

Mt. Vernon Recreation Center

Facility Condition Assessment and Life Cycle Cost Analysis



Fairfax County Park Authority



Prepared by: Hughes Group Architects
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Table of Contents

Section 1 – Executive Summary

- A. Overview - 1
- B. Assessment Summary - 2
 - 1. Assessment Summarized by Building System - 2
 - 2. Assessment Summarized by ADA Upgrades - 14
 - 3. Assessment Summarized by Grade/Priority - 15
 - 4. Assessment Summarized by Category - 23
 - 5. 15 Year Expenditure Plan - 30

Section 2 – Project Introduction

- A. Building Description - 39
- B. Project Objectives - 39
- C. Methodology - 39

Section 3 – Existing Conditions Descriptions

- A. Existing Site and Facility Description - 43
 - 1. Site (S) - 43
 - 2. Building Envelope (E) - 43
 - 3. Structural Systems - 44
 - 4. Interior Finishes (F) – 44
 - 5. Mechanical (M) – 46
 - 6. Electrical (EL) – 48
 - 7. Plumbing (P) – 50
 - 8. Fire Protection (FP) – 51
 - 9. Aquatic (A) – 52
 - 10. Ice Rink (I) – 57
 - 11. Americans with Disabilities Act - 58
- B. Code Assessment - 59
- C. Functional Relationships - 63

Section 4 – Assessment Reports

- Site (S) - 67
- Building Envelope (E) - 72
- Interior Finishes (F) - 91
- Mechanical (M) - 96
- Electrical (EL) - 130
- Plumbing (P) - 145
- Fire Protection (FP) - 161
- Aquatic (A) - 163
- Ice Rink (I) – 196

FAIRFAX COUNTY PARK AUTHORITY - Mt. Vernon RECenter

Facility Condition Assessment and Life Cycle Cost Analysis



Section 5 – Appendix

- A. Community Input - 203
- B. Image Portfolio - 205
 - Photo Key Plan – Site - 205
 - Photo Key Plan – Building - 206
 - Photos - 207
 - Building Layout - 214



Section 1

Executive Summary



Section 1

Executive Summary

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Facility Condition Assessment and Life Cycle Cost Analysis



A. Overview

This Facility Condition Assessment and Life Cycle Cost Analysis has been developed to give the Fairfax County Park Authority (FPCA) a clear picture of the existing condition of the Mt. Vernon Recreation Center and the anticipated costs to maintain the Facility over time.

Headed by Hughes Group Architects, an Assessment Team analyzed and evaluated conditions of the existing Facility's building systems—site, building envelope, interior finishes, mechanical, electrical, plumbing, fire protection, aquatics, and ice rink—to identify current and potential deficiencies, recommend remedial action, and estimate the probable cost for remedial action.

Existing building conditions and systems have been assessed using the FPCA anticipated useful life of each system. Most of the assessment items include an estimate of probable construction cost for replacement, repair, or, in some cases, inclusion of a new product. In some cases, due to the lack of existing data and/or an undetermined extent of the scope of work, the cost estimate for those particular items is labeled, "To Be Determined" (TBD).

Based upon our assessments and recommendations for remedial action, the total probable construction costs are as follows:

| DISCIPLINE | COST |
|-----------------------|-----------------|
| Site (S) | \$ 223,754.51 |
| Building Envelope (E) | \$ 902,995.34 |
| Interior Finishes (F) | \$ 143,471.72 |
| Mechanical (M) | \$ 4,104,897.40 |
| Electrical (EL) | \$ 725,373.33 |
| Plumbing (P) | \$ 837,518.95 |
| Fire Protection (FP) | \$ 155,570.00 |
| Aquatic (A) | \$ 1,109,913.79 |
| Ice Rink (I) | \$ 567,360.46 |
| Total | \$ 8,770,855.50 |



Costs include material, sales tax, sub contractor mark ups, general contractor mark ups, design contingency, and inflation.

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Facility Condition Assessment and Life Cycle Cost Analysis



B. Assessment Summary

B.1 Assessment Summarized by Building System

Site (S)

Vehicular and pedestrian access to the Mt. Vernon Recreation Center is one of the most problematic functional relationships of the facility assessment. The building identity and the functional relationship of site entry, parking and building entry are currently vexing.

The most remarkable aspect of vehicular circulation at the Mt. Vernon Recreation Center is the parking area location above the Facility. The orientation of the parking lot access drive, the dramatic topography of the site, and the location of vegetative growth which creates extensive blind spots for drivers, poses unsafe conditions. And although an accessible route connects the accessible/drop-off area parking lot and the building's main entrance, patrons have complained that the path is too long.

After parking, visual orientation to the building entry remains confusing and obscured from view by the geometry of the structure and vegetative growth. Once the stairway down to the building entry is located, patrons must negotiate a vertical drop of over 30' to reach the entry level. Negotiating these stairs is difficult for children, seniors, and parents with strollers. Located at the bottom of the steep hill-side, the entry plaza is often inundated with storm water, ice and snow. Staff informed us that poor site drainage at the entry level sometimes causes the Lobby to flood.

Lastly, the appearance of the Mt. Vernon Recreation Center is foreboding and industrial according to patrons, staff and members of the community. The Building offers no hint of the vibrant activities within. The only location device for the Facility is the sign at the corner of Ft. Hunt Road and Belle View Blvd. The obscured building entry makes the need for way-finding acute. Not being able to see the entry of a public facility is a problem for patrons and for staff control of the site.

For improved safety and efficiency, the public parking lot (including pedestrian circulation) should be completely redesigned so that it is free of blind spots at access points; allows for a shorter pedestrian commute between the parking lot and main entrance; and enables staff to view the public parking and drop-off areas from the reception desk. Way-finding and site drainage throughout the site should be improved as well.

The estimate of remedial costs is: **\$223,754.51**

| BUILDING SYSTEMS - SITE | | | | | | | | | | | |
|-------------------------|--|-------|----------|----------|-----|-------------------|--------------------------------|--------|---------|-------------|---------------|
| ITEM NO. | RECOMMENDATION | GRADE | PRIORITY | CATEGORY | QTY | UNIT ² | LIFE CYCLE STATUS ¹ | REPAIR | REPLACE | FISCAL YEAR | BASE COST |
| S.1 | Redesign public park lot. Improve way-finding and site drainage. | D | 2 | 3 | - | - | 35/15 | - | ✓ | 15 | TBD |
| S.2 | Replace damaged storm drain cover | D | 2 | 5 | 1 | EA | 35/15 | - | ✓ | 15 | \$ 996.52 |
| S.3 | Provide additional handrail at side of exterior steps | F | 1 | 3 | 1 | LS | - | - | - | 15 | \$ 2,839.36 |
| S.4 | Replace parking lot asphalt and concrete curbs and restripe parking lot. | C | 3 | 2 | 1 | LS | 35/15 | - | ✓ | 15 | \$ 219,918.63 |

1. Life Cycle Status (years): Age/Expected Useful Life; 2. LS = Lump Sum; EA = Each

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Facility Condition Assessment and Life Cycle Cost Analysis



Building Envelope (E)

The base of the exterior façade of the Building consists of a CMU wall construction with a painted stucco cladding. Although the stucco cladding is original to the Building and has been in service past its estimated life expectancy, overall it appears in good condition. Surface cracking and delaminated areas were noted. Both vertical and horizontal control joints are visible, but have been painted over and are no longer affective. It is recommended that the painted stucco cladding be replaced with anew to include sealed control joints.

Insulated metal fascia panels are installed above the CMU wall construction. The metal panels are in good condition with only minor areas that need attention. Metal panels near the service entrance of the Pool area show signs of damage due to traffic, but the damage appears to be cosmetic only. For aesthetic reasons, those damaged panels can be replaced.

The main entrance of the Building is made of a steel storefront system. Metal doors and windows appear to be in relatively good condition but do not provide a good thermal barrier and are not energy efficient. To provide a good thermal barrier and better energy efficiency, the storefront doors and windows should be replaced with a thermally broken, low-e window system. The entire metal framing system should be painted. The sealant around the metal frames, both at the metal to metal joints and at the metal to glass joints has deteriorated and requires replacement. The lintels at several of the doors are rusting and should be repaired and painted also.

Overall, the existing membrane of the EPDM low sloped roof appears in relatively good condition. However, at several locations, it is visible that the roof membrane is pulling away from its substrate due to membrane shrinkage. Within the next few years, it is recommended that the EPDM membrane be completely removed and replaced with a new single ply membrane roof to include term flashings and terminations.

Mechanical equipment and equipment supports are also located on the low sloped roof. A number of the supports are showing significant signs of deterioration and are significantly corroded. Depending on when the mechanical equipment is scheduled to be replaced, a temporary repair may be considered and full replacement deferred until the other work is performed.

The standing seam metal roof is in good condition. The galvanized metal ridge cover shows minimal deterioration in isolated locations. These areas should be painted to stop the deterioration.

Additionally, the reflective coating applied to the glazing of the Building's entrance storefront presents a lack of visual transparency at the approach to the Building which creates a drab, isolated experience upon entering the building.

The estimate of remedial costs is: **\$902,995.34**

| BUILDING SYSTEMS – BUILDING ENVELOPE | | | | | | | | | | | |
|--------------------------------------|---|-------|----------|----------|-----|-------------------|--------------------------------|--------|---------|-------------|---------------|
| ITEM NO. | RECOMMENDATION | GRADE | PRIORITY | CATEGORY | QTY | UNIT ² | LIFE CYCLE STATUS ¹ | REPAIR | REPLACE | FISCAL YEAR | BASE COST |
| E.1A | Repair EPDM membrane roof system where shrinking has occurred | F | 1 | 2 | 1 | LS | 17/20 | ✓ | - | 15 | \$ 7,433.28 |
| E.1B | Replace EPDM membrane roof system w/ new single ply membrane roof system. | C | 3 | 3 | 1 | LS | 17/20 | - | ✓ | 18 | \$ 137,893.29 |

FAIRFAX COUNTY PARK AUTHORITY - Mt. Vernon RECenter
Facility Condition Assessment and Life Cycle Cost Analysis



| BUILDING SYSTEMS – BUILDING ENVELOPE (cont'd) | | | | | | | | | | | |
|---|--|-------|----------|----------|-----|-------------------|--------------------------------|--------|---------|-------------|---------------|
| ITEM NO. | RECOMMENDATION | GRADE | PRIORITY | CATEGORY | QTY | UNIT ² | LIFE CYCLE STATUS ¹ | REPAIR | REPLACE | FISCAL YEAR | BASE COST |
| E.1C | Replace roof drains; and replace existing flashing (to include roofing membrane, terminations, and sealants) at existing penetrations. | C | 3 | 3 | 1 | LS | 17/20 | - | ✓ | 18 | \$ 5,825.86 |
| E.1D | Replace roof walkway pads | C | 3 | 3 | 1 | LS | 17/20 | - | ✓ | 18 | \$ 4,438.65 |
| E.1E | Repair structural supports for the mechanical units | F | 1 | 5 | 1 | LS | 35/30 | ✓ | - | 15 | \$ 10,020.22 |
| E.1F | Replace structural supports for the mechanical units | F | 1 | 5 | 1 | LS | 35/30 | - | ✓ | 15 | \$ 16,167.38 |
| E.1G | Clean & re-paint 20% of metal roof | C | 3 | 1 | 1 | LS | 18/30 | ✓ | - | 15 | \$ 25,089.63 |
| E.1H | Replace metal roof | C | 3 | 3 | 1 | LS | 18/30 | - | ✓ | 27 | \$ 172,817.49 |
| E.2A | Clean and re-paint metal wall panels that show deterioration | C | 3 | 1 | 1 | LS | 18/30 | ✓ | - | 15 | \$ 3,604.11 |
| E.2B | Replace damaged metal wall panels at Pool area service entrance | C | 3 | 3 | 1 | LS | 18/30 | ✓ | - | 15 | \$ 9,027.45 |
| E.2C | Install (2) pipe bollards near pool service door | B | 4 | 5 | 1 | LS | - | - | - | 15 | \$ 2,689.92 |
| E.2D | Replace painted stucco on exterior of building | C | 3 | 3 | 1 | LS | 35/30 | - | ✓ | 15 | \$ 46,840.61 |
| E.2E | Clean and re-paint outside metal louvers | A | 6 | 1 | 1 | LS | 18/30 | ✓ | - | 15 | \$ 369.02 |
| E.2F | Replace outside metal louvers | A | 6 | 3 | 1 | LS | 18/30 | - | ✓ | 27 | \$ 7,508.70 |
| E.2G | Repair and paint damaged exterior doors/frames to include replacement of perimeter sealants. | C | 3 | 1 | 1 | LS | 35/30 | ✓ | - | 15 | \$ 2,051.76 |
| E.2H | Replace exterior doors | C | 3 | 3 | 1 | LS | 35/30 | - | ✓ | 15 | \$ 26,132.63 |
| E.2I | Replace exterior storefront windows | C | 3 | 3 | 1 | LS | 35/30 | - | ✓ | 15 | \$ 52,432.50 |
| E.2J | Replace existing glazing system at main entrance with new low E curtain wall system | D | 2 | 3 | 1 | LS | 31/30 | - | ✓ | 15 | \$ 151,652.84 |
| E.2K | Replace metal wall panel system | B | 4 | 3 | 1 | LS | 18/30 | - | ✓ | 27 | \$ 221,000.00 |

1. Life Cycle Status (years): Age/Expected Useful Life

2. LS = Lump Sum

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Facility Condition Assessment and Life Cycle Cost Analysis



Interior Finishes (F)

The most significant complaint from customers regards the lack of privacy within Men's and Women's Locker Rooms. Given the small amount of area of those rooms, it would be very challenging to provide an extensive level of privacy for individual patrons without completely redesigning the layout. However, some measures may be taken to increase the general level of privacy between the different spaces within the existing locker rooms.

Acoustics within the Pool and Ice Rink could be improved too for a more enjoyable user experience.

The estimate of remedial costs is: **\$143,471.72**

| BUILDING SYSTEMS – INTERIOR FINISHES | | | | | | | | | | | |
|--------------------------------------|---|-------|----------|----------|-----|-------------------|--------------------------------|--------|---------|-----------------|--------------|
| ITEM NO. | RECOMMENDATION | GRADE | PRIORITY | CATEGORY | QTY | UNIT ³ | LIFE CYCLE STATUS ¹ | REPAIR | REPLACE | FISCAL YEAR | BASE COST |
| F.1 | Provide translucent panel partitions | B | 4 | 3 | 1 | LS | - | - | - | 15 | \$ 34,090.33 |
| F.2 | Replace damaged base and floor tiles in locker room | F | 1 | 5 | 1 | LS | 31/10 | - | ✓ | 15 ² | \$ 480.00 |
| F.3A | In Ice Rink area, replace low-E ceiling with a foil & bubble finished low-E ceiling | B | 4 | 4 | 1 | LS | 19/10 | - | ✓ | 15 | \$ 12,655.56 |
| F.3B | In the Ice Rink area, provide acoustical wall panels | B | 4 | 4 | 1 | LS | - | - | - | 15 | \$ 42,644.55 |
| F.4 | Provide lapendary acoustic panels for 40% of Pool & Spa ceiling | B | 4 | 4 | 1 | LS | - | - | - | 15 | \$ 53,601.28 |

1. Life Cycle Status (years): Age/Expected Useful Life
2. Work currently underway, already scheduled, or recommended to occur during Natatorium shutdown in FY 15
3. LS = Lump Sum

Mechanical (M)

The existing mechanical systems include packaged rooftop units, pool conditioning units, exhaust fans, boilers, and variable-air-volume terminal units. The HVAC systems in the Ice Rink and Pool Facilities were installed approximately 20 years ago and are generally showing signs of extensive wear. Replacement of these systems (including the equipment, deteriorated valves, piping and insulation) is recommended in the next 2 to 5 years.

In the remainder of the Facility, the HVAC systems are less than 10 years old and appear to be operating satisfactorily. The existing installations present maintenance challenges, such as leaks in the systems; as well as safety concerns like belt guards not installed on exhaust fan motors. Replacement of equipment in the near future will ensure compliance with the latest Codes, decrease energy consumption, provide better comfort levels in the occupied spaces, and reduce the amount of maintenance problems going forward.

The condition of the pool water heater was surveyed as part of the mechanical systems assessment. The boiler was installed in 1983. Although it is still operational, like the other main mechanical systems, it has reached the end of its expected useful life. It is recommended for the pool heater burner and boiler to be replaced as soon as possible.

The estimate of remedial costs is: **\$4,104,897.40**

FAIRFAX COUNTY PARK AUTHORITY - Mt. Vernon RECenter
Facility Condition Assessment and Life Cycle Cost Analysis



| BUILDING SYSTEMS – MECHANICAL | | | | | | | | | | | |
|-------------------------------|--|-------|----------|----------|-----|-------------------|--------------------------------|--------|---------|-------------|-----------------|
| ITEM NO. | RECOMMENDATION | GRADE | PRIORITY | CATEGORY | QTY | UNIT ² | LIFE CYCLE STATUS ¹ | REPAIR | REPLACE | FISCAL YEAR | BASE COST |
| M.1 | Replace Boiler B-1 | F | 1 | 3 | 1 | EA | 35/30 | - | ✓ | 15 | \$ 90,924.76 |
| M.2 | Replace RTU-1 | D | 2 | 3 | 1 | EA | 18/20 | - | ✓ | 17 | \$ 30,161.24 |
| M.3 | Replace RTU-2 | D | 2 | 3 | 1 | EA | 18/20 | - | ✓ | 17 | \$ 104,846.20 |
| M.4 | Replace RTU-3 | D | 2 | 3 | 1 | EA | 18/20 | - | ✓ | 17 | \$ 8,114.35 |
| M.5 | Replace RTU-4 | D | 2 | 3 | 1 | EA | 18/20 | - | ✓ | 17 | \$ 40,933.11 |
| M.6 | Replace RTU-5 | D | 2 | 3 | 1 | EA | 18/20 | - | ✓ | 17 | \$ 48,114.35 |
| M.7 | Replace RTU-6 | D | 2 | 3 | 1 | EA | 18/20 | - | ✓ | 17 | \$ 33,751.86 |
| M.8 | Replace Unit MAU-1 | D | 2 | 3 | 1 | EA | 18/20 | - | ✓ | 17 | \$ 354,035.44 |
| M.9 | Replace Unit PRU-1 | D | 2 | 3 | 1 | EA | 18/20 | - | ✓ | 17 | \$ 366,961.67 |
| M.10 | Replace Unit PRU-2 | D | 2 | 3 | 1 | EA | 18/20 | - | ✓ | 17 | \$ 366,961.67 |
| M.11 | Replace Boiler B-2 | F | 1 | 3 | 1 | EA | 31/30 | - | ✓ | 15 | \$ 98,443.81 |
| M.12 | Replace Unit ERU-1 | B | 4 | 4 | 1 | EA | 6/20 | - | ✓ | 17 | \$ 56,680.74 |
| M.13 | Replace Unit ERU-2 | B | 4 | 4 | 1 | EA | 6/20 | - | ✓ | 17 | \$ 56,680.74 |
| M.14 | Replace Unit DH-1 | C | 3 | 3 | 1 | EA | 18/20 | - | ✓ | 17 | \$ 256,298.68 |
| M.15 | Replace Unit DH-2 | C | 3 | 3 | 1 | EA | 18/20 | - | ✓ | 17 | \$ 256,298.68 |
| M.16 | Replace Fan MF-1 | D | 2 | 3 | 1 | EA | 18/20 | - | ✓ | 17 | \$ 20,099.16 |
| M.17A | Provide missing belt guard | D | 2 | 5 | 1 | EA | - | - | - | 15 | \$ 560.00 |
| M.17B | Replace Exhaust Fan EF-2 | D | 2 | 3 | 1 | EA | 18/20 | - | ✓ | 17 | \$ 8,617.50 |
| M.18 | Replace Exhaust Fan EF-3 | D | 2 | 1 | 1 | EA | 18/20 | - | ✓ | 17 | \$ 9,319.82 |
| M.19 | Replace Exhaust Fan EF-4 | D | 2 | 1 | 1 | EA | 18/20 | - | ✓ | 17 | \$ 9,586.96 |
| M.20 | Replace Exhaust Fan EF-5 | D | 2 | 1 | 1 | EA | 18/20 | - | ✓ | 17 | \$ 9,586.96 |
| M.21A | Provide missing belt guard | D | 2 | 5 | 1 | EA | - | - | - | 15 | \$670.00 |
| M.21B | Replace Supply Fan SF-1 | D | 2 | 3 | 1 | EA | 18/20 | - | ✓ | 17 | \$ 7,879.26 |
| M.22 | Replace Fan Coil Unit FCU-1 | D | 2 | 3 | 1 | EA | 18/20 | - | ✓ | 17 | \$ 8,186.62 |
| M.23 | Replace Fan Coil Unit FCU-2 | D | 2 | 3 | 1 | EA | 18/20 | - | ✓ | 17 | \$ 8,186.62 |
| M.24 | Replace VVT air terminals 1 - 5 | D | 2 | 3 | 1 | LS | 18/20 | - | ✓ | 17 | \$ 6,447.00 |
| M.25 | Provide insulation to ductwork | F | 1 | 4 | 1 | LS | ? | - | - | 15 | \$ 6,900.00 |
| M.26 | Replace Unit ACCOU-1 | D | 2 | 3 | 1 | EA | 18/20 | - | ✓ | 17 | \$ 58,742.60 |
| M.27 | Replace Unit ACCOU-2 | D | 2 | 3 | 1 | EA | 18/20 | - | ✓ | 17 | \$ 58,742.60 |
| M.28 | Replace (4) Compressors & (2) Chillers | B | 4 | 3 | 1 | LS | 15/20 | - | ✓ | 20 | \$ 529,000.00 |
| M.29A | Descale Cooling Towers | B | 4 | 2 | 1 | LS | - | ✓ | - | 15 | \$ 4,000.00 |
| M.29B | Replace (2) Cooling Towers | B | 4 | 3 | 1 | LS | 10/15 | - | ✓ | 20 | \$ 151,625.00 |
| M.30 | Replace (2) Brine Pumps | B | 4 | 3 | 1 | LS | 35/15 | - | ✓ | 15 | \$ 12,540.00 |
| M.31 | Replace Glycol Grid System | B | 4 | 3 | 1 | LS | 35/50 | - | ✓ | 30 | \$ 1,025,000.00 |

1. Life Cycle Status (years): Age/Expected Useful Life; 2: LS = Lump Sum; EA = Each

FAIRFAX COUNTY PARK AUTHORITY - Mt. Vernon RECenter

Facility Condition Assessment and Life Cycle Cost Analysis



Electrical (EL)

The existing Facility is served by a single 277/480 volt, 3 phase, 1600 ampere underground service from Dominion Virginia Power. The service and the electrical gear are original to the time of construction in the 1970s. Although the electrical system was sized adequately at the time of construction, increased capacity should be considered during any upcoming renovations. Panel-boards, transformers, motor starters, conduit and wiring throughout show signs of excessive wear and require replacement, especially in the corrosive environment of the pool area. In recent assessments, as well as during the current survey, mislabeled circuit breakers, dirty equipment interiors and loose connections have been noted. These safety issues need to be corrected as soon as possible.

The age and condition of the lighting systems vary within the Facility. In the Ice Rink and Pool Facilities, the light fixtures have been replaced within the last 10 years and are operating satisfactorily. In other spaces, fixtures are nearing the end of their useful lives, and control schemes are not being utilized to reduce energy consumption as required by the latest energy related codes. Emergency lighting is installed and appears to have been replaced on an "as needed" basis over the life of the Facility. Renovations to the Facility should include an overall lighting design plan that employs the latest control schemes and replaces a portion of the existing light fixtures that are outdated and less energy efficient.

The existing fire alarm system was installed within the last 10 years, and appears to generally meet current Code requirements. Building renovations would likely require only minor modifications of the current system.

The estimate of remedial costs is: **\$725,373.33**

| BUILDING SYSTEMS – ELECTRICAL | | | | | | | | | | | |
|-------------------------------|---|-------|----------|----------|-----|-------------------|--------------------------------|--------|---------|-----------------|---------------|
| ITEM NO. | RECOMMENDATION | GRADE | PRIORITY | CATEGORY | QTY | UNIT ³ | LIFE CYCLE STATUS ¹ | REPAIR | REPLACE | FISCAL YEAR | BASE COST |
| EL.1 | Replace existing 1600 switch board | D | 2 | 5 | 1 | EA | 35/30 | - | ✓ | 15 | \$ 105,631.55 |
| EL.2 | Replace breakers 100amp,60 amp, (2) 300 amps, & 400 amp | C | 3 | 3 | 1 | LS | Varies | - | ✓ | 15 | \$ 7,937.00 |
| EL.3 | Replace the Motor Control Center | C | 3 | 3 | 1 | EA | 35/30 | - | ✓ | 15 | \$ 14,862.30 |
| EL.4 | Replace panels MLO and S 100 AMP for Ice Rink | C | 3 | 3 | 1 | LS | 35/30 | - | ✓ | 15 | \$ 3,564.60 |
| EL.5 | Replace panels T,MLO 100 AMP | C | 3 | 3 | 1 | LS | 26/30 | - | ✓ | 19 | \$ 3,890.00 |
| EL.6 | Replace 45 KVA transformer | C | 3 | 3 | 1 | EA | 35/30 | - | ✓ | 15 | \$ 8,405.36 |
| EL.7 | Replace 7.5 KVA Transformer | C | 3 | 3 | 1 | EA | 35/30 | - | ✓ | 15 | \$ 5,042.15 |
| EL.8 | Replace panels X,MLO 60 AMP | C | 3 | 3 | 1 | LS | 35/30 | - | ✓ | 15 | \$ 3,110.69 |
| EL.9 | Replace panels Z,MLO 200 AMP | C | 3 | 3 | 1 | LS | 20/30 | - | ✓ | 25 | \$ 9,136.49 |
| EL.10 | Replace panels SA,MLO 125 AMP | C | 3 | 3 | 1 | LS | 20/30 | - | ✓ | 25 | \$ 8,110.91 |
| EL.11 | Provide knock out | D | 2 | 5 | 1 | EA | - | - | - | 15 | \$ 25.00 |
| EL.12 | Replace starters for pool pumps | F | 1 | 5 | 1 | LS | 35/30 | - | ✓ | 15 ² | \$ 5,521.65 |
| EL.13 | Remove canister pad | C | 3 | 5 | 1 | LS | 31/30 | - | ✓ | 15 | Refer to A.12 |
| EL.14 | Replace conduit in Filter Room | D | 2 | 5 | 1 | LS | 31/30 | - | ✓ | 15 | \$ 45,745.16 |

FAIRFAX COUNTY PARK AUTHORITY - Mt. Vernon RECenter

Facility Condition Assessment and Life Cycle Cost Analysis



| BUILDING SYSTEMS – ELECTRICAL (cont'd) | | | | | | | | | | | |
|--|--|-------|----------|----------|-----|-------------------|--------------------------------|--------|---------|-------------|---------------|
| ITEM NO. | RECOMMENDATION | GRADE | PRIORITY | CATEGORY | QTY | UNIT ³ | LIFE CYCLE STATUS ¹ | REPAIR | REPLACE | FISCAL YEAR | BASE COST |
| EL.15 | Complete light fixture replacement (except for LED lighting in the Pool) | C | 3 | 3 | 1 | LS | Varies | - | ✓ | 15 | \$ 504,390.47 |

1. Life Cycle Status (years): Age/Expected Useful Life
2. Work currently underway, already scheduled, or recommended to occur during Natatorium shutdown in FY 15
3. LS = Lump Sum; EA = Each

Plumbing (P)

The existing Building is served by two 3" domestic water services: one for the Ice Rink Facility; and one for the Pool Facility. The Ice Rink Facility's domestic water service appears to have a new inside water meter and new back flow preventer. The domestic hot water system for the Ice Rink Facility is a steel tank type heater with an immersion heat exchanger serviced by the ice rink boiler. This water heater is beyond its recommended useful life and should be replaced. The Pool Facility's domestic water service does not have an inside water meter or back flow preventer. The domestic hot water system for the Pool Facility is comprised of two gas-fired burners in a rack, with steel tank storage. This domestic water heater system is showing visible signs of wear and is near the end of its expected useful life. The existing domestic water distribution and sanitary drain piping is in need of repair in each portion of the Building, and a number of mixing/flush valves require replacement. Plumbing fixtures are worn and appear to not meet ADA guidelines in many cases.

Natural gas is provided to the site and is utilized by HVAC equipment, water heaters and ice rink resurfacing machines (Olympias). Gas is distributed throughout the Facility in schedule 40 black steel piping with screw fittings. Natural gas pipe has visual surface rust that appeared extensive where exposed at the exterior.

The estimate of remedial costs is: **\$837,518.95**

| BUILDING SYSTEMS – PLUMBING | | | | | | | | | | | |
|-----------------------------|--|-------|----------|----------|-----|-------------------|--------------------------------|--------|---------|-----------------|---------------|
| ITEM NO. | RECOMMENDATION | GRADE | PRIORITY | CATEGORY | QTY | UNIT ³ | LIFE CYCLE STATUS ¹ | REPAIR | REPLACE | FISCAL YEAR | BASE COST |
| P.1 | Replace domestic backflow preventer | C | 3 | 3 | 1 | LS | 26/30 | - | ✓ | 19 | \$ 24,188.42 |
| P.2 | Replace domestic water piping | C | 3 | 3 | 1 | LS | 26/30 | - | ✓ | 19 | \$ 107,840.24 |
| P.3 | Replace and add pipe insulation | C | 3 | 4 | 1 | LS | 35/30 | - | ✓ | 15 ² | \$ 28,888.41 |
| P.4 | Add mixing valves at lavatories/showers | F | 1 | 5 | 1 | LS | 35/30 | - | - | 15 | \$ 18,005.38 |
| P.5 | Replace and add sink trap insulation | F | 1 | 5 | 1 | LS | 35/30 | - | ✓ | 15 | \$ 712.35 |
| P.6 | Revise sanitary piping and provide proper air gap | C | 3 | 3 | 1 | LS | 26/30 | - | ✓ | 19 | \$ 296.00 |
| P.7 | Replace broken cover at hose bib | F | 1 | 5 | 1 | EA | 26/30 | - | ✓ | 15 | \$ 352.96 |
| P.8 | Replace building water heater, associated pumps and flue | D | 2 | 3 | 1 | LS | 35/30 | - | ✓ | 15 | \$ 106,058.86 |

FAIRFAX COUNTY PARK AUTHORITY - Mt. Vernon RECenter

Facility Condition Assessment and Life Cycle Cost Analysis



| BUILDING SYSTEMS – PLUMBING (cont'd) | | | | | | | | | | | |
|--------------------------------------|---|-------|----------|----------|-----|-------------------|--------------------------------|--------|---------|-------------|---------------|
| ITEM NO. | RECOMMENDATION | GRADE | PRIORITY | CATEGORY | QTY | UNIT ³ | LIFE CYCLE STATUS ¹ | REPAIR | REPLACE | FISCAL YEAR | BASE COST |
| P.9 | Replace Ice Rink water heater system | F | 1 | 3 | 1 | LS | 35/30 | - | ✓ | 15 | \$ 71,061.23 |
| P.10A | Repair damaged gutter | C | 3 | 3 | 1 | LS | 35/30 | ✓ | - | 15 | \$ 532.45 |
| P.10B | Replace gutters and downspouts | B | 4 | 3 | 1 | LS | 35/30 | - | ✓ | 15 | \$ 8,708.00 |
| P.11 | Provide downspout boot to underground stub | C | 3 | 3 | 1 | LS | 26/30 | - | - | 15 | \$ 971.50 |
| P.12 | Clean & paint gas pipe | C | 3 | 3 | 1 | LS | 29/30 | ✓ | - | 16 | \$ 1,597.35 |
| P.13 | Replace plumbing fixtures | C | 3 | 3 | 1 | LS | 26/30 | - | ✓ | 19 | \$261,325.00 |
| P.14 | Camera survey of existing cast iron sanitary piping | B | 4 | 3 | 1 | LS | - | - | - | 15 | \$ 15,000.00 |
| P.15 | Replace existing cast iron sanitary piping | C | 3 | 3 | 1 | LS | 35/30 | - | ✓ | 15 | \$ 191,980.80 |

1. Life Cycle Status (years): Age/Expected Useful Life
2. Work currently underway, already scheduled, or recommended to occur during Natatorium shutdown in FY 15
3. LS = Lump Sum; EA = Each

Fire Protection (FP)

The existing Building is fully sprinklered with an NFPA 13 compliant system. The Facility is served by two 4" fire protection water services, one for the Ice Rink Facility and one for the Pool Facility. There are no standpipes as they are not required by Code.

The Ice Rink Facility's fire protection water service has original components and appurtenances, and no back flow preventer is present. The Pool Facility's fire protection water service also has original components and appurtenances, and no back flow preventer is present either. Each Facility has a fire department connection (FDC/Siamese connection) that is located directly through the wall to the respective service area. The location of the Pool Facility fire protection water service in the Filter Room is not desirable due to the caustic environment, which could accelerate the aging of components.

Although there is not a recent hydraulic report, the fire protection water services appear to be adequate in size, but each needs a code-required backflow preventer. The life expectancy of sprinkler heads is 20 years, so replacement is anticipated within the next 5 years. Sprinkler pipe has an anticipated life expectancy of 40 years, or more, and the existing piping appears to be in good condition.

The estimate of remedial costs is: **\$155,570.00**

FAIRFAX COUNTY PARK AUTHORITY - Mt. Vernon RECenter

Facility Condition Assessment and Life Cycle Cost Analysis



| BUILDING SYSTEMS – FIRE PROTECTION | | | | | | | | | | | |
|------------------------------------|--|-------|----------|----------|-----|-------------------|--------------------------------|--------|---------|-------------|--------------|
| ITEM NO. | RECOMMENDATION | GRADE | PRIORITY | CATEGORY | QTY | UNIT ² | LIFE CYCLE STATUS ¹ | REPAIR | REPLACE | FISCAL YEAR | BASE COST |
| FP.1 | Add backflow preventer (including new room) for sprinklers | C | 3 | 5 | 1 | LS | 26/30 | - | - | 15 | \$ 77,785.00 |
| FP.2 | Add backflow preventer (including new room) for sprinklers | C | 3 | 5 | 1 | LS | 26/30 | - | - | 15 | \$ 77,785.00 |

1. Life Cycle Status (years): Age/Expected Useful Life
2. LS = Lump Sum

Aquatic (A)

The main pool is a 25Y x 25M swimming pool with attached beach entry and play features. The pool was installed in 1983, and renovated in 2001 to include the beach entry, play features and ramp. The swimming pool is in relatively good condition, for its age and use. The pool water quality and natatorium air quality is excellent despite an aging filtration and recirculation system, which has operated successfully for over thirty years.

During our survey, the operator reported that there were originally two gutter pipe connections with 8" gutter pipes running back to the filter tank. One of these pipes was discovered to be leaking and has been abandoned. During our survey, the gutter operation did not seem to be affected by the abandoned pipe; and the operator reported that the gutter rim flows and does not flood. However, since the installation of a new pump in 2014, which creates a stronger pull, the water in the wet pit cannot be properly maintained with the previously abandoned gutter pipe. In addition, the pool gutter was reported to be out of level approximately 1/8" to 1/4" which did not seem to be affecting water quality when we observed the system. Facility staff also indicated that the main drains have been updated to comply with federal standards in 2007; however, no records were provided to verify that the sump and piping are compliant with the standards. While not part of the visual investigation, the underground plumbing for the pool is reported to be steel pipe, which is likely approaching the end of its useful life. Of safety concern, pool depth markers are missing near the beach entry and ramp and do not appear accurate around the deeper areas of the pool. ADA compliant access into the pool is lacking. Additionally, damages were apparent at some pool finishes and joints, but those are mainly cosmetic issues.

The spa pool is a 125 SF round, 4'-0" deep hot water pool. The spa was installed during the 2001 renovation work. The water volume (provided by County documents) is 3,000 gallons. It is in good condition, but pool finishes have deteriorated. The skimmer piping appears undersized per current Health Department requirements, but may be grandfathered under a predecessor standard. Similar to the pool, the spa main drain covers have been replaced to comply with federal requirements, but it is unknown if the main drain sumps and piping are compliant.

The mechanical equipment space of the Filter Room is cramped and difficult to work in for maintenance personnel. The pool chemicals are currently stored in the same room as all of the other pool mechanical equipment which has led to increased corrosion of metal components in the room.

The estimate of remedial costs is: **\$1,109,913.79**

FAIRFAX COUNTY PARK AUTHORITY - Mt. Vernon RECenter
Facility Condition Assessment and Life Cycle Cost Analysis



| BUILDING SYSTEMS – AQUATIC | | | | | | | | | | | |
|----------------------------|--|-------|----------|----------|-----|-------------------|--------------------------------|--------|---------|-----------------|---------------|
| ITEM NO. | RECOMMENDATION | GRADE | PRIORITY | CATEGORY | QTY | UNIT ⁴ | LIFE CYCLE STATUS ¹ | REPAIR | REPLACE | FISCAL YEAR | BASE COST |
| A.2A | Replace pool finishes with quartz type finish and replace joint filler with chemical resistant filler | C | 3 | 5 | 1 | LS | 3/7 | - | ✓ | 15 ² | \$ 134,020.08 |
| A.2B | Drain and survey pool. Add depth markers as needed. | D | 2 | 3 | - | - | Varies | - | - | 15 ³ | - |
| A.3A | Drain and survey pool to verify floor slopes | D | 2 | 3 | - | - | ? | - | - | 15 ³ | - |
| A.3B | Drain and survey pool to verify that water depth is consistent with code | D | 2 | 3 | - | - | ? | - | - | 15 ³ | - |
| A.4A | Revise stair riser height so that all are even | A | 6 | 3 | 1 | LS | 13/25 | - | ✓ | 15 ² | \$ 4,995.00 |
| A.4B | Drain pool, survey and verify dimensions. ³ Add ADA compliant hydraulic lift. | F | 1 | 3 | 1 | LS | Varies | - | - | 15 ² | \$ 5,500.00 |
| A.4C | Replace ramp rails to alleviate safety concerns at failed welds | F | 1 | 5 | 1 | LS | 13/25 | - | ✓ | 15 ² | \$ 11,854.00 |
| A.4D | Provide secondary ADA compliant hydraulic lift. | F | 1 | 3 | 1 | LS | - | - | - | 15 ² | \$ 5,500.00 |
| A.5 | Re-plumb geyser features | B | 4 | 3 | 1 | LS | 13/25 | - | ✓ | 27 | \$ 61,067.14 |
| A.6A | Repair abandoned gutter pipe | B | 4 | 1 | 1 | LS | 31/25 | ✓ | - | 15 ² | \$ 33,284.67 |
| A.6B | Replace sumps and main drain covers. Replace below grade piping complete to filter. | D | 2 | 3 | 1 | LS | Varies; 31/25 (sumps) | - | ✓ | 15 ² | \$ 150,000.00 |
| A.6C | Replace inlet fitting and below grade cast iron pipe | C | 3 | 3 | 1 | LS | 31/25 | - | ✓ | 15 | \$ 210,000.00 |
| A.7 | Replace pump for pool recirculation to provide 6 hr turnover per code | F | 1 | 3 | 1 | LS | 31/25 | - | ✓ | 15 | \$ 30,956.55 |
| A.8A | Replace filter pump to provide 6 hr turnover per code | F | 1 | 3 | 1 | LS | ? | - | ✓ | 15 | \$ 21,545.76 |
| A.8B | Relocate suction & discharge pump | F | 1 | 3 | 1 | LS | ? | - | ✓ | 15 | \$ 13,620.88 |
| A.9 | Replace pool filters | D | 2 | 3 | 1 | LS | 31/25 | - | ✓ | 15 | \$ 75,000.00 |
| A.10 | Replace pool water pipe with CPVC | C | 3 | 3 | - | - | 31/30 | - | ✓ | 15 | Refer to M.11 |
| A.11A | Provide separate chemical storage room and new chemical treatment system | D | 2 | 3 | 1 | LS | 31/? | - | ✓ | 15 | \$ 215,561.00 |
| A.11B | Provide a secondary, electrical interlock direct to the filtration pump. Replace the chemical controller. | C | 3 | 3 | 1 | LS | ? | - | ✓ | 15 | \$ 9,196.86 |
| A.12 | Relocate chemical storage/feed system/eyewash to free up equipment and maintenance work space. Replace pipe hangers ² with corrosion resistant hangers. | C | 3 | 3 | 1 | LS | 31/? | - | ✓ | 15 ² | \$ 7,620.25 |

FAIRFAX COUNTY PARK AUTHORITY - Mt. Vernon RECenter
Facility Condition Assessment and Life Cycle Cost Analysis



| BUILDING SYSTEMS – AQUATIC (cont'd) | | | | | | | | | | | |
|-------------------------------------|---|-------|----------|----------|-----|-------------------|--------------------------------|--------|---------|-----------------|--------------|
| ITEM NO. | RECOMMENDATION | GRADE | PRIORITY | CATEGORY | QTY | UNIT ⁴ | LIFE CYCLE STATUS ¹ | REPAIR | REPLACE | FISCAL YEAR | BASE COST |
| A.13 | Modify Pool Spectator Seating area for ADA compliance | F | 1 | 3 | - | - | 31/25 | - | ✓ | 15 | TBD |
| A.21A | Replace submerged aggregate finish. | F | 1 | 5 | 1 | LS | 3/7 | - | ✓ | 15 ² | \$ 4,293.00 |
| A.21B | Provide deep cleaning of spa pool coping finishes | A | 5 | 1 | 1 | LS | 13/25 | - | ✓ | 27 | \$ 4,580.03 |
| A.21C | Provide deep cleaning of spa deck and wall depth markers | A | 5 | 1 | 1 | LS | 13/25 | - | ✓ | 27 | \$ 13,740.10 |
| A.22B | Replace spa pool hydraulically powered pool lift. | C | 3 | 3 | 1 | LS | 13/25 | - | ✓ | 27 | \$ 5,500.00 |
| A.24C | Replace spa pool inlets. | C | 3 | 3 | 1 | LS | 13/25 | - | ✓ | 27 | \$ 12,000.00 |
| A.25 | Reduce flow to pool | C | 3 | 1 | 1 | LS | 13/25 | ✓ | - | 15 | \$ 600.00 |
| A.26A | Install pressure gauges in the suction and discharge PVC flange. Adjust pump to design flow rate. | C | 3 | 1 | 1 | LS | 13/25 | ✓ | - | 15 | \$ 878.47 |
| A.26B | Adjust pump to design flow rate | C | 3 | 1 | 1 | LS | 13/14 | ✓ | - | 15 | \$ 600.00 |
| A.27 | Replace spa pump filters | C | 3 | 3 | 1 | LS | 13/20 | - | ✓ | 22 | \$ 9,000.00 |
| A.28 | Replace spa pool heater | C | 3 | 3 | 1 | LS | 13/25 | - | ✓ | 27 | \$ 9,000.00 |
| A.29 | Find alternate storage location for CO2 and provide secondary sanitization system. | C | 3 | 3 | 1 | LS | 31/? | - | ✓ | 15 | \$ 60,000.00 |

1. Life Cycle Status (years): Age/Expected Useful Life
2. Work currently underway, already scheduled, or recommended to occur during Natatorium shutdown in FY 15
3. Work completed post building survey
4. LS = Lump Sum

FAIRFAX COUNTY PARK AUTHORITY - Mt. Vernon RECenter

Facility Condition Assessment and Life Cycle Cost Analysis



Ice Rink (I)

An overall assessment of the Ice Rink area reveals that the Facility has been decently maintained. However, most items that were analyzed are either beyond their anticipated useful lifespan and should be replaced soon; or are recommended for repair in the near/immediate future to improve the energy efficiency and functionality of the Ice Rink space.

Due to the age, condition and safety issues created at the spectator seating area, bleachers are recommended for immediate replacement. The bleachers are not ADA compliant and would not meet code for bleachers today. A replacement system would have to be compliant with ADA guidelines.

Rubber flooring around the perimeter of the rink is significantly worn and has gaps between rubber pieces that present a tripping hazard. The rubber floor is estimated to be over 10 years old and is at the end of its operational life. Furthermore, rubberizing where the Olympia enters the ice rink will improve ice quality and reduce maintenance cost to the ice and Olympia.

Although the dasher boards are at the midpoint of their expected life cycle, they are improperly leaning out at the short ends of the rink. The footings of many support legs for the boards are rusted and corroded too. Until funds are allocated for replacement of the boards, it is recommended that a dasher board company visit the Facility to re-plumb the boards straight, remove rust, and paint the feet of the support legs.

Other improvements to the Ice Rink Facility include replacement of the dilapidated sound system with a newer, more modern audio system and equipment; and repair to weather stripping at exterior doors for greater energy efficiency. Additionally, with each Olympia being in the middle of their serviceable life, it is recommended that both machines be put on a preventive maintenance program with an Olympia service company.

The estimate of remedial costs is: **\$567,360.46**

| BUILDING SYSTEMS – ICE RINK | | | | | | | | | | | |
|-----------------------------|--|-------|----------|----------|-----|-------------------|--------------------------------|--------|---------|-------------|---------------|
| ITEM NO. | RECOMMENDATION | GRADE | PRIORITY | CATEGORY | QTY | UNIT ² | LIFE CYCLE STATUS ¹ | REPAIR | REPLACE | FISCAL YEAR | BASE COST |
| I.1 | Replace sound system in Ice Rink | B | 4 | 3 | 1 | LS | ? | - | ✓ | 15 | \$ 27,740.00 |
| I.2 | Replace existing bleachers with a new ADA compliant bleacher system. | F | 1 | 5 | 1 | LS | 35/25 | - | ✓ | 15 | \$ 56,333.76 |
| I.3 | Replace rubber tile around ice rink | F | 1 | 5 | 1 | LS | 10+/10 | - | ✓ | 15 | \$ 75,412.30 |
| I.4 | Replace weather stripping at Ice rink doors | B | 4 | 4 | 1 | LS | ? | - | ✓ | 15 | \$ 1,394.40 |
| I.5A | Repair dasher boards | B | 4 | 1 | 1 | LS | 18/30 | ✓ | - | 15 | \$ 26,480.00 |
| I.5B | Replace dasher boards | C | 3 | 3 | 1 | LS | 18/30 | - | ✓ | 27 | \$ 150,000.00 |
| I.6 | Replace both Olympia machines | B | 4 | 3 | 1 | LS | 12/20; 13/20 | - | ✓ | 23/ 22 | \$ 230,000.00 |

1. Life Cycle Status (years): Age/Expected Useful Life

2. LS = Lump Sum

FAIRFAX COUNTY PARK AUTHORITY - Mt. Vernon RECenter

Facility Condition Assessment and Life Cycle Cost Analysis



B.2 Assessment Summarized by ADA Upgrades

The American with Disabilities Act (ADA) was enacted in 1990. Fortunately, the original design accommodates the fundamentals of ADA compliance and FCPA has continually retrofitted the Facility to comply with ADA requirements in spirit. Future alteration and/or addition to the Facility will need to comply with the current ADA guidelines.

The following chart lists assessment items which are not in compliance with current ADA requirements. The estimate of remedial costs is: **\$344,064.47**

| ADA UPGRADES | | | | | | | | | | | |
|--------------|--|-------|----------|----------|-----|-------------------|--------------------------------|--------|----------|-----------------|---------------------------|
| ITEM NO. | RECOMMENDATION | GRADE | PRIORITY | CATEGORY | QTY | UNIT ⁴ | LIFE CYCLE STATUS ¹ | REPAIR | REPLACE. | FISCAL YEAR | BASE COST |
| S.3 | Provide additional handrail at side of exterior steps | F | 1 | 3 | 1 | LS | - | - | - | 15 | \$ 2,839.36 |
| P.5 | Replace and add sink trap insulation | F | 1 | 5 | 1 | LS | 35/30 | - | ✓ | 15 | \$ 712.35 |
| P.13 | Replace plumbing fixtures | C | 3 | 3 | 1 | LS | 26/30 | - | ✓ | 19 | \$261,325.00 ⁵ |
| A.4B | Drain pool, survey and verify dimensions. ³ Add ADA compliant hydraulic lift. | F | 1 | 3 | 1 | LS | Varies | - | - | 15 ² | \$ 5,500.00 |
| A.4C | Replace ramp rails to alleviate safety concerns at failed welds | F | 1 | 5 | 1 | LS | 13/25 | - | ✓ | 15 ² | \$ 11,854.00 |
| A.4D | Provide secondary ADA compliant hydraulic lift. | F | 1 | 3 | 1 | LS | - | - | - | 15 ² | \$ 5,500.00 |
| A.13 | Modify Pool Spectator Seating area for ADA compliance | F | 1 | 3 | - | - | 31/25 | - | ✓ | 15 | TBD |
| I.2 | Replace existing bleachers with a new ADA compliant bleacher system. | F | 1 | 5 | 1 | LS | 35/25 | - | ✓ | 15 | \$ 56,333.76 |

1. Life Cycle Status (years): Age/Expected Useful Life
2. Work currently underway, already scheduled, or recommended to occur during Natatorium shutdown in FY 15
3. Work completed post building survey
4. LS = Lump Sum
5. It is to be expected that any major building expansion or renovation of the Facility would require significant alterations to the plumbing systems (piping as well as fixture types, arrangements and installation methods) to ensure ADA compliance. Due to this, it is not reasonable to attempt an estimate of probable costs for ADA versus non-ADA compliant fixture installations for the existing structure as this information could be considered irrelevant in the likelihood that any major building alterations would prompt complete replacement of fixtures compliant with Code and the current ADA guidelines during that time.

