility Locations

Scenario One assumes that the City is able to move facilities in order to maximize the

[3] New CAD systems typically enable this feature of a common data exchange protocol recently promoted by the federal government.

effectiveness of the current stations. This option requires the addition of one new station and movement of two stations, for a net increase of one new station. Station 210, already planned for Eisenhower Valley, would continue.

Table 2: Scenario One Station Recommendations

Fire Station	Action	New Location	Comments
210	New Facility	Impound Lot	
203	Rebuild 3-bay facility	No change	Provides space for Medic Unit
205	Move	Quaker Ln and Seminary Rd	
206	Move	Braddock and Beauregard St	

Station 205 would be moved to the area of Quaker Lane and Seminary Road.[4] From this location, it would provide good coverage for the center of the City, and second-arriving support for stations 207, 206, 203, while continuing to support stations 202, 204, and 201. If this facility were moved, it would permit Station 206 to be moved to the other side of Shirley Highway in order to provide better coverage for the large number of calls for service that are anticipated along Beauregard St.

c. Scenario Two -- Limited Facility Relocation (Maximize retention of existing facilities)

Assuming that a central Alexandria location for a relocated fire station can't be found, then this option requires the addition of two stations. Station 210, already planned for Eisenhower Valley, would continue.

A new Station 211 would be constructed on Beauregard St. south of Seminary Road. This station would provide service to the rapidly-growing Alexandria West area, which will increasingly be a center of high activity.

Table 3: Scenario Two Station Recommendations

Fire Station		New Location	Comments
210	New Facility	Impound Lot	
203	Rebuild 3-bay facility	No change	Provides space for Medic Unit
205	Rebuild 2-bay facility	No change	
206	Rebuild 3-bay facility	No change	
211	New Facility	Beauregard St south of Seminary Rd	

d. Other Alternatives

The alternatives presented above are intended to capture the key elements of a long-term facilities plan for the AFD. They are not exhaustive, and there are numerous alternatives within these scenarios with regard to placement of apparatus and use of space by support functions

[4] A review by the City shows that its current site is too small for a 3-bay facility.

such as training and fire prevention. Also, the movement of Station 207 or 205 toward the Center of the City and/or the Eisenhower East area can be considered as a viable alternative of equal merit to the plan proposed in the scenarios above. The important point is that resources are moved toward the center of the City, and closer to the area of high and growing demand in Alexandria West.

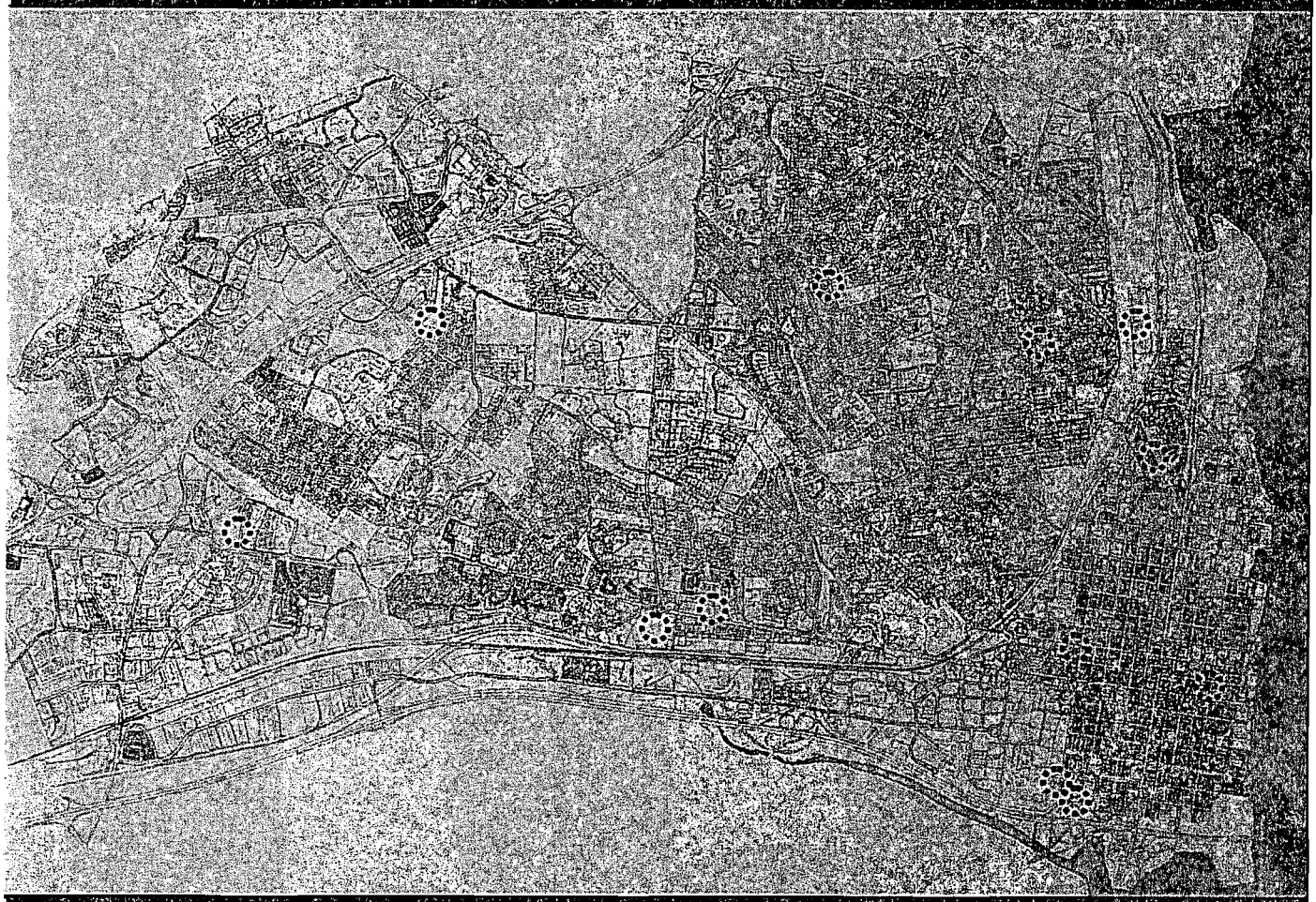
Construction or renovation of facilities will call for movement of apparatus to adjust coverage citywide on a dynamic basis. Over time, changes in the development patterns and mix of apparatus will also call for adjustments of unit locations. The facilities should be constructed now to permit maximum flexibility to make these adjustments in the future.

8. Conclusions

The City of Alexandria is undergoing a period of sustained development that will likely culminate in the nearly complete build-out of major parcels within the City. These changes will result in shifts in relative concentrations of population and employment that will affect the demand for fire and rescue service. The existing stock of fire stations needs considerable investment to maintain its usefulness, and several facilities should be replaced. These circumstances present an opportunity to the city to position the AFD for the next 30-50 years in terms of its facilities, and assure that levels of service to the public can be maintained.

NOTE: As this document was being finalized, the AFD produced *Station Renovation-Replacement-New Construction Options* dated October 20, 2008. While there is a difference between the Department's plan and the scenarios recommended in this report, the AFD plan and this document are in agreement as to the need to move more resources to the west, and to add resources in Alexandria West. The AFD plan is sensible and will achieve the desired outcomes. Uncertainties in site acquisition may end up requiring Scenario Two, which assumes (in a worst case) that current facilities can not be moved from their existing sites.

CITY OF ALEXANDRIA
DEPARTMENT OF GENERAL SERVICES



FIRE STATION FACILITIES STUDY

Draft Report
Decenber 19, 2008
FOR OFFICIAL USE ONLY

Baker

TABLE OF CONTENTS

1. INTRODUCTION

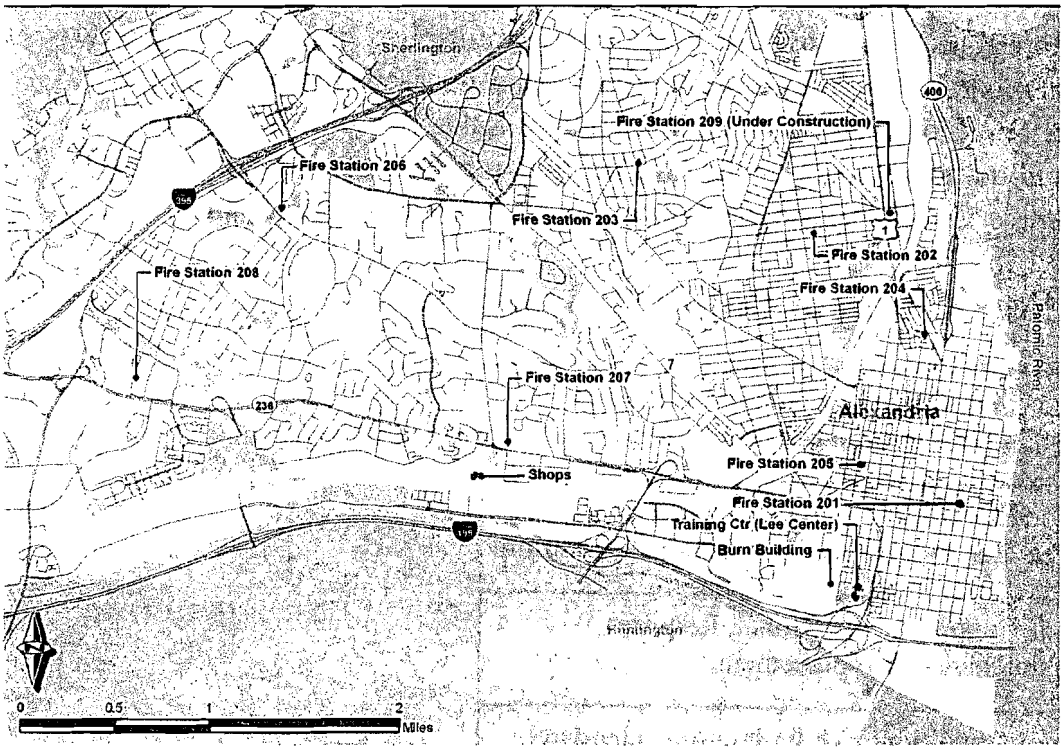
Study Scope

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	10840	0	9750	**20590**	225	15470	RB	900 SECOND ST
Fire Station 205	1949	S-1, R-2, B	780	3940	0	3420	**8140**	98	8844	RB	1210 CAMERON ST
Fire Station 206	1958	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	1978	S-1, R-2, B	5600	5600	100	0	**11300**	90	33868	CG	175 N PAXTON ST
Fire Station 209	2009	S-1, R-2, B	0	23600	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.

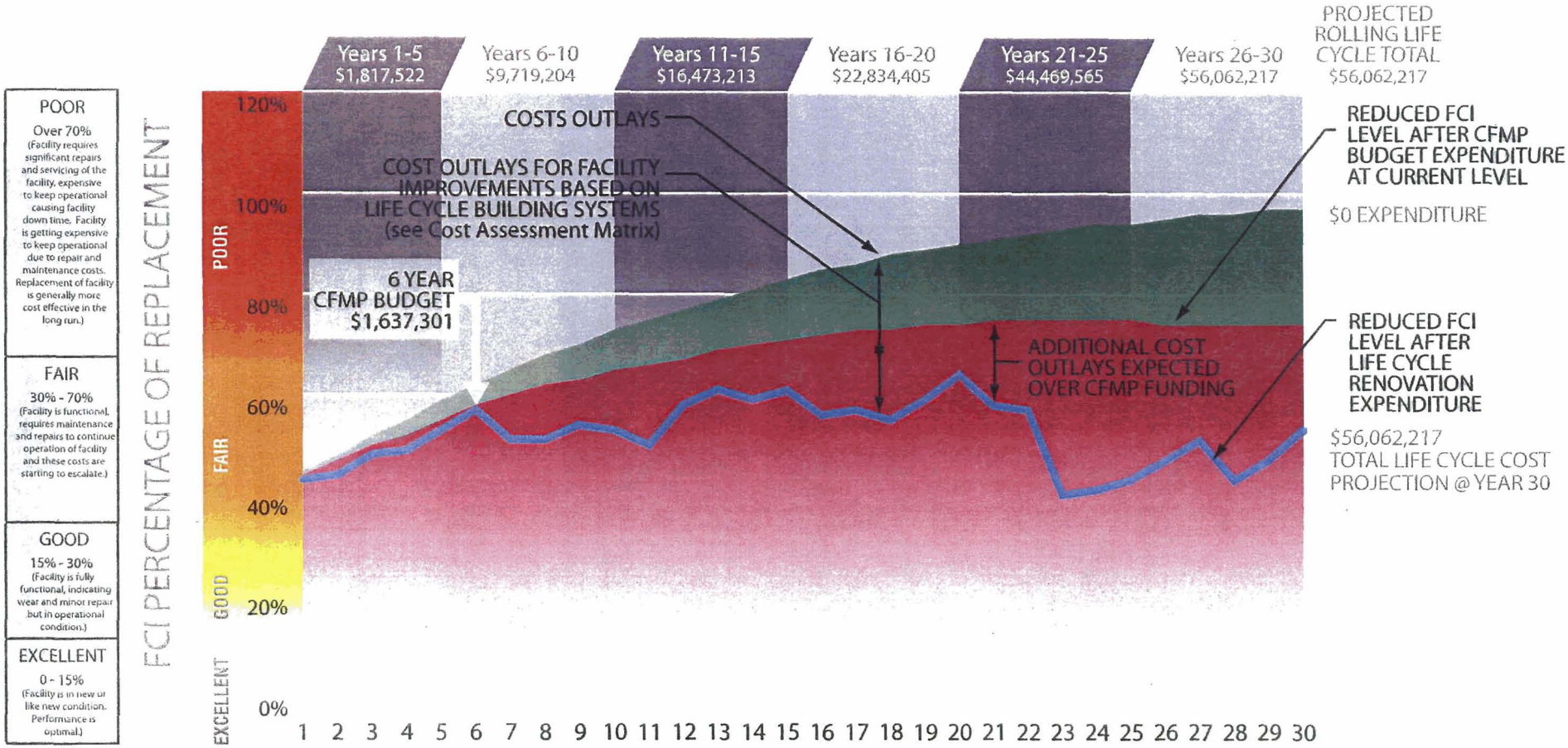
Exceeds 70% FCI
Nearing 70% FCI or reduced below 70% by anticipated renovation expenditure
* Recommend replacement if renovations are not sufficient to lower FCI values below 70%.

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.

2. EXISTING SITE CONDITIONS

Overall Issues

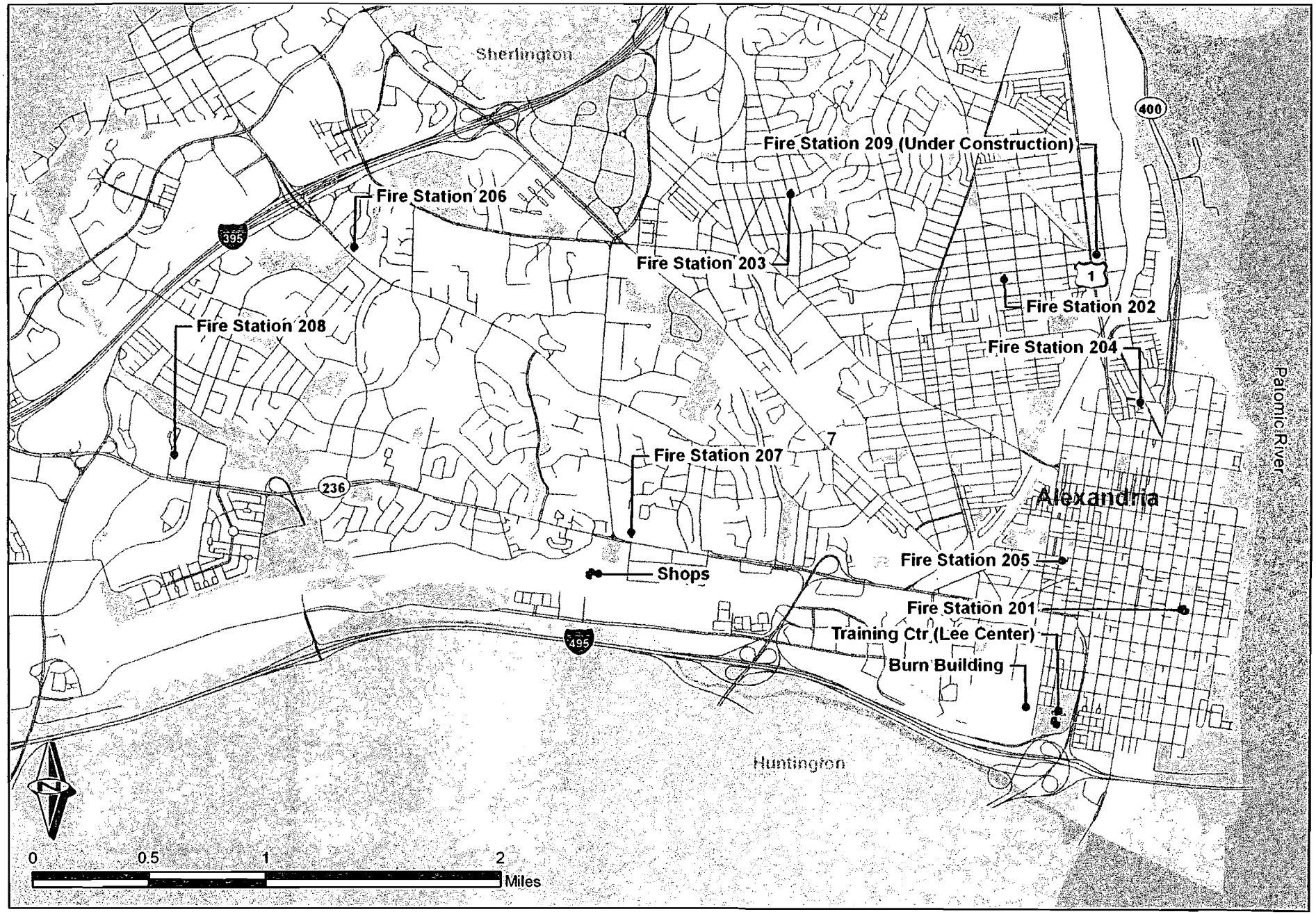
There appear to be no zoning issues with the existing facilities. Many facilities are in urban setting where land is a premium. Off street parking is not always sufficient to accommodate many of the locations.

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.

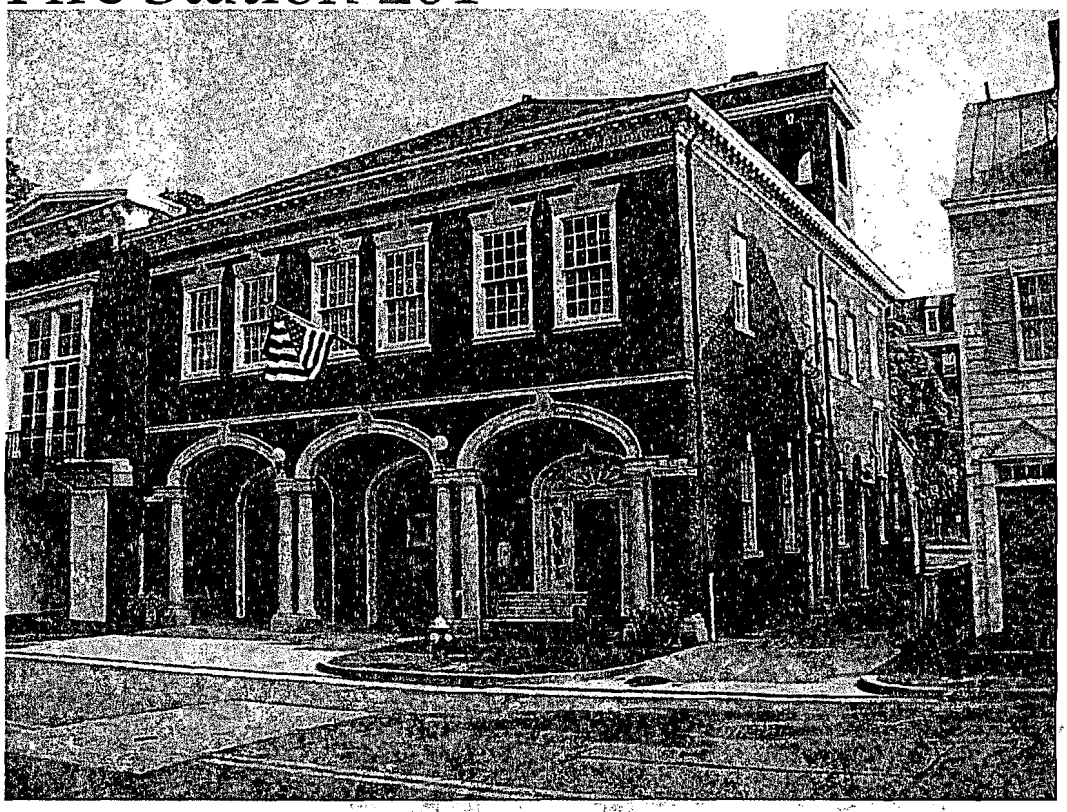
A study should be conducted to examine the essential facility requirements of each facility site. The study should examine the facility operating needs as would be required to operate during a major disaster such as an earth quake or hurricane. It was observed during the site investigations that only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