FAIRFAX COUNTY PARK AUTHORITY - Mt. Vernon RECenter

Facility Condition Assessment and Life Cycle Cost Analysis



B.3 Assessment Summarized by Grade/Priority

Grading Standard F / Priority 1 - Currently Critical:

Conditions in this category require immediate action by the end of FY 2015 to:

- Correct a cited safety hazard
- Stop accelerated deterioration
- Return a facility/system to operational status

The estimate of remedial costs is: **\$553,878.63**

| GRADE F / PRIORITY 1 | | | | | | | | | | | |
|----------------------|--|-------|----------|----------|-----|-------------------|--------------------------------|--------|---------|-----------------|--------------|
| ITEM NO. | RECOMMENDATION | GRADE | PRIORITY | CATEGORY | QTY | UNIT ³ | LIFE CYCLE STATUS ¹ | REPAIR | REPLACE | FISCAL YEAR | BASE COST |
| S.3 | Provide additional handrail at side of exterior steps | F | 1 | 3 | 1 | LS | - | - | - | 15 | \$ 2,839.36 |
| E.1A | Repair EPDM membrane roof system where shrinking has occurred | F | 1 | 2 | 1 | LS | 17/20 | ✓ | - | 15 | \$ 7,433.28 |
| E.1E | Repair structural supports for the mechanical units | F | 1 | 5 | 1 | LS | 35/30 | ✓ | - | 15 | \$ 10,020.22 |
| E.1F | Replace structural supports for the mechanical units | F | 1 | 5 | 1 | LS | 35/30 | - | ✓ | 15 | \$ 16,167.38 |
| F.2 | Replace damaged base and floor tiles in locker room | F | 1 | 5 | 1 | LS | 31/10 | - | ✓ | 15 ² | \$ 480.00 |
| M.1 | Replace Boiler B-1 | F | 1 | 3 | 1 | EA | 35/30 | - | ✓ | 15 | \$ 90,924.76 |
| M.11 | Replace Boiler B-2 | F | 1 | 3 | 1 | EA | 31/30 | - | ✓ | 15 | \$ 98,443.81 |
| M.25 | Provide insulation to ductwork | F | 1 | 4 | 1 | LS | ? | - | - | 15 | \$ 6,900.00 |
| EL.12 | Replace starters for pool pumps | F | 1 | 5 | 1 | LS | 35/30 | - | ✓ | 15 ² | \$ 5,521.65 |
| P.4 | Add mixing valves at lavatories/showers | F | 1 | 5 | 1 | LS | 35/30 | - | - | 15 | \$ 18,005.38 |
| P.5 | Replace and add sink trap insulation | F | 1 | 5 | 1 | LS | 35/30 | - | ✓ | 15 | \$ 712.35 |
| P.7 | Replace broken cover at hose bib | F | 1 | 5 | 1 | EA | 26/30 | - | ✓ | 15 | \$ 352.96 |
| P.9 | Replace Ice Rink water heater system | F | 1 | 3 | 1 | LS | 35/30 | - | ✓ | 15 | \$ 71,061.23 |
| A.4B | Drain pool, survey and verify dimensions. ³ Add ADA compliant hydraulic lift. | F | 1 | 3 | 1 | LS | Varies | - | - | 15 ² | \$ 5,500.00 |
| A.4C | Replace ramp rails to alleviate safety concerns at failed welds | F | 1 | 5 | 1 | LS | 13/25 | - | ✓ | 15 ² | \$ 11,854.00 |
| A.4D | Provide secondary ADA compliant hydraulic lift. | F | 1 | 3 | 1 | LS | - | - | - | 15 ² | \$ 5,500.00 |
| A.7 | Replace pump for pool recirculation to provide 6 hr turnover per code | F | 1 | 3 | 1 | LS | 31/25 | - | ✓ | 15 | \$ 30,956.55 |
| A.8A | Replace filter pump to provide 6 hr turnover per code | F | 1 | 3 | 1 | LS | ? | - | ✓ | 15 | \$ 21,545.76 |
| A.8B | Relocate suction & discharge pump | F | 1 | 3 | 1 | LS | ? | - | ✓ | 15 | \$ 13,620.88 |

FAIRFAX COUNTY PARK AUTHORITY - Mt. Vernon RECenter
Facility Condition Assessment and Life Cycle Cost Analysis



| GRADE F / PRIORITY 1 (cont'd) | | | | | | | | | | | |
|-------------------------------|--|-------|----------|----------|-----|-------------------|--------------------------------|--------|---------|-----------------|--------------|
| ITEM NO. | RECOMMENDATION | GRADE | PRIORITY | CATEGORY | QTY | UNIT ³ | LIFE CYCLE STATUS ¹ | REPAIR | REPLACE | FISCAL YEAR | BASE COST |
| A.13 | Modify Pool Spectator Seating area for ADA compliance | F | 1 | 3 | - | - | 31/25 | - | ✓ | 15 | TBD |
| A.21A | Replace submerged aggregate finish. | F | 1 | 5 | 1 | LS | 3/7 | - | ✓ | 15 ² | \$ 4,293.00 |
| I.2 | Replace existing bleachers with a new ADA compliant bleacher system. | F | 1 | 5 | 1 | LS | 35/25 | - | ✓ | 15 | \$ 56,333.76 |
| I.3 | Replace rubber tile around ice rink | F | 1 | 5 | 1 | LS | 10+/10 | - | ✓ | 15 | \$ 75,412.30 |

1. Life Cycle Status (years): Age/Expected Useful Life
2. Work currently underway, already scheduled, or recommended to occur during Natatorium shutdown in FY 15
3. LS = Lump Sum; EA = Each

Grading Standard D / Priority 2 - Potentially Critical:

Conditions in this category, if not corrected expeditiously, will become critical soon. Situations within this category include:

- Correct a cited safety hazard
- Stop accelerated deterioration
- Return a facility/system to operational status

The estimate of remedial costs is: **\$2,411,175.92**

| GRADE D / PRIORITY 2 | | | | | | | | | | | |
|----------------------|---|-------|----------|----------|-----|-------------------|--------------------------------|--------|---------|-------------|---------------|
| ITEM NO. | RECOMMENDATION | GRADE | PRIORITY | CATEGORY | QTY | UNIT ⁴ | LIFE CYCLE STATUS ¹ | REPAIR | REPLACE | FISCAL YEAR | BASE COST |
| S.1 | Redesign public park lot. Improve way-finding and site drainage. | D | 2 | 3 | - | - | 35/15 | - | ✓ | 15 | TBD |
| S.2 | Replace damaged storm drain cover | D | 2 | 5 | 1 | EA | 35/15 | - | ✓ | 15 | \$ 996.52 |
| E.2J | Replace existing glazing system at main entrance with new low-E curtain wall system | D | 2 | 3 | 1 | LS | 31/30 | - | ✓ | 15 | \$ 151,652.84 |
| M.2 | Replace RTU-1 | D | 2 | 3 | 1 | EA | 18/20 | - | ✓ | 17 | \$ 30,161.24 |
| M.3 | Replace RTU-2 | D | 2 | 3 | 1 | EA | 18/20 | - | ✓ | 17 | \$ 104,846.20 |
| M.4 | Replace RTU-3 | D | 2 | 3 | 1 | EA | 18/20 | - | ✓ | 17 | \$ 8,114.35 |
| M.5 | Replace RTU-4 | D | 2 | 3 | 1 | EA | 18/20 | - | ✓ | 17 | \$ 40,933.11 |
| M.6 | Replace RTU-5 | D | 2 | 3 | 1 | EA | 18/20 | - | ✓ | 17 | \$ 48,114.35 |
| M.7 | Replace RTU-6 | D | 2 | 3 | 1 | EA | 18/20 | - | ✓ | 17 | \$ 33,751.86 |
| M.8 | Replace Unit MAU-1 | D | 2 | 3 | 1 | EA | 18/20 | - | ✓ | 17 | \$ 354,035.44 |
| M.9 | Replace Unit PRU-1 | D | 2 | 3 | 1 | EA | 18/20 | - | ✓ | 17 | \$ 366,961.67 |

FAIRFAX COUNTY PARK AUTHORITY - Mt. Vernon RECenter
Facility Condition Assessment and Life Cycle Cost Analysis



| GRADE D / PRIORITY 2 (cont'd) | | | | | | | | | | | |
|-------------------------------|---|-------|----------|----------|-----|-------------------|--------------------------------|--------|---------|-----------------|---------------|
| ITEM NO. | RECOMMENDATION | GRADE | PRIORITY | CATEGORY | QTY | UNIT ⁴ | LIFE CYCLE STATUS ¹ | REPAIR | REPLACE | FISCAL YEAR | BASE COST |
| M.10 | Replace Unit PRU-2 | D | 2 | 3 | 1 | EA | 18/20 | - | ✓ | 17 | \$ 366,961.67 |
| M.16 | Replace Fan MF-1 | D | 2 | 3 | 1 | EA | 18/20 | - | ✓ | 17 | \$ 20,099.16 |
| M.17A | Provide missing belt guard | D | 2 | 5 | 1 | EA | - | - | - | 15 | \$ 560.00 |
| M.17B | Replace Exhaust Fan EF-2 | D | 2 | 3 | 1 | EA | 18/20 | - | ✓ | 17 | \$ 8,617.50 |
| M.18 | Replace Exhaust Fan EF-3 | D | 2 | 1 | 1 | EA | 18/20 | - | ✓ | 17 | \$ 9,319.82 |
| M.19 | Replace Exhaust Fan EF-4 | D | 2 | 1 | 1 | EA | 18/20 | - | ✓ | 17 | \$ 9,586.96 |
| M.20 | Replace Exhaust Fan EF-5 | D | 2 | 1 | 1 | EA | 18/20 | - | ✓ | 17 | \$ 9,586.96 |
| M.21A | Provide missing belt guard | D | 2 | 5 | 1 | EA | - | - | - | 15 | \$670.00 |
| M.21B | Replace Supply fan SF-1 | D | 2 | 3 | 1 | EA | 18/20 | - | ✓ | 17 | \$ 7,879.26 |
| M.22 | Replace Fan Coil Unit FCU-1 | D | 2 | 3 | 1 | EA | 18/20 | - | ✓ | 17 | \$ 8,186.62 |
| M.23 | Replace Fan Coil Unit FCU-2 | D | 2 | 3 | 1 | EA | 18/20 | - | ✓ | 17 | \$ 8,186.62 |
| M.24 | Replace VVT air terminals 1 - 5 | D | 2 | 3 | 1 | LS | 18/20 | - | ✓ | 17 | \$ 6,447.00 |
| M.26 | Replace Unit ACCOU-1 | D | 2 | 3 | 1 | EA | 18/20 | - | ✓ | 17 | \$ 58,742.60 |
| M.27 | Replace Unit ACCOU-2 | D | 2 | 3 | 1 | EA | 18/20 | - | ✓ | 17 | \$ 58,742.60 |
| EL.1 | Replace existing 1600 switch board | D | 2 | 5 | 1 | EA | 35/30 | - | ✓ | 15 | \$ 105,631.55 |
| EL.11 | Provide knock out | D | 2 | 5 | 1 | EA | - | - | - | 15 | \$ 25.00 |
| EL.14 | Replace conduit in pool filter room | D | 2 | 5 | 1 | LS | 31/30 | - | ✓ | 15 | \$ 45,745.16 |
| P.8 | Replace building water heater, associated pumps and flue | D | 2 | 3 | 1 | LS | 35/30 | - | ✓ | 15 | \$ 106,058.86 |
| A.2B | Drain and survey pool. Add depth markers as needed. | D | 2 | 3 | - | - | Varies | - | - | 15 ³ | - |
| A.3A | Drain and survey pool to verify floor slopes | D | 2 | 3 | - | - | ? | - | - | 15 ³ | - |
| A.3B | Drain and survey pool to verify that water depth is consistent with code | D | 2 | 3 | - | - | ? | - | - | 15 ³ | - |
| A.6B | Replace sumps and main drain covers. Replace below grade piping complete to filter. | D | 2 | 3 | 1 | LS | Varies; 31/25 (sumps) | - | ✓ | 15 ² | \$ 150,000.00 |
| A.9 | Replace pool filters | D | 2 | 3 | 1 | LS | 31/25 | - | ✓ | 15 | \$ 75,000.00 |
| A.11A | Provide separate chemical storage room and new chemical treatment system | D | 2 | 3 | 1 | LS | 31/? | - | ✓ | 15 | \$ 215,561.00 |

1. Life Cycle Status (years): Age/Expected Useful Life
2. Work currently underway, already scheduled, or recommended to occur during Natatorium shutdown in FY 15
3. Work completed post building survey
4. LS = Lump Sum; EA = Each

FAIRFAX COUNTY PARK AUTHORITY - Mt. Vernon RECenter

Facility Condition Assessment and Life Cycle Cost Analysis



Grading Standard C / Priority 3 - Necessary, But Not Yet Critical:

Conditions in this category require appropriate attention to preclude predictable deterioration and associated damage or higher costs if deferred further.

The estimate of remedial costs is: **\$3,168,725.77**

| GRADE C / PRIORITY 3 | | | | | | | | | | | |
|----------------------|--|-------|----------|----------|-----|-------------------|--------------------------------|--------|---------|-------------|---------------|
| ITEM NO. | RECOMMENDATION | GRADE | PRIORITY | CATEGORY | QTY | UNIT ² | LIFE CYCLE STATUS ¹ | REPAIR | REPLACE | FISCAL YEAR | BASE COST |
| S.4 | Replace parking lot asphalt and concrete curbs and restripe parking lot. | C | 3 | 2 | 1 | LS | 35/30 | - | ✓ | 15 | \$ 219,918.63 |
| E.1B | Replace EPDM membrane roof system w/ new single ply membrane roof system. | C | 3 | 3 | 1 | LS | 17/20 | - | ✓ | 18 | \$ 137,893.29 |
| E.1C | Replace roof drains; and replace existing flashing (to include roofing membrane, terminations, and sealants) at existing penetrations. | C | 3 | 3 | 1 | LS | 17/20 | - | ✓ | 18 | \$ 5,825.86 |
| E.1D | Replace roof walkway pads | C | 3 | 3 | 1 | LS | 17/20 | - | ✓ | 18 | \$ 4,438.65 |
| E.1G | Clean & re-paint 20% of metal roof | C | 3 | 1 | 1 | LS | 18/30 | ✓ | - | 15 | \$ 25,089.63 |
| E.1H | Replace metal roof | C | 3 | 3 | 1 | LS | 18/30 | - | ✓ | 27 | \$ 172,817.49 |
| E.2A | Clean and re-paint metal wall panel near pool service door | C | 3 | 1 | 1 | LS | 18/30 | ✓ | - | 15 | \$ 3,604.11 |
| E.2B | Replace metal wall panels | C | 3 | 3 | 1 | LS | 18/30 | ✓ | - | 15 | \$ 9,027.45 |
| E.2D | Replace painted stucco on exterior of building | C | 3 | 3 | 1 | LS | 35/30 | - | ✓ | 15 | \$ 46,840.61 |
| E.2G | Repair and paint damaged exterior doors/frames to include replacement of perimeter sealants. | C | 3 | 1 | 1 | LS | 35/30 | ✓ | - | 15 | \$ 2,051.76 |
| E.2H | Replace exterior doors | C | 3 | 3 | 1 | LS | 35/30 | - | ✓ | 15 | \$ 26,132.63 |
| E.2I | Replace exterior storefront windows | C | 3 | 3 | 1 | LS | 35/30 | - | ✓ | 15 | \$ 52,432.50 |
| M.14 | Replace Unit DH-1 | C | 3 | 3 | 1 | EA | 18/20 | - | ✓ | 17 | \$ 256,298.68 |
| M.15 | Replace Unit DH-2 | C | 3 | 3 | 1 | EA | 18/20 | - | ✓ | 17 | \$ 256,298.68 |
| EL.2 | Replace Breakers 100amp,60 amp, (2) 300 amps, & 400 amp | C | 3 | 3 | 1 | LS | Varies | - | ✓ | 15 | \$ 7,937.00 |
| EL.3 | Replace the Motor Control Center | C | 3 | 3 | 1 | EA | 35/30 | - | ✓ | 15 | \$ 14,862.30 |
| EL.4 | Replace panels MLO and S 100 AMP for ice rink | C | 3 | 3 | 1 | LS | 35/30 | - | ✓ | 15 | \$ 3,564.60 |
| EL.5 | Replace panels T,MLO 100 AMP | C | 3 | 3 | 1 | LS | 26/30 | - | ✓ | 19 | \$ 3,890.00 |
| EL.6 | Replace 45 KVA transformer | C | 3 | 3 | 1 | EA | 35/30 | - | ✓ | 15 | \$ 8,405.36 |
| EL.7 | Replace 7.5 KVA Transformer | C | 3 | 3 | 1 | EA | 35/30 | - | ✓ | 15 | \$ 5,042.15 |
| EL.8 | Replace panels X,MLO 60 AMP | C | 3 | 3 | 1 | LS | 35/30 | - | ✓ | 15 | \$ 3,110.69 |
| EL.9 | Replace panels Z,MLO 200 AMP | C | 3 | 3 | 1 | LS | 20/30 | - | ✓ | 25 | \$ 9,136.49 |

FAIRFAX COUNTY PARK AUTHORITY - Mt. Vernon RECenter
Facility Condition Assessment and Life Cycle Cost Analysis



| GRADE C / PRIORITY 3 (cont'd) | | | | | | | | | | | |
|-------------------------------|--|-------|----------|----------|-----|-------------------|--------------------------------|--------|---------|-----------------|---------------|
| ITEM NO. | RECOMMENDATION | GRADE | PRIORITY | CATEGORY | QTY | UNIT ³ | LIFE CYCLE STATUS ¹ | REPAIR | REPLACE | FISCAL YEAR | BASE COST |
| EL.10 | Replace panels SA,MLO 125 AMP | C | 3 | 3 | 1 | LS | 20/30 | - | ✓ | 25 | \$ 8,110.91 |
| EL.13 | Remove canister pad | C | 3 | 5 | 1 | LS | 31/30 | - | ✓ | 15 | Refer to A.12 |
| EL.15 | Complete light fixture replacement (except for LED lighting in the Pool) | C | 3 | 3 | 1 | LS | Varies | - | ✓ | 15 | \$ 504,390.47 |
| P.1 | Replace domestic backflow preventer | C | 3 | 3 | 1 | EA | 26/30 | - | ✓ | 19 | \$24,188.42 |
| P.2 | Replace domestic water piping | C | 3 | 3 | 1 | LS | 26/30 | - | ✓ | 19 | \$107,840.24 |
| P.3 | Replace and add pipe insulation | C | 3 | 4 | 1 | LS | 35/30 | - | ✓ | 14 | \$28,888.41 |
| P.6 | Revise sanitary piping and provide proper air gap | C | 3 | 3 | 1 | LS | 26/30 | - | ✓ | 19 | \$296.00 |
| P.10A | Repair damaged gutter | C | 3 | 3 | 1 | LS | 35/30 | ✓ | - | 15 | \$532.45 |
| P.11 | Provide downspout boot to underground stub | C | 3 | 3 | 1 | LS | 26/30 | - | - | 15 | \$ 971.50 |
| P.12 | Clean & paint gas pipe | C | 3 | 3 | 1 | LS | 29/30 | ✓ | - | 16 | \$1,597.35 |
| P.13 | Replace plumbing fixtures | C | 3 | 3 | 1 | LS | 26/30 | - | ✓ | 19 | \$261,325.00 |
| P.15 | Replace existing cast iron sanitary piping | C | 3 | 3 | 1 | LS | 35/30 | - | ✓ | 15 | \$ 191,980.80 |
| FP.1 | Add backflow preventer (including new room) for sprinklers | C | 3 | 5 | 1 | LS | 26/30 | - | - | 15 | \$77,785.00 |
| FP.2 | Add backflow preventer (including new room) for sprinklers | C | 3 | 5 | 1 | LS | 26/30 | - | - | 15 | \$77,785.00 |
| A.2A | Replace pool finishes with quartz type finish and replace joint filler with chemical resistant filler | C | 3 | 5 | 1 | LS | 3/7 | - | ✓ | 15 ² | \$134,020.08 |
| A.6C | Replace inlet fitting and below grade cast iron pipe | C | 3 | 3 | 1 | LS | 31/25 | - | ✓ | 15 | \$ 210,000.00 |
| A.10 | Replace pool water pipe with CPVC | C | 3 | 3 | - | - | 31/30 | - | ✓ | 15 | Refer to M.11 |
| A.11B | Provide a secondary, electrical interlock direct to the filtration pump. Replace the chemical controller | C | 3 | 3 | 1 | LS | ? | - | ✓ | 15 | \$9,196.86 |
| A.12 | Relocate chemical storage/feed system/eyewash to free up equipment and maintenance work space. Replace pipe hangers ² with corrosion resistant hangers. | C | 3 | 3 | 1 | LS | 31/? | - | ✓ | 15 | \$7,620.25 |
| A.22B | Replace spa pool hydraulically powered pool lift. | C | 3 | 3 | 1 | LS | 13/25 | - | ✓ | 27 | \$ 5,500.00 |
| A.24C | Replace spa pool inlets. | C | 3 | 3 | 1 | LS | 13/25 | - | ✓ | 27 | \$ 12,000.00 |
| A.25 | Reduce flow to pool | C | 3 | 1 | 1 | LS | 13/25 | ✓ | - | 15 | \$ 600.00 |

FAIRFAX COUNTY PARK AUTHORITY - Mt. Vernon RECenter
Facility Condition Assessment and Life Cycle Cost Analysis



| GRADE C / PRIORITY 3 (cont'd) | | | | | | | | | | | |
|-------------------------------|---|-------|----------|----------|-----|-------------------|--------------------------------|--------|---------|-------------|--------------|
| ITEM NO. | RECOMMENDATION | GRADE | PRIORITY | CATEGORY | QTY | UNIT ² | LIFE CYCLE STATUS ¹ | REPAIR | REPLACE | FISCAL YEAR | BASE COST |
| A.26A | Install pressure gauges in the suction and discharge PVC flange. Adjust pump to design flow rate. | C | 3 | 1 | 1 | LS | 13/25 | ✓ | - | 15 | \$878.47 |
| A.26B | Adjust pump to design flow rate | C | 3 | 1 | 1 | LS | 13/14 | ✓ | - | 15 | \$ 600.00 |
| A.27 | Replace spa pump filters | C | 3 | 3 | 1 | LS | 13/20 | - | ✓ | 22 | \$ 9,000.00 |
| A.28 | Replace spa pool heater | C | 3 | 3 | 1 | LS | 13/25 | - | ✓ | 27 | \$ 9,000.00 |
| A.29 | Find alternate storage location for CO2 and provide secondary sanitization system. | C | 3 | 3 | 1 | LS | 31/? | - | ✓ | 15 | \$ 60,000.00 |
| I.5B | Replace dasher boards | C | 3 | 3 | 1 | LS | 18/30 | - | ✓ | 27 | \$150,000.00 |

1. Life Cycle Status (years): Age/Expected Useful Life
2. Work currently underway, already scheduled, or recommended to occur during Natatorium shutdown in FY 15
3. LS = Lump Sum; EA = Each

Grading Standard B / Priority 4 – Recommended:

Conditions in this category include items that represent a sensible improvement to existing conditions. These are not required for the most basic function of the facility.

The estimate of remedial costs is: \$2,605,882.33

| GRADE B / PRIORITY 4 | | | | | | | | | | | |
|----------------------|---|-------|----------|----------|-----|-------------------|--------------------------------|--------|---------|-------------|---------------|
| ITEM NO. | RECOMMENDATION | GRADE | PRIORITY | CATEGORY | QTY | UNIT ³ | LIFE CYCLE STATUS ¹ | REPAIR | REPLACE | FISCAL YEAR | BASE COST |
| E.2C | Install (2) pipe bollards near pool service door | B | 4 | 5 | 1 | LS | - | - | - | 15 | \$ 2,689.92 |
| E.2K | Replace metal wall panel system | B | 4 | 3 | 1 | LS | 18/30 | - | ✓ | 27 | \$ 221,000.00 |
| F.1 | Provide translucent panel partitions | B | 4 | 3 | 1 | LS | - | - | - | 15 | \$ 34,090.33 |
| F.3A | In Ice Rink area, replace low-E ceiling with a foil & bubble finished low-E ceiling | B | 4 | 4 | 1 | LS | 19/10 | - | ✓ | 15 | \$ 12,655.56 |
| F.3B | In the Ice Rink area, provide acoustical wall panels | B | 4 | 4 | 1 | LS | - | - | - | 15 | \$ 42,644.55 |
| F.4 | Provide lapdary acoustic panels for 40% of Pool & Spa ceiling | B | 4 | 4 | 1 | LS | - | - | - | 15 | \$ 53,601.28 |
| M.12 | Replace Unit ERU-1 | B | 4 | 4 | 1 | EA | 6/20 | - | ✓ | 17 | \$ 56,680.74 |
| M.13 | Replace Unit ERU-2 | B | 4 | 4 | 1 | EA | 6/20 | - | ✓ | 17 | \$ 56,680.74 |
| M.28 | Replace (4) Compressors & (2) Chillers | B | 4 | 3 | 1 | LS | 15/20 | - | ✓ | 20 | \$ 529,000.00 |
| M.29A | Descale Cooling Towers | B | 4 | 2 | 1 | LS | - | ✓ | - | 15 | \$ 4,000.00 |
| M.29B | Replace (2) Cooling Towers | B | 4 | 3 | 1 | LS | 10/15 | - | ✓ | 20 | \$ 151,625.00 |

FAIRFAX COUNTY PARK AUTHORITY - Mt. Vernon RECenter
Facility Condition Assessment and Life Cycle Cost Analysis



| GRADE B / PRIORITY 4 (cont'd) | | | | | | | | | | | |
|-------------------------------|---|-------|----------|----------|-----|-------------------|--------------------------------|--------|---------|-----------------|-----------------|
| ITEM NO. | RECOMMENDATION | GRADE | PRIORITY | CATEGORY | QTY | UNIT ³ | LIFE CYCLE STATUS ¹ | REPAIR | REPLACE | FISCAL YEAR | BASE COST |
| M.30 | Replace (2) Brine Pumps | B | 4 | 3 | 1 | LS | 35/15 | - | ✓ | 15 | \$ 12,540.00 |
| M.31 | Replace Glycol Grid System | B | 4 | 3 | 1 | LS | 35/50 | - | ✓ | 30 | \$ 1,025,000.00 |
| P.10B | Replace gutters and downspouts | B | 4 | 3 | 1 | LS | 35/30 | - | ✓ | 15 | \$ 8,708.00 |
| P.14 | Camera survey of existing cast iron sanitary piping | B | 4 | 3 | 1 | LS | - | - | - | 15 | \$ 15,000.00 |
| A.5 | Re-plumb geyser features | B | 4 | 3 | 1 | LS | 13/25 | - | ✓ | 27 | \$ 61,067.14 |
| A.6A | Repair abandoned gutter pipe | B | 4 | 1 | 1 | LS | 31/25 | ✓ | - | 15 ² | \$ 33,284.67 |
| I.1 | Replace sound system in Ice Rink | B | 4 | 3 | 1 | LS | ? | - | ✓ | 15 | \$ 27,740.00 |
| I.4 | Replace weather stripping at Ice rink doors | B | 4 | 4 | 1 | LS | ? | - | ✓ | 15 | \$ 1,394.40 |
| I.5A | Repair dasher boards | B | 4 | 1 | 1 | LS | 18/30 | ✓ | - | 15 | \$ 26,480.00 |
| I.6 | Replace both Olympia machines | B | 4 | 3 | 1 | LS | 12/20; 13/20 | - | ✓ | 23/ 22 | \$ 230,000.00 |

1. Life Cycle Status (years): Age/Expected Useful Life
2. Work currently underway, already scheduled, or recommended to occur during Natatorium shutdown in FY 15
3. LS = Lump Sum; EA = Each

Grading Standard A/ Priority 5 – Appearance:

Conditions in this category include finishes that have deteriorated and are required to maintain the required aesthetic standards.

The estimate of remedial costs is: **\$18,320.13**

| GRADE A / PRIORITY 5 | | | | | | | | | | | |
|----------------------|--|-------|----------|----------|-----|-------------------|--------------------------------|--------|---------|-------------|--------------|
| ITEM NO. | RECOMMENDATION | GRADE | PRIORITY | CATEGORY | QTY | UNIT ² | LIFE CYCLE STATUS ¹ | REPAIR | REPLACE | FISCAL YEAR | BASE COST |
| A.21B | Provide deep cleaning of spa pool coping finishes | A | 5 | 1 | 1 | LS | 13/25 | - | ✓ | 27 | \$ 4,580.03 |
| A.21C | Provide deep cleaning of spa deck and wall depth markers | A | 5 | 1 | 1 | LS | 13/25 | - | ✓ | 27 | \$ 13,740.10 |

1. Life Cycle Status (years): Age/Expected Useful Life
2. LS = Lump Sum

FAIRFAX COUNTY PARK AUTHORITY - Mt. Vernon RECenter

Facility Condition Assessment and Life Cycle Cost Analysis



Grading Standard A/ Priority 6 - Does Not Comply With Current Codes – “Grandfathered”:

Conditions in this category include items that do not conform to existing codes, but are “grandfathered” in their condition. However, should substantial work be undertaken in contiguous areas, certain existing conditions may require correction to comply with current code standards.

The estimate of remedial costs is: **\$12,872.72**

| GRADE A / PRIORITY 6 | | | | | | | | | | | |
|----------------------|--|-------|----------|----------|-----|-------------------|--------------------------------|--------|---------|-----------------|-------------|
| ITEM NO. | RECOMMENDATION | GRADE | PRIORITY | CATEGORY | QTY | UNIT ³ | LIFE CYCLE STATUS ¹ | REPAIR | REPLACE | FISCAL YEAR | BASE COST |
| E.2E | Clean and re-paint outside metal louvers | A | 6 | 1 | 1 | LS | 18/30 | ✓ | - | 15 | \$ 369.02 |
| E.2F | Replace outside metal louvers | A | 6 | 3 | 1 | LS | 18/30 | - | ✓ | 27 | \$ 7,508.70 |
| A.4A | Revise stair riser height so that all are even | A | 6 | 3 | 1 | LS | 13/25 | - | ✓ | 15 ² | \$ 4,995.00 |

1. Life Cycle Status (years): Age/Expected Useful Life
2. Work currently underway, already scheduled, or recommended to occur during Natatorium shutdown in FY 15
3. LS = Lump Sum

FAIRFAX COUNTY PARK AUTHORITY - Mt. Vernon RECenter

Facility Condition Assessment and Life Cycle Cost Analysis



B.4 Assessment Summarized by Category

Category 1 - Scheduled Maintenance:

Maintenance that is planned and performed on a routine basis to maintain and preserve the condition

The estimate of remedial costs is: **\$139,771.53**

| CATEGORY 1 | | | | | | | | | | | |
|------------|---|-------|----------|----------|-----|-------------------|--------------------------------|--------|---------|-----------------|-------------|
| ITEM NO. | RECOMMENDATION | GRADE | PRIORITY | CATEGORY | QTY | UNIT ³ | LIFE CYCLE STATUS ¹ | REPAIR | REPLACE | FISCAL YEAR | BASE COST |
| E.1G | Clean & re-paint 20% of metal roof | C | 3 | 1 | 1 | LS | 18/30 | ✓ | - | 15 | \$25,089.63 |
| E.2A | Clean and re-paint metal wall panel near pool service door | C | 3 | 1 | 1 | LS | 18/30 | ✓ | - | 15 | \$3,604.11 |
| E.2E | Clean and re-paint outside metal louvers | A | 6 | 1 | 1 | LS | 18/30 | ✓ | - | 15 | \$369.02 |
| E.2G | Repair and paint damaged exterior doors/frames to include replacement of perimeter sealants. | C | 3 | 1 | 1 | LS | 35/30 | ✓ | - | 15 | \$2,051.76 |
| M.18 | Replace Exhaust Fan EF-3 | D | 2 | 1 | 1 | EA | 18/20 | - | ✓ | 17 | \$9,319.82 |
| M.19 | Replace Exhaust Fan EF-4 | D | 2 | 1 | 1 | EA | 18/20 | - | ✓ | 17 | \$9,586.96 |
| M.20 | Replace exhaust Fan EF-5 | D | 2 | 1 | 1 | EA | 18/20 | - | ✓ | 17 | \$9,586.96 |
| A.6A | Repair abandoned gutter pipe | B | 4 | 1 | 1 | LS | 31/25 | ✓ | - | 15 ² | \$33,284.67 |
| A.21B | Provide deep cleaning of spa pool coping finishes | A | 5 | 1 | 1 | LS | 13/25 | - | ✓ | 27 | \$4,580.03 |
| A.21C | Provide deep cleaning of spa deck and wall depth markers | A | 5 | 1 | 1 | LS | 13/25 | - | ✓ | 27 | \$13,740.10 |
| A.25 | Reduce flow to pool | C | 3 | 1 | 1 | LS | 13/25 | ✓ | - | 15 | \$ 600.00 |
| A.26 A | Install pressure gauges in the suction and discharge PVC flange. Adjust pump to design flow rate. | C | 3 | 1 | 1 | LS | 13/25 | ✓ | - | 15 | \$878.47 |
| A.26B | Adjust pump to design flow rate | C | 3 | 1 | 1 | LS | 13/14 | ✓ | - | 15 | \$ 600.00 |
| I.5A | Repair dasher boards | B | 4 | 1 | 1 | LS | 18/30 | ✓ | - | 15 | \$26,480.00 |

1. Life Cycle Status (years): Age/Expected Useful Life

2. Work currently underway, already scheduled, or recommended to occur during Natatorium shutdown in FY 15

3. LS = Lump Sum; EA = Each

FAIRFAX COUNTY PARK AUTHORITY - Mt. Vernon RECenter

Facility Condition Assessment and Life Cycle Cost Analysis



Category 2 - Deferred Maintenance:

Maintenance that was not performed when it was scheduled, or is past its useful life, resulting in immediate repair or replacement

The estimate of remedial costs is: \$231,351.91

| CATEGORY 2 | | | | | | | | | | | |
|------------|--|-------|----------|----------|-----|-------------------|--------------------------------|--------|---------|-------------|--------------|
| ITEM NO. | RECOMMENDATION | GRADE | PRIORITY | CATEGORY | QTY | UNIT ² | LIFE CYCLE STATUS ¹ | REPAIR | REPLACE | FISCAL YEAR | BASE COST |
| S.4 | Replace parking lot asphalt and concrete curbs and restripe parking lot. | C | 3 | 2 | 1 | LS | 35/15 | - | ✓ | 15 | \$219,918.63 |
| E.1A | Repair EPDM membrane roof system where shrinking has occurred | F | 1 | 2 | 1 | LS | 17/20 | ✓ | - | 15 | \$7,433.28 |
| M.29A | Descale Cooling Towers | B | 4 | 2 | 1 | LS | - | ✓ | - | 15 | \$ 4,000.00 |

1. Life Cycle Status (years): Age/Expected Useful Life
2. LS = Lump Sum

Category 3 - Capital Renewal:

Planned replacement of a building system that has reached the end of its useful life

The estimate of remedial costs is: \$7,495,225.15

| CATEGORY 3 | | | | | | | | | | | |
|------------|--|-------|----------|----------|-----|-------------------|--------------------------------|--------|---------|-------------|---------------|
| ITEM NO. | RECOMMENDATION | GRADE | PRIORITY | CATEGORY | QTY | UNIT ⁴ | LIFE CYCLE STATUS ¹ | REPAIR | REPLACE | FISCAL YEAR | BASE COST |
| S.1 | Redesign public park lot. Improve way-finding and site drainage. | D | 2 | 3 | - | - | 35/15 | - | ✓ | 15 | TBD |
| S.3 | Provide additional handrail at side of exterior steps | F | 1 | 3 | 1 | LS | - | - | - | 15 | \$2,839.36 |
| E.1B | Replace EPDM membrane roof system w/ new single ply membrane roof system. | C | 3 | 3 | 1 | LS | 17/20 | - | ✓ | 18 | \$ 137,893.29 |
| E.1C | Replace roof drains; and replace existing flashing (to include roofing membrane, terminations, and sealants) at existing penetrations. | C | 3 | 3 | 1 | LS | 17/20 | - | ✓ | 18 | \$ 5,825.86 |
| E.1D | Replace roof walkway pads | C | 3 | 3 | 1 | LS | 17/20 | - | ✓ | 18 | \$ 4,438.65 |
| E.1H | Replace metal roof | C | 3 | 3 | 1 | LS | 18/30 | - | ✓ | 27 | \$ 172,817.49 |
| E.2B | Replace metal wall panels | C | 3 | 3 | 1 | LS | 18/30 | ✓ | - | 15 | \$ 9,027.45 |
| E.2D | Replace painted stucco on exterior of building | C | 3 | 3 | 1 | LS | 35/30 | - | ✓ | 15 | \$ 46,840.61 |
| E.2F | Replace outside metal louvers | A | 6 | 3 | 1 | LS | 18/30 | - | ✓ | 27 | \$ 7,508.70 |

FAIRFAX COUNTY PARK AUTHORITY - Mt. Vernon RECenter
Facility Condition Assessment and Life Cycle Cost Analysis



| CATEGORY 3 (cont'd) | | | | | | | | | | | |
|---------------------|---|-------|----------|----------|-----|-------------------|--------------------------------|--------|---------|-------------|-----------------|
| ITEM NO. | RECOMMENDATION | GRADE | PRIORITY | CATEGORY | QTY | UNIT ⁴ | LIFE CYCLE STATUS ¹ | REPAIR | REPLACE | FISCAL YEAR | BASE COST |
| E.2H | Replace exterior doors | C | 3 | 3 | 1 | LS | 35/30 | - | ✓ | 15 | \$ 26,132.63 |
| E.2I | Replace exterior storefront windows | C | 3 | 3 | 1 | LS | 35/30 | - | ✓ | 15 | \$ 52,432.50 |
| E.2J | Replace existing glazing system at main entrance with new low E curtain wall system | D | 2 | 3 | 1 | LS | 31/30 | - | ✓ | 15 | \$ 151,652.84 |
| E.2K | Replace metal wall panel system | B | 4 | 3 | 1 | LS | 18/30 | - | ✓ | 27 | \$ 221,000.00 |
| F.1 | Provide translucent panel partitions | B | 4 | 3 | 1 | LS | - | - | - | 15 | \$ 34,090.33 |
| M.1 | Replace Boiler B-1 | F | 1 | 3 | 1 | EA | 35/30 | - | ✓ | 15 | \$ 90,924.76 |
| M.2 | Replace RTU-1 | D | 2 | 3 | 1 | EA | 18/20 | - | ✓ | 17 | \$ 30,161.24 |
| M.3 | Replace RTU-2 | D | 2 | 3 | 1 | EA | 18/20 | - | ✓ | 17 | \$ 104,846.20 |
| M.4 | Replace RTU-3 | D | 2 | 3 | 1 | EA | 18/20 | - | ✓ | 17 | \$ 8,114.35 |
| M.5 | Replace RTU-4 | D | 2 | 3 | 1 | EA | 18/20 | - | ✓ | 17 | \$ 40,933.11 |
| M.6 | Replace RTU-5 | D | 2 | 3 | 1 | EA | 18/20 | - | ✓ | 17 | \$ 48,114.35 |
| M.7 | Replace RTU-6 | D | 2 | 3 | 1 | EA | 18/20 | - | ✓ | 17 | \$ 33,751.86 |
| M.8 | Replace Unit MAU-1 | D | 2 | 3 | 1 | EA | 18/20 | - | ✓ | 17 | \$ 354,035.44 |
| M.9 | Replace Unit PRU-1 | D | 2 | 3 | 1 | EA | 18/20 | - | ✓ | 17 | \$ 366,961.67 |
| M.10 | Replace Unit PRU-2 | D | 2 | 3 | 1 | EA | 18/20 | - | ✓ | 17 | \$ 366,961.67 |
| M.11 | Replace Boiler B-2 | F | 1 | 3 | 1 | EA | 31/30 | - | ✓ | 15 | \$ 98,443.81 |
| M.14 | Replace Unit DH-1 | C | 3 | 3 | 1 | EA | 18/20 | - | ✓ | 17 | \$ 256,298.68 |
| M.15 | Replace Unit DH-2 | C | 3 | 3 | 1 | EA | 18/20 | - | ✓ | 17 | \$ 256,298.68 |
| M.16 | Replace Fan MF-1 | D | 2 | 3 | 1 | EA | 18/20 | - | ✓ | 17 | \$ 20,099.16 |
| M.17B | Replace Exhaust Fan EF-2 | D | 2 | 3 | 1 | EA | 18/20 | - | ✓ | 17 | \$ 8,617.50 |
| M.21B | Replace Supply Fan SF-1 | D | 2 | 3 | 1 | EA | 18/20 | - | ✓ | 17 | \$ 7,879.26 |
| M.22 | Replace Fan Coil Unit FCU-1 | D | 2 | 3 | 1 | EA | 18/20 | - | ✓ | 17 | \$ 8,186.62 |
| M.23 | Replace Fan Coil Unit FCU-2 | D | 2 | 3 | 1 | EA | 18/20 | - | ✓ | 17 | \$ 8,186.62 |
| M.24 | Replace VVT air terminals 1 - 5 | D | 2 | 3 | 1 | LS | 18/20 | - | ✓ | 17 | \$ 6,447.00 |
| M.26 | Replace Unit ACCOU-1 | D | 2 | 3 | 1 | EA | 18/20 | - | ✓ | 17 | \$ 58,742.60 |
| M.27 | Replace Unit ACCOU-2 | D | 2 | 3 | 1 | EA | 18/20 | - | ✓ | 17 | \$ 58,742.60 |
| M.28 | Replace (4) Compressors & (2) Chillers | B | 4 | 3 | 1 | LS | 15/20 | - | ✓ | 20 | \$ 529,000.00 |
| M.29B | Replace (2) Cooling Towers | B | 4 | 3 | 1 | LS | 10/15 | - | ✓ | 20 | \$ 151,625.00 |
| M.30 | Replace (2) Brine Pumps | B | 4 | 3 | 1 | LS | 35/15 | - | ✓ | 15 | \$ 12,540.00 |
| M.31 | Replace Glycol Grid System | B | 4 | 3 | 1 | LS | 35/50 | - | ✓ | 30 | \$ 1,025,000.00 |
| EL.2 | Replace Breakers 100amp, 60 amp, (2) 300 amps, & 400 amp | C | 3 | 3 | 1 | LS | Varies | - | ✓ | 15 | \$ 7,937.00 |
| EL.3 | Replace the Motor Control Center | C | 3 | 3 | 1 | EA | 35/30 | - | ✓ | 15 | \$ 14,862.30 |
| EL.4 | Replace panels MLO and S 100 AMP for ice rink | C | 3 | 3 | 1 | LS | 35/30 | - | ✓ | 15 | \$ 3,564.60 |

FAIRFAX COUNTY PARK AUTHORITY - Mt. Vernon RECenter
Facility Condition Assessment and Life Cycle Cost Analysis



| CATEGORY 3 (cont'd) | | | | | | | | | | | |
|---------------------|--|-------|----------|----------|-----|-------------------|--------------------------------|--------|---------|-----------------|---------------|
| ITEM NO. | RECOMMENDATION | GRADE | PRIORITY | CATEGORY | QTY | UNIT ⁴ | LIFE CYCLE STATUS ¹ | REPAIR | REPLACE | FISCAL YEAR | BASE COST |
| EL.5 | Replace panels T,MLO 100 AMP | C | 3 | 3 | 1 | LS | 26/30 | - | ✓ | 19 | \$ 3,890.00 |
| EL.6 | Replace 45 KVA transformer | C | 3 | 3 | 1 | EA | 35/30 | - | ✓ | 15 | \$ 8,405.36 |
| EL.7 | Replace 7.5 KVA Transformer | C | 3 | 3 | 1 | EA | 35/30 | - | ✓ | 15 | \$ 5,042.15 |
| EL.8 | Replace panels X,MLO 60 AMP | C | 3 | 3 | 1 | LS | 35/30 | - | ✓ | 15 | \$ 3,110.69 |
| EL.9 | Replace panels Z,MLO 200 AMP | C | 3 | 3 | 1 | LS | 20/30 | - | ✓ | 25 | \$ 9,136.49 |
| EL.10 | Replace panels SA,MLO 125 AMP | C | 3 | 3 | 1 | LS | 20/30 | - | ✓ | 25 | \$ 8,110.91 |
| EL.15 | Complete light fixture replacement (except for LED lighting in the Pool) | C | 3 | 3 | 1 | LS | Varies | - | ✓ | 15 | \$ 504,390.47 |
| P.1 | Replace domestic backflow preventer | C | 3 | 3 | 1 | EA | 26/30 | - | ✓ | 19 | \$ 24,188.42 |
| P.2 | Replace domestic water piping | C | 3 | 3 | 1 | LS | 26/30 | - | ✓ | 19 | \$ 107,840.24 |
| P.6 | Revise sanitary piping and provide proper air gap | C | 3 | 3 | 1 | LS | 26/30 | - | ✓ | 19 | \$ 296.00 |
| P.8 | Replace building water heater, associated pumps and flue | D | 2 | 3 | 1 | LS | 35/30 | - | ✓ | 15 | \$ 106,058.86 |
| P.9 | Replace Ice Rink water heater system | F | 1 | 3 | 1 | LS | 35/30 | - | ✓ | 15 | \$ 71,061.23 |
| P.10A | Repair damaged gutter | C | 3 | 3 | 1 | LS | 35/30 | ✓ | - | 15 | \$ 532.45 |
| P.10B | Replace gutters and downspouts | B | 4 | 3 | 1 | LS | 35/30 | - | ✓ | 15 | \$ 8,708.00 |
| P.11 | Provide downspout boot to underground stub | C | 3 | 3 | 1 | LS | 26/30 | - | - | 15 | \$ 971.50 |
| P.12 | Clean & paint gas pipe | C | 3 | 3 | 1 | LS | 29/30 | ✓ | - | 16 | \$ 1,597.35 |
| P.13 | Replace plumbing fixtures | C | 3 | 3 | 1 | LS | 26/30 | - | ✓ | 19 | \$ 261,325.00 |
| P.14 | Camera survey of existing cast iron sanitary piping | B | 4 | 3 | 1 | LS | - | - | - | 15 | \$ 15,000.00 |
| P.15 | Replace existing cast iron sanitary piping | C | 3 | 3 | 1 | LS | 35/30 | - | ✓ | 15 | \$ 191,980.80 |
| A.2B | Drain and survey pool. Add depth markers as needed. | D | 2 | 3 | - | - | Varies | - | - | 15 ³ | - |
| A.3A | Drain and survey pool to verify floor slopes | D | 2 | 3 | - | - | ? | - | - | 15 ³ | - |
| A.3B | Drain and survey pool to verify that water depth is consistent with code | D | 2 | 3 | - | - | ? | - | - | 15 ³ | - |
| A.4A | Revise stair riser height so that all are even | A | 6 | 3 | 1 | LS | 13/25 | - | ✓ | 15 ² | \$ 4,995.00 |
| A.4B | Drain pool, survey and verify dimensions. ³ Add ADA compliant hydraulic lift. | F | 1 | 3 | 1 | LS | Varies | - | - | 15 ² | \$ 5,500.00 |
| A.4D | Provide secondary ADA compliant hydraulic lift. | F | 1 | 3 | 1 | LS | - | - | - | 15 ² | \$ 5,500.00 |
| A.5 | Re-plumb geyser features | B | 4 | 3 | 1 | LS | 13/25 | - | ✓ | 27 | \$ 61,067.14 |

FAIRFAX COUNTY PARK AUTHORITY - Mt. Vernon RECenter
Facility Condition Assessment and Life Cycle Cost Analysis



| CATEGORY 3 (cont'd) | | | | | | | | | | | |
|---------------------|--|-------|----------|----------|-----|-------------------|--------------------------------|--------|---------|-----------------|---------------|
| ITEM NO. | RECOMMENDATION | GRADE | PRIORITY | CATEGORY | QTY | UNIT ⁴ | LIFE CYCLE STATUS ¹ | REPAIR | REPLACE | FISCAL YEAR | BASE COST |
| A.6B | Replace sumps and main drain covers. Replace below grade piping complete to filter. | D | 2 | 3 | 1 | LS | Varies; 31/25 (sumps) | - | ✓ | 15 ² | \$ 150,000.00 |
| A.6C | Replace inlet fitting and below grade cast iron pipe | C | 3 | 3 | 1 | LS | 31/25 | - | ✓ | 15 | \$ 210,000.00 |
| A.7 | Replace pump for pool recirculation to provide 6 hr turnover per code | F | 1 | 3 | 1 | LS | 31/25 | - | ✓ | 15 | \$ 30,956.55 |
| A.8A | Replace filter pump to provide 6 hr turnover per code | F | 1 | 3 | 1 | LS | ? | - | ✓ | 15 | \$ 21,545.76 |
| A.8B | Relocate suction & discharge pump | F | 1 | 3 | 1 | LS | ? | - | ✓ | 15 | \$ 13,620.88 |
| A.9 | Replace pool filters | D | 2 | 3 | 1 | LS | 31/25 | - | ✓ | 15 | \$ 75,000 |
| A.10 | Replace pool water pipe with CPVC | C | 3 | 3 | - | - | 31/30 | - | ✓ | 15 | Refer to M.11 |
| A.11A | Provide separate chemical storage room and new chemical treatment system | D | 2 | 3 | 1 | LS | 31/? | - | ✓ | 15 | \$ 215,561.00 |
| A.11B | Provide a secondary, electrical interlock direct to the filtration pump. Replace the chemical controller | C | 3 | 3 | 1 | LS | ? | - | ✓ | 15 | \$ 9,196.86 |
| A.12 | Relocate chemical storage/feed system/eyewash to free up equipment and maintenance work space. Replace pipe hangers ² with corrosion resistant hangers. | C | 3 | 3 | 1 | LS | 31/? | - | ✓ | 15 ² | \$ 7,620.25 |
| A.13 | Modify Pool Spectator Seating area for ADA compliance | F | 1 | 3 | - | - | 31/25 | - | ✓ | 15 | TBD |
| A.22B | Replace spa pool hydraulically powered pool lift. | C | 3 | 3 | 1 | LS | 13/25 | - | ✓ | 27 | \$ 5,500.00 |
| A.24C | Replace spa pool inlets. | C | 3 | 3 | 1 | LS | 13/25 | - | ✓ | 27 | \$ 12,000.00 |
| A.27 | Replace spa pump filters | C | 3 | 3 | 1 | LS | 13/20 | - | ✓ | 22 | \$ 9,000.00 |
| A.28 | Replace spa pool heater | C | 3 | 3 | 1 | LS | 13/25 | - | ✓ | 27 | \$ 9,000.00 |
| A.29 | Find alternate storage location for CO2 and provide secondary sanitization system. | C | 3 | 3 | 1 | LS | 31/? | - | ✓ | 15 | \$ 60,000.00 |
| I.1 | Replace sound system in Ice Rink | B | 4 | 3 | 1 | LS | ? | - | ✓ | 15 | \$ 27,740.00 |
| I.5B | Replace dasher boards | C | 3 | 3 | 1 | LS | 18/30 | - | ✓ | 27 | \$150,000.00 |
| I.6 | Replace both Olympia machines | B | 4 | 3 | 1 | LS | 12/20; 13/20 | - | ✓ | 23/22 | \$230,000.00 |

1. Life Cycle Status (years): Age/Expected Useful Life

2. Work currently underway, already scheduled, or recommended to occur during Natatorium shutdown in FY 15

3. Work completed post building survey

4. LS = Lump Sum; EA = Each

FAIRFAX COUNTY PARK AUTHORITY - Mt. Vernon RECenter

Facility Condition Assessment and Life Cycle Cost Analysis



Category 4 - Energy & Sustainability:

When the repair or replacement of equipment or system is recommended to improve energy and sustainability performance

The estimate of remedial costs is: **\$259,445.68**

| CATEGORY 4 | | | | | | | | | | | |
|------------|---|-------|----------|----------|-----|-------------------|--------------------------------|--------|---------|-----------------|--------------|
| ITEM NO. | RECOMMENDATION | GRADE | PRIORITY | CATEGORY | QTY | UNIT ³ | LIFE CYCLE STATUS ¹ | REPAIR | REPLACE | FISCAL YEAR | BASE COST |
| F.3A | In Ice Rink area, replace low-E ceiling with a foil & bubble finished low-E ceiling | B | 4 | 4 | 1 | LS | 19/10 | - | ✓ | 15 | \$ 12,655.56 |
| F.3B | In the Ice Rink area, provide acoustical wall panels | B | 4 | 4 | 1 | LS | - | - | - | 15 | \$ 42,644.55 |
| F.4 | Provide lapendary acoustic panels for 40% of Pool & Spa ceiling | B | 4 | 4 | 1 | LS | - | - | - | 15 | \$ 53,601.28 |
| M.12 | Replace Unit ERU-1 | B | 4 | 4 | 1 | EA | 6/20 | - | ✓ | 17 | \$ 56,680.74 |
| M.13 | Replace Unit ERU-2 | B | 4 | 4 | 1 | EA | 6/20 | - | ✓ | 17 | \$ 56,680.74 |
| M.25 | Provide insulation to ductwork | F | 1 | 4 | 1 | LS | ? | - | - | 15 | \$ 6,900.00 |
| P.3 | Replace and add pipe insulation | C | 3 | 4 | 1 | LS | 35/30 | - | ✓ | 15 ² | \$ 28,888.41 |
| I.4 | Replace weather stripping at Ice rink doors | B | 4 | 4 | 1 | LS | ? | - | ✓ | 15 | \$ 1,394.40 |

1. Life Cycle Status (years): Age/Expected Useful Life
2. Work currently underway, already scheduled, or recommended to occur during Natatorium shutdown in FY 15
3. LS = Lump Sum; EA = Each

Category 5 - Security & Safety:

When a condition, equipment or system requires replacement due to a security and/or safety risk or requirement

The estimate of remedial costs is: **\$645,061.23**

| CATEGORY 5 | | | | | | | | | | | |
|------------|--|-------|----------|----------|-----|-------------------|--------------------------------|--------|---------|-----------------|--------------|
| ITEM NO. | RECOMMENDATION | GRADE | PRIORITY | CATEGORY | QTY | UNIT ³ | LIFE CYCLE STATUS ¹ | REPAIR | REPLACE | FISCAL YEAR | BASE COST |
| S.2 | Replace damaged storm drain cover | D | 2 | 5 | 1 | EA | 35/15 | - | ✓ | 15 | \$ 996.52 |
| E.1E | Repair structural supports for the mechanical units | F | 1 | 5 | 1 | LS | 35/30 | ✓ | - | 15 | \$ 10,020.22 |
| E.1F | Replace structural supports for the mechanical units | F | 1 | 5 | 1 | LS | 35/30 | - | ✓ | 15 | \$ 16,167.38 |
| E.2C | Install (2) pipe bollards near pool service door | B | 4 | 5 | 1 | LS | - | - | - | 15 | \$ 2,689.92 |
| F.2 | Replace damaged base and floor tiles in locker room | F | 1 | 5 | 1 | LS | 31/10 | - | ✓ | 15 ² | \$ 480.00 |
| M.17A | Provide missing belt guard | D | 2 | 5 | 1 | EA | - | - | - | 15 | \$ 560 |

FAIRFAX COUNTY PARK AUTHORITY - Mt. Vernon RECenter
Facility Condition Assessment and Life Cycle Cost Analysis



| CATEGORY 5 (cont'd) | | | | | | | | | | | |
|---------------------|---|-------|----------|---------|-----|-------------------|--------------------------------|--------|---------|-----------------|---------------|
| ITEM NO. | RECOMMENDATION | GRADE | PRIORITY | CATEGOR | QTY | UNIT ³ | LIFE CYCLE STATUS ¹ | REPAIR | REPLACE | FISCAL YEAR | BASE COST |
| M.21A | Provide missing belt guard | D | 2 | 5 | 1 | EA | - | - | - | 15 | \$670 |
| EL.1 | Replace existing 1600 switch board | D | 2 | 5 | 1 | EA | 35/30 | - | ✓ | 15 | \$ 105,631.55 |
| EL.11 | Provide knock out | D | 2 | 5 | 1 | EA | - | - | - | 15 | \$ 25.00 |
| EL.12 | Replace starters for pool pumps | F | 1 | 5 | 1 | LS | 35/30 | - | ✓ | 15 ² | \$ 5,521.65 |
| EL.13 | Remove canister pad | C | 3 | 5 | 1 | LS | 31/30 | - | ✓ | 15 | Refer to A.12 |
| EL.14 | Replace conduit in pool filter room | D | 2 | 5 | 1 | LS | 31/30 | - | ✓ | 15 | \$ 45,745.16 |
| P.4 | Add mixing valves at lavatories/showers | F | 1 | 5 | 1 | LS | 35/30 | - | - | 15 | \$ 18,005.38 |
| P.5 | Replace and add sink trap insulation | F | 1 | 5 | 1 | LS | 35/30 | - | ✓ | 15 | \$ 712.35 |
| P.7 | Replace broken cover at hose bib | F | 1 | 5 | 1 | EA | 26/30 | - | ✓ | 15 | \$ 352.96 |
| FP.1 | Add backflow preventer (including new room) for sprinklers | C | 3 | 5 | 1 | LS | 26/30 | - | - | 15 | \$ 77,785.00 |
| FP.2 | Add backflow preventer (including new room) for sprinklers | C | 3 | 5 | 1 | LS | 26/30 | - | - | 15 | \$ 77,785.00 |
| A.2A | Replace pool finishes with quartz type finish and replace joint filler with chemical resistant filler | C | 3 | 5 | 1 | LS | 3/7 | - | ✓ | 15 ² | \$ 134,020.08 |
| A.4C | Replace ramp rails to alleviate safety concerns at failed welds | F | 1 | 5 | 1 | LS | 13/25 | - | ✓ | 15 ² | \$ 11,854.00 |
| A.21A | Replace submerged aggregate finish. | F | 1 | 5 | 1 | LS | 3/7 | - | ✓ | 15 ² | \$ 4,293.00 |
| I.2 | Replace existing bleachers with a new ADA compliant bleacher system. | F | 1 | 5 | 1 | LS | 35/25 | - | ✓ | 15 | \$ 56,333.76 |
| I.3 | Replace rubber tile around ice rink | F | 1 | 5 | 1 | LS | 10+/10 | - | ✓ | 15 | \$ 75,412.30 |

1. Life Cycle Status (years): Age/Expected Useful Life

2. Work currently underway, already scheduled, or recommended to occur during Natatorium shutdown in FY 15

3. LS = Lump Sum; EA = Each

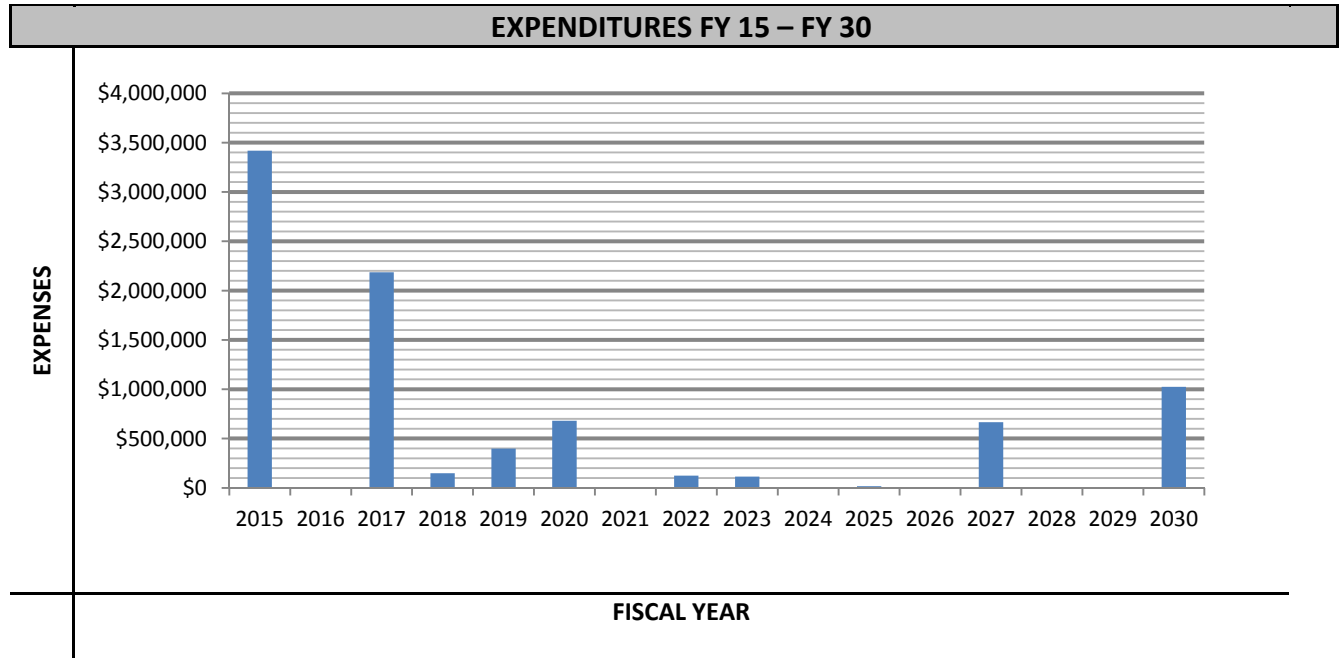
FAIRFAX COUNTY PARK AUTHORITY - Mt. Vernon RECenter

Facility Condition Assessment and Life Cycle Cost Analysis



B.5 15 Year Expenditure Plan

The estimate of remedial costs over the next 15 years is: **\$8,770,855.50**



The estimate of remedial costs for fiscal year 2015 is: **\$3,419,241.00**

| EXPENDITURES – FY 15 | | | | | | | | | | | |
|----------------------|--|-------|----------|----------|-----|-------------------|--------------------------------|--------|---------|-------------|---------------|
| ITEM NO. | RECOMMENDATION | GRADE | PRIORITY | CATEGORY | QTY | UNIT ⁴ | LIFE CYCLE STATUS ¹ | REPAIR | REPLACE | FISCAL YEAR | BASE COST |
| S.1 | Redesign public park lot. Improve way-finding and site drainage. | D | 2 | 3 | - | - | 35/15 | - | ✓ | 15 | TBD |
| S.2 | Replace damaged storm drain cover | D | 2 | 5 | 1 | EA | 35/15 | - | ✓ | 15 | \$ 996.52 |
| S.3 | Provide additional handrail at side of exterior steps | F | 1 | 3 | 1 | LS | - | - | - | 15 | \$ 2,839.36 |
| S.4 | Replace parking lot asphalt and concrete curbs and restripe parking lot. | C | 3 | 2 | 1 | LS | 35/15 | - | ✓ | 15 | \$ 219,918.63 |
| E.1A | Repair EPDM membrane roof system where shrinking has occurred | F | 1 | 2 | 1 | LS | 17/20 | ✓ | - | 15 | \$ 7,433.28 |
| E.1E | Repair structural supports for the mechanical units | F | 1 | 5 | 1 | LS | 35/30 | ✓ | - | 15 | \$ 10,020.22 |
| E.1F | Replace structural supports for the mechanical units | F | 1 | 5 | 1 | LS | 35/30 | - | ✓ | 15 | \$ 16,167.38 |
| E.1G | Clean & re-paint 20% of metal roof | C | 3 | 1 | 1 | LS | 18/30 | ✓ | - | 15 | \$ 25,089.63 |
| E.2A | Clean and re-paint metal wall panel near pool service door | C | 3 | 1 | 1 | LS | 18/30 | ✓ | - | 15 | \$ 3,604.11 |

FAIRFAX COUNTY PARK AUTHORITY - Mt. Vernon RECenter
Facility Condition Assessment and Life Cycle Cost Analysis



| EXPENDITURES – FY 15 (cont'd) | | | | | | | | | | | |
|-------------------------------|--|-------|----------|----------|-----|-------------------|--------------------------------|--------|---------|-----------------|---------------|
| ITEM NO. | RECOMMENDATION | GRADE | PRIORITY | CATEGORY | QTY | UNIT ⁴ | LIFE CYCLE STATUS ¹ | REPAIR | REPLACE | FISCAL YEAR | BASE COST |
| E.2B | Replace damaged metal wall panels at Pool area service entrance | C | 3 | 3 | 1 | LS | 18/30 | ✓ | - | 15 | \$ 9,027.45 |
| E.2C | Install (2) pipe bollards near pool service door | B | 4 | 5 | 1 | LS | - | - | - | 15 | \$ 2,689.92 |
| E.2D | Replace painted stucco on exterior of building | C | 3 | 3 | 1 | LS | 35/30 | - | ✓ | 15 | \$ 46,840.61 |
| E.2E | Clean and re-paint outside metal louvers | A | 6 | 1 | 1 | LS | 18/30 | ✓ | - | 15 | \$ 369.02 |
| E.2G | Repair and paint damaged exterior doors/frames to include replacement of perimeter sealants. | C | 3 | 1 | 1 | LS | 35/30 | ✓ | - | 15 | \$ 2,051.76 |
| E.2H | Replace exterior doors | C | 3 | 3 | 1 | LS | 35/30 | - | ✓ | 15 | \$ 26,132.63 |
| E.2I | Replace exterior storefront windows | C | 3 | 3 | 1 | LS | 35/30 | - | ✓ | 15 | \$ 52,432.50 |
| E.2J | Replace existing glazing system at main entrance with new low E curtain wall system | D | 2 | 3 | 1 | LS | 31/30 | - | ✓ | 15 | \$ 151,652.84 |
| F.1 | Provide translucent panel partitions | B | 4 | 3 | 1 | LS | - | - | - | 15 | \$ 34,090.33 |
| F.2 | Replace damaged base and floor tiles in locker room | F | 1 | 5 | 1 | LS | 31/10 | - | ✓ | 15 ² | \$ 480.00 |
| F.3A | In Ice Rink area, replace low-E ceiling with a foil & bubble finished low-E ceiling | B | 4 | 4 | 1 | LS | 19/10 | - | ✓ | 15 | \$ 12,655.56 |
| F.3B | In the Ice Rink area, provide acoustical wall panels | B | 4 | 4 | 1 | LS | - | - | - | 15 | \$ 42,644.55 |
| F.4 | Provide lapendary acoustic panels for 40% of Pool & Spa ceiling | B | 4 | 4 | 1 | LS | - | - | - | 15 | \$ 53,601.28 |
| M.1 | Replace Boiler B-1 | F | 1 | 3 | 1 | EA | 35/30 | - | ✓ | 15 | \$ 90,924.76 |
| M.11 | Replace Boiler B-2 | F | 1 | 3 | 1 | EA | 31/30 | - | ✓ | 15 | \$ 98,443.81 |
| M.17A | Provide missing belt guard | D | 2 | 5 | 1 | EA | - | - | - | 15 | \$ 560.00 |
| M.21A | Provide missing belt guard | D | 2 | 5 | 1 | EA | - | - | - | 15 | \$ 670.00 |
| M.25 | Provide insulation to ductwork | F | 1 | 4 | 1 | LS | ? | - | - | 15 | \$ 6,900.00 |
| M.29A | Descale Cooling Towers | B | 4 | 2 | 1 | LS | - | ✓ | - | 15 | \$ 4,000.00 |
| M.30 | Replace (2) Brine Pumps | B | 4 | 3 | 1 | LS | 35/15 | - | ✓ | 15 | \$ 12,540.00 |
| EL.1 | Replace existing 1600 switch board | D | 2 | 5 | 1 | EA | 35/30 | - | ✓ | 15 | \$ 105,631.55 |
| EL.2 | Replace Breakers 100amp,60 amp, (2) 300 amps, & 400 amp | C | 3 | 3 | 1 | LS | Varies | - | ✓ | 15 | \$ 7,937.00 |
| EL.3 | Replace the Motor Control Center | C | 3 | 3 | 1 | EA | 35/30 | - | ✓ | 15 | \$ 14,862.30 |
| EL.4 | Replace panels ML0 and S 100 AMP for ice rink | C | 3 | 3 | 1 | LS | 35/30 | - | ✓ | 15 | \$ 3,564.60 |
| EL.6 | Replace 45 KVA transformer | C | 3 | 3 | 1 | EA | 35/30 | - | ✓ | 15 | \$ 8,405.36 |
| EL.7 | Replace 7.5 KVA Transformer | C | 3 | 3 | 1 | EA | 35/30 | - | ✓ | 15 | \$ 5,042.15 |

FAIRFAX COUNTY PARK AUTHORITY - Mt. Vernon RECenter
Facility Condition Assessment and Life Cycle Cost Analysis



| EXPENDITURES – FY 15 (cont'd) | | | | | | | | | | | |
|-------------------------------|---|-------|----------|----------|-----|-------------------|--------------------------------|--------|---------|-----------------|---------------|
| ITEM NO. | RECOMMENDATION | GRADE | PRIORITY | CATEGORY | QTY | UNIT ⁴ | LIFE CYCLE STATUS ¹ | REPAIR | REPLACE | FISCAL YEAR | BASE COST |
| EL.8 | Replace panels X,MLO 60 AMP | C | 3 | 3 | 1 | LS | 35/30 | - | ✓ | 15 | \$ 3,110.69 |
| EL.11 | Provide knock out | D | 2 | 5 | 1 | EA | - | - | - | 15 | \$ 25.00 |
| EL.12 | Replace starters for pool pumps | F | 1 | 5 | 1 | LS | 35/30 | - | ✓ | 15 ² | \$ 5,521.65 |
| EL.13 | Remove canister pad | C | 3 | 5 | 1 | LS | 31/30 | - | ✓ | 15 | Refer to A.12 |
| EL.14 | Replace conduit in pool filter room | D | 2 | 5 | 1 | LS | 31/30 | - | ✓ | 15 | \$ 45,745.16 |
| EL.15 | Complete light fixture replacement (except for LED lighting in the Pool) | C | 3 | 3 | 1 | LS | Varies | - | ✓ | 15 | \$ 504,390.47 |
| P.3 | Replace and add pipe insulation | C | 3 | 4 | 1 | LS | 35/30 | - | ✓ | 15 ² | \$ 28,888.41 |
| P.4 | Add mixing valves at lavatories/showers | F | 1 | 5 | 1 | LS | 35/30 | - | - | 15 | \$ 18,005.38 |
| P.5 | Replace and add sink trap insulation | F | 1 | 5 | 1 | LS | 35/30 | - | ✓ | 15 | \$ 712.35 |
| P.7 | Replace broken cover at hose bib | F | 1 | 5 | 1 | EA | 26/30 | - | ✓ | 15 | \$ 352.96 |
| P.8 | Replace building water heater and storage tank | D | 2 | 3 | 1 | LS | 35/30 | - | ✓ | 15 | \$ 106,058.86 |
| P.9 | Replace Ice Rink Water heaters | F | 1 | 3 | 1 | LS | 35/30 | - | ✓ | 15 | \$ 71,061.23 |
| P.10A | Repair damaged gutter | C | 3 | 3 | 1 | LS | 35/30 | ✓ | - | 15 | \$ 532.45 |
| P.10B | Replace gutters and downspouts | B | 4 | 3 | 1 | LS | 35/30 | - | ✓ | 15 | \$ 8,708.00 |
| P.11 | Provide downspout boot to underground stub | C | 3 | 3 | 1 | LS | 26/30 | - | - | 15 | \$ 971.50 |
| P.14 | Camera survey of existing cast iron sanitary piping | B | 4 | 3 | 1 | LS | - | - | - | 15 | \$ 15,000.00 |
| P.15 | Replace existing cast iron sanitary piping | C | 3 | 3 | 1 | LS | 35/30 | - | ✓ | 15 | \$ 191,980.80 |
| FP.1 | Add backflow preventer (including new room) for sprinklers | C | 3 | 5 | 1 | LS | 26/30 | - | - | 15 | \$ 77,785.00 |
| FP.2 | Add backflow preventer (including new room) for sprinklers | C | 3 | 5 | 1 | LS | 26/30 | - | - | 15 | \$ 77,785.00 |
| A.2A | Replace pool finishes with quartz type finish and replace joint filler with chemical resistant filler | C | 3 | 5 | 1 | LS | 3/7 | - | ✓ | 15 ² | \$ 134,020.08 |
| A.2B | Drain and survey pool. Add depth markers as needed. | D | 2 | 3 | - | - | Varies | - | - | 15 ³ | - |
| A.3A | Drain and survey pool to verify floor slopes | D | 2 | 3 | - | - | ? | - | - | 15 ³ | - |
| A.3B | Drain and survey pool to verify that water depth is consistent with code | D | 2 | 3 | - | - | ? | - | - | 15 ³ | - |
| A.4A | Revise stair riser height so that all are even | A | 6 | 3 | 1 | LS | 13/25 | - | ✓ | 15 ² | \$ 4,995.00 |
| A.4B | Drain pool, survey and verify dimensions. ³ Add ADA compliant hydraulic lift. | F | 1 | 3 | 1 | LS | Varies | - | - | 15 ² | \$ 5,500.00 |

FAIRFAX COUNTY PARK AUTHORITY - Mt. Vernon RECenter
Facility Condition Assessment and Life Cycle Cost Analysis



| EXPENDITURES – FY 15 (cont'd) | | | | | | | | | | | |
|-------------------------------|--|-------|----------|----------|-----|-------------------|--------------------------------|--------|---------|-----------------|---------------|
| ITEM NO. | RECOMMENDATION | GRADE | PRIORITY | CATEGORY | QTY | UNIT ⁴ | LIFE CYCLE STATUS ¹ | REPAIR | REPLACE | FISCAL YEAR | BASE COST |
| A.4C | Replace ramp rails to alleviate safety concerns at failed welds | F | 1 | 5 | 1 | LS | 13/25 | - | ✓ | 15 ² | \$ 11,854.00 |
| A.4D | Provide secondary ADA compliant hydraulic lift. | F | 1 | 3 | 1 | LS | - | - | - | 15 ² | \$ 5,500.00 |
| A.6A | Repair abandoned gutter pipe | B | 4 | 1 | 1 | LS | 31/25 | ✓ | - | 15 ² | \$ 33,284.67 |
| A.6B | Replace sumps and main drain covers. Replace below grade piping complete to filter. | D | 2 | 3 | 1 | LS | Varies; 31/25 (sumps) | - | ✓ | 15 ² | \$ 150,000.00 |
| A.6C | Replace inlet fitting and below grade cast iron pipe | C | 3 | 3 | 1 | LS | 31/25 | - | ✓ | 15 | \$ 210,000.00 |
| A.7 | Replace pump for pool recirculation to provide 6 hr turnover per code | F | 1 | 3 | 1 | LS | 31/25 | - | ✓ | 15 | \$ 30,956.55 |
| A.8A | Replace filter pump to provide 6 hr turnover per code | F | 1 | 3 | 1 | LS | ? | - | ✓ | 15 | \$ 21,545.76 |
| A.8B | Relocate suction & discharge pump | F | 1 | 3 | 1 | LS | ? | - | ✓ | 15 | \$ 13,620.88 |
| A.9 | Replace pool filters | D | 2 | 3 | 1 | LS | 31/25 | - | ✓ | 15 | \$ 75,000.00 |
| A.10 | Replace pool water pipe with CPVC | C | 3 | 3 | - | - | 31/30 | - | ✓ | 15 | Refer to M.11 |
| A.11A | Provide separate chemical storage room and new chemical treatment system | D | 2 | 3 | 1 | LS | 31/? | - | ✓ | 15 | \$ 215,561.00 |
| A.11B | Provide a secondary, electrical interlock direct to the filtration pump. Replace the chemical controller | C | 3 | 3 | 1 | LS | ? | - | ✓ | 15 | \$ 9,196.86 |
| A.12 | Relocate chemical storage/feed system/eyewash to free up equipment and maintenance work space. Replace pipe hangers ³ with corrosion resistant hangers. | C | 3 | 3 | 1 | LS | 31/? | - | ✓ | 15 ² | \$ 7,620.25 |
| A.13 | Modify Pool Spectator Seating area for ADA compliance | F | 1 | 3 | - | - | 31/25 | - | ✓ | 15 | TBD |
| A.21A | Replace submerged aggregate finish. | F | 1 | 5 | 1 | LS | 3/7 | - | ✓ | 15 ² | \$ 4,293.00 |
| A.25 | Reduce flow to pool | C | 3 | 1 | 1 | LS | 13/25 | ✓ | - | 15 | \$ 600.00 |
| A.26A | Install pressure gauges in the suction and discharge PVC flange. Adjust pump to design flow rate. | C | 3 | 1 | 1 | LS | 13/25 | ✓ | - | 15 | \$ 878.47 |
| A.26B | Adjust pump to design flow rate | C | 3 | 1 | 1 | LS | 13/14 | ✓ | - | 15 | \$ 600.00 |
| A.29 | Find alternate storage location for CO2 and provide secondary sanitization system. | C | 3 | 3 | 1 | LS | 31/? | - | ✓ | 15 | \$ 60,000.00 |
| I.1 | Replace sound system in Ice Rink | B | 4 | 3 | 1 | LS | ? | - | ✓ | 15 | \$ 27,740.00 |

FAIRFAX COUNTY PARK AUTHORITY - Mt. Vernon RECenter
Facility Condition Assessment and Life Cycle Cost Analysis



| EXPENDITURES – FY 15 (cont'd) | | | | | | | | | | | |
|-------------------------------|--|-------|----------|----------|-----|-------------------|--------------------------------|--------|---------|-------------|--------------|
| ITEM NO. | RECOMMENDATION | GRADE | PRIORITY | CATEGORY | QTY | UNIT ⁴ | LIFE CYCLE STATUS ¹ | REPAIR | REPLACE | FISCAL YEAR | BASE COST |
| I.2 | Replace existing bleachers with a new ADA compliant bleacher system. | F | 1 | 5 | 1 | LS | 35/25 | - | ✓ | 15 | \$ 56,333.76 |
| I.3 | Replace rubber tile around ice rink | F | 1 | 5 | 1 | LS | 10+/10 | - | ✓ | 15 | \$ 75,412.30 |
| I.4 | Replace weather stripping at Ice rink doors | B | 4 | 4 | 1 | LS | ? | - | ✓ | 15 | \$ 1,394.40 |
| I.5A | Repair dasher boards | B | 4 | 1 | 1 | LS | 18/30 | ✓ | - | 15 | \$ 26,480.00 |

1. Life Cycle Status (years): Age/Expected Useful Life
2. Work currently underway, already scheduled, or recommended to occur during FY 15
3. Work completed post building survey
4. LS = Lump Sum; EA = Each

The estimate of remedial costs for **fiscal year 2016** is: **\$1,597.35**

| EXPENDITURES – FY 16 | | | | | | | | | | | |
|----------------------|------------------------|-------|----------|----------|-----|-------------------|--------------------------------|--------|---------|-------------|-------------|
| ITEM NO. | RECOMMENDATION | GRADE | PRIORITY | CATEGORY | QTY | UNIT ² | LIFE CYCLE STATUS ¹ | REPAIR | REPLACE | FISCAL YEAR | BASE COST |
| P.12 | Clean & paint gas pipe | C | 3 | 3 | 1 | LS | 29/30 | ✓ | - | 16 | \$ 1,597.35 |

1. Life Cycle Status (years): Age/Expected Useful Life
2. LS = Lump Sum

The estimate of remedial costs for **fiscal year 2017** is: **\$2,185,233.83**

| EXPENDITURES – FY 17 | | | | | | | | | | | |
|----------------------|--------------------|-------|----------|----------|-----|-------------------|--------------------------------|--------|---------|-------------|---------------|
| ITEM NO. | RECOMMENDATION | GRADE | PRIORITY | CATEGORY | QTY | UNIT ² | LIFE CYCLE STATUS ¹ | REPAIR | REPLACE | FISCAL YEAR | BASE COST |
| M.2 | Replace RTU-1 | D | 2 | 3 | 1 | EA | 18/20 | - | ✓ | 17 | \$ 30,161.24 |
| M.3 | Replace RTU-2 | D | 2 | 3 | 1 | EA | 18/20 | - | ✓ | 17 | \$ 104,846.20 |
| M.4 | Replace RTU-3 | D | 2 | 3 | 1 | EA | 18/20 | - | ✓ | 17 | \$ 8,114.35 |
| M.5 | Replace RTU-4 | D | 2 | 3 | 1 | EA | 18/20 | - | ✓ | 17 | \$ 40,933.11 |
| M.6 | Replace RTU-5 | D | 2 | 3 | 1 | EA | 18/20 | - | ✓ | 17 | \$ 48,114.35 |
| M.7 | Replace RTU-6 | D | 2 | 3 | 1 | EA | 18/20 | - | ✓ | 17 | \$ 33,751.86 |
| M.8 | Replace Unit MAU-1 | D | 2 | 3 | 1 | EA | 18/20 | - | ✓ | 17 | \$ 354,035.44 |
| M.9 | Replace Unit PRU-1 | D | 2 | 3 | 1 | EA | 18/20 | - | ✓ | 17 | \$ 366,961.67 |
| M.10 | Replace Unit PRU-2 | D | 2 | 3 | 1 | EA | 18/20 | - | ✓ | 17 | \$ 366,961.67 |

FAIRFAX COUNTY PARK AUTHORITY - Mt. Vernon RECenter
Facility Condition Assessment and Life Cycle Cost Analysis



| EXPENDITURES – FY 17 (cont'd) | | | | | | | | | | | |
|-------------------------------|---------------------------------|-------|----------|----------|-----|-------------------|--------------------------------|--------|---------|-------------|---------------|
| ITEM NO. | RECOMMENDATION | GRADE | PRIORITY | CATEGORY | QTY | UNIT ² | LIFE CYCLE STATUS ¹ | REPAIR | REPLACE | FISCAL YEAR | BASE COST |
| M.12 | Replace Unit ERU-1 | B | 4 | 4 | 1 | EA | 6/20 | - | ✓ | 17 | \$ 56,680.74 |
| M.13 | Replace Unit ERU-2 | B | 4 | 4 | 1 | EA | 6/20 | - | ✓ | 17 | \$ 56,680.74 |
| M.14 | Replace Unit DH-1 | C | 3 | 3 | 1 | EA | 18/20 | - | ✓ | 17 | \$ 256,298.68 |
| M.15 | Replace Unit DH-2 | C | 3 | 3 | 1 | EA | 18/20 | - | ✓ | 17 | \$ 256,298.68 |
| M.16 | Replace Fan MF-1 | D | 2 | 3 | 1 | EA | 18/20 | - | ✓ | 17 | \$ 20,099.16 |
| M.17B | Replace Exhaust Fan EF-2 | D | 2 | 3 | 1 | EA | 18/20 | - | ✓ | 17 | \$ 8,617.50 |
| M.18 | Replace Exhaust Fan EF-3 | D | 2 | 1 | 1 | EA | 18/20 | - | ✓ | 17 | \$ 9,319.82 |
| M.19 | Replace Exhaust Fan EF-4 | D | 2 | 1 | 1 | EA | 18/20 | - | ✓ | 17 | \$ 9,586.96 |
| M.20 | Replace Exhaust Fan EF-5 | D | 2 | 1 | 1 | EA | 18/20 | - | ✓ | 17 | \$ 9,586.96 |
| M.21B | Replace Supply Fan SF-1 | D | 2 | 3 | 1 | EA | 18/20 | - | ✓ | 17 | \$ 7,879.26 |
| M.22 | Replace Fan Coil Unit FCU-1 | D | 2 | 3 | 1 | EA | 18/20 | - | ✓ | 17 | \$ 8,186.62 |
| M.23 | Replace Fan Coil Unit FCU-2 | D | 2 | 3 | 1 | EA | 18/20 | - | ✓ | 17 | \$ 8,186.62 |
| M.24 | Replace VVT air terminals 1 - 5 | D | 2 | 3 | 1 | LS | 18/20 | - | ✓ | 17 | \$ 6,447.00 |
| M.26 | Replace Unit ACCOU-1 | D | 2 | 3 | 1 | EA | 18/20 | - | ✓ | 17 | \$ 58,742.60 |
| M.27 | Replace Unit ACCOU-2 | D | 2 | 3 | 1 | EA | 18/20 | - | ✓ | 17 | \$ 58,742.60 |

1. Life Cycle Status (years): Age/Expected Useful Life
2. LS = Lump Sum; EA = Each

The estimate of remedial costs for **fiscal year 2018** is: **\$148,157.80**

| EXPENDITURES – FY 18 | | | | | | | | | | | |
|----------------------|--|-------|----------|----------|-----|-------------------|--------------------------------|--------|---------|-------------|---------------|
| ITEM NO. | RECOMMENDATION | GRADE | PRIORITY | CATEGORY | QTY | UNIT ² | LIFE CYCLE STATUS ¹ | REPAIR | REPLACE | FISCAL YEAR | BASE COST |
| E.1B | Replace EPDM membrane roof system w/ new single ply membrane roof system. | C | 3 | 3 | 1 | LS | 17/20 | - | ✓ | 18 | \$ 137,893.29 |
| E.1C | Replace roof drains; and replace existing flashing (to include roofing membrane, terminations, and sealants) at existing penetrations. | C | 3 | 3 | 1 | LS | 17/20 | - | ✓ | 18 | \$ 5,825.86 |
| E.1D | Replace roof walkway pads | C | 3 | 3 | 1 | LS | 17/20 | - | ✓ | 18 | \$ 4,438.65 |

1. Life Cycle Status (years): Age/Expected Useful Life
2. LS = Lump Sum

FAIRFAX COUNTY PARK AUTHORITY - Mt. Vernon RECenter

Facility Condition Assessment and Life Cycle Cost Analysis



The estimate of remedial costs for **fiscal year 2019** is: \$397,539.66

| EXPENDITURES – FY 19 | | | | | | | | | | | |
|----------------------|---|-------|----------|----------|-----|-------------------|--------------------------------|--------|---------|-------------|---------------|
| ITEM NO. | RECOMMENDATION | GRADE | PRIORITY | CATEGORY | QTY | UNIT ² | LIFE CYCLE STATUS ¹ | REPAIR | REPLACE | FISCAL YEAR | BASE COST |
| EL.5 | Replace panels T,MLO 100 AMP | C | 3 | 3 | 1 | LS | 26/30 | - | ✓ | 19 | \$ 3,890.00 |
| P.1 | Replace domestic backflow preventer | C | 3 | 3 | 1 | EA | 26/30 | - | ✓ | 19 | \$ 24,188.42 |
| P.2 | Replace domestic water piping | C | 3 | 3 | 1 | LS | 26/30 | - | ✓ | 19 | \$ 107,840.24 |
| P.6 | Revise sanitary piping and provide proper air gap | C | 3 | 3 | 1 | LS | 26/30 | - | ✓ | 19 | \$ 296.00 |
| P.13 | Replace plumbing fixtures | C | 3 | 3 | 1 | LS | 26/30 | - | ✓ | 19 | \$ 261,325.00 |

1. Life Cycle Status (years): Age/Expected Useful Life
2. LS = Lump Sum; EA = Each

The estimate of remedial costs for **fiscal year 2020** is: \$680,625.00

| EXPENDITURES – FY 20 | | | | | | | | | | | |
|----------------------|--|-------|----------|----------|-----|-------------------|--------------------------------|--------|---------|-------------|---------------|
| ITEM NO. | RECOMMENDATION | GRADE | PRIORITY | CATEGORY | QTY | UNIT ² | LIFE CYCLE STATUS ¹ | REPAIR | REPLACE | FISCAL YEAR | BASE COST |
| M.28 | Replace (4) Compressors & (2) Chillers | B | 4 | 3 | 1 | LS | 15/20 | - | ✓ | 20 | \$ 529,000.00 |
| M.29B | Replace (2) Cooling Towers | B | 4 | 3 | 1 | LS | 10/15 | - | ✓ | 20 | \$ 151,625.00 |

1. Life Cycle Status (years): Age/Expected Useful Life
2. LS = Lump Sum

The estimate of remedial costs for **fiscal year 2021** is: Not Applicable

The estimate of remedial costs for **fiscal year 2022** is: \$124,000.00

| EXPENDITURES – FY 22 | | | | | | | | | | | |
|----------------------|--------------------------|-------|----------|----------|-----|-------------------|--------------------------------|--------|---------|-------------|---------------|
| ITEM NO. | RECOMMENDATION | GRADE | PRIORITY | CATEGORY | QTY | UNIT ² | LIFE CYCLE STATUS ¹ | REPAIR | REPLACE | FISCAL YEAR | BASE COST |
| A.27 | Replace spa pump filters | C | 3 | 3 | 1 | LS | 13/20 | - | ✓ | 22 | \$ 9,000.00 |
| I.6 | Replace Olympia machine | B | 4 | 3 | 1 | EA | 13/20 | - | ✓ | 22 | \$ 115,000.00 |

1. Life Cycle Status (years): Age/Expected Useful Life
2. EA = Each

FAIRFAX COUNTY PARK AUTHORITY - Mt. Vernon RECenter

Facility Condition Assessment and Life Cycle Cost Analysis



The estimate of remedial costs for fiscal year 2023 is: **\$115,000.00**

| EXPENDITURES – FY 23 | | | | | | | | | | | |
|----------------------|-------------------------|-------|----------|----------|-----|-------------------|--------------------------------|--------|---------|-------------|---------------|
| ITEM NO. | RECOMMENDATION | GRADE | PRIORITY | CATEGORY | QTY | UNIT ² | LIFE CYCLE STATUS ¹ | REPAIR | REPLACE | FISCAL YEAR | BASE COST |
| I.6 | Replace Olympia machine | B | 4 | 3 | 1 | EA | 12/20 | - | ✓ | 23 | \$ 115,000.00 |

1. Life Cycle Status (years): Age/Expected Useful Life
2. EA = Each

The estimate of remedial costs for fiscal year 2024 is: **Not Applicable**

The estimate of remedial costs for fiscal year 2025 is: **\$17,247.40**

| EXPENDITURES – FY 25 | | | | | | | | | | | |
|----------------------|-------------------------------|-------|----------|----------|-----|-------------------|--------------------------------|--------|---------|-------------|-------------|
| ITEM NO. | RECOMMENDATION | GRADE | PRIORITY | CATEGORY | QTY | UNIT ² | LIFE CYCLE STATUS ¹ | REPAIR | REPLACE | FISCAL YEAR | BASE COST |
| EL.9 | Replace panels Z,MLO 200 AMP | C | 3 | 3 | 1 | LS | 20/30 | - | ✓ | 25 | \$ 9,136.49 |
| EL.10 | Replace panels SA,MLO 125 AMP | C | 3 | 3 | 1 | LS | 20/30 | - | ✓ | 25 | \$ 8,110.91 |

1. Life Cycle Status (years): Age/Expected Useful Life
2. LS = Lump Sum

The estimate of remedial costs for fiscal year 2026 is: **Not Applicable**

The estimate of remedial costs for fiscal year 2027 is: **\$657,213.46**

| EXPENDITURES – FY 27 | | | | | | | | | | | |
|----------------------|---|-------|----------|----------|-----|-------------------|--------------------------------|--------|---------|-------------|---------------|
| ITEM NO. | RECOMMENDATION | GRADE | PRIORITY | CATEGORY | QTY | UNIT ² | LIFE CYCLE STATUS ¹ | REPAIR | REPLACE | FISCAL YEAR | BASE COST |
| E.1H | Replace metal roof | C | 3 | 3 | 1 | LS | 18/30 | - | ✓ | 27 | \$ 172,817.49 |
| E.2F | Replace outside metal louvers | A | 6 | 3 | 1 | LS | 18/30 | - | ✓ | 27 | \$ 7,508.70 |
| E.2K | Replace metal wall panel system | B | 4 | 3 | 1 | LS | 18/30 | - | ✓ | 27 | \$ 221,000.00 |
| A.5 | Re-plumb geyser features | B | 4 | 3 | 1 | LS | 13/25 | - | ✓ | 27 | \$ 61,067.14 |
| A.21B | Provide deep cleaning of spa pool coping finishes | A | 5 | 1 | 1 | LS | 13/25 | - | ✓ | 27 | \$ 4,580.03 |
| A.22B | Replace spa pool hydraulically powered pool lift. | C | 3 | 3 | 1 | LS | 13/25 | - | ✓ | 27 | \$ 5,500.00 |
| A.24C | Replace spa pool inlets. | C | 3 | 3 | 1 | LS | 13/25 | - | ✓ | 27 | \$ 12,000.00 |

FAIRFAX COUNTY PARK AUTHORITY - Mt. Vernon RECenter
Facility Condition Assessment and Life Cycle Cost Analysis



| EXPENDITURES – FY 27 (cont'd) | | | | | | | | | | | |
|-------------------------------|-------------------------|-------|----------|----------|-----|-------------------|--------------------------------|--------|---------|-------------|---------------|
| ITEM NO. | RECOMMENDATION | GRADE | PRIORITY | CATEGORY | QTY | UNIT ² | LIFE CYCLE STATUS ¹ | REPAIR | REPLACE | FISCAL YEAR | BASE COST |
| A.28 | Replace spa pool heater | C | 3 | 3 | 1 | LS | 13/25 | - | ✓ | 27 | \$ 9,000.00 |
| I.5B | Replace dasher boards | C | 3 | 3 | 1 | LS | 18/30 | - | ✓ | 27 | \$ 150,000.00 |

1. Life Cycle Status (years): Age/Expected Useful Life
2. LS = Lump Sum

The estimate of remedial costs for fiscal year 2028 – 2029 is: Not Applicable

The estimate of remedial costs for fiscal year 2030 is: \$1,025,000.00

| EXPENDITURES – FY 30 | | | | | | | | | | | |
|----------------------|----------------------------|-------|----------|----------|-----|-------------------|--------------------------------|--------|---------|-------------|-----------------|
| ITEM NO. | RECOMMENDATION | GRADE | PRIORITY | CATEGORY | QTY | UNIT ² | LIFE CYCLE STATUS ¹ | REPAIR | REPLACE | FISCAL YEAR | BASE COST |
| M.31 | Replace Glycol Grid System | B | 4 | 3 | 1 | LS | 35/50 | - | ✓ | 30 | \$ 1,025,000.00 |

1. Life Cycle Status (years): Age/Expected Useful Life
2. LS = Lump Sum



Section 2

Project Introduction



Section 2

Project Introduction

FAIRFAX COUNTY PARK AUTHORITY - Mt. Vernon RECenter

Facility Condition Assessment and Life Cycle Cost Analysis



A. Building Description

Mt. Vernon Recreation Center was originally constructed in two successive phases. The Ice Rink Facility was completed in 1979 and the Aquatic Facility was added in 1983. As a 64,374 SF one story structure, both components were state of the art facilities at the time they were designed but much has changed in the ensuing years. The regulatory environment has changed with much stricter health and safety requirements, and energy codes focused on sustainability and conservation issues.

The biggest change affecting the Mt. Vernon Recreation Center has been the expansion of health and fitness programs themselves which have broadened the market appeal and the demand for fitness. The Mt. Vernon Recreation Center has had to adapt to these changes without expanding its physical capacity. The current Fitness area spills into the Lobby; and the four Club Rooms are examples of adaptations retrofitted within the original Facility as these rooms host many functions such as fitness, children's classes, camps and room rental.



Facility staff and the FCPA maintenance staff have done an excellent job sustaining operations despite the Building's age and program diversification. While serviceable, the Mt. Vernon Recreation Center is in need of physical and programmatic improvements which will better serve the community.

B. Project Objectives

Mt. Vernon Recreation Center is being assessed to evaluate the existing conditions and functionality of the building systems and determine the life expectancy of each of the main building elements. Another objective is to determine the cost to repair, replace or modify each element/function to meet the use requirements or the Expected Facility Life Cycle standards set by FCPA (refer to Appendix) and when the repairs should be expected within the life of the Building. The results of the assessment are compiled in this comprehensive report and a proposed renewal budget of the expected costs is listed per fiscal year.

C. Methodology

The Assessment Team, lead by **Hughes Group Architects**, is composed of the following engineering and specialty consulting firms:

- **Summit Engineers, Inc.**
- **WDP & Associates**
- **Water Technologies Inc.**
- **Rink Management Services Corp.**
- **Downey & Scott**

The Assessment Team was supported by members of the Mt. Vernon Recreation Center staff and FCPA maintenance personnel who supplied key information regarding the operational history of equipment. Those two groups and members of the Mt. Vernon community also provided a keen perspective on the functional relationships which affect customer service.

FAIRFAX COUNTY PARK AUTHORITY - Mt. Vernon RECenter

Facility Condition Assessment and Life Cycle Cost Analysis



On April 28, 2014, the Assessment Team performed a Facility Condition Assessment. Specific areas of investigation included the following:

- Site (S)
- Building Envelope (E)
- Interior Finishes (F)
- Mechanical (M)
- Electrical (EL)
- Plumbing (P)
- Fire Protection (FP)
- Aquatic (A)
- Ice Rink (I)



To facilitate in sorting and analyzing the assessments, each assessment item is classified by the letter designation shown in () above. The Team also distinguished varying levels of criticality of each assessment item according to FCPA's standard ranking systems which classify Grade/Priority, and Category. These classifications are meant to help prioritize fiscal impacts.

GRADING/PRIORITY

Grading Standard F / Priority 1 - Currently Critical:

Conditions in this category require immediate action by the end of **FY 2015** to:

- Correct a cited safety hazard
- Stop accelerated deterioration
- Return a facility/system to operational status

Grading Standard D / Priority 2 - Potentially Critical:

Conditions in this category, if not corrected expeditiously, will become critical soon. Situations within this category include:

- Correct a cited safety hazard
- Stop accelerated deterioration
- Return a facility/system to operational status

Grading Standard C / Priority 3 - Necessary, But Not Yet Critical:

Conditions in this category require appropriate attention to preclude predictable deterioration and associated damage or higher costs if deferred further.

Grading Standard B / Priority 4 – Recommended:

Conditions in this category include items that represent a sensible improvement to existing conditions. These are not required for the most basic function of the facility.

Grading Standard A/ Priority 5 – Appearance:

Conditions in this category include finishes that have deteriorated and are required to maintain the required aesthetic standards.

Grading Standard A/ Priority 6 - Does Not Comply With Current Codes – “Grandfathered”:

Conditions in this category include items that do not conform to existing codes, but are “grandfathered” in their condition. However, should substantial work be undertaken in contiguous areas, certain existing conditions may require correction to comply with current code standards.

FAIRFAX COUNTY PARK AUTHORITY - Mt. Vernon RECenter

Facility Condition Assessment and Life Cycle Cost Analysis



CATEGORY

Category 1 - Scheduled Maintenance:

Maintenance that is planned and performed on a routine basis to maintain and preserve the condition

Category 2 - Deferred Maintenance:

Maintenance that was not performed when it was scheduled, or is past its useful life, resulting in immediate repair or replacement

Category 3 - Capital Renewal:

Planned replacement of a building system that has reached the end of its useful life

Category 4 - Energy & Sustainability:

When the repair or replacement of equipment or system is recommended to improve energy and sustainability performance

Category 5 - Security & Safety:

When a condition, equipment or system requires replacement due to a security and/or safety risk or requirement

LIFE CYCLE ANALYSIS

The FCPA Expected Facility Life Cycle General Guideline standards were used by the Assessment Team as a basis for evaluating the life cycle status of existing building conditions and systems. The FCPA Expected Facility Life Cycle General Guideline standards are as follows:

| | |
|----------------------------------|----------------|
| Exterior Building Envelope:..... | 30 years |
| Building Structure:..... | 30 years |
| Concrete Slabs:..... | 30 years |
| Roofs:..... | 20 years |
| Doors and Hardware:..... | 10 years |
| Finishes: | |
| Broadloom Carpet..... | 7 years |
| Carpet Tiles..... | 15 years |
| Sports Flooring..... | 10 years |
| Resilient Flooring..... | 10 years |
| Wood Athletic Flooring..... | 10 years |
| Acoustic Ceiling Systems..... | 10 years |
| Furnishings: | |
| Systems Furniture..... | 20 to 25 years |
| Site Furnishings..... | 5 years |
| Window Treatments..... | 7 years |
| Millwork..... | 10 years |
| Conveying Systems: | |
| Elevators..... | 15 years |
| Escalators..... | 15 years |

FAIRFAX COUNTY PARK AUTHORITY - Mt. Vernon RECenter

Facility Condition Assessment and Life Cycle Cost Analysis



FCPA Expected Facility Life Cycle General Guideline standards (continued)

| | | |
|---------------------------------------|---------------------------|----------------|
| Pool Systems: | Filters..... | 25 years |
| | Pumps..... | 25 years |
| | Gutters and Piping..... | 25 years |
| Ice Rink Refrigeration Systems: | Compressors..... | 20 years |
| | Chiller..... | 15 to 20 years |
| | Condensers..... | 15 years |
| | Pumps..... | 15 years |
| Fire Suppression: | Sprinkler System..... | 30 years |
| | | |
| Plumbing: | Pumps..... | 15 years |
| | Pipes and Fittings..... | 30 years |
| | Fixtures..... | 30 years |
| HVAC: | Equipment..... | 15 years |
| | Boilers..... | 15 to 25 years |
| | Air Handling Units..... | 15 to 20 years |
| | Building Controls..... | 10 years |
| Electrical: | Lighting..... | 20 years |
| | Generators..... | 25 years |
| | Service/Power..... | 25 years |
| Fire Alarm: | Fire Alarm System..... | 20 years |
| Site: | Asphalt Paving..... | 15 years |
| | Concrete Paving..... | 15 years |
| | Grounds/Earth Moving..... | 30 years |





Section 3

Existing Conditions Descriptions



Section 3

Existing Conditions Descriptions



A. Existing Site and Facility Description

A.1 Site (S)

The building identity and the functional relationship of site entry, parking and building entry are currently vexing. Vehicular and pedestrian access to the Mt. Vernon Recreation Center is one of the most problematic functional relationships noted by users of the facility.

The most problematic accessibility aspect of the Mt. Vernon Recreation Center is the parking area being location so far above the entry to the Facility. The orientation of the parking lot access drive, the dramatic topography of the site, and vegetative growth all contribute to blind spots for drivers and pedestrians. Although an accessible route connects the accessible/drop-off area parking lot and the building's main entrance, patrons have complained that the path is too long.

Visual orientation to the building entry remains confusing and obscured from view by the geometry of the structure and vegetative growth. Once the stairway down to the building entry is located, patrons must negotiate a vertical drop of over 30' to reach the entry level. Negotiating these stairs is difficult for children, seniors, and parents with strollers. Located at the bottom of the steep hill-side, the entry plaza is often inundated with storm water, ice and snow. Poor site drainage at the entry level sometimes causes the Lobby to flood.

1. Access Road and Parking Pavements:

Access roads and parking pavements are in generally serviceable condition. Detailed observations and recommended improvements are included in this Report.

2. Walkways and Exterior Stairs:

Walkways and exterior stairs are in generally serviceable condition. Detailed observations and recommended improvements are included in this Report. Patrons have worn a dirt path from the sidewalk that links the site with the parking for the Library next door.

3. Landscaping:

Landscaping surrounding the building entry is overgrown.

A.2 Building Envelope (E)

1. Exterior Façade:

- a. **Wall Assembly:** The base consists of a CMU wall construction with a painted stucco cladding. Overall the stucco cladding appears in good condition, but surface cracking and delaminated areas were noted. Both vertical and horizontal control joints are visible, but have been painted over and are no longer effective. The stucco cladding is original to the Building and has been in service past its estimated life expectancy.
- b. **Metal Panels:** Insulated metal fascia panels are installed above the CMU wall construction. The metal panels are in good condition with only minor areas that need attention. Metal panels near the service entrance at the pool show signs of damage due to traffic, but the damage appears to be only cosmetic.
- c. **Steel Storefront System:** The main entrance of the Building is made of steel storefront window system. The window system does not provide a good thermal barrier and is not energy efficient. Metal framing at the base of the window system shows signs of corrosion deterioration. Sealant around the metal frames, both at the metal to metal joints and at the metal to glass joints has deteriorated as well. Three window glass panes have lost their internal seal and have become frosted. Storefront metal doors and windows are

FAIRFAX COUNTY PARK AUTHORITY - Mt. Vernon RECenter

Facility Condition Assessment and Life Cycle Cost Analysis



in good condition. Several of the frames show signs of deterioration at the base. Additionally, lintels at several of the doors are rusting.