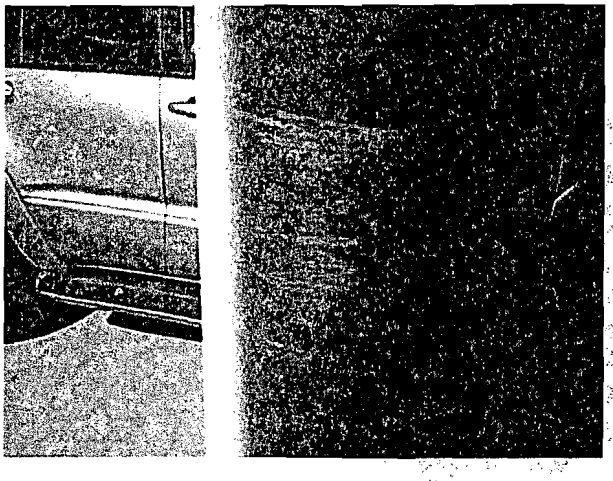
Alexandria Fire Station Locations



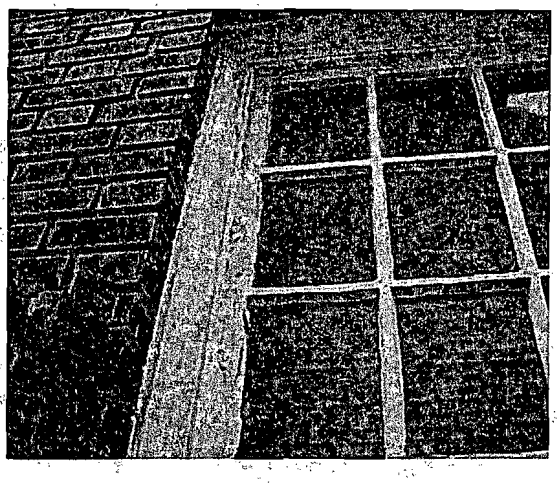
Fire Station 201



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

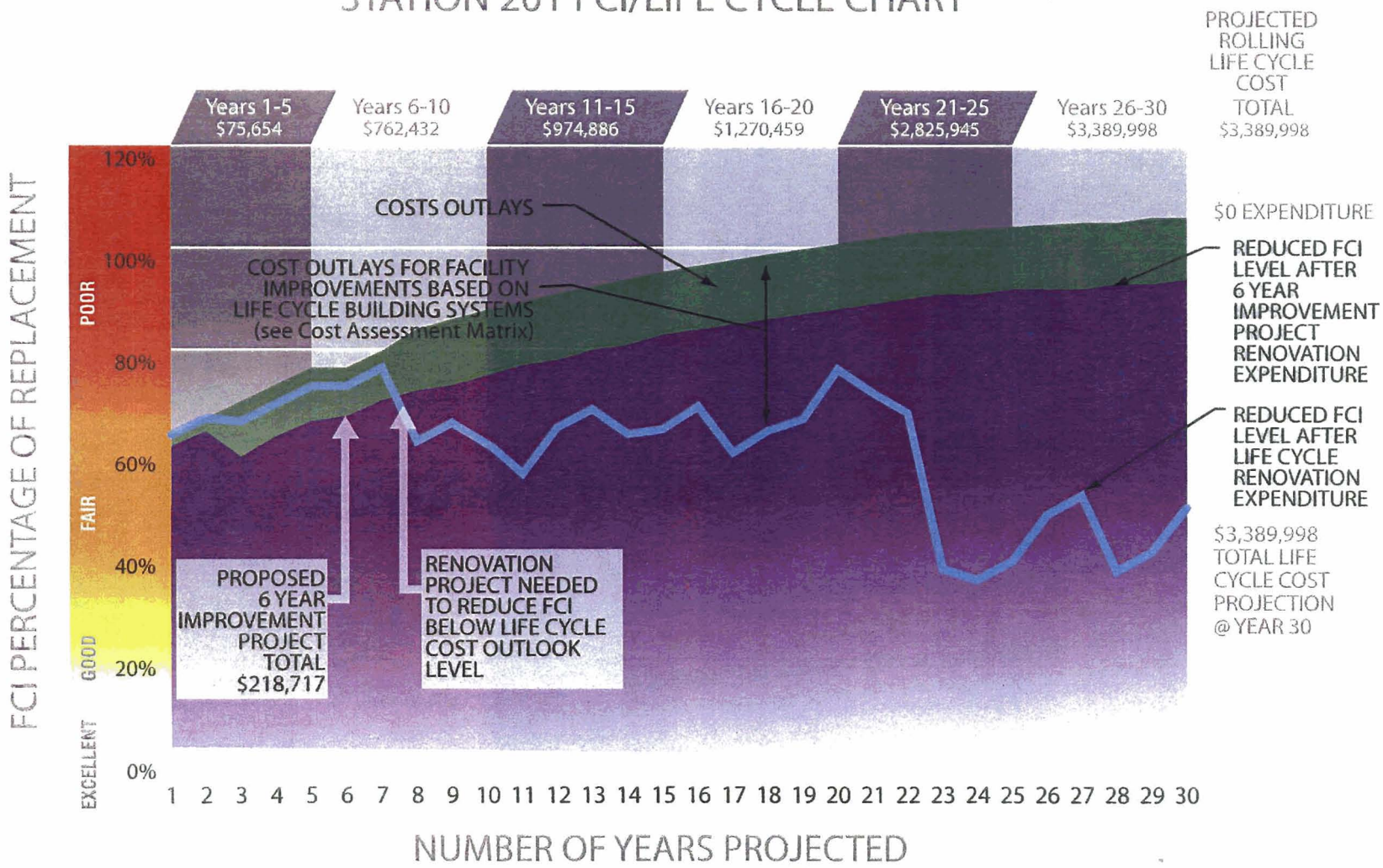
Facility Outlook

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



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 #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	SIX YEAR OUTLOOK 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									

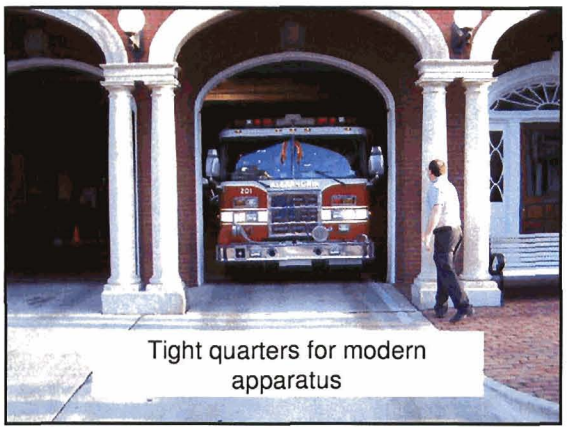
Notes:

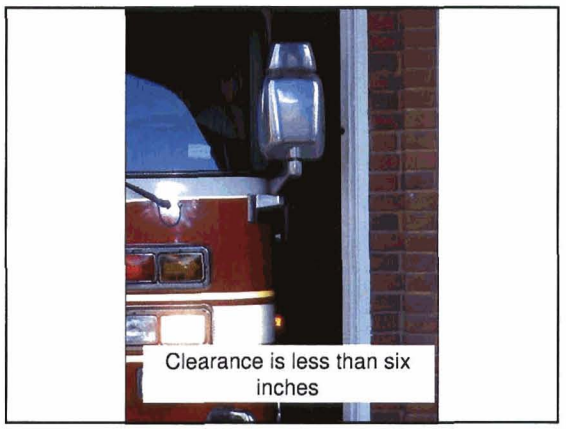
Cost estimate shows the following:

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

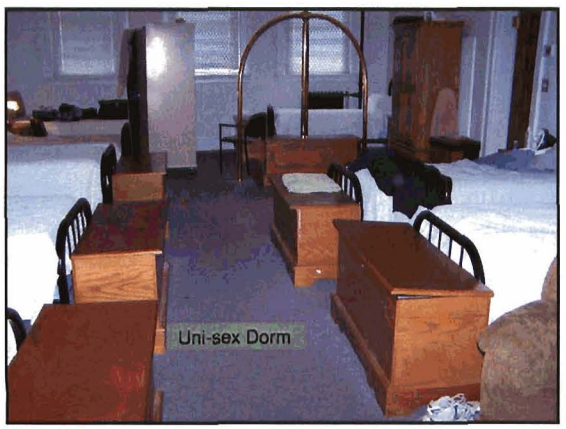
Priority Rating 1 - 5

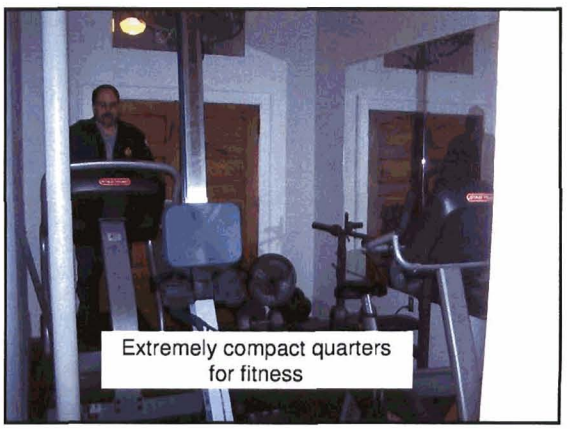
- 5- Life safety & building security.
- 4- Building exterior & primary systems.
- 3- Building interior finishes and secondary systems.
- 2- Supplemental systems.
- 1- Noncritical systems.

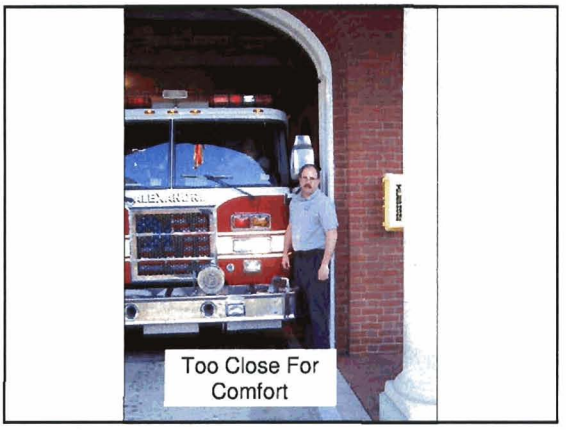

Tight quarters for modern apparatus

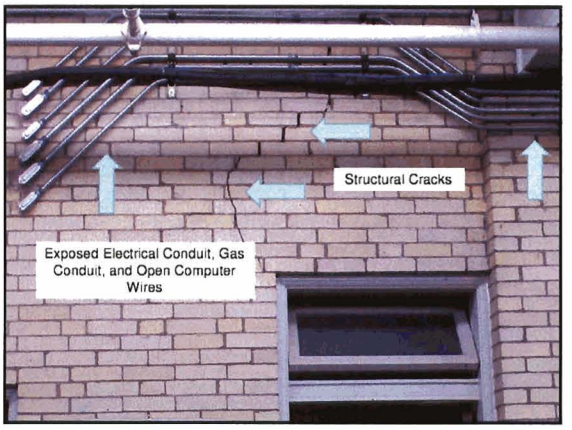

Clearance is less than six inches


Station Supplies

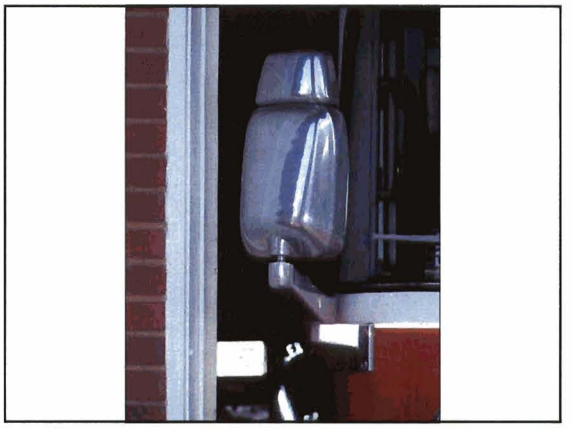

Uni-sex Dorm


Extremely compact quarters for fitness


Too Close For Comfort


Structural Cracks
Exposed Electrical Conduit, Gas Conduit, and Open Computer Wires