2. Roof:

- a. **Gutters and Downspouts:** Gutters and downspouts are included in the Plumbing systems assessments sections of this Report.
- b. **Built-Up Roof:** The low sloped roof is a ballasted single ply EPDM roof. Overall, the existing membrane appears in relatively good condition. There are gravel guards around the perimeter of the roof. At several locations, the roof membrane is pulling away from its substrate due to membrane shrinkage. The EPDM membrane was replaced in 1997 and is approaching the end of its estimated life expectancy.
- c. **Roof Drains:** Roof drains are located in various places on the low sloped portion of the roof. The drains appear to be in proper working order.
- d. **Standing Seam Metal Roof:** The standing seam metal roof is in good condition. The galvanized metal ridge cover shows minimal deterioration in isolated locations.

A.3 Structural Systems

The Ice Rink and Pool Structures are both Pre-Engineered Metal Building Systems composed of long span ridged bents with metal girts and light gage metal roofing and siding. The Pool also has an interior metal liner panel on the walls and the roof. Exposed structural steel members were assessed by the Architectural and Envelope Consultants and were found to be in serviceable condition with no visible signs of stress or deterioration that would affect performance.

The structure of the infill area housing the skate change area is composed of columns, beams and joists with masonry infill. Exposed structural steel members were assessed by the Architectural and Envelope Consultants and were found to be in serviceable condition with no visible signs of stress or deterioration that would affect performance.

1. Foundations:

Foundations for the Pool and Ice Rink Buildings consist of spread column footings that support the steel frame. The exterior walls are supported by continuous wall footings. There was no observed wall cracking which would indicate settlement.

2. Slab on Grade:

Per the structural drawings, the slabs of the Facility are slab on grade. Excessive wear was noted in the Ice Rink where the ice resurface machine enters the rink. All other exposed slab areas appeared to be in serviceable condition.

3. Miscellaneous:

A number of the mechanical equipment supports are showing significant signs of deterioration and are heavily rusted.

A.4 Interior Finishes (F)

1. Structural Slab:

Excessive wear was noted in the Ice Rink where the ice resurface machine enters the rink. All other exposed slab areas appeared to be in serviceable condition.

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Facility Condition Assessment and Life Cycle Cost Analysis



2. **Finish Flooring and Base:**

The Building has several types of floor finishes:

- a. **Carpeting:** Carpeting is showing signs of age.
- b. **Rubber Flooring Tiles:** The material recently installed in the Skate Change Room as a replacement is in excellent condition. Rubber tile flooring in team rooms also appeared to be in serviceable condition. However, rubber flooring tiles that are placed around the perimeter of the rink are very worn and missing in some places. There are also gaps between rubber pieces which is a tripping hazard.
- c. **Wood Flooring:** Wood flooring in the club/exercise rooms appeared to be in serviceable condition.
- d. **Ceramic Tile:** Ceramic tiles in the locker rooms are in serviceable condition but have been partially replaced several times with tile that does not match the original. The result is a visual patchwork. Additionally, portions of floor and base tiles in those rooms have become chipped or completely broken off.
- e. **VCT Tile:** VCT tile throughout the Facility is in serviceable condition.
- f. **Exposed Concrete:** Exposed Concrete on the pool deck is in serviceable condition. Excessive wear was noted in the Ice Rink where the ice resurface machine enters the rink.
- g. **Terra Cotta Tile:** Located in the Lobby and corridors, terra cotta tile is in serviceable condition but creates a dated look for the Facility.
- h. **Wall Base:** Base materials include vinyl, wood and tile and are all in serviceable, but dated, condition.

3. **Walls:**

Interior walls are either built with gypsum board (painted) on metal studs or furring channels, or exposed CMU (painted). Glazed CMU is used in the Pool area. Overall, wall finishes appeared to be in good condition.

4. **Ceilings:**

- a. **Acoustic Tile:** Ceiling grids and acoustic tiles are in generally good shape.
- b. **Painted Gypsum Board:** Gypsum board ceilings are in good shape.
- c. **Exposed Structure:** The exposed structure in the Pool and the Ice Rink appears to be in serviceable condition.

5. **Doors:**

Hollow core metal and solid core wood doors and metal door frames are used throughout the Facility and are in serviceable condition.

6. **Windows and Storefront:**

The windows and storefront systems are dated and do not provide the thermal performance of contemporary window and window frame systems. The critical window wall unit is located at the front door of the Facility. This condition is addressed in detail in the Building Envelope sections of this Report.

7. **Miscellaneous:**

Millwork throughout the Facility is in serviceable condition but dated in appearance. The Ice Rink has a Low-E suspended ceiling element over most of the rink area to conserve energy and act as an acoustic baffle. While the system appears to be in very good condition with no separation at seams or at connections to the ceiling, it has a dated look.

FAIRFAX COUNTY PARK AUTHORITY - Mt. Vernon RECenter

Facility Condition Assessment and Life Cycle Cost Analysis



A.5 Mechanical (M)

The Mt. Vernon Recreation Center contains an ice rink, pool, and various fitness areas. Each space is conditioned by a myriad of mechanical systems and system types, including packaged rooftop units, pool conditioning units, exhaust fans, boilers, and variable air volume terminal units. The Ice Rink Facility is currently served by two dehumidification units (DH-1 and DH-2), one makeup air unit (MAU-1), and one hot water boiler (B-1). The Pool Facility is served by two pool energy recovery and air conditioning units (PRU-1 and PRU-2) with remote condensing units (ACCOU-1 and ACCOU-2), as well as one boiler (labeled B-2 for the purposes of this report) for pool water and ventilation air heating, and associated pumps and heat exchanger. The remainder of the Building is served by six rooftop units (RTU-1 through RTU-6), two energy recovery units (ERU-1 and ERU-2), six exhaust fans (EF-1 through EF-6), one supply fan (SF-1), and approximately thirteen single duct air terminal units.

1. Ice Rick Facility:

- a. **Dehumidification Units:** DesertAire model IH1200 which have 152,000 Btu/hr cooling capacity, and are rated to remove 69 pounds of moisture from the air per hour for entering air at 80 °F, and 60% RH. Unit DH-1 exhibits a slight noise coming from the compressor when running, while DH-2 is silent. Both units were installed in 1996 and are at the end of their useful lives.
- b. **Space Ventilation and Conditioning:** Space ventilation and conditioning is provided by the makeup air unit (MAU-1) located on the roof. This unit is a Munters Drycool model AM30D55G with an R-22 direct expansion (DX) cooling system, gas fired reactivator, enthalpy wheel, desiccant wheel, and hot water heating coil. The unit is scheduled to provide up to 12,000 cfm of outdoor air with capacity for cooling to 55 °F or heating to 85 °F. MAU-1 was installed in 1996, and is in relatively good condition for its age, though it is missing some access door handles. This unit is also nearing the end of its useful life.
- c. **Boiler:** Hot water is provided to makeup air unit MAU-1 by the hydronic boiler B-1 located in the mechanical room (Compressor Room) of the Ice Rink. Boiler B-1 also serves an ice melt system and domestic hot water for the Ice Rink Facility. The boiler is a Spencer model 4FW-240-40-0-GP mated to a Peabody Gordon-Platt burner (model R10-G0-15) rated for 2,511,000 Btu/hr gas input. The boiler was installed in 1979, and shows signs of significant deterioration. Leaks, corrosion, damaged insulation, and rust are all evident on this equipment and its associated piping and pumps. This unit is well beyond its serviceable lifetime.
- d. **Chillers:** Also contained within the Compressor Room are two chillers, chilled water pumps, and condenser water pumps.
- e. **Exhaust Fans:** To provide refrigerant exhaust for the chillers, fan MF-1 was installed with refrigerant sensor and controls in 1996; and is approaching the end of its useful life. Further, the existing fan is not ducted to the floor of the Compressor Room to allow exhaust of heavier-than-air refrigerant gasses, and it appears to be only a single speed fan. The refrigerant exhaust system is required by code to operate at a low constant ventilation rate, and increase to a higher ventilation rate upon detection of refrigerant.
- f. **Chillers and Compressors:** The York compressors and chillers seemed to be operating well and maintain the ice sheet to industry tolerances.
- g. **Cooling Towers:** The inside of the cooling towers was observed to be in very good shape. However, there is considerable algae growth and calcium deposits on the outside.
- h. **Pumps for Cooling Towers:** During the inspection, the pumps for the cooling tower/condenser looked to be in good shape and staff did not indicate that they had any maintenance issue with these pumps.
- i. **Brine Pumps:** The brine pumps seemed to be operating well.
- j. **Glycol Grid System:** This subfloor heating grid is assumed to be serviceable as the refrigerated pad above and the pumps for the system both seem to be in good shape. Operations staff did not report of any problems with the system either.

2. Pool Facility:

- a. **Pool Energy Recovery and Air Conditioning Units; and Condensing Units:** The pool energy recovery and air conditioning units are PoolPak SWHP190 and are scheduled to provide 18,000 cfm of conditioned air, 477,000 Btu/hr cooling capacity, and 1,000,000 Btu/hr heating capacity. These units are each mated to a roof mounted condensing unit (ACCOU-1 and -2), which are Witt model RCS040VH. The indoor and outdoor units were installed in 1996, and while the indoor units are in relatively good

FAIRFAX COUNTY PARK AUTHORITY - Mt. Vernon RECenter

Facility Condition Assessment and Life Cycle Cost Analysis



condition, the outdoor units are showing signs of weathering and rusting. Deficiencies noted during the field survey included a noisy compressor (not severe) for PRU-1, and severe duct swaying and bellowing for PRU-2. The outdoor units were not energized during the survey, so no observations could be made regarding their operation. While none of the deficiencies noted are indicative of imminent failure, these units are nearing the end of their useful lives.

- b. **Boiler:** Boiler B-2 is a Peerless G-721-FDA-WUP mated to a Peabody Gordon-Platt R10-G-15 burner. The boiler is rated for 2,323,000 Btu/hr heat output, and was installed in 1983. Boiler B-2 and associated pumps, pipes and insulation are past their useful lifespan. Other noticeable deficiencies in the Mechanical Room are various piping leaks and damaged insulation. The piping in the space is a mixture of copper and black iron/steel piping.

3. Remainder of Building:

- a. **Roof Top Units:** Energy recovery units ERU-1 and ERU-2 serve the Men's and Women's Locker Rooms. Each is a Munters PV-MZP-8702 with R-410A refrigerant, 160,000 Btu/hr output gas heater (modulating), and plate heat exchanger. The original mechanical schedules for these units indicate that they were sized for 1,885 cfm. These units were installed in 2008, and appear to be in excellent condition. The characteristics of each RTU are outlined in Table M1:

| TABLE M1: ROOFTOP UNIT SCHEDULE | | | | | | | |
|---------------------------------|--------------|----------------|----------------------------|-----------------------------|---------------------------------|-----------------------------------|----------------------------|
| TAG | Manufacturer | Model | Scheduled Supply Air (CFM) | Scheduled Outdoor Air (CFM) | Nominal Cooling Capacity (Tons) | Gas Heating Output (1,000 Btu/hr) | Area Served (Room #) |
| RTU-1 | AAON | RH-05-3-EO-231 | 2,000 | 200 | 5.0 | 115.0 | 127-131 |
| RTU-2 | AAON | RH-25-3-EO-222 | 9,000 | 2,085 | 25.0 | 292.0 | 122-124, 132, 133, 136-141 |
| RTU-3 | AAON | RH-10-3-EO-232 | 4,000 | 800 | 10.0 | 230.0 | 119, 125 |
| RTU-4 | AAON | RH-08-EO-231 | 3,400 | 350 | 8.0 | 182.0 | 112, 115, 116, 117 |
| RTU-5 | AAON | RH-10-3-EO-232 | 3,600 | 830 | 10.0 | 230.0 | 134, 135, CLB1 & CLB2 |
| RTU-6 | AAON | RH-06-3-EO-231 | 2,500 | 650 | 6.0 | 115.0 | 149 |

All six of the rooftop units appear to be constant volume except for RTU-2 which serves thirteen single-duct air terminal units. RTU-1 through RTU-3 and RTU-6 did not have condensate piping directed toward a roof drain, which can cause puddling and eventual leaks in the roof. Also, it appears that the controllers for RTU-5 and RTU-6 have been replaced recently. All of the rooftop units are showing slight rusting, and wear-and-tear consistent with 18 years of weather exposure. All of the rooftop units were installed in 1996, and are nearing the end of their serviceable lives.

- b. **Fans:** Fan EF-1 and EF-6 were not found, and therefore, not surveyed. Inline exhaust fan EF-2 and supply fan SF-1 both appear to lack a belt guard. Powered roof ventilators EF-3 through EF-5 demonstrate some vibration and rattling. The characteristics of each fan are outlined in Table M2:

FAIRFAX COUNTY PARK AUTHORITY - Mt. Vernon RECenter

Facility Condition Assessment and Life Cycle Cost Analysis



| TABLE M2: FAN SCHEDULE | | | | | |
|------------------------|--------------|------------|-------------------------|--------------------------------------|---------------------------------|
| TAG | Manufacturer | Model | Scheduled Airflow (CFM) | Scheduled Static Pressure (in. w.g.) | Area Served |
| EF-1 | Unknown | Unknown | 725 | 0.70 | Pool Storage |
| EF-2 | Greenheck | GB-120-3-X | 1,600 | 1.00 | Filter Room |
| EF-3 | Greenheck | GB-120-3-X | 1,190 | 0.75 | Locker Rooms & Janitor's Closet |
| EF-4 | Greenheck | GB-120-3-X | 1,250 | 0.75 | Team Rooms 142 & 144 |
| EF-5 | Greenheck | GB-120-3-X | 1,250 | 0.75 | Team Rooms 145 & 147 |
| EF-6 | Unknown | Unknown | 1,350 | 0.75 | Pool Boiler Room |
| SF-1 | - | - | 1,200 | 2.00 | - |

A.6 Electrical (EL)

1. Service and Distribution:

The Building is served by a single 1600 ampere, 277/480 volt, 3 phase, 4 wire, underground, Dominion Virginia Power service that terminates in a switchboard on the West wall of the Mechanical Room (Compressor Room) of the Ice Rink Facility. The Dominion pad mounted transformer that serves the Building is located at the Northwest corner of the Ice Rink Facility. The service and the service gear are original to the Building's construction in 1979. A safety assessment was done by Benfield Electric in January of 2012 and this report will reference their assessments when pertinent.

The switchboard is comprised of three sections. The first section (on the South end of the line up) is the incoming utility compartment and the CT instrument (DVP's metering equipment). Benfield's report found loose lugs that were causing a dangerous "hot spot". We tried to contact Benfield to get confirmation of what corrective action was taken, but we were not successful. The second section contains the Pringle fusible bolted pressure switch (the service switch and the ground fault protective instrument). This is the main safety protective device for the Facility that protects against overload, ground fault and large short circuits. The device and accessories are original parts and in addition were identified in Benfield's assessment as being dangerously dirty internally. Again, we attempted to contact Benfield to get confirmation of corrective action that had been taken. The third section is the main distribution portion of the switchboard and contains large, molded case circuit breakers for the following:

- 100 amp 3P - Brine Pump trough
- 60 amp 3P - Parking Lot Panel "L"
- 300 amp 3P - Panel "S" (via a 45 KVA transformer)
- 300 amp 3P - Chiller #2 (ice refrigeration)
- 3P 300 amp - Chiller #1 (ice refrigeration)
- 400 amp 3P - Distribution Panel "E" (should be labeled "P") located adjacent to the switchboard on its North end

FAIRFAX COUNTY PARK AUTHORITY - Mt. Vernon RECenter Facility Condition Assessment and Life Cycle Cost Analysis



- g. 800 amp 3P - Panel "DP" (serves pool building)
- h. 300 amp 3P - MUA-1 (Make up air unit A/C for ice rink space)

Other than breakers #7 and #8, the above listed breakers are original. Breaker #6 is mislabeled and therefore a code violation. Breakers #2 through #6 are labeled with black marker, which does not meet the intent of the NEC identification requirements.

A load profile of the 1600 amp service was done in 1995 that showed more than adequate capacity as measured on a June day. However, much equipment and load has been added over the years to the system. In particular, the load for the pool was reserved as 400 amperes when the first building was built, yet was increased to 800 amps when the pool building was completed. Also the ice rink dehumidification system was added in 1995 and added approximately 70 amps of load. We determined that the existing capacity is acceptable for NEC and seems adequately sized to handle the current loads served.

Panel "P" mislabeled "E" on the breaker that serves the panel is located adjacent and to the right of the switchboard and contains breakers and controls for various larger loads such as glycol pumps, dehumidifiers, cooling tower fans, hot water pumps, boiler and Panel "S". As you may have noticed, Panel S is listed as a feeder breaker on Panel P and is also listed as an output breaker on the distribution section of the switchboard. Labeling will need to be verified and corrected. Panel P is rated at 400 amperes and is two sections with twelve output breakers / motor controllers. It dates from the original building and a lot of the motor controllers have been replaced with overcurrent protective devices as they have failed or as mechanical equipment has changed. The entire panel is in poor condition.

Panel "S", Panel "SA", Panel "T", Panel "X", and Panel "Z" are also located in the main electrical room. Panels S and SA are 120/208 volt and are original. Panels T, X and Z are newer panels but are of "Load Center" construction and therefore are not desirable in this installation. Load Centers are designed for circuit breaker protection in residential and light commercial facilities. Given the nature of the Facility and where these panels are located, "Panelboard" construction units are better suited for this type of facility.

There are also three transformers within the space: a very new 15 kVA transformer, 120/208 volt (for ice resurfacer charger); a 7.5 kVA 120/240 volt transformer for propane fuel compressor, fire alarm system and emergency lighting; and a 45 kVA 120/208 volt transformer that serves Panel S & SA. Only the 15 kVA transformer is in good shape, the others are beyond their life expectancy.

The next major distribution point is in the mezzanine of the Mechanical Room where the Pool Facility distribution occurs. The pool distribution panel "DP" is very new and distributes power throughout the Pool Facility (but most panels are located in the Mechanical Room mezzanine). Panel DP is in very good condition and has a remaining lifespan of over 20 years. Other panels in the mezzanine include Panel "L", Panel "LP", Panel "PH" and Panel "PL". Panels L and LP are panels and breakers built by companies no longer in operation – FPE and Sylvania. Panels PH and PL are newer and have a useful life of 10 or more years. However, panel PH was recognized as having overheated lugs that may have affected the adjacent breaker. The mezzanine is already a hot room given its internal load and its attic type location.

The transformers, starters and disconnects in the mezzanine all appear to be in good condition.

There is electrical equipment in the Filter Room of the Pool Facility. This includes the disconnect switches for various pumps, starters for various pumps, a panel-board, and other switches and connections. The corrosive atmosphere has taken its toll on all the metal components within the room. Even the newer stainless steel panel-board, spa pump controller, main pool pump disconnect switch and backwash pump disconnect switch have minor corrosion damage. Starters for the main pool pump and the backwash pump have major rust

FAIRFAX COUNTY PARK AUTHORITY - Mt. Vernon RECenter

Facility Condition Assessment and Life Cycle Cost Analysis



damage. We believe that either the ventilation within the room is not adequate or that improper containment of chemicals is causing premature damage. However, corrosion in these spaces is inevitable. We also observed corrosion on all conduit and cable work that was installed prior to the year 2000 renovations, when PVC was installed for all new work. Given the current rate of decline, we believe that none of the equipment within the room will last another 10 years.

2. Lighting:

Lighting Systems within the Building vary greatly and include original fluorescent and incandescent lighting, but also include very recent LED and metal halide fixture upgrades. Most notably the upgrade at the Pool replaced the existing metal halide fixtures with new long lasting and energy efficient LED fixtures. Metal halide fixtures in the Ice Rink area appear to have been recently replaced with newer versions of a similar two light level metal halide fixture. Emergency egress and exit lighting is accomplished with battery backed egress fixtures “battery packs” and via battery backed exit signs. Since batteries typically fail within 5 to 15 years, replacements have occurred over the years and have often been for one or two fixtures at a time.

A.7 Plumbing (P)

1. Domestic Water Distribution:

The existing Building is served by two 3” domestic water services: one for the Ice Rink Facility that stubs up in the Southeast corner of the area; and one for the Pool Facility that stubs up in the Mechanical Room.

The Ice Rink Facility domestic water service appears to have a new inside water meter and new back flow preventer. The domestic hot water system for the Ice Rink Facility is a steel tank type heater with an immersion heat exchanger serviced by the Ice Rink Facility’s boiler. It appears that this domestic water heater serves the restrooms adjacent to the Skate Change Room, Team Rooms, and Olympia Room. There are no specs or name plate data for this equipment. There were no reports of hot water demand issues by users. This water heater is beyond its recommend useful life.

The Pool Facility’s domestic water service does not have an inside water meter nor back flow preventer. This line appears to serve the restrooms within the locker rooms and pool make up water. The domestic hot water system for the Pool Facility is two 495 MBH gas fired burners in a rack with a single steel tank of approximately 500 gallons storage. This equipment is adequately sized for the connected load with no reports of hot water demand issues by users. This domestic water heater system is showing visible signs of wear. It is near the end of its recommend useful life.

The domestic water distribution piping is primarily copper with socket fittings and solder joints. Although this piping distribution system, where visible, is in fair shape, it did have several locations of pipe corrosion and oxidation. Pipe insulation that was visible or exposed is in very poor conditions and damaged or missing in many locations.

For both domestic water systems, facility personnel reported that tempered water mix valves are located above the ceiling of the locker room restrooms, but original drawings do not indicate a means to provide tempered water to lavatories, hand sinks or showers. The recorded water temperature at lavatories and showers was 130° F for the pool system and 140° F for the ice rink system.

2. Plumbing Fixtures and Specialties:

Plumbing fixtures are provided at the following locations:

- a. **Men’s & Women’s Restrooms adjacent to Skate Change Room:** 9 water closets; 4 lavatories; 3 urinals; 1 mop sink; 1 drink fountain
- b. **Team Rooms (each of four):** 2 water closets; 2 lavatories; gang shower with 4 shower heads
- c. **Restroom of Men’s Locker Room:** 3 water closets; 2 lavatories; 2 urinals; gang shower with 4 shower heads

FAIRFAX COUNTY PARK AUTHORITY - Mt. Vernon RECenter

Facility Condition Assessment and Life Cycle Cost Analysis



- d. **Restroom of Women's Locker Room:** 4 water closets; 2 lavatories; gang shower with 4 shower heads
- e. **Family Accessible Locker Room:** 1 water closet, 1 lavatory, 1 shower
- f. **Pool deck:** 1 drink fountain
- g. **Lobby:** 1 drink fountain
- h. **Mechanical Room:** 1 mop sink

All of the water closets and urinals are flush valve and have been retrofitted with battery pack auto sensor flush mechanisms. Some flush mechanism did not work or flush properly during our survey.

It appears that all of the lavatories are wall mounted or integral with counter and are equipped with single lever faucets. Lavatories are showing signs of wear. Traps are leaky or corroded. Many of the lavatories are missing or have ill fitting trap insulation covers.

The showers are primarily in a gang arrangement where several shower controls and heads are in an open area with a single drain.

Analysis of water supply demand, per the current IPC code, has determined that the domestic water service size and distribution is adequately sized for fixtures connected.

3. Sanitary Waste and Vent:

Sanitary drainage piping where observable was deemed adequate and fair shape. We had no reports of slow or obstructed drains while conducting our survey. Vent piping, where observed, was in good condition.

4. Storm Water System:

We observed the flat roof drainage system from above and below where possible. Roof drains appeared in fair condition with some surface rust with all dome strainers intact and in place. There were no emergency overflow drains. But, due to the lack of a parapet wall or containing conditions, secondary roof drains are not required. Roof drain piping we observed from below was cast iron and in fair condition. Other roof drainage from the sloped metal roof collects to perimeter gutters to down spouts. Gutters were rusted or damaged in some locations and the downspouts were not properly connected to underground storm receptors with flexible boots.

5. Natural Gas Piping:

Natural gas is provided to the site. There is an exterior gas meter located in the service area near the Mechanical Room. Gas is distributed through the Facility through schedule 40 black steel piping with screw fittings. Pipe has visual surface rust that appeared extensive where exposed at the exterior. Gas is distributed to gas fired roof top HVAC equipment, HVAC boilers, domestic hot water heaters and a natural gas compressor that fills fuel tanks for the ice resurface machine.

A.8 Fire Protection (FP)

The existing Building is fully sprinklered with an NFPA 13 system. There are no standpipes as they are not required. The Building is served by two 4" fire protection water services: one for the Ice Rink Facility that stubs up in the Southeast corner of the Ice Rink area; and one for the Pool Facility that stubs up in the Filter Room.

The Ice Rink Facility fire protection water service has original components and appurtenances, but appears to have been recently serviced. There is no back flow preventer. The fire department connection (FDC/Siamese connection) is located directly through the wall to the service area. We observed a pressure reading of 110 PSI static at gauge at the service entrance which is a good reading for a one story structure typically.

The Pool Facility fire protection water service only has original components and appurtenances. There is no back flow preventer. The fire department connection (FDC/Siamese connection) is located directly through the wall to the service area. There was no gauge to read water pressure. The location of the Pool Facility fire protection water service in the Filter Room is not desirable due to caustic environment which could accelerate aging of components.

FAIRFAX COUNTY PARK AUTHORITY - Mt. Vernon RECenter

Facility Condition Assessment and Life Cycle Cost Analysis



Although no hydraulic analysis was performed, the fire protection water services appear to be adequate in size but each will require backflow preventers as required by code. The life expectancy of sprinkler heads is 20 years, however no obvious signs of age were observed. Sprinkler pipe has an anticipated life expectancy of 40 years or more and we believe the pipe observed is in good condition.

A.9 Aquatic (A)

The main pool is a 25Y x 25M swimming pool with attached beach entry and play features. The pool was installed in 1983, and renovated in 2001 to include the beach entry, play features and ramp. The spa pool is a 125 SF round, 4'-0" deep hot water pool. The spa was installed during the 2001 renovation work. The water volume (provided by County documents) is 3,000 gallons.

1. Pool Finishes:

- a. **Submerged Plaster/Tile & Joints:** The submerged pool plaster finish is pitted, chipped and etched. Staining was noted around floor inlets. The pool operator reported that the pool finish is approximately 3 years old. The operator added that the pool has been refinished several times in its life, without removal of the existing finishes. The inconsistencies in the pool surface due to pitting and etching could pose a safety hazard to feet and other skin surface that come in contact with the pool finish. The expansion joints are lined by tile on each side. The expansion joint caulk is heavily stained on the edges. The stain color is consistent with oxidized iron and appears to be coming from the caulk material or corrosion of pool steel below the joint. The consistency of the stain along the entire length of each joint points more towards a joint material failure than corrosion of the pool steel.
- b. **Deck and Wall Depth Markers:** The wall and deck depth markers are in good to excellent service condition. However, there are no deck depth markers at the beach entry or the swimming area adjacent to the beach entry. This appears to violate 69.1-2-22, which requires depth markers to be spaced not more than 20'-0" apart along the swimming pool perimeter. There was also inconsistency in depth markers at the deep end of the pool. The Owner also reported that the pool is not level and, as a result, only the deep end of the pool flows into the gutters.*

2. Deck Equipment:

- a. **Diving Stand and Board:** There is a single Durafirm 1M dive stand with MaxiFlex springboard. The diving stand and board appear to be in good condition. The depth of the pool at the diving board is noted as 12 feet on the parallel wall depth markers and 10'-0" on the wall perpendicular to the boards. Field measurements with a tape measure indicated the depths at the pool walls to be less than 10'-0".*
- b. **Starting Platforms:** There are eight starting platforms located on the pool deck. They are located in water depths ranging from 4.5 feet to 12 feet according to the depth markers. The blocks are in good condition, with minor corrosion of the stainless steel components. The blocks appeared to be very sturdy, with no movement noted.

3. Pool Access:

- a. **Deep End Stairs:** The deep end stairs are 48" wide with a width between the rails of 35". The riser height is 9" for all risers except the riser that terminates at the gutter's edge, which is only 4". 69.1-2-10.B.2 requires the stairs to be compliant with VUSBC. A patron at the facility indicated that the inconsistency of the top riser was troublesome as a user. The railing on the stair is in good condition with mild to moderate corrosion on surface of the stainless steel. The left hand side of the rail included unusual flange type pieces in the vertical support that may be from a previous repair.
- b. **ADA Access:** The pool is over 300 linear feet in perimeter, which means that at least two accessible means of entry shall be provided. The primary means must be a lift or sloped entry.

** Pool depth was measured and depth markers were corrected and added post building survey.*

FAIRFAX COUNTY PARK AUTHORITY - Mt. Vernon RECenter

Facility Condition Assessment and Life Cycle Cost Analysis



The ramp in the beach entry is 40 feet long and terminates in 36" of water. The width between the rails is 37.25" and the railing height is 33.25". The Section 1009.3.2 of the 2010 ADA standards requires, "at least one landing shall be located 24 inches minimum and 30" maximum below the stationary water level."

Based on the field measurements, the existing ramp is non-compliant with the requirement for a landing and therefore cannot count toward the two means of accessible entry required. Modification of the ramp would be challenging and would require either modifying the entire beach entry area or providing a peninsula wall between the ramp and beach entry.

Additional means of accessible entry are missing at the swimming pool. The operator verbally indicated that they were in process of securing an ADA compliant lift. A hydraulic connection is already in place at the pool deck for the future lift.

The rails of the ramp entry were poorly welded at joints and heavily corroded, failed areas were noted in the welds. The failed areas were sharp and present a safety hazard to users.

4. Water Features:

The beach entry area includes a Raindrop above grade spray feature consisting of five tumble buckets, bubblers and 5 geysers. All features are in good condition. The geyser features in the beach entry roll back are not hydraulically balanced; three of the geysers create a substantial plume of water approximately 5'-0" while the other geysers are barely spraying to a couple of feet tall. The bubbler features were created by drilling a 1/2" hole in an inlet fitting.

5. Recirculation Components:

Pool Volume as reported in County documentation is 322,465 gallons. For this volume of water, the minimum recirculation rate for a 6 hour turnover is 923 GPM. The flowmeter was reading 850 GPM at the time of the site visit, which equates to a turnover of 391 minutes (6.51 hours). The operator reported flows as low as ~750 GPM when the filter is dirty. It was also reported that the system utilizes 6" PVC discharge piping.

Gauge readings right after a backwash cycle were -11 inches of HG and 7 PSI, which equates to approximately 30' TDH. Assuming the flow meters and gauges are reading accurately, the pump curve and pump data taken off the spare pump are not jiving. WTI needs additional information on the pump from the supplier or PO.

- a. **Gutter:** The gutter system is the original stainless steel gutter system with PVC covering. The PVC covering has holes drilled in it to provide drainage. Both the stainless steel trough and PVC gutter covering appeared to be in very good condition. The gutter trough has been well cared for with minimal corrosion and the gutter covering was intact with very minimal staining.

The operator reported (and the original drawings show) that there were originally two gutter pipe connections with 8" gutter pipes running back to the filter tank. One of these pipes was discovered to be leaking and has been abandoned. During our survey, the gutter operation did not seem to be affected by the abandoned pipe; and the operator reported that the gutter rim flows and does not flood. However, since the installation of a new pump in 2014, which creates a stronger pull, the water in the wet pit cannot be properly maintained with the previously abandoned gutter pipe. The Owner also reported that the pool is not level and, as a result, only the deep end of the pool flows into the gutters. The gutter was operating correctly at the time of observation.

- b. **Main Drains:** The pool includes three 18"x18" main drains. Each drain is covered by four (4) 9"x9" covers. The main drain covers appeared from visual observation to be stamped, VGB covers although the operator indicated the grates were replaced in 2007. Many of the original VGB grates were recalled. WTI was not provided with any data on the main drain grating. Additionally, no documentation was provided on the main drain sumps, so it cannot be determined if they are compliant with VGB.

An email from the County indicates the main drain plumbing has never been modified and should be as shown on the original pool drawings. The record SP drawing (SP01, Feb 12, 1979) indicates the three main drains sized 12"x 24" are connected in series with a note that says, "Drain Pipe as Required." The M-3

FAIRFAX COUNTY PARK AUTHORITY - Mt. Vernon RECenter

Facility Condition Assessment and Life Cycle Cost Analysis



sheet indicates a 10" main drain line (the size of the piping between drains) under the pool is not indicated and is assumed to be 10". From discussion with the operators, the main drain pipes are cast iron, but these could not be observed at the time of the evaluation.

The original cast iron piping has likely corroded to the point that it has exceeded the end of its useful life cycle.

Additionally, there are two 12"x12" main drains in the beach entry that the activity pump takes suction from. The sumps and grating for these outlets must also comply with VGB.

- c. **Inlets:** The pool includes floor inlets spaced throughout the pool. The inlet fittings appear to be in good condition (although discolored) and to provide proper distribution of filtered water.

The below grade plumbing is reported to be the original cast-iron pipe. Corrosion of the cast iron pipe below grade, failure of pool heat exchanger internals, or iron in the pool source water could all be the reason for the stain present around the floor inlet.

6. Pool/Spa Mechanical Equipment Space:

The pool mechanical equipment space layout is cramped and difficult to work in. Space is not adequate for maintenance and creates safety hazards for employees, especially when the fiberglass grating over the filter and pump pit are removed. Chemical storage in the main equipment room has lead to increased corrosion of metal components. Pipe hangers are heavily corroded.

7. Filter Pumps:

According to the Building Equipment-Life Expectancy document from the Owner, the pump was installed in 1977 and has been rebuilt every two years. The operators confirmed the impeller is approximately 1 year old, but the flow rate indicated by the flowmeter is approximately 200 GPM less than the minimum flow required for a code compliant 6 hour turnover rate. A replacement pump and motor were stored in the pool storage room. The name plate data indicates it is an ITT Marlow 530SC series. WTI needs additional information to check this. WTI needs additional information on the backwash pump in the pump pit.

8. Pool Feature Pump:

The pool feature pump (for beach entry spray/play features) appears to be a 5 HP Pac Fab CMK-50 pump (similar to the jet pump). The pump and strainer are heavily corroded. WTI needs additional history on this pump from the operator.

9. Pool Filter/Filter Components:

The existing pool filter is a vacuum diatomaceous earth filter that is original to the building. It has been operating for over thirty years. While the system has been well maintained, it is currently operating beyond the extent of its anticipated useful life. The manufacturer of the filter, Paddock/Whitten, is no longer in operation as a single company and vacuum DE filters are generally out of style, so parts will become increasingly difficult to find. The operator reports standard concerns with this type of filter; the media is dangerous to handle so full personal protective gear is required when handling the media and backwashing the filter takes over four hours.

There are eight filter media separators that contain the spent DE during the backwash process. These appear to be in relatively good condition.

Additionally, WTI noted that the steel wall between the pump pit and the filter was bowed out. The Owner later reported that they had received previous assessments of the conditions of the steel wall in which they were cautioned that the wall could give way any time and cause the immediate shut down of the pool until a new, secure wall could be installed.

FAIRFAX COUNTY PARK AUTHORITY - Mt. Vernon RECenter

Facility Condition Assessment and Life Cycle Cost Analysis



10. Pool Heat Exchanger:

The pool utilized a heat exchanger with a building heat system to maintain water temperature. The operator reported that they are able to maintain pool temperature. The heat exchanger is fully evaluated in the building mechanical scope of the report. The exterior of the heat exchanger showed heavy corrosion. The pool water side connections of the heat exchanger appear to be PVC, but were painted so that the type of PVC could not be noted.

11. Pool Chemical Systems:

- a. **Storage and Feeders:** The pool utilizes liquid chlorine, fed by a double headed Stenner pump, for primary sanitization. The chlorine is stored in three 50 gallon tanks adjacent to the DE filter. Each tank is provided with a secondary containment basin. Access to the tanks is severely limited when the grating over the DE filter is removed. The chemical eye wash required by OSHA is not easy to access from the chlorine storage tanks, which poses a potential safety hazard to employees.

No secondary sanitization (UV or Ozone) is provided.

pH is controlled by Carbon Dioxide gas, which is stored in a primary 650 lb bulk CO2 tank, and five smaller cylinders. The smaller cylinders are required to cover the time lag between emptying the bulk tank and when the vendor can refill the bulk tank. The CO2 storage blocks one of the double doors that provide access in the pool equipment space.

Alkalinity is controlled, as required, by hand dumping acid into the body of the pool. This is both dangerous to personnel and pool finishes.

- b. **Chemical Controller:** The pool chemical controller is a Siemens Impact chemical controller. The Impact controller has been discontinued by the manufacturer and is currently serviced with "new old parts". Maintaining and servicing the chemical controller will become more difficult as time goes on. It is currently operating well, appears in good condition, and is interlocked via the manufacturer's flow cell.

12. Pool Spectator Seating Area:

The existing spectator seating area is not compliant with current ADA guidelines due to its lack of access from an accessible route; and the area does not offer ADA compliant companion seating.

13. Spa Pool Finishes:

- a. **Aggregate and Tile:** The submerged pool finishes include an aggregate type plaster and tile at the waterline and bench/step nosing. The aggregate finish has become overexposed (aggregate dominant) due to wear or chemical balance. A patron reported the excessive roughness of the finish was detrimental to his use of the spa pool. Additionally, areas of aggregate have chipped off at the bench nosing creating a safety hazard to exposed skin. The water line and bench nosing tile/grout is in good condition.
- b. **Coping Stones:** The spa perimeter includes a pre-cast manufactured coping stone. Other than discoloration the coping stones are in good service condition.
- c. **Deck and Wall Depth Markers:** The spa includes two pair of deck and wall depth markers. The depth markers are slip-resistant tile and indicate 4FT water depth and include the international "no diving" symbol. Other than discoloration, the depth markers are in good condition.

14. Spa Pool Accessible Entry:

The one required means of accessible entry into the spa is provided by a hydraulically powered pool lift. The lift is functional and in good service condition.

FAIRFAX COUNTY PARK AUTHORITY - Mt. Vernon RECenter

Facility Condition Assessment and Life Cycle Cost Analysis



15. Spa Pool Inlets:

The spa pool is equipped with six eyeball style inlets located on the vertical portion of the spa bench. The flow per inlet at the required turnover is 33 GPM each.

16. Spa Pool Recirculation:

The spa pool is approximately 3,000 gallons and is required by Chapter 69.1 to have a 15 minute turnover. This equates to a required 200 GPM recirculation rate. The design flow rate on the drawings is 205 GPM. The flow meter was reading approximately 260 GPM. The pool was clean and recirculation appeared well distributed.

In the Mechanical Room, the main drain piping as shown on the 2001 renovation drawings is a 4" PVC pipe and the skimmers measured a 2.5" PVC pipe. Both of these pipes are under direct suction. Per 69.1-2-15E, suction velocity for all piping shall not exceed 6 fps. A 4" schedule 40 PVC pipe can handle 238 GPM at 6fps and a 2.5" schedule 40 PVC pipe can only handle 90 GPM at 6 fps. The velocity of water in the skimmer pipe at the code required 200 GPM and 80% flow would create non-code compliant water velocity in the piping.

17. Spa Pool Pumps:

- a. **Filtration Pump:** The spa pool filtration pump is a Pac-Fab (Pentair) CMK-75, self-priming commercial bronze swimming pool pump with integral strainer. There were no pressure gauges installed on the suction side of the pump, so the operating flow could not be pinpointed on the manufacturer's design curve. The flow meter reading was approximately 260 GPM, design flow rate on the drawings is 205 GPM. The pump body was moderately corroded.
- b. **Jet Pump:** The spa jet pump is a Pac-Fab (Pentair) CMK-50. The gauge readings for the pump were -8.5" Hg and 14 PSI, which equates to a total dynamic head of approximately 42'. Reviewing the pump curve referenced below, this means the pump is operating at approximately 350 GPM and each jet would be operating at approximately 38-39 GPM. The design flow rate for the spa pump as listed on the 2001 renovation drawings is 230 GPM. The pump appears to be in good condition with mild corrosion of the bronze parts.

18. Spa Pump Filters:

The spa filtration is accomplished with three Pentair Triton TR-140 Filters. Each filter has 7.06 square feet of filter area. At the flow meter reading of 260 GPM, the flow through the filters is appropriate at approximately 12.4 GPM/SF.

19. Spa Pool Heater:

The spa pool heater is an electric swimming pool and spa heater manufactured by Coates, model number 34836PHS-3. The operator reports that the spa heater has been working well and maintaining heat.

20. Spa Pool Chemical Systems:

The spa pool utilizes Bromine for sanitizer and disinfectant. The bromine is fed via a BioLab Brominator. A solenoid valve on the influent pipe to the brominator, controlled by the chemical controller is utilized to regulate the feed from the brominator tank. The brominator and solenoid valve were functioning and maintaining the residual set by the Operators.

No secondary sanitization system (UV or Ozone) is provided.

pH control utilizes CO₂, shared with the main pool. The CO₂ feeder is a Strantrol CO₂ feeder. The CO₂ system appears to be in good working order.

FAIRFAX COUNTY PARK AUTHORITY - Mt. Vernon RECenter

Facility Condition Assessment and Life Cycle Cost Analysis



Acid is not required for the whirlpool, as it is emptied frequently, and alkalinity does not have time to build up in the pool.

A.10 Ice Rink (I)

1. Spectator Seating:

The age and condition of the bleachers are past their useable life span. There are visible spots of splinters. At the base of the bleachers, little children can access underneath the seats and is a liability hazard. Additional boards were added to cover the gap between dasher boards and bleachers. The bleachers are not ADA compliant either and would not meet code for bleachers today.

2. Dasher Boards:

According to staff, the dasher board system was replaced around 1996. The manufacturer could not be identified to confirm the installation date. The dashers have been refaced with new white poly board facing 3 years ago along with the yellow kick plate. The dasher boards lean out on the short ends and where they are not built against the bleachers and team boxes. This is due to the Olympia drivers running the machine against the dasher boards, causing them to bow outward. In addition, at the footings of many support legs for the boards there is rust and corrosion.

3. Ice Resurface Machines (Olympias):

The silver and blue Olympia was built in November 2002 and the silver and red Olympia was built in September 2003. These machines have a life span of about 20 years if there is regular preventive maintenance done and good to moderate drivers are operating them. During inspection there were no outward signs of any major mechanical issues. In speaking with staff members of the rink, it seems these machines do have some operating challenges with the natural gas systems, hydraulics and carburetors. The machines had no leaks in the hydraulics or oil systems. We did however notice several scrapes and damage to the fiberglass dump tanks which is assumed to be caused by collision with dasher boards or walls of the Olympia Bay. The low e-ceiling over ice rink is in very good shape with no separation at seams or at connections to the ceiling.

4. Rubber Flooring:

The rubber flooring around the perimeter of the rink is very worn, missing in some places and has gaps between rubber pieces. The rubber floor in the Skate Change Room that was being installed during the time of our survey also needs to be placed around the rink to prevent customers falling and to enhance the appearance of the Facility. The staff was not sure when the black rubber matting was installed around the ice rink but our estimation is that it is over 10 years old and is at the end of its operational life. The Olympia entrance also should be rubberized to prevent the wearing of the concrete surface and improve the life of the tires on the machine. Rubberizing where the Olympia enters the ice rink will improve ice quality and reduce maintenance cost to the ice and Olympia.

5. Sound System:

The sound system at the rink is past its operating life. Some of the speakers are blown, the audio crackles when playing music or making announcements. When a competition for figure skating took place this season the Ice Director stated that they had constant problems with the system. The main audio equipment for the system is in the Ice Directors Office and is not conducive to having a DJ during public sessions or changing music.

6. Exterior Doors:

The weather stripping on each exterior door has been compromised. Every exterior door in the Ice Rink area is missing some part of its weather stripping. This might seem to be minor, but the envelop of an ice rink building is very important to reduce energy costs, reduce humidity and provide great ice quality. During the spring and summer months these small openings to the outside environment add unneeded load to the entire refrigeration system.

FAIRFAX COUNTY PARK AUTHORITY - Mt. Vernon RECenter

Facility Condition Assessment and Life Cycle Cost Analysis



A.11 Americans with Disabilities Act

The original design accommodates the fundamentals of ADA compliance and FCPA has continually retrofitted the Facility to comply with ADA requirements in spirit. Future alteration and/or addition to the Facility will need to comply with the current ADA guidelines.

Areas that currently appear to be of concern include:

1. A missing handrail at a stairway in the parking lot (Item S.3).
2. Exposed sink trap piping at lavatories with damaged or missing insulation (Item P5).
3. The quantity of accessible plumbing fixtures throughout the Building (Item P.13).
4. Access to/from the spectator areas of the Pool and Ice Rink (Items A.13 and I.2 respectively) is not along an accessible route; and the existing spectator areas do not have companion seating in compliance with ADA requirements.
5. Accessible pool entry/exit is also deficient (refer to Items A.4B-A.4D).





B. Code Assessment

INTERNATIONAL BUILDING CODE (IBC)

Mt. Vernon Recreation Center was constructed in 1979 (Ice Rink Facility) and 1983 (Aquatic Facility) under the requirements of the BOCA Building Code. The BOCA Building Code has been superseded by the International Building Code (IBC) which is currently used for all new construction in Fairfax County, Virginia. The Building is currently “Grandfathered” under the IBC. Under the BOCA Building Code, the 64,374 SF one story structure classified as Use Group A-3 of Type 2-C Construction which, under the current IBC, translates to Use Group A-4 of Type IIB Construction.



Future alteration and/or addition to the Facility will need to comply with the current IBC to the extent required by the VA Rehabilitation Code (also referred to as Part II of the Virginia Uniform Statewide Building Code). The 2012 Virginia Rehabilitation Code references chapters 2 – 16 of the 2012 International Existing Building Code (IEBC). The IEBC defines alterations and additions into four distinct types. Each of these types is defined below with an analysis of how it would impact the existing Facility:

Alterations—Level 1:

This level of alterations includes the removal and replacement or the covering of existing materials, elements, equipment, or fixtures with new materials that serve the same purpose.

- Section 703 - Fire Protection: Alterations on this level must maintain the level of existing fire protection provided.
- Section 704 - Means of Egress: Alterations on this level must maintain the level of existing protection provided for the means of egress.
- Section 705 - Accessibility: The facility shall comply with Chapter 11 of the IBC unless it is technically infeasible. In addition, existing facilities do not have to provide accessible means of egress required by Chapter 10 of the IBC. In certain instances, such as *705.1.10 Toilet rooms* and *705.1.11 Dressing, fitting and, locker rooms*, if it is not feasible to alter existing spaces, an accessible space for the same purpose may be constructed on the same floor and in the same area.
- Section 706 - Structural: Alterations causing additional dead loads from roofing or equipment requires the supporting structural components to comply with the current IBC.
- Section 707 - Energy Conservation: Only the alterations must conform to the requirements of the International Energy Conservation Code (IECC) and not the entire building or structure.

Alterations—Level 2:

This level of alterations includes the reconfiguration of space, the addition or elimination of any door or window, the reconfiguration or extension of any system, or the installation of any additional equipment.

- Section 804 - Fire Protection: The requirements of this section for level 2 alterations are limited to the areas where work is being performed (the rest of the building doesn't need to comply). In some cases, if the alteration takes up 50% or more of the floor, the entire floor must comply with the current code requirements.

FAIRFAX COUNTY PARK AUTHORITY - Mt. Vernon RECenter

Facility Condition Assessment and Life Cycle Cost Analysis



- Section 805 - Means of Egress: *2012 Virginia Rehabilitation Code* modifies *Exception 2* of *Section 805.2* to read, “Means of egress conforming to the requirements of the building code under which the building was constructed shall be considered compliant means of egress.” So the means of egress for the existing building do not have to be updated.
- Section 806 - Accessibility: Same as *Section 705*, the facility shall comply with Chapter 11 of the IBC unless it is technically infeasible. In addition, existing facilities do not have to provide accessible means of egress required by Chapter 10 of the IBC. In certain instances, such as *705.1.10 Toilet rooms* and *705.1.11 Dressing, fitting and, locker rooms*, if it is not feasible to alter existing spaces, an accessible space for the same purpose may be constructed on the same floor and in the same area.
- Section 807 - Structural: New structural elements in alterations must comply with the current IBC.
- Section 808 - Electrical: Newly installed electrical equipment and wiring must comply with current IEBC only in the area where work is being done.
- Section 809 - Mechanical: All space intended to be occupied in the work area of the alteration must meet current International Mechanical Code (IMC).
- Section 810 - Plumbing: When a story’s occupant load has increased by more than 20%, plumbing fixtures for that story must meet current International Plumbing Code (IPC) requirements.
- Section 811 - Energy Conservation: Only the alterations must comply with the current IECC and not the entire building.

Alterations—Level 3:

This level of alterations is defined as exceeding 50% of the aggregate area of the building.

- Section 905 - Means of Egress: For level 3 alterations, means of egress shall comply with *Section 805*, so as stated above, “Means of egress conforming to the requirements of the building code under which the building was constructed shall be considered compliant means of egress.” Additionally, means of egress lighting from the highest work area floor to the floor of exit discharge will have artificial lighting and exit signs meeting the current IBC.
- Section 906 - Accessibility: Meet the requirements of *Section 705* and *Section 805*.
- Section 908 - Energy Conservation: Only the altered areas must comply with the IECC and not the entire building.

Additions:

Any extension or increase in floor area, number of stories, or height of a building or structure.

- The addition shall comply with current IBC without requiring the existing building or structure to comply. Where an addition impacts the existing building, that area shall comply with the current code as well.
- Section 1102 - Heights and Areas: The addition will not increase the height or area of an existing building beyond what is permitted under Chapter 5 of the IBC. Existing fire areas increased by the addition must comply with Chapter 9 of the IBC.
- Section 1105 - Accessibility: Additions must comply with accessibility requirements in Chapter 11 of the IBC. If the addition affects an area of primary function in the existing building, then it must comply with *Sections 705, 806 and 906*.
- Section 1106 - Energy Conservation: Additions must comply with the current IECC.

FAIRFAX COUNTY PARK AUTHORITY - Mt. Vernon RECenter

Facility Condition Assessment and Life Cycle Cost Analysis



INTERNATIONAL MECHANICAL CODE (IMC)

Most of the mechanical equipment at Mt. Vernon Recreation Center was replaced during a 1995 renovation. Equipment installed during this renovation would have been designed to comply with the 1993 International Mechanical Code (IMC). This version of the code has been superseded by the 2009 edition. For a simple replace-in-kind equipment update, no changes would be required to the equipment capacity or design, and, with the exception of the refrigerant used, it could be designed to match the 1996 installed equipment. Refrigerant used in the existing equipment is R-22, which has been illegal to use in new equipment since 2010. New refrigerant will be R-410A, which may require electrical upgrades to the equipment. Furthermore, future alteration and/or addition to the Facility will need to comply with the current IBC to the extent required by the VA Rehabilitation Code noted previously in the IBC Code Assessment.

INTERNATIONAL ENERGY CONSERVATION CODE (IECC)

The building envelope predates any known energy codes, and the mechanical equipment and lighting would have been designed to meet the 1993 Model Energy Code. The current energy code governing the building envelope and mechanical and lighting efficiencies is the 2009 International Energy Conservation Code (IECC). IECC requires base levels of energy efficiency that the current lighting systems (except within the Pool area) do not meet. It is also obvious that lighting controls throughout do not meet the current requirements. In addition, FCPA has adopted a policy of almost exclusively utilizing LED lighting. This helps to meet high standards set by Leadership in Energy and Environmental Design (LEED), but also importantly limits routine maintenance and replacement costs due to the LED lighting inherent longevity. Future alteration and/or addition to the Facility will need to comply with the current IBC to the extent required by the VA Rehabilitation Code noted previously in the IBC Code Assessment.