Bent Frame
Lock Failure
Duct Tape Window Repair

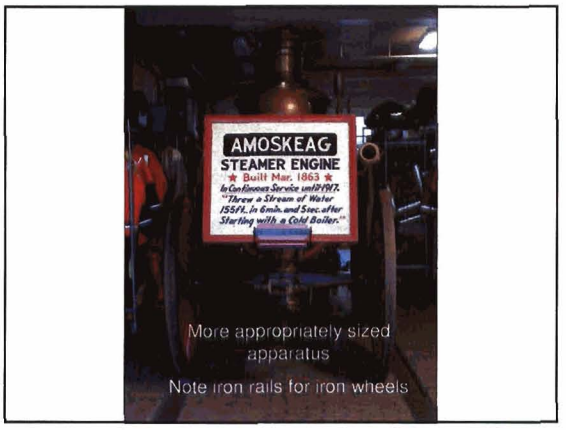


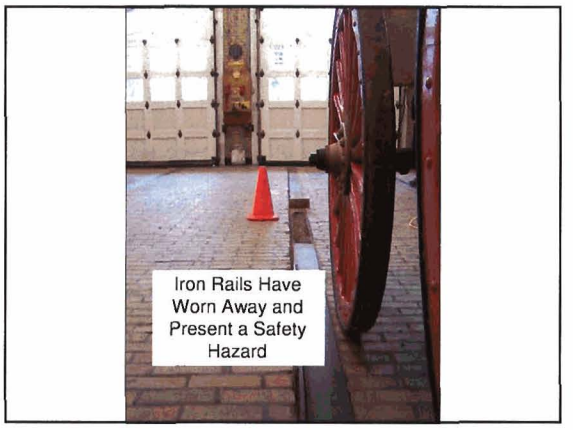

Failing concrete
Patches and Paving have Failed Down to the Cobblestones

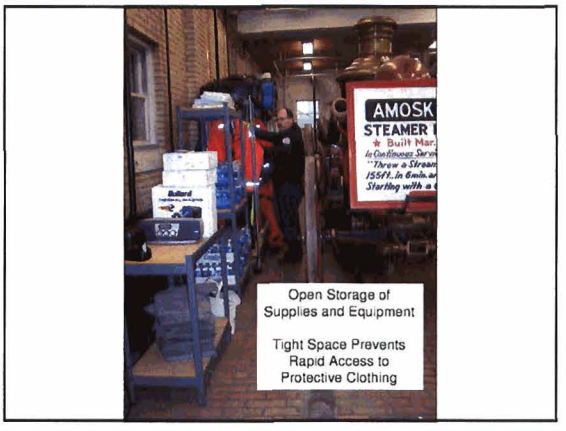

Protective Clothing for Both Fire and Water Stored in Bay

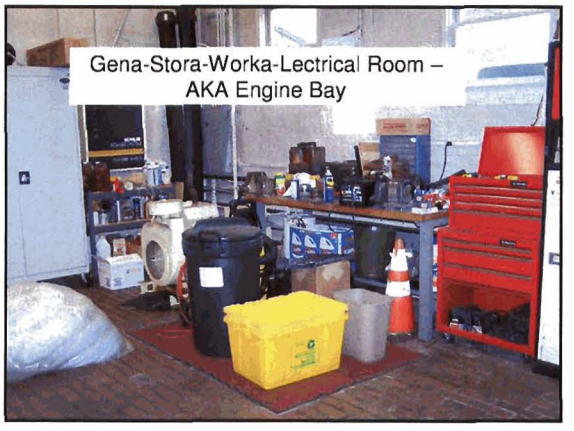

ALEXANDRIA
201
ALEXANDRIA
FIRE EMS

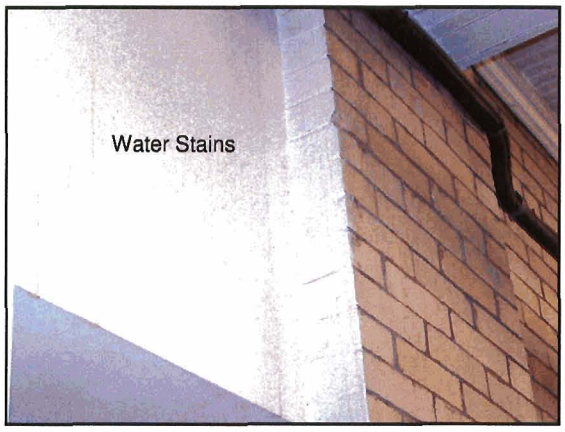

All of the Station Parking
Storage
Enforced

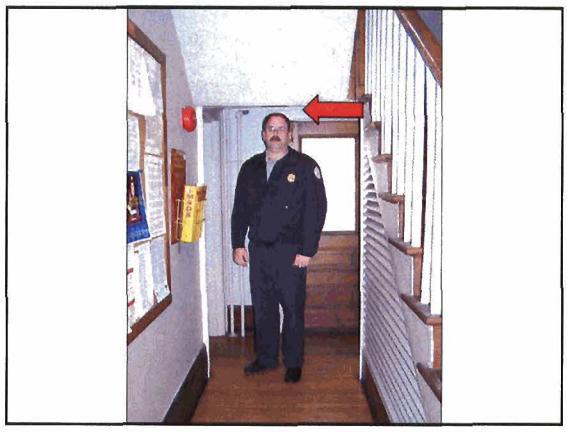

AMOSKEAG
STEAMER ENGINE
★ Built Mar. 1863 ★
In Continuous Service until 1917.
"Threw a Stream of Water
155 ft. in 6 min. and 5 sec. after
Starting with a Cold Boiler."
More appropriately sized apparatus
Note iron rails for iron wheels

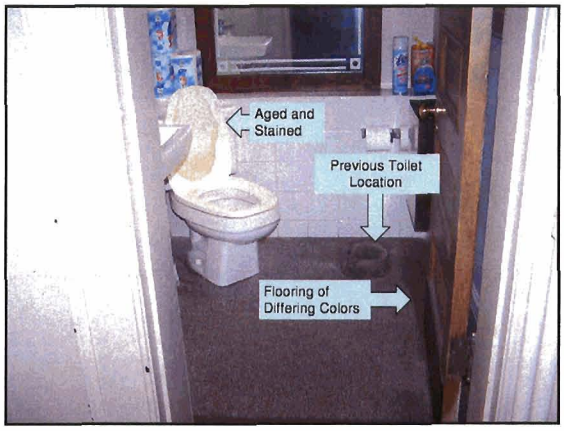

Iron Rails Have Worn Away and Present a Safety Hazard

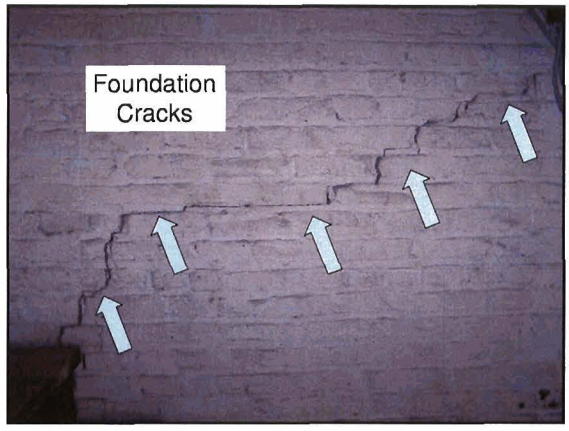

Open Storage of Supplies and Equipment
Tight Space Prevents Rapid Access to Protective Clothing


Gena-Stora-Worka-Lectrical Room – AKA Engine Bay

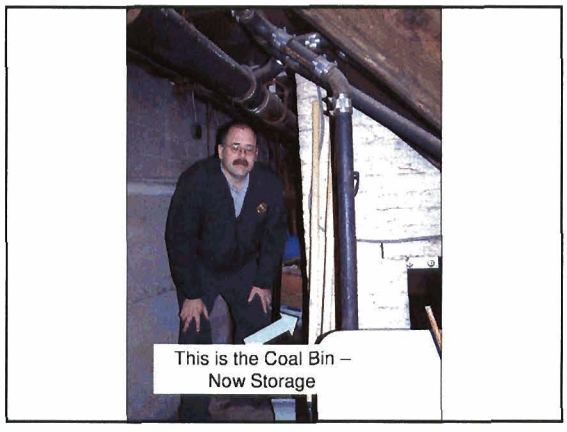

Water Stains

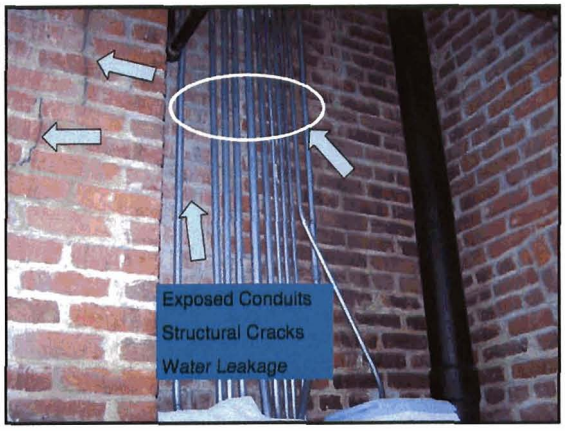


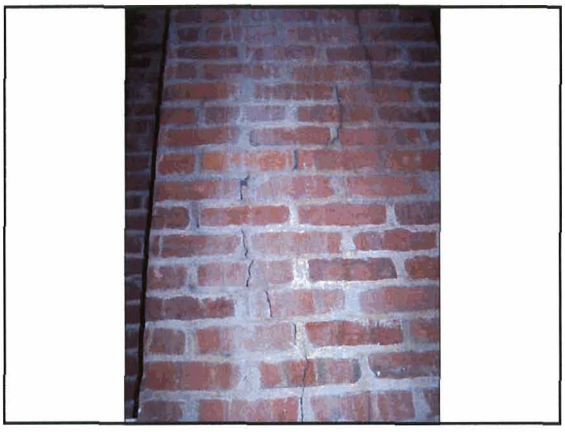

Aged and Stained
Previous Toilet Location
Flooring of Differing Colors


Foundation Cracks

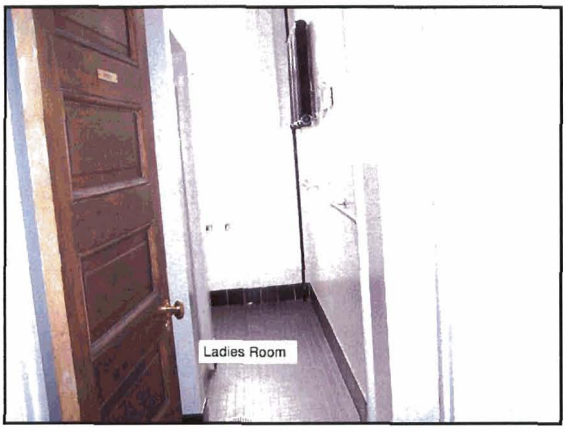

Spauling of Foundation Walls


This is the Coal Bin – Now Storage

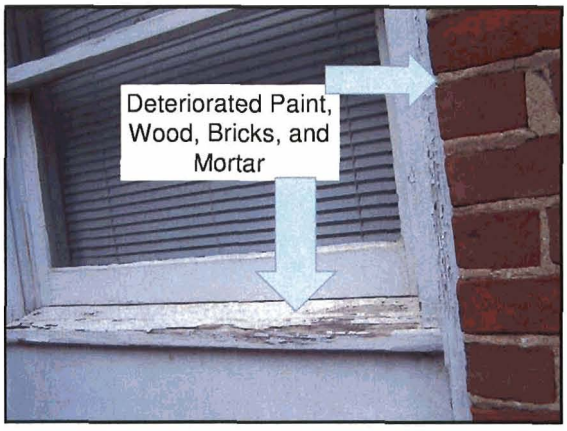

Exposed Conduits
Structural Cracks
Water Leakage

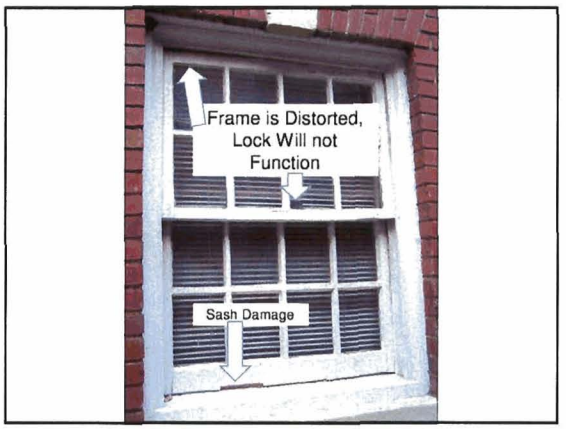


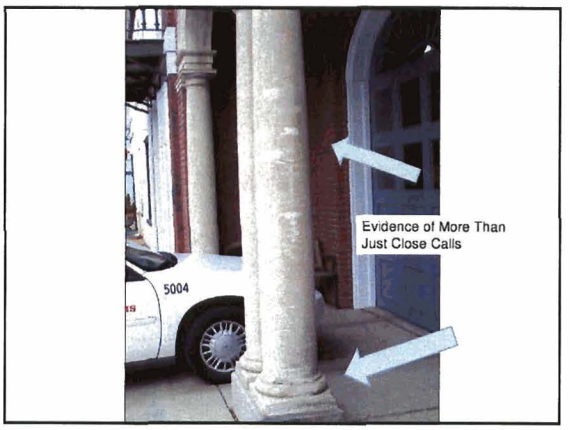

Locker Room Too Small For a Chair

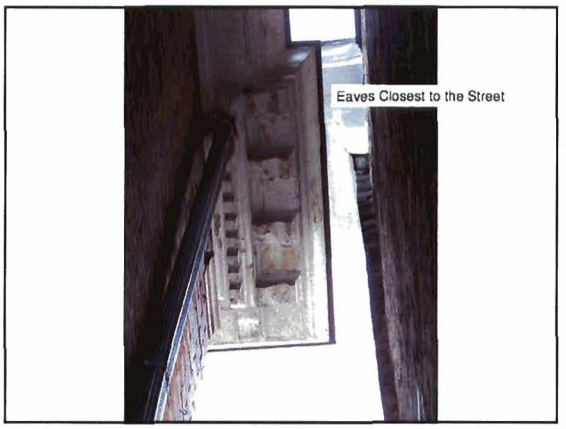

Ladies Room

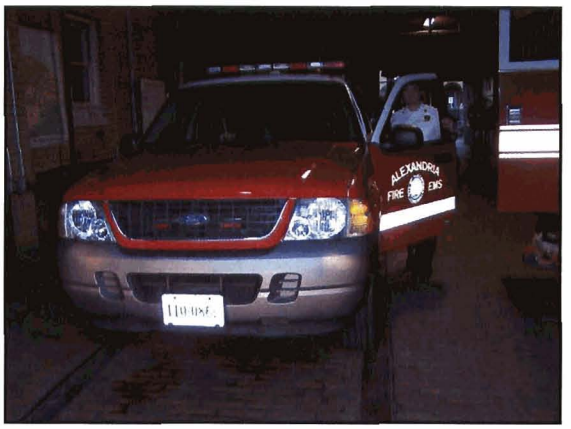

Ladies Room 2


Deteriorated Paint, Wood, Bricks, and Mortar


Frame is Distorted,
Lock Will not
Function
Sash Damage


Evidence of More Than
Just Close Calls
5004


Eaves Closest to the Street


ALEXANDRIA
FIRE EMS


201

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

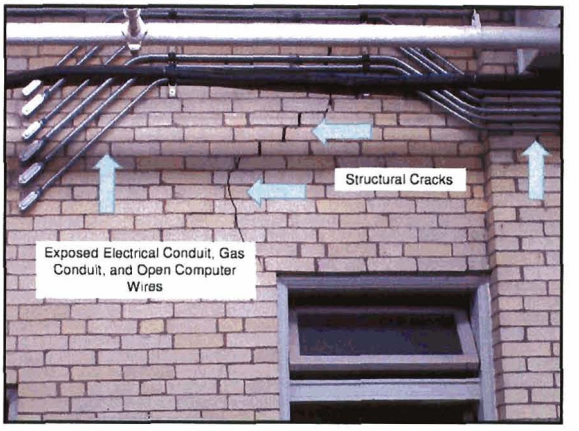
Facility Outlook

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.

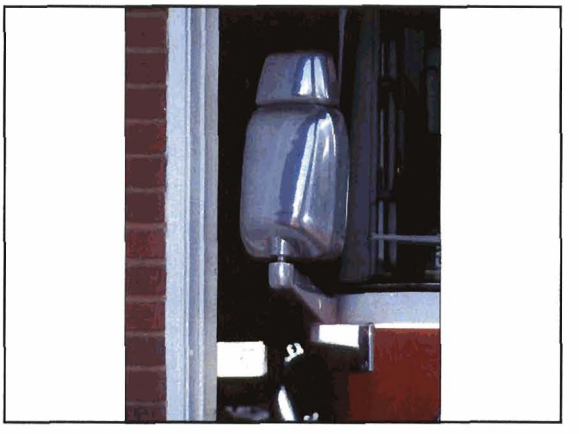
Station 202

1 inch equals 25 feet


Too Close For
Comfort


Structural Cracks
Exposed Electrical Conduit, Gas
Conduit, and Open Computer
Wires


Bent Frame
Lock Failure
Duct Tape
Window Repair




Failing concrete
Patches and
Paving have
Failed Down to
the Cobblestones


Protective Clothing for Both
Fire and Water Stored in Bay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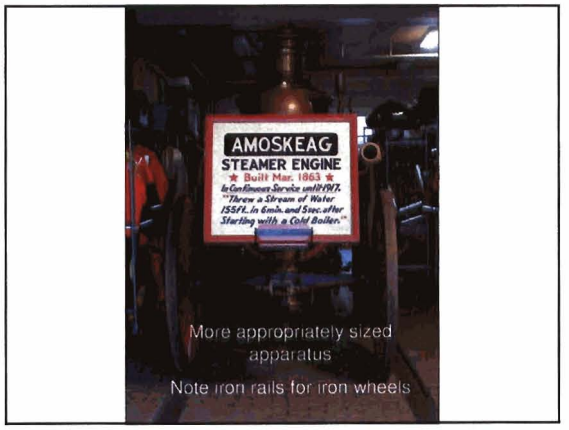
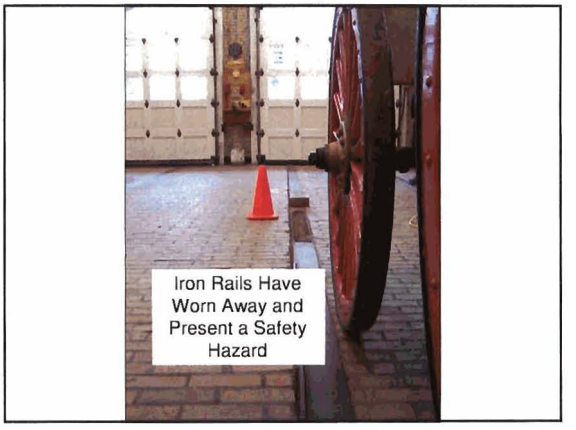
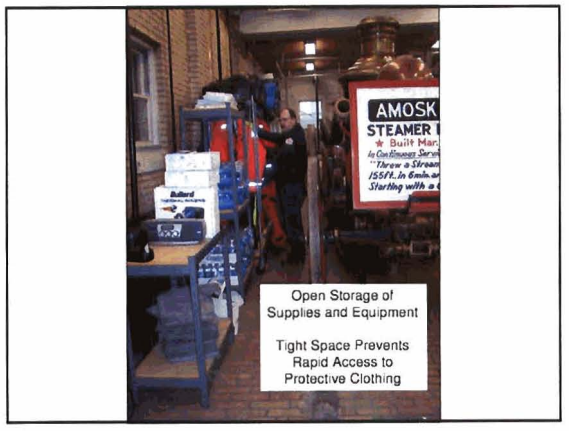
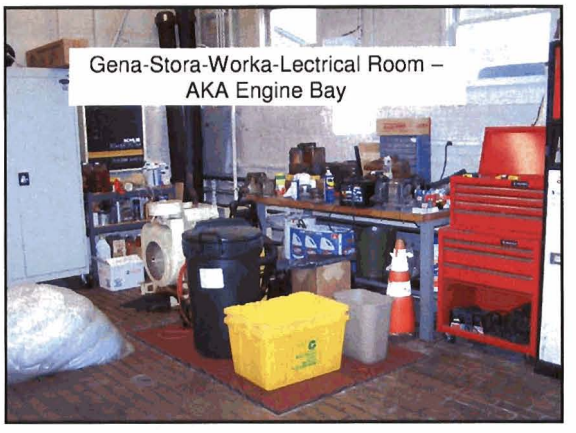
201

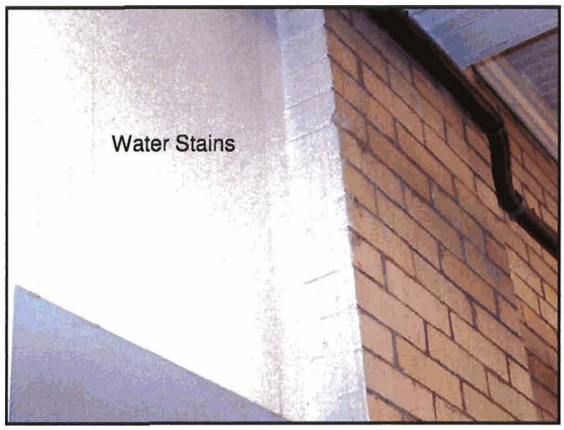

All of the Station Parking
Storage
Enforced

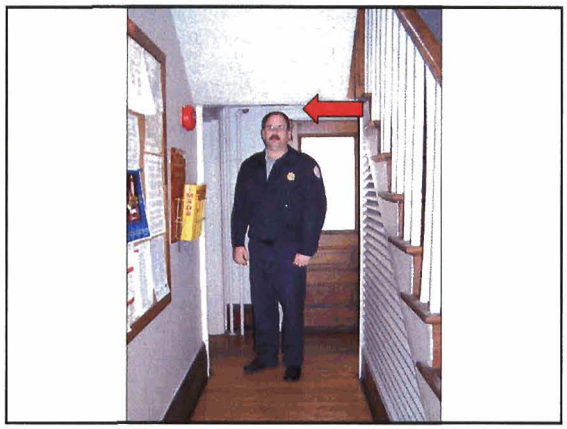

AMOSKEAG
STEAMER ENGINE
★ Built Mar. 1863 ★
"Threw a Stream of Water 155Ft. in 6min. and 5sec. after Starting with a Cold Boiler."
More appropriately sized apparatus
Note iron rails for iron wheels


Iron Rails Have Worn Away and Present a Safety Hazard

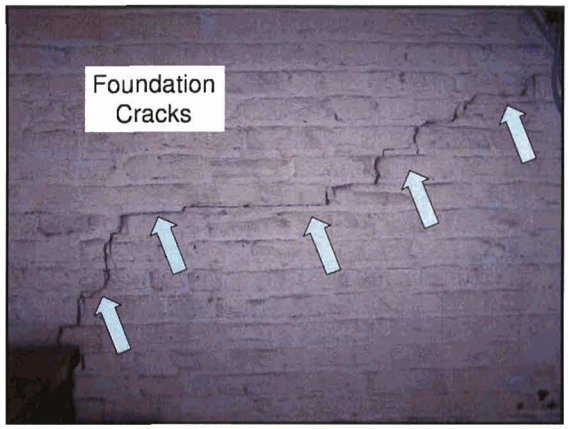

AMOSK
Open Storage of Supplies and Equipment
Tight Space Prevents Rapid Access to Protective Clothing