NATIONAL FIRE PROTECTION ASSOCIATION ELECTRICAL CODE “THE NATIONAL ELECTRICAL CODE” (NFPA 70)

The original installed electrical system would have been designed to comply with the NFPA 70 Code from either 1972 or 1975. The IBC and Virginia Uniform Statewide Building Code (VUSBC 2009) require the enforcement of the 2008 version of NFPA 70. The changes that have occurred from 1979 until now include the use of more ground fault interrupting protection on bath and locker room circuits; the requirement for more outlets at grade and roof mounted equipment; more defined clearance requirements; and the requirement for panic hardware on some electrical room doors. Future alteration and/or addition to the Facility will need to comply with the current IBC to the extent required by the VA Rehabilitation Code noted previously in the IBC Code Assessment.

INTERNATIONAL PLUMBING CODE (IPC)

The original plumbing equipment and fixtures installed would have been designed to comply with the BOCA Code from that era. The 2009 International Plumbing Code (IPC) is presently adopted in the State of Virginia. The changes that have occurred from then until now that would affect the Facility include provisions for protection of the potable water supply which would require backflow preventers at domestic and fire protection water services and at pool and boiler make up water connections and air gaps, and air breaks at drainage connections. Current IPC code requires protection of the Facility from sewer back water conditions. Also required is tempering of water to publicly used hand washing facilities that would require ASSE 1070 mix valves for all lavatories and hand sinks. Future alteration and/or addition to the Facility will need to comply with the current IBC to the extent required by the VA Rehabilitation Code noted previously in the IBC Code Assessment.

FAIRFAX COUNTY PARK AUTHORITY - Mt. Vernon RECenter

Facility Condition Assessment and Life Cycle Cost Analysis



NATIONAL FIRE PROTECTION ASSOCIATION SPRINKLER CODE (NFPA 13)

The original fire protection system installed would have been designed to comply with the NFPA 13 Code from that era. The Virginia Uniform Statewide Building Code (VUSBC 2009) is presently enforced and recognizes the 2007 version of NFPA 13. The changes that have occurred from then until now include more stringent monitoring of the sprinkler system by a sprinkler alarm and fire alarm system. Since the original design, the fire alarm system has been replaced; and when it was replaced, the sprinkler system monitoring was upgraded to current standards. There have also been changes to sprinkler and piping system components, installation requirements, and design approaches. Future alteration and/or addition to the Facility will need to comply with the current IBC to the extent required by the VA Rehabilitation Code noted previously in the IBC Code Assessment.

NATIONAL FIRE PROTECTION ASSOCIATION NATIONAL FIRE ALARM CODE (NFPA 72)

The original installed fire protection system would have been designed to comply with the NFPA 72 Code from that era. However, the fire alarm system was recently updated and is compliant with the current 2007 NFPA 72 Code. Future alteration and/or addition to the Facility will need to comply with the current IBC to the extent required by the VA Rehabilitation Code noted previously in the IBC Code Assessment.

AMERICANS WITH DISABILITIES ACT (ADA)

The ADA was enacted in 1990. Fortunately, the original design accommodates the fundamentals of ADA compliance and FCPA has continually retrofitted the Facility to comply with ADA requirements in spirit. Future alteration and/or addition to the Facility will need to comply with the current ADA guidelines and the current IBC to the extent required by the VA Rehabilitation Code noted previously in the IBC Code Assessment.

LEADERSHIP IN ENERGY AND ENVIRONMENTAL DESIGN (LEED)

Fairfax County adopted LEED Silver objectives for all new and renovated County facilities greater than 10,000 square feet in 2008. The design and construction of the Mt. Vernon Recreation Center precludes compliance.

Based on current LEED and ASHRAE requirements, the Mt. Vernon Facility is outdated with respect to energy conservation. Any renovation and/or expansion effort should include a thorough energy analysis and energy model to evaluate the extent of the requirements for energy conservation upgrades.



C. Functional Relationships

The Mt. Vernon Recreation Center was originally designed 35 years ago. The design has had to adapt to a number of significant changes in the recreation industry which have increased the diversity of programs and services which have increased the demand for recreation services. The following is a summary of the functional outcomes resulting from the effort to adapt from a dual use facility to a multi-purpose fitness facility within the original building shell:

- **Lobby and Fitness Zone Relationship:**

The placement of fitness equipment in the Lobby has reduced the functionality of the Lobby and places patrons using fitness equipment on public display.

- **Lobby and the Club Rooms Relationship:**

In order for patrons to access the club rooms, they must traverse the Skate Change Room which, during peak hours, is packed with skaters and their equipment.

- **Control Desk and Facility Administration Offices Relationship:**

These two functions should be combined for better customer service and management efficiency. Patrons trying to sign up for programs must go past the Control Desk and through the Skate Change Room to access the Administrative Offices. Administrative staff must travel the reverse route to assist staff trying to address customer needs.

- **Family Accessible Locker Room and Access to the Pool:**

Currently, the Family Accessible Locker Room offers the only locker room facilities (including a shower, toilet and lavatory) specifically designated for families and handicapped users. Staff reported that demand for this room is high which results in a waiting line in the adjacent public corridor that is visible from the Lobby. In addition, users of the Family Accessible Locker Room must cross that same public corridor and traverse a gender specific locker room to access the Pool. Having to go through another gender specific locker room defeats the purpose of a Family Accessible Locker Room.

- **Spectator Access to the Ice Rink** - There is currently no ADA compliant access or designated spectator seating in the Ice Rink Facility. In addition, spectators must pass control and traverse the Skate Change Room to access the spectator seating thus mixing paying and non-paying patrons of the Facility. Spectator access to public restrooms and vending is also through the Skate Changing Room.

- **Spectator Access to the Pool:**

The queue line for spectators at pool events stretches out the front door of the Facility because of the inadequate size of the Lobby. During swim events, the doors to the pool from the Lobby are typically propped open to accommodate the traffic in and out of the Pool space, filling the Lobby with pool atmosphere. In addition, spectators who need to use the toilets must either cross the Control Desk to access the toilets within the locker rooms (which are crowded with swimmers); or they must travel a great distance to the public restrooms past the Skate Change Room. There is currently no ADA compliant access or designated spectator seating in the Pool either.

- **Access to Vending Machines from the Pool:**

Currently, the vending machines are located in the Skate Change Room. To access the vending machines, pool patrons, who often wear sandals with exposed toes, must go back through the Lobby, past the Control Desk and enter the Skate Change Room where ice rink patrons are wearing ice skates.

FAIRFAX COUNTY PARK AUTHORITY - Mt. Vernon RECenter

Facility Condition Assessment and Life Cycle Cost Analysis



- **Undersized Men's and Women's Locker Rooms:**
According to users of the Facility, the number of lockers, sinks, toilets and showers is inadequate to handle current utilization of the Facility. The lack of privacy in each locker room is most often cited by users of the Facility as a functional deterrent.
- **Undersized Fitness Equipment Zone:**
Even with the expansion into the Lobby, the size of the fitness zone and the limited number and types of equipment and lack of adequate circulation space is inadequate to address demand or accessibility.
- **Inadequate Storage for Equipment and Program Aids:**
Over time, virtually all storage spaces have been converted to program and administrative uses. Equipment storage now occurs in the program spaces themselves thus reducing the capability of the space.
- **Undersized Fitness Club Rooms:**
Class sizes have to be limited in number below demand to function in the limited space available.
- **Number of Fitness Club Rooms:**
Programs are limited below demand by the number of club rooms.
- **Administrative Offices:**
Facility staff has grown in order to address the demand for services. The number of offices and support spaces are inadequate and they need to be consolidated. Administrative offices are stuffed into every available corner of the Facility.
- **Ice Rink Support Spaces for Women and Girls:**
The original design of the Facility did not address the surge in demand for ice hockey by women and girls.
- **Inadequate Lobby Space:**
As a result of the placement of fitness equipment in the original lobby space, the current configuration is inadequate to address the role of a lobby space in a multi-function Recreation Center.
- **Lack of Adequate Waiting Space for Club Rooms and Fitness Zone:**
The fitness zone and club rooms have defined cycles of use resulting in the need for individuals and groups to assemble and wait for their activity to begin. The limited amount of space adjacent to the fitness zone and each club room makes it difficult to provide this key function as there are no spaces specifically dedicated for Fitness/Club Room waiting. Patrons waiting to begin their activity within fitness/club rooms have to share the limited amenities (benches, chairs, tables, etc.) and space of the Skate Change Area and the Lobby.
- **Poor Acoustics in the Ice Rink Space:**
Due to the predominance of hard surfaces in the Ice Rink space, the acoustics are poor and the public address system is difficult to hear.
- **Poor Acoustics in the Pool Space:**
Due to the predominance of hard surfaces in the Pool space, the acoustics are poor and the public address system is difficult to hear.

FAIRFAX COUNTY PARK AUTHORITY - Mt. Vernon RECenter

Facility Condition Assessment and Life Cycle Cost Analysis



- **Lack of Organizational Clarity:**

The confluence of distinct Ice, Pool and Fitness patrons combined with event spectators has resulted in cross-circulation patterns that are confusing to patrons and difficult to control for FCPA staff.





As part of our commitment to sustainability,
this page has been left blank to
accommodate two-sided printing.



Section 4

Assessment Reports



Section 4

Assessment Reports





SITE (S)

| ASSESSMENT REPORT | | | | |
|---|------------------------------|-------|----------|----------|
| ITEM NO. | LOCATION | GRADE | PRIORITY | CATEGORY |
| S.1 | Public Parking Lot - General | D | 2 | 3 |
| <p>ASSESSMENT DESCRIPTION:</p> <p>Vehicular circulation for the public parking lot has been notoriously noted by Patrons for the safety challenges that it presents. The parking area is located more than 30' above the Facility. When vehicles enter/exit the site to/from one of the tiered parking levels, they have to navigate a curved access drive which is coursed along a hill. Potential for an accident is intensified by poorly sited vegetative growth at the parking lot access points which create extensive blind spots.</p> <p>The access point of a small parking lot which contains ADA parking spaces is located at the lower portion of the access drive. This parking lot provides the only "at grade" parking for the Facility and functions as the default drop off area for the Building Entry. Sometimes hockey players off-load from here as well. Although an accessible route connects the accessible/drop-off area parking lot and the Building's Main Entrance, some Users have complained that the path is too long.</p> <p>After parking, visual orientation to the building entry remains confusing and obscured from view by the geometry of the structure, the lack of way-finding devices, and vegetative growth. Not being able to see the entry of a public facility is a problem for Patrons and for Staff control of the site. Once a stairway down from the main parking lots to the building entry is located, Patrons must negotiate a vertical drop of over 30' to reach the entry level. Negotiating these stairs (with over 50 steps) is difficult for children, seniors, and parents with strollers. Located at the bottom of the steep hill-side, the entry plaza is often inundated with storm water, ice and snow. Staff informed us that poor site drainage at the Main Entrance sometimes causes the Lobby to flood.</p> <p>Lastly, the Building's appearance is foreboding and industrial according to Patrons, Staff and members of the community. Besides the sign at the corner of Ft. Hunt Road and Belle View Blvd., there is no implication of the vibrant activities within.</p> | | | | |
| <p>RECOMMENDATION:</p> <p>For improved safety and efficiency, redesign public parking lot (including pedestrian circulation) that is free of blind spots at access points; allows for a shorter pedestrian commute between the parking lot and Main Entrance; and enables Staff to view the public parking and drop-off areas from the Reception Desk. Improve way-finding and site drainage throughout the site as well.</p> | | | | |


FAIRFAX COUNTY PARK AUTHORITY - Mt. Vernon RECenter
 Facility Condition Assessment and Life Cycle Cost Analysis



| ASSESSMENT REPORT | | | | |
|--|------------------------------|------------------|----------|----------|
| ITEM NO. | LOCATION | GRADE | PRIORITY | CATEGORY |
| S.1 (cont'd) | Public Parking Lot - General | D | 2 | 3 |
| <div><div></div><div></div></div> | | | | |
| LIFE CYCLE STATUS | REPLACEMENT YEAR | REPLACEMENT COST | | |
| 35 yrs of 15 | 2015 | TBD | | |
| REFERENCE: S.2; S.3; S.4 | | | | |


FAIRFAX COUNTY PARK AUTHORITY - Mt. Vernon RECenter
Facility Condition Assessment and Life Cycle Cost Analysis



| ASSESSMENT REPORT | | | | |
|---|--------------------|------------------|----------|----------|
| ITEM NO. | LOCATION | GRADE | PRIORITY | CATEGORY |
| S.2 | Public Parking Lot | D | 2 | 5 |
| ASSESSMENT DESCRIPTION: Damaged storm drain cover. | | | | |
| RECOMMENDATION: Replace damaged storm drain cover with a new cover. | | | | |
|  | | | | |
| LIFE CYCLE STATUS | REPLACEMENT YEAR | REPLACEMENT COST | | |
| 35 yrs of 15 | 2015 | \$ 996.52 | | |
| REFERENCE: S.1; S.4 | | | | |


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Facility Condition Assessment and Life Cycle Cost Analysis



| ASSESSMENT REPORT | | | | |
|--|--------------------|-------------------|----------|----------|
| ITEM NO. | LOCATION | GRADE | PRIORITY | CATEGORY |
| S.3 | Public Parking Lot | F | 1 | 3 |
| ASSESSMENT DESCRIPTION: ADA (section 505.2) states that handrails shall be provided on both sides of stairs and ramps. The stairway between middle and lower level parking lots has two existing handrails: one handrail is located at the center of the stairway; and the other is located on the side of the stairway. The other side of the stairway does not have a handrail and is thus non-compliant. | | | | |
| RECOMMENDATION: Add hand railing to the other side of the steps to comply with ADA. | | | | |
|  | | | | |
| LIFE CYCLE STATUS | INSTALLATION YEAR | INSTALLATION COST | | |
| N/A | 2015 | \$ 2,839.36 | | |
| REFERENCE: S.1; S.4 | | | | |

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Facility Condition Assessment and Life Cycle Cost Analysis

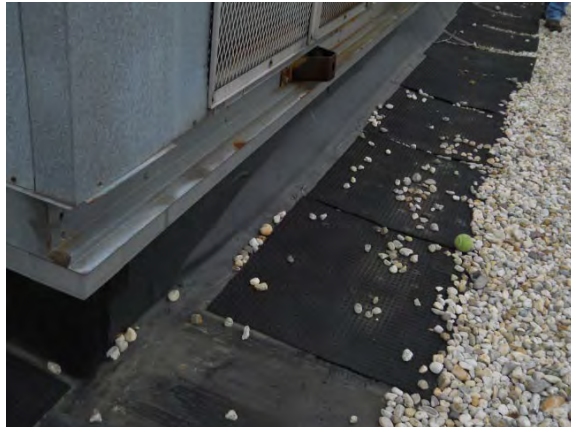



| ASSESSMENT REPORT | | | | |
|---|-------------------------|-------------------------|----------|----------|
| ITEM NO. | LOCATION | GRADE | PRIORITY | CATEGORY |
| S.4 | Public Parking Lot | C | 3 | 2 |
| ASSESSMENT DESCRIPTION: Although the public parking lots lack significant damages, the asphalt pavement surface, and concrete steps and curbs seem to be wearing down as normal and nearing the end of their useful life. Additionally, striping is worn out. | | | | |
| RECOMMENDATION: Replace all concrete curbs and asphalt pavement of public parking lots with new materials and restripe parking lot. Also, repair edges of concrete steps which have broken off and/or have become significantly worn. | | | | |
|  | | | | |
| LIFE CYCLE STATUS | REPLACEMENT YEAR | REPLACEMENT COST | | |
| 35 yrs of 15 | 2015 | \$ 219,918.63 | | |
| REFERENCE: S.1; S.2; S.3 | | | | |

FAIRFAX COUNTY PARK AUTHORITY - Mt. Vernon RECenter
Facility Condition Assessment and Life Cycle Cost Analysis



BUILDING ENVELOPE (E)

| ASSESSMENT REPORT | | | | |
|---|---------------------|--------------------|----------|-------------------------|
| ITEM NO. | LOCATION | GRADE | PRIORITY | CATEGORY |
| E.1A | Ballasted EPDM Roof | F | 1 | 2 |
| ASSESSMENT DESCRIPTION: Due to age and exposure to the elements, the EPDM membrane is showing signs of shrinking. As the EPDM shrinks, it causes stress on the membrane and can begin to pull away from the adhered substrates. This is evident where the low sloped roof meets the metal roofing and at several of the roof top mechanical units. Leaks that have been noted to occur throughout the interior of the building from the roof are a result of this activity. | | | | |
| RECOMMENDATION: Cut back the EPDM membrane where shrinking has occurred to relax the membrane, adhere new flashing membranes at those locations, and provide new terminations. | | | | |
| <div></div> | | | | |
| LIFE CYCLE STATUS | | REPAIR YEAR | | REPLACEMENT COST |
| 17 yrs of 20 | | 2015 | | \$ 7,433.28 |
| REFERENCE: E.1C; E.1D; E.1E; E.1F | | | | |

FAIRFAX COUNTY PARK AUTHORITY - Mt. Vernon RECenter
Facility Condition Assessment and Life Cycle Cost Analysis



ASSESSMENT REPORT

| ITEM NO. | LOCATION | GRADE | PRIORITY | CATEGORY |
|----------|---------------------|-------|----------|----------|
| E.1B | Ballasted EPDM Roof | C | 3 | 3 |

ASSESSMENT DESCRIPTION:

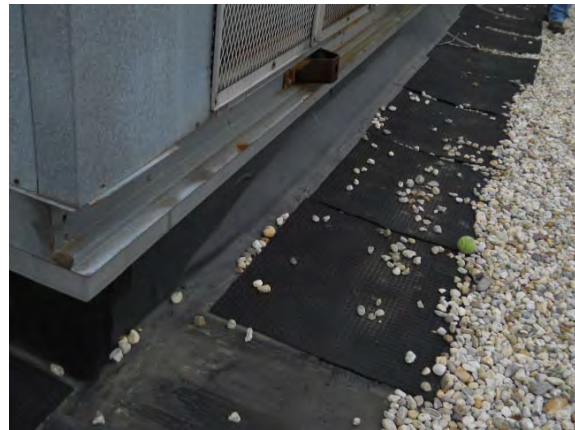
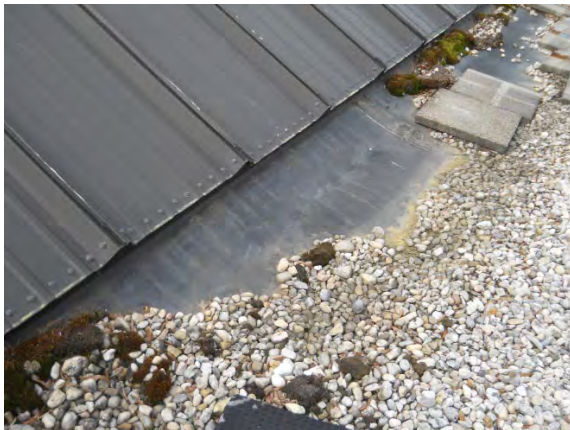
Due to age and exposure to the elements, the EPDM membrane is showing signs of shrinking. As the EPDM shrinks, it causes stress on the membrane and can begin to pull away from the adhered substrates. This is evident where the low sloped roof meets the metal roofing and at several of the roof top mechanical units. Leaks that have been noted to occur throughout the interior of the building from the roof are a result of this activity.

The projected life expectancy for a single membrane EPDM roof system is 20 years. According to FCPA: Building Equipment – Life Expectancy Report dated 12/20/2013, the existing EPDM roof was replaced in January 1997. The roof has been in service for 17 of its expected 20 years, with its life expectancy end date of 2017. Isolated repairs may provide temporary solutions to existing leaks but will not address long term roofing problems.

RECOMMENDATION:

Cut back the EPDM membrane where shrinking has occurred to relax the membrane, adhere new flashing membranes at those locations, and provide new terminations.


Completely remove and replace the EPDM membrane and install a new single ply membrane roof. Provide term flashings and terminations.



| LIFE CYCLE STATUS | REPLACEMENT YEAR | REPLACEMENT COST |
|-----------------------------------|------------------|------------------|
| 17 yrs of 20 | 2018 | \$ 137,893.29 |
| REFERENCE: E.1C; E.1D; E.1E; E.1F | | |



FAIRFAX COUNTY PARK AUTHORITY - Mt. Vernon RECenter
Facility Condition Assessment and Life Cycle Cost Analysis



| ASSESSMENT REPORT | | | | |
|---|--|------------------|----------|----------|
| ITEM NO. | LOCATION | GRADE | PRIORITY | CATEGORY |
| E.1C | Ballasted EPDM Roof—Penetrations & Roof Drains | C | 3 | 3 |
| ASSESSMENT DESCRIPTION: The roof has numerous mechanical units that penetrate through to the roofing membrane down to the structure below. At these locations, the EPDM membrane turns up and terminates at the penetration. The EPDM membrane appeared properly adhered and showed little signs of deterioration. Roof drains appear in satisfactory conditions and show no signs of significant wear. The life expectancy of roof penetrations and roof drains are the same as the main roof membrane, 20 years. The roof penetrations were replaced in 1997, same as the main roof and it is assumed that the drains were replaced at the same time. Even though the flashings and drains show no significant wear, they are nearing the end of their expected lifespan which will expire in 2017. | | | | |
| RECOMMENDATION: During new roofing installation, existing penetrations should be flashed with new roofing membranes, terminations, and sealants. Existing roof drains should be replaced when the EPDM membrane is replaced. | | | | |
|  | | | | |
| LIFE CYCLE STATUS | REPLACEMENT YEAR | REPLACEMENT COST | | |
| 17 yrs of 20 | 2018 | \$ 5,825.86 | | |
| REFERENCE: E.1A; E.1B | | | | |

FAIRFAX COUNTY PARK AUTHORITY - Mt. Vernon RECenter
Facility Condition Assessment and Life Cycle Cost Analysis



| ASSESSMENT REPORT | | | | |
|---|----------------------------------|------------------|----------|----------|
| ITEM NO. | LOCATION | GRADE | PRIORITY | CATEGORY |
| E.1D | Ballasted EPDM Roof—Walkway Pads | C | 3 | 3 |
| ASSESSMENT DESCRIPTION: Existing walkway pads appeared in satisfactory condition. The life expectancy of the roof walkway pads is 20 years, the same as for the main roof membrane and were probably replaced in 1997. Even though the pads appear in satisfactory condition, they are close to exceeding their life expectancy. | | | | |
| RECOMMENDATION: Completely remove and replace the existing walkway pads with new pads when the new roofing membrane is installed. | | | | |
| <div></div> | | | | |
| LIFE CYCLE STATUS | REPLACEMENT YEAR | REPLACEMENT COST | | |
| 17 yrs of 20 | 2018 | \$ 4,438.65 | | |
| REFERENCE: E.1A; E.1B | | | | |

FAIRFAX COUNTY PARK AUTHORITY - Mt. Vernon RECenter
Facility Condition Assessment and Life Cycle Cost Analysis



ASSESSMENT REPORT

| ITEM NO. | LOCATION | GRADE | PRIORITY | CATEGORY |
|----------|---|-------|----------|----------|
| E.1E | Ballasted EPDM Roof – Mech. Equip. Support Frames | F | 1 | 5 |

ASSESSMENT DESCRIPTION:

The life expectancy of the mechanical equipment support framing is 30 years. Being part of the original construction, the life expectancy end date would have been 5 years ago in 2009. Due to lack of protection, several sections of the support steel show extensive corrosion which could cause failure in the system.

RECOMMENDATION:

Remove existing steel corrosion and repair by welding new steel in place. Paint entire support with corrosion inhibitor paint. At roof penetrations, remove existing EPDM membrane and clean existing supports. Paint support with corrosion inhibitor paints and install new roof flashing and sealants.



| LIFE CYCLE STATUS | REPAIR YEAR | REPAIR COST |
|-------------------|-------------|--------------|
| 35 yrs of 30 | 2015 | \$ 10,020.22 |

REFERENCE: E.1A; E.1B; E.1C

FAIRFAX COUNTY PARK AUTHORITY - Mt. Vernon RECenter
Facility Condition Assessment and Life Cycle Cost Analysis



ASSESSMENT REPORT

| ITEM NO. | LOCATION | GRADE | PRIORITY | CATEGORY |
|----------|---|-------|----------|----------|
| E.1F | Ballasted EPDM Roof – Mech. Equip. Support Frames | F | 1 | 5 |

ASSESSMENT DESCRIPTION:

The life expectancy of the mechanical equipment support framing is 30 years. Being part of the original construction, the life expectancy end date would have been 5 years ago in 2009. Due to lack of protection, several sections of the support steel show extensive corrosion which could cause failure in the system.

RECOMMENDATION:



During the proposed roofing membrane replacement or when the existing mechanical equipment is scheduled for replacement, install new structural supports for the mechanical units. The new roof penetrations can be properly flashed and waterproofed. The new structural supports should be painted with a rust inhibiting paint to protect against corrosion.



| LIFE CYCLE STATUS | REPLACEMENT YEAR | REPLACEMENT COST |
|------------------------------------|------------------|------------------|
| 35 yrs of 30 | 2015 | \$ 16,167.38 |
| REFERENCE: E.1A; E.1B; E.1C | | |



FAIRFAX COUNTY PARK AUTHORITY - Mt. Vernon RECenter
Facility Condition Assessment and Life Cycle Cost Analysis



| ASSESSMENT REPORT | | | | |
|--|--------------------------|--------------|----------|----------|
| ITEM NO. | LOCATION | GRADE | PRIORITY | CATEGORY |
| E.1G | Standing Seam Metal Roof | C | 3 | 1 |
| ASSESSMENT DESCRIPTION: Metal roof appears in good condition. Painted galvanized cap shows signs of minor surface rust and deterioration. | | | | |
| RECOMMENDATION: Clean and repair mildly corroded areas (approx. 20% of roof area) and paint to match existing metal roof. | | | | |
| <div></div> | | | | |
| LIFE CYCLE STATUS | REPAIR YEAR | REPAIR COST | | |
| 18 yrs of 30 | 2015 | \$ 25,089.63 | | |
| REFERENCE: | | | | |



FAIRFAX COUNTY PARK AUTHORITY - Mt. Vernon RECenter
Facility Condition Assessment and Life Cycle Cost Analysis



| ASSESSMENT REPORT | | | | |
|--|--------------------------|------------------|----------|----------|
| ITEM NO. | LOCATION | GRADE | PRIORITY | CATEGORY |
| E.1H | Standing Seam Metal Roof | C | 3 | 3 |
| ASSESSMENT DESCRIPTION: Metal roof appears in good condition. | | | | |
| RECOMMENDATION: Replace metal roof with new metal roof. | | | | |
| <div></div> | | | | |
| LIFE CYCLE STATUS | REPLACEMENT YEAR | REPLACEMENT COST | | |
| 18 yrs of 30 | 2027 | \$ 172,817.49 | | |
| REFERENCE: | | | | |



FAIRFAX COUNTY PARK AUTHORITY - Mt. Vernon RECenter
Facility Condition Assessment and Life Cycle Cost Analysis



| ASSESSMENT REPORT | | | | |
|--|-------------------------------|--|----------|--------------------|
| ITEM NO. | LOCATION | GRADE | PRIORITY | CATEGORY |
| E.2A | Exterior Façade – Metal Panel | C | 3 | 1 |
| ASSESSMENT DESCRIPTION: Overall the metal wall panels are in good condition. Little sign of wear is evident. | | | | |
| RECOMMENDATION: Where deterioration has occurred, these areas should be cleaned and painted to match. | | | | |
|  | |  | | |
| LIFE CYCLE STATUS | | REPAIR YEAR | | REPAIR COST |
| 18 yrs of 30 | | 2015 | | \$ 3,604.11 |
| REFERENCE: | | | | |



FAIRFAX COUNTY PARK AUTHORITY - Mt. Vernon RECenter
Facility Condition Assessment and Life Cycle Cost Analysis



| ASSESSMENT REPORT | | | | |
|--|-------------------------------|-------------|----------|----------|
| ITEM NO. | LOCATION | GRADE | PRIORITY | CATEGORY |
| E.2B | Exterior Façade – Metal Panel | C | 3 | 3 |
| ASSESSMENT DESCRIPTION: Metal panels near the service entrance of the Pool Facility show signs of damage due to traffic, but the damage appears to be cosmetic only. | | | | |
| RECOMMENDATION: Replace damaged metal wall panels at Pool Facility’s service entrance. | | | | |
| <div></div> | | | | |
| LIFE CYCLE STATUS | REPAIR YEAR | REPAIR COST | | |
| 18 yrs of 30 | 2015 | \$ 9,027.45 | | |
| REFERENCE: E.2E | | | | |



FAIRFAX COUNTY PARK AUTHORITY - Mt. Vernon RECenter
Facility Condition Assessment and Life Cycle Cost Analysis



| ASSESSMENT REPORT | | | | |
|--|-------------------------------|-------------------|----------|----------|
| ITEM NO. | LOCATION | GRADE | PRIORITY | CATEGORY |
| E.2C | Exterior Façade – Metal Panel | B | 4 | 5 |
| ASSESSMENT DESCRIPTION: Metal Panels: Overall the metal wall panels are in good condition. Little sign of wear is evident. | | | | |
| RECOMMENDATION: Pipe bollards are recommended at service areas where automobiles or equipment may contact low metal panels. | | | | |
| <div><div></div><div></div></div> | | | | |
| LIFE CYCLE STATUS | INSTALLATION YEAR | INSTALLATION COST | | |
| N/A | 2015 | \$ 2,689.92 | | |
| REFERENCE: | | | | |


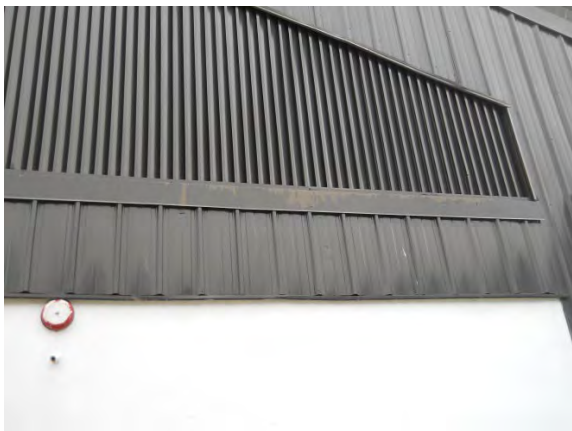
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Facility Condition Assessment and Life Cycle Cost Analysis



| ASSESSMENT REPORT | | | | |
|---|---------------------------------|------------------|----------|----------|
| ITEM NO. | LOCATION | GRADE | PRIORITY | CATEGORY |
| E.2D | Exterior Façade – Stucco Finish | C | 3 | 3 |
| ASSESSMENT DESCRIPTION: Exterior CMU walls are clad in cementitious painted stucco. The stucco shows signs of previous repairs and is showing normal deterioration for its age. Cracks and delaminated areas are visible at several locations. Control joints have been filled in and painted over. | | | | |
| RECOMMENDATION: Complete stucco replacement. | | | | |
| <div></div> | | | | |
| LIFE CYCLE STATUS | REPLACEMENT YEAR | REPLACEMENT COST | | |
| 35 yrs of 30 | 2015 | \$ 46,840.61 | | |
| REFERENCE: E.2E | | | | |


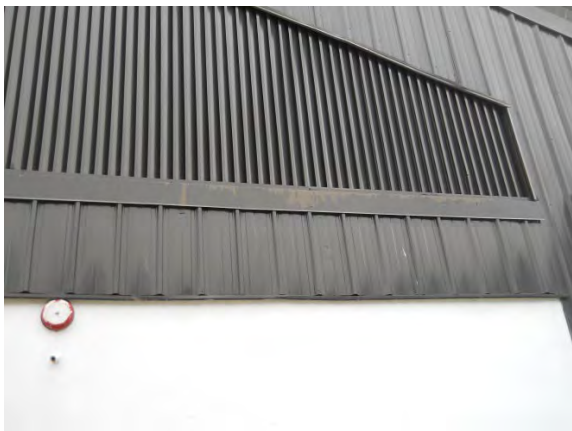
FAIRFAX COUNTY PARK AUTHORITY - Mt. Vernon RECenter
Facility Condition Assessment and Life Cycle Cost Analysis



| ASSESSMENT REPORT | | | | |
|--|---------------------------------|-------------|----------|----------|
| ITEM NO. | LOCATION | GRADE | PRIORITY | CATEGORY |
| E.2E | Exterior Façade – Metal Louvers | A | 6 | 1 |
| ASSESSMENT DESCRIPTION: There are metal louvers outside the mechanical room of the pool at the metal fascia panels and above the metal doors at the skating rink. The galvanized caps show minor signs of deterioration. | | | | |
| RECOMMENDATION: Clean and remove minor deteriorations and paint to match. | | | | |
| <div></div> | | | | |
| LIFE CYCLE STATUS | REPAIR YEAR | REPAIR COST | | |
| 18 yrs of 30 | 2015 | \$ 369.02 | | |
| REFERENCE: | | | | |

FAIRFAX COUNTY PARK AUTHORITY - Mt. Vernon RECenter
Facility Condition Assessment and Life Cycle Cost Analysis



| ASSESSMENT REPORT | | | | |
|---|---------------------------------|------------------|----------|----------|
| ITEM NO. | LOCATION | GRADE | PRIORITY | CATEGORY |
| E.2F | Exterior Façade – Metal Louvers | A | 6 | 3 |
| ASSESSMENT DESCRIPTION: Overall, metal louvers outside the mechanical room of the pool at the metal fascia panels and above the metal doors at the skating rink appear to be in good condition. | | | | |
| RECOMMENDATION: Replace metal louvers. | | | | |
| <div></div> | | | | |
| LIFE CYCLE STATUS | REPLACEMENT YEAR | REPLACEMENT COST | | |
| 18 yrs of 30 | 2027 | \$ 7,508.70 | | |
| REFERENCE: E.2B, E.2D | | | | |

FAIRFAX COUNTY PARK AUTHORITY - Mt. Vernon RECenter
Facility Condition Assessment and Life Cycle Cost Analysis



ASSESSMENT REPORT

| ITEM NO. | LOCATION | GRADE | PRIORITY | CATEGORY |
|----------|--|-------|----------|----------|
| E.2G | Exterior Façade - Metal Doors & Frames | C | 3 | 1 |

ASSESSMENT DESCRIPTION:

The metal doors and frames appear in satisfactory condition. Areas of minor deterioration and rusting were observed. Sealant around the perimeter is in need of replacement.

RECOMMENDATION:

Repair all deterioration and paint metal doors and frames. Repairs should include replacement of all perimeter sealants.



| LIFE CYCLE STATUS | REPAIR YEAR | REPAIR COST |
|-------------------|-------------|-------------|
| 35 yrs of 30 | 2015 | \$ 2,051.76 |

REFERENCE: E.2D, E.2E; E.2F

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Facility Condition Assessment and Life Cycle Cost Analysis



ASSESSMENT REPORT

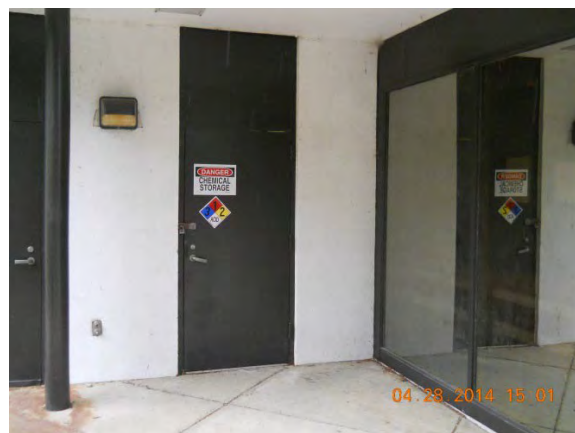
| ITEM NO. | LOCATION | GRADE | PRIORITY | CATEGORY |
|----------|--|-------|----------|----------|
| E.2H | Exterior Façade - Metal Doors & Frames | C | 3 | 3 |

ASSESSMENT DESCRIPTION:

The metal doors and frames appear in satisfactory condition. Areas of minor deterioration and rusting were observed. Sealant around the perimeter is in need of replacement.

RECOMMENDATION:

Replace all metal doors and frames (including perimeter sealants).





| LIFE CYCLE STATUS | REPLACEMENT YEAR | REPLACEMENT COST |
|-------------------|------------------|------------------|
| 35 yrs of 30 | 2015 | \$ 26,132.63 |

REFERENCE: E.2D, E.2E; E.2F

FAIRFAX COUNTY PARK AUTHORITY - Mt. Vernon RECenter
Facility Condition Assessment and Life Cycle Cost Analysis



| ASSESSMENT REPORT | | | | |
|---|---------------------------|------------------|----------|----------|
| ITEM NO. | LOCATION | GRADE | PRIORITY | CATEGORY |
| E.2I | Exterior Façade – Windows | C | 3 | 3 |
| ASSESSMENT DESCRIPTION: The exterior metal windows are in satisfactory condition but do not provide good thermal resistance. Several windows noted are showing mild corrosion and rusting at the corners. The sealant around the perimeter of the windows between the sealant and stucco is also showing signs of deterioration as well as the sealant between the glazing and metal. | | | | |
| RECOMMENDATION: Replace entire window systems with new thermally broken windows to provide better energy efficiency. | | | | |
| <div></div> | | | | |
| LIFE CYCLE STATUS | REPLACEMENT YEAR | REPLACEMENT COST | | |
| 35 yrs of 30 | 2015 | \$ 52,432.50 | | |
| REFERENCE: E.2D | | | | |



FAIRFAX COUNTY PARK AUTHORITY - Mt. Vernon RECenter
Facility Condition Assessment and Life Cycle Cost Analysis



| ASSESSMENT REPORT | | | | |
|--|------------------------------|------------------|----------|----------|
| ITEM NO. | LOCATION | GRADE | PRIORITY | CATEGORY |
| E.2J | Building Entrance Storefront | D | 2 | 3 |
| ASSESSMENT DESCRIPTION: To reduce solar glare and solar heat gain in the Lobby/Reception, a reflective coating was applied to the glazing of the building’s entrance. However, that treatment resulted in a lack of visual transparency at the approach toward the building’s entrance. Many patrons of the facility have remarked that this condition creates a drab, isolated experience upon entering the building. Additionally, the metal storefront windows at the main entrance are showing signs of deterioration and wear. The steel framing has numerous dents and has developed holes at the base. Sealant at joints is deteriorated which has caused some windows to develop a frosty appearance—a sign that the interior seals have broken. With the interior seals broken the windows are no longer able to keep a thermal barrier to the exterior. | | | | |
| RECOMMENDATION: Replace storefront system at main entrance with new aluminum curtain wall system that has low-E glazing to allow visual transparency between the exterior and interior sides of the building without sacrificing the thermal comfort of the interior. Glazing should also have a coating which mitigates solar glare without having an undesirable shiny appearance like reflective glass. | | | | |
| <div></div> | | | | |
| LIFE CYCLE STATUS | REPLACEMENT YEAR | REPLACEMENT COST | | |
| 31 yrs of 30 | 2015 | \$ 151,652.84 | | |
| REFERENCE: | | | | |


FAIRFAX COUNTY PARK AUTHORITY - Mt. Vernon RECenter
Facility Condition Assessment and Life Cycle Cost Analysis



| ASSESSMENT REPORT | | | | |
|--|--------------------------------------|------------------|----------|----------|
| ITEM NO. | LOCATION | GRADE | PRIORITY | CATEGORY |
| E.2K | Exterior Façade – Metal Panel System | B | 4 | 3 |
| ASSESSMENT DESCRIPTION: Overall the metal wall panels are in good condition. The cladding system is about halfway through its expected life cycle. | | | | |
| RECOMMENDATION: Anticipate complete replacement of the metal wall panel system at the end of its expected life cycle. | | | | |
| <div><div></div><div></div></div> | | | | |
| LIFE CYCLE STATUS | REPLACEMENT YEAR | REPLACEMENT COST | | |
| 18 yrs of 30 | 2027 | \$ 221,000.00 | | |
| REFERENCE: | | | | |

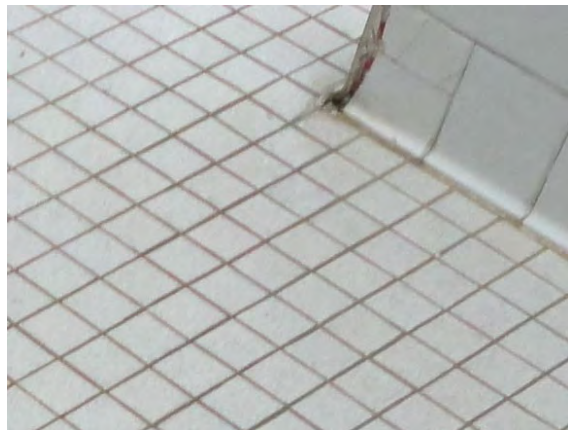
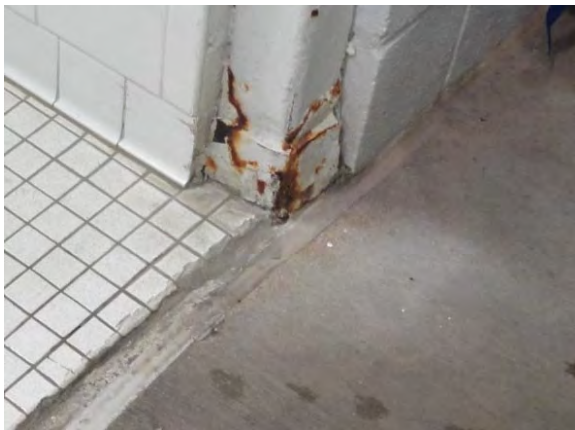


INTERIOR FINISHES (F)

| ASSESSMENT REPORT | | | | |
|--|--|-------------------|----------|----------|
| ITEM NO. | LOCATION | GRADE | PRIORITY | CATEGORY |
| F.1 | Men's Locker Room; Women's Locker Room | B | 4 | 3 |
| ASSESSMENT DESCRIPTION: The most significant complaint from customers regards the lack of privacy within the open layouts of both the men's and women's locker rooms. This reality is of great concern for the program as it is regarded as being a major cause of lost revenue. | | | | |
| RECOMMENDATION: Given the small amount of area of those rooms, it would be very challenging to provide an extensive level of privacy for individual patrons without completely redesigning the layout. Installation of a translucent panel partitioning system (such as 3-form's Ready to Go solutions) to divide the open rooms and shower stations would provide a greater level of privacy than the existing layouts. This type of pre-packaged partitioning system offers a simple way to divide the locker room space and provide privacy among patrons without using too much floor area or losing functionality of the existing space. | | | | |
|  | | | | |
| LIFE CYCLE STATUS | INSTALLATION YEAR | INSTALLATION COST | | |
| N/A | 2015 | \$ 34,090.33 | | |
| REFERENCE: F.2 | | | | |

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Facility Condition Assessment and Life Cycle Cost Analysis

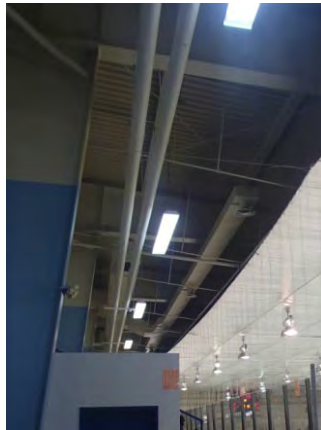



| ASSESSMENT REPORT | | | | |
|--|----------------------------------|------------------|----------|----------|
| ITEM NO. | LOCATION | GRADE | PRIORITY | CATEGORY |
| F.2 | Locker Room Floor and Base Tiles | F | 1 | 5 |
| ASSESSMENT DESCRIPTION: Portions of floor and base tiles have become chipped or completely broken off to the extent in which patron safety is of prime concern. | | | | |
| RECOMMENDATION: Damaged portions of floor and base tiles should be replaced with new tiles immediately to prevent injury to patrons' feet. | | | | |
| <div></div> | | | | |
| LIFE CYCLE STATUS | REPLACEMENT YEAR | REPLACEMENT COST | | |
| 31 yrs of 10 | 2015* | \$ 480.00 | | |
| REFERENCE: | | | | |

*Tile is scheduled to be replace/repaired during the 2014 Natatorium shutdown

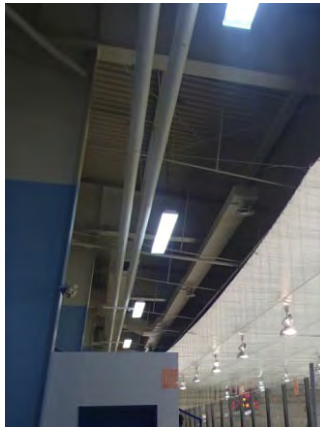

FAIRFAX COUNTY PARK AUTHORITY - Mt. Vernon RECenter
Facility Condition Assessment and Life Cycle Cost Analysis



| ASSESSMENT REPORT | | | | |
|--|------------------|------------------|----------|----------|
| ITEM NO. | LOCATION | GRADE | PRIORITY | CATEGORY |
| F.3A | Ice Rink | B | 4 | 4 |
| ASSESSMENT DESCRIPTION: Acoustics within the Ice Rink are poor. | | | | |
| RECOMMENDATION: Although the low-E ceiling over ice rink is in very good shape with no separation at seams or at connections to the ceiling, we recommend replacing the existing ceiling with a modified low-E ceiling system with foil and bubble finish to improve acoustical quality. | | | | |
| <div></div> | | | | |
| LIFE CYCLE STATUS | REPLACEMENT YEAR | REPLACEMENT COST | | |
| 19 yrs of 10 | 2015 | \$ 12,655.56 | | |
| REFERENCE: I.1 | | | | |

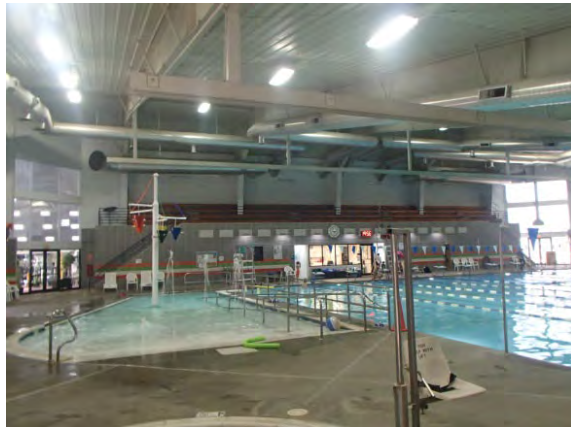
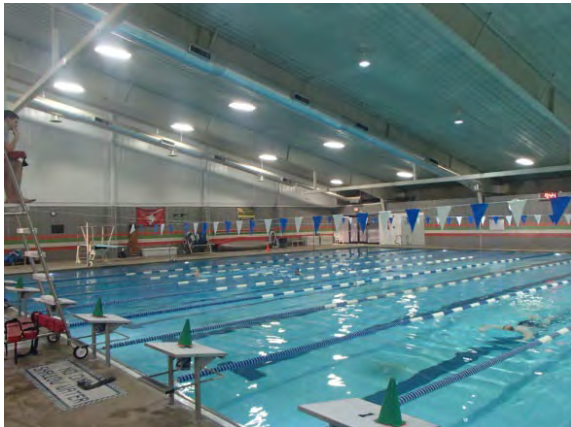
FAIRFAX COUNTY PARK AUTHORITY - Mt. Vernon RECenter
Facility Condition Assessment and Life Cycle Cost Analysis



| ASSESSMENT REPORT | | | | |
|--|-------------------|-------------------|----------|----------|
| ITEM NO. | LOCATION | GRADE | PRIORITY | CATEGORY |
| F.3B | Ice Rink | B | 4 | 4 |
| ASSESSMENT DESCRIPTION: Acoustics within the Ice Rink are poor. | | | | |
| RECOMMENDATION: Provide acoustic panels on the walls of the Ice Rink. | | | | |
| <div></div> | | | | |
| LIFE CYCLE STATUS | INSTALLATION YEAR | INSTALLATION COST | | |
| N/A | 2015 | \$ 42,644.55 | | |
| REFERENCE: I.1 | | | | |

FAIRFAX COUNTY PARK AUTHORITY - Mt. Vernon RECenter
Facility Condition Assessment and Life Cycle Cost Analysis





| ASSESSMENT REPORT | | | | |
|--|-------------------|-------------------|----------|----------|
| ITEM NO. | LOCATION | GRADE | PRIORITY | CATEGORY |
| F.4 | Pool & Spa Area | B | 4 | 4 |
| ASSESSMENT DESCRIPTION: Acoustics within the Pool & Spa Area are poor. | | | | |
| RECOMMENDATION: Provide 40% coverage of Pool & Spa area ceiling with lapendary acoustic panels. | | | | |
| <div></div> | | | | |
| LIFE CYCLE STATUS | INSTALLATION YEAR | INSTALLATION COST | | |
| N/A | 2015 | \$ 53,601.28 | | |
| REFERENCE: | | | | |

FAIRFAX COUNTY PARK AUTHORITY - Mt. Vernon RECenter
Facility Condition Assessment and Life Cycle Cost Analysis





MECHANICAL (M)

| ASSESSMENT REPORT | | | | |
|---|------------------|------------------|----------|----------|
| ITEM NO. | LOCATION | GRADE | PRIORITY | CATEGORY |
| M.1 | Compressor Room | F | 1 | 3 |
| ASSESSMENT DESCRIPTION: Boiler B-1 and associated piping and insulation show signs of advanced wear and leakage. The useful life of the boiler is 30 years, which has been exceeded by 5 years. Further, given the severity of the chemical buildup on the exterior of the piping, we are concerned about how the water chemistry was maintained over the life of the boiler. | | | | |
| RECOMMENDATION: Replace the existing boiler with a new boiler. Replace the piping and pump within the mechanical room, and evaluate the demolished piping to determine if further system demolition is required. | | | | |
| <div><div></div><div></div></div> | | | | |
| LIFE CYCLE STATUS | REPLACEMENT YEAR | REPLACEMENT COST | | |
| 35 yrs of 30 | 2015 | \$ 90,924.76 | | |
| REFERENCE: | | | | |



FAIRFAX COUNTY PARK AUTHORITY - Mt. Vernon RECenter
Facility Condition Assessment and Life Cycle Cost Analysis



| ASSESSMENT REPORT | | | | |
|--|------------------|------------------|----------|----------|
| ITEM NO. | LOCATION | GRADE | PRIORITY | CATEGORY |
| M.2 | Roof | D | 2 | 3 |
| ASSESSMENT DESCRIPTION: Rooftop Unit RTU-1 is nearing the end of its serviceable life. | | | | |
| RECOMMENDATION: Preparations should be made for replacement of this rooftop unit within the next two years. Replacement will include controls, flexible duct connectors, re-piping of the gas train, and piping of the condensate drain to the nearest storm drain (not done for the current installation). If the Facility anticipates that the area served by this RTU will be modified within the next 12 years, then the ductwork may be kept in place and cleaned. If the intent is to maintain the current space configuration beyond the next 12 years, then the ductwork should be replaced with the unit. | | | | |
| <div></div> | | | | |
| LIFE CYCLE STATUS | REPLACEMENT YEAR | REPLACEMENT COST | | |
| 18 yrs of 20 | 2017 | \$ 30,161.24 | | |
| REFERENCE: E.1A; E.1B; E.1C | | | | |



FAIRFAX COUNTY PARK AUTHORITY - Mt. Vernon RECenter
Facility Condition Assessment and Life Cycle Cost Analysis



| ASSESSMENT REPORT | | | | |
|--|----------|-------------------------|----------|-------------------------|
| ITEM NO. | LOCATION | GRADE | PRIORITY | CATEGORY |
| M.3 | Roof | D | 2 | 3 |
| ASSESSMENT DESCRIPTION: Rooftop Unit RTU-2 is nearing the end of its serviceable life. | | | | |
| RECOMMENDATION: Preparations should be made for replacement of this rooftop unit within the next two years. Replacement will include controls, flexible duct connectors, re-piping of the gas train, and piping of the condensate drain to the nearest storm drain (not done for the current installation). If the Facility anticipates that the area served by this RTU will be modified within the next 12 years, then the ductwork may be kept in place and cleaned. If the intent is to maintain the current space configuration beyond the next 12 years, then the ductwork should be replaced with the unit. | | | | |
| <div></div> | | | | |
| LIFE CYCLE STATUS | | REPLACEMENT YEAR | | REPLACEMENT COST |
| 18 yrs of 20 | | 2017 | | \$ 104,846.20 |
| REFERENCE: E.1A; E.1B; E.1C | | | | |



FAIRFAX COUNTY PARK AUTHORITY - Mt. Vernon RECenter
Facility Condition Assessment and Life Cycle Cost Analysis



| ASSESSMENT REPORT | | | | |
|--|------------------|------------------|----------|----------|
| ITEM NO. | LOCATION | GRADE | PRIORITY | CATEGORY |
| M.4 | Roof | D | 2 | 3 |
| ASSESSMENT DESCRIPTION: Rooftop Unit RTU-3 is nearing the end of its serviceable life. | | | | |
| RECOMMENDATION: Preparations should be made for replacement of this rooftop unit within the next two years. Replacement will include controls, flexible duct connectors, re-piping of the gas train, and piping of the condensate drain to the nearest storm drain (not done for the current installation). If the Facility anticipates that the area served by this RTU will be modified within the next 12 years, then the ductwork may be kept in place and cleaned. If the intent is to maintain the current space configuration beyond the next 12 years, then the ductwork should be replaced with the unit. | | | | |
| <div></div> | | | | |
| LIFE CYCLE STATUS | REPLACEMENT YEAR | REPLACEMENT COST | | |
| 18 yrs of 20 | 2017 | \$ 8,114.35 | | |
| REFERENCE: E.1A; E.1B; E.1C | | | | |



FAIRFAX COUNTY PARK AUTHORITY - Mt. Vernon RECenter
Facility Condition Assessment and Life Cycle Cost Analysis



| ASSESSMENT REPORT | | | | |
|--|----------|-------------------------|----------|-------------------------|
| ITEM NO. | LOCATION | GRADE | PRIORITY | CATEGORY |
| M.5 | Roof | D | 2 | 3 |
| ASSESSMENT DESCRIPTION: Rooftop Unit RTU-4 is nearing the end of its serviceable life. | | | | |
| RECOMMENDATION: Preparations should be made for replacement of this rooftop unit within the next two years. Replacement will include controls, flexible duct connectors, re-piping of the gas train, and piping of the condensate drain to the nearest storm drain (not done for the current installation). If the Facility anticipates that the area served by this RTU will be modified within the next 12 years, then the ductwork may be kept in place and cleaned. If the intent is to maintain the current space configuration beyond the next 12 years, then the ductwork should be replaced with the unit. | | | | |
| <div><div></div><div></div></div> | | | | |
| LIFE CYCLE STATUS | | REPLACEMENT YEAR | | REPLACEMENT COST |
| 18 yrs of 20 | | 2017 | | \$ 40,933.11 |
| REFERENCE: E.1A; E.1B; E.1C | | | | |



FAIRFAX COUNTY PARK AUTHORITY - Mt. Vernon RECenter
Facility Condition Assessment and Life Cycle Cost Analysis



| ASSESSMENT REPORT | | | | |
|--|----------|------------------|----------|------------------|
| ITEM NO. | LOCATION | GRADE | PRIORITY | CATEGORY |
| M.6 | Roof | D | 2 | 3 |
| ASSESSMENT DESCRIPTION: Rooftop Unit RTU-5 is nearing the end of its serviceable life. | | | | |
| RECOMMENDATION: Preparations should be made for replacement of this rooftop unit within the next two years. Replacement will include controls, flexible duct connectors, re-piping of the gas train, and piping of the condensate drain to the nearest storm drain (not done for the current installation). If the Facility anticipates that the area served by this RTU will be modified within the next 12 years, then the ductwork may be kept in place and cleaned. If the intent is to maintain the current space configuration beyond the next 12 years, then the ductwork should be replaced with the unit. | | | | |
| <div></div> | | | | |
| LIFE CYCLE STATUS | | REPLACEMENT YEAR | | REPLACEMENT COST |
| 18 yrs of 20 | | 2017 | | \$ 48,114.35 |
| REFERENCE: E.1A; E.1B; E.1C | | | | |



FAIRFAX COUNTY PARK AUTHORITY - Mt. Vernon RECenter
Facility Condition Assessment and Life Cycle Cost Analysis



| ASSESSMENT REPORT | | | | |
|--|----------|-------------------------|----------|-------------------------|
| ITEM NO. | LOCATION | GRADE | PRIORITY | CATEGORY |
| M.7 | Roof | D | 2 | 3 |
| ASSESSMENT DESCRIPTION: Rooftop Unit RTU-6 is nearing the end of its serviceable life. | | | | |
| RECOMMENDATION: Preparations should be made for replacement of this rooftop unit within the next two years. Replacement will include controls, flexible duct connectors, re-piping of the gas train, and piping of the condensate drain to the nearest storm drain (not done for the current installation). If the Facility anticipates that the area served by this RTU will be modified within the next 12 years, then the ductwork may be kept in place and cleaned. If the intent is to maintain the current space configuration beyond the next 12 years, then the ductwork should be replaced with the unit. | | | | |
| <div></div> | | | | |
| LIFE CYCLE STATUS | | REPLACEMENT YEAR | | REPLACEMENT COST |
| 18 yrs of 20 | | 2017 | | \$ 33,751.86 |
| REFERENCE: E.1A; E.1B; E.1C | | | | |

FAIRFAX COUNTY PARK AUTHORITY - Mt. Vernon RECenter
Facility Condition Assessment and Life Cycle Cost Analysis



| ASSESSMENT REPORT | | | | |
|---|------------------|------------------|----------|----------|
| ITEM NO. | LOCATION | GRADE | PRIORITY | CATEGORY |
| M.8 | Roof | D | 2 | 3 |
| ASSESSMENT DESCRIPTION: Makeup Air Unit MAU-1 is nearing the end of its serviceable life. | | | | |
| RECOMMENDATION: Preparations should be made for replacement of this makeup air unit within the next two years. Replacement will include controls, flexible duct connectors, re-piping of the gas train, and piping of the condensate drain to the nearest storm drain (not done for the current installation). If the Facility anticipates that the area served by this MAU will be modified within the next 12 years, then the ductwork may be kept in place and cleaned. If the intent is to maintain the current space configuration beyond the next 12 years, then the ductwork should be replaced with the unit. | | | | |
| <div></div> | | | | |
| LIFE CYCLE STATUS | REPLACEMENT YEAR | REPLACEMENT COST | | |
| 18 yrs of 20 | 2017 | \$ 354,035.44 | | |
| REFERENCE: E.1A; E.1B; E.1C | | | | |

FAIRFAX COUNTY PARK AUTHORITY - Mt. Vernon RECenter
Facility Condition Assessment and Life Cycle Cost Analysis



ASSESSMENT REPORT

| ITEM NO. | LOCATION | GRADE | PRIORITY | CATEGORY |
|----------|--------------------------|-------|----------|----------|
| M.9 | Pool Equipment Room/Roof | D | 2 | 3 |

ASSESSMENT DESCRIPTION:

Pool Energy Recovery Unit PRU-1 and associated Outdoor Condensing Unit ACCOU-1 are nearing the end of their serviceable lifespan.

RECOMMENDATION:



Preparations should be made for replacement of this makeup air unit within the next two years. Replacement will include controls, flexible duct connectors, hot water piping and circulator pump, refrigerant piping, and exhaust fan. If the Facility anticipates that the area served by this PRU will be modified within the next 12 years, then the ductwork may be kept in place and cleaned. If the intent is to maintain the current space configuration beyond the next 12 years, then the ductwork should be replaced with the unit.



| LIFE CYCLE STATUS | REPLACEMENT YEAR | REPLACEMENT COST |
|------------------------------------|------------------|------------------|
| 18 yrs of 20 | 2017 | \$ 366,961.67 |
| REFERENCE: E.1A; E.1B; E.1C | | |

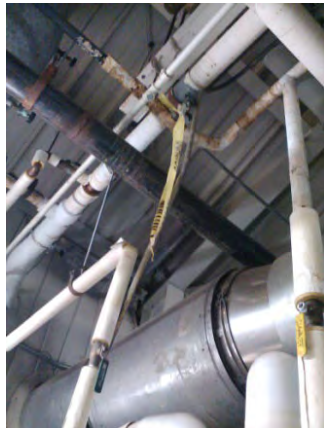

FAIRFAX COUNTY PARK AUTHORITY - Mt. Vernon RECenter
Facility Condition Assessment and Life Cycle Cost Analysis



| ASSESSMENT REPORT | | | | |
|--|----------|-------------------------|----------|-------------------------|
| ITEM NO. | LOCATION | GRADE | PRIORITY | CATEGORY |
| M.10 | Roof | D | 2 | 3 |
| ASSESSMENT DESCRIPTION: Pool Energy Recovery Unit PRU-2 and associated Outdoor Condensing Unit ACCOU-2 are nearing the end of their serviceable lifespan. | | | | |
| RECOMMENDATION: Preparations should be made for replacement of this makeup air unit within the next two years. Replacement will include controls, flexible duct connectors, hot water piping and circulator pump, refrigerant piping, and exhaust fan. If the Facility anticipates that the area served by this PRU will be modified within the next 12 years, then the ductwork may be kept in place and cleaned. If the intent is to maintain the current space configuration beyond the next 12 years, then the ductwork should be replaced with the unit. Also, the 40x30 outside air duct should be reinforced to eliminate the bellowing, and provided with additional support to eliminate the swaying of the duct. | | | | |
| <div></div> | | | | |
| LIFE CYCLE STATUS | | REPLACEMENT YEAR | | REPLACEMENT COST |
| 18 yrs of 20 | | 2017 | | \$ 366,961.67 |
| REFERENCE: E.1A; E.1B; E.1C | | | | |



FAIRFAX COUNTY PARK AUTHORITY - Mt. Vernon RECenter
Facility Condition Assessment and Life Cycle Cost Analysis



| ASSESSMENT REPORT | | | | |
|--|------------------|------------------|----------|----------|
| ITEM NO. | LOCATION | GRADE | PRIORITY | CATEGORY |
| M.11 | Mechanical Room | F | 1 | 3 |
| ASSESSMENT DESCRIPTION: Boiler B-2 (pool water heater) and associated pumps, piping and insulation show signs of wear and leakage. | | | | |
| RECOMMENDATION: Replace the existing boiler with a new boiler. Replace the piping and pump within the mechanical room, and evaluate the demolished piping to determine if further system demolition is required. | | | | |
| <div></div> | | | | |
| LIFE CYCLE STATUS | REPLACEMENT YEAR | REPLACEMENT COST | | |
| 31 yrs of 30 | 2015 | \$ 98,443.81 | | |
| REFERENCE: | | | | |



FAIRFAX COUNTY PARK AUTHORITY - Mt. Vernon RECenter
Facility Condition Assessment and Life Cycle Cost Analysis



| ASSESSMENT REPORT | | | | |
|--|------------------|------------------|----------|----------|
| ITEM NO. | LOCATION | GRADE | PRIORITY | CATEGORY |
| M.12 | Roof | B | 4 | 4 |
| ASSESSMENT DESCRIPTION: Reports from FCPA staff indicate that Energy Recovery Unit ERU-1 serving the locker rooms does an inadequate job of cooling and dehumidifying the space. Conditions observed in the locker room during a survey on 6/17/14 could be qualitatively assessed as “comfortable”. | | | | |
| RECOMMENDATION: This unit was installed in 2008 as a replacement for the unit installed during the 1995 renovations. The occasional nature of the equipment issue suggests that it is related to the unit controls. The unit is only six years old and has an anticipated remaining service life of 14 years. At the very least, we would recommend that this unit be commissioned, and inspected by a controls contractor for proper operation. However, as the remainder of the mechanical systems are generally in poor condition and require full replacement, any major renovation plans should include replacing these units as well rather than an attempted repair. Therefore, the cost provided is for full replacement. | | | | |
| <div></div> | | | | |
| LIFE CYCLE STATUS | REPLACEMENT YEAR | REPLACEMENT COST | | |
| 6 yrs of 20 | 2017 | \$ 56,680.74 | | |
| REFERENCE: E.1A; E.1B; E.1C | | | | |


FAIRFAX COUNTY PARK AUTHORITY - Mt. Vernon RECenter
Facility Condition Assessment and Life Cycle Cost Analysis



| ASSESSMENT REPORT | | | | |
|--|------------------|------------------|----------|----------|
| ITEM NO. | LOCATION | GRADE | PRIORITY | CATEGORY |
| M.13 | Roof | B | 4 | 4 |
| ASSESSMENT DESCRIPTION: Reports from FCPA staff indicate that Energy Recovery Unit ERU-2 serving the locker rooms does an inadequate job of cooling and dehumidifying the space. Conditions observed in the locker room during a survey on 6/17/14 could be qualitatively assessed as “comfortable”. | | | | |
| RECOMMENDATION: This unit was installed in 2008 as a replacement for the unit installed during the 1995 renovations. The occasional nature of the equipment issue suggests that it is related to the unit controls. The unit is only six years old and has an anticipated remaining service life of 14 years. At the very least, we would recommend that this unit be commissioned, and inspected by a controls contractor for proper operation. However, as the remainder of the mechanical systems are generally in poor condition and require full replacement, any major renovation plans should include replacing these units as well rather than an attempted repair. Therefore, the cost provided is for full replacement. | | | | |
| <div></div> | | | | |
| LIFE CYCLE STATUS | REPLACEMENT YEAR | REPLACEMENT COST | | |
| 6 yrs of 20 | 2017 | \$ 56,680.74 | | |
| REFERENCE: E.1A; E.1B; E.1C | | | | |


FAIRFAX COUNTY PARK AUTHORITY - Mt. Vernon RECenter
 Facility Condition Assessment and Life Cycle Cost Analysis



| ASSESSMENT REPORT | | | | |
|--|------------------|------------------|----------|----------|
| ITEM NO. | LOCATION | GRADE | PRIORITY | CATEGORY |
| M.14 | Ice Rink | C | 3 | 3 |
| ASSESSMENT DESCRIPTION: Dehumidification Unit DH-1 is nearing the end of its serviceable life. | | | | |
| RECOMMENDATION: Preparations should be made for replacement of this unit within the next two years. Replacement will include controls, flexible duct connectors, and piping of the condensate drain to the nearest storm or sanitary drain. The ductwork may be kept in place and cleaned. | | | | |
|  | | | | |
| LIFE CYCLE STATUS | REPLACEMENT YEAR | REPLACEMENT COST | | |
| 18 yrs of 20 | 2017 | \$ 256,298.68 | | |
| REFERENCE: | | | | |


FAIRFAX COUNTY PARK AUTHORITY - Mt. Vernon RECenter
Facility Condition Assessment and Life Cycle Cost Analysis



| ASSESSMENT REPORT | | | | |
|--|-------------------------|-------------------------|----------|----------|
| ITEM NO. | LOCATION | GRADE | PRIORITY | CATEGORY |
| M.15 | Compressor Room | C | 3 | 3 |
| ASSESSMENT DESCRIPTION: Dehumidification Unit DH-2 is nearing the end of its serviceable life. | | | | |
| RECOMMENDATION: Preparations should be made for replacement of this unit within the next two years. Replacement will include controls, flexible duct connectors, and piping of the condensate drain to the nearest storm or sanitary drain. The ductwork may be kept in place and cleaned. | | | | |
|  | | | | |
| LIFE CYCLE STATUS | REPLACEMENT YEAR | REPLACEMENT COST | | |
| 18 yrs of 20 | 2017 | \$ 256,298.68 | | |
| REFERENCE: | | | | |


FAIRFAX COUNTY PARK AUTHORITY - Mt. Vernon RECenter
Facility Condition Assessment and Life Cycle Cost Analysis



| ASSESSMENT REPORT | | | | |
|--|------------------|------------------|----------|----------|
| ITEM NO. | LOCATION | GRADE | PRIORITY | CATEGORY |
| M.16 | Roof | D | 2 | 3 |
| ASSESSMENT DESCRIPTION: Boiler room exhaust fan MF-1 is nearing the end of its serviceable life. Additionally, this fan exhibits significant vibration and rattling. | | | | |
| RECOMMENDATION: Preparations should be made for replacement of this unit within the next two years. Replacement will include controls (speed controls and refrigerant leak detection), flexible duct connectors, and new ductwork. | | | | |
|  | | | | |
| LIFE CYCLE STATUS | REPLACEMENT YEAR | REPLACEMENT COST | | |
| 18 yrs of 20 | 2017 | \$ 20,099.16 | | |
| REFERENCE: E.1A; E.1B; E.1C | | | | |


FAIRFAX COUNTY PARK AUTHORITY - Mt. Vernon RECenter
 Facility Condition Assessment and Life Cycle Cost Analysis



| ASSESSMENT REPORT | | | | |
|--|-------------------|-------------------|----------|----------|
| ITEM NO. | LOCATION | GRADE | PRIORITY | CATEGORY |
| M.17A | Mechanical Room | D | 2 | 5 |
| ASSESSMENT DESCRIPTION: Inline Exhaust Fan EF-2 was installed without a belt guard. | | | | |
| RECOMMENDATION: Provide new belt guard for the existing fan to ensure personnel are protected from exposed rotating parts. | | | | |
|  | | | | |
| LIFE CYCLE STATUS | INSTALLATION YEAR | INSTALLATION COST | | |
| N/A | 2015 | \$ 560.00 | | |
| REFERENCE: | | | | |


FAIRFAX COUNTY PARK AUTHORITY - Mt. Vernon RECenter
Facility Condition Assessment and Life Cycle Cost Analysis



| ASSESSMENT REPORT | | | | |
|---|-------------------------|-------------------------|----------|----------|
| ITEM NO. | LOCATION | GRADE | PRIORITY | CATEGORY |
| M.17B | Mechanical Room | D | 2 | 3 |
| ASSESSMENT DESCRIPTION: Inline Exhaust Fan EF-2 is nearing the end of its serviceable life. | | | | |
| RECOMMENDATION: Replace inline exhaust fan at the end of its service life. | | | | |
|  | | | | |
| LIFE CYCLE STATUS | REPLACEMENT YEAR | REPLACEMENT COST | | |
| 18 yrs of 20 | 2017 | \$ 8,617.50 | | |
| REFERENCE: | | | | |


FAIRFAX COUNTY PARK AUTHORITY - Mt. Vernon RECenter
Facility Condition Assessment and Life Cycle Cost Analysis



| ASSESSMENT REPORT | | | | |
|---|------------------|------------------|----------|----------|
| ITEM NO. | LOCATION | GRADE | PRIORITY | CATEGORY |
| M.18 | Roof | D | 2 | 1 |
| ASSESSMENT DESCRIPTION: Powered Roof Ventilator EF-3 exhibits slight rattling and vibration and is nearing the end of its serviceable life. | | | | |
| RECOMMENDATION: At the very least, we would recommend that the services of a factory service representative be enlisted to perform required maintenance (belt replacement, grease bearings, etc.). However, as the remainder of the mechanical systems are generally in poor condition and require full replacement, any major renovation plans should include replacing these units as well, rather than an attempted repair. Therefore, the cost provided is for full replacement of EF-3 at the end of its service life. | | | | |
|  | | | | |
| LIFE CYCLE STATUS | REPLACEMENT YEAR | REPLACEMENT COST | | |
| 18 yrs of 20 | 2017 | \$ 9,319.82 | | |
| REFERENCE: E.1A; E.1B; E.1C | | | | |


FAIRFAX COUNTY PARK AUTHORITY - Mt. Vernon RECenter
Facility Condition Assessment and Life Cycle Cost Analysis



| ASSESSMENT REPORT | | | | |
|---|------------------|------------------|----------|----------|
| ITEM NO. | LOCATION | GRADE | PRIORITY | CATEGORY |
| M.19 | Roof | D | 2 | 1 |
| ASSESSMENT DESCRIPTION: Powered Roof Ventilator EF-4 exhibits slight rattling and vibration and is nearing the end of its serviceable life. | | | | |
| RECOMMENDATION: At the very least, we would recommend that the services of a factory service representative be enlisted to perform required maintenance (belt replacement, grease bearings, etc.); and would further recommend that this fan be rebalanced by a certified Testing and Balancing firm due to the strong odors present in the room served by this fan. However, as the remainder of the mechanical systems are generally in poor condition and require full replacement, any major renovation plans should include replacing these units as well, rather than an attempted repair. Therefore, the cost provided is for full replacement of EF-4 at the end of its service life. | | | | |
|  | | | | |
| LIFE CYCLE STATUS | REPLACEMENT YEAR | REPLACEMENT COST | | |
| 18 yrs of 20 | 2017 | \$ 9,586.96 | | |
| REFERENCE: E.1A; E.1B; E.1C | | | | |


FAIRFAX COUNTY PARK AUTHORITY - Mt. Vernon RECenter
Facility Condition Assessment and Life Cycle Cost Analysis



| ASSESSMENT REPORT | | | | |
|--|------------------|------------------|----------|----------|
| ITEM NO. | LOCATION | GRADE | PRIORITY | CATEGORY |
| M.20 | Roof | D | 2 | 1 |
| ASSESSMENT DESCRIPTION: Powered Roof Ventilator EF-5 exhibits slight rattling and vibration and is nearing the end of its serviceable life. | | | | |
| RECOMMENDATION: At the very least, we would recommend that the services of a factory service representative be enlisted to perform required maintenance (belt replacement, grease bearings, etc.); and would further recommend that this fan be rebalanced by a certified Testing and Balancing firm due to the strong odors present in the Team Room served by this fan. However, as the remainder of the mechanical systems are generally in poor condition and require full replacement, any major renovation plans should include replacing these units as well, rather than an attempted repair. Therefore, the cost provided is for full replacement of EF-5 at the end of its service life. | | | | |
|  | | | | |
| LIFE CYCLE STATUS | REPLACEMENT YEAR | REPLACEMENT COST | | |
| 18 yrs of 20 | 2017 | \$ 9,586.96 | | |
| REFERENCE: E.1A; E.1B; E.1C | | | | |


FAIRFAX COUNTY PARK AUTHORITY - Mt. Vernon RECenter
 Facility Condition Assessment and Life Cycle Cost Analysis



| ASSESSMENT REPORT | | | | |
|--|-------------------|-------------------|----------|----------|
| ITEM NO. | LOCATION | GRADE | PRIORITY | CATEGORY |
| M.21A | Mechanical Room | D | 2 | 5 |
| ASSESSMENT DESCRIPTION: Supply Fan SF-1 was installed without a belt guard. | | | | |
| RECOMMENDATION: Provide new belt guard for the existing fan to ensure personnel are protected from exposed rotating parts. | | | | |
|  | | | | |
| LIFE CYCLE STATUS | INSTALLATION YEAR | INSTALLATION COST | | |
| N/A | 2015 | \$670.00 | | |
| REFERENCE: | | | | |



FAIRFAX COUNTY PARK AUTHORITY - Mt. Vernon RECenter
 Facility Condition Assessment and Life Cycle Cost Analysis



| ASSESSMENT REPORT | | | | |
|---|------------------|------------------|----------|----------|
| ITEM NO. | LOCATION | GRADE | PRIORITY | CATEGORY |
| M.21B | Mechanical Room | D | 2 | 3 |
| ASSESSMENT DESCRIPTION: Supply Fan SF-1 is nearing the end of its serviceable life. | | | | |
| RECOMMENDATION: Replace Supply Fan SF-1 at the end of its serviceable life. | | | | |
|  | | | | |
| LIFE CYCLE STATUS | REPLACEMENT YEAR | REPLACEMENT COST | | |
| 18 yrs of 20 | 2017 | \$ 7,879.26 | | |
| REFERENCE: | | | | |



FAIRFAX COUNTY PARK AUTHORITY - Mt. Vernon RECenter
Facility Condition Assessment and Life Cycle Cost Analysis



| ASSESSMENT REPORT | | | | |
|---|-------------------------|-------------------------|----------|----------|
| ITEM NO. | LOCATION | GRADE | PRIORITY | CATEGORY |
| M.22 | Team Room 2 | D | 2 | 3 |
| ASSESSMENT DESCRIPTION: Fan Coil Unit FCU-1 is nearing the end of its serviceable life. | | | | |
| RECOMMENDATION: Preparations should be made for replacement of this fan coil unit within the next two years. Replacement will include controls, flexible duct connectors, ductwork, and re-piping of the hot water train. | | | | |
| <div style="display: flex; justify-content: space-around;">   </div> | | | | |
| LIFE CYCLE STATUS | REPLACEMENT YEAR | REPLACEMENT COST | | |
| 18 yrs of 20 | 2017 | \$ 8,186.62 | | |
| REFERENCE: | | | | |


FAIRFAX COUNTY PARK AUTHORITY - Mt. Vernon RECenter
Facility Condition Assessment and Life Cycle Cost Analysis



| ASSESSMENT REPORT | | | | |
|---|------------------|------------------|----------|----------|
| ITEM NO. | LOCATION | GRADE | PRIORITY | CATEGORY |
| M.23 | Team Room 1 | D | 2 | 3 |
| ASSESSMENT DESCRIPTION: Fan Coil Unit FCU-2 is nearing the end of its serviceable life. | | | | |
| RECOMMENDATION: Preparations should be made for replacement of this fan coil unit within the next two years. Replacement will include controls, flexible duct connectors, ductwork, and re-piping of the hot water train. | | | | |
| <div><div></div><div></div></div> | | | | |
| LIFE CYCLE STATUS | REPLACEMENT YEAR | REPLACEMENT COST | | |
| 18 yrs of 20 | 2017 | \$ 8,186.62 | | |
| REFERENCE: | | | | |


FAIRFAX COUNTY PARK AUTHORITY - Mt. Vernon RECenter
Facility Condition Assessment and Life Cycle Cost Analysis



| ASSESSMENT REPORT | | | | |
|---|-------------------------|-------------------------|----------|----------|
| ITEM NO. | LOCATION | GRADE | PRIORITY | CATEGORY |
| M.24 | Skate Change Room | D | 2 | 3 |
| ASSESSMENT DESCRIPTION: The air terminal units serving RTU-2 are nearing the end of their serviceable lives. | | | | |
| RECOMMENDATION: Preparations should be made for replacement of this fan coil unit within the next two years. Replacement will include thermostats. | | | | |
|  | | | | |
| LIFE CYCLE STATUS | REPLACEMENT YEAR | REPLACEMENT COST | | |
| 18 yrs of 20 | 2017 | \$ 6,447.00 | | |
| REFERENCE: | | | | |


FAIRFAX COUNTY PARK AUTHORITY - Mt. Vernon RECenter
Facility Condition Assessment and Life Cycle Cost Analysis



| ASSESSMENT REPORT | | | | |
|---|-------------------|------------------|----------|----------|
| ITEM NO. | LOCATION | GRADE | PRIORITY | CATEGORY |
| M.25 | Skate Change Room | F | 1 | 4 |
| ASSESSMENT DESCRIPTION: Some of the ductwork serving RTU-2 is missing insulation. | | | | |
| RECOMMENDATION: Insulate areas of ductwork where insulation has fallen off, and provide with new vapor barrier. | | | | |
|  | | | | |
| LIFE CYCLE STATUS | INSTALLATION YEAR | REPLACEMENT COST | | |
| N/A | 2015 | \$ 6,900.00 | | |
| REFERENCE: | | | | |


FAIRFAX COUNTY PARK AUTHORITY - Mt. Vernon RECenter
Facility Condition Assessment and Life Cycle Cost Analysis



| ASSESSMENT REPORT | | | | |
|---|------------------|------------------|----------|----------|
| ITEM NO. | LOCATION | GRADE | PRIORITY | CATEGORY |
| M.26 | Roof | D | 2 | 3 |
| ASSESSMENT DESCRIPTION: Outdoor Condensing Unit ACCOU-1 associated with Pool Energy Recovery Unit PRU-1 is showing signs of weathering and rusting. ACCOU-1 was not energized during the survey, so no observations could be made regarding its operation; however, ACCOU-1 is nearing the end of its serviceable life. | | | | |
| RECOMMENDATION: Preparations should be made for replacement of this outdoor condensing unit within the next two years. | | | | |
|  | | | | |
| LIFE CYCLE STATUS | REPLACEMENT YEAR | REPLACEMENT COST | | |
| 18 yrs of 20 | 2017 | \$ 58,742.60 | | |
| REFERENCE: M.9 | | | | |



FAIRFAX COUNTY PARK AUTHORITY - Mt. Vernon RECenter
Facility Condition Assessment and Life Cycle Cost Analysis



| ASSESSMENT REPORT | | | | |
|---|------------------|------------------|----------|----------|
| ITEM NO. | LOCATION | GRADE | PRIORITY | CATEGORY |
| M.27 | Roof | D | 2 | 3 |
| ASSESSMENT DESCRIPTION: Outdoor Condensing Unit ACCOU-2 associated with Pool Energy Recovery Unit PRU-2 is showing signs of weathering and rusting. ACCOU-2 was not energized during the survey, so no observations could be made regarding its operation; however, ACCOU-2 is nearing the end of its serviceable life. | | | | |
| RECOMMENDATION: Preparations should be made for replacement of this outdoor condensing unit within the next two years. | | | | |
|  | | | | |
| LIFE CYCLE STATUS | REPLACEMENT YEAR | REPLACEMENT COST | | |
| 18 yrs of 20 | 2017 | \$ 58,742.60 | | |
| REFERENCE: M.10 | | | | |



FAIRFAX COUNTY PARK AUTHORITY - Mt. Vernon RECenter
Facility Condition Assessment and Life Cycle Cost Analysis



| ASSESSMENT REPORT | | | | |
|--|------------------|------------------|----------|----------|
| ITEM NO. | LOCATION | GRADE | PRIORITY | CATEGORY |
| M.28 | Compressor Room | B | 4 | 3 |
| ASSESSMENT DESCRIPTION: Although they are nearing the end of their expected life cycle, the four York compressors and two chillers seem to be operating well to maintain the ice sheet to industry tolerances. | | | | |
| RECOMMENDATION: Preparations should be made for replacement of this equipment in the next five years. | | | | |
| <div></div> | | | | |
| LIFE CYCLE STATUS | REPLACEMENT YEAR | REPLACEMENT COST | | |
| 15 yrs of 20 | 2020 | \$ 529,000.00 | | |
| REFERENCE: | | | | |



FAIRFAX COUNTY PARK AUTHORITY - Mt. Vernon RECenter
Facility Condition Assessment and Life Cycle Cost Analysis



| ASSESSMENT REPORT | | | | |
|---|--------------------|--------------------|----------|----------|
| ITEM NO. | LOCATION | GRADE | PRIORITY | CATEGORY |
| M.29A | Roof | B | 4 | 2 |
| ASSESSMENT DESCRIPTION: The inside of each of the two cooling towers appears to be in very good shape. However, there is considerable algae growth and calcium deposits on the outside. | | | | |
| RECOMMENDATION: Look at water treatment history to determine if more algaecide is needed and descale units (preferably every year before winter). Water treatment documents were not available at the time of the assessment. | | | | |
| <div style="display: flex; justify-content: space-around;">   </div> | | | | |
| LIFE CYCLE STATUS | REPAIR YEAR | REPAIR COST | | |
| N/A | 2015 | \$ 4,000.00 | | |
| REFERENCE: | | | | |

FAIRFAX COUNTY PARK AUTHORITY - Mt. Vernon RECenter
Facility Condition Assessment and Life Cycle Cost Analysis



| ASSESSMENT REPORT | | | | |
|--|------------------|------------------|----------|----------|
| ITEM NO. | LOCATION | GRADE | PRIORITY | CATEGORY |
| M.29B | Roof | B | 4 | 3 |
| ASSESSMENT DESCRIPTION: While currently operating fine without any major maintenance issue reported from operations staff, the two cooling towers are nearing the end of their serviceable life. | | | | |
| RECOMMENDATION: Preparations should be made to replace these cooling towers in the next five years. | | | | |
| <div></div> | | | | |
| LIFE CYCLE STATUS | REPLACEMENT YEAR | REPLACEMENT COST | | |
| 10 yrs of 15 | 2020 | \$ 151,625.00 | | |
| REFERENCE: | | | | |

FAIRFAX COUNTY PARK AUTHORITY - Mt. Vernon RECenter
 Facility Condition Assessment and Life Cycle Cost Analysis



| ASSESSMENT REPORT | | | | |
|--|------------------|------------------|----------|----------|
| ITEM NO. | LOCATION | GRADE | PRIORITY | CATEGORY |
| M.30 | Compressor Room | B | 4 | 3 |
| ASSESSMENT DESCRIPTION: While currently operating fine without any major maintenance issue reported from operations staff, the two brine pumps are far beyond their expected serviceable life. | | | | |
| RECOMMENDATION: Replace these pumps. | | | | |
| NO PHOTO AVAILABLE | | | | |
| LIFE CYCLE STATUS | REPLACEMENT YEAR | REPLACEMENT COST | | |
| 35 yrs of 15 | 2015 | \$ 12,540.00 | | |
| REFERENCE: | | | | |

FAIRFAX COUNTY PARK AUTHORITY - Mt. Vernon RECenter
 Facility Condition Assessment and Life Cycle Cost Analysis





| ASSESSMENT REPORT | | | | |
|--|-------------------|------------------|----------|----------|
| ITEM NO. | LOCATION | GRADE | PRIORITY | CATEGORY |
| M.31 | Ice Rink Subfloor | B | 4 | 3 |
| ASSESSMENT DESCRIPTION: The subfloor glycol grid system is assumed to be serviceable as the refrigerated pad above and the pumps for the system both seem to be in good shape. Operations staff did not report of any problems with the system either. | | | | |
| RECOMMENDATION: Preparations should be made to replace this system at the end of its expected life cycle. | | | | |
| NO PHOTO AVAILABLE | | | | |
| LIFE CYCLE STATUS | REPLACEMENT YEAR | REPLACEMENT COST | | |
| 35 yrs of 50 | 2030 | \$ 1,025,000.00 | | |
| REFERENCE: | | | | |

FAIRFAX COUNTY PARK AUTHORITY - Mt. Vernon RECenter
Facility Condition Assessment and Life Cycle Cost Analysis





ELECTRICAL (EL)

| ASSESSMENT REPORT | | | | |
|---|---------------------------------|------------------|----------|----------|
| ITEM NO. | LOCATION | GRADE | PRIORITY | CATEGORY |
| EL.1 | Main Electrical/Compressor Room | D | 2 | 5 |
| ASSESSMENT DESCRIPTION: Switchboard Main Switch, CT and Incoming Lugs: This is original equipment from 1970s. Useful life expectancy is 30 years. Benfield Electric report from 2012 indicates critical need to tighten lugs and clean dust and dirt accumulation in the remainder of the compartments (safety hazard). | | | | |
| RECOMMENDATION: The non-moving parts can be maintained in a routine maintenance program. The main fusible Pringle switch and ground fault relay operation can be tested, but these are well beyond their expected life and we recommend replacement. | | | | |
| <div><div></div><div></div></div> | | | | |
| LIFE CYCLE STATUS | REPLACEMENT YEAR | REPLACEMENT COST | | |
| 35 yrs of 30 | 2015 | \$ 105,631.55 | | |
| REFERENCE: | | | | |

FAIRFAX COUNTY PARK AUTHORITY - Mt. Vernon RECenter
Facility Condition Assessment and Life Cycle Cost Analysis



| ASSESSMENT REPORT | | | | |
|---|---------------------------------|------------------|----------|----------|
| ITEM NO. | LOCATION | GRADE | PRIORITY | CATEGORY |
| EL.2 | Main Electrical/Compressor Room | C | 3 | 3 |
| ASSESSMENT DESCRIPTION: Switchboard Distribution Breakers: This is mostly original equipment from 1970s. Useful life expectancy is 30 years. However, two of the breakers have been replaced in recent years and we'd expect the remainder would need to be replaced. | | | | |
| RECOMMENDATION: Replace the 100 amp, 60 amp, and (2) 300 amp, and 400 amp 3 pole breakers and provide permanent labeling of all the feeder breakers. Tighten the bus bars inside the section and thoroughly clean the interior. | | | | |
| <div><div></div><div></div></div> | | | | |
| LIFE CYCLE STATUS | REPLACEMENT YEAR | REPLACEMENT COST | | |
| Varies | 2015 | \$ 7,937.00 | | |
| REFERENCE: | | | | |

FAIRFAX COUNTY PARK AUTHORITY - Mt. Vernon RECenter
Facility Condition Assessment and Life Cycle Cost Analysis



ASSESSMENT REPORT

| ITEM NO. | LOCATION | GRADE | PRIORITY | CATEGORY |
|----------|---------------------------------|-------|----------|----------|
| EL.3 | Main Electrical/Compressor Room | C | 3 | 3 |

ASSESSMENT DESCRIPTION:

Panel P (also labeled E), Motor Control Center at the end of Switchboard: This is original equipment from 1970s. Useful life expectancy is 30 years. Most of the Motor Controls have been removed and newer stand alone motor controls are at the equipment served.

RECOMMENDATION:

Replace the Motor Control Center with a 2 section 84 pole MDP Panel with (12) 3 pole breakers to all of the existing equipment served.





| LIFE CYCLE STATUS | REPLACEMENT YEAR | REPLACEMENT COST |
|-------------------|------------------|------------------|
| 35 yrs of 30 | 2015 | \$ 14,862.30 |

REFERENCE:



FAIRFAX COUNTY PARK AUTHORITY - Mt. Vernon RECenter
Facility Condition Assessment and Life Cycle Cost Analysis



| ASSESSMENT REPORT | | | | |
|--|---------------------------------|------------------|----------|----------|
| ITEM NO. | LOCATION | GRADE | PRIORITY | CATEGORY |
| EL.4 | Main Electrical/Compressor Room | C | 3 | 3 |
| ASSESSMENT DESCRIPTION: Panels S, MLO, 100 amp, 120/208 volt, 36 poles: This is an original panel that has outlived its useful life. It serves house loads. | | | | |
| RECOMMENDATION: Replace with new panel and confirm and tag all existing circuits. New branch circuit breakers to serve all existing loads. Reconnect to source and to all branch circuits. | | | | |
| <div><div></div><div></div></div> | | | | |
| LIFE CYCLE STATUS | REPLACEMENT YEAR | REPLACEMENT COST | | |
| 35 yrs of 30 | 2015 | \$ 3,564.60 | | |
| REFERENCE: | | | | |


FAIRFAX COUNTY PARK AUTHORITY - Mt. Vernon RECenter
Facility Condition Assessment and Life Cycle Cost Analysis



| ASSESSMENT REPORT | | | | |
|---|---------------------------------|------------------|----------|----------|
| ITEM NO. | LOCATION | GRADE | PRIORITY | CATEGORY |
| EL.5 | Main Electrical/Compressor Room | C | 3 | 3 |
| ASSESSMENT DESCRIPTION: Panels T, MLO, 100 amp, 120/208 volt, 12 poles: This is a newer load center (non-commercial grade electrical panel) that we believe is not a properly matched solution for this Facility. It also has early signs of corrosion (rust). It serves house loads. | | | | |
| RECOMMENDATION: Replace with new panel and confirm and tag all existing circuits. New branch circuit breakers to serve all existing loads. Reconnect to source and to all branch circuits. | | | | |
| <div><div></div><div></div></div> | | | | |
| LIFE CYCLE STATUS | REPLACEMENT YEAR | REPLACEMENT COST | | |
| 26 yrs of 30 | 2019 | \$ 3,890.00 | | |
| REFERENCE: | | | | |


FAIRFAX COUNTY PARK AUTHORITY - Mt. Vernon RECenter
Facility Condition Assessment and Life Cycle Cost Analysis



| ASSESSMENT REPORT | | | | |
|---|---------------------------------|-------------------------|----------|----------|
| ITEM NO. | LOCATION | GRADE | PRIORITY | CATEGORY |
| EL.6 | Main Electrical/Compressor Room | C | 3 | 3 |
| ASSESSMENT DESCRIPTION: Dry type step down transformer that converts 480 volt power to 120/208 volt power. This appears to be original equipment. Typically transformers last 30 or more years but given the conditions of the Compressor Room (hot and humid), this transformer should be replaced as it is showing signs of exterior corrosion. | | | | |
| RECOMMENDATION: Replace with new 45 KVA transformer of the same general ratings. | | | | |
|  | | | | |
| LIFE CYCLE STATUS | REPLACEMENT YEAR | REPLACEMENT COST | | |
| 35 yrs of 30 | 2015 | \$ 8,405.36 | | |
| REFERENCE: | | | | |



FAIRFAX COUNTY PARK AUTHORITY - Mt. Vernon RECenter
Facility Condition Assessment and Life Cycle Cost Analysis



| ASSESSMENT REPORT | | | | |
|--|---------------------------------|------------------|----------|----------|
| ITEM NO. | LOCATION | GRADE | PRIORITY | CATEGORY |
| EL.7 | Main Electrical/Compressor Room | C | 3 | 3 |
| ASSESSMENT DESCRIPTION: Dry type step down transformer that converts 480 volt power to 120/208 volt power. This appears to be original equipment. Typically transformers last 30 or more years but given the conditions of the Mechanical Room (hot and humid), this transformer should be replaced it is showing signs of exterior corrosion. | | | | |
| RECOMMENDATION: Replace with new 7.5 KVA transformer of the same general ratings. | | | | |
|  | | | | |
| LIFE CYCLE STATUS | REPLACEMENT YEAR | REPLACEMENT COST | | |
| 35 yrs of 30 | 2015 | \$ 5,042.15 | | |
| REFERENCE: | | | | |



FAIRFAX COUNTY PARK AUTHORITY - Mt. Vernon RECenter
Facility Condition Assessment and Life Cycle Cost Analysis



| ASSESSMENT REPORT | | | | |
|--|---------------------------------|------------------|----------|----------|
| ITEM NO. | LOCATION | GRADE | PRIORITY | CATEGORY |
| EL.8 | Main Electrical/Compressor Room | C | 3 | 3 |
| ASSESSMENT DESCRIPTION: Panel X, MLO, 60 amp, 120/240 volt, single phase, 12 poles. This is an original panel that has outlived its useful life. It serves house life safety loads. | | | | |
| RECOMMENDATION: Replace with new panel and confirm and tag all existing circuits. New branch circuit breakers to serve all existing loads. Reconnect to source and to all branch circuits. | | | | |
| <div><div></div><div></div></div> | | | | |
| LIFE CYCLE STATUS | REPLACEMENT YEAR | REPLACEMENT COST | | |
| 35 yrs of 30 | 2015 | \$ 3,110.69 | | |
| REFERENCE: | | | | |



FAIRFAX COUNTY PARK AUTHORITY - Mt. Vernon RECenter
Facility Condition Assessment and Life Cycle Cost Analysis



| ASSESSMENT REPORT | | | | |
|--|---------------------------------|------------------|----------|----------|
| ITEM NO. | LOCATION | GRADE | PRIORITY | CATEGORY |
| EL.9 | Main Electrical/Compressor Room | C | 3 | 3 |
| ASSESSMENT DESCRIPTION: Panel Z, MLO, 200 amp, 120/208 volt, 40 poles. This is a newer load center (non-commercial grade electrical panel) that we believe is not a properly matched solution for this facility. It also is missing exterior fasteners. It serves house loads. | | | | |
| RECOMMENDATION: Replace with new panel and confirm and tag all existing circuits. New branch circuit breakers to serve all existing loads. Reconnect to source and to all branch circuits. | | | | |
| <div><div></div><div></div></div> | | | | |
| LIFE CYCLE STATUS | REPLACEMENT YEAR | REPLACEMENT COST | | |
| 20 yrs of 30 | 2025 | \$ 9,136.49 | | |
| REFERENCE: | | | | |



FAIRFAX COUNTY PARK AUTHORITY - Mt. Vernon RECenter
Facility Condition Assessment and Life Cycle Cost Analysis



| ASSESSMENT REPORT | | | | |
|--|---------------------------------|------------------|----------|----------|
| ITEM NO. | LOCATION | GRADE | PRIORITY | CATEGORY |
| EL.10 | Main Electrical/Compressor Room | C | 3 | 3 |
| ASSESSMENT DESCRIPTION: Panel SA, MLO, 125 amp, 120/208 volt, single phase, 18 poles. This is a newer panel, but exhibits rust damage in many areas. It serves house loads. | | | | |
| RECOMMENDATION: Replace with new panel and confirm and tag all existing circuits. New branch circuit breakers to serve all existing loads. Reconnect to source and to all branch circuits. | | | | |
| <div><div></div><div></div></div> | | | | |
| LIFE CYCLE STATUS | REPLACEMENT YEAR | REPLACEMENT COST | | |
| 20 yrs of 30 | 2025 | \$ 8,110.91 | | |
| REFERENCE: | | | | |


FAIRFAX COUNTY PARK AUTHORITY - Mt. Vernon RECenter
Facility Condition Assessment and Life Cycle Cost Analysis



| ASSESSMENT REPORT | | | | |
|---|-------------------|-------------------|----------|----------|
| ITEM NO. | LOCATION | GRADE | PRIORITY | CATEGORY |
| EL.11 | Roof | D | 2 | 5 |
| ASSESSMENT DESCRIPTION: The disconnect for roof mounted equipment ACCOU-2 has a missing knock out on its bottom surface which has allowed the infiltration of wasps whose nest could cause a failure. | | | | |
| RECOMMENDATION: Provide a permanent knock-out cover. Should be done very soon to avoid possible damage to the system. | | | | |
| <div><div></div><div></div></div> | | | | |
| LIFE CYCLE STATUS | INSTALLATION YEAR | INSTALLATION COST | | |
| N/A | 2015 | \$ 25.00 | | |
| REFERENCE: | | | | |

FAIRFAX COUNTY PARK AUTHORITY - Mt. Vernon RECenter
Facility Condition Assessment and Life Cycle Cost Analysis

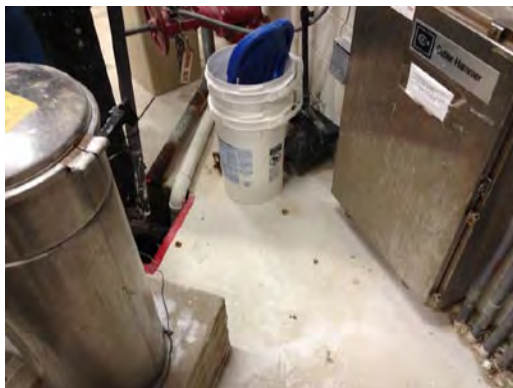


| ASSESSMENT REPORT | | | | |
|---|------------------|------------------|----------|----------|
| ITEM NO. | LOCATION | GRADE | PRIORITY | CATEGORY |
| EL.12 | Filter Room | F | 1 | 5 |
| ASSESSMENT DESCRIPTION: The starters for the pool pump equipment are severely corroded and could possibly fail. | | | | |
| RECOMMENDATION: Provide new starters for main pool and for back wash pump. | | | | |
|  | | | | |
| LIFE CYCLE STATUS | REPLACEMENT YEAR | REPLACEMENT COST | | |
| 35 yrs of 30 | 2015* | \$ 5,521.65* | | |
| REFERENCE: | | | | |

*Requests for estimates to replace starters for pool pump equipment are currently underway.