Gena-Stora-Worka-Lectrical Room – AKA Engine Bay

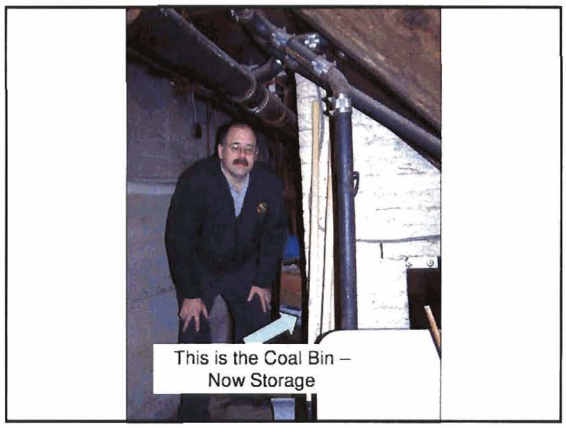

Water Stains

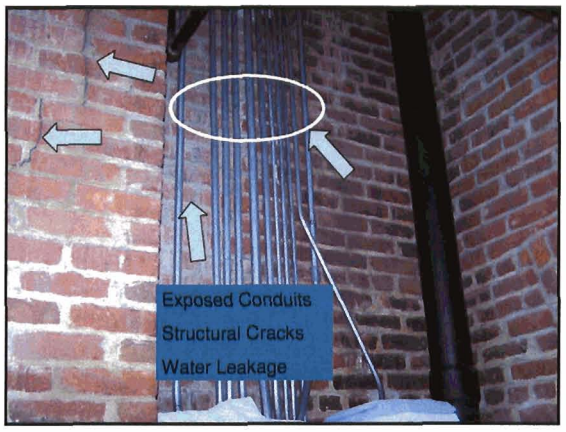


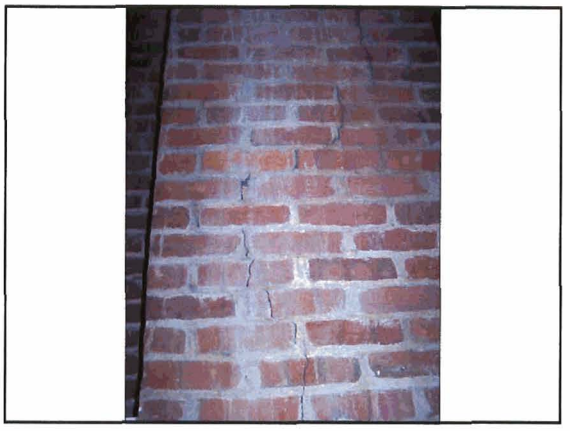

Aged and Stained
Previous Toilet Location
Flooring of Differing Colors


Foundation Cracks


Spauling of Foundation Walls

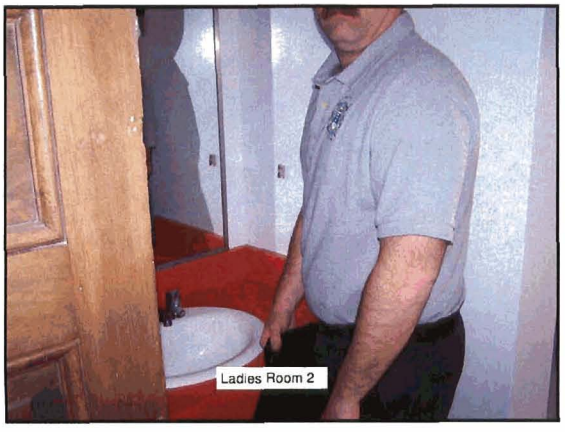

This is the Coal Bin – Now Storage

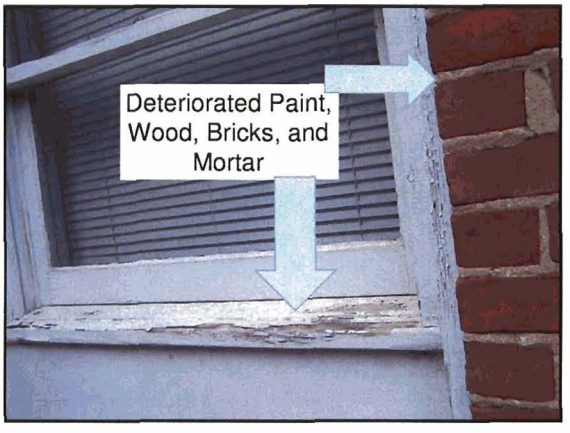

Exposed Conduits
Structural Cracks
Water Leakage

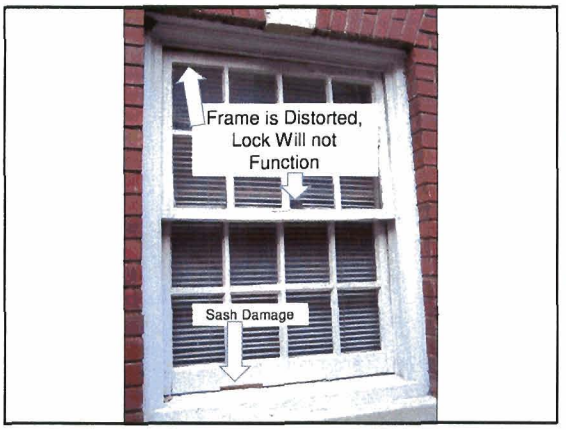


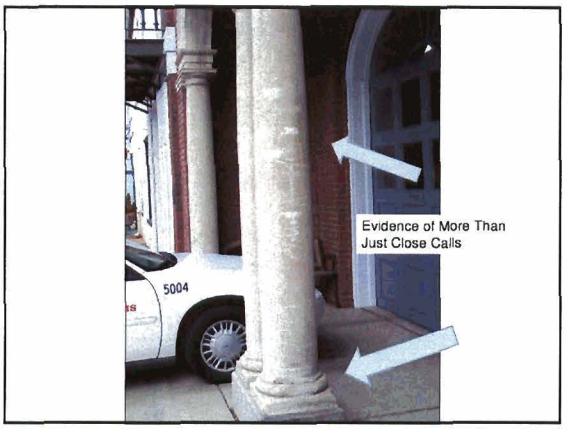

Locker Room Too Small For a Chair

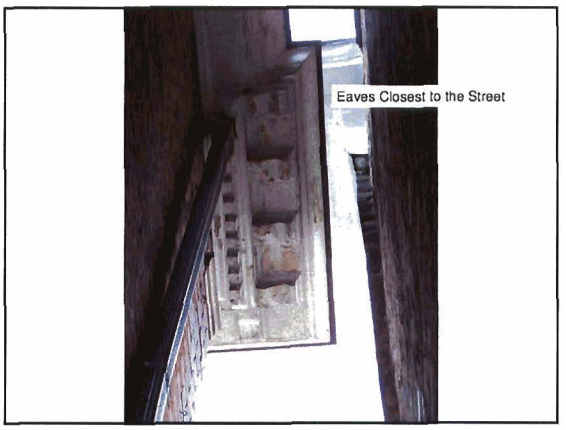

Ladies Room


Ladies Room 2


Deteriorated Paint, Wood, Bricks, and Mortar


Frame is Distorted,
Lock Will not
Function
Sash Damage


Evidence of More Than
Just Close Calls
5004


Eaves Closest to the Street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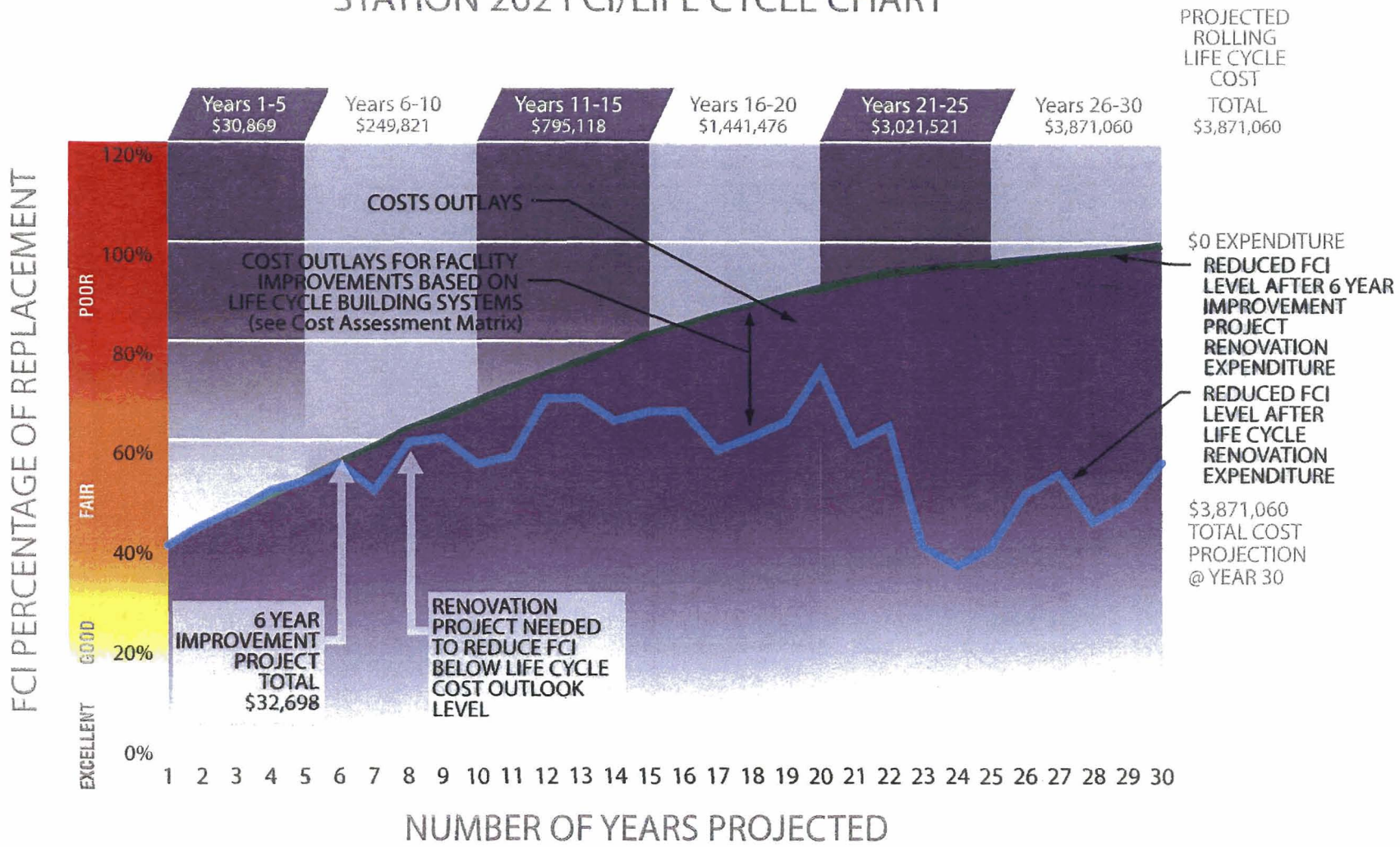
STATION 202 FCI/LIFE CYCLE CHART



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.

FIR TATION #202

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
						$ 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:

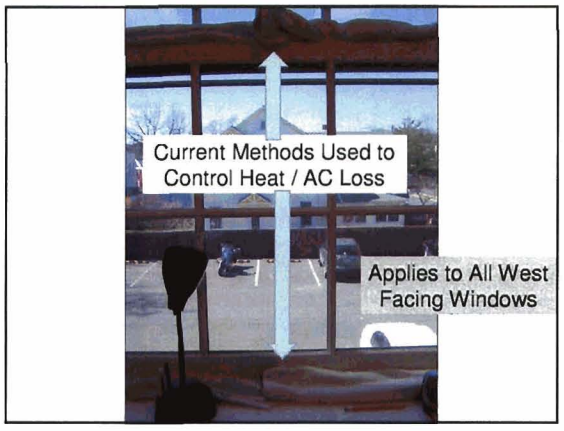
Cost estimate shows the following:

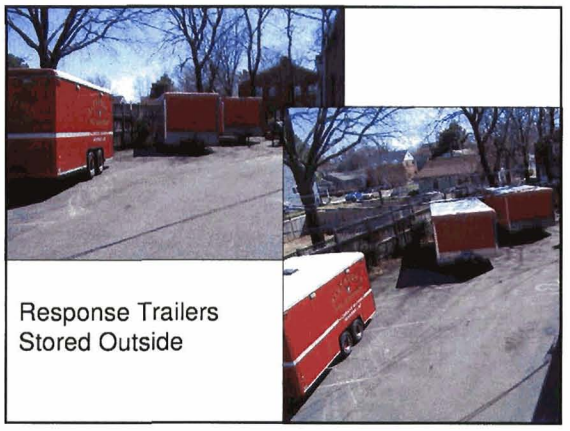
- Project Elements.
- Base Year Costs.
- Distribution of costs
- Differences are due to rounding.

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.

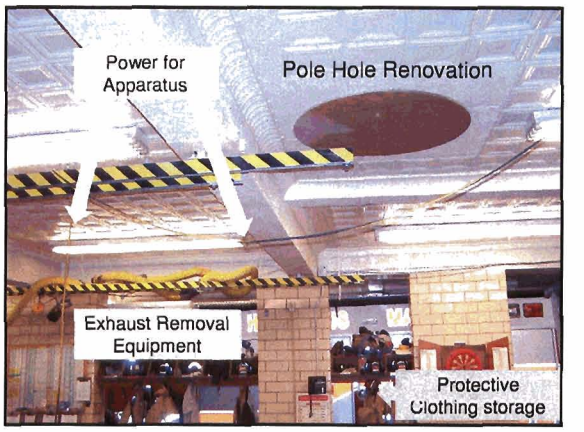

ALEXANDRIA
202
Fire Station 202


Current Methods Used to Control Heat / AC Loss
Applies to All West Facing Windows

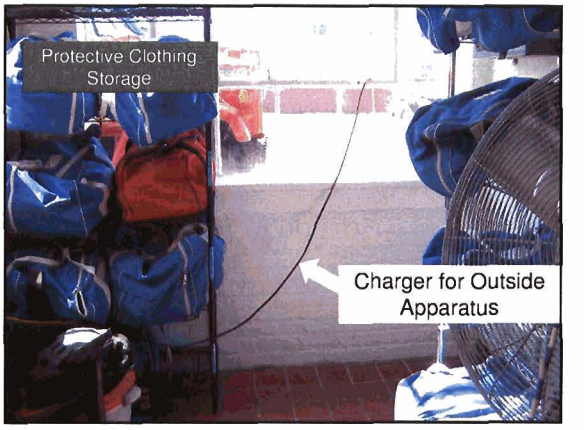

Response Trailers Stored Outside

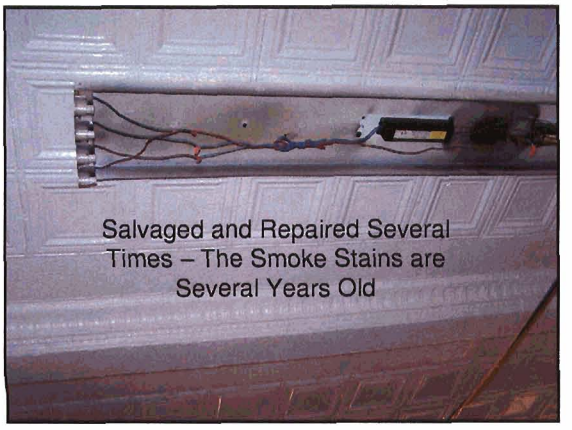

Laundry Area

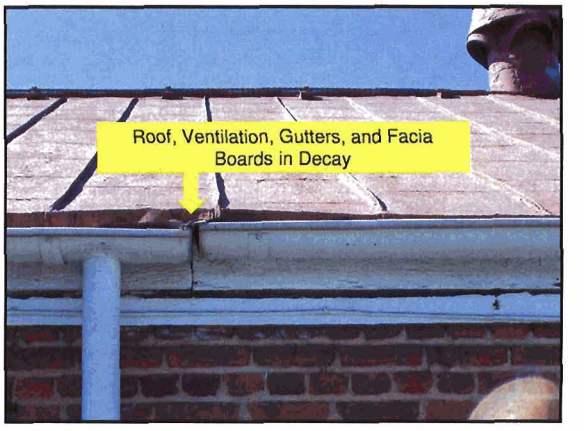

Temporary Storage Space
(More Than Five Years Old)
Apparatus Stored
Outside
Dumpster in Front of
Response Apparatus
5004
ALEXANDRIA
FIRE EMS

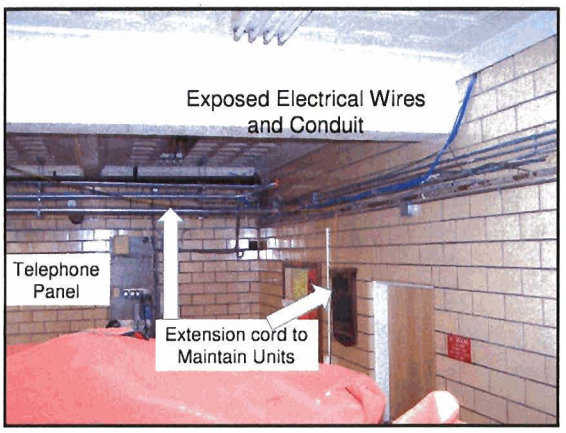

Power for
Apparatus
Pole Hole Renovation
Exhaust Removal
Equipment
Protective
Clothing storage

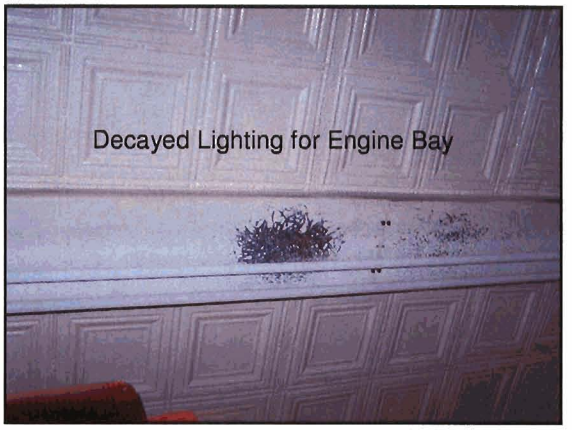

Just Enough Room for
Small People to Fit
Between Stacked First
Response Units


Protective Clothing
Storage
Charger for Outside
Apparatus


Salvaged and Repaired Several
Times – The Smoke Stains are
Several Years Old


Roof, Ventilation, Gutters, and Facia
Boards in Decay

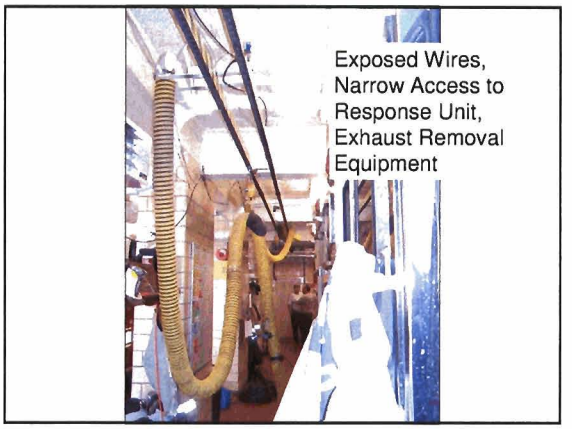

Exposed Electrical Wires
and Conduit
Telephone
Panel
Extension cord to
Maintain Units