FAIRFAX COUNTY PARK AUTHORITY - Mt. Vernon RECenter
 Facility Condition Assessment and Life Cycle Cost Analysis



| ASSESSMENT REPORT | | | | |
|---|------------------|------------------|----------|----------|
| ITEM NO. | LOCATION | GRADE | PRIORITY | CATEGORY |
| EL.13 | Filter Room | C | 3 | 5 |
| ASSESSMENT DESCRIPTION: Filter canister pad impinges on Code required 3 feet of clearance in front of panel. | | | | |
| RECOMMENDATION: No solution possible without removal of canister pad. Rework of filter room as part of Aquatics recommendations should free up space for code compliant installation. | | | | |
|  | | | | |
| LIFE CYCLE STATUS | REPLACEMENT YEAR | REPLACEMENT COST | | |
| 31 yrs of 30 | 2015 | Refer to A.12 | | |
| REFERENCE: A.12 | | | | |


FAIRFAX COUNTY PARK AUTHORITY - Mt. Vernon RECenter
Facility Condition Assessment and Life Cycle Cost Analysis



| ASSESSMENT REPORT | | | | |
|--|------------------|------------------|----------|----------|
| ITEM NO. | LOCATION | GRADE | PRIORITY | CATEGORY |
| EL.14 | Filter Room | D | 2 | 5 |
| ASSESSMENT DESCRIPTION: Corrosion of existing original era equipment and conduits is rapidly deteriorating electrical system and is becoming a safety concern. | | | | |
| RECOMMENDATION: Replace all metal conduit with PVC. Replace Nema 1 enclosures with Nema 4 enclosures and metal outlet and switch boxes with heavy duty plastic or nylon boxes. | | | | |
|  | | | | |
| LIFE CYCLE STATUS | REPLACEMENT YEAR | REPLACEMENT COST | | |
| 31 yrs of 30 | 2015 | \$ 45,745.16 | | |
| REFERENCE: | | | | |

FAIRFAX COUNTY PARK AUTHORITY - Mt. Vernon RECenter
Facility Condition Assessment and Life Cycle Cost Analysis

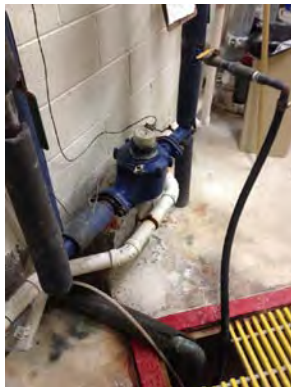


| ASSESSMENT REPORT | | | | |
|---|--------------------------------|------------------|----------|----------|
| ITEM NO. | LOCATION | GRADE | PRIORITY | CATEGORY |
| EL.15 | Facility-wide (except at Pool) | C | 3 | 3 |
| ASSESSMENT DESCRIPTION: Lighting fixtures throughout the Building are not meeting current IECC watts per square foot requirements nor are they controlled in a manner that meets IECC requirements. IECC has no enforcement mechanism that would force compliance. However substantial energy saving could be realized with a total replacement. | | | | |
| RECOMMENDATION: Do a phased replacement of all lighting in the Facility except for new LED lighting in the Pool. This would include the parking pole fixtures as well. FCPA guidelines would require the use of LED fixtures wherever possible. Special consideration would be given to the lighting in the main lobby (pictured) that would provide not only illumination but also drama and interest. LED linear pendants would be considered in this area. Also we believe that all emergency egress battery backs and battery backed exit signs should be replaced. | | | | |
|  | | | | |
| LIFE CYCLE STATUS | REPLACEMENT YEAR | REPLACEMENT COST | | |
| Varies | 2019 | \$ 504,390.47 | | |
| REFERENCE: | | | | |

FAIRFAX COUNTY PARK AUTHORITY - Mt. Vernon RECenter
Facility Condition Assessment and Life Cycle Cost Analysis




PLUMBING (P)

| ASSESSMENT REPORT | | | | |
|---|------------------------------|-------------------------|----------|----------|
| ITEM NO. | LOCATION | GRADE | PRIORITY | CATEGORY |
| P.1 | Water Service at Filter Room | C | 3 | 5 |
| ASSESSMENT DESCRIPTION: Domestic water backflow preventer is not installed per Code. Need to upgrade to RPZ ASPE 1013. | | | | |
| RECOMMENDATION: Install new RPZ ASPE 1013 in lieu of existing arrangement. An even better solution would be to remove this critical installation from this room to prevent corrosion issues. Recommend installation of new water service at alternative location. | | | | |
|  | | | | |
| LIFE CYCLE STATUS | REPLACEMENT YEAR | REPLACEMENT COST | | |
| 26 yrs of 30 | 2019 | \$ 24,188.42 | | |
| REFERENCE: | | | | |



FAIRFAX COUNTY PARK AUTHORITY - Mt. Vernon RECenter
 Facility Condition Assessment and Life Cycle Cost Analysis



| ASSESSMENT REPORT | | | | |
|--|------------------|------------------|----------|----------|
| ITEM NO. | LOCATION | GRADE | PRIORITY | CATEGORY |
| P.2 | Compressor Room | C | 3 | 3 |
| ASSESSMENT DESCRIPTION: Poor condition of domestic water copper piping. | | | | |
| RECOMMENDATION: Replace all domestic water piping with new. We would recommend a phased approach where the worst piping (that piping occurring in the Pool, Main & Rink Mechanical Rooms) is replaced first. The other piping could be done in a second phase. | | | | |
|  | | | | |
| LIFE CYCLE STATUS | REPLACEMENT YEAR | REPLACEMENT COST | | |
| 26 yrs of 30 | 2019 | \$ 107,840.24 | | |
| REFERENCE: | | | | |

FAIRFAX COUNTY PARK AUTHORITY - Mt. Vernon RECenter
Facility Condition Assessment and Life Cycle Cost Analysis



| ASSESSMENT REPORT | | | | |
|--|------------------|------------------|----------|----------|
| ITEM NO. | LOCATION | GRADE | PRIORITY | CATEGORY |
| P.3 | Facility-wide | C | 3 | 4 |
| ASSESSMENT DESCRIPTION: Domestic water pipe insulation damaged or missing in many locations. | | | | |
| RECOMMENDATION: Replace all damaged domestics water pipe insulation; and add new pipe insulation where it is currently missing. | | | | |
| <div></div> | | | | |
| LIFE CYCLE STATUS | REPLACEMENT YEAR | REPLACEMENT COST | | |
| 35 yrs of 30 | 2015* | \$ 28,888.41 | | |
| REFERENCE: | | | | |

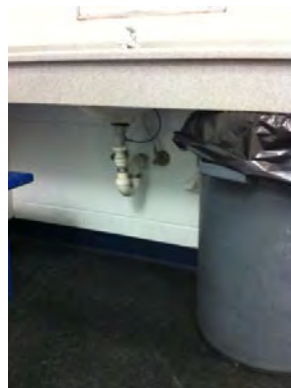

FAIRFAX COUNTY PARK AUTHORITY - Mt. Vernon RECenter
Facility Condition Assessment and Life Cycle Cost Analysis



| ASSESSMENT REPORT | | | | |
|---|--------------------------|------------------|----------|----------|
| ITEM NO. | LOCATION | GRADE | PRIORITY | CATEGORY |
| P.4 | Restrooms & Locker Rooms | F | 1 | 5 |
| ASSESSMENT DESCRIPTION: No Code mandated mixing valves provided for anti-scald protection. | | | | |
| RECOMMENDATION: Provide new mix valves as required by current code in order to prevent serious safety concerns due to possible scalding temperatures at the lavatories and/or showers. Although this requirement is “Grandfathered” and is not mandated to be revised in existing buildings, we believe that the lack of protection presents serious safety and liability concerns. | | | | |
| NO PHOTO AVAILABLE | | | | |
| LIFE CYCLE STATUS | INSTALLATION YEAR | REPLACEMENT COST | | |
| N/A | 2015 | \$ 18,005.38 | | |
| REFERENCE: | | | | |


FAIRFAX COUNTY PARK AUTHORITY - Mt. Vernon RECenter
Facility Condition Assessment and Life Cycle Cost Analysis



| ASSESSMENT REPORT | | | | |
|--|------------------|------------------|----------|----------|
| ITEM NO. | LOCATION | GRADE | PRIORITY | CATEGORY |
| P.5 | Restrooms | F | 1 | 5 |
| ASSESSMENT DESCRIPTION: Damaged and missing sink insulation. | | | | |
| RECOMMENDATION: Replace sink trap insulation and add new sink insulation where it is currently missing. This is important to meet ADA requirements. | | | | |
| <div></div> | | | | |
| LIFE CYCLE STATUS | REPLACEMENT YEAR | REPLACEMENT COST | | |
| 35 yrs of 30 | 2015 | \$ 712.35 | | |
| REFERENCE: P.13 | | | | |


FAIRFAX COUNTY PARK AUTHORITY - Mt. Vernon RECenter
 Facility Condition Assessment and Life Cycle Cost Analysis



| ASSESSMENT REPORT | | | | |
|--|------------------|------------------|----------|----------|
| ITEM NO. | LOCATION | GRADE | PRIORITY | CATEGORY |
| P.6 | Restrooms | C | 3 | 3 |
| ASSESSMENT DESCRIPTION: Indirect drains to sanitary do not provide proper air gap. | | | | |
| RECOMMENDATION: Revise piping to provide proper air gap. | | | | |
|  | | | | |
| LIFE CYCLE STATUS | REPLACEMENT YEAR | REPLACEMENT COST | | |
| 26 yrs of 30 | 2019 | \$ 296.00 | | |
| REFERENCE: | | | | |



FAIRFAX COUNTY PARK AUTHORITY - Mt. Vernon RECenter
 Facility Condition Assessment and Life Cycle Cost Analysis



| ASSESSMENT REPORT | | | | |
|---|------------------|------------------|----------|----------|
| ITEM NO. | LOCATION | GRADE | PRIORITY | CATEGORY |
| P.7 | Pool Deck | F | 1 | 5 |
| ASSESSMENT DESCRIPTION: Broken cover at flush mounted hose bib. | | | | |
| RECOMMENDATION: Replace cover. | | | | |
|  | | | | |
| LIFE CYCLE STATUS | REPLACEMENT YEAR | REPLACEMENT COST | | |
| 26 yrs of 30 | 2015 | \$ 352.96 | | |
| REFERENCE: | | | | |



FAIRFAX COUNTY PARK AUTHORITY - Mt. Vernon RECenter
Facility Condition Assessment and Life Cycle Cost Analysis



| ASSESSMENT REPORT | | | | |
|--|------------------|------------------|----------|----------|
| ITEM NO. | LOCATION | GRADE | PRIORITY | CATEGORY |
| P.8 | Mechanical Room | D | 2 | 3 |
| ASSESSMENT DESCRIPTION: Water heater at Mechanical Room beyond useful life. Associated flue is rusty. | | | | |
| RECOMMENDATION: Replace with new water heater, associated pumps and flue. Flue is nearly rusted through at size transition. | | | | |
| <div></div> | | | | |
| LIFE CYCLE STATUS | REPLACEMENT YEAR | REPLACEMENT COST | | |
| 35 yrs of 30 | 2015 | \$ 106,058.86 | | |
| REFERENCE: | | | | |


FAIRFAX COUNTY PARK AUTHORITY - Mt. Vernon RECenter
Facility Condition Assessment and Life Cycle Cost Analysis



| ASSESSMENT REPORT | | | | |
|---|------------------|------------------|----------|----------|
| ITEM NO. | LOCATION | GRADE | PRIORITY | CATEGORY |
| P.9 | Compressor Room | F | 1 | 3 |
| ASSESSMENT DESCRIPTION: Old hot water generator and immersion coil, storage tank beyond life expectancy. | | | | |
| RECOMMENDATION: Replace old water heater generator, immersion coil, storage tank and associated pumps with new. Efficiency will be increased by Code mandated higher efficiency model. Hot water generator referenced in other reports. | | | | |
| <div></div> | | | | |
| LIFE CYCLE STATUS | REPLACEMENT YEAR | REPLACEMENT COST | | |
| 35 yrs of 30 | 2015 | \$ 71,061.23 | | |
| REFERENCE: | | | | |


FAIRFAX COUNTY PARK AUTHORITY - Mt. Vernon RECenter
 Facility Condition Assessment and Life Cycle Cost Analysis



| ASSESSMENT REPORT | | | | |
|--|-------------|-------------|----------|----------|
| ITEM NO. | LOCATION | GRADE | PRIORITY | CATEGORY |
| P.10A | Roof | C | 3 | 3 |
| ASSESSMENT DESCRIPTION: Damaged roof gutter. | | | | |
| RECOMMENDATION: Repair roof gutter over access door into Mezzanine of the Mechanical Room. | | | | |
|  | | | | |
| LIFE CYCLE STATUS | REPAIR YEAR | REPAIR COST | | |
| 35 yrs of 30 | 2015 | \$ 532.45 | | |
| REFERENCE: | | | | |


FAIRFAX COUNTY PARK AUTHORITY - Mt. Vernon RECenter
Facility Condition Assessment and Life Cycle Cost Analysis



| ASSESSMENT REPORT | | | | |
|--|-------------------------|-------------------------|----------|----------|
| ITEM NO. | LOCATION | GRADE | PRIORITY | CATEGORY |
| P.10B | Roof | B | 4 | 3 |
| ASSESSMENT DESCRIPTION: Although roof gutters and downspouts are operating well, they are operating beyond their life cycle. | | | | |
| RECOMMENDATION: Replace roof gutters and downspouts. | | | | |
|  | | | | |
| LIFE CYCLE STATUS | REPLACEMENT YEAR | REPLACEMENT COST | | |
| 35 yrs of 30 | 2015 | \$ 8,708.00 | | |
| REFERENCE: | | | | |


FAIRFAX COUNTY PARK AUTHORITY - Mt. Vernon RECenter
Facility Condition Assessment and Life Cycle Cost Analysis



| ASSESSMENT REPORT | | | | |
|--|--------------------|------------------|----------|----------|
| ITEM NO. | LOCATION | GRADE | PRIORITY | CATEGORY |
| P.11 | Exterior Perimeter | C | 3 | 3 |
| ASSESSMENT DESCRIPTION: Downspouts do not connect properly to underground storm stub up. | | | | |
| RECOMMENDATION: Provide downspout boot connection at downspouts | | | | |
|  | | | | |
| LIFE CYCLE STATUS | INSTALLATION YEAR | REPLACEMENT COST | | |
| N/A | 2015 | \$ 971.50 | | |
| REFERENCE: | | | | |

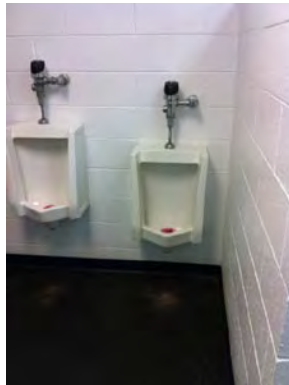
FAIRFAX COUNTY PARK AUTHORITY - Mt. Vernon RECenter
Facility Condition Assessment and Life Cycle Cost Analysis



| ASSESSMENT REPORT | | | | |
|---|----------------------|--------------------|----------|----------|
| ITEM NO. | LOCATION | GRADE | PRIORITY | CATEGORY |
| P.12 | At grade and at roof | C | 3 | 3 |
| ASSESSMENT DESCRIPTION: Gas piping paint is peeling and/or pipe is rusting. | | | | |
| RECOMMENDATION: Remove rust and old paint, for nine roof top equipment locations; repaint with appropriate exterior grade paint. Replacement of gas piping has been factored into the replacement costs to replace individual HVAC equipment and other systems which utilize natural gas. | | | | |
|  | | | | |
| LIFE CYCLE STATUS | REPAIR YEAR | REPAIR COST | | |
| 29 yrs of 30 | 2016 | \$ 1,597.35 | | |
| REFERENCE: | | | | |

FAIRFAX COUNTY PARK AUTHORITY - Mt. Vernon RECenter
Facility Condition Assessment and Life Cycle Cost Analysis



| ASSESSMENT REPORT | | | | |
|--|----------------------------|------------------|----------|----------|
| ITEM NO. | LOCATION | GRADE | PRIORITY | CATEGORY |
| P.13 | Restrooms and Locker Rooms | C | 3 | 3 |
| ASSESSMENT DESCRIPTION: During our assessment, we analyzed and evaluated of the overall conditions of the plumbing fixtures. The existing fixtures do not meet Code for water savings. Many of the existing fixtures have been retrofitted with auto flush and auto sensor flow but, in general, all plumbing fixtures are nearing the end of their life span. | | | | |
| RECOMMENDATION: Make provisions for new lavatories, urinals, EWCs and water closets compliant with current ADA and IPC requirements. New fixtures should have 120V auto sensor technology (per FCPA standard) and not battery powered sensors as they have been currently retrofitted. | | | | |
|  | | | | |
| LIFE CYCLE STATUS | REPLACEMENT YEAR | REPLACEMENT COST | | |
| 26 yrs of 30 | 2019 | \$261,325.00 | | |
| REFERENCE: P.5 | | | | |

FAIRFAX COUNTY PARK AUTHORITY - Mt. Vernon RECenter
 Facility Condition Assessment and Life Cycle Cost Analysis



| ASSESSMENT REPORT | | | | |
|--|----------------------|------------------|----------|----------|
| ITEM NO. | LOCATION | GRADE | PRIORITY | CATEGORY |
| P.14 | Below Grade and Slab | B | 4 | 3 |
| ASSESSMENT DESCRIPTION: All below grade piping is assumed to be cast iron and is further assumed to have been installed in the 1970s. Cast iron can last for a century but can also deteriorate rapidly dependent on soil conditions, quality of the pipe, quality of the installation, water quality and usage. | | | | |
| RECOMMENDATION: Recommend a camera survey of existing mains below the building. The survey will show condition, lengths and routing and will allow an accurate assessment with cost. The survey will also allow for selective replacement if that is deemed more appropriate. | | | | |
| NO PHOTO AVAILABLE | | | | |
| LIFE CYCLE STATUS | YEAR OF ACTION | REPLACEMENT COST | | |
| N/A | 2015 | \$ 15,000.00 | | |
| REFERENCE: | | | | |

FAIRFAX COUNTY PARK AUTHORITY - Mt. Vernon RECenter
 Facility Condition Assessment and Life Cycle Cost Analysis




| ASSESSMENT REPORT | | | | |
|---|----------------------|------------------|----------|----------|
| ITEM NO. | LOCATION | GRADE | PRIORITY | CATEGORY |
| P.15 | Below Grade and Slab | C | 3 | 3 |
| ASSESSMENT DESCRIPTION: All below grade piping is assumed to be cast iron and is further assumed to have been installed in the 1970s. Per the FCPA expected life cycle general standards, piping has an expected life cycle of 30 years. However, cast iron can last for a century, but can also deteriorate rapidly dependent on soil conditions, quality of the pipe, quality of the installation, water quality and usage. | | | | |
| RECOMMENDATION: Recommend total replacement. | | | | |
| NO PHOTO AVAILABLE | | | | |
| LIFE CYCLE STATUS | REPLACEMENT YEAR | REPLACEMENT COST | | |
| 35 yrs of 30 | 2015 | \$ 191,980.80 | | |
| REFERENCE: | | | | |

FAIRFAX COUNTY PARK AUTHORITY - Mt. Vernon RECenter
Facility Condition Assessment and Life Cycle Cost Analysis




FIRE PROTECTION (FP)

| ASSESSMENT REPORT | | | | |
|--|--------------------------|--------------------------|----------|----------|
| ITEM NO. | LOCATION | GRADE | PRIORITY | CATEGORY |
| FP.1 | Filter Room | C | 3 | 5 |
| ASSESSMENT DESCRIPTION: Pool Building Fire protection water service is without back flow prevention. | | | | |
| RECOMMENDATION: Provide back flow prevention at fire protection water service (Current Code requirement). Any new substantial work in building such as an addition would require this upgrade. Current code does not make upgrade necessary in existing buildings, however the backward flow of water from the in-building sprinkler lines could present a health issue. We recommend relocation of service outside the Filter room so that the corrosion of piping (that is currently an issue) would be mitigated. | | | | |
|  | | | | |
| LIFE CYCLE STATUS | INSTALLATION YEAR | INSTALLATION COST | | |
| 26 yrs of 30 | 2015 | \$ 77,785.00 | | |
| REFERENCE: | | | | |

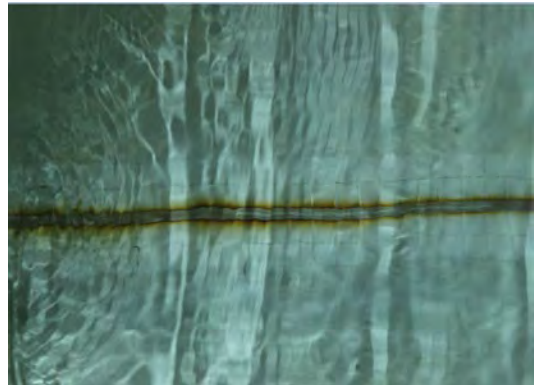
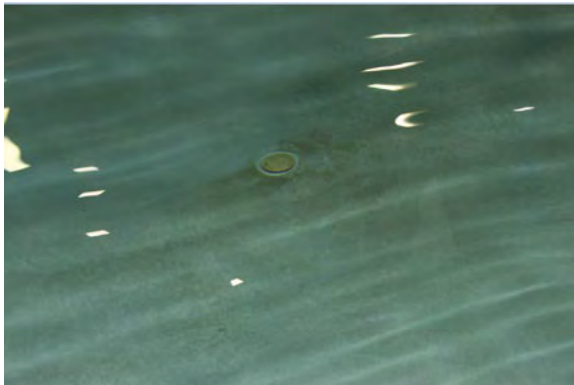
FAIRFAX COUNTY PARK AUTHORITY - Mt. Vernon RECenter
Facility Condition Assessment and Life Cycle Cost Analysis



| ASSESSMENT REPORT | | | | |
|--|------------------------------|-------------------|----------|----------|
| ITEM NO. | LOCATION | GRADE | PRIORITY | CATEGORY |
| FP.2 | Southeast corner of Ice Rink | C | 3 | 5 |
| ASSESSMENT DESCRIPTION: Ice Rink and the remainder of the original building fire protection water service are without back flow prevention. | | | | |
| RECOMMENDATION: Provide back flow prevention at fire protection water service (Current Code requirement). Any new substantial work in building such as an addition would require this upgrade. Current code does not make upgrade necessary in existing buildings, however the backward flow of water from the in-building sprinkler lines could present a health issue. | | | | |
|  | | | | |
| LIFE CYCLE STATUS | INSTALLATION YEAR | INSTALLATION COST | | |
| 26 yrs of 30 | 2015 | \$ 77,785.00 | | |
| REFERENCE: | | | | |



AQUATICS (A)

| ASSESSMENT REPORT | | | | |
|---|--|------------------|------------------|----------|
| ITEM NO. | LOCATION | GRADE | PRIORITY | CATEGORY |
| A.2A | Pool Finishes- Submerged Plaster/Tile & Joints | C | 3 | 5 |
| ASSESSMENT DESCRIPTION: The submerged pool plaster finish is pitted, chipped and etched. Staining was noted around floor inlets. The pool operator reported that the pool finish is approximately 3 years old. The operator added that the pool has been refinished several times in its life, without removal of the existing finishes. The inconsistencies in the pool surface due to pitting and etching could pose a safety hazard to feet and other skin surface that come in contact with the pool finish. The expansion joints are lined by tile on each side. The expansion joint caulk is heavily stained on the edges. The stain color is consistent with oxidized iron and appears to be coming from the caulk material or corrosion of pool steel below the joint. The consistency of the stain along the entire length of each joint points more towards a joint material failure than corrosion of the pool steel. | | | | |
| RECOMMENDATION: <ul style="list-style-type: none">Remove existing finishes, provide manufacturer's recommended bonding agent, and refinish the pool with quartz aggregate type finish. If staining is from the source water, WTI recommends a 12"x12" pattern of white tile around each inlet to make these areas easier to clean.Remove joint filler materials, review steel integrity.Provide pool chemical resistant joint filler materials. | | | | |
| <div></div> | | | | |
| LIFE CYCLE STATUS | | REPLACEMENT YEAR | REPLACEMENT COST | |
| 3 yrs of 7 | | 2015* | \$ 134,020.08 | |
| REFERENCE: A.2B; A.3A; A.3B | | | | |

*Recommend that work be performed during the 2014 Natatorium shutdown.

FAIRFAX COUNTY PARK AUTHORITY - Mt. Vernon RECenter
Facility Condition Assessment and Life Cycle Cost Analysis



ASSESSMENT REPORT

| ITEM NO. | LOCATION | GRADE | PRIORITY | CATEGORY |
|----------|--|-------|----------|----------|
| A.2B | Pool Finishes- Deck and Wall Depth Markers | D | 2 | 3 |

ASSESSMENT DESCRIPTION:

The wall and deck depth markers are in good to excellent service condition.

- The deck depth markers around the lap area of the pool are original and consist of mosaic tile depth markers with the depth and "no diving shallow water" spelled out.
- At the beach entry, 8"x8" depth marker tiles and the international "no diving" symbol have been provided on the deck at one foot water depth increments.
- There are no deck depth markers at the beach entry or the swimming area adjacent to the beach entry. This appears to violate 69.1-2-22, which requires depth markers to be spaced not more than 20'-0" apart along the swimming pool perimeter.
- The wall depth markers on the pool gutter consist of vinyl stick on numbers and letters. These were in good condition for the most part. A few stick on numbers and letters need to be replaced. Additionally, tile depth markers have been added below the water line.
- There was inconsistency in depth markers at the deep end of the pool. The Owner also reported that the pool is not level and, as a result, only the deep end of the pool flows into the gutters.

RECOMMENDATION:

- Add depth markers at beach entry and adjacent swimming area.
- Survey the pool depth to confirm depth markers are accurate after several years of pool refinishing.



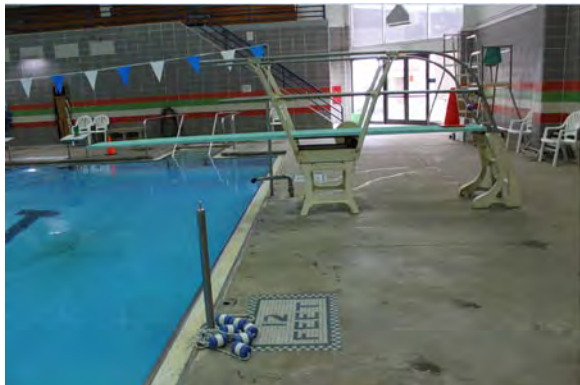
| LIFE CYCLE STATUS | INSTALLATION YEAR | INSTALLATION COST |
|-------------------|-------------------|-------------------|
| Varies | 2015* | N/A |

REFERENCE: A.2A; A.3A; A.3B

*Pool depth was measured—depth markers were corrected and added post building survey.

FAIRFAX COUNTY PARK AUTHORITY - Mt. Vernon RECenter
Facility Condition Assessment and Life Cycle Cost Analysis

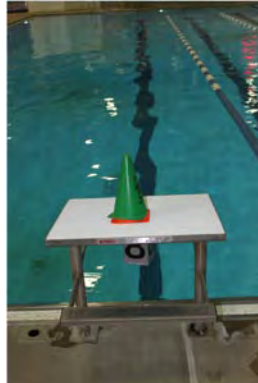



| ASSESSMENT REPORT | | | | |
|---|--|------------------|----------|----------|
| ITEM NO. | LOCATION | GRADE | PRIORITY | CATEGORY |
| A.3A | Deck Equipment- Diving Stand and Board | D | 2 | 3 |
| ASSESSMENT DESCRIPTION: There is a single Duraform 1M dive stand with MaxiFlex springboard. The diving stand and board appear to be in good condition. The depth of the pool at the diving board is noted as 12 feet on the parallel wall depth markers and 10'-0" on the wall perpendicular to the boards. Field measurements with a tape measure indicated the depths at the pool walls to be less than 10'-0". | | | | |
| RECOMMENDATION: Survey the pool empty to verify the depths and pool floor slopes are consistent with 69.1-2-8 or FINA standards, whichever is most stringent. If pool depth is inadequate, then board shall be removed. Otherwise, observe condition daily. | | | | |
|  | | | | |
| LIFE CYCLE STATUS | REPLACEMENT YEAR | REPLACEMENT COST | | |
| Age Unknown | N/A* | N/A | | |
| REFERENCE: A.2A; A.2B | | | | |

*Pool depth was measured—depth markers were corrected and added post building survey.

FAIRFAX COUNTY PARK AUTHORITY - Mt. Vernon RECenter
Facility Condition Assessment and Life Cycle Cost Analysis



| ASSESSMENT REPORT | | | | |
|---|------------------------------------|------------------|----------|----------|
| ITEM NO. | LOCATION | GRADE | PRIORITY | CATEGORY |
| A.3B | Deck Equipment- Starting Platforms | D | 2 | 3 |
| ASSESSMENT DESCRIPTION: There are eight starting platforms located on the pool deck. They are located in water depths ranging from 4.5 feet to 12 feet according to the depth markers. The blocks are in good condition, with minor corrosion of the stainless steel components. The blocks appeared to be very sturdy, with no movement noted. | | | | |
| RECOMMENDATION: Survey the pool empty to verify the pool water depth at the blocks is consistent with the governing swimming body (NFHSA, USA, NCAA) that is utilized at the pool. If pool depth is inadequate, then starting platforms shall be removed. Otherwise, observe condition daily. | | | | |
| <div></div> | | | | |
| LIFE CYCLE STATUS | REPLACEMENT YEAR | REPLACEMENT COST | | |
| Age Unknown | N/A* | N/A | | |
| REFERENCE: A.2A; A.2B | | | | |

*Pool depth was measured—depth markers were corrected and added post building survey.

FAIRFAX COUNTY PARK AUTHORITY - Mt. Vernon RECenter
Facility Condition Assessment and Life Cycle Cost Analysis



ASSESSMENT REPORT

| ITEM NO. | LOCATION | GRADE | PRIORITY | CATEGORY |
|----------|-------------------------------|-------|----------|----------|
| A.4A | Pool Access – Deep End Stairs | A | 6 | 3 |

ASSESSMENT DESCRIPTION:

The deep end stairs are 48" wide with a width between the rails of 35". The riser height is 9" for all risers except the riser that terminates at the gutter's edge, which is only 4". 69.1-2-10.B.2 requires the stairs to be compliant with VUSBC. A patron at the facility indicated that the inconsistency of the top riser was troublesome as a user. The railing on the stair is in good condition with mild to moderate corrosion on surface of the stainless steel. The left hand side of the rail included unusual flange type pieces in the vertical support that may be from a previous repair.

RECOMMENDATION:

Revise stair riser heights such that all are uniform.




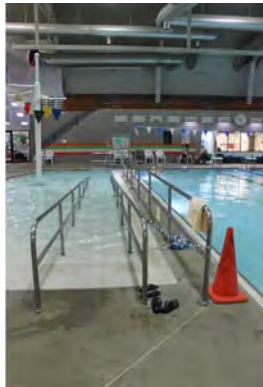
| LIFE CYCLE STATUS | REPLACEMENT YEAR | REPLACEMENT COST |
|-------------------|------------------|------------------|
| 13 yrs of 25 | 2015* | \$ 134,020.08 |

REFERENCE:

*Recommend that work be performed during the 2014 Natatorium shutdown.

FAIRFAX COUNTY PARK AUTHORITY - Mt. Vernon RECenter
Facility Condition Assessment and Life Cycle Cost Analysis





| ASSESSMENT REPORT | | | | |
|--|-------------------------|-------------------|----------|----------|
| ITEM NO. | LOCATION | GRADE | PRIORITY | CATEGORY |
| A.4B | Pool Access- ADA Access | F | 1 | 3 |
| ASSESSMENT DESCRIPTION: The pool is over 300 linear feet in perimeter, which means that at least two accessible means of entry shall be provided. The primary means must be a lift or sloped entry. The ramp in the beach entry is 40 feet long and terminates in 36" of water. The width between the rails is 37.25" and the railing height is 33.25". The Section 1009.3.2 of the 2010 ADA standards requires, "at least one <u>landing shall be located 24 inches minimum and 30" maximum</u> below the stationary water level." Based on the field measurements, the existing ramp is non-compliant with the requirement for a landing and therefore cannot count toward the two means of accessible entry required. Modification of the ramp would be challenging and would require either modifying the entire beach entry area or providing a peninsula wall between the ramp and beach entry. Additional means of accessible entry are missing at the swimming pool. The Operator verbally indicated that they were in process of securing an ADA compliant lift. A hydraulic connection is already in place at the pool deck for the future lift. | | | | |
| RECOMMENDATION: <ul style="list-style-type: none">Survey the pool when empty to confirm exact dimensions of sloped entry and rail spacing dimensions.Install ADA lift as primary means of ADA entry. Lift must comply with 1009.2 of the 2010 ADA Standards. | | | | |
| <div></div> | | | | |
| LIFE CYCLE STATUS | INSTALLATION YEAR | INSTALLATION COST | | |
| Varies | 2015* | \$ 5,500.00 | | |
| REFERENCE: | | | | |

* Pool depth was measured—depth markers were corrected and added post building survey.
Procurement process is currently underway for an ADA lift to be installed in 2015.

FAIRFAX COUNTY PARK AUTHORITY - Mt. Vernon RECenter
Facility Condition Assessment and Life Cycle Cost Analysis


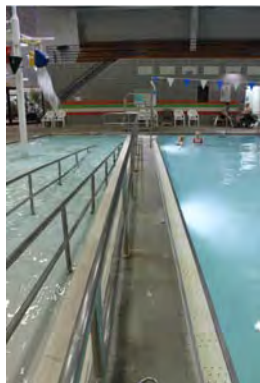


| ASSESSMENT REPORT | | | | |
|--|-------------------------|------------------|----------|----------|
| ITEM NO. | LOCATION | GRADE | PRIORITY | CATEGORY |
| A.4C | Pool Access- ADA Access | F | 1 | 5 |
| ASSESSMENT DESCRIPTION: The rails of the ramp entry were poorly welded at joints and heavily corroded, failed areas were noted in the welds. The failed areas were sharp and present a safety hazard to users. | | | | |
| RECOMMENDATION: Replace ramp rails to alleviate safety concerns at failed welds. | | | | |
| <div></div> | | | | |
| LIFE CYCLE STATUS | REPLACEMENT YEAR | REPLACEMENT COST | | |
| 13 yrs of 25 | 2015* | \$ 11,854.00 | | |
| REFERENCE: | | | | |

*Recommend that work be performed during the 2014 Natatorium shutdown.

FAIRFAX COUNTY PARK AUTHORITY - Mt. Vernon RECenter
Facility Condition Assessment and Life Cycle Cost Analysis

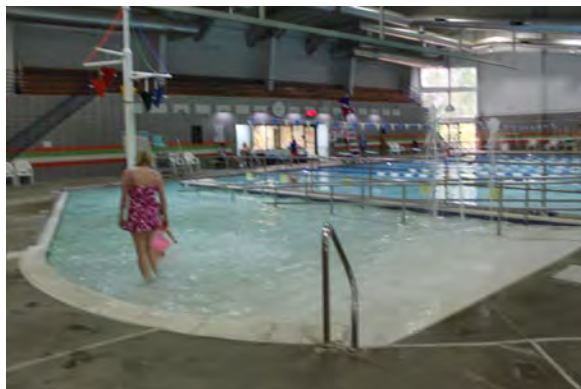


| ASSESSMENT REPORT | | | | |
|--|-------------------------|-------------------|----------|----------|
| ITEM NO. | LOCATION | GRADE | PRIORITY | CATEGORY |
| A.4D | Pool Access- ADA Access | F | 1 | 3 |
| ASSESSMENT DESCRIPTION: The pool is over 300 linear feet in perimeter, which means that at least two accessible means of entry shall be provided. The primary means must be a lift or sloped entry. The ramp in the beach entry is 40 feet long and terminates in 36" of water. The width between the rails is 37.25" and the railing height is 33.25". The Section 1009.3.2 of the 2010 ADA standards requires, "at least one <u>landing shall be located 24 inches minimum and 30" maximum</u> below the stationary water level." Based on the field measurements, the existing ramp is non-compliant with the requirement for a landing and therefore cannot count toward the two means of accessible entry required. Modification of the ramp would be challenging and would require either modifying the entire beach entry area or providing a peninsula wall between the ramp and beach entry. Additional means of accessible entry are missing at the swimming pool. The Operator verbally indicated that they were in process of securing an ADA compliant lift. A hydraulic connection is already in place at the pool deck for the future lift. When the lift is in place, the pool will still be missing a secondary compliant means of ADA access. | | | | |
| RECOMMENDATION: <ul style="list-style-type: none">Install secondary means of ADA entry. A hydraulic lift compliant with 1009.2 is recommended. | | | | |
| <div></div> <div></div> | | | | |
| LIFE CYCLE STATUS | INSTALLATION YEAR | INSTALLATION COST | | |
| N/A | 2015* | \$ 5,500.00 | | |
| REFERENCE: | | | | |

*Recommend that work be performed during the 2014 Natatorium shutdown.

FAIRFAX COUNTY PARK AUTHORITY - Mt. Vernon RECenter
Facility Condition Assessment and Life Cycle Cost Analysis



| ASSESSMENT REPORT | | | | |
|---|------------------|------------------|----------|----------|
| ITEM NO. | LOCATION | GRADE | PRIORITY | CATEGORY |
| A.5 | Water Features | B | 4 | 3 |
| ASSESSMENT DESCRIPTION: The beach entry area includes a Raindrop above grade spray feature consisting of five tumble buckets, bubblers and 5 geysers. All features are in good condition. The geyser features in the beach entry roll back are not hydraulically balanced; three of the geysers create a substantial plume of water approximately 5'-0" while the other geysers are barely spraying to a couple of feet tall. This is an aesthetic issue that could be addressed by below grade re-plumbing of the features. The bubbler features were created by drilling a 1/2" hole in an inlet fitting. | | | | |
| RECOMMENDATION: Re-plumb the geyser features, if the aesthetic spray heights are not desirable to the operator/users. | | | | |
|  | | | | |
| LIFE CYCLE STATUS | REPLACEMENT YEAR | REPLACEMENT COST | | |
| 13 yrs of 25 | 2027 | \$ 61,067.14 | | |
| REFERENCE: | | | | |

FAIRFAX COUNTY PARK AUTHORITY - Mt. Vernon RECenter
Facility Condition Assessment and Life Cycle Cost Analysis



ASSESSMENT REPORT

| ITEM NO. | LOCATION | GRADE | PRIORITY | CATEGORY |
|----------|----------------------------------|-------|----------|----------|
| A.6A | Recirculation Components- Gutter | B | 4 | 1 |

ASSESSMENT DESCRIPTION:

The gutter system is the original stainless steel gutter system with PVC covering. The PVC covering has holes drilled in it to provide drainage. Both the stainless steel trough and PVC gutter covering appeared to be in very good condition. The gutter trough has been well cared for with minimal corrosion and the gutter covering was intact with very minimal staining.

The operator reported (and the original drawings show) that there were originally two gutter pipe connections with 8" gutter pipes running back to the filter tank. One of these pipes was discovered to be leaking and has been abandoned. During our survey, the gutter operation did not seem to be affected by the abandoned pipe; and the operator reported that the gutter rim flows and does not flood. However, since the installation of a new pump in 2014, which creates a stronger pull, the water in the wet pit cannot be properly maintained with the previously abandoned gutter pipe. The Owner also reported that the pool is not level and, as a result, only the deep end of the pool flows into the gutters. The gutter was operating correctly at the time of observation.

RECOMMENDATION:

Repair the abandoned gutter pipe.



| LIFE CYCLE STATUS | REPAIR YEAR | REPAIR COST |
|-------------------|-------------|--------------|
| 31 yrs of 25 | 2015* | \$ 33,284.67 |

REFERENCE: A.6B; A.6C

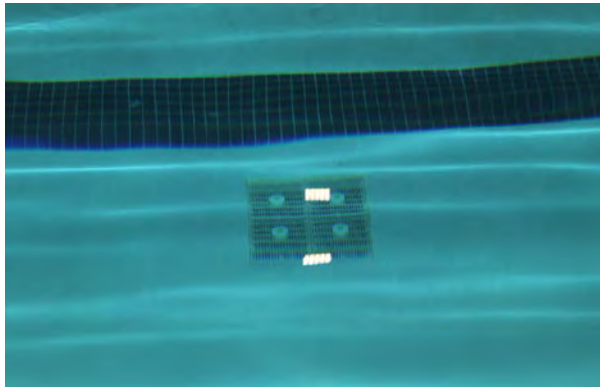

*Sections of broken gutter are scheduled to be repaired during the 2014 Natatorium shutdown.



| ASSESSMENT REPORT | | | | |
|--|---------------------------------------|-------|----------|----------|
| ITEM NO. | LOCATION | GRADE | PRIORITY | CATEGORY |
| A.6B | Recirculation Components- Main Drains | D | 2 | 3 |
| ASSESSMENT DESCRIPTION: <p>The pool includes three 18"x18" main drains. Each drain is covered by four (4) 9"x9" covers. The main drain covers appeared from visual observation to be stamped, VGB covers although the operator indicated the grates were replaced in 2007. Many of the original VGB grates were recalled. WTI was not provided with any data on the main drain grating. Additionally, no documentation was provided on the main drain sumps, so it cannot be determined if they are compliant with VGB.</p> <p>An email from the County indicates the main drain plumbing has never been modified and should be as shown on the original pool drawings. The record SP drawing (SP01, Feb 12, 1979) indicates the three main drains sized 12"x 24" are connected in series with a note that says, "Drain Pipe as Required." The M-3 sheet indicates a 10" main drain line (the size of the piping between drains) under the pool is not indicated and is assumed to be 10". From discussion with the operators, the main drain pipes are cast iron, but these could not be observed at the time of the evaluation.</p> <p>The original cast iron piping has likely corroded to the point that it has exceeded the end of its useful life cycle.</p> <p>Additionally, there are two 12"x12" main drains in the beach entry that the activity pump takes suction from. The sumps and grating for these outlets must also comply with VGB.</p> | | | | |
| RECOMMENDATION: <ul style="list-style-type: none"> Remove main drain covers and evaluate the sumps for VGB (ASME A112.19.8-2008) compliance. Replace sumps and main drain covers as required. Operator has indicated that the main drain covers are scheduled to be replaced in August 2014. Replacement cover flow rates should be verified against design flow and MAXIMUM pump flow (based on pump curve or verified testing of maximum flow). Scope pipes to confirm quality and design. As required, replace below grade piping complete to filter, pipes should be plumbed in parallel for hydraulic balance and compliance with ANSI/APSP 7. By law, if the outlet (cover and sump) are not compliant with the requirements, the pool shall be closed. | | | | |

FAIRFAX COUNTY PARK AUTHORITY - Mt. Vernon RECenter
 Facility Condition Assessment and Life Cycle Cost Analysis



| ASSESSMENT REPORT | | | | |
|--|---------------------------------------|------------------|----------|----------|
| ITEM NO. | LOCATION | GRADE | PRIORITY | CATEGORY |
| A.6B (cont'd) | Recirculation Components- Main Drains | D | 2 | 3 |
| <div></div> | | | | |
| LIFE CYCLE STATUS | REPLACEMENT YEAR | REPLACEMENT COST | | |
| Varies; 31 yrs of 25 (sumps) | 2015* | \$ 150,000.00 | | |
| REFERENCE: A.6A; A.6C | | | | |

*Main drain covers are scheduled to be replaced during 2014 Natatorium shutdown. Contractor will evaluate the sumps.

FAIRFAX COUNTY PARK AUTHORITY - Mt. Vernon RECenter
Facility Condition Assessment and Life Cycle Cost Analysis



| ASSESSMENT REPORT | | | | |
|--|----------------------------------|------------------|----------|----------|
| ITEM NO. | LOCATION | GRADE | PRIORITY | CATEGORY |
| A.6C | Recirculation Components- Inlets | C | 3 | 3 |
| ASSESSMENT DESCRIPTION The pool includes floor inlets spaced throughout the pool. The inlet fittings appear to be in good condition (although discolored) and to provide proper distribution of filtered water. The below grade plumbing is reported to be the original cast-iron pipe. Corrosion of the cast iron pipe below grade, failure of pool heat exchanger internals, or iron in the pool source water could all be the reason for the stain present around the floor inlet. | | | | |
| RECOMMENDATION: <ul style="list-style-type: none">• Replace discolored inlet fittings to enhance aesthetics.• Replace below grade cast-iron pipe to inlet system. Test source water for dissolved metals. | | | | |
| NO PHOTO AVAILABLE | | | | |
| LIFE CYCLE STATUS | REPLACEMENT YEAR | REPLACEMENT COST | | |
| 31 yrs of 25 | 2015 | \$ 210,000.00 | | |
| REFERENCE: A.6A; A.6B | | | | |

FAIRFAX COUNTY PARK AUTHORITY - Mt. Vernon RECenter
Facility Condition Assessment and Life Cycle Cost Analysis



ASSESSMENT REPORT

| ITEM NO. | LOCATION | GRADE | PRIORITY | CATEGORY |
|----------|-----------------------------------|-------|----------|----------|
| A.7 | Pool Recirculation System General | F | 1 | 3 |

ASSESSMENT DESCRIPTION:

Pool Volume as reported in County documentation is 322,465 gallons. For this volume of water, the minimum recirculation rate for a 6 hour turnover is 923 GPM. The flowmeter was reading 850 GPM at the time of the site visit, which equates to a turnover of 391 minutes (6.51 hours). The operator reported flows as low as ~750 GPM when the filter is dirty. It was also reported that the system utilizes 6" PVC discharge piping.

Gauge readings right after a backwash cycle were -11inches of HG and 7 PSI, which equates to approximately 30' TDH. Assuming the flow meters and gauges are reading accurately, the pump curve and pump data taken off the spare pump are not jiving.

WTI needs additional information on the pump from the supplier or PO.

RECOMMENDATION:

A 6" PVC discharge is undersized and a larger pipe size will be required to provide adequate turnover rate. 8" pipe should be adequate but final pipe size should be determined by a full engineering design of pump and filter operating characteristics if they are replaced at a later date.

Based on current information, the pump size/design appears to be inadequate for the required turnover and should be replaced to fit the system operating characteristics.


Note that if the filter is replaced with a pressure side filter as recommended in A.9 below, the operating head of the pump will change considerably and will require a redesign of the pump system.



| LIFE CYCLE STATUS | REPLACEMENT YEAR | REPLACEMENT COST |
|------------------------------|------------------|------------------|
| 31 yrs of 25 | 2015 | \$ 30,956.55 |
| REFERENCE: A.8A; A.8B | | |


FAIRFAX COUNTY PARK AUTHORITY - Mt. Vernon RECenter
Facility Condition Assessment and Life Cycle Cost Analysis



| ASSESSMENT REPORT | | | | |
|---|-------------------------|-------------------------|----------|----------|
| ITEM NO. | LOCATION | GRADE | PRIORITY | CATEGORY |
| A.8A | Filter Pumps | F | 1 | 3 |
| ASSESSMENT DESCRIPTION: According to the Building Equipment-Life Expectancy document from the Owner, the pump was installed in 1977 and has been rebuilt every two years. The operators confirmed the impeller is approximately 1 year old, but the flow rate indicated by the flowmeter is approximately 200 GPM less than the minimum flow required for a code compliant 6 hour turnover rate. A replacement pump and motor were stored in the pool storage room. The name plate data indicates it is an ITT Marlow 530SC series. The pump impeller size and curve should be checked to see if it is properly sized for a six hour turnover rate. WTI needs additional information to check this. WTI needs additional information on the backwash pump in the pump pit. | | | | |
| RECOMMENDATION: Replace pump as required to provide a minimum 6 hour turnover per code. Note that if the filter is replaced with a pressure side filter as recommended in A.9 below, the operating head of the pump will change considerably and will require a redesign of the pump system. Typically the impeller should last 5-7 years. We need to understand what owner's documentation means by "rebuilt every year" before a recommendation can be made. The pump volute should be supported to reduce stress on the pump connection flange bolts when the motor is removed. | | | | |
|  | | | | |
| LIFE CYCLE STATUS | REPLACEMENT YEAR | REPLACEMENT COST | | |
| Age Unknown | 2015 | \$ 21,545.76 | | |
| REFERENCE: | | | | |


FAIRFAX COUNTY PARK AUTHORITY - Mt. Vernon RECenter
Facility Condition Assessment and Life Cycle Cost Analysis



| ASSESSMENT REPORT | | | | |
|--|-------------------|------------------|----------|----------|
| ITEM NO. | LOCATION | GRADE | PRIORITY | CATEGORY |
| A.8B | Pool Feature Pump | F | 1 | 3 |
| ASSESSMENT DESCRIPTION: The pool feature pump (for beach entry spray/play features) appears to be a 5 HP Pac Fab CMK-50 pump (similar to the jet pump). The pump and strainer are heavily corroded. WTI needs additional history on this pump from the operator. | | | | |
| RECOMMENDATION: Suction and discharge gauges should be relocated as closely as possible to the pump volute. | | | | |
|  | | | | |
| LIFE CYCLE STATUS | REPLACEMENT YEAR | REPLACEMENT COST | | |
| Age Unknown | 2015 | \$ 13,620.88 | | |
| REFERENCE: | | | | |


FAIRFAX COUNTY PARK AUTHORITY - Mt. Vernon RECenter
Facility Condition Assessment and Life Cycle Cost Analysis



| ASSESSMENT REPORT | | | | |
|--|-------------------------------|-------------------------|----------|-------------------------|
| ITEM NO. | LOCATION | GRADE | PRIORITY | CATEGORY |
| A.9 | Pool Filter/Filter Components | D | 2 | 3 |
| ASSESSMENT DESCRIPTION: The existing pool filter is a vacuum diatomaceous earth filter that is original to the building. It has been operating for over thirty years. While the system has been well maintained, it is currently operating beyond the extent of its anticipated useful life. The manufacturer of the filter, Paddock/Whitten, is no longer in operation as a single company and vacuum DE filters are generally out of style, so parts will become increasingly difficult to find. The operator reports standard concerns with this type of filter; the media is dangerous to handle so full personal protective gear is required when handling the media and backwashing the filter takes over four hours. There are eight filter media separators that contain the spent DE during the backwash process. These appear to be in relatively good condition. Additionally, WTI noted that the steel wall between the pump pit and the filter was bowed out. The Owner later reported that they had received previous assessments of the conditions of the steel wall in which they were cautioned that the wall could give way any time and cause the immediate shut down of the pool until a new, secure wall could be installed. If this steel vessel is to remain on site, either as a filter or a potential future surge tank, WTI recommends having a structural engineer review the condition of the filter tank walls and provide a remedial solution. | | | | |
| RECOMMENDATION: WTI recommends removing or repurposing the existing filter and providing new filter(s) that would provide equivalent water quality with less maintenance and safer handling. The existing dimensions of the pool equipment room could be a challenge for filter replacement. | | | | |
|  | | | | |
| LIFE CYCLE STATUS | | REPLACEMENT YEAR | | REPLACEMENT COST |
| 31 yrs of 25 | | 2015 | | \$ 75,000.00 |
| REFERENCE: | | | | |

FAIRFAX COUNTY PARK AUTHORITY - Mt. Vernon RECenter
Facility Condition Assessment and Life Cycle Cost Analysis



| ASSESSMENT REPORT | | | | |
|--|---------------------|------------------|----------|----------|
| ITEM NO. | LOCATION | GRADE | PRIORITY | CATEGORY |
| A.10 | Pool Heat Exchanger | C | 3 | 3 |
| ASSESSMENT DESCRIPTION: The pool utilized a heat exchanger with a building heat system to maintain water temperature. The operator reported that they are able to maintain pool temperature. The heat exchanger is fully evaluated in the building mechanical scope of the report. The exterior of the heat exchanger showed heavy corrosion. The pool water side connections of the heat exchanger appear to be PVC, but were painted so that the type of PVC could not be noted. | | | | |
| RECOMMENDATION: Replace pool water piping with CPVC or Copper pipe. Defer to the Mechanical section of report for recommendations on the pool heat exchanger. | | | | |
|  | | | | |
| LIFE CYCLE STATUS | REPLACEMENT YEAR | REPLACEMENT COST | | |
| 31 yrs of 30 | 2015 | Refer to M.11 | | |
| REFERENCE: M.11 | | | | |



ASSESSMENT REPORT

| ITEM NO. | LOCATION | GRADE | PRIORITY | CATEGORY |
|----------|--|-------|----------|----------|
| A.11A | Pool Chemical Systems- Storage and Feeders | D | 2 | 3 |

ASSESSMENT DESCRIPTION:

The pool utilizes liquid chlorine, fed by a double headed Stenner pump, for primary sanitization. The chlorine is stored in three 50 gallon tanks adjacent to the DE filter. Each tank is provided with a secondary containment basin. Access to the tanks is severely limited when the grating over the DE filter is removed. The chemical eye wash required by OSHA is not easy to access from the chlorine storage tanks, which poses a potential safety hazard to employees.

No secondary sanitization (UV or Ozone) is provided.

pH is controlled by Carbon Dioxide gas, which is stored in a primary 650 lb bulk CO2 tank, and five smaller cylinders. The smaller cylinders are required to cover the time lag between emptying the bulk tank and when the vendor can refill the bulk tank. The CO2 storage blocks one of the double doors that provide access in the pool equipment space.

Alkalinity is controlled, as required, by hand dumping acid into the body of the pool. This is both dangerous to personnel and pool finishes.