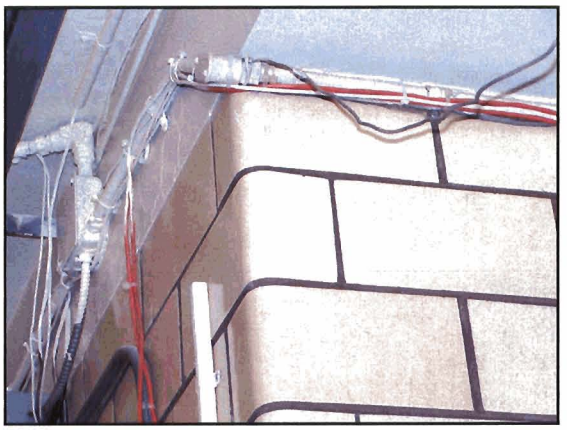

Decayed Lighting for Engine Bay

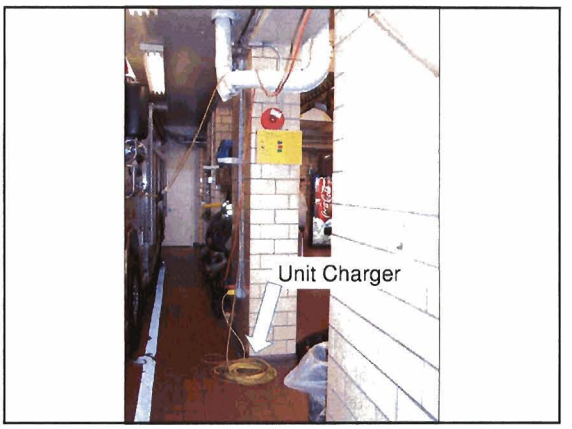

PLYMOVENT


Historic Marker

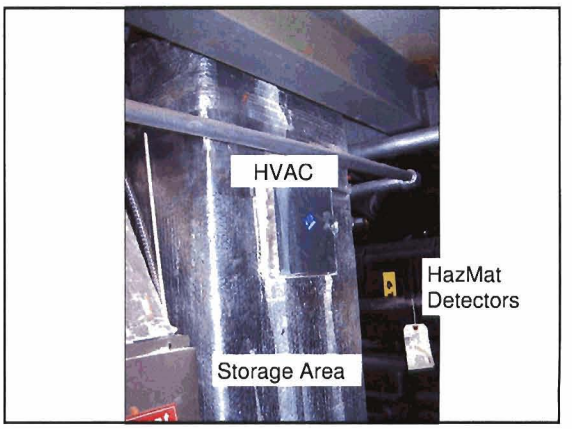

Electrical Room Shares the Protective Clothing and Storage Area

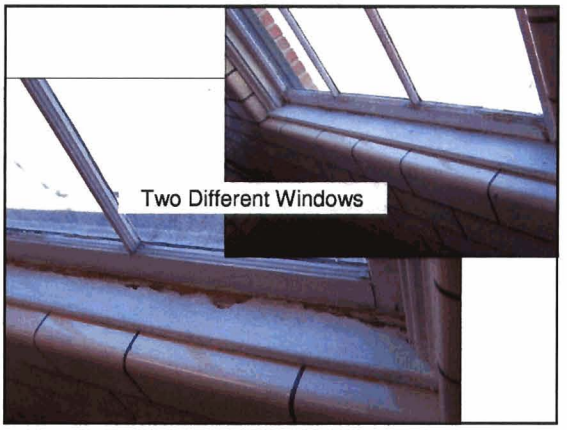

Exposed Wires, Narrow Access to Response Unit, Exhaust Removal Equipment




Unit Charger


HazMat Detectors
Storage Area

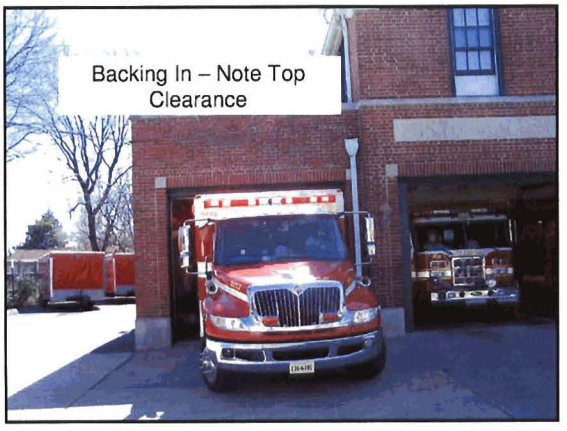

HVAC
HazMat Detectors
Storage Area

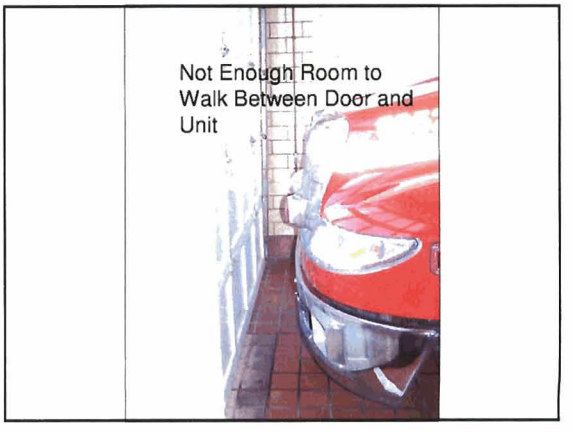

Two Different Windows

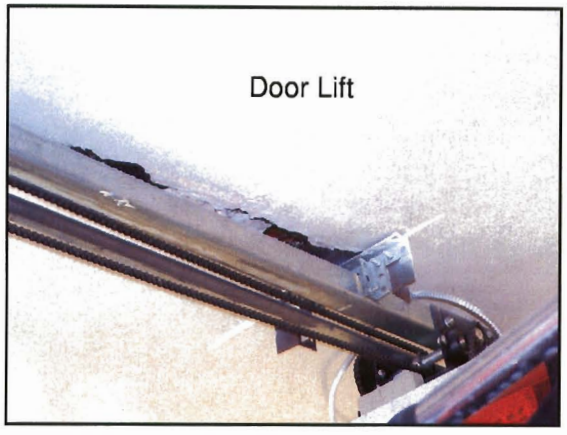

Three Different Windows

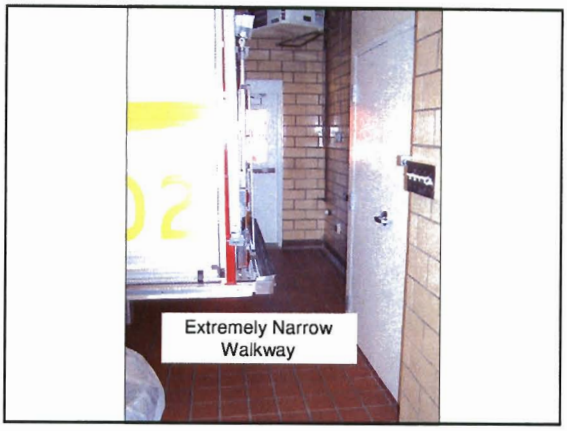

Although Replaced, No Finish and No Grout Were Applied

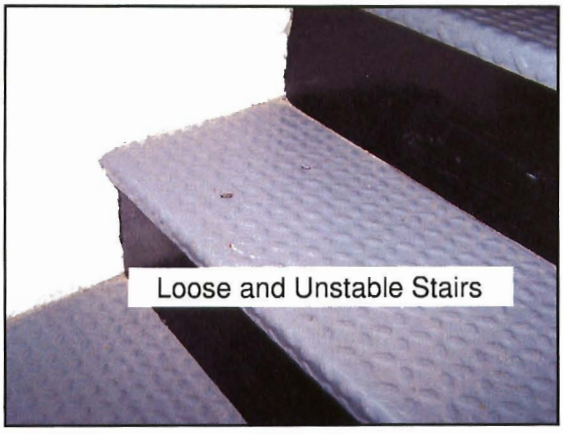

Storage Trailers and Garbage

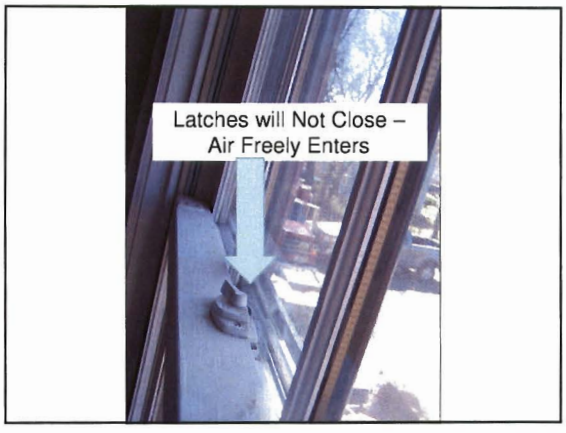

Backing In – Note Top Clearance

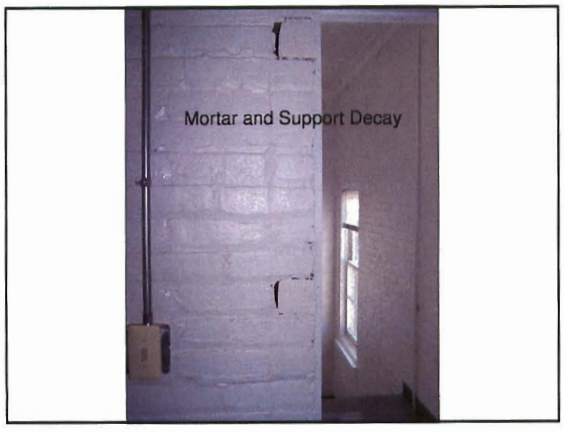

Not Enough Room to Walk Between Door and Unit

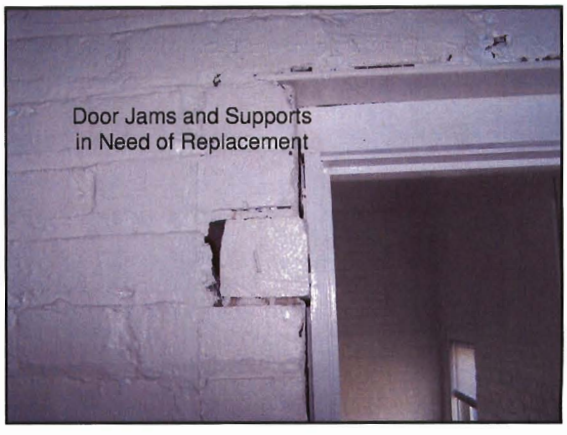

Door Lift

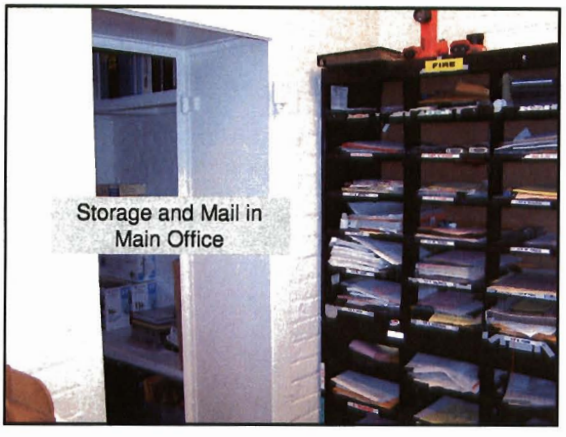

Extremely Narrow
Walkway


Loose and Unstable Stairs

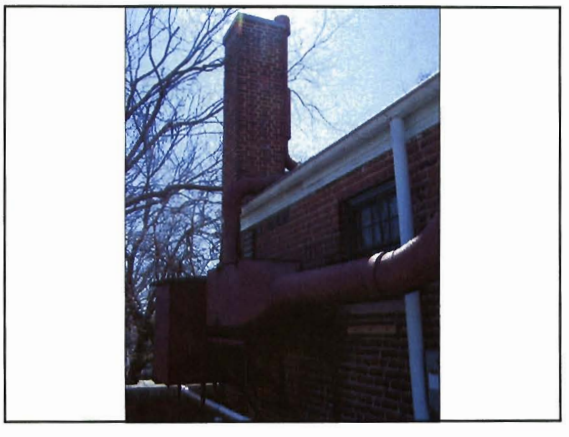

Latches will Not Close –
Air Freely Enters

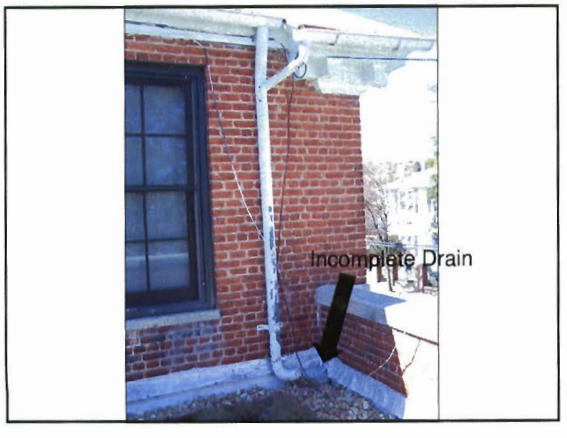

Mortar and Support Decay


Door Jams and Supports
in Need of Replacement


Storage and Mail in
Main Office

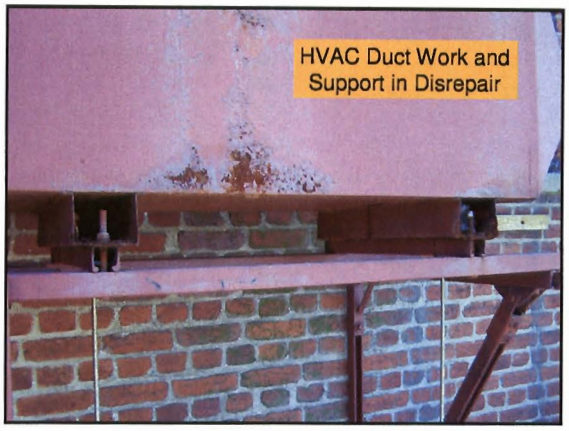

View From Bunk Room
Note Generator Exhaust Which
Does Infiltrate Sleeping
Quarters
Also Note Temporary Storage
Container




Incomplete Drain


Kitchen
Ventilation /
Funnel


Standing Water
Collector


HVAC Duct Work and
Support in Disrepair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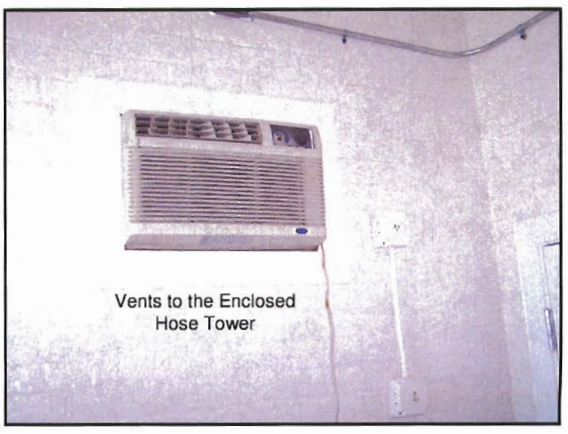
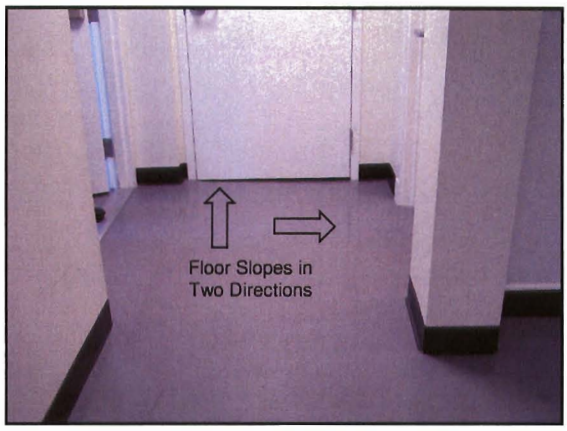
FIRE EMS
5208


Tight Quarters Stress
Driver Going Into and
Out of the Station


ALEXANDRIA
202


Vents to the Enclosed
Hose Tower


Angel of Death Image has Bled
Through Paint in Bunk Room


Floor Slopes in
Two Directions