RECOMMENDATION:

- Provide separate, properly ventilated chemical storage room for the liquid chlorine with eye wash/drench shower properly located adjacent.
- Provide separate, properly ventilated acid storage room for liquid acid, as required. Provide feed system into the pool return pipe to eliminate hand feeding of acid into the pool.
- Replace existing chlorine storage with CFR compliant double wall storage tanks.
- Find alternative storage location for CO2 to increase accessibility and access into the main mechanical space.
- Install secondary sanitization system to be consistent with other Fairfax County facilities.




| LIFE CYCLE STATUS | REPLACEMENT YEAR | REPLACEMENT COST |
|-------------------|------------------|------------------|
| 31 yrs old | 2015 | \$ 215,561.00 |

REFERENCE:

FAIRFAX COUNTY PARK AUTHORITY - Mt. Vernon RECenter
Facility Condition Assessment and Life Cycle Cost Analysis



| ASSESSMENT REPORT | | | | |
|--|--|------------------|----------|----------|
| ITEM NO. | LOCATION | GRADE | PRIORITY | CATEGORY |
| A.11B | Pool Chemical Systems- Chemical Controller | C | 3 | 3 |
| ASSESSMENT DESCRIPTION: The pool chemical controller is a Siemens Impact chemical controller. The Impact controller has been discontinued by the manufacturer and is currently serviced with "new old parts". Maintaining and servicing the chemical controller will become more difficult as time goes on. It is currently operating well, appears in good condition, and is interlocked via the manufacturer's flow cell. | | | | |
| RECOMMENDATION: <ul style="list-style-type: none">• Provide a secondary, electrical interlock direct to the filtration pump such that if the filtration pump is off, chemical cannot feed, even if the flow cell is reading flow.• Replace the chemical controller, as necessary, when parts are no longer available for service. | | | | |
|  | | | | |
| LIFE CYCLE STATUS | REPLACEMENT YEAR | REPLACEMENT COST | | |
| Age Unknown | 2015 | \$ 9,196.86 | | |
| REFERENCE: | | | | |

FAIRFAX COUNTY PARK AUTHORITY - Mt. Vernon RECenter
Facility Condition Assessment and Life Cycle Cost Analysis



ASSESSMENT REPORT

| ITEM NO. | LOCATION | GRADE | PRIORITY | CATEGORY |
|----------|---|-------|----------|----------|
| A.12 | Pool/Spa Mechanical Equipment Space General | C | 3 | 3 |

ASSESSMENT DESCRIPTION:

The pool mechanical equipment space layout is cramped and difficult to work in. Space is not adequate for maintenance and creates safety hazards for employees, especially when the fiberglass grating over the filter and pump pit are removed.

Chemical storage in the main equipment room has lead to increased corrosion of metal components.

Pipe hangers are heavily corroded.

RECOMMENDATION:

- Relocate chemical storage/feed system/eyewash to free up equipment and maintenance work space.
- Replace pipe hangers with corrosion resistant hangers.



| LIFE CYCLE STATUS | REPLACEMENT YEAR | REPLACEMENT COST |
|-------------------|------------------|------------------|
| 31 yrs old | 2015* | \$ 7,620.25 |

REFERENCE: EL.13

*Pipe hangers are scheduled to be replaced during the 2014 Natatorium shutdown.

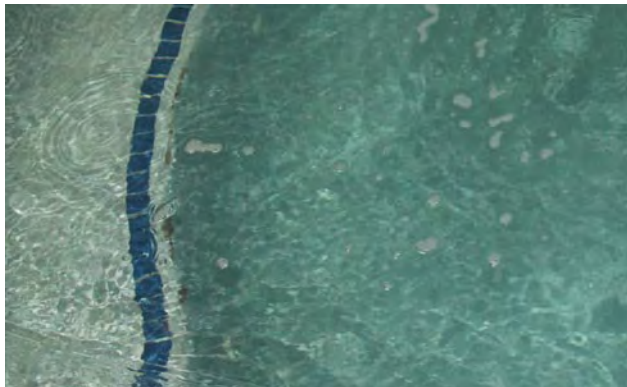
FAIRFAX COUNTY PARK AUTHORITY - Mt. Vernon RECenter
Facility Condition Assessment and Life Cycle Cost Analysis



| ASSESSMENT REPORT | | | | |
|---|-----------------------------|------------------|----------|----------|
| ITEM NO. | LOCATION | GRADE | PRIORITY | CATEGORY |
| A.13 | Pool Spectator Seating Area | F | 1 | 3 |
| ASSESSMENT DESCRIPTION: The existing spectator seating area is not compliant with current ADA guidelines due to its lack of access from an accessible route; and the area does not offer ADA compliant companion seating. | | | | |
| RECOMMENDATION: Replace current system with a new ADA compliant fixed aluminum bleacher system with plastic covers on seating (including a lift or elevator for access to/from the seating area). | | | | |
| NO PHOTO AVAILABLE | | | | |
| LIFE CYCLE STATUS | REPLACEMENT YEAR | REPLACEMENT COST | | |
| 31 yrs of 25 | 2015 | TBD | | |
| REFERENCE: | | | | |

FAIRFAX COUNTY PARK AUTHORITY - Mt. Vernon RECenter
Facility Condition Assessment and Life Cycle Cost Analysis




| ASSESSMENT REPORT | | | | |
|--|---------------------------------------|------------------|----------|----------|
| ITEM NO. | LOCATION | GRADE | PRIORITY | CATEGORY |
| A.21A | Spa Pool Finishes- Aggregate and Tile | F | 1 | 5 |
| ASSESSMENT DESCRIPTION: The submerged pool finishes include an aggregate type plaster and tile at the waterline and bench/step nosing. The aggregate finish has become overexposed (aggregate dominant) due to wear or chemical balance. A patron reported the excessive roughness of the finish was detrimental to his use of the spa pool. Additionally, areas of aggregate have chipped off at the bench nosing creating a safety hazard to exposed skin. The water line and bench nosing tile/grout is in good condition. | | | | |
| RECOMMENDATION: Replace submerged aggregate finish. | | | | |
|  | | | | |
| LIFE CYCLE STATUS | REPLACEMENT YEAR | REPLACEMENT COST | | |
| 3 yrs of 7 | 2015* | \$ 4,293.00 | | |
| REFERENCE: | | | | |

*Submerged aggregate finish is scheduled to be repaired during the 2014 Natatorium shutdown.


FAIRFAX COUNTY PARK AUTHORITY - Mt. Vernon RECenter
 Facility Condition Assessment and Life Cycle Cost Analysis



| ASSESSMENT REPORT | | | | |
|--|----------------------------------|------------------|----------|----------|
| ITEM NO. | LOCATION | GRADE | PRIORITY | CATEGORY |
| A.21B | Spa Pool Finishes- Coping Stones | A | 5 | 1 |
| ASSESSMENT DESCRIPTION: The spa perimeter includes a pre-cast manufactured coping stone. Other than discoloration the coping stones are in good service condition. | | | | |
| RECOMMENDATION: <ul style="list-style-type: none">• Provide a deep cleaning• Anticipate replacement in 12 years | | | | |
|  | | | | |
| LIFE CYCLE STATUS | REPLACEMENT YEAR | REPLACEMENT COST | | |
| 13 yrs of 25 | 2027 | \$ 4,580.03 | | |
| REFERENCE: | | | | |


FAIRFAX COUNTY PARK AUTHORITY - Mt. Vernon RECenter
Facility Condition Assessment and Life Cycle Cost Analysis



| ASSESSMENT REPORT | | | | |
|---|--|------------------|----------|----------|
| ITEM NO. | LOCATION | GRADE | PRIORITY | CATEGORY |
| A.21C | Spa Pool Finishes- Deck and Wall Depth Markers | A | 5 | 1 |
| ASSESSMENT DESCRIPTION: The spa includes two pair of deck and wall depth markers. The depth markers are slip-resistant tile and indicate 4FT water depth and include the international "no diving" symbol. Other than discoloration, the depth markers are in good condition. | | | | |
| RECOMMENDATION: <ul style="list-style-type: none">• Provide a deep cleaning• Anticipate replacement in 12 years | | | | |
|  | | | | |
| LIFE CYCLE STATUS | REPLACEMENT YEAR | REPLACEMENT COST | | |
| 13 yrs of 25 | 2027 | \$ 13,740.10 | | |
| REFERENCE: | | | | |

FAIRFAX COUNTY PARK AUTHORITY - Mt. Vernon RECenter
Facility Condition Assessment and Life Cycle Cost Analysis



| ASSESSMENT REPORT | | | | |
|---|-----------------------------|------------------|----------|----------|
| ITEM NO. | LOCATION | GRADE | PRIORITY | CATEGORY |
| A.22B | Spa Pool - Accessible Entry | C | 3 | 3 |
| ASSESSMENT DESCRIPTION: The one required means of accessible entry into the spa is provided by a hydraulically powered pool lift. The lift is functional and in good service condition. | | | | |
| RECOMMENDATION: Status quo. Anticipate replacement in 12 years. | | | | |
|  | | | | |
| LIFE CYCLE STATUS | REPLACEMENT YEAR | REPLACEMENT COST | | |
| 13 yrs of 25 | 2027 | \$ 5,500.00 | | |
| REFERENCE: | | | | |

FAIRFAX COUNTY PARK AUTHORITY - Mt. Vernon RECenter
 Facility Condition Assessment and Life Cycle Cost Analysis



| ASSESSMENT REPORT | | | | |
|--|------------------|------------------|----------|----------|
| ITEM NO. | LOCATION | GRADE | PRIORITY | CATEGORY |
| A.24C | Spa Pool Inlets | C | 3 | 3 |
| ASSESSMENT DESCRIPTION: The spa pool is equipped with six eyeball style inlets located on the vertical portion of the spa bench. The flow per inlet at the required turnover is 33 GPM each. | | | | |
| RECOMMENDATION: Status quo. Anticipate replacement in 12 years. | | | | |
| NO PHOTO AVAILABLE | | | | |
| LIFE CYCLE STATUS | REPLACEMENT YEAR | REPLACEMENT COST | | |
| 13 yrs of 25 | 2027 | \$ 12,000.00 | | |
| Reference: | | | | |


FAIRFAX COUNTY PARK AUTHORITY - Mt. Vernon RECenter
 Facility Condition Assessment and Life Cycle Cost Analysis



| ASSESSMENT REPORT | | | | |
|--|----------------------------------|-------------|----------|----------|
| ITEM NO. | LOCATION | GRADE | PRIORITY | CATEGORY |
| A.25 | Spa Pool - Recirculation General | C | 3 | 1 |
| ASSESSMENT DESCRIPTION: The spa pool is approximately 3,000 gallons and is required by Chapter 69.1 to have a 15 minute turnover. This equates to a required 200 GPM recirculation rate. The design flow rate on the drawings is 205 GPM. The flow meter was reading approximately 260 GPM. The pool was clean and recirculation appeared well distributed. In the Mechanical Room, the main drain piping as shown on the 2001 renovation drawings is a 4" PVC pipe and the skimmers measured a 2.5" PVC pipe. Both of these pipes are under direct suction. Per 69.1-2-15E, suction velocity for all piping shall not exceed 6 fps. A 4"schedule 40 PVC pipe can handle 238 GPM at 6fps and a 2.5" schedule 40 PVC pipe can only handle 90 GPM at 6 fps. The velocity of water in the skimmer pipe at the code required 200 GPM and 80% flow would create non-code compliant water velocity in the piping. | | | | |
| RECOMMENDATION: <ul style="list-style-type: none">• See if the whirlpool piping design was provided with a variance to exceed the suction velocity or is otherwise grandfathered under an earlier version of the code.• Reduce flow to the pool, unless there is operational justification for the higher flow. | | | | |
| NO PHOTO AVAILABLE | | | | |
| LIFE CYCLE STATUS | REPAIR YEAR | REPAIR COST | | |
| 13 yrs of 25 | 2015 | \$ 600.00 | | |
| REFERENCE: | | | | |

FAIRFAX COUNTY PARK AUTHORITY - Mt. Vernon RECenter
Facility Condition Assessment and Life Cycle Cost Analysis



| ASSESSMENT REPORT | | | | |
|---|---------------------------------|--------------------|----------|----------|
| ITEM NO. | LOCATION | GRADE | PRIORITY | CATEGORY |
| A.26A | Spa Pool Pumps- Filtration Pump | C | 3 | 1 |
| ASSESSMENT DESCRIPTION: The spa pool filtration pump is a Pac-Fab (Pentair) CMK-75, self-priming commercial bronze swimming pool pump with integral strainer. There were no pressure gauges installed on the suction side of the pump, so the operating flow could not be pinpointed on the manufacturer's design curve. The flow meter reading was approximately 260 GPM, design flow rate on the drawings is 205 GPM. The pump body was moderately corroded. | | | | |
| RECOMMENDATION: <ul style="list-style-type: none">• Install pressure gauges in the suction and discharge PVC flange connections for compliance with chapter 69.1 and so that pump performance can be evaluated.• Adjust pump to design flow rate, unless there is operational justification for the higher flow rate. | | | | |
|  | | | | |
| LIFE CYCLE STATUS | REPAIR YEAR | REPAIR COST | | |
| 13 yrs of 25 | 2015 | \$ 878.47 | | |
| REFERENCE: | | | | |

FAIRFAX COUNTY PARK AUTHORITY - Mt. Vernon RECenter
Facility Condition Assessment and Life Cycle Cost Analysis



ASSESSMENT REPORT

| ITEM NO. | LOCATION | GRADE | PRIORITY | CATEGORY |
|----------|--------------------------|-------|----------|----------|
| A.26B | Spa Pool Pumps- Jet Pump | C | 3 | 1 |

ASSESSMENT DESCRIPTION:

The spa jet pump is a Pac-Fab (Pentair) CMK-50. The gauge readings for the pump were -8.5" Hg and 14 PSI, which equates to a total dynamic head of approximately 42'. Reviewing the pump curve referenced below, this means the pump is operating at approximately 350 GPM and each jet would be operating at approximately 38-39 GPM. The design flow rate for the spa pump as listed on the 2001 renovation drawings is 230 GPM.

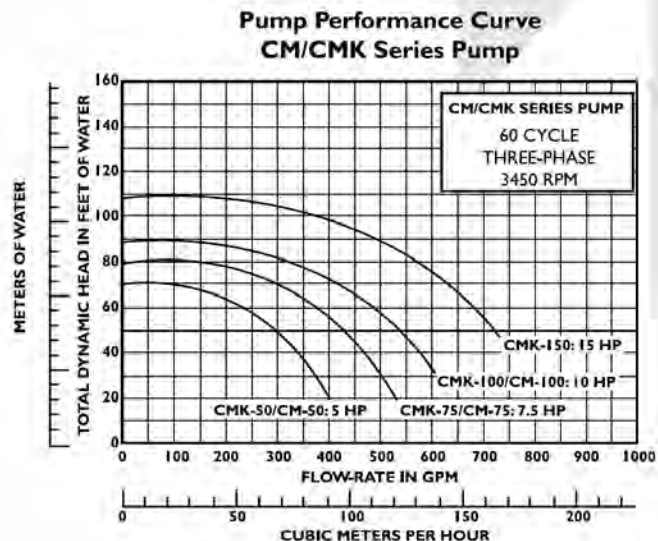
The pump appears to be in good condition with mild corrosion of the bronze parts.

RECOMMENDATION:

Adjust pump to design flow rate, unless there is operational justification for the higher flow rate.



Spa jet pump on right



| LIFE CYCLE STATUS | REPAIR YEAR | REPAIR COST |
|-------------------|-------------|-------------|
| 13 yrs of 14 | 2015 | \$ 600.00 |
| REFERENCE: | | |

FAIRFAX COUNTY PARK AUTHORITY - Mt. Vernon RECenter



Facility Condition Assessment and Life Cycle Cost Analysis



| ASSESSMENT REPORT | | | | |
|---|------------------|------------------|----------|----------|
| ITEM NO. | LOCATION | GRADE | PRIORITY | CATEGORY |
| A.27 | Spa Pump Filters | C | 3 | 3 |
| ASSESSMENT DESCRIPTION: The spa filtration is accomplished with three Pentair Triton TR-140 Filters. Each filter has 7.06 square feet of filter area. At the flow meter reading of 260 GPM, the flow through the filters is appropriate at approximately 12.4 GPM/SF. | | | | |
| RECOMMENDATION: Status quo. Anticipate replacement in 7 years. | | | | |
| NO PHOTO AVAILABLE | | | | |
| LIFE CYCLE STATUS | REPLACEMENT YEAR | REPLACEMENT COST | | |
| 13 yrs of 20 | 2022 | \$ 9,000.00 | | |
| REFERENCE: | | | | |

FAIRFAX COUNTY PARK AUTHORITY - Mt. Vernon RECenter
Facility Condition Assessment and Life Cycle Cost Analysis



| ASSESSMENT REPORT | | | | |
|---|------------------|------------------|----------|----------|
| ITEM NO. | LOCATION | GRADE | PRIORITY | CATEGORY |
| A.28 | Spa Pool Heater | C | 3 | 3 |
| ASSESSMENT DESCRIPTION: The spa pool heater is an electric swimming pool and spa heater manufactured by Coates, model number 34836PHS-3. The operator reports that the spa heater has been working well and maintaining heat. | | | | |
| RECOMMENDATION: Status quo. Anticipate replacement in 12 years. | | | | |
| <div><div></div><div></div></div> | | | | |
| LIFE CYCLE STATUS | REPLACEMENT YEAR | REPLACEMENT COST | | |
| 13 yrs of 25 | 2027 | \$ 9,000.00 | | |
| REFERENCE: | | | | |

FAIRFAX COUNTY PARK AUTHORITY - Mt. Vernon RECenter
Facility Condition Assessment and Life Cycle Cost Analysis



ASSESSMENT REPORT

| ITEM NO. | LOCATION | GRADE | PRIORITY | CATEGORY |
|----------|--|-------|----------|----------|
| A.29 | Spa Pool Chemical Systems- Feeders and Storage | C | 3 | 3 |

ASSESSMENT DESCRIPTION:

The spa pool utilizes Bromine for sanitizer and disinfectant. The bromine is fed via a BioLab Brominator. A solenoid valve on the influent pipe to the brominator, controlled by the chemical controller is utilized to regulate the feed from the brominator tank. The brominator and solenoid valve were functioning and maintaining the residual set by the Operators.

No secondary sanitization system (UV or Ozone) is provided.

pH control utilizes CO2, shared with the main pool. The CO2 feeder is a Strantrol CO2 feeder. The CO2 system appears to be in good working order.

Acid is not required for the whirlpool, as it is emptied frequently, and alkalinity does not have time to build up in the pool.

RECOMMENDATION:

- Find alternative storage location for CO2 to increase accessibility and access into the main mechanical space.
- Provide secondary sanitization system to be consistent with other Fairfax County recreation facilities.




| LIFE CYCLE STATUS | REPLACEMENT YEAR | REPLACEMENT COST |
|-------------------|------------------|------------------|
| 31 yrs old | 2015 | \$ 60,000.00 |
| REFERENCE: | | |

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Facility Condition Assessment and Life Cycle Cost Analysis





ICE RINK (I)

| ASSESSMENT REPORT | | | | |
|--|--------------------|------------------|----------|----------|
| ITEM NO. | LOCATION | GRADE | PRIORITY | CATEGORY |
| I.1 | Score Keeper’s Box | B | 4 | 3 |
| ASSESSMENT DESCRIPTION: The sound system at the rink is past its operating life. Some of the speakers are blown, the audio crackles when playing music or making announcements. When a competition for figure skating took place this season the Ice Director stated that they had constant problems with the system. The main audio equipment for the system is in the Ice Directors office and is not conducive to having a DJ during public sessions or changing music. | | | | |
| RECOMMENDATION: Replace system with outdoor tolerant speakers, new components that are up to date for digital storage and play back. Another option for the County is to pay for satellite music and eliminate having to own music. | | | | |
|  | | | | |
| LIFE CYCLE STATUS | REPLACEMENT YEAR | REPLACEMENT COST | | |
| Age Unknown | 2015 | \$ 27,740.00 | | |
| REFERENCE: F.3A; F.3B | | | | |

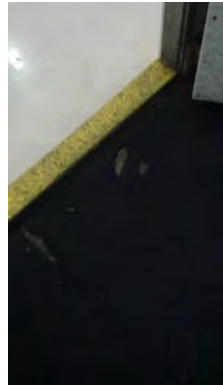

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| ASSESSMENT REPORT | | | | |
|---|----------------------------|-------------------------|----------|-------------------------|
| ITEM NO. | LOCATION | GRADE | PRIORITY | CATEGORY |
| I.2 | Ice Rink Spectator Seating | F | 1 | 5 |
| ASSESSMENT DESCRIPTION: There are two sets of wall-mounted telescopic wooden bleachers that were installed in the '70s during the original construction of the Ice Rink Facility. The age and condition of the bleachers are past there useable life span. There are visible spots of splinters. At the base of the bleachers, little children can access underneath the seats, which is a liability hazard. Additional boards were added to cover the gap between the dasher boards and bleachers. The bleachers are not ADA compliant either and would not meet code for bleachers today. | | | | |
| RECOMMENDATION: Replace current system with a new ADA compliant wall-mounted telescopic aluminum bleacher system with plastic covers on seating. | | | | |
| <div></div> | | | | |
| LIFE CYCLE STATUS | | REPLACEMENT YEAR | | REPLACEMENT COST |
| 35 yrs of 25 | | 2015 | | \$ 56,333.76 |
| REFERENCE: I.3 | | | | |

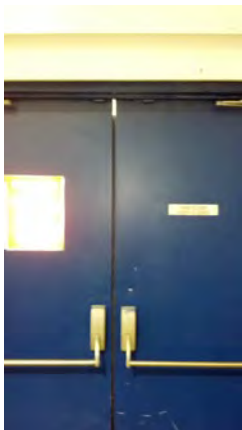
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| ASSESSMENT REPORT | | | | |
|--|---------------------------------|------------------|----------|----------|
| ITEM NO. | LOCATION | GRADE | PRIORITY | CATEGORY |
| I.3 | Rubber Flooring Around Ice Rink | F | 1 | 5 |
| ASSESSMENT DESCRIPTION: Rubber flooring around the perimeter of the rink is very worn, missing in some places and has gaps between rubber pieces that present a tripping hazard. The rubber floor in the Skate Change Room that was being installed during our visit should also be installed around the rink to prevent patrons from tripping/falling, and to enhance the appearance of the Facility. Staff were not sure when the black rubber matting was installed, but Rink Managements Services estimates that it is over 10 years old and is at the end of its operational life. The Olympia entrance also should be rubberized to prevent the wearing of the concrete surface and improve the life of the tires on the machine. Rubberizing where the Olympia enters the ice rink will improve ice quality and reduce maintenance cost to the ice and Olympia. | | | | |
| RECOMMENDATION: Replace rubber matting around rink with virgin rubber flooring (without recycled content) once a solution is determined for the bleachers in order to know the location of all new rubber matting. | | | | |
| <div></div> | | | | |
| LIFE CYCLE STATUS | REPLACEMENT YEAR | REPLACEMENT COST | | |
| 10+ yrs of 10 | 2015 | \$ 75,412.30 | | |
| REFERENCE: I.2; I.5B | | | | |



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 Facility Condition Assessment and Life Cycle Cost Analysis



| ASSESSMENT REPORT | | | | |
|---|--------------------------------|------------------|----------|----------|
| ITEM NO. | LOCATION | GRADE | PRIORITY | CATEGORY |
| I.4 | Exterior Doors of the Ice Rink | B | 4 | 4 |
| ASSESSMENT DESCRIPTION: Weather stripping on each exterior door has been compromised. Every exterior door in the rink section of the building is missing some part of its weather stripping. This might seem to be minor, but the envelope of an ice rink building is very important to reduce energy costs, reduce humidity and provide great ice quality. During the spring and summer months these small openings to the outside environment add unneeded load to the entire refrigeration system. | | | | |
| RECOMMENDATION: Replace all weather stripping between doors and on their bottoms. | | | | |
|  | | | | |
| LIFE CYCLE STATUS | REPLACEMENT YEAR | REPLACEMENT COST | | |
| Age Unknown | 2015 | \$ 1,394.40 | | |
| REFERENCE: | | | | |



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Facility Condition Assessment and Life Cycle Cost Analysis



| ASSESSMENT REPORT | | | | |
|--|----------------------------------|--------------------|----------|--------------------|
| ITEM NO. | LOCATION | GRADE | PRIORITY | CATEGORY |
| 1.5A | Dasher Boards Around Ice Surface | B | 4 | 1 |
| ASSESSMENT DESCRIPTION: According to staff, the dasher board system was replaced around 1996. The manufacturer could not be identified to confirm install date. The dashers have been refaced with new white poly board facing 3 years ago along with the yellow kick plate. The dasher boards lean out on the short ends and where they are not built against the bleachers and team boxes. This is due to the Olympia drivers running the machine against the dasher boards, causing them to bow outward. In addition at the footings of many support legs for the boards there is rust and corrosion. | | | | |
| RECOMMENDATION: Until funds are allocated for replacement of the boards, it is recommended that a dasher board company visit the Building to re-plumb the boards straight (see picture below), remove rust, and paint feet of support legs for the dasher boards. | | | | |
| <div></div> | | | | |
| LIFE CYCLE STATUS | | REPAIR YEAR | | REPAIR COST |
| 18 yrs of 30 | | 2015 | | \$ 26,480.00 |
| REFERENCE: | | | | |


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Facility Condition Assessment and Life Cycle Cost Analysis



| ASSESSMENT REPORT | | | | |
|--|----------------------------------|------------------|----------|----------|
| ITEM NO. | LOCATION | GRADE | PRIORITY | CATEGORY |
| 1.5B | Dasher Boards Around Ice Surface | C | 3 | 3 |
| ASSESSMENT DESCRIPTION: According to staff, the dasher board system was replaced around 1996. The manufacturer could not be identified to confirm install date. The dashers have been refaced with new white poly board facing 3 years ago along with the yellow kick plate. The dasher boards lean out on the short ends and where they are not built against the bleachers and team boxes. This is due to the Olympia drivers running the machine against the dasher boards, causing them to bow outward. In addition at the footings of many support legs for the boards there is rust and corrosion. | | | | |
| RECOMMENDATION: Replace dasher boards within the next 10 years. | | | | |
| <div></div> | | | | |
| LIFE CYCLE STATUS | REPLACEMENT YEAR | REPLACEMENT COST | | |
| 18 yrs of 30 | 2027 | \$150,000.00 | | |
| REFERENCE: I.2; I.3 | | | | |

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Facility Condition Assessment and Life Cycle Cost Analysis



| ASSESSMENT REPORT | | | | |
|--|--------------------------|------------------|----------|----------|
| ITEM NO. | LOCATION | GRADE | PRIORITY | CATEGORY |
| I.6 | Olympias in Olympia Room | B | 4 | 3 |
| ASSESSMENT DESCRIPTION: The silver and blue Olympia was built in November 2002 and the silver and red Olympia was built in September 2003. These machines have a life span of about 20 years if there is regular preventive maintenance done and good/moderate drivers are operating them. During inspection, there were no outward signs of any major mechanical issues, staff members of the rink noted these machines do have some operating challenges with the natural gas systems, hydraulics and carburetors. The machines had no leaks in the hydraulics or oil systems; however, we did notice several scrapes and damage to the fiberglass dump tanks which is assumed to be caused by drivers riding against the rink’s dasher boards or from collisions with walls of the Olympia Bay. Staff members feel these machines need to be traded in for new machines. These machines have at least another 7 years or more of service as a front line machine. | | | | |
| RECOMMENDATION: Have both machines put on a preventive maintenance program with an Olympia service company. Perform scheduled maintenance that is documented in the Olympia manual (staff does log ice cuts and some maintenance, but not all). The County could sell these machines and put funds generated on the sale toward new machines. When replacement machines are purchased, it would be recommended that the County purchase an Electric or a Propane Ice Resurfacer. No manufacturer makes the natural gas resurfacer that the County currently operates. | | | | |
|  | | | | |
| LIFE CYCLE STATUS | REPLACEMENT YEAR | REPLACEMENT COST | | |
| 12/13 yrs of 20 | 2023/2022 | \$ 230,000.00 | | |
| REFERENCE: | | | | |



Section 5

Appendix



Section 5

Appendix



A. Community Input

The very first step in the assessment process was to meet with members of the Mt. Vernon Community who are the primary users of the Facility. On April 28, 2014, a Community Meeting was organized by the Assessment Team to listen to the observations and comments of citizens who use the Facility on a regular basis. Some individuals have been users since the Facility first opened. Representatives of each of the major building elements—Ice Rink Users, Aquatic Users and Fitness Users—were present. A summary of their comments follows:

- **General Site & Facility:**
 - Site drainage and ice on the stairs is very problematic in the winter months.
 - Trees on the site are overgrown and contribute to short sightlines.
 - The Facility's appearance from Ft. Hunt Road is industrial. A better street presence is needed.
 - The path to the library needs to be improved. People usually take the dirt path under the tree instead.
 - There is virtually no storage space in the Facility.
 - Signage inside the Building is poor. Signage on the exterior is also weak.
 - More stroller friendly parking is needed.
 - A drop off area at the front door is needed.
 - The most frequently asked question at the Control Desk is, "Why so many stairs?"
- **Lobby:**
 - Lack of visual transparency—exterior windows have been coated to reduce solar heat gain and glare, but the outcome is a dark and isolated experience.
 - The Control Desk is poorly placed and inadequate in size.
 - Vestibule doors let too much cold air into the Facility in the winter.
- **Fitness & Club (Exercise) Spaces:**
 - Small size and poor placement of the Fitness Room
 - Small size and limited number of club rooms
 - Fitness equipment area is much too small to accommodate the number of users. If the area was expanded it would attract a much larger crowd and generate more revenue.
 - All of the exercise rooms are too small and are not adequately ventilated or isolated acoustically.
- **Pool Area:**
 - Pool water treatment and filtration equipment is antiquated
 - Pool Users rate the pool very high in terms of water quality and accessibility. The Spa and Pool beach entry are outstanding additions.
 - Acoustics in the Pool area are awful.
 - The beach entry and main pool area are on the same filtration and water treatment lines. Those lines need to be segregated.
- **Ice Rink Area:**
 - Ice Rink Users rate the Mt. Vernon ice sheet as one of the best in the Region.
 - The sound system is inadequate.
 - Acoustics in the Ice Rink area are awful.
 - Spectator seating in the Ice Rink is in very poor condition.

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Facility Condition Assessment and Life Cycle Cost Analysis



- **Locker Rooms:**
 - Men's and Women's Locker Rooms are much too small and lack privacy. There are enough lockers for the daily group of seniors but when swim teams arrive it is chaotic.
 - Some feel that the stainless steel lockers in the Men's and Women's Locker Rooms are too institutional in appearance while others are in favor of the look.
 - Shower fixtures are in need of replacement. There is a need for a water fountain in the Locker Rooms.
 - Changing stalls in the Men's and Women's Locker Rooms are much needed—a privacy wall would help immediately.
- **Skate Change Room:**
 - Some of the benches in the Skate Change Room should be lowered for increased accessibility.

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B. Image Portfolio

PHOTO TAG

PHOTO NUMBER
DIRECTION OF VIEW



PHOTO KEY PLAN - SITE



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PHOTO TAG

PHOTO NUMBER

DIRECTION OF VIEW

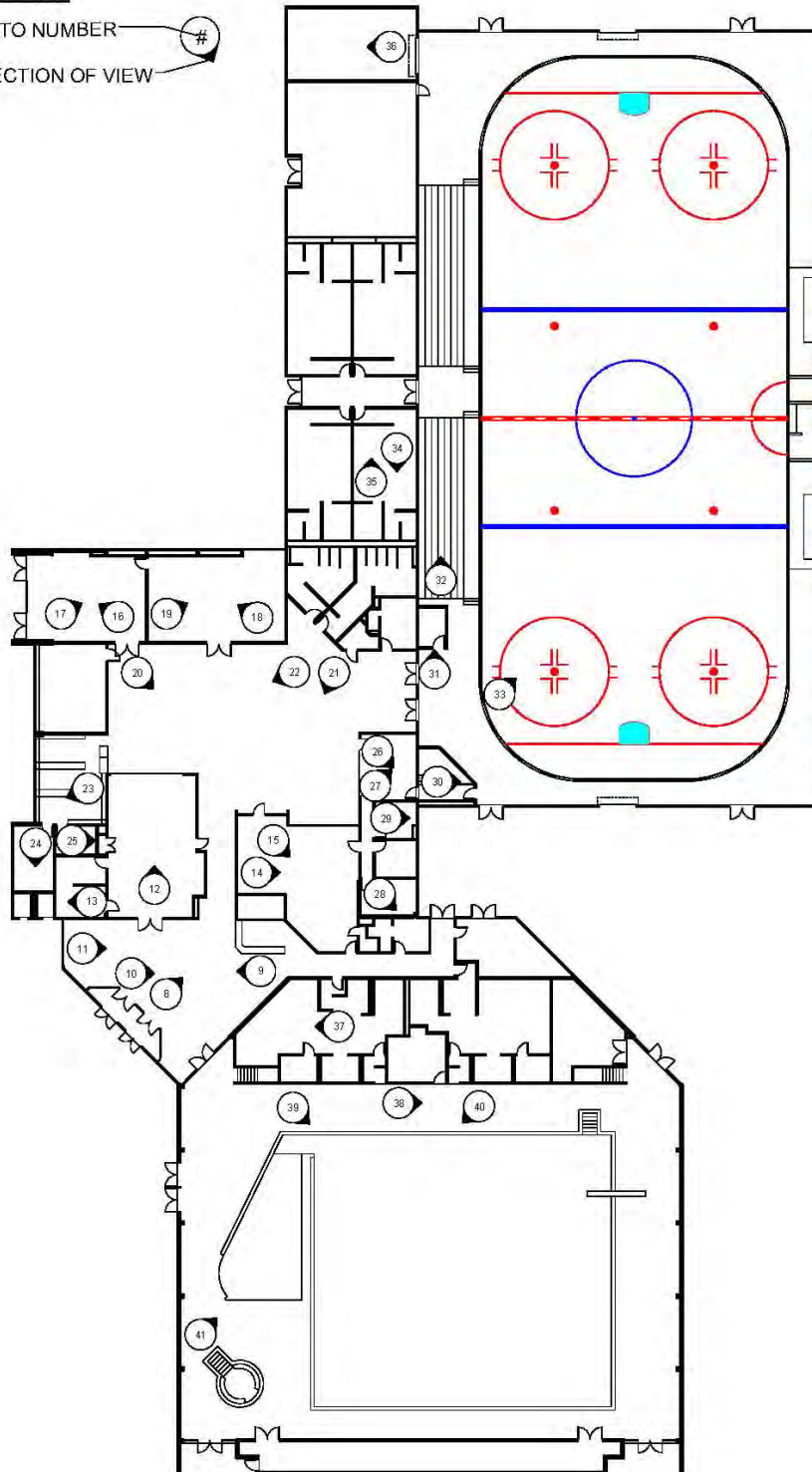


PHOTO KEY PLAN - BUILDING



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PHOTOS



1. Public Parking Lot



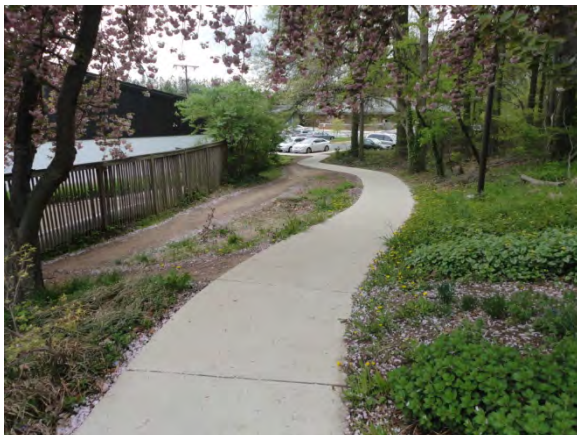
2. View of Building from Public Parking Lot



3. View of Building from Public Parking Lot



4. Path from Public Parking Lot to Main Entrance



5. Path from Staff Parking Lot to Main Entrance



6. Main Entrance Plaza

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PHOTOS



7. Facility from Fort Hunt Rd. & Belle View Blvd.



8. Lobby



9. Lobby



10. Lobby



11. Lobby

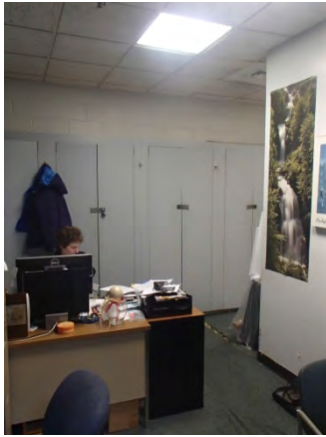


12. Fitness

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PHOTOS



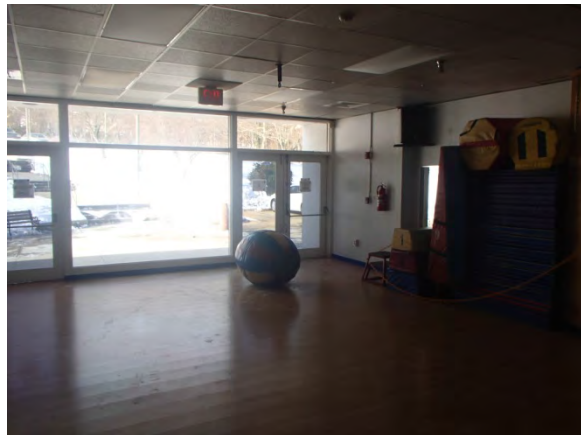
13. Fitness Office



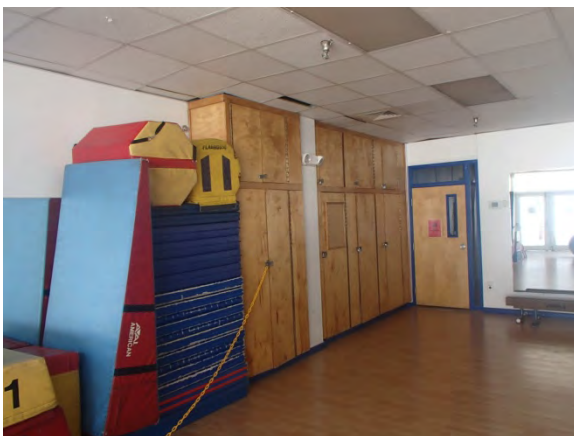
14. Club Room 4



15. Club Room 4



16. Club Room 2



17. Club Room 2



18. Club Room 1

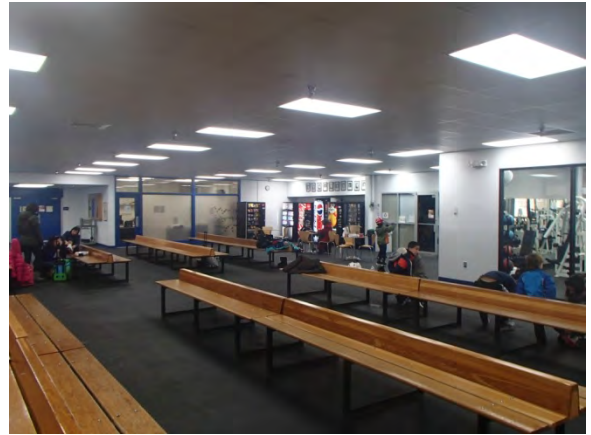
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Facility Condition Assessment and Life Cycle Cost Analysis



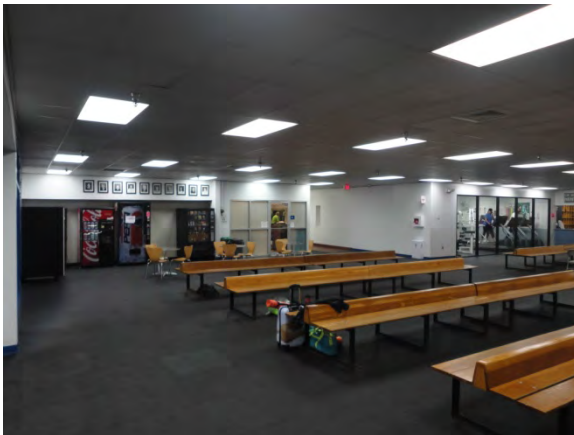
PHOTOS



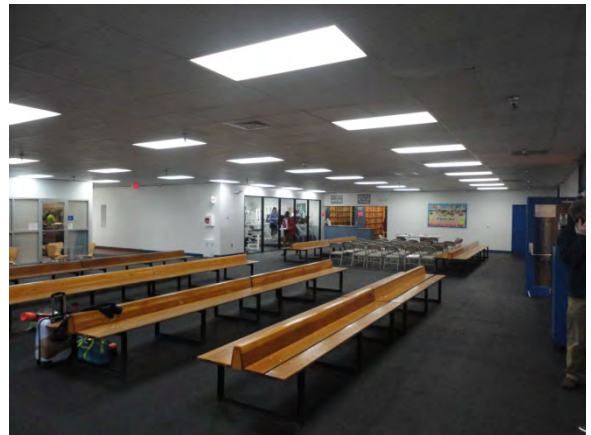
19. Club Room 1



20. Skate Change Room



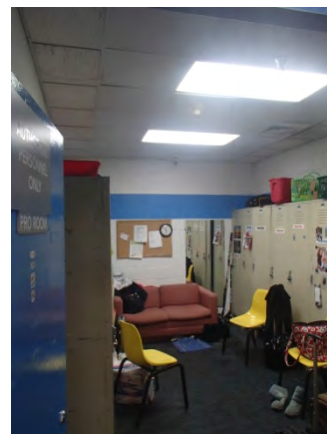
21. Skate Change Room



22. Skate Change Room



23. Skate Rental



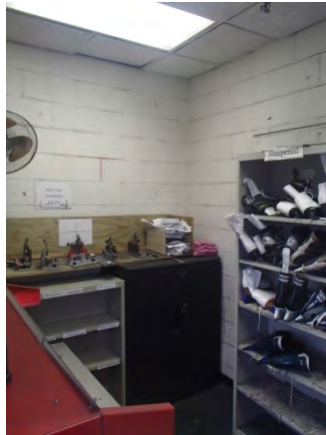
24. Proshop

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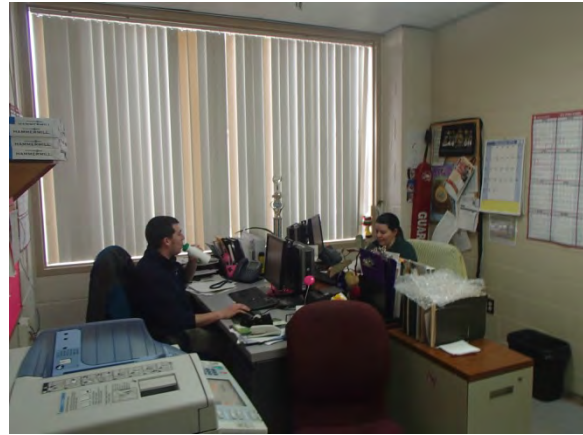
Facility Condition Assessment and Life Cycle Cost Analysis



PHOTOS



25. Proshop



26. Office



27. Office



28. Office



29. Office



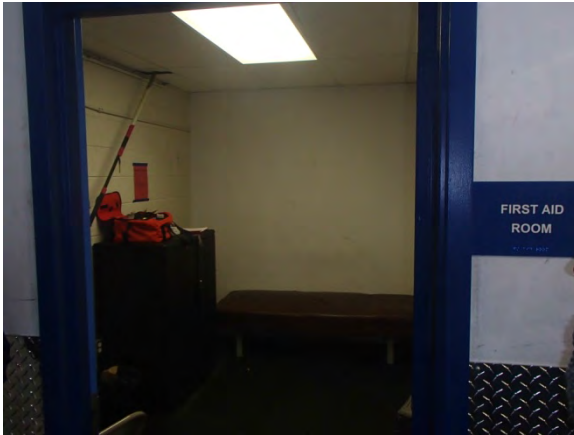
30. Ice Rink Office

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PHOTOS



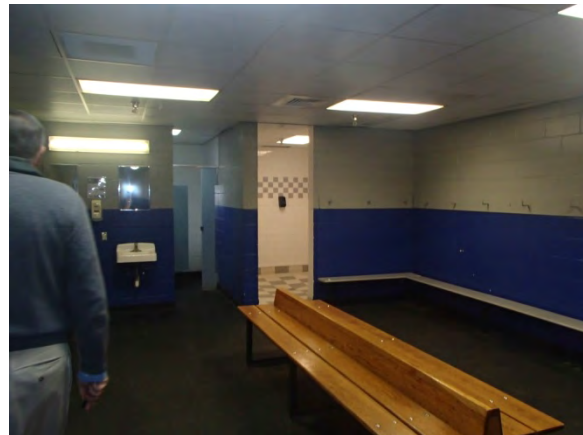
31. First Aid Room



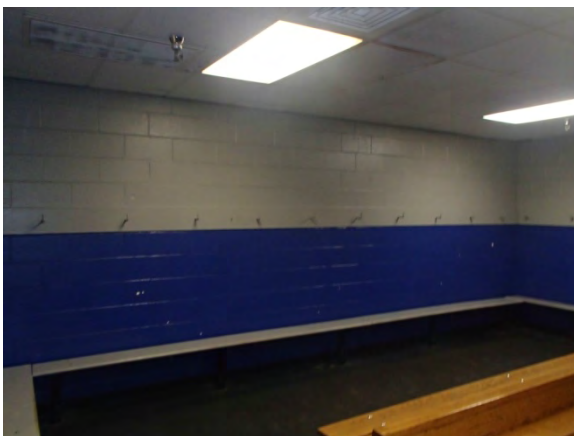
32. Bleachers in Ice Rink Area



33. Ice Rink



34. Team Room 1



35. Team Room 1



36. Olympia Room

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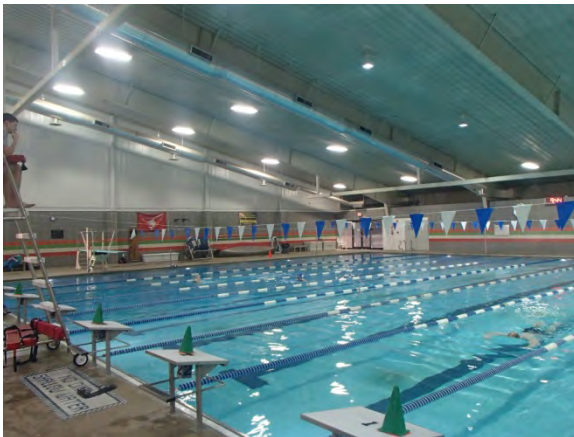
PHOTOS



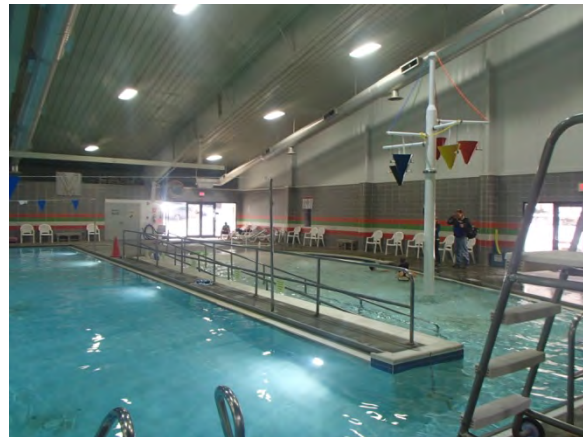
37. Men's Locker Room



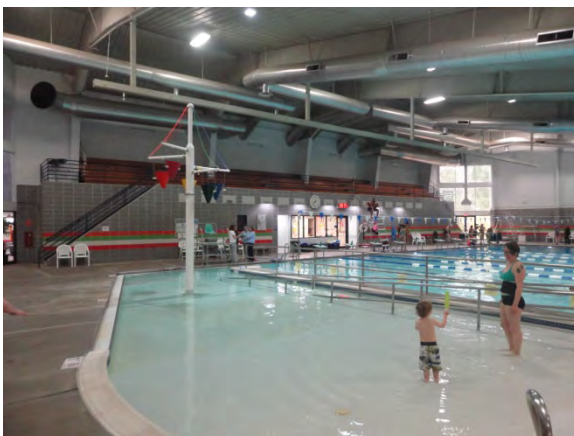
38. Pool Deck



39. Pool Area



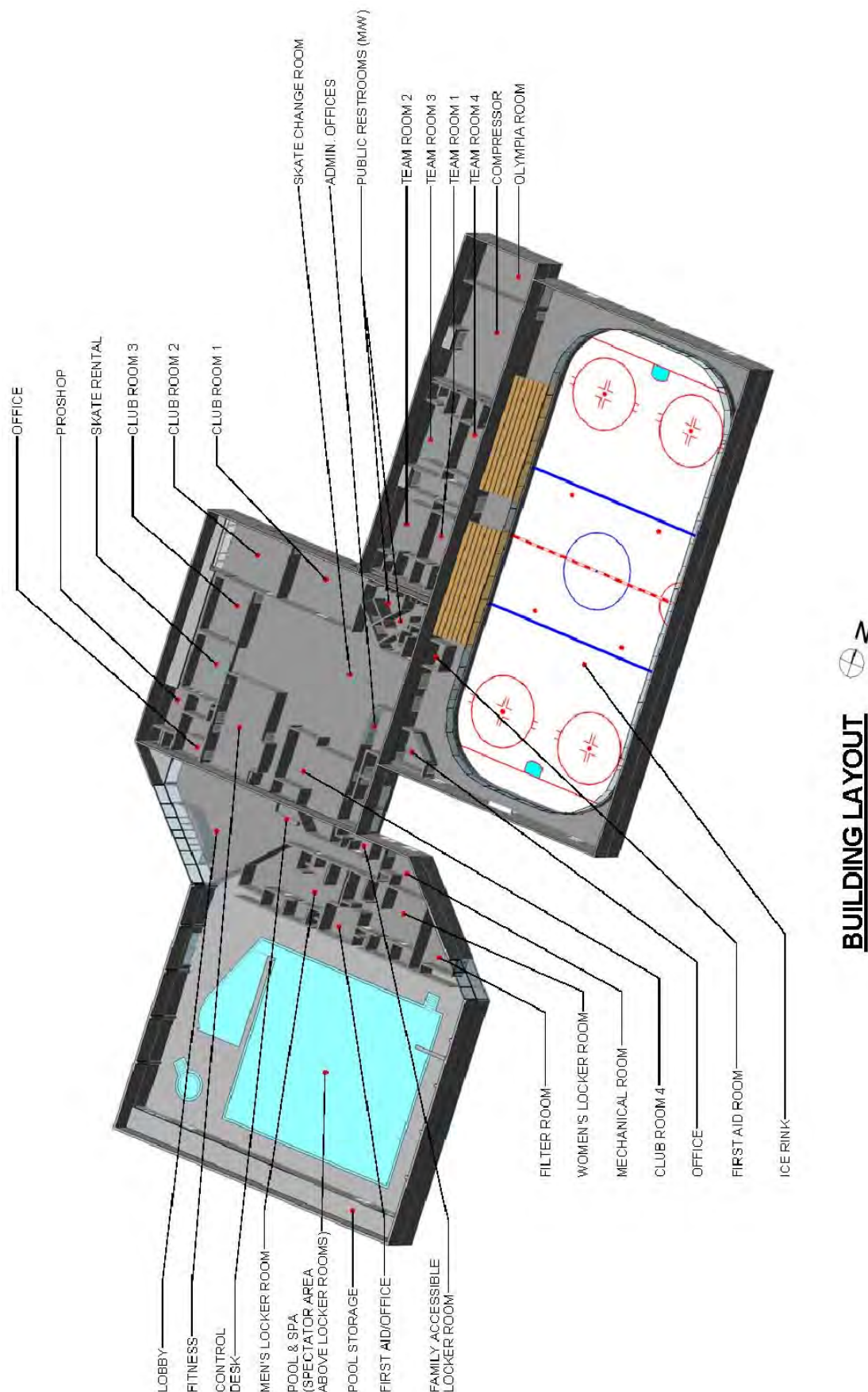
40. Pool Area



41. Pool Beach Entry

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BUILDING LAYOUT



END OF REPORT